ISSN NO: 2770-0003
May 2025

Economic And Geographical Features Of The Formation Of The Infrastructure Of Secondary Schools In The Kashkadarya Region

Nurmatov A.U.
Shakhrisabz State Pedagogical Institute

Abstract. This article analyzes the economic and geographical factors affecting the formation of the infrastructure of secondary schools in the Kashkadarya region. The study studies the location of schools, their material and technical base, population density and the level of socio-economic development based on a geographical approach. In particular, the imbalances in the educational infrastructure in mountainous and remote areas, transport and communication problems, and the need for new schools are scientifically covered. The article reveals regional differences based on statistical and cartographic materials and gives practical recommendations for planning and developing educational institutions taking into account economic and geographical conditions. The results of the study are important in developing regional education policy and determining a strategy for developing school infrastructure.
Keywords: Kashkadarya region, secondary schools, infrastructure, economic and geographical factors, regional development, educational geography, transport infrastructure, demographic density.

Introduction. Today, in many countries of the world, the general education system is recognized as one of the main factors not only of social progress, but also of territorial stability and economic development. The equal and consistent formation of educational infrastructure across regions plays an important role in developing the potential of the population, training personnel who meet the requirements of the labor market, as well as ensuring social justice and well-being. Currently, developed countries are taking infrastructure development to a new level by digitizing the education system, combining it with environmental sustainability and transport opportunities.

A number of strategic programs are being adopted in the Republic of Uzbekistan to reform the education sector, especially to improve school infrastructure. Population growth, urbanization processes, territorial disparities and transport and logistics constraints have a certain impact on the stable functioning of the education system. Especially in regions with geographically complex and mountainous terrain, such as the Kashkadarya region, it is of great importance to analyze the territorial aspects of the infrastructure of general education schools. The lack of schools in some districts and villages of the region or the physical and technical obsolescence of existing buildings are a manifestation of imbalances in regional development.

In this regard, the study of the formation and development of the infrastructure of secondary schools in the Kashkadarya region based on economic and geographical factors is an urgent scientific and practical issue. The results of the study can serve to further improve educational policy, effectively plan the location of schools and resource allocation, as well as meet the needs of the population living in remote areas for quality education. This article is aimed at identifying existing problems in this area, analyzing them and developing practical recommendations.

The main part. Today, the territorial location of secondary education institutions, their infrastructure and their equal distribution in terms of quality are one of the urgent scientific problems not only nationally, but also globally. In particular, many foreign scientists have conducted in-depth scientific research on the role of educational infrastructure in ensuring social justice, territorial development and equality of economic opportunities. Their approaches and results can serve as an important theoretical basis for analyzing the formation of educational infrastructure in the specific economic and geographical conditions of the Kashkadarya region.

David Harvey - the theory of socio-geographic inequality. British-American geographer and economist David Harvey, in his work “Social Justice and the City” (1973), argued that the disproportionate location of infrastructure, especially social services such as education, between cities and villages leads to social stratification in society. Harvey's ideas about the territorial distribution of capital, social inequality in resources, and the distributive role of state policy indicate the need for a deeper analysis of interregional

ISSN NO: 2770-0003
May 2025

differences in the formation of school networks. The low number of schools and outdated infrastructure in mountainous and remote areas of the Kashkadarya region are explained by Harvey's theory.

Edward Soja - third space and territorial identity. In his work "Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places" (1996), the American geographer Edward Soja emphasizes that space is not only a physical and economic factor, but also a concept with social and cultural meanings. He calls space the "third space" and connects it with social justice and the level of use of citizens' opportunities. The fact that although there are schools in some areas of Kashkadarya, their accessibility (transport, internet, resources) is limited can be analyzed in more depth based on the Soja approach.

John Friedmann - territorial development and planning. Canadian urban planner and planner John Friedmann, in his work “Regional Development and Planning” (1966), argued that infrastructure – in particular, schools and other social services – is of strategic importance in underdeveloped regions. He believes that state-planned investment policies, including the expansion of the education network, are important in reducing interregional inequality. The construction of new schools and the modernization of existing ones in the economically underdeveloped parts of the Kashkadarya region are consistent with Friedmann’s approach.

Amartya Sen – the concept of human potential and freedom. Indian Nobel laureate Amartya Sen considers education to be a key factor in the formation of human potential. In his work “Development as Freedom” (1999), he directly links the development of education and health infrastructure with human freedom and opportunities. The unequal distribution of education infrastructure limits the social mobility of the population. The limited access to education in remote and mountainous areas of the Kashkadarya region practically confirms Sen's theory.

International organizations: UNESCO, UNICEF, World Bank. Within the framework of the “Education for All” (EFA) initiative developed by the United Nations specialized agency for education - UNESCO, geographical inequality of educational infrastructure is noted as one of the main problems in developing countries. UNICEF and World Bank reports extensively cover transport problems in reaching schools in rural and mountainous areas, the condition of school buildings, the shortage of teachers, and the distribution of digital tools. These situations are also clearly visible in the case of the Kashkadarya region and allow the application of international experience in local conditions.

Research by foreign scientists and reports of international organizations serve as a solid theoretical basis for a scientific analysis of the economic and geographical formation of the infrastructure of secondary schools in the Kashkadarya region. In particular, it allows for a deep understanding of local problems and the development of appropriate strategic solutions, using concepts such as territorial inequality, social justice, balance of opportunities, and planned development.

The formation of the infrastructure of secondary schools in the Republic of Uzbekistan is directly related to the level of socio-economic development of the country's regions. In economically developed regions (for example, Tashkent, Samarkand, Fergana Valley), there are a large number of schools and their infrastructure is relatively modern, but their economic potential is limited, while in mountainous or desert regions (some districts of Surkhandarya, Kashkadarya, Navoi regions) there are fewer schools, and their material and technical base is also insufficient. This is clearly visible in the quality of school buildings, classroom capacity, provision with the Internet and digital technologies. Also, in regions with high demographic growth rates, the location of schools often lags behind, which leads to excessive student load and second-shift education. Natural and geographical factors also play an important role in the formation of school infrastructure. Building new schools in mountainous, remote, and infrastructurally inaccessible areas requires more funding and organizational strength. For example, in the mountainous districts of Kashkadarya and Surkhandarya regions, most of the existing schools are outdated, and in some schools, children are forced to travel long distances to study. In such conditions, the quality of education may decline, and the percentage of students attending school may decrease. On the contrary, in the plains and districts close to cities, the transport network is developed, the number of schools is greater and more conveniently located. This indicates the direct influence of geographical conditions on the formation of infrastructure. In recent years, the development and modernization of the general education system in Uzbekistan has become a priority area of state policy. Based on the principle of “Each region is an individual approach,” large-scale work is being carried out to build new schools in rural areas, repair existing ones, and provide them with the Internet and technological tools. In particular, the educational infrastructure development programs approved by presidential decrees aim to

ISSN NO: 2770-0003
May 2025

reduce regional disparities in the number and quality of schools across the republic. However, economic and geographical conditions and uneven distribution of financial resources hinder the uniform development of infrastructure. Therefore, the formation of educational infrastructure requires comprehensive planning that takes into account regional specialization, demographic pressure, and natural factors.

Information about secondary schools in Kashkadarya region

	2010/ 2011		*2015/ 2016*		*2020/ 2021*		*2023/ 2024*	
	Number of schools	**Number of schools**	**Number of schools**	**Number of schools**	**Number of schools**	**Number of schools**	**Number of schools**	**Number of schools**
Kashkadarya region	**1116**	**500584**	**1124**	**485693**	**1155**	**639649**	**1220**	**673058**
Karshi city	51	41900	50	43015	54	60104	59	62116
Shakhrisabz city	-	-	-	-	26	23786	27	25436
districts								
Gissar	79	32507	79	32055	78	40480	79	41189
Dehkanabad	89	24006	89	22335	93	29939	101	31584
Kamashi	87	41279	89	39178	89	51250	95	54276
Karshi	64	34183	67	33224	69	44710	70	46716
Kasan	96	46780	99	43198	102	55418	102	56391
Kitab	92	38852	92	36832	94	49230	98	50910
Mirishkor	39	17560	39	16998	39	21701	43	22254
Muborek	33	14190	32	14150	33	16950	34	17098
Nishon	38	23696	38	23316	38	30548	43	31946
Kasbi	58	29709	59	28493	61	35640	61	37863
Kukdala	-	-	-	-	-	-	97	43591
Chirakchi	176	69797	178	70378	192	90875	124	56063
Shakhrisabz	111	49022	110	46404	85	40622	85	43520
Yakkabag	103	37103	103	36117	102	48396	102	52105

The table was compiled by the author based on data from the Kashkadarya regional statistics department.

Below is a detailed, scientific and systematic analysis of the number of secondary schools and the number of students in the Kashkadarya region based on statistical data for the period 2010/2011 - 2023/2024. The analysis was conducted in three main areas: the number of schools, the number of students and the average load (number of students per school).

1. Territorial grouping and dynamic analysis by the number of schools.

From 2010/2011 to 2023/2024, the number of secondary schools in the Kashkadarya region increased from 1,116 to 1,220, that is, 104 new schools were established. This indicator indicates the gradual expansion of the educational infrastructure in the region. Among the districts with the largest number of schools, Chiraqchi district (124), Dehqonabad (101), Koson (102), Yakkabog (102), Kitab (98) and Kokdala (97) districts stand out. Although these regions are large in area and have different population densities, they are distinguished by the large number of educational institutions. It is especially noteworthy that Kokdala district, despite being established as a separate district only after 2023, achieved a high indicator with 97 schools. On the contrary, in districts such as Mirishkor (43), Muborak (34), Nishon (43) and Shahrisabz district (85), the number of schools is relatively lower, which can be explained by the remoteness of these regions or the harsh climatic conditions, or low population density. The number of schools in Karshi (70) and Kamashi (95) districts is average.

2. Regional differences in the number of students and demographic analysis.

ISSN NO: 2770-0003
May 2025

The number of students in Kashkadarya region increased from 500,584 in 2010/2011 to 673,058 in 2023/2024, an increase of about 172,474 or 34.5%. This increase is an indicator of natural demographic growth, migration flows, and the growing need for education.

By region, the largest number of students for 2023/2024 is concentrated in the following regions: Karshi city - 62,116 people, Kokdala district - 43,591 people, Chiroqchi - 56,063 people, Koson - 56,391 people, Kamashi - 54,276 people, Kitob - 50,910 people. This indicates a high number of children of school age in these regions, as well as their location in central or economically active zones. In particular, Karshi city, as a regional center, has a high student contingent, due to its large population. The lowest number of students falls on Mubarak (17,098), Mirishkor (22,254), Nishon (31,946) and Dehqonabad (31,584) districts. The low number of students in these regions is explained by the presence of more remote, sparsely populated areas and, in some cases, migration flows.

3. Analysis of the average number of students per school (load).

Based on the ratio of the number of schools to the number of students, the average number of students per school in the region in 2023/2024 is 551. This indicator can be considered as the average load norm. The regions with high load are as follows: Karshi city - 1053 students/school (62116: 59), Shahrisabz city - 942 students/school (25436: 27), Koson district - 553 students/school (56391: 102), Kamashi - 571 students/school (54276: 95). These situations indicate that the class capacity in educational institutions is high, teaching in the second shift is widespread, and the load on school buildings is increasing. At the same time, there is a need to build new schools in these districts.

The districts with low load are: Dehqanabad - 313 students/school (31584: 101), Mirishkor - 517 students/school (22254: 43), Mubarak - 503 students/school (17098: 34). These indicators may be due to the fact that some schools are not fully utilized, and in some cases, classes consist of a small number of students, or low population density. This indicates the possibility of conflicting with the principle of economic efficiency. The formation and development dynamics of the infrastructure of secondary schools in the Kashkadarya region are directly related to territorial, demographic and economic conditions. In urban and central districts, the load is high, and there is a strong need for the construction of new schools, while in remote areas it is advisable to optimize the existing infrastructure, in some cases merge schools or take measures to improve the quality of education.

Conclusion. The number of secondary schools and the number of students in the Kashkadarya region are increasing year by year, which indicates the continuous development of the educational infrastructure. Analysis of statistical data shows that the number of schools in the region increased from 1,116 to 1,220 from 2010/2011 to 2023/2024, and this increase is especially noticeable in the newly established Kokdala district and central cities. This indicates that there are relative changes in the level of provision of educational infrastructure by region.

The increase in the number of students in the region is especially high in the city of Karshi, Koson, Chirokchi and Kamashi districts, which is directly related to the demographic activity, urbanization and improvement of economic opportunities in these regions. At the same time, the low number of students in remote districts such as Dehqanabad, Mubarak and Mirishkor is explained by the underdevelopment of regional social infrastructure, population migration and natural climatic factors. Problems with infrastructure in these districts remain relevant.

In terms of average load - that is, the number of students per school, there are significant differences between districts. In the cities of Karshi and Shahrisabz, this indicator is more than 900, which is causing excessive density in classes. On the contrary, in remote districts, there are an average of 300-500 students per school. This requires a review of resources and load between schools, as one of the important factors affecting the quality of education.

In general, regional differences, demographic growth, level of economic development and geographical location are important factors in the formation of the infrastructure of secondary schools in the Kashkadarya region. In the future, improving the school network requires approaches such as scientifically based territorial planning, expanding modern infrastructure, introducing digital educational technologies and improving transport links. This analysis serves as an important scientific and practical basis for the formation of regional education policy.

References

ISSN NO: 2770-0003
May 2025

1. Harvey, D. (1973). Social Justice and the City. London: Edward Arnold.
2. Soja, E. W. (1996). Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places. Oxford: Blackwell.
3. Friedmann, J. (1966). Regional Development and Planning: A Reader. Cambridge, MA: MIT Press.
4. Sen, A. (1999). Development as Freedom. New York: Alfred A. Knopf.
5. UNESCO. (2015). Education for All 2000–2015: Achievements and Challenges. Paris: UNESCO Publishing. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000232205
6. UNICEF. (2019). Education Strategy 2019–2030: Every Child Learns. New York: UNICEF. Retrieved from https://www.unicef.org/media/59921/file/UNICEF-education-strategy-2019-2030.pdf
7. World Bank. (2020). World Development Report 2020: Trading for Development in the Age of Global Value Chains. Washington, DC: World Bank. Retrieved from https://www.worldbank.org/en/publication/wdr2020
8. OECD. (2012). Equity and Quality in Education: Supporting Disadvantaged Students and Schools. Paris: OECD Publishing. https://doi.org/10.1787/9789264130852-en
9. Fayzullayev M.A., Xujaqulov S.U. A.U.Nurmatov. Economic Geographical Characteristics Of The Development Of Industrial Networks Of Kashadarya Region. Proceedings of International Conference on Modern Science and Scientific Studies. Vol 2, Issue 4. Paris, France 19 th April 2023. P. 125-134
10. A.U.Nurmatov. Economic geographical factors affecting the development of the infrastructure of the Educational system. In volume 38 of, of Eurasian Journal of History, Geography and Economics (EJHGE), December 2024. Genius Journals Publishing Group, Brussels, Belgium. P. 47-50
11. Fayzullayev M.A, Nurmatov N.E, Usmanov A.B, Islamova D.H. Main features of the use of research methods in economic and social geography. Электронное научно-практическое периодическое издание. «Экономика и социум». ISSN 2225-1545. Выпуск №12(127)-1 (декабрь, 2024). С. 138-142
12. A.U.Nurmatov. Main directions of social geographical research in the republic of Uzbekistan. Электронное научно-практическое периодическое издание. Экономика и социум. №3 (106), 2023. С. 220-226