GEOGRAPHICAL CHARACTERISTICS OF THE SPATIAL SPECIALIZATION AND DEVELOPMENT OF THE ECONOMY OF GULISTAN CITY

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Abstract. This study examines the geographical characteristics of the spatial specialization and economic development of Gulistan City, Uzbekistan. It analyzes the territorial distribution of industrial enterprises, trade and service activities, educational and healthcare facilities, and transport infrastructure across urban neighborhoods. Particular attention is paid to changes in industrial production, differences in sectoral specialization, and the factors influencing the spatial organization of economic activities. The findings provide a basis for identifying the economic functions of individual neighborhoods and determining priority areas for the city's sustainable development.

Keywords: city, spatial specialization, urban economy, geographical characteristics, industrial production, economic development, neighborhood, service sector, territorial distribution, urban infrastructure.

The territorial specialization of the urban economy is determined by the spatial distribution of production and service sectors, the geographical concentration of economic activities, and the functional differentiation of the urban space. In recent years, particular attention in economic geography has been devoted to studying these processes at the level of small territorial units within cities.

Z. Li Et Al. (2021) investigated the spatial concentration of population, economic activities, and land use within urban areas. Their findings revealed that the location of economic facilities is influenced by transport accessibility, diversity of land use, and the characteristics of the urban environment[1]. Q. Qin et al.

[1] Li Z., Jiao L., Zhang B., Xu G., Liu J. Understanding the pattern and mechanism of spatial oncentration of urban land use, population and economic activities: a case study in Wuhan, China // *Geo-spatial Information Science*. - 2021. - Vol. 24, № 4. - P. 678–694. DOI: 10.1080/10095020.2021.1978276

substantiated the need to consider the location and spatial density of economic and social facilities when identifying urban functional areas[2].

J. Wang and co-authors demonstrated that the integrated use of various geographical datasets enables a more accurate assessment of territorial specialization when identifying the functional structure of cities[3]. C. Pan et al. emphasized the importance of analyzing the location of service facilities and territorial infrastructure in the study of urban functional zones[4].

W. C. B. Chin et al. examined the distribution of economic and social facilities within urban areas and identified cases in which several functions coexist and interact within particular areas[5]. X. Li et al. assessed intra-urban economic disparities across functional zones and demonstrated that the economic activity of individual areas is associated with their functional composition[6]. These scientific approaches provide a theoretical and methodological foundation for investigating the territorial specialization of neighborhoods in Gulistan City based on the location of industrial enterprises, trade and service facilities, social infrastructure, and transport connections.

The territorial specialization of Gulistan City is closely associated with its economic and geographical position, production capacity, and the development of its social infrastructure. As the administrative center of Syrdarya Region, the city is distinguished by the spatial concentration of industrial production, trade, services, education, and healthcare. The development of the urban economy is driven by the interrelationships between production enterprises, transport infrastructure, and

[2] Qin Q., Xu S., Du M., Li S. Urban functional zone identification by considering the heterogeneous distribution of points of interests // *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. - 2022. - Vol. V-4-2022. - P. 83–90. DOI: 10.5194/isprs-annals-V-4-2022-83-2022

[3] Wang J., Gao C., Wang M., Zhang Y. Identification of Urban Functional Areas and Urban Spatial Structure Analysis by Fusing Multi-Source Data Features: A Case Study of Zhengzhou, China // *Sustainability*. - 2023. - Vol. 15, № 8. - Article 6505. DOI: 10.3390/su15086505

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[6] Li X., Deng Y., Liu B., Yang J., Li M., Jing W., Chen Z. GDP spatial differentiation in the perspective of urban functional zones // *Cities*. - 2024. - Article 105126. DOI: 10.1016/j.cities.2024.105126

facilities providing services to the population. This process is reflected in the varying spatial distribution of economic activities across the city's neighborhoods.

Industry plays an important role in the economic development of Gulistan City. In 2010, the city's industrial output amounted to UZS 116.9 billion, whereas by 2025 this figure had reached UZS 1,574.6 billion. Thus, during the period under consideration, industrial output increased approximately 13.5-fold in nominal terms. At the same time, changes occurred in the industrial structure. During 2010–2020, light industry, food processing, and construction materials manufacturing were among the principal sectors, while in subsequent years ferrous metallurgy, pharmaceuticals, and the chemical industry also emerged as significant branches.

According to the data presented for the end of 2025, manufacturing accounted for 87.9% of total industrial output. The share of electricity, gas, steam, and air-conditioning supply was reported at 4%, while water supply, sewerage, waste collection, and waste treatment accounted for 7.8%. Mining and quarrying represented 0.3%. This structure indicates that the majority of industrial activity in Gulistan is associated with the production of manufactured goods, while utility and infrastructure-related sectors also occupy a considerable position in the urban economy.

Certain neighborhoods play a particularly important role in the spatial organization of industrial production. For example, CHELEBI TEXTILE and BAQQOL-DON SAVDO are located in Bog‘ishamol Neighborhood; WANGDA METAL operates in Taraqqiyot Neighborhood; DON MILK and BETON SANOAT are situated in Obod Yurt Neighborhood; and BIG BAG SALE, TOSH BETON TRANS, and SIRDARYO LAK BO‘YOQ operate in Bahor Neighborhood. These enterprises represent a variety of industrial activities, including textile production, food processing, ferrous metallurgy, plastic packaging, and construction materials manufacturing. In addition, pharmaceutical production has been recorded in Baxt and Namuna neighborhoods, light industrial activities in Do‘stlik and Ma’naviyat neighborhoods, and the manufacture of packaging products from polypropylene materials in Buyuk Kelajak Neighborhood. This

demonstrates that the city's industrial sector is not specialized in a single branch but encompasses several distinct manufacturing activities.

A comparison of production volumes and sectoral composition across neighborhoods provides a clearer understanding of territorial disparities. According to the calculations presented, light industry and food processing predominate in Bog‘ishamol Neighborhood, ferrous metallurgy in Taraqqiyot Neighborhood, food processing in Obod Yurt Neighborhood, and chemical and construction-related manufacturing in Bahor Neighborhood. Chemical production is represented in Buyuk Kelajak Neighborhood, pharmaceutical activities in Baxt and Namuna neighborhoods, and light industry in Do‘stlik and Ma’naviyat neighborhoods. Consequently, the territorial specialization of industry is reflected not only in the number of enterprises but also in production volumes and differences in the leading industrial sectors across neighborhoods.

The temporal growth of industrial production further confirms the importance of this sector in the urban economy. Industrial output increased from UZS 116.9 billion in 2010 to UZS 318.3 billion in 2015, UZS 931.0 billion in 2020, UZS 1,123.6 billion in 2023, and UZS 1,364.6 billion in 2024. In 2025, industrial output reached UZS 1,574.6 billion. This trend indicates long-term growth, although a decline compared with the preceding year was also observed in certain periods, particularly in 2020 relative to 2019. Therefore, an assessment of industrial development should consider not only overall growth but also annual fluctuations and changes in the sectoral composition of production.

Trade and services constitute other important components of the urban economy. Their spatial distribution is associated with population size and density, consumer demand, major streets, and transport routes. In some neighborhoods, retail and catering facilities primarily meet everyday consumer needs, whereas in others, the concentration of educational and healthcare institutions strengthens their role in providing social services. The territorial analysis of these sectors should consider not only the presence of facilities but also their capacity, service catchment areas, and accessibility to residents of neighboring areas.

Transport infrastructure acts as a connecting factor linking industrial production, trade, and service activities. The proximity of enterprises to major transport routes influences the delivery of raw materials, the transportation of finished products, and the development of economic linkages. Therefore, the transport factor should also be considered when assessing the functional characteristics of neighborhoods such as Taraqqiyot, where industrial and commercial activities have developed simultaneously.

Based on these considerations, an assessment of the territorial specialization of Gulistan City at the neighborhood level should jointly examine the volume and structure of industrial production, the location of trade and service facilities, social infrastructure, and transport connections. This approach makes it possible to identify the principal economic functions of individual neighborhoods and characterize the territorial differences between them. Accordingly, the territorial specialization of neighborhoods in Gulistan City was classified into the following categories.

Table 1

Geographical Characteristics of the Territorial Specialization and Economic Development of Neighborhoods in Gulistan City

No	Specialization Sector	Specialized Neighborhoods	Characteristics of Spatial Distribution	Priority Development Areas
1	Industry	Bog‘ishamol, Taraqqiyot, Obod yurt, Bahor	Spatial Concentration of Industrial Enterprises	Modernization of Industry and Improvement of Production Efficiency
2	Trade	Yangi Hayot, Taraqqiyot, Namuna	Location of Commercial Facilities in Relation to Population Distribution and Transport Routes	Development of Trade Infrastructure and Logistics Connections
3	Educational Services	Bo‘ston, Baxt	Spatial Concentration of Educational Institutions	Improving the Spatial Coverage of Educational Services
4	Service Sector	Namuna	Location of Everyday Service Facilities for the Population	Diversification of Services and Development of Small Businesses
5	Healthcare Services	Obod yurt, Taraqqiyot, Do‘stlik, Namuna	Spatial Distribution of Healthcare	Improving Access to Healthcare Services

			Facilities	
6	Transport	Taraqqiyot	Relationship Between Transport Infrastructure and Economic Activity	Improving Transport Connectivity and Logistics Efficiency
7	Agriculture	Ulug‘obod, Ibratli	Activities Related to the Use of Agricultural Land	Rational Use of Land and Water Resources
8	Trade and Catering	Madaniyat, Ma’naviyat, Nihol, Ulug‘ yo‘l, Sohil, Ahillik, Navbahor, Buyuk kelajak	Distribution of Daily Consumer Goods and Catering Services Across Neighborhoods	Improving Service Quality and Developing Entrepreneurial Activities

The table data indicate that different types of economic and social activities in Gulistan City exhibit distinctive spatial distribution patterns across its neighborhoods. In particular, industrial activities are predominant in Bog‘ishamol, Taraqqiyot, Obod Yurt, and Bahor neighborhoods; educational services are concentrated in Bo‘ston and Baxt neighborhoods; while trade activities are prominent in Yangi Hayot, Taraqqiyot, and Namuna neighborhoods. These patterns reflect the differentiated development of production and service functions across the city.

The specialization of Taraqqiyot and Namuna neighborhoods in several sectors highlights their significance as multifunctional urban areas. Meanwhile, the prominence of trade and catering activities in Madaniyat, Ma’naviyat, Nihol, Ulug‘ Yo‘l, Sohil, Ahillik, Navbahor, and Buyuk Kelajak neighborhoods indicates the widespread distribution of service activities throughout the city. The designation of Ulug‘obod and Ibratli neighborhoods as areas specializing in agriculture also highlights the need to examine land-use patterns in relation to territorial specialization.

Conclusion: Overall, the territorial specialization of Gulistan City is characterized by the interconnected spatial distribution of industrial production, trade and services, and social infrastructure facilities. Taking these characteristics into account is essential for assessing the economic potential of individual

neighborhoods, identifying spatial disparities, and determining priority areas for the city's future sustainable development.

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