



Article

# Methods of Effective Assessment of Tourist and Recreational Capacity in Uzbekistan

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**Abstract:** There is a growing focus on tourism as a crucial component of regional development so it is necessary to use proven methods for evaluating tourism and recreation potential. In this regard, this study will suggest an integrated methodological approach for the assessment of tourism capacity on the regional level and apply it to the Samarkand region of Uzbekistan as a case study. Description: The assessment framework is based on a hybrid system and consumer-oriented approach that integrates economic, infrastructural, environmental and socio-economic indicators into a single integral index. Qualitative features were converted to quantitative scores based on a graduated scale, and GIS tools, and expert assessments were used to guarantee the spatial optimization and weighting of indicators. The findings demonstrate high regional differentiation of tourism development: the districts with diversified tourism types and developed infrastructure had the highest scores. It concludes that resource endowment is necessary but not a sufficient condition for successful tourism development and that factors such as accessibility, infrastructure and institutional support play an important role for the realisation of sustainable regional tourism development.

**Keywords:** Tourism and recreational potential; regional tourism development; integrated assessment; territorial differentiation; sustainable tourism; Uzbekistan; Samarkand region

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## 1. Introduction

The In recent decades, tourism and recreation have become integral components of national and regional socio-economic systems, reflecting not only economic dynamics but also social, environmental, cultural, and institutional transformations. The observance of the multifaceted character of tourism, in both providing income, jobs, regional development, environmental sustainability, cultural diversity and quality of life, accounts for their increasing significance.

In economics the development of tourism affects the formation of national income by means of export–import operations reflected in the balance of payments, allows to activate investment activity, promotes the development of entrepreneurship, creates new economic entities at both regional and national levels. On the social scale, tourism and recreation facilitate the fulfillment of social guarantees — namely, the right to leisure, recovery of psycho-physiological human abilities, prevention of stress and related diseases. Tourism being developed, also favours the growth of employment, the incorporation of the underdeveloped and rural areas in the economic processes and balanced territorial development.

The environmental aspect of travel/ tourism has also changed greatly. Tourism has long been regarded primarily as an ecological drag, but new ideas, and particularly those associated with ecotourism, highlight its opportunity to provide conservation and sustainable resource use benefits. Simultaneously, tourism performs significant medical and biological functions by encouraging active recreation, healthy living, and functional recovery.

Uzbekistan has relatively large tourism and recreational potential. According to expert assessments, over fifty percent of the natural and landscape resources of the country are fit for any type of tourism development. Yet, despite these advantages in resources, tourism only contributes marginally to national growth and GDP. This mismatch thus signals the methodological issue that a high tourism potential does not simply lead to high economic profit.

Consequently, the scientifically grounded, quantitative, and comparable methods of tourist and recreational potential assessment development is a topical problem. Such approaches should be consistent with the System of National Accounts and should not only rely on resource availability, but also on territorial carrying capacity instead.

The aim of this study is to develop and apply an integrated methodological framework for assessing tourism and recreational potential at the regional level, using the districts of the Samarkand region as a case study.

The problem of spatial differentiation of tourist and recreational potential has been developed in the studies of S.V. Chubaro, O.D. Strochko, and E.V. Shamatul'skaya[1]. Using the example of Mogilev region, the authors use GIS in combination with point-rating assessment methods, which allows for the identification of territorial differences in the level of development of tourism potential components. Geoinformation visualization of results provides a visual representation of resource concentration zones and serves as a basis for determining priority areas for regional tourism development.

The theoretical and methodological foundations of geoinformation modeling of tourist and recreational potential were systematized in the work of E.V. Chervyakov and I.M. Mamadaev, conducted under the scientific supervision of D.A. Mikov[2]. The authors consider GIS as a universal integration platform that combines natural and anthropogenic factors in a single digital environment. It is emphasized that geoinformation modeling expands the possibilities of multifactorial analysis, visualization, and support for management decision-making in the tourism and recreation sector.

The fundamental research of such scientists of our country as E.O.Ushakov, Yu.A.Vlasuk, R.I. Suxov, I.S.Tukhliev, A.N.Norchaev is used as the main source in scientific research. Recreational geography describes the tourist and recreational potential of the region from a functional and technological point of view and is based on the analysis of the relationship between man and nature [3][4][5][6][7].

## **2. Materials and Methods**

The methodological framework of the study is based on a system approach that combines economic, environmental, social, and infrastructural components of tourism development. The assessment was carried out from the perspective of consumers of tourist and recreational services rather than service providers. Assessment of the effectiveness of tourism development, and the need to use optimal methods for assessing resource potential during the implementation of tourism activities were justified.

## **3. Results**

Approaches to evaluating the potential of tourist and recreational resources have been examined by various authors from different perspectives. In particular, economic approaches to assessing tourism and recreational potential have formed the conceptual foundation for research in this field.

The first stage involved the compilation of a cadastre of tourism and recreational resources. The cadastre includes a comprehensive description of natural, cultural, historical, infrastructural, and socio-economic resources, as well as their qualitative and quantitative characteristics, efficiency of use, and development prospects. The cadastre was developed based on the principles of integrity, objectivity, continuity, and visual representation. The cadastre represents a systematized set of data, including the following positions: location and ownership; qualitative and quantitative description of objects or phenomena with their economic assessment; data on the dynamics and degree of their study with the attachment of cartographic and statistical materials; recommendations for the use of objects or phenomena, proposals for measures for their protection; indication of the need for further research.

Additionally, monitoring tools based on geographic information systems (GIS) were used to analyze spatial distribution and accessibility of tourism resources [8]. Geographic Information System (GIS) is an information system that enables the collection, storage, processing, access, display, and distribution of spatially coordinated geographic data.

Creating maps and conducting geographical analysis are not entirely novel concepts. However, GIS technology offers a new, more contemporary, efficient, convenient, and rapid approach to analyzing problems and solving challenges facing humanity as a whole, as well as specific organizations or groups of people in particular [9]. It automates the processes of analysis and forecasting, which underscores its immense practical significance.

Tourism and recreational activities were classified according to the main purpose of travel, including cultural, health, ecological, business, pilgrimage, event, sport, and rural-based tourism. Each type was assessed based on specific evaluation criteria (Table 1).

**Table 1.** Types of tourist and recreational activities in the regions

Type of tourist and recreational activity	Description	Evaluation criterion
Cultural Exploration	Organizing a trip to explore historical and cultural sites and notable architectural monuments.	Unique historical, cultural, and architectural objects, along with human interest in these valuable heritage sites.
Health treatment and wellness	Implementation of tourism for the purpose of health improvement, treatment and recreation.	Conditions for rest and medical treatment (geographical, climatic, and high-quality service). Availability of hydromineral resources.
Ecological tourism	Embarking on a journey to explore natural landscapes, scenic locations, and natural monuments.	The presence of unique natural objects and ecologically clean natural zones.
Business tourism	Visiting businessmen to scientific conferences and seminars for business purposes.	Availability of business and scientific cooperation facilities.

Pilgrimage	Religious motivated travel	Presence of sacred, holy, great, divine, and cherished places (for performing religious rites) for pilgrims.
Event tourism	Visits of tourists to participate in major local events.	Organization of various events (Navruz, melon festival, various festivals)
Sport tourism	Travel for the purpose of participation in sports competitions and recreation.	Availability of sports facilities and installations.
Rural-based tourism	To familiarize oneself with rural conditions and travel for recreational purposes in rural areas.	Visits of citizens of the city to rural houses for recreational purposes and conditions there.

Since not all components of tourism potential can be measured directly, qualitative indicators were converted into quantitative values using a five-point scale (very low, low, average, high, very high) [10]. This helped in consolidating heterogeneous indicators at the district level.

The suggested methodological framework enables you to compare regions to one another and may be incorporated in large national statistical systems [11]. Designed to be aspirational from a consumer-oriented perspective, it adds more objectivity to the assessment and is consistent with the notions of the sustainable tourism industry today.

In regional development plans, priority should be given to high potential districts such as Samarkand, Urgut, Kattakurgan, Nurabad and Taylak. Tourism development in these areas should be implemented with consideration of carrying capacity to prevent environmental degradation and social tension.

**Table 2.** Level assessment of objects of tourist and recreational activities of districts of Samarkand region

Districts of Samarkand region	Availability of tourist and recreational facilities by type					Grade rating scale	
	Cultural Exploration	Health treatment and wellness	Ecological tourism	Business tourism	Pilgrimage	Level of tourism development	Scores
Bulung'ur	+			+	+	Average	33
Jomboy			+		+	Low	22
Ishtixon	+			+	+	Average	33
Kattako'rg'on	+	+	+	+		High	44
Narpay			+		+	Low	22
Nurobod	+	+	+		+	High	44
Oqdaryo		+			+	Low	22
Payariq			+	+	+	Average	33
Pastdarg'om	+			+		Low	22
Paxtachi	+				+	Low	22

Samarqand	+	+	+	+	+	Very high	55
Tayloq	+		+	+	+	High	44
Urgut	+	+	+	+	+	Very high	55
Ko'shrobd					+	Too low	11

The application of the integral assessment model to the districts of the Samarkand region revealed considerable spatial differentiation in tourism and recreational potential. According to the graded assessment (Table 2), Samarkand city and Urgut district demonstrated a very high level of tourism potential, while Kattakurgan, Nurabad, and Taylak districts showed high potential. In contrast, Kushrabad and several peripheral districts were characterized by low or very low levels of tourism development [12].

The results indicate that districts with a diversified structure of tourism activities, better infrastructure, and favorable environmental conditions tend to achieve higher integral scores [13]. To obtain an integrated assessment of tourism and recreational conditions, an integral index (B) was calculated using the following formula:

$$B = T_{X1} + I_{X2} + E_{X3} + R_{X4} + II_{X5}$$

where:

T – transport accessibility;

I – condition of tourism and recreational infrastructure;

E – environmental quality;

R – availability of tourism and recreational facilities;

II – socio-economic conditions;

X1..... X5 - weighting factors

Weighting coefficients were determined through expert surveys involving specialists from the Samarkand regional tourism administration, representatives of Tourism Committee and local government experts [14]. The expert method was applied to reflect the relative importance of each indicator in regional development decision-making.

The assessment results confirm the high tourism potential of Uzbekistan, estimated at 58.7%, which exceeds that of several traditionally tourism-developed countries such as Turkey and Greece (Table 3). This indicates significant opportunities for tourism diversification and expansion.

**Table 3.** Indicators reflecting the potential of main tourism-developed countries

Country	Tourist potential, %
Uzbekistan	58,7
Russia	55,8
Germany	50,0
France	50,0
Spain	50,0
Italy	49,0
Turkey	38,4
Greece	35,0

The findings demonstrate that the presence of rich tourism resources alone is insufficient to ensure effective economic outcomes. Infrastructure development, transport accessibility, environmental quality, and socio-economic conditions play a decisive role in transforming tourism potential into real economic benefits [15].

Overall, the study confirms the effectiveness of an integrated, multi-factor assessment framework for identifying priority areas of tourism development and supporting evidence-based regional policy-making.

#### 4. Conclusion

The findings of the research indicate that the successful development of tourism in Uzbekistan is determined not merely by the presence of extensive natural, cultural, and historical resources, but largely by the use of well-structured and methodologically

justified assessment tools. The developed approach, grounded in a systemic and consumer-focused framework, enables a comprehensive evaluation of tourism and recreational capacity through the integration of economic, environmental, infrastructural, and socio-economic parameters into a unified integral indicator.

As a result of applying the proposed methodology on the districts of the Samarkand region, pronounced territorial disparities of tourism and recreation development have been identified. Regions with wider tourism activities, better transport accessibility, higher infrastructure development and relatively favourable ecological conditions provided better results of the overall assessment. On the other hand, most of the peripheral districts showed very low values of tourism development, which is partly attributed to insufficient infrastructure and poor overall economic conditions, even if tourism resources were embedded.

The results achieved corroborate the fact that, having tourism resources alone is not enough to guarantee that benefits are reflected in the economy. The transformation of tourism potential in socio-economic gains is subject to several conditions such as availability and quality of infrastructure, navigation, environmental quality, regulatory conditions, and institutional capacity for tourism development. Hence the strategic development of districts including Samarkand, Urgut, Kattakurgan, Nurabad and Taylak with high tourism potential should in parallel with keeping ecological balance and complying with territorial carrying capacities.

This assessment methodology opens the doors for regional comparison and can easily be integrated into statistical systems and regional planning systems of countries. The applied importance shows how its usage enables managers to make informed decisions, justifies where investment resources should be prioritized, and ensures the effectiveness of tourism policy implementation. More broadly, the research confirms that the application of an integrated multi-criteria approach to tourism and recreational capacity assessment is a precondition for achieving the sustainable and balanced development of the tourism sector in Uzbekistan.

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