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Scientific and Theoretical Foundations of Pilgrimage Tourism Evaluation and Issues of Methodology for Forming a System of Indicators

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Abstract: This article assesses the potential of pilgrimage tourism in Samarkand region based on a comprehensive scientific and methodological approach. The study analyzes the theoretical foundations of assessing the potential of pilgrimage tourism, in particular, the scientific views of such scientists as G. Rinschede (1992), VL Smith (1992), DJ Timothy and DH Olsen (2006), R. Raj and ND Morpeth (2007), N. Collins-Kreiner (2010), Z. Navruz-zoda (2020), and S. Aulet and T. Duda (2020). The methods used in assessing the potential of pilgrimage tourism are expert assessment, scoring (rating), integral index, SWOT analysis, spatial analysis based on geographic information systems (GIS), multi-criteria assessment, statistical and econometric analysis, questionnaire and sociological research, and cluster analysis methods.
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Keywords: pilgrimage tourism; Samarkand region; tourism potential; integrated assessment; pilgrimage sites; tourist infrastructure; holy sites; religious tourism; regional analysis; multi-criteria assessment.

1. Introduction.

Samarkand region is one of the regions of Uzbekistan richest in historical and cultural heritage and has great potential for the development of pilgrimage tourism. The numerous holy sites, historical and architectural complexes and religious monuments located in the region are the main resource factors determining the pilgrimage tourism potential of the region. In recent years, the spatial location of pilgrimage sites, the development of transport infrastructure and the expansion of the service system have contributed to the steady growth of the flow of pilgrims.

There are various scientific approaches to assessing the pilgrimage tourism potential of regions, and scholars such as G. Rinschede (1992), DJ Timothy and DH Olsen (2006), Z. Navruz-zoda (2020) have recognized the religious significance of pilgrimage sites, historical and cultural value, transport convenience, infrastructure and quality of services as the main assessment criteria. In this study, a multi-criteria scoring (integral) assessment method is used to determine the pilgrimage tourism potential of districts and cities of the Samarkand region, comparing regions based on resource potential, infrastructure, economic activity and social stability indicators.

2. Literature review.

Scientific approaches to assessing the pilgrimage tourism potential of regions are covered in the studies of G. Rinschede (1992), VL Smith (1992), DJ Timothy and DH Olsen (2006), R. Raj and ND Morpeth (2007), N. Collins-Kreiner (2010), Z. Navruz-zoda (2020), and S. Aulet and T. Duda (2020). These scholars recognized the religious significance of pilgrimage sites, historical and cultural value, pilgrim flow, transport convenience, tourist infrastructure, quality of services, local community participation, and

sustainable development indicators as the main criteria for assessing the pilgrimage tourism potential of regions.

G. Rinschede (1992), who made a significant contribution to the study of the geography of religious tourism, used indicators such as the number of pilgrims, the territorial coverage of the pilgrimage center, the development of transport connections, seasonality, accommodation infrastructure, and the economic impact of the pilgrimage center when evaluating pilgrimage centers. According to the author, the level of development of pilgrimage centers is determined not only by their religious prestige, but also by the state of the transport and service system.

M. Nolan and S. Nolan (1992) studied religious sites in Europe from the perspective of tourist attraction, and identified religious significance, historical and cultural value, architectural and aesthetic appeal, the presence of religious events and festivals, and the level of satisfaction of tourist needs as the main evaluation criteria. The researchers paid special attention to the importance of religious sites as cultural heritage in assessing their tourist potential.

Research by DJ Timothy and DH Olsen (2006) developed a theoretical framework for evaluating pilgrimage tourism, in which the religious significance of pilgrimage sites, pilgrim motivation, cultural heritage value, and the tourist service system were considered as key factors. The authors noted that the attractiveness of a pilgrimage site is determined not only by religious factors, but also by the presence of historical and cultural resources.

R. Raj and ND Morpeth (2007) studied the issues of religious tourism and pilgrimage festival management and included tourism infrastructure, quality of services, marketing activities, management of pilgrim flows and participation of local communities as important criteria in assessing the potential of pilgrimage tourism of regions. They believe that the sustainable development of pilgrimage tourism depends on effective cooperation between government agencies, local residents and tourism entities.

In recent years, practical methodologies have also been developed to assess the pilgrimage tourism potential of regions. In particular, Z. Navruz-zoda (2020) proposed a 100-point system for assessing holy sites. This methodology evaluates the availability of information about pilgrimage sites, the development of infrastructure, the prestige of the site, the possibilities for worship, the level of holiness, scientific potential, historicity, miraculousness, and management capabilities as the main criteria. This approach is recognized as one of the practical methods for comprehensively assessing pilgrimage tourism sites in the conditions of Central Asia.

Also, S. Aulet and T. Duda (2020), while studying the sustainable development of holy places, proposed transport and physical convenience, information provision, management efficiency, environmental sustainability, and preservation of the spiritual environment as key indicators. The authors emphasize the need to consider not only economic efficiency in the development of pilgrimage sites, but also the preservation of their spiritual and cultural values.

3. Research methods.

Scientific assessment of the potential of pilgrimage tourism requires a multi-stage and complex methodological approach. The research process uses an integrated approach that combines statistical, sociological, economic, ecological and spatial analysis methods.

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Several scientific methods are used to assess the pilgrimage tourism potential of regions. Each of them is selected depending on the research objective and the available database.

4. Expert evaluation method.

In this method, the importance, attractiveness, and development opportunities of pilgrimage sites are evaluated based on points by experts in the field of pilgrimage tourism, scientists, representatives of

tourism organizations, and experts from local governments. This method is often used in complex evaluation systems (Navruz-zoda, 2020). https://ijler.umsida.ac.id/index.php/ijler/article/view/493

Scoring method. In this method, each indicator is evaluated based on certain points, and a final integral indicator is determined. For example, the religious significance of a pilgrimage site, transport accessibility, level of infrastructure and quality of services are evaluated on a 1–5 or 1–10 point system. This approach was used by Rinschede (1992) in the geography of religious tourism. https://www.sciencedirect.com/science/article/pii/016073839290106Y

Integral index method. In this method, various indicators are combined into a single index. This approach allows comparing regions and dividing them into groups according to their potential for pilgrimage tourism. Today, it is one of the most widely used methods for assessing tourism potential. https://www.unwto.org/statistics

SWOT analysis method. This method is used to identify the strengths and weaknesses, opportunities and threats of the region. This method is important in developing strategies for the development of pilgrimage tourism.

A spatial analysis method based on Geographic Information Systems (GIS). This method analyzes the location of pilgrimage sites, transport networks, infrastructure facilities, and the territorial distribution of tourist flows. Currently, research on assessing the potential of pilgrimage tourism is widely developing based on the ArcGIS and Google Earth Engine platforms. https://www.esri.com/en-us/what-is-gis/overview

Multi-criteria evaluation method. In this, several criteria, such as religious significance, historical-cultural value, infrastructure, ecological condition, and transport convenience, are evaluated based on weight coefficients.

Statistical and econometric analysis method. This approach identifies development trends in the region based on the number of visitors, tourism revenues, service volumes, and other statistical indicators. https://www.unwto.org/statistics

Questionnaire and sociological research method. Through this method, the opinions of visitors, local residents, and experts are studied and the tourist attractiveness of the area and the quality of services are assessed.

Cluster analysis method. This allows you to group pilgrimage sites and regions with similar characteristics. This method is effective in forming pilgrimage routes and tourist clusters.

Only when these methods are applied comprehensively will the real development opportunities for pilgrimage tourism be identified.

5. Analysis and results .

In this study, a multi-criteria scoring (integral) assessment method was used to assess the potential of pilgrimage tourism in regions. In this approach, the main blocks such as resource potential, infrastructure, economic activity, social stability and ecological status were assessed using several indicators on a 0–5 point system and a final integral indicator was formed. Taking into account the feasibility of implementing the task set in the research work and the need for accuracy, statistical indicators relevant to the Samarkand region were used. The statistical data presented in this article were collected from the relevant departments of the Samarkand region's Department of Statistics and the regional department of the Tourism Committee using a sampling method.

Table 1. Criteria and indicators for comprehensive assessment of the potential of pilgrimage tourism in Samarkand region

Block	Criteria	Unit of measurement	Maximum score
1. Resource potential	Number of pilgrimage sites	piece	5
	Historical and religious significance	international/national/local	5
2. Infrastructure	Transportation convenience	0–5 points	5
	Hotels and restaurants	0–5 points	5
3. Economic activity	Annual flow of pilgrims	person	5
	Tourism income	million soums	5
4. Social stability	Local attitude	questionnaire score	5
	Employment and service quality	0–5 points	5

The table was compiled by the author.

When assessing the potential of pilgrimage tourism, the number of pilgrimage sites in the area is an important criterion. However, the large number of sites does not always mean high tourist potential. Therefore, it is necessary to determine not only the quantitative indicators of pilgrimage sites, but also the level of their historical and religious significance. Based on this, the following table presents the criteria for assessing the level of historical and religious significance of pilgrimage sites (see Table 1).

Table 2 Criteria and scoring scale for evaluating pilgrimage tourism facilities in districts and cities

Category	Number of pilgrimage sites	A situation suitable for pilgrimage tourism	Score
Very low	0-1	almost no pilgrimage potential	1
Low	2-3	limited visitation opportunities	2
Medium	4-5	There is a sustainable pilgrimage potential	3
High	6-8	A strong pilgrimage center has been formed	4
Very high	10 and more	regional/national importance	5

The table was compiled by the author.

The resource potential of the region is the main factor in the development of pilgrimage tourism. However, for the effective use of existing pilgrimage sites, accessibility to them is also important. Therefore, when assessing the potential of pilgrimage tourism, the level of development of transport infrastructure is considered as a separate criterion. The table below provides criteria for determining the level of transport convenience.

Table 3 Criteria and scoring scale for assessing the level of historical and religious significance of pilgrimage sites

Level of historical-religious significance	Number of pilgrimage sites	A situation suitable for pilgrimage tourism	Score
Very low	0-1	Not of local importance, with weak historical or religious source	1
Low	2-3	Locally significant, but limited historical document or religious narrative	2

Medium	4-5	Known regionally, has historical and religious foundations	3
High	6-8	Associated with important, historical figures at a regional or national level	4
Very high	10 and more	Islamic civilization or an internationally recognized holy center	5

The table was compiled by the author.

The resource potential of the region is the main factor in the development of pilgrimage tourism. However, for the effective use of existing pilgrimage sites, accessibility to them is also important. Therefore, when assessing the potential of pilgrimage tourism, the level of development of transport infrastructure is considered as a separate criterion. The table below provides criteria for determining the level of transport convenience.

Table 4. Criteria and scoring scale for assessing the level of transport convenience of pilgrimage tourism facilities

Transport comfort level	A situation suitable for pilgrimage tourism	Score
Very low	There is no or very poor road infrastructure, accessible only on foot or by special transport	1
Low	Dirt road, difficult access, no public transport available	2
Medium	There is a main road, but traffic is limited or irregular	3
High	There is an asphalt road, there is irregular public transport or taxi.	4
Very high	Close to the highway, regular and convenient transport (bus, marshrutka, taxi) operates constantly	5

The table was compiled by the author.

While the ease of transportation determines the ability of pilgrims to reach their destination, the service infrastructure available in the area affects the duration of their trip and their level of satisfaction. Therefore, assessing the level of development of hotels, restaurants, and other service facilities is one of the important stages in determining the potential of pilgrimage tourism.

Table 5. Criteria and scoring scale for assessing the level of tourist infrastructure

Level of tourist infrastructure	Number of pilgrimage sites	A situation suitable for pilgrimage tourism	Score
Very low	0-1	No or very limited hotel and dining options (local services only)	1
Low	2-3	There are very few places with minimal service.	2
Medium	4-5	There are a few hotels/restaurants, but the quality of service and selection are limited.	3
High	6-8	There are a sufficient number of hotels and restaurants, the quality of service is good.	4
Very high	10 and more	Developed tourist infrastructure: a wide range of hotels, restaurants, and services of various categories	5

The table was compiled by the author.

Resource and infrastructure factors create the necessary conditions for the development of pilgrimage tourism. The practical result of these opportunities is reflected in the number of pilgrims visiting

the region. Therefore, the flow of pilgrims is considered an important indicator of the tourist attractiveness of the region and the level of development of pilgrimage tourism.

Table 6. Criteria and scoring scale for assessing the level of annual pilgrim flow to shrines

Annual flow rate of visitors	Number of pilgrims (person/year)	Description of the quality level of the annual flow of visitors	Score
Very low	< 1,000	Very few visits, local level	1
Low	1,000 – 5,000	Limited flow of pilgrims	2
Medium	5,000 – 20,000	Stable, well-known within the region	3
High	20,000 – 100	Large stream, regional importance	4
Very high	> 100,000	Very high demand, national or international pilgrimage center	5

The table was compiled by the author.

The increase in the flow of pilgrims has a direct impact on the economy of the region. As a result of the expansion of the volume of tourist services, tourism revenues are formed and local economic activity increases. Therefore, in order to determine the economic efficiency of pilgrimage tourism, the tourism revenue indicator is evaluated.

Table 7. Criteria and scoring scale for assessing the level of tourism revenue

Tourism revenue level	Tourism revenue (million soums/year)	Description of the quality level of income from pilgrimage tourism	Score
Very low	0 – 100	Tourism is almost undeveloped, income is very small	1
Low	100 – 500	Limited income, mainly seasonal visits	2
Medium	500 – 2,000	Sustainable tourism exists, services are working	3
High	2,000 – 10,000	Large tourist flow, developed infrastructure	4
Very high	10,000	Very high income, international tourism level	5

The table was compiled by the author.

The economic results of tourism also affect the attitude of the local population towards this sector. In areas where tourism is developed, the population gains new jobs and sources of income, which leads to a positive attitude towards pilgrims. Therefore, the attitude of the local population is an important criterion in assessing the social sustainability of pilgrimage tourism.

Table 8. Criteria and scoring scale for assessing the level of local population attitudes

Level of local attitude	Positive attitude of local residents (%)	Description of the attitude of the local population	Score
Very low	Up to 20%	The local population has a negative attitude towards tourism and pilgrims and does not support the development of tourism.	1
Low	21–40%	The attitude is mostly negative or indifferent, and the benefits of tourism are not sufficiently understood.	2
Medium	41–60%	The local population has a neutral or partially positive attitude towards tourism.	3

High	61–80%	The majority of the population supports tourism and has a positive attitude towards pilgrims.	4
Very high	81–100%	The local population is actively involved in the development of tourism, warmly welcomes visitors, and considers tourism an important source of income.	5

The table was compiled by the author.

The positive attitude of the local population towards tourism is often associated with the contribution of this sector to employment. In regions where tourism services are developed, new jobs are created and the quality of services is improved. In this context, it is necessary to assess the share of the population employed in the tourism sector and the level of service quality.

Table 9. Population employed in tourism Level assessment criteria and scoring scale

Level of employed population in the tourism sector	Percentage of population employed in tourism (%)	Description of the population employed in the tourism sector	Score
Very low	2 %	There are almost no jobs in the tourism sector, and the quality of service is poor.	1
Low	2 – 5 %	Employment is limited, and service delivery is often lacking.	2
Medium	5 – 1 0 %	There are tourism-related jobs available, and the quality of service is satisfactory.	3
High	10 – 15 %	The employment rate is high, the quality of services is good and stable.	4
Very high	Above 15 %	Tourism is an important source of employment, and services meet high quality standards.	5

The table was compiled by the author.

All of the above criteria describe individual aspects of the potential of pilgrimage tourism. However, for the purpose of comparing regions and determining the level of overall potential, it is necessary to bring these indicators into a single integrated assessment system. For this purpose, a final assessment scale has been developed, based on which the level of pilgrimage tourism potential of districts and cities of Samarkand region will be determined.

Table 10. Samarkand region pilgrimage tourism potential assessment scale

Score	Level of pilgrimage tourism potential
0 – 2	Very low
2.1 – 4.0	Low
4.1 – 6.0	Medium
6.1 – 8.0	High
8.1 – 10.0	Very high

The table was compiled by the author.

Table 11. Pilgrimage tourism potential of administrative-territorial units of Samarkand region

No.	District	Resource R	Infra I	Economic I	Social I	Total score (HZT S)	Authority
1.	Samarkand city.	10	10	10	9	9 .75	Very high
2.	Kattakurgan city.	5	8	4	5	5.5	Average
3.	Akdarya	5	6	7	6	6 .0	Average
4.	Bulungur	4	4	4	4	4.0	Low
5.	Jamboy	6	6	6	6	6.5	Average
6.	Ishtikhan	3	4	5	4	4	Low
7.	Kattakurgan	4	7	5	6	5.5	Average
8.	Collaboration	7	5	5	5	5.5	Average
9.	Narpay	6	7	6	5	6	Average
10.	Foot	8	8	10	8	8.5	Very high
11.	Lowland	3	5	4	4	4.0	Low
12.	Cotton farmer	6	6	6	5	5.75	Average
13.	Samarkand	6	7	6	7	6.5	High
14.	Nurabad	8	6	7	7	7	High
15.	Urgut	8	6	6	6	6.5	High
16.	Toilok	7	6	5	5	5.75	Average

The table was compiled by the author.

The table data reflects the results of assessing the pilgrimage tourism potential of the districts of Samarkand region based on resource, infrastructure, economic and social indicators. The calculated **territorial pilgrimage tourism potential** (TZTP) indicator serves to determine the potential for the development of pilgrimage tourism in the regions.

According to the results of the analysis, **the city of Samarkand** recorded the highest result, entering the "very high" potential group with a score of 9.75. This was due to the presence of the Shahi Zinda, Imam Bukhari complex, Hazrati Davud and other holy sites located in the city, developed transport and tourist infrastructure, and a high level of service. **Payariq district** was also assessed as an area with "very high" potential with a score of 8.5. The high economic indicators of this district and the tourist potential associated with pilgrimage sites increased its rating.

The "high" potential group includes **the city of Kattakurgan (6.5 points)** , **Samarkand district (6.5 points)** , **Nurabad district (7.0 points)** and **Urgut district (6.5 points)** . These regions have sufficient pilgrimage resources, and the relatively developed infrastructure and social conditions create favorable opportunities for the development of tourism. Urgut and Nurabad districts in particular are distinguished by the harmony of natural and religious heritage sites.

The regions with "average" potential are the most numerous in terms of numbers and include **Akdaryo (6.0 points)** , **Jomboy (6.5 points)** , **Kattakurgan district (5.5 points)** , **Qoshrabot (5.5 points)** , **Narpay (6.0 points)** , **Pakhtachi (5.75 points)** , and **Toyloq (5.75 points)** . Although these districts have pilgrimage resources, their overall potential indicators remain average due to insufficient development of infrastructure, marketing, or service quality.

The "low" potential group includes **Bulungur (4.0 points)** , **Ishtikhon (4.0 points)** and **Pastdarg'om (4.0 points)** districts. Despite the presence of pilgrimage sites in these regions, the lack of transport facilities, tourist services, accommodation facilities and low economic activity limit the potential indicators. In these districts, effective use of existing pilgrimage resources, modernization of infrastructure and development of new tourist routes are of great importance.

6. Conclusion

A multi-criteria integral scoring method was used to assess the pilgrimage tourism potential of districts and cities of Samarkand region . This methodology was developed based on the approaches proposed by G. Rinschede (1992) in the geography of religious tourism and Z. Navruz-zoda (2020) in the assessment of holy places of Central Asia, and is based on calculating the integral index of territorial pilgrimage tourism potential (HZTS) by assessing 5 main blocks, such as resource potential, infrastructure, economic activity, social stability and environmental condition, and 10 related indicators on a 0–5 point system.

The advantage of the methodology is that it integrates the material-resource and intangible-social aspects of pilgrimage tourism, allows for comparisons between different regions, and creates a basis for differentiating development strategies by grouping them on a 5-point scale from “very low” to “very high.” The results of the study showed that this methodology provides a comprehensive assessment of pilgrimage sites, covering not only quantitative but also qualitative criteria such as historical-religious significance, transport accessibility, quality of service, and the attitude of the local community.

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