

Article

Methods and Criteria For Assessing the Effectiveness of Accommodation and Catering Services in the Regions

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Abstract: *The article develops methods and criteria for assessing the activity level of the population of Surkhandarya region. It also presents scientific proposals and conclusions aimed at improving the quality of housing and public catering services for the population of Surkhandarya region.*

Keywords: *standard of living, unemployment rate, life expectancy, education, healthcare, and housing infrastructure.*

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1. Introduction

In the global economy, the service sector, in particular accommodation and catering services, plays a special role in ensuring the quality of life and well-being of the population. This sector not only serves to meet the daily needs of the population, but also serves as an important indicator in the development of tourism, regional economic activity and an increase in the level of employment. The development of the hotel and catering system is one of the main factors determining the investment attractiveness of the region and the competitiveness of the services market [1]. According to UNWTO (World Tourism Organization), the service sector occupies a high position in the global structure of gross domestic product, and in some developed countries its share is more than 70%. In particular, in the United States, accommodation and catering services have been established as a key

component of tourism infrastructure, with a high level of service intensity. On the contrary, in developing countries such as Uzbekistan, although this sector has been developing rapidly in recent years, there are significant regional disparities [2].

2. Analysis of literature on the topic

In the scientific studies of a number of modern economists, the development of accommodation and catering services (hospitality sector) has been studied in close connection with macroeconomic growth, tourism and regional development factors. In particular, Yang Yang, Graziano Abrate and Chunrong Ai in their studies substantiate the widespread use of econometric modeling in the hotel and tourism services sector, emphasizing the need to use time series, panel data and causal models in this area. In their opinion, the hospitality sector occupies an important place in the economic system, and future development trends can be identified by modeling demand [3].

Also, studies conducted by Ubay Pérez-Granja and Federico Inchausti-Sintes have scientifically proven that the efficiency of the hotel sector is directly related to tourism specialization. According to their conclusions, the efficiency of hotel services is higher in regions focused on tourism, which enhances the positive impact of the service sector on economic growth [4].

Another important direction is the analysis of the relationship between entrepreneurial activity, human capital and regional innovation systems in the hospitality sector in the research of Yoo Ri Kim. The author notes that entrepreneurial activity in the service sector is one of the main factors stimulating economic growth and innovation and has different dynamics across regions [5].

In addition, G. Lin, in his scientific work, focuses on the issues of econometric modeling of demand for tourism and hospitality services, justifying that the assessment and forecasting of demand functions in this area is an important tool for formulating economic policy. In his opinion, the possibility of identifying and forecasting changes in demand in the service sector using modern econometric approaches is expanding [6].

In the research of C. Sampaio, the analysis of demand changes in the hotel and tourism services market is noted, and the increasing role of the service sector in the global economy is noted. According to him, the hospitality sector makes a significant contribution to the national economy through economic growth, employment and export of services [7].

Also, in the scientific works of R. Rasulov, issues of increasing the efficiency of catering services, optimizing costs and improving logistics systems were studied. According to the results of the research, the use of innovative management approaches in restaurant activities leads to an increase in the quality of services and economic efficiency [8].

3. Methodology

In general, the analysis of the above scientific studies shows that the development of accommodation and catering services is a multifactorial process, which is closely related to tourism, investments, innovations, human capital and regional development factors. Econometric modeling of these processes creates the opportunity not only to identify existing trends, but also to forecast future development prospects on a scientific basis. Research methodology.

4. Analysis and results

According to statistics, the share of the services sector in GDP in Uzbekistan in 2023 was approximately 40-45%, with trade, transport and tourism-related services taking the leading place. In particular, the volume of accommodation and catering services has been showing a steady growth trend in recent years due to the increase in tourism flows. In 2019, 6.7 million tourists visited the republic, but in the post-pandemic period this figure recovered and exceeded 7 million in 2023. This directly increased the demand for hotel and catering services. When we analyze by region, we can see that although the services sector is developing in Surkhandarya region, its potential has not been fully utilized. The increase in the number of tourism facilities in the region, in particular the development of historical-cultural and pilgrimage tourism, is increasing the demand for accommodation and catering services. In recent years, the number of hotels and family guest houses in the region has

increased, and the network of catering establishments is expanding. However, some problems remain in terms of the quality of services, infrastructure provision and service efficiency [9]. These differences create the need to improve the efficiency of accommodation and catering services across regions, effectively use existing material and technical resources and labor potential, as well as improve the quality of services. In this regard, an important scientific task is to identify trends in the development of the sector based on a comprehensive assessment of the volume of services, profitability, employment indicators and customer flow. Therefore, a systematic analysis of the volume of accommodation and catering services in the regions, their economic efficiency and the level of provision of the population with these services is an urgent issue [10]. At the same time, identifying factors affecting the efficiency of services based on econometric models, assessing regional differences, and developing practical recommendations are of great scientific and practical importance.

In our research, a comprehensive analysis of the effectiveness of accommodation and catering services in Surkhandarya region was carried out. The favorable natural and climatic conditions of this region, its rich historical heritage and tourism are considered promising for the development of the economic sector. The region has the potential to effectively provide the population with food and catering resources, ensure the effective reception of tourists and use them in the regional market. At the same time, through accommodation and catering services, it is possible to manage the needs of domestic and international tourists, export, regional security and inter-security economic relations [11]. The geographical location of the region and its transport and logistics, as well as its integration with neighboring regions, strengthen the capacity of the service center. The results of our analysis show that, depending on the location, the level of service delivery is not high enough in the region. In particular, the development of some of the processes of re-production of the service structure, the level of introduction of modern and management technologies in the economy, the development of scientific mechanisms for monitoring the quality of assistance and monitoring have an impact on the production of this sector. , the need to develop scientific and practical recommendations on the basis of economic support for the optimal use of available resources for the production of food products and the provision of public services, the introduction of innovative products for quality control, and the development of scientific and practical recommendations will help [12].

The benefit was carried out by us using the production trend of the accommodation and catering services sector in Surkhandarya region for 15 years and the current real efficiency based on 5-year data. At the first stage, the standardized values of the indicators were calculated using the proposed system of indicators and the overall average values were determined. The integrated efficiency index of the accommodation and catering services sector was selected as the main indicator.

Our scientific research has shown that the most optimal approach to assessing the efficiency of the development of accommodation and catering services in the regions is the assessment method based on the integrated efficiency index. In this method, we took into account the coefficient of foreign tourists (T_x), domestic tourists (T_1), the number of hotels (K_M), the number of catering establishments (K_O), the total volume of services (V_x) and the volume of investments in fixed capital (V_I). Since the impact of each indicator on the efficiency of production is different, we assigned a separate weight (ω_i) to each. As is known, the weight (ω_i) determines the relative importance of each indicator in calculating the index. For example, changes in the coefficient of foreign tourists and domestic tourists or the volume of total services and the volume of investments in fixed capital may have a greater impact on the efficiency state [13]. Therefore, they will have a higher weight. On the contrary, some indicators may be less important in influencing the level of efficiency of the development of accommodation and catering services. In this case, they will have a lower weight. We analyzed this using the example of hotels and public catering establishments.

Based on the above, the evaluation formula based on the integrated efficiency index for improving the efficiency of the development of accommodation and public catering services in the regions was presented as follows:

$$I_T = \sum_{k=1}^3 \omega_k \left(\frac{1}{n_k} \sum_{j \in G_k} Z_{jt} \right)$$

We can classify this expression as follows:

$$I_T = \omega_1 * \frac{T_I + T_X}{2} + \omega_2 * \frac{K_M + K_O}{2} + \omega_3 * \frac{V_X + V_I}{2}$$

According to the methodology proposed above, an assessment of the effectiveness of the development of accommodation and catering services in the region was carried out.

Table 1

Criteria and indicator values for evaluating accommodation and catering services based on the integrated performance index¹

No	Criteria	Indicator weight
1	Foreign and domestic tourist coefficient	0.35
2	Hotels and catering coefficient	0.30
3	Total services and investment volume	0.35

Foreign and domestic tourist coefficient ($T_{X,I}$). The ratio of foreign to domestic tourists is an important indicator characterizing the structural structure of tourism flows. This indicator allows you to determine the share of domestic and foreign segments in the structure of tourists visiting the region, as well as assess the orientation of the tourism market [14].

Economically, it reflects the level of international attractiveness of the tourism sector, the state of development of domestic tourism, and the export orientation of tourism services. Therefore, this indicator is important as a structural analysis tool in developing a tourism development strategy and substantiating regional tourism policy.

These trends are reflected in the dynamics of the number of tourists visiting the region in 2010–2025 (Figure 1)

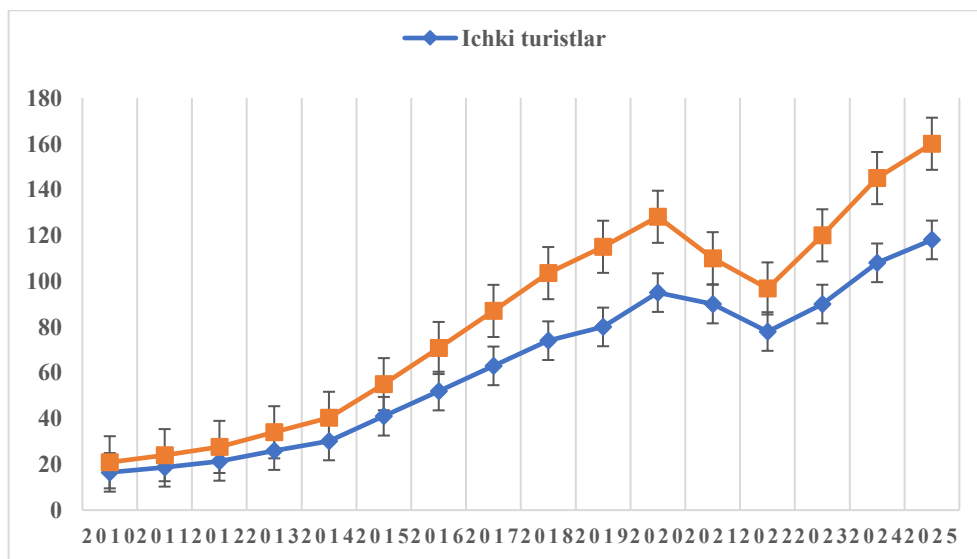


Figure 1. The volume of foreign and domestic tourists visiting Surkhandarya region between 2010 and 2025.²

The analysis shows that, while there was a steady growth trend in the number of

¹ The table is based on the author's scientific research.

² Compiled based on the author's work.

tourists during 2010–2019, there was a sharp decline in 2020 due to the global pandemic. This situation led to a decrease in demand for accommodation and catering services, which had a direct negative impact on the volume of activities of enterprises in the sector. The decrease in the flow of tourists led to a decrease in the occupancy rate of hotels and the revenue of catering enterprises. At the same time, such external factors are important in assessing the stability and level of resilience of the service sector.

Coefficient of hotels and catering enterprises ($K_{M,O}$). This indicator is an important indicator characterizing the level of development of the accommodation and catering services sector. This indicator reflects the breadth of the service infrastructure in the region, the ability to provide services to the population and economic entities, and the level of institutional formation of the sector.

Economically, this indicator is closely related not only to tourism, but also to population consumption, urbanization processes, the expansion of the service sector, and the level of employment. Therefore, it is an important assessment criterion in determining the overall level of development of accommodation and catering services, the capacity and stability of the regional services market [15].

Total services and fixed capital investment volume coefficient ($V_{X,I}$). This indicator is an important economic indicator that characterizes the relationship between the results created in the services sector and the investments made. The main reason for choosing this indicator is that it allows you to indirectly assess the effectiveness and return on investments in the services sector. That is, it determines how much services are produced in exchange for funds directed to fixed capital. Economically, this indicator reflects the role of investments in increasing the volume of services, the level of capital capacity and efficiency of the industry, and the overall efficiency of resource use.

Therefore, this indicator is chosen to determine the impact of the investment factor in assessing the development of accommodation and catering services, as well as to assess whether the industry is developing intensively or extensively.

To analyze the results and achieve the result, we present statistical data for the Surkhandarya region for 2010–2025.

Table 2.

Statistical data for the indicator values of the assessment of the efficiency of the development of accommodation and catering services in Surkhandarya region over the past 15 years based on the integrated efficiency index.³

Years	Total volume of services (in billions of soums)	Volume of investments in fixed capital (in billions of soums)	Number of foreign tourists (in thousands)	Number of domestic tourists (in thousands)	Number of guest rooms (in thousands)	Number of catering establishments (in thousands)
2010	4,8	655,3	4,4	16,5	26	494
2011	7,2	802,9	5,3	18,7	28	556
2012	9,2	980,3	6,3	21,3	29	567
2013	13,1	1 371,0	8	26	28	588
2014	16,5	1 509,1	10,1	30,2	29	610
2015	22,6	1 843,6	14	41	31	631
2016	132,1	2 142,4	18,8	52	35	692
2017	155,7	3 551,0	24	63	38	810
2018	193,5	7 240,6	29,5	74	38	976
2019	240,6	11 835,1	35	80	26	1 051

³ The table is based on the author's work.
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2020	214,4	10 068,2	33,1	95	37	1 411
2021	315,0	12 037,8	20	90	27	1 580
2022	425,2	11 569,4	18,8	78	64	1 694
2023	527,0	18 307,7	30	90	66	1 888
2024	8 085,3	16 593,1	37	108	71	1 503
2025	8 827,7	22 758,4	42	118	75	1 508

Based on the above statistical data, normalized values of the evaluation indicators for all performance indices were determined (Table 3).

Table 3.

Indicator values for assessing the effectiveness of the development of accommodation and catering services in Surkhandarya region over the past 15 years based on the integrated performance index.⁴

Years	V_X	V_I	T_{X+I}	K_M	K_O
2010	0,00	0,00	0,0	0,0	0,0
2011	0,03	0,67	2,2	4,1	6,1
2012	0,05	1,47	4,8	6,1	7,2
2013	0,09	3,24	9,4	4,1	9,3
2014	0,13	3,86	13,9	6,1	11,4
2015	0,20	5,38	24,5	10,2	13,5
2016	1,44	6,73	35,9	18,4	19,5
2017	1,71	13,10	47,5	24,5	31,2
2018	2,14	29,79	59,4	24,5	47,5
2019	2,67	50,58	67,6	0,0	54,9
2020	2,38	42,59	77,1	22,4	90,4
2021	3,52	51,50	64,1	2,0	107,1
2022	4,77	49,38	54,6	77,6	118,3
2023	5,92	79,86	71,2	81,6	137,5
2024	91,59	72,11	89,2	91,8	99,5
2025	100,00	100,00	100,0	100,0	100,0

In the course of the research, we developed an assessment scale based on an integrated performance index, which allows us to more systematically and comprehensively assess the level of development of accommodation and catering services in the regions (Table 5). This scale, along with analyzing the development of the service sector based on general indicators, allows us to assess the economic, infrastructural and production factors of the industry in a coherent manner. As a result, this approach allows us to determine the state of development of accommodation and catering services and their interrelationships on a scientific basis.

Table 4.

Scale for assessing the level of cultivation based on the integrated efficiency index⁵.

Marginal coefficient	Descriptive level	Comment on the situation
$0 \leq I_T \leq 30$	Very low efficiency	The development of the industry is slow, the infrastructure is insufficient
$30 \leq I_T \leq 50$	Low efficiency	There is progress, but it is not sustainable.
$50 \leq I_T \leq 70$	Moderately efficient	The sector is active, but its potential is not fully realized.
$70 \leq I_T \leq 85$	Good level of efficiency	Sustainable development

⁴ The table is based on the author's scientific research.

⁵ The table is calculated based on the author's scientific research.
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		exists
$85 \leq I_T \leq 100$	Highly efficient	The development of the industry is at a high level

Over the past five years, the results of assessing the efficiency of the development of accommodation and catering services in Surkhandarya region based on the integrated efficiency index have yielded a value of 63.8.

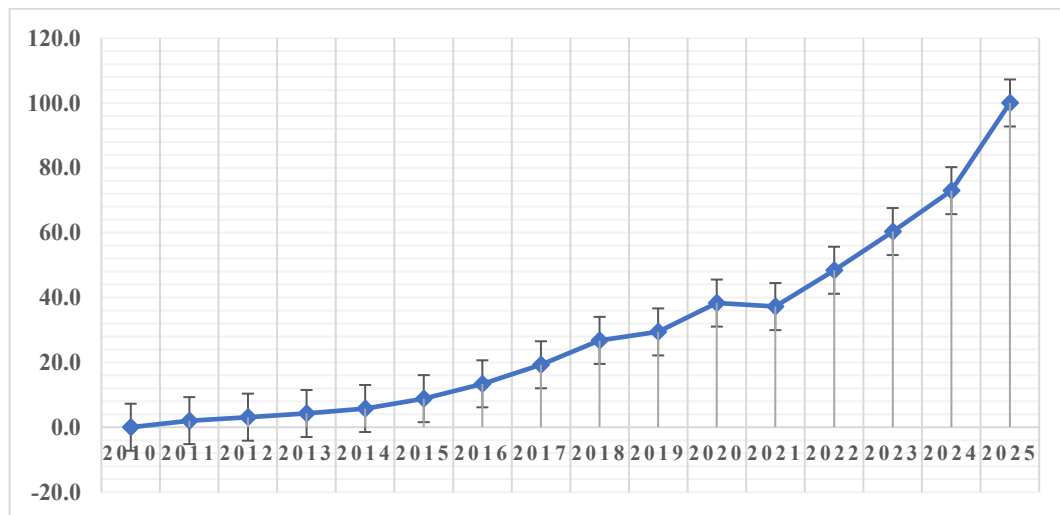


Figure 2. Dynamics of assessing the level of development of accommodation and catering services in Surkhandarya region for 2010-2025 based on the integrated efficiency index.⁶

Our analysis shows that the results of the analysis of the dynamics of the services sector development index during the studied period showed a general positive trend. The increase in index values over the years is explained by the expansion of demand in the sector, the development of infrastructure, and increased investment activity. In particular, the significant increase in indicators in recent years confirms that the sector has entered a phase of sustainable development. As can be seen from the diagram, a relative decrease in the development index is observed in 2020. This situation is directly related to the reduction in economic activity, especially the sharp decrease in tourism flows, in the context of a global pandemic. In particular, the decrease in the number of domestic and foreign tourists had a negative impact on the demand component, while the slowdown in the volume of services and investment indicators led to a decrease in the overall index. At the same time, in recent years, recovery and growth of index values have been observed, which indicates the flexibility of this sector and its ability to quickly recover in the post-pandemic period.

In summary, the integrated efficiency index calculated for the last 15 years was 31.3. This indicates a "low" level. This result indicates that the system of accommodation and catering services in the region has been poorly developed in terms of sustainability and efficiency for a long time. The results of our study confirmed that the development indicators in the service sector have not achieved sustainable results due to insufficient strategic planning and ineffective allocation of resources.

However, over the past five years, the integrated efficiency index has reached 63.8. This is assessed as an "average" level. This result indicates that a trend is forming in the service sector to move to a stage of intensive development. In particular, the expansion of the volume of services, modernization of infrastructure, improvement of management systems, and increased efficiency in resource use have significantly improved the overall development level of the sector.

The results obtained show that, although the service sector in Surkhandarya region has been developing at a relatively low level of efficiency for a long time, in recent years there

⁶ The table is based on the author's work. American Journal of Economics and Business Management 2026, 9(5), 241-249 .

has been a transition to a phase of intensive growth. This trend is of significant scientific and practical importance in determining the priority strategic directions for the development of the service sector. As noted above, various factors affect the level of development of the service sector in Surkhandarya region. Based on the results of scientific research, Table 5 below systematically reflects these main factors and measures aimed at reducing or eliminating their negative impact.

Table 6.
Assessment of the main factors influencing the development of accommodation and catering services in Surkhandarya region and measures to improve them⁷

№	Influencing factors	Content of the impact	Improvement and remedial measures
1	Insufficiently developed tourist demand	Low volume of services and reduced income	Increasing the tourist attractiveness of the region, strengthening marketing strategies, developing advertising activities
2	Poor quality of service	Reduced customer flow and reduced competitiveness	Introducing service standards, strengthening quality control, improving service culture
3	Limited financial resources	Low capacity for infrastructure modernization	Attracting investments, providing preferential loans, expanding state support programs
4	Lack of modern technologies	Low efficiency of services and high costs	Introduction of digital technologies, development of online services, use of automated management systems
5	Insufficiently developed infrastructure	Limited tourist flow and reduced quality of services	Development of hotels, catering enterprises and transport infrastructure
6	Weaknesses in the logistics and transport system	Reduced ease of use of services	Improvement of transport networks, development of the logistics system
7	Insufficient staff qualifications	Reduced quality and efficiency of services	Training of specialists, organization of advanced training courses

Systematic and effective implementation of the proposed measures will increase the effectiveness of the services sector in the region, as well as bring its development indicators to a higher level.

5. Conclusion

The study shows that accommodation and catering services in Surkhandarya region have an important role in supporting regional economic growth, tourism development, and employment opportunities. Using the integrated efficiency index, the research found that the sector experienced a generally positive development trend during 2010–2025, although growth was disrupted in 2020 due to the global pandemic. The overall integrated efficiency index for the last 15 years was 31.3, indicating a low level of efficiency, while the index for the last five years increased significantly to 63.8, reflecting a transition toward moderate and sustainable development. This improvement was mainly influenced by increasing tourism flows, infrastructure expansion, higher investment activity, and modernization of service systems. However, several challenges remain, including inadequate infrastructure, limited financial resources, low service quality, weak logistics systems, and insufficient staff qualifications. Therefore, strengthening investment support, improving service quality, introducing modern technologies, and developing tourism infrastructure are essential to further enhance the efficiency and competitiveness of accommodation and catering services in the region.

REFERENCES

[1] Y. Yang, G. Abrate, and C. Ai, *Econometric Analysis in Hospitality and Tourism Management*. Bingley, U.K.: Emerald

⁷ The table is based on the author's work.
American Journal of Economics and Business Management 2026, 9(5), 241-249 .

Publishing, 2022.

- [2] F. Inchausti-Sintes and U. Pérez-Granja, "On the analysis of efficiency in the hotel sector," *Tourism Economics*, vol. 27, no. 6, pp. 1154–1172, 2021.
- [3] Y. R. Kim, "Understanding the entrepreneurial ecosystem in hospitality," *International Journal of Hospitality Management*, vol. 122, Art. no. 103912, 2025.
- [4] G. Lin, "Behavioral Economic Analysis of Tourism Demand," Univ. of Surrey Research Paper, Surrey, U.K., 2023.
- [5] C. Sampaio, "Hospitality and tourism demand: Exploring industry shifts," *MDPI Journal*, vol. 12, no. 4, pp. 45–59, 2024.
- [6] R. Rasulov, "Economic substantiation of innovative solutions for restaurant efficiency," *Futurity Economics & Law*, vol. 4, no. 2, pp. 33–41, 2024.
- [7] O. A. Abduganiyev, "Econometric models for increasing the production efficiency of agricultural products included in the consumer basket," D.Sc. dissertation, Urgench State Univ., Urgench, Uzbekistan, 2022.
- [8] E. A. Roslyakova, "Econometric analysis of the factor forming environment," *Vestnik Omskogo Universiteta. Series 'Economics'*, no. 4, pp. 235–241, 2015.
- [9] B. B. Berkinov, *Modeling of Agricultural Management Systems*. Tashkent, Uzbekistan: Fan, 1991.
- [10] N. M. Makhmudov, "Modeling of production and economic processes in the cotton processing industries," D.Sc. dissertation, Tashkent State Univ. of Economics, Tashkent, Uzbekistan, 1993.
- [11] J. Wooldridge, *Introductory Econometrics: A Modern Approach*, 7th ed. Boston, MA, USA: Cengage Learning, 2020.
- [12] D. Gujarati and D. Porter, *Basic Econometrics*, 5th ed. New York, NY, USA: McGraw-Hill, 2009.
- [13] P. Baltagi, *Econometric Analysis of Panel Data*, 6th ed. Cham, Switzerland: Springer, 2021.
- [14] S. Cameron and P. Trivedi, *Microeconometrics: Methods and Applications*. Cambridge, U.K.: Cambridge Univ. Press, 2009.
- [15] J. Greene, *Econometric Analysis*, 8th ed. New York, NY, USA: Pearson Education, 2018.