

GEOGRAPHICAL ANALYSIS OF URBAN POPULATION DYNAMICS AND URBANIZATION PROCESSES IN THE ABSHERON–KHIZI ECONOMIC REGION

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Abstract

This study examines the key features of demographic change and urbanization in the cities of the Absheron–Khizi economic region from a geographical perspective. The primary objective is to identify trends in urban population growth, analyze urbanization processes, and determine the main factors influencing the formation of the demographic structure.

The research is based on statistical analysis, a comparative geographical approach, and cartographic methods supported by GIS technologies. The findings indicate that population growth in the region's urban areas is largely driven by internal migration and the expansion of urban economic activities. Under the influence of the capital city, suburbanization processes have intensified, leading to the emergence of new residential zones in peri-urban areas and contributing to spatial disparities in population distribution.

At the same time, the analysis of age and gender composition reveals a relatively high proportion of the working-age population, which positively contributes to the region's economic development potential. The assessment of demographic dependency ratios highlights their significance for the effective planning of social infrastructure and the optimization of employment policies.

In conclusion, the study demonstrates that demographic dynamics in the urban areas of the Absheron–Khizi economic region are strongly shaped by urbanization processes. Ensuring sustainable regional development requires consideration of the spatial characteristics of population growth, balanced expansion of social services, and the application of demographic forecasting tools.

Keywords: *Absheron–Khizi economic region; urbanization; demographic dynamics; urban population; migration processes; settlement system; demographic structure; regional development.*

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INTRODUCTION

Modern urbanization processes exert a substantial influence on the settlement patterns of urban populations as well as on key indicators of social well-being. The Absheron–Khizi economic region stands out as one of the territories characterized by intensive urban development, rapid population growth, and increasingly active internal migration flows.

These dynamics contribute to the emergence of new socio-demographic risks, particularly in relation to housing provision and overall living conditions within urban environments. This article investigates the impact of housing conditions on the formation of socio-demographic risks in urban areas through the application of statistical, comparative, and spatial analysis methods.

Within the framework of the study, several core indicators are employed, including per capita living space, housing density, population density, accessibility of social infrastructure, employment levels, and educational attainment.

The results of the analysis suggest that uneven spatial development and structural deficiencies within the housing stock contribute significantly to the intensification of social risks.

In particular, newly developed residential zones often face limited access to social services and insufficient transport connectivity, which negatively affects the quality of life of residents [5].

The article also proposes a set of recommendations aimed at improving housing policy from the perspectives of urban planning and regional governance.

These include the more balanced distribution of social services, the refinement of housing strategies, and the integration of demographic forecasts into planning processes.

The findings confirm the strategic importance of housing conditions in ensuring sustainable social development in urban settings.

In the contemporary period, the acceleration of urbanization has become one of the key drivers of socio-economic development in regions.

The growth of urban populations, the intensification of migration processes, and structural transformations within settlement systems have further increased the relevance of demographic research. Owing to its proximity to the capital city, the Absheron–Khizi economic region is considered one of the most dynamically developing areas in terms of urbanization within the country.

The main objective of this study is to provide a geographical analysis of demographic dynamics, urbanization trends, and structural changes in the population of the region's cities.

To achieve this aim, the research focuses on identifying trends in urban population growth, assessing the role of migration processes, and determining the key characteristics of demographic structure.

Theoretical and Methodological Framework. The interrelationship between demographic processes and regional development has been extensively examined in both geographical and demographic scholarship.

Urbanization directly affects the spatial distribution of population, the formation of labor resources, and the development of social infrastructure.

The analysis of indicators such as population growth, density levels, and natural and mechanical growth rates allows for the identification of the specific features of regional demographic development.

Demographic Dynamics of the Urban Population. In recent years, the cities of the Absheron–Khizi economic region have experienced a steady increase in population.

This growth is primarily associated with the expansion of urban economic activities, the enlargement of the housing stock, and the intensification of settlement processes in peri-urban areas surrounding the capital. A comparative analysis of demographic trends across cities indicates that population growth rates are higher in major industrial and service centers.

The construction of new residential areas, along with improvements in transport infrastructure, has contributed to spatial differentiation in population distribution.

The rising population density, in turn, has led to more intensive land use within urban areas and an increased demand for social services.

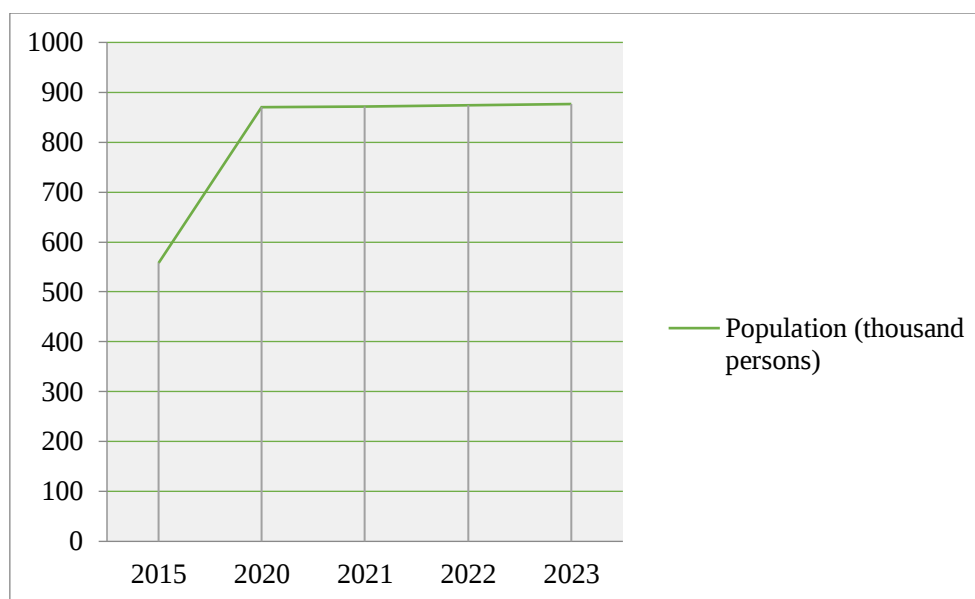


Figure 1. Population growth in the Absheron–Khizi economic region

Source: State Statistical Committee of the Republic of Azerbaijan.

Between 2015 and 2023, the population of the Absheron–Khizi economic region increased markedly. In 2015, the total population stood at 557.8 thousand persons, rising to 870.2 thousand by 2020. Although the pace of growth moderated in subsequent years, an upward trend persisted, with the population reaching 871.2 thousand in 2021, 874.1 thousand in 2022, and 876.5 thousand in 2023. These figures indicate a stable pattern of population growth in the region over the past five years. The most pronounced increase occurred during the 2015–2020 period, which can be associated with the expansion of economic activities and the development of social infrastructure in regional urban centers.

Migration Processes and Urban Development. Internal migration constitutes one of the key drivers of demographic growth in the region.

The movement of population from rural settlements to urban areas contributes to a higher level of urbanization.

Under the influence of the capital city, suburbanization tendencies have intensified, leading to the emergence of new settlement zones in peri-urban areas.

These processes also affect the structure of the labor market by fostering increased employment opportunities in both the service and industrial sectors.

At the same time, the growing intensity of migration flows introduces new challenges for the planning of urban infrastructure and the effective provision and optimization of social services.

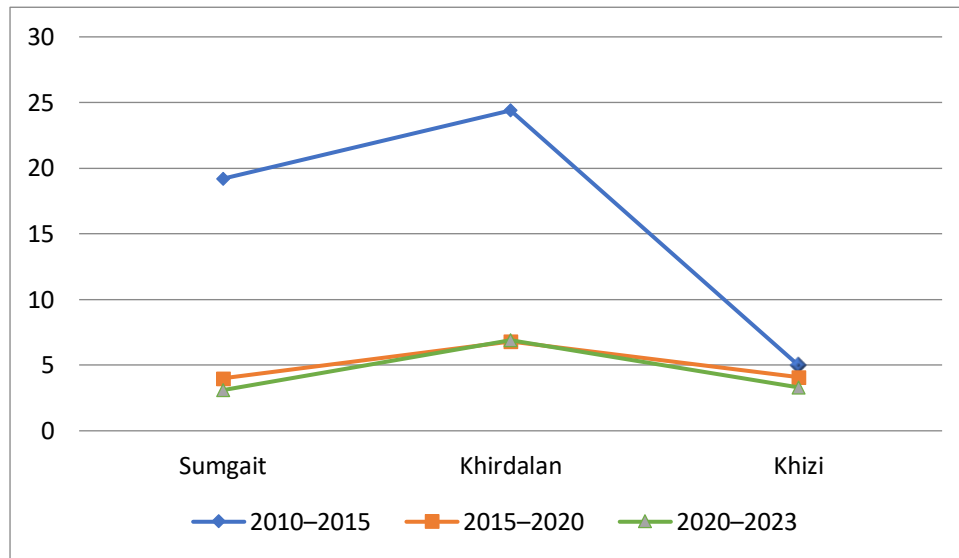


Figure 2. Growth rate of the urban population (%)

Source: State Statistical Committee of the Republic of Azerbaijan.

The statistical indicators demonstrate that the dynamics of urban settlement in the Absheron–Khizi economic region have followed differentiated developmental trajectories across distinct periods. During 2010–2015, a relatively high intensity of population growth was observed in the cities of the region. In this phase, the growth rate in Khirdalan reached 24.4%, which can be explained by its location within the suburban urban zone of the capital and the expansion of newly developed residential areas. In Sumgait, a 19.2% increase was associated with the development of industrial and service sectors, as well as the strengthening of internal migration flows. In contrast, Khizi recorded a comparatively low growth rate of 5.0%, which may be attributed to limited urban functions and weak migration attractiveness [6].

Over the period 2015–2020, a general decline in growth rates across all cities indicates a certain stabilization in urban demographic development. During this stage, population growth amounted to 4.0% in Sumgait, 6.8% in Khirdalan, and 4.1% in Khizi. A comparative assessment shows that Khirdalan continued to exhibit the highest growth rate, reflecting the ongoing process of suburbanization and the strengthening of economic linkages with the capital. At the same time, the decline in Sumgait's growth rate may be interpreted as a result of the city approaching a level of spatial saturation and a relative weakening of natural population increase.

In 2020–2023, the further moderation of growth rates indicates that urban demographic processes in the region have entered a new qualitative stage. During this period, population growth reached 3.1% in Sumgait, 6.9% in Khirdalan, and 3.3% in Khizi. The relatively higher growth rate in Khirdalan can be explained by its increasing integration into the Baku agglomeration's sphere of influence and the outward relocation of population toward peri-urban areas. Meanwhile, the persistently low growth in Khizi is linked to the limited development of urban infrastructure and economic functions.

Overall, although a declining trend in urban population growth rates has been observed in the Absheron–Khizi economic region over the studied period, this should not be interpreted as a stagnation of urban development. Rather, it reflects a transition toward a more stable and regulated stage of

urbanization. Within the regional urban system, Khirdalan has emerged as the principal driver of demographic growth, confirming the presence of migration flows directed from peripheral areas toward central and peri-central zones.

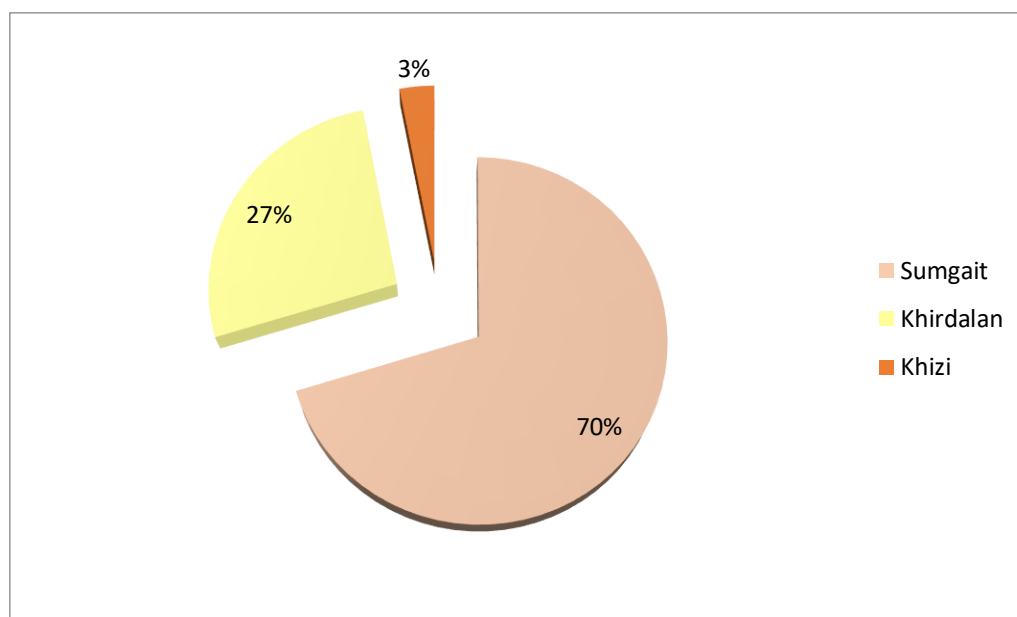


Figure 3. Urban Population Structure

Source: State Statistical Committee of the Republic of Azerbaijan.

The analysis of statistical indicators demonstrates that the urban settlement system of the Absheron–Khizi economic region is characterized by a spatially uneven distribution of the population. According to the available data, 357.2 thousand people, or 70.3% of the total urban population of the region, are concentrated in Sumgait city, 135.4 thousand people, or 26.6%, reside in Khirdalan city, while 15.6 thousand people, or 3.1%, are located in Khizi city.

This structural distribution indicates the monocentric nature of urban development in the region. In this regard, Sumgait city functions as the main centre of attraction within the urban system due to its industrial capacity, well-developed socio-economic infrastructure, and advantageous transport-geographical position. As a result, the concentration of the majority of the urban population in this city confirms a high level of spatial centralization within the urban structure.

At the same time, the fact that Khirdalan accounts for more than one quarter of the total urban population reflects its rapid urban development in recent years. This process can be associated with the expansion of the Baku metropolitan area, the formation of new residential zones, and the intensification of labour migration flows. Accordingly, Khirdalan can be assessed as a secondary yet dynamically developing centre within the regional urban structure [1].

The relatively low population share of Khizi city can be explained by its limited population size, weak diversification of economic functions, and comparatively slow development of urban infrastructure. This situation reflects spatial differentiation in the level of urbanization within the region and the formation of a functional hierarchy among cities.

Overall, the analysis of the population structure confirms that the urban system of the Absheron–Khizi economic region is organized according to a pattern of a dominant core centre (Sumgait) and developing peripheral zones (Khirdalan and Khizi), while spatial concentration trends in population distribution continue to persist.

The structural analysis of the urban population further shows that in 2023, Sumgait city maintained a dominant position within the urban system of the Absheron–Khizi economic region, accounting for more than 70% of the urban population. At the same time, a comparison of growth indicators suggests that Khirdalan city is undergoing a more dynamic phase of demographic development. Thus, although Sumgait remains the dominant structural centre of the regional urban space, the main direction of demographic growth is increasingly observed in peri-urban areas, particularly in Khirdalan.

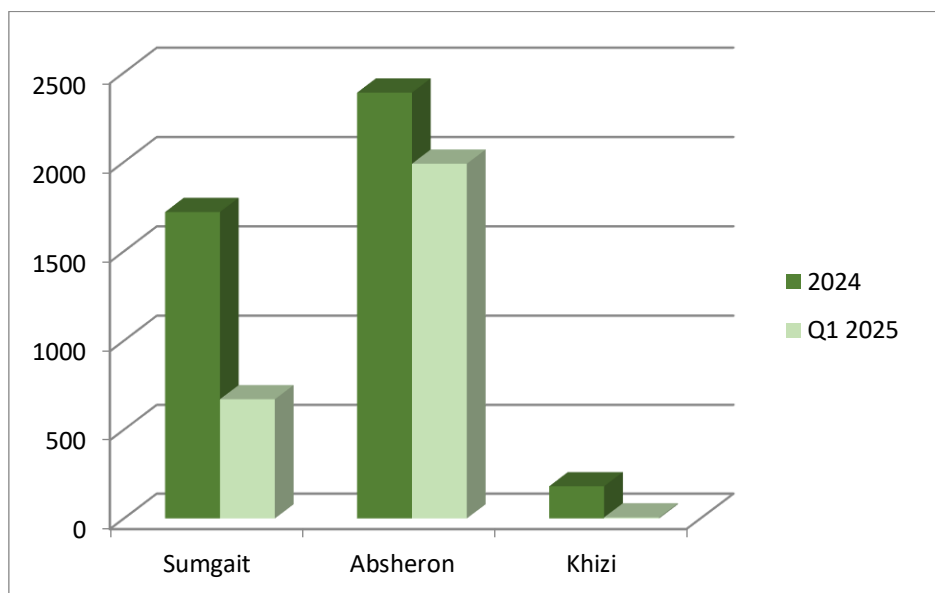


Figure 4. Dynamics of newly created jobs in the Absheron–Khizi economic region

Source: State Statistical Committee of the Republic of Azerbaijan.

In 2024, the total number of newly created jobs in the Abşeron–Khizi economic region demonstrates notable variation across its different administrative territorial units. In the city of Sumqayıt, 1,720 new jobs were created, while the Abşeron district accounted for 2,388 jobs, and the Khizi district recorded 181 newly established jobs [6].

These figures indicate that the Abşeron district emerged as the leading administrative unit in terms of new job creation within the region, reflecting more intensive economic development and investment activity in areas where employment opportunities expand more rapidly. In the first quarter of 2025, the number of new jobs amounted to 671 in Sumqayıt, 1,990 in the Abşeron district, and only 6 in the Khizi district. Compared with the total figures of the previous year, these data reveal that job creation during the initial period of the year proceeded at differing rates across the region.

In particular, the relatively high number of new jobs in the Abşeron district suggests the continuation of economic dynamism in this area. In Sumqayıt, employment growth appears to follow a more moderate trajectory, whereas in Khizi, the creation of new jobs remains at a minimal level.

Overall, the table reflects the degree of spatial concentration in job creation and highlights disparities in employment opportunities across the region. These findings serve as an important empirical basis for economic planning and the formulation of regional development strategies.

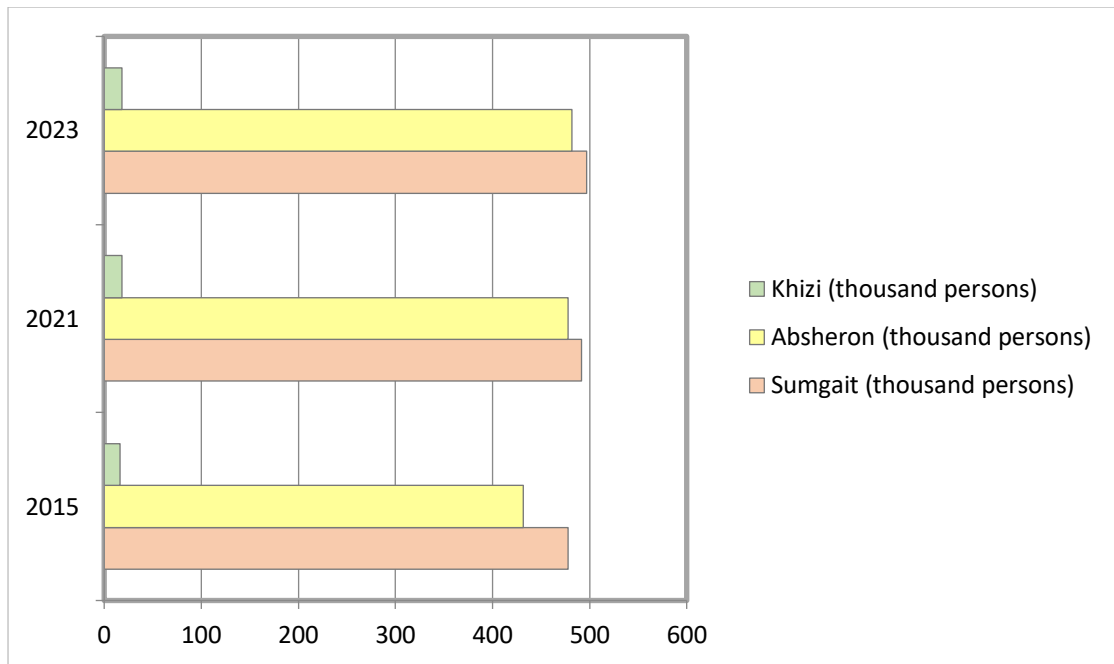


Figure 5. Yearly dynamics of population size in the cities of the Absheron–Khizi economic region
Source: State Statistical Committee of the Republic of Azerbaijan.

The analysis of indicators for the period 2015–2023 demonstrates that population growth in the major urban centers of the region has been continuous and relatively stable. Thus, the population of Sumgait city increased from 478 thousand people in 2015 to 492 thousand in 2021, reaching 497 thousand in 2023 [6].

This growth trend can be explained by the development of industrial and service sectors in the city, the strengthening of functional linkages with the metropolitan agglomeration, and the intensity of internal migration flows.

A similar demographic dynamic is observed in Absheron District. The population, which stood at 432 thousand people in 2015, increased to 478 thousand in 2021 and reached 482 thousand in 2023.

This growth is associated with the expansion of suburbanization processes, the construction of new residential areas, and the development of transport infrastructure.

As Absheron is located within the influence zone of the capital, the intensity of settlement in this area remains high.

In Khizi District, population growth is characterized by a slower but steady trend. The population increased from 16 thousand people in 2015 to 18 thousand in 2021, reaching 18.5 thousand in 2023. The mountainous relief of the region, limited urban functions, and relatively weak development of economic activities are considered the main factors contributing to the low population growth rate.

Overall, the presented indicators demonstrate the uneven spatial distribution of the population in the Absheron–Khizi economic region and the centralized nature of the urbanization process.

The higher demographic growth in major urban centers is of significant importance for regional socio-economic planning and the optimization of urban infrastructure.

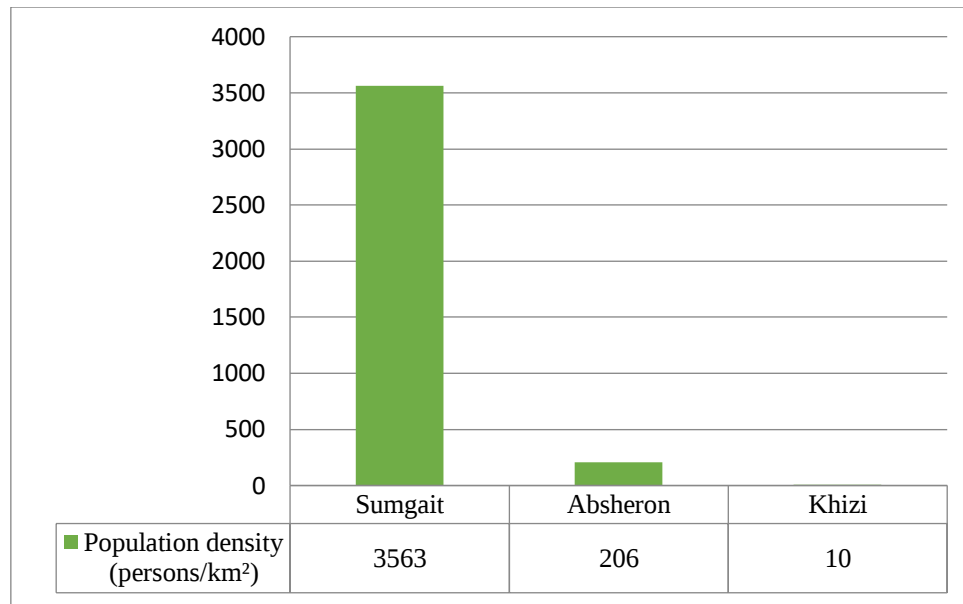


Figure 6. Population density (people per square kilometer)

Source: State Statistical Committee of the Republic of Azerbaijan.

Statistical data indicate that population density indicators in the Absheron–Khizi economic region demonstrate significant spatial variation between urban centers and districts. In Sumgait city, the population density amounts to 3,563 persons per km², which confirms its status as the leading urban center of the region. This high density can be explained by the development of industrial and service sectors, the extensive urban infrastructure, and the concentration of the population within the urban space [6]. In Absheron District, the population density is recorded at 206 persons per km². This figure reflects a more dispersed settlement pattern and indicates that the urbanization process is largely concentrated in urban centers. The spatial distribution of the population within the district confirms the uneven nature of the regional urban structure. In Khizi District, the population density is only 10 persons per km², which reflects the low intensity of urban development and a sparsely populated settlement pattern. The natural-geographical conditions of the district and the limited scope of economic activities are key factors determining the low level of urbanization in this area.

Overall, population density indicators clearly illustrate the spatial concentration of urban systems and the center–periphery structure within the Absheron–Khizi economic region. While Sumgait city stands out with its high density and urban center status, the low density in Absheron and Khizi districts reflects the spatial differentiation of urban development. These indicators provide a solid empirical basis for both urban planning and demographic analysis.

Table 1.
Labour market

	2015	2020	2021	2022	2023	2024
Labor force, persons	287218	407797	409577	411842	413677	414906
Number of employed population, persons	272393	377741	384120	388018	390703	394426
Unemployment rate, percent	5,2	7,4	6,2	5,8	5,6	4,9

The analysis of the region's labour market indicators shows that in recent years significant structural changes have occurred in the formation of labour resources and the level of employment. The observed increase in the labour force is associated with the expansion of demographic potential, the acceleration of urbanisation processes, and the diversification of economic activities.

Over the period 2015–2024, the growth of the labour force from 287.2 thousand to 414.9 thousand persons indicates an increasing number of people entering the regional labour market. This dynamic is closely linked to the expansion of urban settlement patterns and the intensification of migration flows.

A steady upward trend is also observed in the number of employed population. In 2015, the employed population amounted to 272.4 thousand persons, reaching 394.4 thousand persons in 2024. This increase can be explained by the creation of new jobs, the development of the industrial and service sectors, as well as the expansion of entrepreneurial activity. The rise in employment serves as one of the key indicators of the region's socio-economic development [6].

The dynamics of the unemployment rate are characterised by fluctuations over certain periods. In 2020, the unemployment rate increased to 7.4 percent, which may be attributed to the impact of global and regional economic processes. However, in the subsequent years, this indicator declined, reaching 4.9 percent in 2024, which reflects a gradual restoration of equilibrium in the labour market. Overall, the analysis of labour market indicators demonstrates an expansion of employment opportunities in the region, an increase in the economic activity of the labour force, and the positive influence of urban development processes on the structure of labour resources. These trends should be considered as key factors in regional planning and the formulation of sustainable development strategies.

CONCLUSION

The conducted analysis indicates that demographic dynamics in the cities of the Absheron–Khizi economic region are largely shaped by the influence of urbanisation processes. Migration flows, the concentration of economic activities, and changes in settlement structure represent the key factors determining the demographic development directions of the region. For the future, ensuring sustainable urban development requires taking into account the spatial characteristics of population growth, promoting the balanced development of social infrastructure, and applying demographic forecasting in regional planning processes.

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