

URBAN SETTLEMENT PATTERNS AND SOCIO-ECONOMIC DEVELOPMENT OF CITIES IN THE REPUBLIC OF AZERBAIJAN

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Annotation

The study examines spatial distribution, demographic dynamics, and functional specialization of these urban centers, with particular attention to the capital city of Baku and other significant nodes. Authors examine the contemporary urban settlement structure and socio-economic development patterns of cities in the Republic of Azerbaijan, with a focus on urban centers under republican subordination. The analysis reveals significant regional disparities in urban population distribution, with over half of the urban population concentrated in the Baku and Absheron-Khizi economic regions, underscoring the emergence of the Baku metropolitan area as a major urban agglomeration in the South Caucasus.

The paper identifies a steady increase in the urbanization rate from 52.4% in 2005 to 54.5% in 2024, driven primarily by rural-to-urban migration and socio-economic factors that attract younger populations to urban centers. Despite positive urban growth, the research documents a marked decline in reproduction rates across both urban and rural areas, raising concerns about long-term demographic sustainability. The gender and age structure analysis points to a relatively balanced gender ratio and a youth demographic advantage in cities, linked to educational and labor migration.

The findings provide critical insights for policymakers aiming to foster equitable spatial development, enhance urban-rural linkages, and promote inclusive socio-economic progress throughout Azerbaijan.

Keywords: Urbanisation, Regional development, Population dynamics, Rural-to-urban migration, Urban agglomeration

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Introduction

At the current stage of societal development, cities play a vital role as centers of socio-economic growth, contributing to the dynamic and systematic development of the regions of the Republic of Azerbaijan. According to the "Classification of Administrative-Territorial Units" (2024) of the Republic of Azerbaijan, adopted on February 16, 2024, the contemporary settlement structure of the country

has been defined. In this classification, the status of cities is determined in accordance with the legal and regulatory acts of the Republic of Azerbaijan [4].

The article explores the patterns of urban settlement development and the socio-economic characteristics of urban growth in the Republic of Azerbaijan, using the example of cities under republican subordination, which are now recognized in research as major urban centers of the country.

Analysis and comparison

In the modern stage of humanity cities serve as crucial hubs for regional economic growth, innovation, and social transformation. They act as centers of resource concentration, infrastructure development, and service provision, driving productivity and improving living standards. Urban areas facilitate the aggregation of human capital and foster networks that stimulate technological advancement and cultural exchange, thereby playing a pivotal role in shaping balanced and sustainable regional development.

Cities in the Republic of Azerbaijan play a vital role as centers of socio-economic development within their regions. They contribute to economic diversification, employment generation, and infrastructure modernization. Urban areas also act as hubs for innovation and public services, supporting the overall advancement and integration of the country's regional economies [2].

As the capital city, Baku serves as the administrative, managerial, and economic center of the Republic of Azerbaijan and constitutes a distinct economic region – the Baku Economic Region [6]. The city comprises 59 settlements and 12 urban districts. These districts include Binagadi, Khatai, Khazar, Garadagh, Narimanov, Nasimi, Nizami, Pirallahi, Sabunchu, Sabail, Surakhani, and Yasamal.

The city of Ganja includes seven settlements: Javadkhan, Hajikend, Goygol (settlement), Mahsati, Natavan, Sadylli, and Shykhzamanly [5].

These urban centers, particularly Baku and Ganja, exemplify the concentration of administrative, economic, and socio-cultural functions, reinforcing their roles as strategic nodes within the national spatial framework [3]. Baku, with its extensive urban infrastructure and diversified economy, acts as a key driver of national GDP and is home to major institutions, industrial complexes, and international enterprises. Its administrative structure – comprising 12 urban districts and multiple settlements – enables decentralized governance and targeted urban management strategies.

Khankandi is a city located in the South Caucasus region, within the internationally recognized borders of Azerbaijan. It lies on the Karabakh Plateau, characterized by a moderate climate with cold winters and warm summers. The city has historically held a strategic position due to its location along internal routes across the Karabakh region.

Khankandi's urban development reflects Soviet-era planning, featuring a compact city layout with wide streets, standardized apartment blocks, and central administrative and cultural buildings. Economically, Khankandi once hosted a modest industrial base, including food processing, light manufacturing such as textiles, and machine-building. After Azerbaijan regained control of the city in 2023, efforts have begun to reintegrate it into the national economy, with a focus on rebuilding infrastructure and public services.

Lankaran is a city located in the southeastern part of Azerbaijan, near the Caspian Sea. It is situated on the Lankaran Lowland, which is known for its fertile soils and favorable subtropical climate. The region receives high annual precipitation and has warm, humid summers and mild winters, making it suitable for diverse agricultural activities. The city's geographical position also gives it strategic importance due to its proximity to both the sea and a major international border.

Economically, Lankaran is one of the prominent agricultural centers of Azerbaijan. The region is particularly known for tea cultivation, citrus fruits, rice, vegetables, and tobacco. Tea production in Lankaran has historical roots and remains an important part of the local economy, supported by the favorable climate and irrigation systems. Livestock farming and beekeeping are also practiced. In recent years, there have been efforts to modernize agriculture and expand food processing industries in the area. The city also benefits from trade and transport connections due to its location on key north–south transport corridors, including the Baku–Astara railway and highway, facilitating commerce with Iran and other regions. Urbanistically, Lankaran has a well-developed city center with administrative, cultural, and educational institutions.

Mingachevir is a city located in central Azerbaijan, on the banks of the Kura River, and is one of the country's key urban and industrial centers. Its geographical position on the river and near major transportation routes gives it strategic importance, particularly in terms of energy production and inland connectivity. The city lies in a semi-arid zone with a warm climate, characterized by hot summers and mild winters, which supports certain types of agriculture and industrial activity.

One of the most defining features of Mingachevir is its role in Azerbaijan's energy sector. It is home to the Mingachevir Hydroelectric Power Station (HPS), the largest of its kind in the country, which plays a crucial role in supplying electricity to the national grid. The presence of the Mingachevir Reservoir, formed by the dam on the Kura River, not only enables power generation but also supports irrigation and fishing industries in the surrounding areas. The city is sometimes referred to as the “city of lights” due to its significant contribution to electricity production.

Naftalan is a small city located in the foothills of the Lesser Caucasus Mountains, approximately 330 kilometers west of Baku. It lies at an altitude of about 200 meters above sea level and experiences a dry subtropical climate, with hot summers and mild winters. The city is surrounded by steppe landscapes and is relatively close to major transport routes that connect it with Ganja and other regional centers. Its geographical setting makes it suitable for both therapeutic tourism and limited agricultural activities.

Naftalan is unique in Azerbaijan and internationally renowned for its rare therapeutic oil, known as Naftalan oil. This non-combustible, medicinal-grade crude oil has been used for centuries for its supposed healing properties, especially for treating skin diseases, joint disorders, and neurological conditions. The city's economy is heavily centered on the health tourism sector, with numerous sanatoriums, wellness centers, and medical resorts built around the use of Naftalan oil therapies. The spa industry is the backbone of Naftalan's economy and is supported by both domestic and international visitors seeking treatment.

Urban development in Naftalan reflects its specialization as a health resort town. The city is relatively small and compact, with an infrastructure oriented toward healthcare, hospitality, and tourism services. Sanatorium complexes, hotels, and recreational areas dominate the urban landscape, along with parks and cultural venues that serve both visitors and residents. Although its population is modest, Naftalan has seen infrastructure improvements in recent years, including the renovation of health facilities and roads, as part of national efforts to boost medical tourism.

Sumgayit is a major industrial city in Azerbaijan, located on the western coast of the Caspian Sea, about 30 kilometers northwest of Baku. It lies on the Absheron Peninsula, in a dry semi-arid zone characterized by hot summers, mild winters, and low annual precipitation. Its coastal location and proximity to the capital make it a strategically important urban and economic center, well integrated into national transportation networks, including road and rail links.

Historically, Sumgayit became known for its heavy industry, particularly chemical production, metallurgy, and oil refining. Large industrial complexes were established, including plants for aluminum, synthetic rubber, and petrochemicals.

Since Azerbaijan's independence, efforts have been made to modernize and diversify Sumgayit's economy. Many outdated Soviet-era factories have been closed or rehabilitated, and a significant development has been the establishment of the Sumgayit Chemical Industrial Park (SCIP), one of the largest industrial parks in the South Caucasus. SCIP hosts a range of modern enterprises in petrochemicals, metallurgy, electronics, and construction materials, positioning the city as a center for sustainable industrial growth.

Shaki is a historic city located in the northwestern part of Azerbaijan, at the southern foothills of the Greater Caucasus Mountains. It lies at an elevation of about 500–700 meters above sea level, surrounded by forested mountains and valleys. The region enjoys a mild, temperate climate with warm summers and cool, snowy winters, and it benefits from natural protection against harsh weather, making it suitable for agriculture and tourism. Its geographical location along historical trade routes, including the Silk Road, has played a significant role in shaping the city's identity and economy.

Tourism plays a vital role in Shaki's modern economy, driven by its rich cultural heritage, unique architecture, and scenic landscapes. The city is famous for the Palace of the Shaki Khans, a UNESCO World Heritage Site, as well as its historic caravanserais, mosques, and residential architecture that reflect Persian, Ottoman, and local influences. Shaki's urban core maintains a strong historical character, with cobblestone streets and terraced neighborhoods built to fit the mountainous terrain. Modern developments are concentrated in the lower parts of the city, while the older quarters are preserved as cultural landmarks.

Shirvan is a city located in the central part of Azerbaijan, on the left bank of the Kura River, within the lowland region known as the Shirvan Plain. It lies at a relatively low altitude and has a dry subtropical climate, characterized by hot, arid summers and mild winters. The flat terrain and proximity to the Kura River have historically supported irrigation-based agriculture, although water scarcity and soil salinity have posed challenges in some areas.

Economically, Shirvan has been known for its role in the oil and gas sector. The city serves as a regional hub for nearby rural settlements, providing services, trade opportunities, and employment. Though not a major cultural or tourist destination, it has historical roots and local traditions tied to the broader Shirvan region, once a historic khanate and cultural center.

Yevlakh is a city located in central Azerbaijan, situated on the Kura River within the Kura-Aras Lowland. It lies at a low elevation and features a dry subtropical climate, with hot summers, mild winters, and relatively low annual precipitation. Its central position gives it strategic importance as a transportation and logistical hub, connecting western and eastern regions of the country. Major railways and highways pass through Yevlakh, including routes linking Baku with Ganja and the western borders, as well as access to the liberated territories of Karabakh.

Economically, Yevlakh is a regional center for agriculture, trade, and transport. The surrounding lands are fertile and extensively irrigated, supporting the cultivation of cotton, grains, vegetables, and fruits. The city's urban development reflects its role as a mid-sized administrative and economic center. It has a planned layout with residential areas, public institutions, and commercial zones. While it does not have the cultural or historical prominence of cities like Shaki or Ganja, Yevlakh functions as an important service center for nearby districts. It offers educational, medical, and administrative services to the surrounding population and has basic infrastructure including schools, hospitals, and sports facilities.

The ongoing expansion and modernization of these cities are closely aligned with national development programs, such as the “Socio-Economic Development Strategy of the Republic of Azerbaijan for 2022–2026,” which emphasizes sustainable urban planning, digital infrastructure, and regional integration [9]. These initiatives aim to enhance the resilience and competitiveness of urban centers while addressing disparities between urban and rural areas.

The detailed structure of the cities (under republican subordination) of the Republic of Azerbaijan is presented in **Table 1** below:

Table 1. Structure of cities of the Republic of Azerbaijan

<i>No</i>	<i>Cities</i>	<i>Settlements</i>	<i>Urban districts / (+) territorial administrative unit</i>
1.	Baku	59	12 + 21
2.	Ganja	7	0 + 4
3.	Khankandi	1	–
4.	Lankaran	8	0 + 1
5.	Mingachevir	0	–
6.	Naftalan	0	0 + 1
7.	Sumgayit	2	0 + 4
8.	Shaki	2	0 + 1
9.	Shirvan	2	0 + 1
10.	Yevlakh	3	0 + 1

Source: SSC AR, 2024

According to the latest data (State Statistical Committee of the Republic of Azerbaijan, 2024), there is one city in the country with a population exceeding 500,000 inhabitants (Baku). Four cities – Sumgayit, Ganja, Khirdalan, and Mingachevir – have populations greater than 100,000. Ten cities have populations above 50,000, and 23 cities have populations exceeding 20,000 residents. In the remaining 41 cities, the population is under 20,000 each. Additionally, 26 settlements have populations above 20,000; however, they still retain the status of settlements rather than cities [5].

Considering the population size and regional differentiation in settlement patterns, cities with populations exceeding 50,000 are geographically distributed quite unevenly across the economic regions of the country. **Table 2** below presents the indicators of cities in the Republic of Azerbaijan with populations exceeding 50,000 inhabitants.

Table 2. Cities with populations exceeding 50,000 inhabitants

<i>No</i>	<i>Cities</i>	<i>Population, thsd. person</i>	<i>Economic Region</i>
1.	Baku	2 330,4	Baku
2.	Sumgayit	422,6	Absheron-Khizi
3.	Ganja	328,8	Ganja-Dashkasan
4.	Khirdalan	315,6	Absheron-Khizi
5.	Mingachevir	101,2	Central Aran
6.	Lankaran (with Liman)	86,7	Lankaran-Astara

7.	Nakhcivan	83,8	Nakhcivan AR
8.	Shirvan	83,5	Shirvan-Salyan
9.	Shamkir	71,9	Gazakh-Tovuz
10.	Yevlakh	70,3	Central Aran
11.	Khacmaz (with Khudat)	68,2	Guba-Khacmaz
12.	Shaki	67,1	Shaki-Zagatala
13.	Jalilabad (with Goytapa)	56,3	Lankaran-Astara
14.	Masalli	50,1	Lankaran-Astara
15.	Fuzuli (with Horadiz)	50,1	Karabakh

Source: SSC AR, 2019 & 2024

This uneven urban distribution underscores the importance of region-specific development policies aimed at addressing demographic concentration, infrastructure provision, and balanced regional growth. Understanding these spatial dynamics is critical for effective urban planning, resource allocation, and sustainable development strategies across Azerbaijan [7].

Regional differentiation of cities creates distinctive patterns in the development of the regions of the Republic of Azerbaijan. More than 3,068.6 thousand people, accounting for 56.4% of the country's total urban population, are concentrated solely in the Baku and Absheron-Khizi economic regions. It is noteworthy that the urbanization rate across the country was 54.6% in 2019 and slightly decreased to 54.5% in 2024.

The concentration of population in Baku and its immediate vicinity – including the cities of Sumgayit and Khirdalan – has facilitated the formation of the largest urban agglomeration in the South Caucasus and Caspian regions: the Baku metropolitan area [6]. Additionally, the country hosts several other urban development centers, such as Ganja, Mingachevir-Yevlakh, Shirvan, Lankaran (together with Masally and Jalilabad), Nakhchivan, Fuzuli, and Khachmaz. In the future, the potential growth of cities may promote the development of urban agglomeration systems in regions such as Shamkir-Dal-lar, Fuzuli-Aghdam, Khachmaz-Khudat, Lankaran-Liman, Masally-Arkivan, Jalilabad-Goytapa, among others [1].

Figure 1 presents a schematic map of the current distribution of the urban population across the regions of the Republic of Azerbaijan, based on data from 15 cities with populations exceeding 50,000 inhabitants.

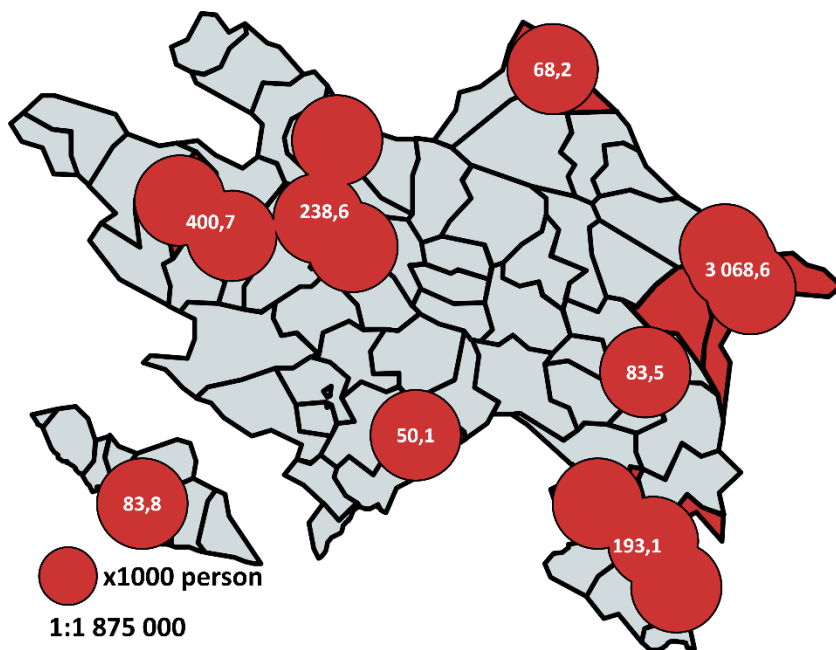


Figure 1. Map of the current distribution of the urban population

According to the data provided by the State Statistical Committee of the Republic of Azerbaijan for the year 2019, the regional urbanization structure of the country is as follows: Baku – 42.8%, Absheron-Khizi – 13.7%, Ganja-Dashkasan – 7.7%, Central Aran – 5.3%, Lankaran-Astara – 4.4%, Karabakh – 4.4%, Shirvan-Salyan – 4.2%, Guba-Khachmaz – 3.3%, Shaki-Zagatala – 3.2%, Gazakh-Tovuz – 2.9%, Nakhchivan AR – 2.5%, Mil-Mughan – 2.4%, Daghlig Shirvan – 2.0%, and Eastern Zangezur – 1.2%.

As evident, nearly half of the country's total urban population is concentrated in the capital city itself. Other highly urbanized economic regions include Absheron-Khizi, Ganja-Dashkasan, and Central Aran. In contrast, the lowest urbanization rates are observed in the Mountainous Shirvan and Eastern Zangezur economic regions. A detailed breakdown of the regional urban population distribution is presented in **Figure 2** below.

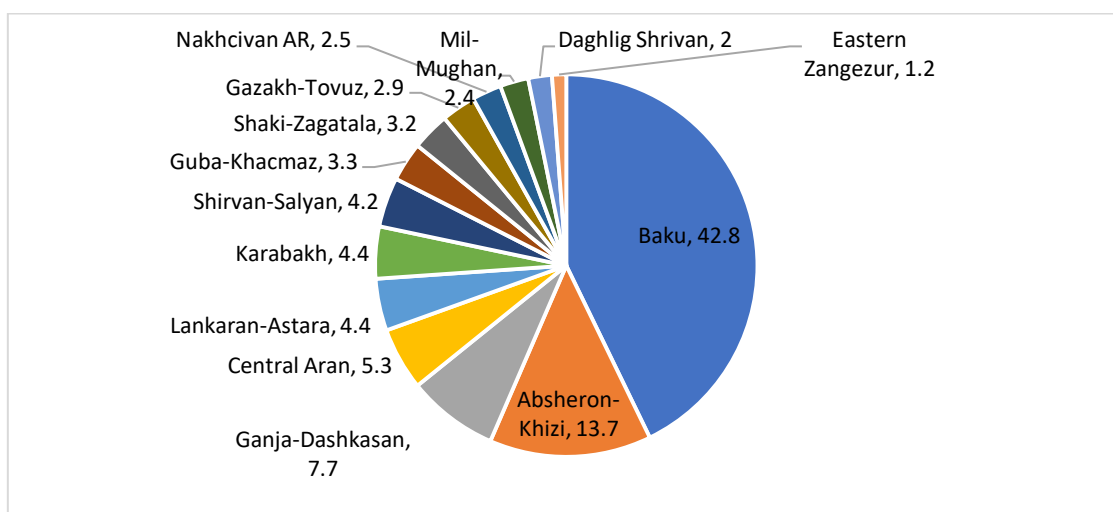


Figure 2. Regional urban population distribution in the Republic of Azerbaijan (in percentage)

Source: SSC AR, 2024

The relatively low urbanization levels in regions like Daghlig Shirvan and Eastern Zangezur can be attributed to their geographic and socio-economic characteristics, including rugged terrain, limited industrial development, and historical factors that have constrained urban growth. These disparities highlight the ongoing challenges of achieving balanced regional development and underscore the need for targeted policies to stimulate urbanization and economic activity in less developed areas.

Addressing regional imbalances requires integrated strategies that promote infrastructural investments, enhance connectivity, and support small and medium-sized urban centers. Such measures are critical to fostering sustainable urban growth, reducing migration pressures on major cities, and ensuring equitable socio-economic development across all regions of Azerbaijan.

Materials and methods

From 2019 to 2024, the urban population of Azerbaijan increased by 5.19%, while the rural population experienced a negative growth rate of -1.58% during the same period. In other words, the relative natural increase (or decrease) per 1,000 people was 27.4 for the urban population and -7.5 for the rural population, respectively. These figures indicate a high growth rate of the urban population, contrasted with a decline in rural areas. This trend is primarily attributed to mechanical migration from rural to urban areas and the socio-economic differences in living conditions between urban and rural populations.

Over the past 20 years, due to the socio-economic development of the regions – specifically the concentration of production in regional centers, the creation of new jobs, and the improvement of living conditions – cities serving as regional centers have experienced rapid growth. However, it is important to note that this has impacted rural settlement patterns, contributing to the migration of populations from villages to regional centers and the capital city. A comparative analysis of the urban-to-rural population ratio dynamics is presented in **Figure 3**.

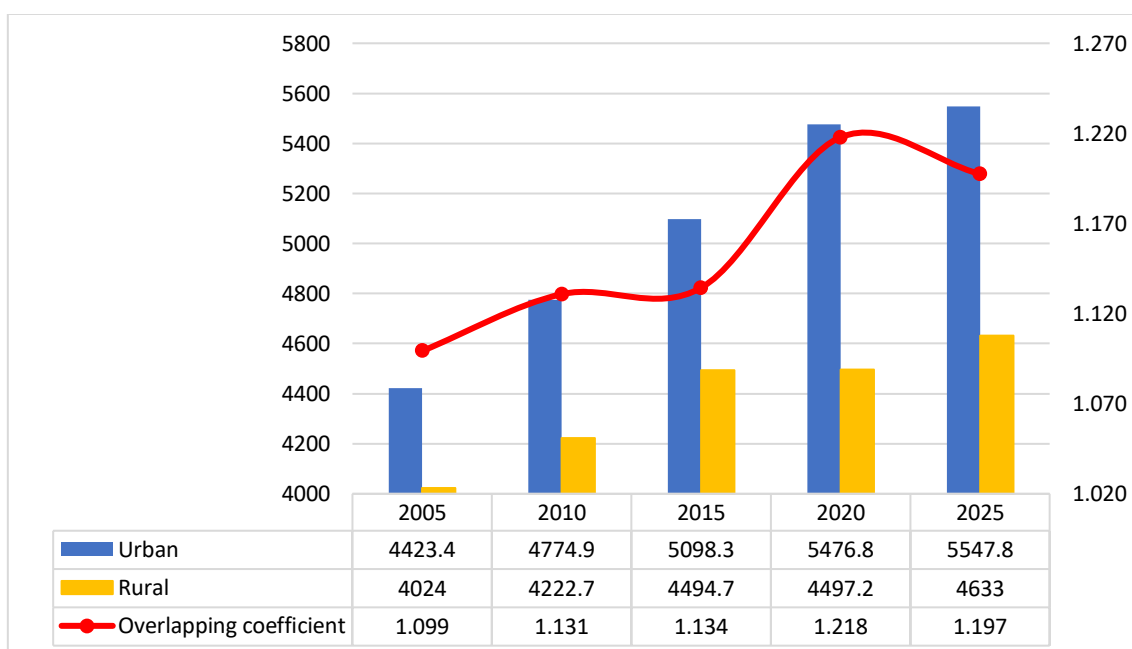


Figure 3. Comparative analysis of the urban-to-rural (U/R) population ratio dynamics during the 2005-2025 years

Source: SSC AR, 2024

As seen from the diagram, the differentiation between urban and rural populations has rapidly increased over the past 20 years. In 2005, the urbanization rate across the country was 52.4%. Over the 20-year period, it rose by 4 percentage, reaching 54.5%.

The gender structure of urban and rural populations does not significantly differ. However, it should be noted that the percentage distribution of males and females in cities is 49.2% and 50.8%, respectively, while in rural areas these figures are 50.5% and 49.5%. The predominance of males in cities is primarily associated with labor migration from mountainous and relatively underdeveloped peripheral regions to regional centers and the capital.

Cities of the Republic are well endowed with labor resources capable of sustaining the economy. The number of young people aged 14–29 in urban areas exceeds that of rural areas by 11.8%. This disparity is primarily due to two factors: (1) the positive population growth dynamics in cities, and (2) educational migration of young individuals aged 17–22 to urban centers for higher education and professional training.

However, despite the overall positive trend of urban population growth – mainly driven by mechanical increase, as mentioned above – reproduction rates have rapidly declined in both urban and rural areas over the past 20 years. A detailed illustration of this situation is presented in **Figure 4** below.

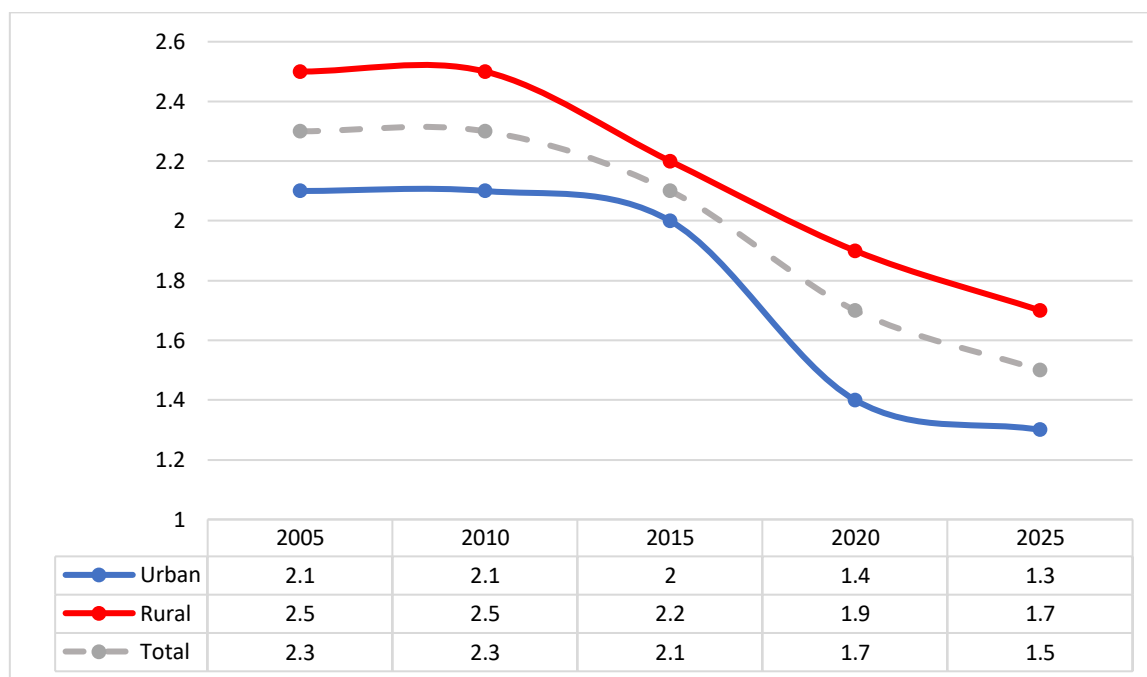


Figure 4. Comprison of the reproductive rates of the urban and rural areas during the 2005-2025 years

Source: SSC AR, 2024

Since 2015, there has been a significant decline in reproduction rates, particularly in urban areas. However, considering that urban populations continue to grow despite this decline, it indicates that the issue of population settlement in rural areas is even more acute.

This decline in reproduction rates reflects broader demographic transitions influenced by socio-economic changes, improved access to family planning, shifts in cultural attitudes toward family size, and increased participation of women in the workforce. Urban areas, in particular, tend to exhibit

lower fertility rates due to higher living costs, changing lifestyles, and greater access to education and healthcare services.

The reduction in natural population growth presents challenges for long-term demographic sustainability, especially when coupled with the continued rural depopulation and aging of the countryside. While urban areas benefit from in-migration and a relatively younger population structure, the decline in birth rates may eventually temper urban growth if not offset by continued migration or policy interventions.

In rural regions, the simultaneous effects of low fertility and out-migration exacerbate population aging and labor shortages, potentially undermining agricultural productivity and rural economic viability. These demographic trends necessitate proactive measures to support family welfare, improve healthcare access, and create economic incentives that encourage population retention and growth in both urban and rural settings [8].

To address these challenges, integrated demographic and socio-economic policies are essential. These should include the promotion of balanced regional development, enhancement of social infrastructure, and targeted support for young families. Additionally, investments in education, healthcare, and employment opportunities are critical to fostering a stable and sustainable population structure across Azerbaijan.

Results and discussion

This rural-to-urban migration has led to significant demographic shifts, intensifying urban growth while contributing to population decline and depopulation in many rural areas. The resulting demographic concentration in cities has increased demand for housing, infrastructure, social services, and employment opportunities, thereby exerting pressure on urban planning and resource management.

At the same time, the depopulation of rural settlements has posed challenges for the sustainability of agricultural activities, local economies (including SMEs), and community life in the countryside. Many villages face aging populations, reduced labor forces, and deteriorating social infrastructure, which further exacerbates disparities in living standards between urban and rural areas.

In response, government strategies have increasingly focused on fostering balanced regional development by promoting economic diversification, improving rural infrastructure, and enhancing connectivity between urban and rural areas. Initiatives aimed at supporting rural livelihoods, modernizing agriculture, and encouraging small and medium enterprises are crucial to mitigating the negative effects of rural depopulation.

Furthermore, the expansion of urban centers as regional hubs presents opportunities for creating integrated urban-rural linkages. Strengthening these connections can facilitate the flow of goods, services, and human capital, contributing to more inclusive and sustainable development across the entire country.

Figure 5 presents a map illustrating the level of urbanization (percentage of urban population) across the regions of the Republic of Azerbaijan, highlighting regional patterns and disparities in the spatial distribution of the urban population.

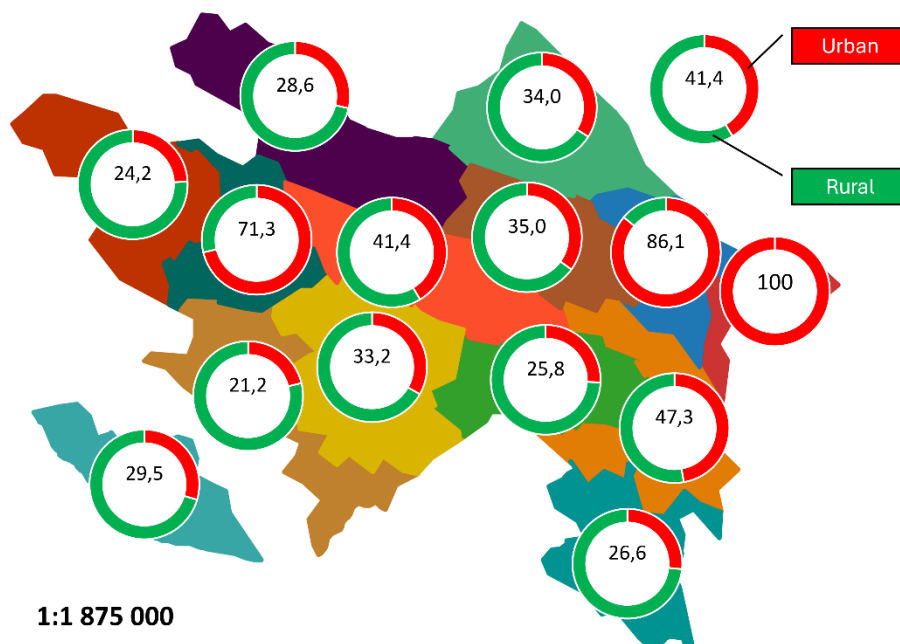


Figure 5. Urbanization in the regions of the Republic of Azerbaijan

Future urban development policies must therefore address not only the management of urban growth but also the revitalization of rural areas to ensure comprehensive socio-economic progress and spatial equity within the Republic of Azerbaijan.

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