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ASSESSMENT OF TOURISM USING INTEGRATED INDICATORS IN THE NATIONAL STATISTICAL PRACTICE OF UZBEKISTAN

Abstract: *The article presents the views of N.I. Panova, O.A. Berezi, O.N. Bikova, A.M. Vetitneva, T.P. Levchenko and M.Yu. Makarov, who conducted research on the formation of integral indicators. In particular, the approaches of Z.A. Trifonova and M.M. Trifonova on the use of integral indicators and the methodological approaches of L.I. Kulakova, V.A. Osipova to the assessment of the tourist and recreational potential of the regions. The article also discusses the indices used in the formation of integral indicators, in particular, the Price Competitiveness Index, Human Tourism Index, Infrastructure Index, Environment Index, Technology Index, Human Resources Index, Openness Index, Social Index. In the article, based on the studies carried out by the aforementioned foreign researchers to assess tourism using integrated indicators, in the national statistical practice of Uzbekistan, recommendations have been developed for assessing the tourism potential of regions using the "Integrated Tourism Potential Indicator", "Tourism Infrastructure Potential Indicator" and "Regions Potential Indicator on tourist resources". The peculiarity of the approach presented in the article is that the factors that determine the tourist potential were selected based on the specifics of the country and the effective use of indicators of the tourism satellite account when developing an integral indicator of tourist potential.*

Key words: *tourism, tourism statistics, system national accounts, tourism satellite account, housing, integral indicators, tourism resources, tourism potential.*

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Introduction

Over the years, integrated indicators have been developed and analyzed by scientists and statisticians from developed countries in order to use the generalized indicators in-depth analysis of various aspects of economic activity that affect the development of the tourism network. Integrated indicators are formed based on many indicators of economic development, social services and tourism, that is, cover all economic and social processes related to the tourism area. When forming these integral indicators, a number of indicators are used. Below we will consider these main indicators [1,2]:

- the Price Competitiveness Index includes the price index for hotel services, the purchasing power parity coefficient of the country's currency in relation to the US dollar, the consumer price index, the price index for the services of travel organizations, etc .;

- the Human Tourism Index includes the number of people leaving for foreign countries with a tourist purpose in relation to the population of the country; the number of foreign tourists entering the country; indicators assessing the impact of tourism on the country's economy (the share of tourism in GDP, the share of tourism in investment in fixed assets, the share of government spending in GDP, the share of tourism in exports and imports);

- the Infrastructure Index, which expresses the state of development of housing facilities, sanatoriums and resorts, tourist organizations, catering organizations, the transport system, sports,

cultural organizations, financial organizations and other infrastructure;

- **the Environment Index** provides for the registration of population density, harmful emissions into the atmosphere, the country's participation in environmental protection measures, the adoption of UN conventions on environmental protection, etc.;

- **the Technology Index** includes the number of people connected to the Internet, the level of use of mobile services, the share of high-tech products in GDP, etc.;

- **Human Resources Index** is calculated by summing up indicators of population literacy, employment in tourism, unemployment rate, population growth, urbanization and other indicators;

- **the index of openness** is calculated by summing up the indicators of the state's visa policy, the country's participation in foreign trade, export and import duties and other indicators;

- **the Social Index** provides the standard of living of the population records, the availability of publications, software computers and TVs, the level of social security, the number of crimes, etc.

A number of scientists in the research have been developed various integrated indicators related to tourism.

In particular, the Russian scientist S.L. Sychev studies the "Recreational potential" indicator, highlighting recreational and socio-economic resources in it. Recreational resources include natural, material and cultural resources, while socio-economic resources include infrastructural, financial, legal, educational and demographic resources [3].

Also N.I. Panov describes the term “tourist and recreational resources” and includes the resources which are necessary to meet human needs for tourist purposes, such as climatic, socio-cultural, historical, archaeological, architectural, scientific and industrial, and cultural [3].

Other foreign scientists O.A. Berezi, O.N. Bykov, A.M. Vetitneva, T.P. Levchenko and M.Yu. Makarov conducted research on the development of the “Integral indicator of sustainable tourism” in the countries [2,3,4,5,7].

This indicator is one of the integral indicators that can be used to effectively assess tourism in the country.

The study of integral indicators for assessing the tourist potential of regions can be seen in the scientific articles of Russian researchers Z.A. Trifonova, MM Trifonova [4]. In their opinion, the integral indicator for assessing the tourist potential covers several intermediate indices and is expressed by the following formula:

$$\Delta I = I_1 * 0{,}25 + I_2 * 0{,}25 + I_3 * 0{,}25 + I_4 * 0{,}25$$

where, I_1 - intermediate index of natural potential;

I_2 - intermediate index of historical and cultural potential;

I_3 - an intermediate index of the potential for the provision of tourism infrastructure;

I_4- an intermediate index of the potential of transport infrastructure;

0,25 – a correction factor index.

In his works L.I. Kulakova, VA Osipov studied methodological approaches to assessing the tourist and recreational potential of the regions of the Russian Federation [5].

In their opinion, when assessing the tourist and recreational potential, in particular, the historical, cultural and infrastructural potential, natural conditions and the potential of specially protected natural areas affecting the development of the administrative centers of the regions are taken into account, which are determined by the following formula:

$$P = v_1 K_0 + v_2 T_0 + v_3 N_0 + v_4 B_0$$

where, P - tourist and recreational potential, K_0 - historical and cultural potential, T_0– potential of specially protected natural areas, N_0 – potential of natural conditions, B_0 – infrastructure potential, $v_1 - v_4$- weight coefficients.

They propose to express the indicator of the historical and cultural potential of the region by the following formula:

$$K_i = \frac{n_1(1+c)}{m}$$

where, K_i – density of historical and cultural resources, n_1- number of objects in the administrative center, c – localization coefficient, m – number of objects in the region.

The localization coefficient is estimated at five points in the system, depending on how far the historical and cultural objects are located in relation to the administrative centers.

At the same time, it is believed that the proximity of historical and cultural sites to administrative centers represents the level of provision of information and communication technologies.

Based on the above research on the assessment of tourism using integral indicators, carried out by a number of authors, we set the task of developing an “Integral indicator of tourism potential” in order to assess the tourism potential of the regions of Uzbekistan in the practice of national statistics.

The integral indicator of tourist potential allows us to single out a single indicator representing the tourist potential of the region, summing up indicators that include several factors representing the tourist resources of the region.

This indicator is calculated by summing the indicators presented in the table below (Table 1.).

Table 1. Indicators reflecting tourism potential[1]

T/p	Factors	Indicators
I. Tourist infrastructure (F_{ij})		
1.	Housing funds	- number of objects; - the volume of services provided; - state of the art; - the share of tourism in the industry.
2.	Sanatoriums and resorts	- number of objects; - the volume of services provided; - state of the art.
3.	Tourism organizations	- the number of objects; - the volume of services provided; - state of the art.
4.	Catering organizations	- the number of objects; - the volume of services provided; - level of development; - share of tourism in the industry.
5.	Transport	- availability of types of transport; - the volume of services provided in the transport sector; - share of tourism in the industry.
6.	Sport	- the number of objects; - the volume of services provided; - state of the art; - share of tourism in the industry.
7.	Culture	- the number of objects; - the volume of services provided; - state of the art; - share of tourism in the industry.
II. Tourism resources (R_{ij})		
1.	Natural and climatic resources	- the level of conservation of natural resources and their rational use; - quality level of water resources; - the length of the season.
2.	Historical and cultural heritage	- the level of preservation of historical and cultural heritage and their rational use; - the availability of opportunities for pilgrimage.

Systematizing the indicators representing the tourism potential presented in the above table, the following integral indicators of the tourism potential can be derived:

$$I = \sum_{i,j=1}^{n} F_{ij} * w_i + \sum_{i,j=1}^{n} R_{ij} * w_i$$

where, in this formula *w* represents the weight of each individual indicator. Weights can be set depending on the importance of the indicator. In the above studies, Z.A. Trifonov and M.M. Trifonov, each index is taken as equivalent, and each of the four intermediate indexes is estimated with a weight of 0.25.

Based on the existing indicators, using the above formula, it becomes possible to assess the tourism potential of the regions of Uzbekistan and conduct a comparative analysis.

For 2019, the potential of the regions (F1j) in this direction was assessed by bringing the main indicators of the activities of hotels and similar accommodation facilities by region to relative sizes and generalizing them.

The indicator of the number of accommodated persons was calculated taking into account the number of visitors from the CIS countries and far abroad, as well as workers with higher education.

The relative indicators for each direction in the regions were reduced to a general scale according to the following formula by equalizing the highest (maximum) indicator to 100:

$$F_{ij} = \sum_{j=1}^{n} \frac{F_n}{F_{max}}$$

where, F_n - arbitrary regional indicator,

[1] Formed by the author

F_{max}– the highest rate by region.

From the information obtained as a result of calculations carried out on the activities of hotels and similar accommodation facilities, it can be seen that the greatest potential in this direction is observed in the city of Tashkent (100), Samarkand (39) and Bukhara (35) regions, while the average potential is observed in Tashkent (23), Khorezm (22) and Fergana (19) regions, in other regions we can observe a low indicator (in the range of 10-16) (Table 2.).

Table 2. Relative measurement of the activities of hotels and similar accommodation facilities in the regions of the Republic of Uzbekistan in 2019. [2]

	Number of accommodation facilities	Number of rooms	Number of persons accommodated	Number of visitors from non-CIS countries	Number of overnight stays	The utilization rate of accommodation facilities	Employment in the field	Total
Republic of Karakalpakstan	13	7	4	3	3	48	4	11
Regions:								
Andijan	11	7	5	2	4	71	5	14
Bukhara	83	31	22	28	17	54	23	35
Jizzakh	19	9	4	1	3	39	4	10
Kashkadarya	29	15	8	2	7	50	8	16
Navoi	16	12	5	2	5	52	7	13
Namangan	13	10	6	2	4	36	6	10
Samarkand	68	36	27	33	23	63	29	39
Surkhandarya	13	6	3	2	3	50	3	10
Syrdarya	7	3	2	0	2	89	2	14
Tashkent	45	21	11	4	15	60	13	23
Fergana	42	18	7	4	8	46	12	19
Khorezm	36	20	16	16	10	51	13	22
Tashkent city	100	100	100	100	100	100	100	100

Also, from the information obtained by summarizing the main indicators of the activities of tourist organizations in the regions, it can be seen that high potential in this direction is observed in the city of Tashkent (90), Khorezm (45) and Samarkand (19) regions, while the potential of other regions of the country in this direction is much lower than in the above regions (0-6) (Table 3.).

Table 3. Generalized indicators of the potential of the tourist infrastructure of the regions[3]

	Accommodation facilities	Travel companies and organizations	Health resort organizations	Physical Culture	Tourist base	Theatres	Museums	Concert organizations	Parks of culture and	Total

2 Calculated by the author based on data from the State Statistics Committee of the Republic of Uzbekistan.
3 Calculated by the author based on data from the State Statistics Committee of the Republic of Uzbekistan.

				and sport					**recreation**	
Republic of Karakalpakstan	11	1	9	52	11	24	9	27	26	**9**
Regions:										
Andijan	14	1	14	65	11	17	7	18	90	**12**
Bukhara	35	6	10	48	25	15	33	12	38	**14**
Jizzakh	10	2	19	41	8	14	7	15	10	**7**
Kashkadarya	16	2	19	67	15	22	7	27	50	**12**
Navoi	13	2	13	31	21		7	9	39	**8**
Namangan	10	1	51	50	5	7	7	17	46	**12**
Samarkand	39	19	28	75	15	28	50	13	49	**18**
Surkhandarya	10	1	14	52	16	15	7	1	38	**9**
Syrdarya	14	0	2	23	1	5	1	10	9	**4**
Tashkent	23	4	90	67	75	5	9	9	25	**25**
Fergana	19	1	83	78	7	23	23	32	57	**20**
Khorezm	22	45	6	46	17	21	17	8	34	**13**
Tashkent city	100	90	41	59	78	100	79	100	92	**47**

When calculating the activities of sanatorium-resort institutions in the regions based on the data available in the above methodology, the greatest potential is observed in Tashkent (90), Fergana (83), Namangan (51) regions and Tashkent city (41), and the average potential (19-28) - in Jizzakh, Kashkadarya, Samarkand regions. It was also revealed that other regions - have the least potential in this direction in relation to the above regions. At the same time, we calculated and summarized indicators for the activities of physical culture, sports, leisure organizations and tourist centers, theaters, museums, concert organizations and parks in the above order. At the next stage, we will calculate the integral indicator of the potential of the tourism infrastructure through the correction factors for tourism sectors using the following formula.

$$F_D = \sum_{i,j=n}^{n} F_{ij} * w_i$$

In contrast to the approaches of the authors discussed above, we considered it expedient to use the indicator of the share of tourism in this area as a correction coefficient (w_i).

This indicator comes from the Tourism Satellite Account (TSA - Table 6) (Table 4.).

Table 4. Information on the domestic supply and consumption of domestic tourism in the Republic of Uzbekistan for 2019 [4]

	Domestic supply, mln. UZS	**Consumption related to tourism within the country, mln. Soums**	**Share of tourism,%**
A. Consumption products	**72 749 888,3**	**20 846 421,6**	**28,7**
A.1 Tourism characteristic products	**38 086 318,4**	**18 397 504,3**	**48,3**
1. Accommodation services for visitors	3 930 155,8	3 902 353,3	99,3
2. Food- and beverage-serving services	4 544 412,0	2 806 819,5	61,8
3. Railway passenger transport services	529 837,8	482 574,5	91,1
4. Road passenger transport services	18 386 598,4	5 080 302,4	27,6

[4] Data of the State Committee of the Republic of Uzbekistan on Statistics.

	Domestic supply, mln. UZS	**Consumption related to tourism within the country, mln. Soums**	**Share of tourism,%**
5. Air passenger transport services	5 962 496,4	4 771 965,0	80,0
6. Transport equipment rental services	2 274 091,0	188 019,4	8,3
7. Travel agencies and other reservation services	930 431,2	673 359,2	72,4
8. Cultural services	586 597,7	198 570,6	33,9
9. Sports and recreational services	941 698,1	293 540,3	31,2
A.2. Other consumption products	34 663 569,9	2 448 917,3	7,1
B. Other products	**883 501 827,4**	**3 591 962,2**	**0,4**

In essence, the function of the correction factor is to represent the level of attitude of a given sphere to tourism, and the indicator of the share of tourism in this sphere fulfills this task in full. Having formed the TSA tables in the context of regions, it will be possible to apply the appropriate coefficients for each region. In these calculations, we conventionally used the data of the TSA of Table 6, which is formed for the republic.

In these calculations, as a correction factor (w_i) for accommodation facilities, health resorts, leisure organizations and tourist centers, such indicators were used as the share of tourism in services for the accommodation of visitors (99.3%), the share of tourism in the services of travel agencies for travel companies and organizations and other booking services (72.4%), the share of tourism in sports and leisure services in the field of physical education and sports (31.2%), the share of tourism in cultural services for theaters, museums, concert organizations, cultural organizations and recreation parks (33.9%).

According to the results of calculations, the highest integral indicator for the potential of tourism infrastructure is noted in the city of Tashkent (47) and Tashkent region (25), followed by Fergana (20), Samarkand (18), Bukhara (14) and Khorezm (13) regions. The lowest result for this indicator was recorded in Syrdarya (4), Jizzakh (7) and Navoi (8) regions.

The next stage is to assess the potential of tourism resources. Based on the available information, we will divide tourism resources, as noted above, into natural and climatic resources and historical and cultural heritage.

We will also divide natural and climatic resources into natural parks and reserves, as well as water bodies that attract tourists. At the same time, Badai-Tagai, Hisar, Kyzylkum, Nurotinsky, Surkhandarya, Chatkal and Kitab state geological reserves, Zaamin, Zarafshan, Ugam-Chatkal, Khorezm national natural parks, Dzhayran eco-center in the regions and others, which attract attention of tourists, are taken into account. Samarkand, Bukhara, Khiva, Shakhrisabz and other regions included in the list of international organizations, including UNESCO, are presented as historical and cultural heritage.

Using the methods described above for assessing the potential of the tourism infrastructure of the regions, it is possible to generalize the potential of tourism resources. According to the results obtained, the regions with high tourist potential include the Samarkand (75), Bukhara (75), Khorezm (75) and Tashkent (75) regions, and the regions with the average tourist potential - the Republic of Karakalpakstan (63), the city of Tashkent (75), Kashkadarya (63), Surkhandarya (63) and Jizzakh (50) regions. It should be noted that other regions also have natural and climatic resources and a rich historical and cultural heritage, and in order to increase their tourist potential, it is necessary to increase their attractiveness.

At the next stage, on the basis of the available data, the indicators of the potential of the regions in terms of tourist infrastructure and tourist resources are summed up, and an index of the effectiveness of the tourist potential of the regions is determined. The obtained results show that the highest level of tourist potential in the regions of our country falls on the city of Tashkent (55), and Tashkent (50), Samarkand (47), Bukhara (44) and Kharezm (44) regions. The next places in this indicator are occupied by Kashkadarya (37), Surkhandarya (36), Jizzakh (29) regions, and the Republic of Karakalpakstan (36), and in Syrdarya (2), Namangan (6), Andijan (6), Navoi (10) and Fergana (10) regions, this indicator is significantly lower than in the above regions.

In conclusion, we can say that in statistical practice it is advisable to establish work on the assessment of tourism using integral indicators. The most important of them are “integral indicator of sustainable tourism” and “integral indicator of tourism potential”. It is advisable to assess the sustainability of tourism resources in the country using the integral indicator of sustainable tourism, as well as to assess the tourism potential of the country's regions on the basis of the above formulas using the integral indicator of tourism potential. In this article, we also

recommend our approach to assessing the tourist potential of the regions of our country using the integral indicator of tourist potential. The differences between this approach and the approaches recommended by other authors are as follows:

the factors that determine the tourist potential are selected based on the specific characteristics of the country;

when developing an integral indicator of tourism potential, it was recommended to effectively use the TSA indicators.

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