

Research Paper: Spatial model of establishment and construction of rural-nomadic tourism complexes in Chaharmahal and Bakhtiari province

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ABSTRACT

Purpose: Today, the tourism industry, as one of the largest industries in the world, has undeniable effects on the economic and social well-being of the host society. These conditions in areas such as Chaharmahal and Bakhtiari province that have good potential in relation to tourism; Especially in rural and nomadic areas, it is very significant and important. Therefore, it is necessary to plan and purposeful management in order to promote tourism complexes (rural-nomadic). The present article has been compiled with the aim of providing an optimal model of tourism complexes in rural and nomadic areas in Chaharmahal and Bakhtiari province.

Methods: This research is applied in terms of the purpose of the research and in terms of the nature of the methodology is based on descriptive-analytical research and based on library studies and field studies. The selected indicators have been collected in two stages by studying the records (research projects, statistics, books) and using the opinions of experts (using the Delphi technique and extracting the opinions of academic theorists and managers of related organizations). The geographical territory of the research includes all tourist areas in the areas of Chaharmahal and Bakhtiari province.

Results: Findings from the study and presentation of an optimal model of tourism complexes in rural and nomadic areas showed that using the spatial model of the research process while identifying and briefly introducing tribes and nomads and nomadic ecosystems in the province Chaharmahal and Bakhtiari, to explain and determine the structural elements and functional features in the proposed model, explain and analyze the role of tourist-nomadic complexes in creating employment and income in the research area.

Conclusion: The results show that the pattern of establishment and construction of tourist-nomadic complexes in this province depends on the natural and tourist attractions, especially the location of the tribes and nomads, as well as the migration of these tribes, so that the most suitable situation in the area Studies in this province were associated with the ethnic distribution of tribes and nomads at the level of urbanites. The results showed that this pattern of establishment has provided the most feedback in the study level of Koohrang and Borujen counties.

Keywords:

Rural-Nomadic Tourism Complexes, Economic Feedback, Chaharmahal and Bakhtiari Province

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1. Introduction

The definition of rural tourism is still unclear and only a few studies; They have depicted the current state of knowledge in this field (Putu Devi & et al: 2021: 134).

On the other hand, nomadism is the oldest way of life of human beings and its permanence has become the most spectacular human attraction of tourism so far. Accordingly, nomadic tourism should be considered as one of the types of cultural tourism. Hence, the development of rural tourism and travel to rural and nomadic areas has been considered and is developing rapidly (YanjiaoDong, 2021: 104). Users' experiences in rural and nomadic tourism are considered as a key factor that can lead to the success and innovation of this industry (Wookhyun: 2021: 2).

Rural tourism, which is considered as an alternative approach to achieving sustainable rural development, due to the growing trend of rural degradation and agricultural decline, try to offer new strategies to revitalize rural and nomadic areas by creating complementary or transformational activities. The identification of these areas with respect to their natural and human resources (Holland et al., 2003: 23).

In addition, three variables are needed for tourism sustainability; Optimal use of local resources, coordinating the diverse needs of stakeholders and improving tourist satisfaction by providing meaningful experiences (WookhyunAnSilverioAlarcón, 2021: 2).

Tourism can have significant different effects on the tourist area. These effects can be social, economic, political and environmental (Sahebi, Naghmeh, Isapour Ramadan et al., 1400: 30).

Due to the complexity and scope of tourism activities, the resulting effects also have many interrelated dimensions that should be considered in the study of tourism effects (Amini et al.: 1394, 56). Tourists pursue diverse, high-quality experiences during short-term vacations. Rural-nomadic areas should strive to provide distinctive, engaging, and diverse experiences for users (Kastenholz, et al., 2012: 207).

It is therefore important to understand the individual perceptions associated with user experiences in rural tourism (WookhyunAnSilverioAlarcón: 212021: -3). Rural-nomadic areas may benefit from the entrepre-

neurial dynamism created by small tourism businesses, especially if it is related to the lifestyle motivations of the respective entrepreneurs. Despite the skepticism of some researchers about the involvement of small tourism businesses in the rural and nomadic economy, their potential role in enhancing development should not be overlooked (ConceiçãoCunha, alet al: 202020: -215);

However, many villages that have been transformed from traditional communities into tourist destinations to alleviate economic poverty face environmental and social crises that threaten sustainable development (Jinxin Zhu, Xiaomei Yuan & et al: 2021: 23) and these effects and consequences are never separate from each other (Rezvani, 1387: 89).

The effects of rural-nomadic tourism can be summarized as the results of a relatively complex process between tourists, hosts, and host settlements (Kandel & Brown, 2006: 278).

In addition, it should be acknowledged that when a local community becomes a destination for tourism, its quality of life and its value systems and customs are also affected (Gnoth & Zins, 2013: 1) Experience has shown that wherever tourism is developed without a clear planning and strategy framework, numerous environmental and social problems appear and in the long run, tourism problems outweigh its benefits (Fazelnia and Hedayati, 2010: 146).

For example, by expanding the scope of change in the functioning of production resources from agriculture to other uses, including tourism services, not only marginalizes the traditional and entrenched part of production in these communities, but also increases the field of exclusivism in geographical spaces. Give (Sahebi, et al., 1400: 30).

The complex problems of rural ecosystems are the result of the accumulation of material and energy exchange between humans and nature in the socio-ecological environment (Jinxin Zhu, Xiaomei Yuan et al., 2021: 23). Land use, irregular growth and incorrect location of many land uses, especially residential and tourist land uses, and injustice in the allocation of geographical resources, especially land, and natural landscapes (Amar, Timur, 2013).

Whereas rural-nomadic tourism is an important tool for economic development in the region; Because it allows new infrastructure to be created and help maintain

existing facilities (Sang-HyunLeeaYun & GyeongOha: 2013: 14)

It is considered as a destination attraction that stimulates economic growth especially for local communities (Ringkar, Situmoranga& et al: 2019: 20)

On the other hand, community awareness, lack of tourism knowledge and skills are the main limitations that limit the ability of local people to actively participate in tourism planning and development (Abdul Rasid, et al: 2013: 1835).

Although a change in the landscape of rural-nomadic settlements is inevitable (Saeedi, 1389: 13), it can be said that features such as local customs, customs related to the way of life and mirrors left over from the past among tribes and nomadic groups and Their way of life and way of life is a precious heritage that must be preserved; In such a way that the development of nomadic tourism is an economic and social complement that complements the nomadic groups and groups with tribal and nomadic life.

Also, despite the different business policies and strategies used by tourism companies, the demand for tourism services is characterized by severe seasonal changes (Vanesa F. & et al: 2015: 123) However, the role of companies and individual entrepreneurs in the literature and destination development models is greatly underestimated (Isabel, Dinis, et al: 2019: 92)

But what is the extent of these changes? And to what extent can the environment be tolerant of exploitation?

Chaharmahal and Bakhtiari province, which has been selected as the study area in the present study, has a wide variety of tourist attractions in terms of climate, ethnicity, dialect, dialect, clothing, customs, religion, handicrafts, etc. ; And there is the potential to create rural and nomadic tourism complexes with various branches of tourism activities such as natural-ecological, pilgrimage, cultural and social, religious, historical, etc .;

Which can be considered as suitable options for creating tourism complexes;

The rural areas of the province, being located in three geographical locations: mountainous and mountainous, plain and plain, have a very high capacity to accept tourism activities.

It seems that rural tourism in rural and nomadic areas of the province, despite its high potential in terms of ethnic and social diversity, is a spontaneous phenomenon and due to the diversity of attractions, it is necessary to attract tourists at the local, city level. , Provincial, regional and even international.

But the limitations and problems such as: lack and easy access to attractions as well as the destruction of natural resources, land use change and land price inflation, other problems such as physical changes and changes in the pattern of rural architecture and environmental pollution.

Due to the fact that tourism in these villages and nomadic areas has been planned before and has been more spontaneous, its economic goals have been considered more and less attention has been paid to its negative environmental consequences. At least in the last decade, with changing attitudes towards nomadic and rural life, limited economic opportunities and problems of this lifestyle, cultural gaps and sometimes environmental approaches, the formation of deep social ties between different classes and groups and nomadic population has not been allowed. It has narrowed the field for tribes and clans.

Nomadic-rural tourism, however, is a relatively effective solution for reconnecting different cultural and social groups and groups, and is of great importance in this regard.

Accordingly, this study, with the aim of presenting a proposed model in the implementation of rural-nomadic tourism complexes and examining its economic feedback, has tried to identify and briefly introduce tribes and nomads and nomadic ecosystems in the field of research; It answers the main question: which areas are the most appropriate spatial model for the establishment and construction of tourist-nomadic complexes in Chaharmahal and Bakhtiari province?

2. Literature Review

Background

In the field of studying the effects and background of research, especially in the field of economic and social feedback of tourism on host regions and communities, a lot of research has been done, some of which are mentioned in Table (1).

Table 1. Excerpts from the background related to the research topic

Findings and results	Title	Authors (year)
A self-administered survey in 4 languages was collected from 252 tourists in the study area. Which a method of clustering the factors identified 4 separate sections.	Motivation Segmentation in Rural Tourism: A Case Study of Korea	Duk-Byeong & Parka Yoo-Shik Yoonb (2009)
The results show that Yongjeon-ri is the main space village supported by ri and thus the possibility of providing Bangchon-ri village is superior. In addition, the other two villages are known as sub-core villages.	Assessment centrality Place To Management Integrated Tourism the door areas rural With Use From GIS And Analysis Network	Sang- Hyun Leea & Yun-Gyeong Oha (2013)
Five groups of macro-environmental factors were identified; Economic, socio-cultural, natural-ecological, political-legal and technological factors. This group of factors in the Lithuanian tourism sector is very large.	Decomposition And Analysis Factors Environmental Macro Effective On Development Tourism Rural : Lithuanian Item	Vytautas Barkaus & et al (2015)
The case study of Yuanjia village shows that three model levels (material, social, and spiritual) are effective paths for successful village revitalization.	Reviving Traditional Villages through Rural Tourism: A Case Study of Yuanxia Village, Shanxi Province, China	Jing Gao Bihu Wu (2017)
For this purpose, a standard survey was conducted among visitors in Northern Ireland. The results show that the sustainable awareness of individual travel tourists as a guide for cruise tourists for pleasure boats is reduced and therefore the special sustainable governance of the sector is desirable.	Attitudes of tourists towards sustainability and their impact on rural Ireland Northern rural production	Sabine Panzer-Krause (2020)
Rural destinations face internal and external challenges. The biggest challenges for developed and emerging areas arise from internal resource issues.	Rural Tourism: A Literary Review of the Systematic Definitions and Challenges	Putu Devi & et al: (2021)

Duk-Byeong Parka Yoo-Shik Yoonb (2009) · Sang-Hyun Leea Yun-Gyeong Oha (2013) · Vytautas Barkaus & et al (2015) · Jing Gao Bihu Wu (2017) · Sabine Panzer-Krause (2020) · Putu Devi & et al: (2021).



Conceptology Rural-nomadic tourism:

The word tourism literally means tourism within a country or foreign countries.

While tourism in Persian means exploring the world and does not include domestic travel, so in a more comprehensive word, the word "tourism" has been equated with tourism, which is both domestic travel. Include and foreign (Saaidnia & Mahdizadeh, 2012: 19) In nomadic tourism, the main activity of tourists is to see the sights of ethnic and tribal life. Because tourism is a key part of the sustainable development of rural environments.

Its ability to create sustainable employment and an acceptable level of profit; It depends on the stability of tourist activity throughout the year (Jose Antonio & et al., 2019: 165).

On this basis, tourism is a set of activities and relationships that take place after people travel from their place of residence or work to another place and lead to their stay in the new place for a limited time (Rezvani: 1374, 15) Rural tourism is "a type of tourism in which people travel to rural areas outside their usual place of residence for vacation, work or other purposes" (Viira A.H. & Et al: 2019: 219) Rural tourism is known as a recreational

activity based on rural natural resources, contact with local cultures, relatively small scales of accommodation and infrastructure, and close participation of local providers (M. Cawley: 2009: 313) Rural tourism is an important tool for the economic development of the region because it allows the creation of new infrastructure and helps maintain existing facilities (Sang-Hyun Leea Yun & Gyeong Oha: 2013: 14) In the discussion of tourism in nomadic areas, two interconnected dimensions of cultural space and cultural perspective can be analyzed.

Based on this, nomadic tourism is in fact the final search for a unified and coherent structure in human daily life (Papli Yazdi, 2003: 35)

Nomadic tourists are postmodern pilgrims who seek their semantic originality in the cultural landscapes of nomadic areas.

As a strategy of sustainable development in rural areas, tourism (rural-nomadic) has increasingly attracted the attention of policy makers, researchers and officials (Saheb Mohammadianmansoor et al., 2020: 1)

It can be said that in a systemic approach to the issue of nomadic tourism, local factors, jobs, services, attractions, and local residents, along with tourism man-

agement and factors outside the nomadic environment play a key role in the functioning of this system. In the framework of capitalist functioning, the existence of attractions is necessary for the formation of tourism (Papli Yazdi & Saghaei, 2007: 210)

The way of life, customs, rituals and other things that show the symbols of cultural heritage in the social relations of communities are of interest to tourists. These symbols are found in abundance in nomadic areas. We can mention the way of conduct and manners, society, way of life, the way of clothes and clothing, temperament and various tribal ceremonies, which is very attractive for tourists (Manshizadeh, 1997: 178)

Theoretical concepts related to tourism as a function of power relations provide new insights into the production and consumption of rural and nomadic tourism (M. Cawley, 2009: 313).

Tourist complexes (rural-nomadic)

Rural-nomadic tourism is an important tool for the economic development of rural areas because it allows the creation of new infrastructure and helps maintain existing facilities (Sang-HyunLeeaYun & GyeongOha, 2013: 14).

Referring to Article 3 of the Nature Tourism Regulations approved by the Cabinet on 2/5/2005 and also Article 1 of the Regulations on the establishment, amendment, completion, grading and rating of tourism facilities and monitoring their activities approved on (4 March 1990) and Subsequent amendments and considering the importance of creating a suitable platform for the sustainable development of nature tourism throughout Iran, the rules and standards of construction, grading and monitoring the performance of ecotourism complexes are proposed as follows:

Ecotourism complexes are accommodations for tourists who, in addition to observing the principles governing the hotel industry and providing services of a specific and acceptable quality to guests in natural environments, have the following characteristics:

- Do the least damage to the surrounding environment, both natural and cultural.
- Have the least possible impact on the natural environment during construction.

- Be appropriate and in harmony with the physical and cultural context of the region and be made according to the shape, appearance, color and local architecture.

- Use sustainable methods to obtain and reduce water consumption.

- Have an efficient waste and effluent disposal system.

- As far as possible, benefit from alternative energy sources by observing the principles of sustainability.

- Work towards cooperation with local associations.

- Organize educational programs about the natural and cultural environments of the region for the employees and tourists.

- Contribute to the sustainable development of the region by participating in research programs.

Based on the above interpretations, eco-tourism complexes are hotels that have been constructed in natural environments with the highest possible level of environmental standards and in a manner compatible with the local architecture and natural appearance of the region and while maximizing interaction with the local community. They provide the presence and stay of naturalists with acceptable and defined quality in natural environments. Obviously, according to the principles governing the sustainable development of nature tourism, ecotourism complexes will be created on a smaller scale than their hotels of the same rank, and during their construction and ranking, while paying attention to the principles of hotel management, attention It seems necessary to pay special attention to the principles governing the sustainable development of nature tourism (Atazadeh, Ebrahim, Mahnaz Mahmoudi, 1396: 21).

3. Methodology

This research is applied in terms of purpose and in terms of descriptive-analytical method and is based on library studies and field studies.

Selected indicators in two stages through the study of records (research projects, statistics, books) and the use of expert opinions (using the Delphi technique and extracting the views of academic theorists and managers of related organizations) Collected.

It should be noted that in the first stage, about 70 indicators were selected, which in the final selection process,

taking into account the discussion of access to statistical and spatial data, the number of indicators was adjusted to 31 variables.

Finally, they were integrated using the Delphi method. After extracting the indices, the leveling of the indices was done using geographical spatial regression. It should be noted that in this study, the population and area of each county has been considered as an independent variable.

Spatial analysis method

Equation (1) Geographical weight regression

Carlton, Brandson, and Foddingham coined the term geographic weight regression. In linear regression, spatial data in a static process are assumed to be general linear regression as follows.

Relationship (1)

$$Y_i = \beta_0 + \sum_k \beta_k X_{ik} + \varepsilon_i \quad i = 1, 2, \dots, n$$

Here Y is the estimated value of the dependent variable to observe B0i the constant coefficient Bk of the estimated parameter or the variable, Xik, K is the value of the K variable for i and ε_i the error component that is curved is normally distributed.

Estimation of parameters in the measurement of such models is constant in space.

Relationship (2)

$$\beta' = (X^T X)^{-1} X^T Y$$

Geographic weight regression model is an extension of general regression. The main essence of this model is as follows.

Relationship (3)

$$y_i = \beta(u_i, v_i) + \sum_k \beta_k(u_i, v_i) X_{ik} + \varepsilon_i \quad i = 1, 2, \dots, n$$

Where the (u_i, v_i) coordinates of the i point show in space. $\beta(u_i, v_i)$ The continuous function is i at $\beta(u, v)$ any point i and X_{1i}, \dots, X_{pi} the variables are explanatory at point i except ε_i for the error.

For the given data set, the regional parameters $\beta(u, v)$ are estimated using the least squares steps. The weights w for $j=1, 2, \dots, n$ are obtained in each position (u_i, v_i) as a continuous function of the distances between the points i and the other data points.

$$\beta = \begin{bmatrix} \beta_1(u_1, v_1) & \beta_2(u_1, v_1) & \dots & \beta_p(u_1, v_1) \\ \vdots & \vdots & \ddots & \vdots \\ \beta_1(u_n, v_n) & \beta_2(u_n, v_n) & \dots & \beta_p(u_n, v_n) \end{bmatrix}$$

This matrix is a regional parameter. Each row is derived from the following equation.

Relationship (4)

$$\beta(i) = (X^T W(i) X)^{-1} X^T W(i) Y$$

Table 2. Indicators and research variables

Criteria	index	Criteria	index
Residential per capita Commercial per capita Disciplinary per capita Cultural per capita Per capita tourism	Physical	Inflation Income level Purchasing power Financial ratios Poverty line. Gross production. Average Production growth Position in the country	economic
The length of the arterial pathways Quality of transportation Road quality Percentage of public transport vehicles Percentage of private transport vehicles	Transportation	9. Education 10. life expectancy 11. Human development 12. Access to welfare 13. Quality of life	Socio-cultural
Access to health centers Access to hotel and accommodation Access to the road High speed internet access	infrastructure	14. Regional water quality 15. Waste production rate 16. Garbage dumps 17. Type of surface water disposal	environmental



So that $i=1,2,\dots,n$ represents the rows of the matrix X the matrix of the independent variables, Y the dependent variable $w(i)$ the matrix $n*n$ the spatial weight as follows.

$$W(i) = \text{diag} W_{11}, W_{12}, \dots, W_{nn}$$

$$W(i) = \begin{bmatrix} W_{11} & \cdot & \dots & \cdot \\ \cdot & W_{12} & \dots & \cdot \\ \vdots & \vdots & \ddots & \vdots \\ \cdot & \dots & \dots & W_{nn} \end{bmatrix}$$

Estimating Equation 4 is an estimate of least squares, but the weight matrix is not constant. For this reason $w(i)$ must be computed for each point i . w_{ij} represents the approximate of each data point in position i . Data points close to i have more weight in estimating parameters $\beta(i)$ than points farther away. Different weight functions can be defined. The most common are kernel, Gaussian and weight functions.

Equation (2) Moran index:

Moran’s spatial autocorrelation indices are widely used. This index of contractual significance provides a linear relationship between the observed values and the means of adjacent and spatially weighted values.

The Moran index shows whether clustering exists in the data set and is calculated as Equation 6.

Relationship (6)

$$I = \frac{n \sum_{i=1}^n \sum_{j=1}^n w_{ij} (x_i - \bar{x})(x_j - \bar{x})}{(\sum_{i=1}^n \sum_{j=1}^n w_{ij}) \sum_{i=1}^n (x_i - \bar{x})^2}$$

Where n is the number of regions, x_i is the value of the variable in region x_j , i is the value of the variable in region j , \bar{x} is the mean of the variable in all regions and w_{ij} is the weight used to compare the regions i and j .

A value I greater than the expected value $E(I)=-1/(n-1)$ indicates positive spatial correlation and a value I less than the expected value $E(I)=-1/(n-1)$ indicates a negative spatial correlation. The range of Moran value changes is from $+1$ to -1 .

Brief introduction of the research area:

Chaharmahal and Bakhtiari province is one of the provinces of Iran. The capital of this province is Shahrekord.

With an area of 16,421 square kilometers, one percent of the total area of Iran, this province is the 22nd largest province in terms of size.

Chaharmahal and Bakhtiari province is one of the mountainous parts of the central plateau of Iran and is located at 31 degrees and 9 minutes to 32 degrees and 38 minutes north latitude and 49 degrees and 30 minutes to 51 degrees and 26 minutes east longitude of Greenwich. This province is limited to Isfahan province from the north and east, to Khuzestan province from the west, to Kohgiluyeh and Boyer-Ahmad provinces from the south and to Lorestan province from the northwest.

Lori Bakhtiari, Persian and Turkish dialects are common among the inhabitants of this province. In the center of the province, Hafshejan, Borujen, Farokhshahr, Gandoman and some other cities of the province speak Persian with their own dialect. The center of this province is Shahrekord and with 2066 meters above sea level, it is the tallest center of Iran.

The average height in Chaharmahal and Bakhtiari province is about 2153 meters and therefore Chaharmahal and Bakhtiari province is known as the roof of Iran (Figure 1).

4. Findings

Step 1: Spatial geographical regression

At the beginning and before the implementation of the model, spatial autocorrelation was calculated for all variables of geographical spatial regression test in Geoda software (Table 3).

As can be seen, the results confirm the model indication that is normally present in spatial data.

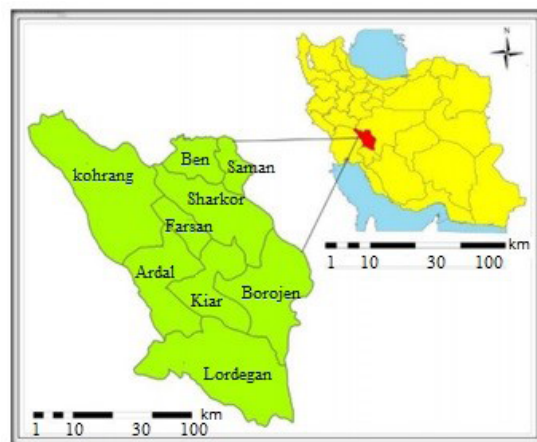


Figure 1. Study area (Source: Authors, 2021) JSRD

Table 3. Regression pattern trend in the implementation of rural-nomadic tourism complexes¹

Indicator	variable	Coefficient ¹	Standard Error (Std.Error)	level (sig)
population	Independent	-	-	-
Economical	Dependent	26/095	0/95	0/00
Social-cultural	Dependent	4/161	0/95	0/00
environmental	Dependent	0/437	0/95	0/00
Physical	Dependent	1/918	0/95	0/00
Transportation	Dependent	-50/16	0/95	0/00
infrastructure	Dependent	23/100	0/95	0/00
Area	Independent	-	-	-
Economical	Dependent	32/152	0/95	0/00
Social-cultural	Dependent	2/331	0/95	0/00
environmental	Dependent	0/637	0/95	0/00
Physical	Dependent	0/972	0/95	0/00
Transportation	Dependent	17/230	0/95	0/00
infrastructure	Dependent	23/140	0/95	0/00



1. In the process of patterns, the coefficient or spatial weight is obtained Which is added to the layers in the next step (spatial autocorrelation) .

The trend of regression model (Figure2) in determining the distribution of tourism infrastructure in the field of research shows that: They have the highest coefficient among the factors affecting economic indicators, infrastructure and transportation with a coefficient of 26.95 and 32.15.

Determination of regression test in the study area showed that in some indicators, due to the relationship between that indicator and the population in the same range, the coefficient is sometimes negative and sometimes very large.

As it is clear from the level of significance, obtaining the relationship in the regression test in this place is confirmed in the index of infrastructure, transportation and other indicators.

Then, by combining these indicators, a map related to these indicators was produced.

In this regard, LMiZScore in this study was obtained numerically between -70 to +70.

The more positive this number is, the stronger the spatial autocorrelation results provide for the regression model. The following is a picture and diagram of this process.

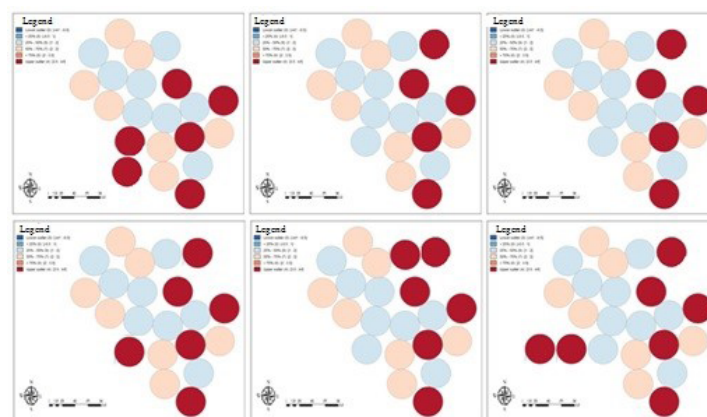


Figure 2. Regression pattern trend in the distribution of indicators. (Source: Authors, 2021)



Step 2: Moran Spatial Autocorrelation:

After performing weight-geographical regression on the model parameters, a variety of outputs are obtained.

The first output is general information about the estimated model.

The output of the model parameters also shows statistics that reflect the goodness of the model.

The most important values here are the values of R² and Adjusted R² (Adjusted R²).

which in fact indicate the goodness and accuracy of the model used.

The closer these values are to the number one, the better the descriptive variables used are able to explain the changes in the dependent variable (Table 4).

Other outputs appear as fields in the output layer properties table, for most of which the desired maps can also be prepared.

The output layer properties table contains the fields of estimated local values for the dependent variable y, estimation coefficients, standard error, and a number of statistics to evaluate the model. One of the fields used for the accuracy and efficiency of the geographic weight regression model is the existence of a statistically significant autocorrelation between the residual values (difference between observed values and estimated regression values). (Pictures 3 and 4)

Its presence indicates the accuracy of the regression model.

The estimated autocorrelation on the residual values obtained from the geographic weight regression model using I (Moran's I) statistics indicates significant autocorrelation.

In addition, by comparing the value of this index with the autocorrelation index between each of the effective variables (Tables 4 and 5), it is possible to achieve an obvious difference between them and autocorrelation in the residual values.

Step 3: Leveling the implementation of rural-nomadic tourism complexes:

Among other maps that can be generated from the model output is the field of estimated local coefficients that can be prepared for each of the variables.

Maps of local coefficients show that: The effect of these variables in the model varies significantly in the study area and has a specific direction. And also shows what the situation of each level is.

Figure (4) shows the levels and ranges predicted by geographical spatial regression in Chaharmahal and Bakhtiari province.

The partial and analytical results of this model showed that the pattern of establishment and construction of tourist-nomadic complexes in this province was based on the centrality of natural and tourist attractions, especially the location and migration route.

In such a way that the most appropriate situation in the study area of this province was associated with the ethnic distribution of tribes and nomads in the cities. The results showed that this deployment pattern has provided the most feedback in the geographical area of Koohrang and Borujen counties.

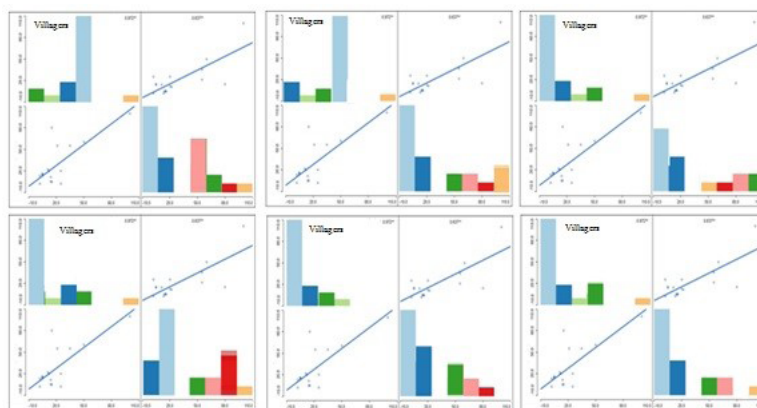


Figure 3. Regression pattern trend in the distribution of indicators. (Source: Authors, 2021)

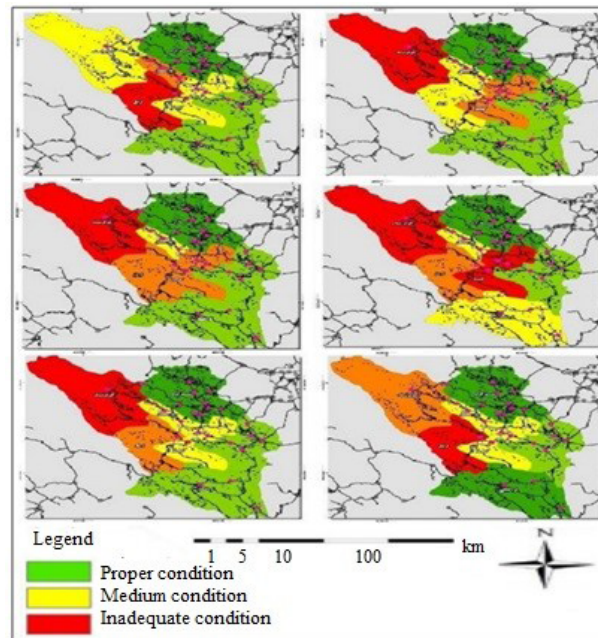


Figure 4. Moran spatial autocorrelation and geographic weight regression (GWR) in the distribution of six indices (Source: Authors, 1400)



Table 4. Estimation of Moran spatial correlation and geographic weight regression (GWR) in the distribution of tourism indicators

R ² Modified	R ²	AICc	Sigma	Band length	p-value	variable
0/215	0/347	179/86	39912/68	32/499752	-2/5 _ +2/5	Economical
0/413	0/744	124/80	37511/55	32/499752	-2/5 _ +2/5	Social-Cultura
0/221	0/871	454/20	45457/18	32/499752	-2/5 _ +2/5	environmental
0/741	0/826	554/019	999495/081	32/499752	-2/5 _ +2/5	Physical
0/890	0/954	487/587	8475632/225	32/499752	-2/5 _ +2/5	Transportation
0/825	0/874	597/241	658742/478	32/499752	-2/5 _ +2/5	infrastructure

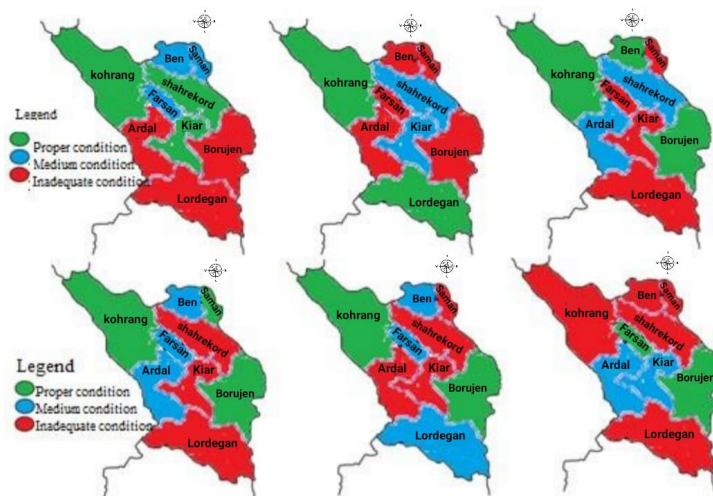


Figure 5. Leveling status of rural and nomadic tourism complexes (Source: Authors, 2021)



5. Discussion

Geographical spatial regression has been modeled with due accuracy by considering spatial changes in the relationships between variables. As shown in Tables 4 and 5, and as shown in field R^2 . All variables measure the status of the model under study and show a number close to one. This property is also seen in the modified variable R^2 .

Based on the final results of fitting the geographical spatial regression model in the field of research and at the level of 6 indicators for the distribution of rural and nomadic tourism complexes show that:

At the level of economic index: Borujen, Lordegan and Ardal counties were in poor condition, Saman Bin and Farsan counties were moderate and Koohrang, Kiar and Shahrekord counties were in good condition.

At the level of socio-cultural index: Borujen, Farsan, Ardal, Ben and Saman counties were in poor condition, Shahrekord and Kiar Moderate counties and Koohrang and Lordegan counties were in good condition. At the level of environmental index: Saman Farsan, Kiar and Lorgan were in poor condition, Shahrekord and Ardal by and Koohrang, Ben and Borujen were in good condition.

At the level of physical index: Saman Shahrekord, Kiar and Lorgan were in poor condition, Bon, Farasen and Ardal by and Koohrang, Saman and Borujen were in good condition.

At the level of transportation index: Saman Ardal, Kiar and Shahrekord were in poor condition, Bon, Farsan and Lordegan and Ardal by and Koohrang and Borujen were in good condition. In terms of infrastructure: Koohrang, Bin Saman, Shahrekord and Lordegan counties were in poor condition, Kiar and Ardal counties were in moderate condition and Farsan and Borujen counties were in good condition.

The proposed settlement model in this province can be offered based on the following format and proposed model:

The result of the proposed model also showed that in general, considering the situation of tourist-nomadic complexes in the province and having rural and nomadic populations, the following measures are necessary:

- Reasonable guidance of eager investors to invest in a safe and pre-designed environment in the field of nomadic tourism industry,
- Creating direct and indirect job opportunities in deprived and less developed areas of the province,
- Improving the standard of living and indicators of human development in the host rural-nomadic community.
- Achieving sustainable and endogenous development by using the existing environmental potential in the region.



Figure 6. Spatial model of establishing and creating tourist complexes (rural-nomadic) in Chaharmahal and Bakhtiari province.

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Conflict of Interest

The authors declared no conflicts of interest.

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