Research Paper: Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System (Case Study: Kuhrang Region, in the West of Iran)

Hojat Ollah Sadeghi[1*], Seyed Skandar Seidaiy[2]

1. PhD in Geography and Rural Planning, Isfahan University, Isfahan, Iran.
2. Associate Professor, Department of Geography and Rural Planning, University of Isfahan, Isfahan, Iran.

ABSTRACT

Purpose: One crucial development planning for tourism is the spatial distribution pattern which can draw up a plan for rural development within a uniform framework. This study aims to analyze the tourism indicators in rural areas and determine their spatial distribution pattern in the Kuhrang region of Chaharmahal and Bakhtiari province.

Methods: The study adopts a descriptive-analytical approach. The survey data is quantitative using a questionnaire. The statistical population of this research includes 2628 people in tourism villages. Three hundred thirty-five people were selected as the sample size based on the Cochran formula. SPSS and ArcGIS software was used for data analysis, and Moran's I was employed in ArcGIS software for spatial distribution pattern analysis.

Results: The results showed that rural areas have attraction diversity and capacity for tourism development; however, economic, social, and environmental indicators have unfavorable status. Also, the results showed that rural areas have a dispersed spatial pattern only for the tourism current status indicators, followed by Moran's I (-0.94), and regarding other indicators, namely, tourism potential, attraction diversity, foresight, indicators of social, economic, and environmental tourism have a random pattern.

Conclusion: Considering the appropriate attraction diversity for tourism development, the spatial distribution pattern of rural areas in terms of tourism indicators is unacceptable as it does not follow a regular, planned, and uniform pattern. Therefore, an acceptable framework should be provided for creating an appropriate spatial distribution pattern for tourism development (Clustered pattern).

* Corresponding Author:
Hojat Ollah Sadeghi, PhD
Address: *Isfahan University, Isfahan, Iran.*
Tel: *+98 (916) 6904491*
E-mail: *Hojat.sadeghi65@gmail.com*

1. Introduction

Tourism is a particularly complex phenomenon with social, political, cultural, and economic implications. The sheer volume and complexity of the offer of tourist services have led to the development of the travel and tourism industries (Bunghez, 2016). Through its content and role, tourism demonstrates a distinct field of activity and is an essential part of most countries' economic and social life (Jasrotia & Gangotia, 2018). The tourism industry generates substantial economic benefits for host communities or tourist accommodations. In developing countries, one of the primary motivations for a region to promote itself as a tourism destination is the expected economic improvement (Khayrulloevna, 2020). Thus, tourism has economic, social, and cultural benefits for both host communities and tourists, and these effects on a geographical area include job creation, income diversification (Muresan et al., 2021); participation, infrastructure improvements, facilities improvements, and environmental improvements (Chong & Balasingam, 2018). Regarding these capacities and effects, tourism has different types, of which a clear example is rural tourism.

In recent decades, rural tourism has been considered an approach to the economic development of sensitive locations, especially in rural areas (Ibănescu et al., 2018). Tourism can positively and negatively affect destination communities' livelihoods (Su et al., 2019), and its effectiveness depends on various factors. One of the strategies for the economic development of rural areas is to promote tourism activities. Tourism activities' impact on rural communities and the environment has become a subject of interest lately. The research findings by Elena (2019) show that if rural tourism is well managed, it can significantly contribute to the rural community development; if not, it could have negative consequences on nature and the rural community. Therefore, today the primary efforts in support of rural tourism are centered on improving the quality of the accommodation on offer and on using ICT to drive the recovery, conservation, management, and promotion of the vast natural and cultural heritage in rural areas (Maroto-Martos et al., 2020), and seeks to alleviate pastoral challenges such as poverty (Feng et al., 2018), migration, income growth, diversification of activities (Cheng et al., 2020; Santos, 2021), reducing the pressure on the environment (Khartishvili et al., 2019), improving the quality of life, technology upgrading (Yang et al., 2021), improving physical and environmental condition (Cucari et al., 2019), demo-

graphic stability, improving the public utilities, and socio-economic sustainability (Ibanescu et al., 2018) via applying rural tourism strategy.

Since there is a new trend in tourism and tourists' demands, it is necessary to emphasize and plan for the evolution of tourism in rural areas based on different indicators. Using a regular pattern can effectively develop rural tourism and provide facilities (Qi et al., 2022). Creating spatial patterns is one of the practical approaches to developing rural tourism (Zhang et al., 2021) because appropriate spatial patterns can accelerate the planning and development process for many tourism villages and can also help for balanced growth and coordinated development of tourism villages. Nowadays, villages using integrated patterns can develop booming tourism (Liao et al., 2022). The planning of tourism development in a geographical space should be in an integrated and networked manner. One-dimensional or one-village approaches can not create long-term sustainability. Tourism villages are components of geographical space that can achieve sustainable development through a regular spatial pattern (Zhang et al., 2022). This research cannot apply to tourism areas with only one or few villages, and there would be many obstacles, creating multiple problems for villages in the future.

Therefore, the spatial distribution of rural accommodations in tourism development is of utmost importance (Sarrion-Gavilan et al., 2021). In this issue, there are clustered, dispersed, and random patterns (Gonzalez-Ramiro et al., 2016). The indicators of tourism development which are the basis of rural development and rural tourism, cannot be excluded from the mentioned issue. In other words, tourism development indicators can be effective only under an appropriate spatial pattern (Zheng et al., 2022). Rural areas in terms of tourism follow a cluster pattern, and they are usually in good condition for planning and integrated development while maintaining low working capital (Khan, 2018); because a significant part of the facilities allocation planning is equal for such villages and each of this villages can use economic and social services of the surrounding villages (Song et al., 2014). On the contrary, such capacities are unavailable for the villages out of this framework.

This research studied the tourism villages of the Kuhrang region of Chaharmahal and Bakhtiari province. Kuhrang region is a vital eco-tourism region that attracts many tourists annually due to its pristine natural areas. Considering its natural, cultural, and climatic attractions, it is an ideal destination for rural tourism development (Sadeghi & Kouravand, 2022). The emphasis should be

on a regular planning pattern for villages of the region, a pattern based on the spatial system pattern of the country. Various indicators of tourism development play an essential role in this field. Thus, the first step to be taken in the current situation of tourism villages is to determine the spatial distribution pattern of rural tourism. This research can be an initial step in understanding the current situation and presenting an appropriate spatial distribution pattern for the development of rural tourism since the Kuhrang region has various limitations, namely, accessibility limitations, in terms of its topographical and geographical condition hence, defining an appropriate spatial distribution pattern can both enhance and develop the facilities and the various indicators of tourism development. Therefore, this research aims to study the tourism indicator in rural areas and then determine the spatial distribution pattern of the rural area's tourism using spatial statistics. In other words, in this research, the distribution trend of the tourism indicators in rural areas was studied.

2. Literature Review

Rural settlements, on the one hand, are established based on the diversity of ecological-environmental factors. On the other hand, the influential power of social, economic, and political factors has found a specific spatial distribution over time. The natural parameters have been considered significant factors contributing to population and rural settlements' stabilization and spatial distribution patterns. These also play a crucial role in improving the spatial development of rural settlements. The establishment and distribution of rural settlements system regarding land development is closely related to the spatial-physical patterns of rural settlements. The appropriate spatial patterns in the settlement system, generally and in rural settlements, are a requirement for sustainable development in rural areas (Moradi & Alizadeh, 2015). In the spatial framework, rural regions are classified into different categories, and some of these areas are perceived to have the capacity to carry tourism forward. Tourism villages have structure-based services and tourist attractions (Currie & Falconer, 2013). A key to sustainable development with an approach to spatial justice for tourism villages is a proper recognition of the spatial-spatial structure of rural settlements for directing resources and the material and spiritual capital (Moradi & Alizadeh, 2015). Delivering optimal services is the primary basis of tourists' satisfaction (Osman & Sentosa, 2013). Accessibility for tourists to tourism facilities and services should be highlighted to avoid the adverse consequences of tourism (Chin et al., 2014). This can

occur through the spatial distribution pattern of rural tourism settlements, a pattern to distribute the tourism indicators and increase accessibility. And since tourism is a dynamic industry, good spatial distribution characteristics and services should be provided for developing the tourism industry (Gay & Fayosola, 2011).

The spatial distribution of tourism indicators is comprised of economic, social, environmental, and infrastructural aspects of rural areas' tourism. Owing to the objective of the spatial distribution pattern to provide a desirable condition for the development of rural tourism, a set of tourism indicators work as an integrated framework to help tourism development (Li et al., 2021). Today, planners have found that the locations of services and facilities play an essential role in improving regional development. They also claimed that improving the accessibility of services and tourism indicators is necessary for accelerating regional development (Qin, 2008). Spatial distribution has an impact not only on expenses, productivity, and exploitation but also affects their quality (Goh et al., 2014). Accordingly, tourism is a system composed of elements and components that, by combining them put together a whole. The perception of any system requires recognition of its features as a whole. Thus, determining the existing spatial distribution pattern and the recognition of spatial patterns is an essential step in planning and tourism development for rural areas.

Therefore, the unbalanced spatial distribution of tourism indicators in most regions of developing countries can have undesirable economic, environmental, and social effects. Understanding the spatial distribution patterns of industries is essential for their planning and distribution in the regions (Noori & Mohammadi, 2019). These patterns should be proportionate to social justice. Social justice refers to a condition in which fair and equitable distribution of the development indicators is seen in the spatial or geographical aspects (Kanbur & Venables, 2005). Subsequently, spatial planning and the process of organizing and rational use of regional facilities, resources, and talents are for a balanced improvement to optimize the exploitation of this land (Masoomi Asghkouri, 2006). Therefore, the purpose of this research is to study the tourism indicators in rural areas to determine the villages' degree of enjoyment as well as the distribution of the indicators. This issue is a step in recognizing and improving the current situation and planning for overcoming obstacles.

3. Methodology

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

5

Journal of
Sustainable Rural Development

The research method is descriptive-analytic in terms of practical purpose and a quantitative survey. Various tourism indicators of the targeted villages were evaluated to determine the status of tourism indicators. Further, GIS algorithms were used to analyze the spatial distribution pattern of tourism indicators in target tourism villages, including Dimeh, Sheykh Ali Khan, Sar Agha Seyed, Banuastaki, and Tabreh Castle. These villages are rich in natural, historical, and cultural attractions. The statistical population of this research includes 2628 people in the studied areas. Three hundred thirty-five people were selected as the sample size based on the Cochran formula. After the field data collecting and analyzing data using SPSS software, the desired data were entered into the ArcGIS system. Moran's index measures spatial autocorrelation and determines the spatial distribution pattern of phenomena or indicators. The p-value and z-score should be calculated to analyze Moran's I. The values of spatial autocorrelation (Global Moran's I) analysis range from -1.0 to +1.0. If the p-value is near +1.0, it can be concluded that the data does display statistically significant clustering. If the p-value is near -1.0, it shows statistically substantial dispersing. When Moran's I criterion approximates 0, spatial autocorrelation is absent, and values are randomly distributed in space.

4. Findings

The study area covers the tourism villages of the Kuhrang Region in Chaharmahal and Bakhtiari provinces. Kuhrang county, located between the Zagros mountains, is known as the snow capital of Iran. Kuhrang County'stop tourist attractions are Dimeh Spring, Kuhrang dam, Zard-Kuh, Fritillaries plain, ice caves, Kuhrang and Bazoft river, handcrafts, and winter sports. Furthermore, Dimeh, Sheykh Ali Khan, Sar Agha Seyed, Banuastaki, and Tabreh Castle are the major settlements of rural tourism in this region.

A statistical sample indicates that the Kuhrang region has a high potential for tourism since its sample mean 4.21. Moreover, the people of the study area had a favorable opinion about the diversity of tourist attractions. This index, with an average of 4.32, indicates the variety of tourist attractions. From a statistical sampling point of view, the current status of tourism in the region is undesirable since the average response was 2.27. The evidence suggests that since the area has various potentials, better planning is required. Considering the current status and capacities of the region's tourism, most of the statistical sample agree with developing tourism since the average response was 4.20.
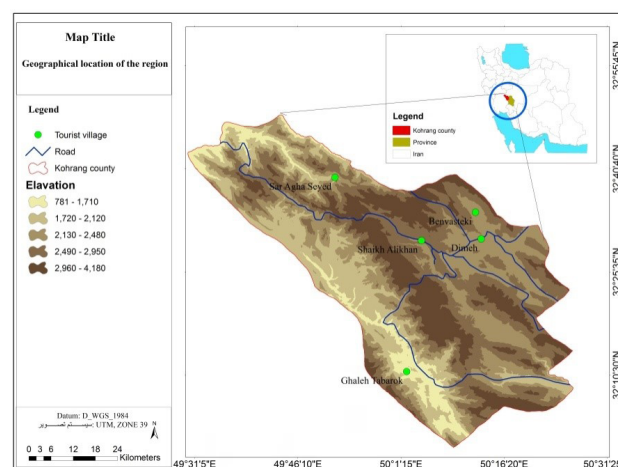

Figure 1. The geographical location of the study area

JSRD

Table 1. Viewpoint- statistical sample regarding tourism in the region

Index	Std. Deviation	Mean
Tourism potential of the region	0.987	4.21
Tourist attractions diversity of the region	0.876	4.32
Current tourism status of the region	0.546	2.27
Degree of regional tourism development agreement (foresight)	0.781	4.20

JSRD

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

In this section, the Kuhrang region was evaluated regarding tourism indexes. The result of the one-sample t-test in the evaluation of the enjoyment degree of tourism indexes indicates that all indexes less than 0.05 and equal to 0.000 are statistically significant. Assessment of the substantial level using the mean (average) emphasizes that preserving local and cultural tradition indexes (with an average of 3.59), technology and internet improvement (with an average of 3.47), and waste management (with an average of 3.43) of Kuhrang region is in medium condition. Furthermore, the safety and security index (average 4.03) is in normal condition. Hence, the four mentioned tourism indexes in the Kuhrang region are in better shape than other indexes, and the security index has the best condition.

The test result also showed that other tourism indicators in the Kuhrang region are in poor condition. The indicators include poverty and deprivation, population stabilization and immigration reduction, social participation and interaction, developing health services, developing educational and global knowledge, job creation, sustainable local income generation, improving economic complexity, improving technology and internet, developing entrepreneurship, improving accommodations, forest conservation, protecting endangered spices, optimal use of water resources, reducing environmental degradation, land preservation, waste management, preservation of ancient monuments in an ecological manner, and reducing the environmental impact through tourism management. Since the condition of these indexes is inferior and the region is endowed with diverse tourist attractions, planning to overcome obstacles must be emphasized.

Table 3 shows the status of various tourism indexes in rural areas through average (mean). GIS software uses the average index to determine the spatial distribution pattern of rural regions. Considering the obtained results, in all the villages, the potential of tourism indexes and the diversity of the attractions with an acceptable average has a favorable condition. Villagers show a good foresight respecting tourism development. The results of evaluating the average sum of the economic, social, and environmental indexes suggest that it has an unfavorable condition in all the rural areas. Analysis of the spatial pattern of tourism indexes in rural areas will be described in the following section.

Table 2. Tourism indexes in rural areas (one-sample t-test)

Dimension	Index	mean	Significance Level
Social	Reducing poverty and deprivation	2.30	0.000
	Preserving local and cultural tradition	3.59	0.000
	Population stabilization and immigration reduction	2.09	0.000
	Social participation and interaction	2.56	0.000
	Developing health services	2.26	0.000
	Developing educational and global knowledge	1.96	0.000
	Safety and Security	4.03	0.000
Economic	job creation	1,92	0.000
	Sustainable local income generation	2.40	0.000
	Improving economic complexity	1.98	0.000
	Improving technology and the internet	3.47	0.000
	Developing entrepreneurship	2.28	0.000
	Improving accommodations	2.39	0.000
Environmental	Forest conservation	2.15	0.000
	Protecting endangered spices	2.16	0.000
	Optimal use of water resources	1.88	0.000
	Reducing environmental degradation	2.06	0.000
	Land preservation	2.07	0.000
	Waste management	3.43	0.000
	Preservation of ancient monuments in an environmental manner	1.89	0.000
	Reducing the environmental impact through tourism management	2.11	0.000

JSRD

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

7

Table 3. The status of different tourism indexes in rural areas (Mean index)

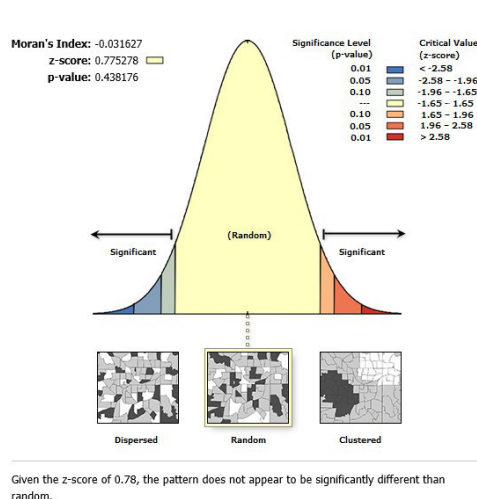| Village	Tourism potential index	Attractions diversity	Tourism current status	Foresight	Social indexes	Economic indexes	Environmental indexes
Tabreh Castle	4.280	4.120	2.240	1.800	2.508	2.140	2.065
Dimeh	4.307	4.538	2.061	2.246	2.802	2.302	2.107
Sheykh Ali Khan	4.428	4.095	2.476	2.761	2.782	3.039	2.785
Banuastaki	4.125	4.875	1.875	2.500	3.107	2.333	2.218
Sar Agha Seyed	4.148	4.305	2.250	2.263	2.648	2.388	2.185

JSRD

Moran's I in ArcGIS software is used to evaluate the spatial distribution pattern of rural areas in terms of general tourism indexes. This index clearly shows the distribution and current spatial pattern. Considering Moran's I for the tourism potential index of rural areas indicates that the index value is -0.435. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to -0.650, which is less than the mean, and a p-value higher than 0.511, the absence of the correlation hypothesis in the spatial distribution with random pattern can be confirmed in the field of tourism potentials of rural areas (Table 5 & Figure 2). The results show that the tourism potentials of the five studied villages are randomly distributed and do not follow a regular pattern.
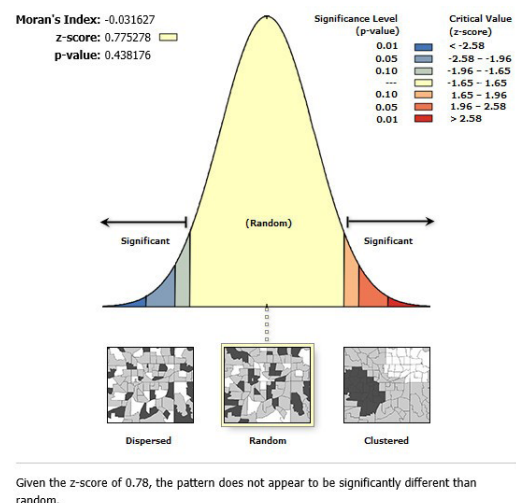
Evaluating Moran's I for the tourist attractions index indicates that the index value is -0.031. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to -0.775, which is less than the mean, and a p-value higher than 0.438, the absence of the correlation hypothesis in the spatial distribution with a random pattern can be confirmed in the field of tourist attractions (Table 5 & Figure 3). In short, the diversity of tourist attractions has a random pattern and does not follow a regular way.
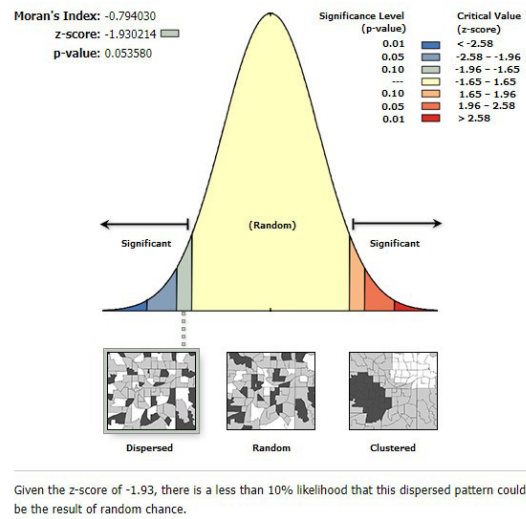
Evaluating Moran's I for the tourism current status index indicates that the index value is -0.794. Since the value is near (-1), it can be concluded that spatial autocorrelation is present in such data. Moreover, since the z-score is equal to -1.93 and a p-value (of 0.053), the correlation hypothesis in the spatial distribution with a dispersed pattern can be confirmed in the field of tourism's current status (Table 5 & Figure 4). In short, the tourism status in villages has a dispersed pattern, and not all the villages have the same situation. As a result, its spatial pattern is distributed.

Given the z-score of 0.78, the pattern does not appear to be significantly different than random.

Figure 2. Moran's I spatial pattern of potential tourism index and correlation analysis

JSRD

Given the z-score of 0.78, the pattern does not appear to be significantly different than random.

Figure 3. Moran's I spatial pattern of tourist attractions' diversity index and correlation analysis

JSRD

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.
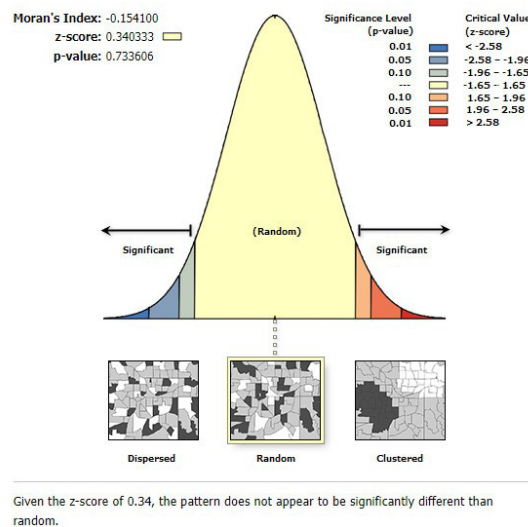
Figure 4. Moran's I spatial pattern of tourism current status index and correlation analysis

◉JSRD

The result of Moran's I for the tourism foresight index indicates that the index value is -0.154. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to 0.340, which is less than the mean, and a p-value higher than 0.733, the absence of the correlation hypothesis in the spatial distribution with a random pattern can be confirmed in the field of tourism foresight (Table 5 & Figure 5). In short, the tourism foresight index has a random spatial way and does not follow a specific pattern, and each village has its conditions.

Figure 5. Moran's I spatial pattern of tourism foresight index and correlation analysis

◉JSRD

Table 4. Distribution status and spatial distribution pattern of general tourism indexes

Index	Distribution pattern	Moran's I	p-value	z-score
Tourism potential	Random	-0.435	0.511	-0.656
tourist attractions' diversity	Random	-0.0316	0.438	0.772
Tourism current status	Dispersed	-0.794	0.053	-1.93
Degree of regional tourism development agreement (foresight)	Random	-0.154	0.733	0.340

◉JSRD

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

9

Analyzing Moran's I for the tourism social index in rural areas indicates positive and is 0.030. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to 0.995, which is less than the mean, and a p-value higher than 0.319, the absence of the correlation hypothesis in the spatial distribution with a random pattern can be confirmed in the field of tourism social index of rural areas (Table 5 & Figure 6).

Analyzing Moran's I for the tourism economic index in rural areas indicates negative and is -0.402. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to -0.538, which is less than the mean, and

a p-value higher than 0.589, the absence of the correlation hypothesis in the spatial distribution with a random pattern can be confirmed in the field of tourism economic index of the villages (Table 5 & Figure 7).

Analyzing Moran's I for the tourism environmental index in rural areas indicates negative and is -0.443. Since the value is near zero, it can be concluded that there is no spatial autocorrelation in the data. Moreover, since the z-score is equal to -0.685, which is less than the mean, and a p-value higher than 0.493, the absence of the correlation hypothesis in the spatial distribution with a random pattern can be confirmed in the field of tourism environmental index of rural areas (Table 5 & Figure 8).
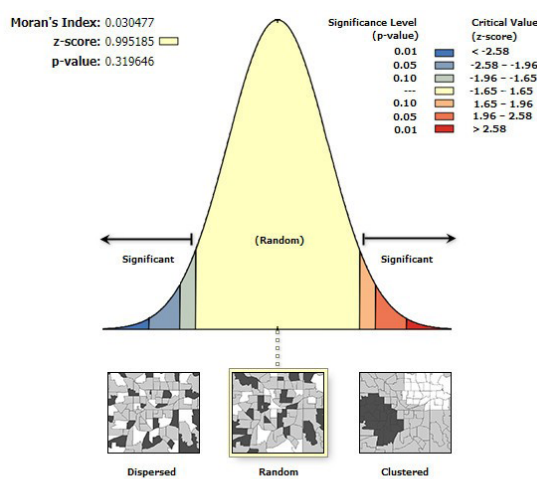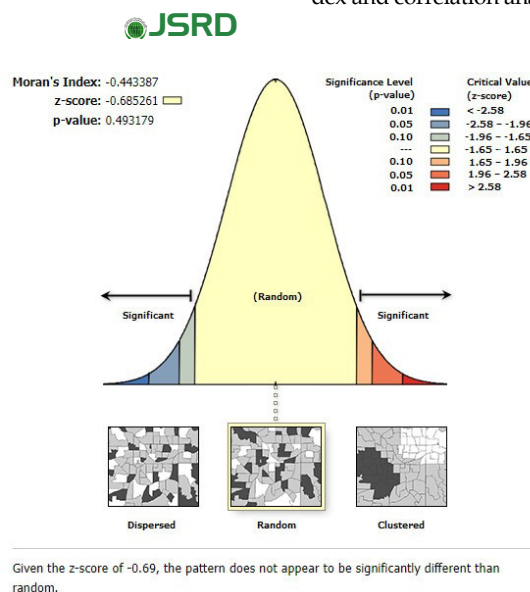

Figure 6. Moran's I spatial pattern of tourism social index and correlation analysis
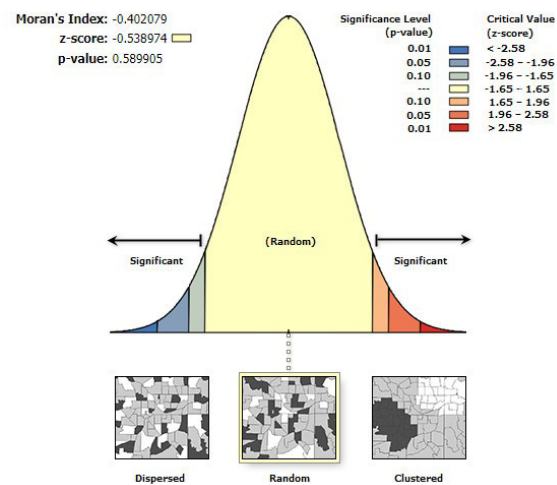
Figure 7. Moran's I spatial pattern of tourism economic index and correlation analysis

Figure 8. Moran's I spatial pattern of tourism environmental index and correlation analysis

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

Table 5. Distribution status and spatial distribution pattern of rural tourism indexes

Index	Distribution pattern	Moran's I	p-value	z-score
Social indexes	Random	0.030	0.319	0.995
Economic indexes	Random	-0.402	0.589	-0.538
Environmental indexes	Random	-0.433	0.493	-0.685

JSRD

5. Discussion

Rural tourism is a form of tourism based on natural, cultural, and historical capacities. By emphasizing the indicators of rural tourism, an appropriate pattern for other types of tourism will be established. Types of planning and spatial patterns of rural tourism should be highlighted. Dispersed villages in a region affected by various indicators follow either a regular or random pattern. The type of spatial pattern can be effective in the distribution and development of tourism villages, and the long run, can have positive impacts.

The results of this study show that general tourism indicators, including tourism potential, tourist attractions diversity, and villagers' foresight, are appropriate, but the indicators follow a random spatial pattern. In other words, the mentioned indicators are not affected by a clustered or dispersed spatial distribution pattern; the distribution was unexpected and unplanned. Spatial pattern assimilation of rural areas through meaningful actions can be a positive step toward developing tourism within a unified planning framework. The results demonstrate that the spatial distribution pattern of villages was evaluated as a dispersed pattern regarding the index of the current situation of villages. The research works of (Zhang et al., 2022; Liao et al., 2022; Khan, 2018; Song et al., 2014), which emphasize the proper spatial distribution of human settlements, are incompatible with the present research because the mentioned research and appropriate spatial pattern are considered as a network, correlated, integrated, and clustered pattern. In the present study, tourism villages are dispersed, and no significant relationship has been observed regarding tourism indicators. This issue poses a challenge to integrated planning.

The results demonstrate that indicators of economic, social, and environmental rural tourism in the studied areas have an unfavorable status except in preserving local and cultural traditions, improving technology and internet, waste management, and Safety and Security. Thus, there is no viable plan to develop tourism in rural areas, and the term rural tourism, which takes place in a region, is affected by tourist attractions and capacities.

Furthermore, evaluating the spatial distribution of economic, social, and environmental indicators demonstrate that the indicators of rural areas are randomly distributed and do not follow the same pattern. The research works of (Qu et al., 2022; Elena, 2019; González et al., 2016), which emphasize the importance of integrity in tourism development indicators and a good spatial pattern, are incompatible with the results of the present study. The researchers admit that the indicator of tourism development in a geographical space should have a similar plan to form a proper spatial pattern for integrated development. The present study shows that economic, environmental, and social indicators do not follow an appropriate pattern. Hence, reconsideration of the issue is a necessity.

In sum, the indicator of tourism in rural areas does not have a regular or uniform pattern; instead, have a random pattern that lacks planning and a logical basis. Considering the appropriate attraction diversity for tourism development, the spatial distribution pattern of rural areas in terms of tourism indicators is not acceptable for not following a regular, planned, and uniform pattern. Therefore, a proper framework should be provided for creating an appropriate spatial distribution pattern for tourism development. It is suggested that the targeted tourism villages in terms of different indicators should be studied. A regular and clustered pattern should be established to develop the various tourism indicators in a unified framework.

Acknowledgements

Conflict of Interest

The authors declared no conflicts of interest.

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

11

References

Bunghez, C. L. (2016). The importance of tourism to a destination's economy. Journal of Eastern Europe Research in Business & Economics, 20(4), 1-9.http://www.ibimapublishing.com/articles/JEERBE/2016/143495/143495.pdf

Cheng, H., Yang, Z., & Liu, S. J. (2020). Rural stay: a new type of rural tourism in China. Journal of Travel & Tourism Marketing, 37(6), 711-726.https://www.tandfonline.com/doi/abs/10.1080/10548408.2020.1812467

Chin, C., Lo, M., Songan, P., Nair, V. (2014). Rural Tourism Destination Competitiveness: A study on Annah Rais Longhouse Homestay, Sarawak. Procedia Social and Behavioral Sciences, 44(3),35-44.https://doi.org/10.1016/j.sbspro.2014.07.271

Chong, K. Y., & Balasingam, A. S. (2018). Tourism sustainability: Economic benefits and strategies for preservation and conservation of heritage sites in Southeast Asia. Tourism Review,13(2),36-49.https://www.cabdirect.org/cabdirect/abstract/20193219393

Cucari, N., Wankowicz, E., & De Falco, S. E. (2019). Rural tourism and AlbergoDiffuso: A case study for sustainable land-use planning. Land use policy, 82(1), 105-119.https://doi.org/10.1016/j.landusepol.2018.11.050

Currie, C., & Falconer, P. (2013). Maintaining Sustainable Island Destinations in Scotland: The role of the transport–tourism relationship. Journal of Destination Marketing and Management, 3(3),1-16.https://doi.org/10.1016/j.jdmm.2013.10.005

Elena, S. I. M. A. (2019). Economic, social and environmental impact of Romanian rural tourism. Agricultural Economics and Rural Development, 16(1), 137-146.https://econpapers.repec.org/article/iagreviea/v_3a16_3ay_3a2019_3ai_3a1_3ap_3a137-146.htm

Feng, N., Wei, F., Zhang, K. H., & Gu, D. (2018). Innovating rural tourism targeting poverty alleviation through a multi-Industries integration network: The case of Zhuanshui village, Anhui province, China. Sustainability, 10(7), 1-18.https://www.mdpi.com/2071-1050/10/7/2162

Gay, C., & Fayosola, E. (2011). Tourism in a comprehensive perspective, London: Intech press.

Goh, C., Li, H., & Li, M. (2014). A comparative analysis of domestic and international tourism spatial distribution: Trends and impacts. Journal of China Tourism Research, 10(4), 388-413.https://www.tandfonline.com/doi/abs/10.1080/19388160.2014.906933

González-Ramiro, A., Gonçalves, G., Sánchez-Ríos, A., & Jeong, J. S. (2016). Using a VGI and GIS-based multicriteria approach for assessing the potential of rural tourism in Extremadura (Spain). Sustainability, 8(11), 114-131.https://doi.org/10.3390/su8111144

Ibănescu, B. C., Stoleriu, O. M., Munteanu, A., &Iațu, C. (2018). The impact of tourism on sustainable development of rural areas: Evidence from Romania. Sustainability, 10(10), 1-19. https://www.mdpi.com/346214

Jasrotia, A., & Gangotia, A. (2018). Smart cities to smart tourism destinations: A review paper. Journal of tourism intelligence and smartness, 1(1), 47-56.https://dergipark.org.tr/en/pub/jtis/issue/39024/446754

Kanbur, R., & Venables, AJ. (2005). Rising spatial disparities and development. United Nations: University Press.

Khan, A. (2018). The spatial distribution and relationship of tourist flow in Turkey. European Journal of Tourism Research, 19(3), 40-55.https://ejtr.vumk.eu/index.php/about/article/view/324

Khartishvili, L., Muhar, A., Dax, T., & Khelashvili, I. (2019). Rural tourism in Georgia in transition: Challenges for regional sustainability. Sustainability, 11(2), 410, 1-20.https://doi.org/10.3390/su11020410

Khayrulloevna, A. M. (2020). The substantial economic benefits of tourism. Academy, (3)54, 39-40.https://cyberleninka.ru/article/n/the-substantial-economic-benefits-of-tourism

Li, T., Li, Q., & Liu, J. (2021). The spatial mobility of rural tourism workforce: A case study from the microanalytical perspective. Habitat International, 110(2),23-42.https://doi.org/10.1016/j.habitatint.2021.102322

Liao, C., Zuo, Y., Law, R., Wang, Y., & Zhang, M. (2022). Spatial Differentiation, Influencing Factors, and Development Paths of Rural Tourism Resources in Guangdong Province. Land, 11(11), 204-222.https://www.mdpi.com/1946008

Maroto-Martos, J. C., Voth, A., & Pinos-Navarrete, A. (2020). The importance of tourism in rural development in Spain and Germany. In Neoendogenous Development in European Rural Areas, 23(4),181-205.https://link.springer.com/chapter/10.1007/978-3-030-33463-5_9

MasoumiAshkevari, H. (2006). [Fundamentals of regional planning (Persian)]. Tehran: Payam Publication.

Moradi, M., & Alizadeh, H. (2015). An Analytical Study on Rural Settlements Spatial Distribution Using GIS With Emphasis On Environmental Factors And Through (A Case Study On Doroh Rural District, Sarbisheh Township). Housing and rural environment, 34(150), 121-135.https://www.sid.ir/paper/186004/en

Muresan, I. C., Harun, R., Arion, F. H., Fatah, A. O., & Dumitras, D. E. (2021). Exploring residents' perceptions of the socio-cultural benefits of tourism development in the mountain area. Societies, 11(3), 1-16. https://doi.org/10.3390/soc11030083

Noori, S., & Mohammadi, A. (2019). The Analysis of Spatial Distribution Pattern of Ardabil Province Industries by Using Spatial Statistics in GIS Environment. Geographical researches, 34(1), 97-108. http://georesearch.ir/article-1-197-en.html

Osman, Z., & Sentosa, I. (2013). Mediating Effect of Customer Satisfaction on Service Quality and Customer Loyalty Relationship in Malaysian Rural Tourism. International Journal of Economics Business and Management Studies, 2(1), 25-37. https://ssrn.com/abstract=2735634

Qi, J., Lu, Y., Han, F., Ma, X., & Yang, Z. (2022). Spatial distribution characteristics of the rural tourism villages in the Qinghai-Tibetan Plateau and its influencing factors. International Journal of Environmental Research and Public Health, 19(15), 133-154.https://www.mdpi.com/1752430

Qin, X. (2008). Distribution pattern and regulation of Chinese rural tourism. Research of Agricultural Modernization, 29(6), 715-718. https://www.cabdirect.org/cabdirect/abstract/20093120684

Sadeghi, H., & Kouravand, H. (2022). Analysis of the status of green tourism indicators in Kohrang region. Journal of Green Management and Development, 1(1), 37-54.https://gmd.birjand.ac.ir/article_2280.html?lang=en

Santos, R. (2021). Return Migration and Rural Tourism Development in Portugal. Tourism Planning & Development, 2(2), 1-24.https://www.tandfonline.com/doi/abs/10.1080/21568316.2021.1953121

Sarrión-Gavilán, M. D., Benítez-Márquez, M. D., & Mora-Rangel, E. O. (2015). Spatial distribution of tourism supply in Andalusia. Tourism Management Perspectives, 15(2), 29-45.https://doi.org/10.1016/j.tmp.2015.03.008

Song, J. H., Wang, P., & Zhao, C. J. (2014). Analysis of Spatial Distribution Pattern of Main Tourism Resources in Hainan Island Based on GIS. In Ecosystem Assessment and Fuzzy Systems Management,254(2), 367-374. https://link.springer.com/chapter/10.1007/978-3-319-03449-2_33

Su, M. M., Wall, G., Wang, Y., & Jin, M. (2019). Livelihood sustainability in a rural tourism destination-Hetu Town, Anhui Province, China. Tourism Management, 71(2), 272-281.https://doi.org/10.1016/j.tourman.2018.10.019

Yang, J., Yang, R., Chen, M. H., Su, C. H. J., Zhi, Y., & Xi, J. (2021). Effects of rural revitalization on rural tourism. Journal of Hospitality and Tourism Management, 47(2), 35-45.https://doi.org/10.1016/j.jhtm.2021.02.008

Zhang, H., Duan, Y., & Han, Z. (2021). Research on spatial patterns and sustainable development of rural tourism destinations in the Yellow River Basin of China. Land, 10(8), 849-862. https://www.mdpi.com/2073-445X/10/8/849

Zhang, Y., Li, W., Li, Z., Yang, M., Zhai, F., Li, Z., ... & Li, H. (2022). Spatial Distribution Characteristics and Influencing Factors of Key Rural Tourism Villages in China. Sustainability, 14(21), 17-32.https://www.mdpi.com/2071-1050/14/21/14064

Zheng, G. H., Jiang, D. F., Luan, Y. F., & Yao, Y. (2022). GIS-based spatial differentiation of ethnic minority villages in Guizhou Province, China. Journal of Mountain Science, 19(4), 987-1000.https://link.springer.com/article/10.1007/s11629-020-6627-9

Sadeghi, H.O., & Seidaiy, S.S. (2022). Spatial Analysis of Sustainable Rural Tourism Pattern Using Geographic Information System. *JSRD, 6*(1), 3-14.

13