Coğrafiya elmləri / Geographical Sciences

TERRITORIAL ORGANIZATION OF INFRASTRUCTURE AREAS IN THE MIL-MUGHAN ECONOMIC REGION

Musa Valiyev[1]*, Nariman Pashayev[1]
[1]*Institute of Geography, Ministry of Science and Education of the Republic of Azerbaijan*
**Corresponding author: musa.valiyev@geo.edu.az*

Keywords: *Mil-Mugan economic region, preschool education, secondary general education institutions, healthcare, tourism, paid services, housing and communal services*

Abstract. The Mil-Mugan economic region includes the administrative districts of Beylagan, Imishli, Saatly, and Sabirabad. It is located in the Kura-Araz lowland, mainly within the Mil and Mugan plains formed by the Kura and Araz rivers. The study aims to examine the development trends of social infrastructure sectors in the region, evaluate the level of services provided to the population, assess their impact on living standards, and identify solutions to existing problems.The research focuses on analyzing the factors influencing the organization of social sphere sectors in line with modern requirements, examining changes in sector indicators since 2000, and comparing regional indicators with national averages. It also investigates the negative effects of weak social infrastructure and explores future development opportunities.

Statistical methods, comparative analysis, historical-geographical approaches, and data from the State Statistical Committee of Azerbaijan were used in the research. The findings reveal that the availability of preschool education institutions in the region remains low, while declining natural population growth has reduced the number of students enrolled in secondary schools. In addition, the number of healthcare institutions has significantly decreased. Most social sector indicators remain below the national average.

The study also highlights that unfavorable natural-geographical conditions and insufficient infrastructure limit tourism development in the region. The volume of paid services per capita is still relatively low. Therefore, attracting both public and private investment is considered necessary for improving social infrastructure according to modern standards. The results of the study may contribute to the preparation of future regional development strategies and the improvement of social services in the Mil-Mugan economic region.

© 2026 The Author(s). Published by the Institute of Geography, Ministry of Science and Education of the Republic of Azerbaijan. This article is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

Introduction

Some of the infrastructure sectors provide the activities of economic sectors, while the majority of them serve the population. Through the activities of the sectors included in this, a wide range of the population is attracted to educational institutions at various levels, the demand for medical services is met, recreation is organized, and tangible and intangible products are obtained. Therefore, the sectors serving the population and called social infrastructure are distinguished by their very complex structure, and are organized in all settlements in the areas inhabited by the population.

For many years, the lack of funds allocated for the development of social sphere sectors has led to the formation of a weak network of facilities included in this in the regions, especially in rural areas, and the services provided have significantly lagged behind demand. This factor has influenced the intensive migration of the population from villages. Although some of them have gathered in cities, the outflow of population outside the republic has been greater (Geography of the Republic of Azerbaijan, 2015).

During the years of independence, large-scale work has been carried out to reconstruct this sector and build a network of new facilities. First of all, work has been carried out to build schools, hospitals, socio-cultural service facilities, and a transport and communication network at the level of modern requirements (Eminov, 2023).

At the same time, the financial resources allocated to many areas, mainly culture, healthcare, art, and maintaining libraries, providing qualified personnel, ensuring the material and technical base in accordance with modern requirements, and operating enterprises, are still at a low level. The funds allocated for the social protection of personnel are small, and the provision is weak.

Therefore, it is important to improve the activities of many socio-cultural infrastructure areas serving the population in the regions and to implement measures to eliminate the lag in the relative indicators of their activities compared to the average for the country. At the same time, it is necessary to conduct scientific research to solve the problems in this area.

Research object

Mil-Mugan economic region is located in the Kur-Araz lowland. The economic region is located in the Mil plain between the Kur and Araz rivers, in the Mughan plain, which separates on the right bank of both rivers (Geography of the Republic of Azerbaijan, 2015). Sabirabad district passes into the Shirvan plain in a small area (Problems of demographic development in the Aran economic region, 2022). The area of the economic region is 5.67 thousand km^2, which covers 6.55% of the country's territory (Demographic indicators of Azerbaijan – 2024, 2025, p. 78; Regions of Azerbaijan – 2024, 2025). It includes the Beylagan, Imishli, Saatly, Sabirabad administrative districts. There are 4 cities, 18 settlements, and 190 rural settlements in the economic region (Population of Azerbaijan – 2024, 2025, p. 70)

The Mil-Mugan economic region has a favorable economic and geographical position (GEO). The nationally important Hajigabul-Horadiz railway and highways, Yevlakh-Aghjabedi-Bahramtepe, Bahramtepe-Bilasuvar highways pass through its territory. The southern borders of the Mil-Mugan economic region run along the state border with Iran (Demographic development problems and population settlement in the Aran economic region, 2022; Geography of the Republic of Azerbaijan, 2015, Vol. 3)

Material and methods

To study the social infrastructure areas in the Mil-Mugan economic region, the State Statistics Committee of the Republic of Azerbaijan used periodic statistical data on education, culture (Education, science, culture in Azerbaijan, 2025), health (Health, social security and housing conditions in Azerbaijan, 2025), transport (Transport in Azerbaijan, 2024), tourism (Tourism in Azerbaijan, 2024), population, and regions (Regions of Azerbaijan, 2007-2024). Also, the provisions of the State Programs adopted for the development of the country for the near and medium term, the socio-economic development of regions (Socio-economic Development Strategy of the Republic of Azerbaijan for 2022–2026, 2022), and the scientific results of research conducted in these areas were accepted as the main sources.

For this, methods such as comparison, historical-geographical approach, mathematical-statistical, analysis and synthesis were used.

Study of the topic

Extensive research was conducted in the field of territorial organization of social infrastructure in Azerbaijan and in individual regions, studying the regional characteristics of services provided to the population during the years of independence. During this period, the territorial organization of the social sphere in the regions, changes occurring in the process of reforms, the creation and operation of a network of new facilities, their role in services provided to the population, improving the standard of living, directions for the establishment of the field in accordance with the requirements of the modern era, and the main trends of its prospective development were studied. During this period, there are studies by V.A. Efendiyev (Urbanization and urban settlements of Azerbaijan, 2022), Z.S. Mammadov (Mammadov, 2002), N.H. Ayyubov (Geography of the Republic of Azerbaijan, II and II vol., 2015), Z.N. Eminov (Eminov & Rzayeva, 2022; Eminov, 2023), N.A. Pashayev (Pashayev et al., 2010), M.Kh. Mammadov, Z.T. Imrani (Imrani & Zeynalova, 2014), H.M. Tahirova (Demographic development of villages in the Republic of Azerbaijan, 2021), E.S. Badalov (Badalov, 2016) and others in the field of studying the development of the social sphere in the regions.

At the same time, the activity of the social sphere in the regions remains low compared to the average indicators of the country. These, in turn, lead to migration of the population from villages to the capital, the growth rate of the rural population is decreasing, and there are declines in rural settlement. Therefore, it is important to continue research in the field of social infrastructure development in the regions and to develop proposals and recommendations for their regulation.

The article examines for the first time the territorial organization and regional differences of social infrastructure sectors in the Mil-Mugan economic region, the changes that have occurred as a result of the reforms carried out in this area, the reasons why the indicators reflecting the services provided are lower than the average level for the country, and the directions for solving the problem.

Analysis and discussion

The number of facilities related to the social sphere in the Mil-Mugan economic region, their territorial organization, the range of services provided and their internal differences in cost depend on the population size, development level, and urban settlement development in the administrative regions.

Preschool institutions are engaged in the training, education, and upbringing of young children. However, the coverage of children by such institutions remains low. The coverage of children aged 1-5 in the country was 37.1% at the beginning of 2025. In villages, these indicators are lower and reach 24.0% (Statistical indicators of Azerbaijan – 2024, 2025, p. 188; Education, science and culture in Azerbaijan – 2024, 2025, p. 29). Due to the small amount of funds allocated to these areas, the organization of private schools in the regions is proceeding at a slow pace.

At the beginning of 2025, 90 preschool educational institutions operated in the Mil-Mugan economic region, with 3,427 children enrolled in them (Table 1). After 2020, no new institutions were established in this area, and the number of children enrolled in them decreased to 600 in the process of decreasing natural growth.

The number of preschool educational institutions in administrative districts depends on the number of urban and rural settlements and their population. Up to 15-20 preschool educational institutions operate in the districts (Education, Science, Culture in Azerbaijan, 2025). Saatly and Sabirabad districts stand out in terms of the number of children enrolled (Figure 1). At the beginning of 2025, there were up to 34.8 thousand children aged 0-4 in the economic region. Therefore, the coverage of children by educational institutions is 9.85% (Regions of Azerbaijan – 2024, 2025, pp. 607–650). The number of children in preschool institutions is also decreasing nationwide. This decrease has been recorded by 9.5 thousand people since 2020. Therefore, the number of children per 100 places is also decreasing.

Table 1

Activities of educational institutions in Azerbaijan and the economic region

Administrative districts	Years	Number of preschool institutions	Number of children in them, people	Provision of preschool institutions (per 100 children)	Number of visible general education institutions	The number of students in them, people	Specific weight of students in the second and third grades, in percent
Economic Region	2020	91	4090	88	251	77644	12,2
	2023	90	3585	79	250	77547	14,6
	2025	90	3427	77	249	76681	14,5
Azerbaijan Rep.	2000	1790	111,0[1]	76	4548	1654[1]	75,6
	2010	1635	108,0	87	4539	1365	42,8
	2015	1722	117,2	90	4462	1353	28,5
	2020	1825	126,5	86	4431	1657	31,4
	2023	1844	118,1	80	4422	1704	31,5
	2025	1872	115,0	76	4357	1695	32,2

1 – Number of children in preschool educational institutions and secondary schools in Azerbaijan, in thousand people.

Source: Regions of Azerbaijan -2024. Baku: DSK, 2025, pp. 607-659. Education, science, culture in Azerbaijan - 2018. Baku DSK, 2019. 504 p. Statistical indicators of Azerbaijan - 2004. Baku: DSK, 2005, pp. 192, 198. Statistical indicators of Azerbaijan - 2011. Baku: DSK, 2012, pp. 202, 215, 223. Statistical indicators of Azerbaijan - 2020. Baku: DSK, 2021, pp. 197, 204. Statistical indicators of Azerbaijan - 2023. Baku: DSK, 2024, pp. 192-197. Education, science, culture in Azerbaijan – 2024. Baku State Education Commission, 2025. P. 45, 75, 87, 226-229, 235-238.

In order to expand the activities of preschool educational institutions in the region, increase the number of children involved, it is necessary to organize a new network of them, attract private funds in this area, and increase state support.

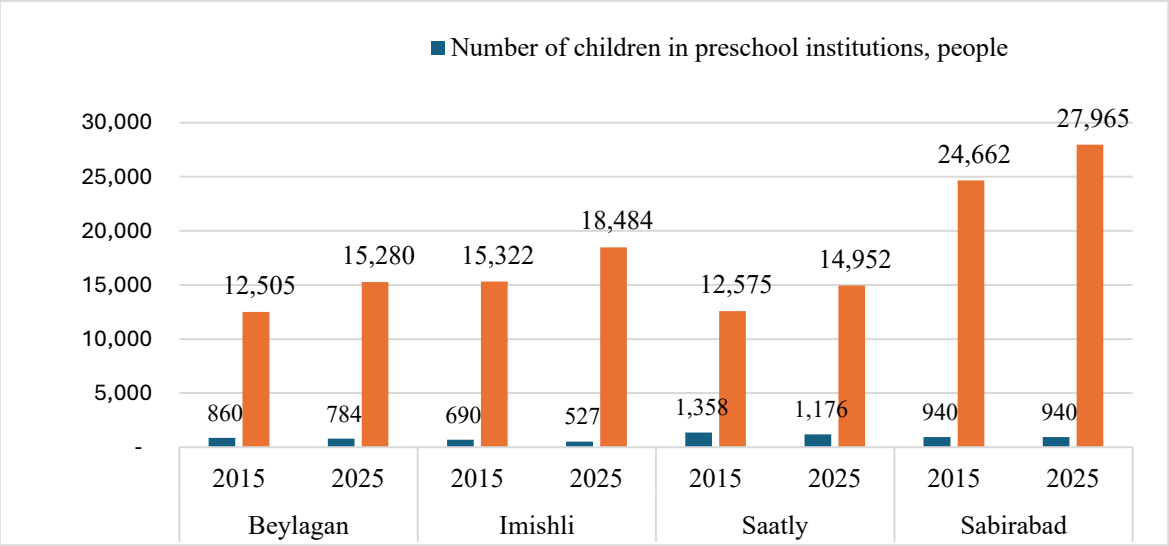


Fig. 1. Number of children attending preschool and secondary general education institutions in administrative districts

Secondary general education institutions serve the secondary education and upbringing of children. Institutions belonging to this field cover settlements and population groups throughout the country. Their number depends on the number of rural settlements. Therefore, up to 28.0 thousand students are educated in 85 schools operating in Sabirabad district, up to 18.5 thousand students in 61 schools in Imishli district, and 15.3 thousand students in 54 schools in Beylagan district (Education, science and culture in Azerbaijan – 2024, 2025, pp. 235–238).

76.7 thousand students are educated in 249 secondary general education institutions in the economic region. 5.7% of secondary schools operating in the country, 4.5% of students studying in them, belong to the region. The number of students in the region in 2025 was 963 less than in 2020. In recent years, the share of those studying in the second and third shifts has been increasing. A decrease in the number of both educational institutions and students studying in them is also observed on a national scale (Table 1).

The activities of healthcare institutions serve to protect and restore the health of the population. Providing the institutions related to this field with material and technical base and personnel is of great importance. However, in the process of reforms and optimization policies, starting from the first years of the 21st century, hospitals have been merged, and some have been liquidated. Therefore, the number of healthcare institutions providing services to the population and the number of beds in them has decreased several times. Thus, the number of 735 hospitals operating in the country in 2000 decreased to 350 in 2025, or more than 2.0 times (Statistical indicators of Azerbaijan, 2000-2025). During this period, the number of hospital beds decreased from 69.9 thousand to 40.3 thousand (Table 2).

Table 2

Activities of healthcare institutions in Azerbaijan and the economic region

Administrative areas	Year	Number of hospitals	Number of hospital beds	Number of doctors	Number of secondary medical workers	Outpatient and polyclinic facilities	Capacity of outpatient clinics (number of visits per [illegible])	Registered diseases	Per 1000 people			
									doctors	paramedical staff	hospital beds	capacity of outpatient clinics (cap)
Economic Region	2020	24	989	414	1465	98	3229	60555	8,1	28,7	19,4	63,2
	2023	6	726	416	1475	97	3248	82650	7,9	28,1	13,8	62,0
	2025	6	726	452	1553	98	3258	90690	8,6	29,4	13,8	61.8
Azerbaijan Rep.	2000	735	69900	29033	60000	1614	105600	1354540	36,5	75,4	87,8	132,1
	2010	736	67400	32800	62900	1690	-	1604610	36,9	70,9	76,0	-
	2015	566	46432	32756	56148	1746	106279	1852918	34,6	59,3	49,0	112,2
	2020	570	44278	31829	55650	1726	106476	1805700	32,0	55,9	44,5	107,0
	2023	338	38172	33645	55591	1665	107549	2616715	33,0	54,6	37,5	105,6
	2025	350	40309	35233	57663	1676	108240	2870154	34,5	56,4	39,4	105,9

Source: Regions of Azerbaijan -2024. Baku: DSK, 2025, pp. 607-659. Healthcare, social security and housing conditions in Azerbaijan - 2014. Baku: DSK, 2015, 280 pp. Statistical indicators of Azerbaijan - 2004. Baku, DSK, 2005, pp. 240. Statistical indicators of Azerbaijan - 2011. Baku, DSK, 2012, pp. 229. Statistical indicators of Azerbaijan - 2020. Baku: DSK, 2021, pp. 247. Statistical indicators of Azerbaijan - 2023. Baku: DSK, 2024, pp. 229, 265. Healthcare, social security and housing conditions in Azerbaijan - 2024. Baku: DSK, 2025, pp. 38, 85-87.

Corresponding measures are also being implemented in the Mil-Mugan economic region. At the beginning of 2025, there were 726 hospital beds in 6 hospitals operating. This is 4 times less than in 2020, and the number of hospital beds was 263 less (Healthcare, Social Security and Housing Conditions in Azerbaijan, 2025; Table 2). 452 doctors and 1.6 thousand paramedical workers work in the existing hospitals. Currently, 1-2 hospitals operate in each administrative region, and the number of doctors and paramedical workers has decreased compared to the beginning of the 21st century. The number of outpatient clinics included in the list of healthcare facilities has changed little in recent years.

The share of the economic region among the country's healthcare facilities is very low. The Mil-Mugan economic region accounts for 1.7% of the country's hospitals, 1.8% of hospital beds, 1.3% of doctors, and 2.7% of paramedical staff (Table 2).

The low number of healthcare institutions in the region is also reflected in relative indicators and their dynamics (Figure 2). The number of doctors per 10,000 population in the economic region is 4.0 times lower than the national average, the number of paramedical staff is 1.9 times lower, and the number of hospital beds is 2.9 times lower. At the same time, the high level of the national average is formed at the expense of Baku. This is because 46.6% of hospitals operating in the country, 67.8% of doctors, and 44.2% of paramedical staff are located in Baku (Healthcare, Social Security and Housing Conditions in Azerbaijan, 2025, pp. 85-87). The relative number of doctors per 10,000 population in Baku is 101.7, the number of paramedical staff is 108.3, and the number of hospital beds is 88.0. The wide range of employment opportunities in Baku, the large number of medical institutions, and the possibility of working in several healthcare institutions at the same time are some of the main reasons why doctors prefer to work in the capital. In addition, the extensive operation of private medical institutions in the city creates additional employment and professional development opportunities for medical workers. These factors make Baku a more attractive labor market for doctors.

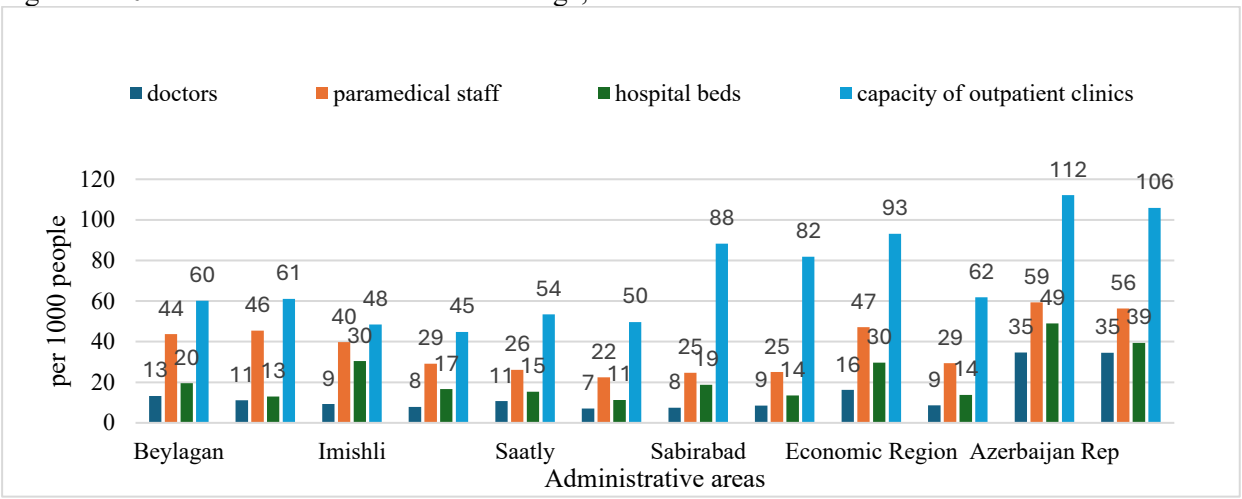


Fig. 2. Relative indicators reflecting the performance of healthcare institutions (per 1000 people)

The number of registered patients in the region increased by 30,000 people or 1.5 times in 2020-2025 (Table 2). Therefore, in order to ensure that the medical services provided to the population in the region meet modern requirements and the needs of the population, it is necessary to reconstruct the material and technical base of hospitals, polyclinics and other health institutions, increase their provision with higher and secondary educated personnel, medicines and other preparations, organize social protection of personnel, and create conditions for continuous examinations.

Cultural facilities serve the education, enlightenment and organization of recreation of the population. However, due to the lack of allocated financial resources, the number of employees in this field is small, and difficulties are

observed in providing personnel. Therefore, there are declines in the activities of facilities included in culture.

Public libraries are an area that serves the enlightenment and education of the population. However, the difficulties in printing new books in the country, the lack of reprinting of books printed with old fonts, the availability of the Internet, and easy access to their use reduce the demand for library activities. After 2010, about 1,000 libraries have been closed in the country, and their book stock has decreased (Table 3). During this period, the number of libraries in the economic region decreased from 256 to 187. Decreases are also recorded in the book stock (Education, Science, Culture in Azerbaijan, 2015-2025). Since libraries operate in villages in administrative regions, their number varies according to their number.

The activity of club institutions is in a similar situation. After 2010, up to 500 clubs have closed in the country (Table 3). In 2024, there were 126 clubs in the region, which is 11 institutions less than in 2010. Clubs in administrative regions vary according to the number of rural settlements.

There are 2 museums in each district, one of which is the historical and local history museum of each district. They are of great importance in studying the history and geography, culture, and socio-political life of each district. Cultural and recreational parks are important recreational places in the districts.

Table 3

Activities of cultural facilities in Azerbaijan and the economic region

Administrative areas	Years	Number of public libraries	book fund, thousand copies	on average per 1000 inhabitants, copies	Number of club establishments	Number of museums	Number of visitors to the museum, thousand people	per 1000 population	Parks
Economic Region	2020	189	1392,6	-	128	8	12,7		9
	2023	187	1261,5	-	126	8	36,1		10
	2024	187	1267,0	-	126	8	35,0		10
Azərbaycan Resp.	2000	2374	38,7 mln.	4867	3354	155	1196	151	-
	2010	3947	36,1 mln.	4012	2772	226	1804	202	-
	2015	3242	32,6 mln.	3403	2650	234	2578	270	347
	2020	2922	31,6 mln.	3160	2231	240	711	71	-
	2023	2913	27,7 mln.	2718	2214	243	2417	239	-
	2024	2914	27,7 mln.	2710	2255	243	2687,8	263	439

Source: Regions of Azerbaijan -2024. Baku: DSK, 2025, pp. 607-659. Education, science, culture in Azerbaijan - 2015. Baku DSK, 2016. 506 p. Statistical indicators of Azerbaijan - 2004. Baku: DSK, 2005, pp. 232-233, 288-291. Statistical indicators of Azerbaijan - 2011. Baku: DSK, 2012, pp. 265-266, 304, 307. Statistical indicators of Azerbaijan - 2015. Baku: DSK, 2016, pp. 312-317. Statistical indicators of Azerbaijan - 2020. Baku: DSK, 2021, pp. 236-237, 279. Statistical indicators of Azerbaijan – 2023. Baku: DSC, 2024, pp. 217, 265. Education, science, culture in Azerbaijan – 2024. Baku DSC, 2025. P. 395, 453-456, 457-460, 465-468.

The region has limited natural and geographical conditions and infrastructure opportunities favorable for the development of tourism and recreation. However, Beylagan has a historical and cultural russian heritage potential. In order to effectively use this potential for tourism purposes, it is necessary to expand promotional activities and form the appropriate infrastructure.

So far, the use of the region's tourism potential is at a low level. There are 17 hotels and hotel-type enterprises operating in the administrative districts (Tourism in Azerbaijan, 2025). There are 3 hotels and hotel-type enterprises in Imishli and Sabirabad districts, and 5-6 hotels and hotel-type enterprises in Beylagan and Saatly districts. Their one-time capacity reaches 440 places. In 2024, 10.3 thousand people were accommodated in them (Tourism in Azerbaijan, 2025, pp. 53-64). These indicators are significantly higher compared to previous years. The existing potential can only ensure the reception and accommodation of a small number of guests coming to the region.

Housing provision is an important indicator of the living conditions and standard of living of the population. The provision of communal facilities in apartments, the living space per capita, and the provision of housing for young people depend on the income of the population in urban and rural settlements and the implementation of housing construction. In recent years, the population has been provided with their own funds in villages, and in cities, by putting apartments built by construction companies on the market. However,

their cost is incomparably higher than the income of the population. Therefore, problems remain in providing the population with housing.

At the beginning of 2025, the housing stock area in the Mil-Mugan economic region was 11.6 million. m2, the housing area per capita was 21.9 m (Healthcare, Social Security and Housing Conditions in Azerbaijan, 2025). This is slightly lower than the average indicator for the country (23.0 m2). 4.9% of the registered housing stock in the country falls on the economic region. In the short time since 2020, the housing stock in the economic region has increased, due to which the housing area per capita is also increasing.

Privatization of existing apartments in residential areas is being carried out, albeit at a slow pace. An average of 45-48 apartments are privatized per year in the economic region. A group of the population in the region is provided with apartments at the expense of state funds. In 2024, 6 families were provided with apartments in this way (Statistical indicators of Azerbaijan, 2025).

The area of residential buildings put into operation in the economic region is constantly decreasing. That is, fewer and fewer apartments are being built and put into operation. If in 2010 153.3 thousand m2 of apartments were put into operation in the region, in 2020 this indicator decreased to 81.0 thousand m2, and in 2024 it decreased to 53.5 thousand m2. The declines are also recorded on a national scale. The area of apartments built and put into operation in 2024 was 2308 thousand m2 less than in 2020 (Statistical indicators of Azerbaijan, 2025).

The organization of communal services in apartments is of great importance. The indicators reflecting the improvement of apartments in the country vary as follows. At the beginning of 2025, the provision of apartments with water lines was 91.3%, the provision of sewage was 90.3%, and the provision of natural gas lines was 96.2%. However, the provision of apartments with a heating system is at a very low level and is up to 23.9% (Statistical indicators of Azerbaijan, 2025, p. 178).

Retail trade serves to meet the population's daily, periodic and long-term demand for products. Trade turnover depends on the total number of the population, the volume of income, the network of trade facilities that meet the demand, and the services they provide. Since more than half of the country's trade turnover belongs to Baku city and the Absheron region (Regions of Azerbaijan, 2025, p. 19), this indicator is low in the regions, the share of the economic region is only 2.38%. Therefore, the share of administrative regions is less than one. Beylagan region has a share of 0.44% in this area, and Saatly region has a share of 0.61% (Regions of Azerbaijan, 2025, p. 607-659).

In 2024, the retail trade turnover of the economic region was 14766.5 million manat (Table 4). In terms of its total value, Sabirabad (33.8%), Imishli (25.58%), Saatly (22.2%) districts stand out (Statistical indicators of Azerbaijan, 2025). The value of retail trade turnover per capita (2807.58 manat) is 2.2 times lower than the average for the country. Paid services determine the structure of the population's expenses for cultural, household, communal, educational, recreational, etc. needs. Paid services constitute the leading part of the population's income expenditure. In 2024, the value of paid services in the economic region was 185.2 million manat, the region's share in this area in the country is 1.4% (Table 4). The small share of the economic region is due to the fact that the main part of paid services falls on the share of Baku city. Its cost per capita is 352.12 manats, which is 3.6 times lower than the national average (Statistical indicators of Azerbaijan, 2025).

Table 4

Value of retail trade and paid services in the economic district

	Retail trade turnover, million manats	per capita turnover, manat	Share in total retail trade turnover in the country, in percent	Catering turnover, thousand manats	Catering turnover per person, manat	Cost of paid services, thousand manats	per person, manat	Household services in paid services, thousand manats	per person, manat
2020	1005496,5	1887,72	2,50	14639,7	26,89	126740,3	232,83	19192,5	35,26
2023	1438293,3	2636,47	2,43	24267,5	44,48	172424,8	316,06	27062,1	49,61
2024	1476455,0	2807,58	2,38	26202,3	49,83	185173,0	352,12	28802,0	54,77

Source: Regions of Azerbaijan -2024. Baku, DSK, 2025, pp. 607-659. Statistical indicators of Azerbaijan - 2020. Baku, DSK, 2021, pp. 312, 328-329. Statistical indicators of Azerbaijan - 2024. Baku, DSK, 2025, pp. 294, 311, 310, 316.

Among the administrative districts, only in Imishli district is the cost of paid services per capita higher than the average indicator for the economic region (449.72 manat; Regions of Azerbaijan, 2025). Despite this, the cost of paid services and services per capita are constantly increasing.

Household services occupy an important place in the structure of paid services (Table 4). 11.0% of paid services in the country and 15.6% in the economic region fall on household services. The share of household services in the economic region in the country is 2.0% (Regions of Azerbaijan, 2025). In conditions of such a low indicator, the cost of household services per capita in the economic region is significantly lower than the average indicator for the country. This lag is 2.5 times. The cost of household services per capita in the Mil-Mugan economic region is 54.77 manat (Table 4).

Although this indicator is close to 41.00 manat in Beylagan and Saatly districts, it is higher than the average indicator for the economic region in Imishli and Sabirabad (Regions of Azerbaijan, 2025). Although the cost of household services has decreased significantly during the pandemic in 2020, the cost of services provided has increased in recent years.

Public catering facilities also serve to provide paid services to the population. Public catering facilities include restaurants, cafes, teahouses, snack bars, etc., which are food centers in public places. In the economic region, the turnover of public catering facilities in 2024 was 26.2 million manat, and the cost of services per person was 49.83 manat (Table 4). This is 4.7 times less than the average indicators for the country (Statistical indicators of Azerbaijan, 2025). In Sabirabad district, it was 8.4 million manat, in Imishli and Saatly districts it was 6.4-6.5 million. public catering services worth manat were provided (Regions of Azerbaijan, 2025).

The transport and communication sectors serve to establish connections between regions, enterprises, and settlements. Transport carries cargo and passengers, ensures the transportation of finished products to consumers, raw materials and semi-finished products to processing plants. Therefore, the development of transport, the distance and volume of transported cargo determine the level of development of territories, and the type of products produced (Mammadov, 2002). Taking this into account, the study of the transport and communication network is of great importance.

Mil-Mugan economic region has a favorable transport and geographical position. Railways and highways from Absheron and Aran to Karabakh, East Zangezur and Nakhchivan pass here. The Hajigabul-Horadiz railway, the Vatega-Aghjabedi branch branching from here, and the main highways in the same direction pass here and are of republican importance. The liberation of Karabakh and East Zangezur, the implementation of restoration and construction works have increased the importance of these roads, and they are currently widely used. Work is underway to restore this road to the Bartaz-Aghband stations in Zangilan and from there to join it to the Nakhchivan Autonomous Republic. After this, the importance of the Mil-Mugan economic region will increase even more. The length of highways in general use in the economic region is 1082 km (Transport in Azerbaijan, 2025, pp. 42-65). They constitute 5.2% of the roads in operation in the country. In recent years, due to the slow pace of construction of new highways, their length has changed little.

There are significant differences in the distribution of highways between administrative regions. The leading factors here are the area of administrative regions, the number of existing rural settlements, the current state of the highway network in them and the work done in this area. The length of highways is 396 km (36.6%) in Sabirabad region, over 250 km in Imishli and Beylagan regions, and 154 km (14.2%) in Saatly region (Transport in Azerbaijan, 2025).

Highways primarily serve the transportation of goods. In 2024, 3527 thousand tons of cargo were transported in the region (Regions of Azerbaijan, 2025, pp. 607-659), the region's share in this area is 2.46%, which is considered a small indicator. The cargo turnover in the region is 243.7 million. ton-km, its share in the country is up to 1.81%. The main part of the cargo transported between administrative regions falls on the share of Imishli (38.2%) and Sabirabad (31.5%) regions (Transport in Azerbaijan, 2025). In the remaining regions, these indicators are 2.0 times lower.

Road transport in the region also plays a significant role in passenger transportation. In 2024, 41.5 million. passengers were transported in the region, the passenger turnover was 268.5 million. person-km (Transport in Azerbaijan, 2025; Regions of Azerbaijan, 2025). The region's share in the country in these directions is recorded at the level of 2.25% and 0.95%. Here, the main part of passenger transportation (40.5%) falls on the share of Sabirabad region. These indicators are 2.0 times lower than in other regions (Transport in Azerbaijan, 2025).

One of the factors determining the development of the sector and the level of services

provided in road transport is the number of cars, including private cars. A small number of cars are produced in the country, most of them are imported. The number of cars in the country is growing rapidly. In 2024, there were 1,833.9 thousand cars in the country, including 1,494.8 thousand private cars (Statistical indicators of Azerbaijan, 2025). After 2020, their number increased by 360.3 thousand and 290.1 thousand units, respectively, that is, private cars account for the majority of cars in the country (81.5%).

The number of cars in general use in the Mil-Mugan economic region was 61.8 thousand units, including 53.1 thousand private cars (85.9%) (Regions of Azerbaijan, 2025). Their share in the country is 3.4% and 3.6%, respectively. The relative share of the region is small. This is because the majority of cars registered in the country (39.4%) fall on the share of Baku city. This is also indicated by the number of cars per 100 households. The average number of cars per 100 households in the country is 65, in Baku city 99, and in administrative regions about 49-50 (Transport in Azerbaijan, 2025, pp. 60-62).

The network of postal departments and ATSs in the regions covers all settlements. There are 90 departments in the economic region for the provision of postal services. After 2000, their number has decreased by 28 units. The number of fixed-line telephones per 100 families is 48 on average in the country, while in the economic region it is 32, in villages it is relatively lower and drops to 25 (Regions of Azerbaijan, 2025).

The development of mobile communications reduces interest in fixed-line telephones. In 2024, there were 351.2 thousand mobile phone users in the region (Statistical indicators of Azerbaijan, 2025). This is 66.6% of the total population of the economic region.

Result

There are up to 15-20 childcare institutions in the administrative districts. No new facilities have been created in this area since 2020. At the same time, due to the decrease in natural population growth, the number of children in them is decreasing. In a short time, this decrease was up to 600 people. At the beginning of 2025, the coverage of children in this type of institutions in the economic region was up to 10%. This is several times lower than the average indicator for the country (37.1%).

As a result of the measures implemented since the beginning of the 21st century, secondary general education institutions have been reconstructed in the region, and a large number of new schools have been built. At the same time, some schools with a small number of students have been closed or merged in recent years. In 2025, the number of students in the economic region was 963 less than in 2020. On a national scale, 65 schools were closed in 2025, and the number of students was 9,000 less than in 2023. However, the share of those studying in the third year of school is increasing.

In the process of reforms in the country's healthcare system in the 21st century, the number of hospitals and beds in them in the regions has decreased several times. Specialized hospitals operating in administrative districts have been merged into central hospitals. Therefore, 1.7% of hospitals in the country, 1.8% of hospital beds, 1.3% of doctors, 2.7% of paramedical staff currently belong to the Mil-Mugan economic region. The number of doctors per 10,000 people in the economic region is 4.0 times lower than the national average, the number of paramedical staff is 1.9 times lower, and the number of hospital beds is 2.9 times lower.

In the process of economic reforms, the number of libraries and clubs is decreasing. The main problems are the low level of financial resources allocated for their activities, difficulties in providing staff, and the low level of their social protection.

The low level of income of the population in the regions, the weak network of trade, household services and public catering facilities, mainly in rural areas, hinder the improvement of the services provided. Retail trade turnover in the economic region is at a low level, its share in the country is only 2.38%. Accordingly, the share of administrative regions is less than one, Beylagan region has a share of 0.44% in this area, and Saatly region has a share of 0.61%. The cost of retail trade turnover, paid services, household services, public catering services per capita is several times lower than the average indicators for the country.

Conclusions

For the development of social spheres in the economic region, it is of great importance to organize the network of enterprises in accordance with the demographic potential and their requirements, to provide them with material and technical base and qualified personnel, and to organize social protection. The analyses conducted in the study can be used to fulfill this task.

REFERENCES

Azerbaijan 2030: National priorities for socio-economic development. (2021, February 2). Republic of Azerbaijan.

Demographic development problems and population settlement in the Aran economic region. (2022). Region-Press.

Jafarov, S., Imrani, Z., & Eminov, Z. (2024). The current state of foreign trade relations of the Republic of Azerbaijan. *South Florida Journal of Development, 5*(7), e4194. https://doi.org/10.46932/sfjdv5n7-034

Jafarov, S. (2024). Education, research and globalization. *South Florida Journal of Development, 5*(10), e4485. https://doi.org/10.46932/sfjdv5n10-012

State Statistics Committee of the Republic of Azerbaijan. (2025). Population of Azerbaijan – 2024. Orange Publishing House.

State Statistics Committee of the Republic of Azerbaijan. (2025). Demographic indicators of Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2025). Transport in Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2008). Regions of Azerbaijan – 2007. Sada Publishing House.

State Statistics Committee of the Republic of Azerbaijan. (2011). Regions of Azerbaijan – 2010. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2017). Regions of Azerbaijan – 2016. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2025). Regions of Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2015). Healthcare, social security and housing conditions in Azerbaijan – 2014. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2025). Healthcare, social security and housing conditions in Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2005). Statistical indicators of Azerbaijan – 2004. Sada Publishing House.

State Statistics Committee of the Republic of Azerbaijan. (2012). Statistical indicators of Azerbaijan – 2011. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2016). Statistical indicators of Azerbaijan – 2015. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2021). Statistical indicators of Azerbaijan – 2020. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2024). Statistical indicators of Azerbaijan – 2023. Printing Company No. 9.

State Statistics Committee of the Republic of Azerbaijan. (2025). Statistical indicators of Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2016). Education, science and culture in Azerbaijan – 2015.

State Statistics Committee of the Republic of Azerbaijan. (2019). Education, science and culture in Azerbaijan – 2018.

State Statistics Committee of the Republic of Azerbaijan. (2025). Education, science and culture in Azerbaijan – 2024. AZMEGA GROUP.

State Statistics Committee of the Republic of Azerbaijan. (2025). Tourism in Azerbaijan – 2024.

Eminov, Z. N. (Ed.). (2021). Problems of demographic development of villages and rural population settlement in the Republic of Azerbaijan. Optimist Printing Center.

Socio-economic development strategy of the Republic of Azerbaijan for 2022–2026. (2022, July 22). Republic of Azerbaijan.

Geography of the Republic of Azerbaijan: Economic, social and political geography (Vol. 2). (2015). Europe Publishing House.

Geography of the Republic of Azerbaijan: Regional geography (Vol. 3). (2015). Europe Publishing House.

Badalov, E. S. (2016). Social-demographic problems and settlement issues in the Absheron economic-geographical region. Europe Publishing House.

Eminov, Z. N. (2023). Social-demographic development and employment problems of the Republic of Azerbaijan. CN Polygraph.

Eminov, Z. N., & Rzayeva, S. I. (2022). Current state of quality of life of the population in the Republic of Azerbaijan. Region-Press.

Afandiyev, V. A. (2002). Urbanization and urban settlements of Azerbaijan. Baku University Press.

Imrani, Z. T., & Zeynalova, K. Z. (2014). Economic-geographical features of territorial organization of the economy in Azerbaijan (R. M. Mammadov, Ed.). Nafta-Press.

Mammadov, Z. S. (2002). XXI century: The transport factor of economic development. Azernashr Publishing House.

Pashayev, N. A., Ayyubov, N. H., & Eminov, Z. N. (2010). Economic, social and political geography of the Republic of Azerbaijan. Chiraq.

MİL-MUĞAN İQTİSADİ RAYONUNDA İNFRASTRUKTUR SAHƏLƏRİNİN ƏRAZİ TƏŞKİLİ

Musa Vəliyev[1]*, Nəriman Paşayev[1]
[1]*Azərbaycan Respublikası Elm və Təhsil Nazirliyi, Coğrafiya İnstitutu*
**Məsul müəllif: musa.valiyev@geo.edu.az*

Xülasə. Mil-Muğan iqtisadi rayonu Beyləqan, İmişli, Saatlı və Sabirabad inzibati rayonlarını əhatə edir. İqtisadi rayon Kür-Araz ovalığında, əsasən Kür və Araz çaylarının fəaliyyəti nəticəsində formalaşmış Mil və Muğan düzlərində yerləşir. Tədqiqatın məqsədi regionda sosial infrastruktur sahələrinin inkişaf meyillərini araşdırmaq, əhaliyə göstərilən xidmətlərin səviyyəsini və onların əhalinin həyat səviyyəsinə təsirini qiymətləndirmək, mövcud problemlərin həlli yollarını müəyyənləşdirməkdir. Tədqiqatda sosial sfera sahələrinin müasir tələblərə uyğun təşkilinə təsir göstərən amillər təhlil edilmiş, 2000-ci ildən etibarən sahə göstəricilərində baş verən dəyişikliklər araşdırılmış və regional göstəricilər ölkə üzrə orta göstəricilərlə müqayisə olunmuşdur. Həmçinin sosial infrastrukturun zəif inkişafının mənfi təsirləri və perspektiv inkişaf imkanları nəzərdən keçirilmişdir.

Tədqiqat zamanı statistik, müqayisəli təhlil və tarixi-coğrafi metodlardan, eləcə də Azərbaycan Respublikası Dövlət Statistika Komitəsinin məlumatlarından istifadə edilmişdir. Nəticələr göstərir ki, regionda məktəbəqədər təhsil müəssisələri ilə təminat səviyyəsi aşağı olaraq qalır, əhalinin təbii artımının zəifləməsi isə ümumtəhsil məktəblərində təhsil alan şagirdlərin sayının azalmasına səbəb olmuşdur. Bununla yanaşı, səhiyyə müəssisələrinin sayı əhəmiyyətli dərəcədə azalmışdır. Sosial sahələr üzrə göstəricilərin əksəriyyəti ölkə üzrə orta səviyyədən aşağıdır.

Tədqiqatda əlverişsiz təbii-coğrafi şəraitin və infrastruktur təminatının yetərsizliyinin regionda turizmin inkişafını məhdudlaşdırdığı da müəyyən edilmişdir. Əhalinin hər nəfərinə düşən ödənişli xidmətlərin həcmi hələ də nisbətən aşağıdır. Bu baxımdan, sosial infrastrukturun müasir standartlara uyğun təkmilləşdirilməsi üçün dövlət və özəl investisiyaların cəlb edilməsi zəruri hesab olunur. Tədqiqatın nəticələri Mil-Muğan iqtisadi rayonunun perspektiv inkişaf strategiyalarının hazırlanmasında və sosial xidmətlərin təkmilləşdirilməsində istifadə oluna bilər.

Açar sözlər: *Mil-Muğan iqtisadi rayonu, məktəbəqədər təhsil, ümumi orta təhsil müəssisələri, səhiyyə, turizm, ödənişli xidmətlər, mənzil-kommunal təsərrüfatı*

Cite this article as (APA 7):
Valiyev, M., & Pashayev, N. (2026). Territorial organization of infrastructure areas in the Mil-Mughan economic region. *Geography and Natural Resources, 12*(1), 53–63. https://doi.org/10.5281/zenodo.23456688