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THE ECONOMIC-GEOGRAPHICAL SIGNIFICANCE OF CITIES AND URBAN AGGLOMERATIONS IN REGIONAL DEVELOPMENT

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Annotation

This thesis examines the economic-geographical significance of cities and urban agglomerations in regional economic development. The study analyzes the role of cities in the spatial concentration of population, economic activity and infrastructure, as well as their influence on adjacent territories. Based on official statistical data for Uzbekistan for 2025, population size, population density and gross regional product indicators are comparatively assessed. The results demonstrate the formation of major urbanization centers in Tashkent, Samarkand, Fergana, Andijan and Namangan. Transport connectivity and functional integration are considered important factors determining the economic efficiency of urban agglomerations. The study also substantiates the development of a polycentric urban system in the Fergana Valley and the integration of major cities with adjacent territories as a unified functional-economic space as an important direction of regional development.

Keywords: City, agglomeration, urbanization, regional development, economic geography, polycentricity, integration, transport, concentration, infrastructure.

Introduction:

Urbanization and economic development are closely interconnected processes, and cities become important centers of regional development through the spatial concentration of economic activity, labor and infrastructure [1]. Henderson



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argues that urbanization is closely associated with economic development and that rapid urbanization requires substantial investments in infrastructure within and between cities [1]. The economic influence of cities is not limited to their administrative boundaries. Labor commuting, transportation networks, production and service linkages contribute to the formation of a unified functional space between cities and adjacent territories. Zheng [2] demonstrates that regional development is determined not only by agglomeration economies but also by the development of transportation networks [2].

The relevance of this issue in Uzbekistan is associated with the spatial concentration of population and the formation of major economic centers. As of October 1, 2025, the permanent population amounted to 4.36 million in Samarkand region, 4.20 million in Fergana region, 3.51 million in Andijan region, 3.18 million in Namangan region, 3.16 million in Tashkent city and 3.15 million in Tashkent region [9].

At the same time, in 2025, gross regional product amounted to 367.2 trillion soums in Tashkent city, 180.2 trillion soums in Tashkent region, 121.5 trillion soums in Samarkand region, 111.3 trillion soums in Fergana region, 107.7 trillion soums in Andijan region and 85.4 trillion soums in Namangan region [10].

The purpose of this thesis is to identify the economic-geographical significance of cities and urban agglomerations in regional development in Uzbekistan and to assess the functional integration of major urbanization centers and adjacent territories.

Literature review:

International studies explain the role of cities in economic development primarily through urbanization and economic concentration. Henderson [1] substantiates the relationship between urbanization and economic development and demonstrates that cities are important centers of economic activity [1].



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Zheng [2] links agglomeration economies with transportation networks and demonstrates the importance of network economies for regional development. This approach highlights the importance of transport integration between cities and their surrounding territories for economic efficiency [2].

Meijers, Hoogerbrugge and Cardoso [3] examine the impact of functional integration in polycentric urban regions and find that functional integration, in particular, strengthens the ability of urban regions to benefit from urbanization economies [3]. Wang, Sun and Zhang [4] investigate functional spillovers and economic performance in polycentric urban regions and emphasize the importance of inter-city linkages and infrastructure. Ouwehand, van Oort and Cortinovis [5] find that urban size has a positive effect on regional productivity, whereas the effect of polycentricity is not always positive.

Caset et al. [6], analyzing 94 regions in 34 European countries, find that higher levels of polycentricity and spatial dispersion can, in some cases, be associated with lower productivity [6]. Martinus, Suzuki and Bossaghzadeh [7] substantiate the relationship between interregional commuting, agglomeration and innovation in peripheral areas [7].

Shmidt, Antonyuk and Francini [8] propose studying urban agglomerations through spatial concentration of population and economic activity, the agglomeration core and its connected territories [8].

Overall, the literature review demonstrates that three major factors — **economic concentration, transport connectivity and functional integration** — should be considered jointly when assessing the impact of urban agglomerations on regional development.



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Methodology:

The study applies comparative analysis, statistical analysis and an economic-geographical approach. Three main groups of indicators were selected to assess the regional significance of cities and agglomerations: **population size, population density and gross regional product (GRP)**. These indicators characterize the general level of demographic and economic concentration in cities and regions.

From an economic-geographical perspective, an urban agglomeration is interpreted according to the principle of **core–adjacent territory–wider zone of influence**. A major economic and urbanization center is considered the core, while territories with strong transport and labor connections to the core are considered adjacent territories. International studies also demonstrate that such functional linkages allow agglomerations to be examined as spaces extending beyond administrative boundaries [2; 3; 7].

For Uzbekistan, population data as of October 1, 2025 and GRP data for 2025 were used [9; 10]. Official population-density indicators as of April 1, 2025 were additionally used as a supporting criterion [11].

Results:

The results demonstrate the formation of major demographic and economic centers in Uzbekistan.



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1-Table Population density as of April 1, 2025.

Region	Population, million, 01.10.2025	GRP, trillion soums, 2025	Population density, persons/km ² *
Tashkent city	3.16	367.2	6,983.2
Tashkent region	3.15	180.2	206.2
Samarkand region	4.36	121.5	257.3
Fergana region	4.20	111.3	615.7
Andijan region	3.51	107.7	807.9
Namangan region	3.18	85.4	422.7

Source: Compiled by the author based on data from the National Statistics Committee of Uzbekistan [9; 10; 11].

First, Tashkent city stands out as the strongest economic center in the country. Its GRP amounted to 367.2 trillion soums in 2025, almost twice the GRP of Tashkent region [10]. This indicates the need to examine the economic linkages between Tashkent city and its adjacent territories from an agglomeration perspective.

Second, population concentration is particularly high in the Fergana Valley. Population density reached 807.9 persons/km² in Andijan region, 615.7 persons/km² in Fergana region and 422.7 persons/km² in Namangan region [11]. These indicators provide a basis for examining the valley as a polycentric urban system consisting of several interconnected major urbanization centers rather than a single dominant center.

Third, Samarkand region, with a population of 4.36 million, is one of the largest demographic centers in the country and generated GRP of 121.5 trillion soums in



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2025 [9; 10]. This demonstrates Samarkand's potential not only as a demographic center but also as a regional economic center.

Comparison with the international literature demonstrates that the economic potential of large cities extends to surrounding territories through transport and functional linkages [2; 3]. Therefore, for Tashkent, strengthening the integration of the core and adjacent territories is important, while for the Fergana Valley, strengthening functional linkages between centers such as Fergana–Margilan, Andijan–Asaka and Namangan is appropriate. At the same time, polycentricity should not automatically be interpreted as an indicator of higher economic efficiency. International empirical studies demonstrate that the outcome of a polycentric structure depends on the actual level of functional integration between cities [3; 5; 6].

Conclusion:

The results demonstrate the significant economic-geographical importance of cities and urban agglomerations for regional development in Uzbekistan. Based on population size, population density and GRP indicators, Tashkent city can be identified as the strongest economic center, Samarkand as a major demographic-economic center, and the Fergana Valley as a highly dense polycentric urbanization area [9; 10; 11]. At the same time, the economic efficiency of an agglomeration depends not only on economic concentration in the core but also on transport, labor and functional linkages between the core and adjacent territories [2; 3; 7]. Therefore, urban agglomeration development in Uzbekistan should take into account functional-economic linkages in addition to administrative boundaries.

In practical terms, the priority directions include strengthening transport and infrastructure integration within the Tashkent agglomeration, supporting the



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spatial diffusion of economic activity around Samarkand, and developing functional linkages among polycentric centers in the Fergana Valley. Further research should identify the precise functional boundaries of agglomerations using labor commuting, travel time, passenger flows and inter-firm linkages.

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