

ISSN 2181-8622

**Manufacturing technology problems**



# **Scientific and Technical Journal Namangan Institute of Engineering and Technology**

INDEX  COPERNICUS  
INTERNATIONAL

**Volume 9  
Issue 3  
2024**



UDC 314.06

## DEMOGRAPHIC AUTHORITY AND ITS REGIONAL CHARACTERISTICS

ESHANKULOVA DILBAR

Independent researcher of the National University of Uzbekistan named Mirzo Ulugbek, Tashkent, Uzbekistan  
E-mail: [eshonqulova986@gmail.com](mailto:eshonqulova986@gmail.com)

**Abstract:** This article analyzes the demographic potential of the Republic of Uzbekistan and its regional characteristics. Specific aspects of the number, structure and location of the country's population, regional differences in demographic processes have been studied. A comparison of regions was made according to the main indicators of demographic development. Recommendations on effective use of demographic potential have been developed. Based on the official data of the State Statistics Committee of the Republic of Uzbekistan, the number, composition and quality indicators of the population were analyzed and the role of the demographic potential in economic growth, innovative development and national security was thoroughly studied. Also, the in-depth analysis of demographic processes and the study of their regional characteristics are of urgent importance.

**Keywords:** demographic potential, population, birth, death, natural growth, migration, regional differences.

**Introduction.** Demographic potential is an important factor in the socio-economic development of any country. The number, composition and quality indicators of the population are of decisive importance in ensuring economic growth, innovative development and national security. Therefore, the in-depth analysis of demographic processes and the study of their regional characteristics are of urgent importance.

The population of Uzbekistan has been showing steady growth in recent years. As of January 1, 2024, the country's population was 36.8 million people<sup>1</sup>. However, there are significant differences between regions in terms of demographic indicators. This shows the need for deep research of territorial features of demographic development.

The purpose of this article is to assess the demographic potential of the Republic of Uzbekistan and to determine its regional characteristics.

The issue of demographic potential and its regional characteristics has been studied by many scientists. In particular, Z.N. Tojiyeva analyzed demographic transition processes in Uzbekistan<sup>2</sup>. R.A. Ubaidullayeva and O.B. Ata-Mirzayev proposed dividing the republic into 6 regions while studying demographic processes and employment issues<sup>3</sup>. A. Saliyev conducted studies on the division of demographic regions<sup>4</sup>.

Foreign scientists D. Bloom and D. Canning studied the impact of demographic changes on economic development<sup>5</sup>. R. Lee and A. Mason analyzed the impact of the demographic dividend on the country's economy<sup>6</sup>.

<sup>1</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

<sup>2</sup> Tajiyeva, Z.N. (2018) Demographic transition processes in Uzbekistan, Information of the Geographical Society of Uzbekistan, 54, pp. 42-46.

<sup>3</sup> Ubaidullayeva, R.A. and Ata-Mirzayev, O.B. (2011) Demography of Uzbekistan. Tashkent: University.

<sup>4</sup> Saliyev, A. (2005) Socio-economic development of regions of Uzbekistan. Tashkent: Science.

<sup>5</sup> Bloom, D.E. and Canning, D. (2008) 'Global demographic change: Dimensions and economic significance', Population and Development Review, 34, pp. 17-51.

<sup>6</sup> Lee, R. and Mason, A. (2010) 'Fertility, human capital, and economic growth over the demographic transition', European Journal of Population, 26(2), pp. 159-182.

The analysis of the literature shows that the demographic potential of Uzbekistan and its regional characteristics have not been sufficiently studied. Therefore, in-depth research of this topic is of urgent importance.

**Methods.** Statistical data analysis, comparison, grouping and systematic approach methods were used as research methodology. Official information of the State Statistics Committee of the Republic of Uzbekistan was taken as the main source of information.

**Results.** According to the State Statistics Committee of the Republic of Uzbekistan, the country's population has been showing steady growth in recent years. In 2010-2024, the population will be increased from 28.0 million to 36.8 million or per person by 31.4%. The average annual growth rate is around 2%<sup>7</sup>.

Population growth is mainly due to high birth rate. The number of people born in 2023 was 872.6 thousand<sup>8</sup>. The total birth rate was 23.9 births per 1,000 inhabitants. This indicator is the highest in the CIS countries.

The death rate is also relatively low, at 5.0 deaths per 1,000 in 2023<sup>9</sup>. As a result, the natural population growth remains at a high level - 18.9 people per 1000 inhabitants in 2023.

The share of young people in the population remains high. At the beginning of 2024, the share of 0-14 year olds was 28.7%, 15-64 year olds - 66.2%, 65 and older - 5.1%<sup>10</sup>. This makes it possible to use the demographic dividend.

There are significant regional differences in population distribution. The highest population density is observed in Andijan (772.4 people/km<sup>2</sup>), Fergana (572.3) and Namangan (384.8) regions. The lowest rate was recorded in Navoi region (9.3 people/km<sup>2</sup>)<sup>11</sup>.

There are significant differences in demographic indicators between regions. This can be seen in Table 1 below:

The table shows that the highest birth rate is observed in Surkhandarya (27.0), Jizzakh (26.4) and Kashkadarya (26.2) regions. The lowest indicator was recorded in the city of Tashkent (18.8). Tashkent city (7.1) and Tashkent region (5.8) are leading in terms of death rate. Natural growth rates are highest in Surkhandarya (22.9), Jizzakh (22.1) and Kashkadarya (21.9) regions, compared to Tashkent city (11.7) and Tashkent region (15.5).

---

<sup>7</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

<sup>8</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

<sup>9</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

<sup>10</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

<sup>11</sup> State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)

**Table 1.** The main demographic indicators of the regions of the Republic of Uzbekistan, 2023.

Territory Population	Thousand people population	Birth rate, per 1000	Death rate, per 1000 population	Natural increase, per 1000 population
Republic of Karakalpakstan	2015,8	22,1	5,0	17,1
Andijan	3264,3	24,2	4,6	19,6
Bukhara	2001,6	22,5	4,8	17,7
Jizzakh	1441,7	26,4	4,3	22,1
Kashkadarya	3408,9	26,2	4,3	21,9
Navoi	1037,5	22,8	4,7	18,1
Namangan	2910,4	25,9	4,4	21,5
Samarkand	4007,9	25,7	4,5	21,2
Surkhandarya	2714,3	27,0	4,1	22,9
Sirdarya	873,3	25,1	4,5	20,6
Tashkent	3012,8	21,3	5,8	15,5
Fergana	3875,8	23,5	5,0	18,5
Khorezm	1918,7	23,3	4,6	18,7
Tashkent c.	2749,9	18,8	7,1	11,7

The results of the research show that Uzbekistan has significant demographic potential. Stable population growth, a high percentage of young people and an increase in the number of people of working age create favorable conditions for economic development. This allows for effective use of the demographic dividend<sup>12</sup>.

However, regional characteristics of demographic development should also be taken into account. In the southern regions (Surkhandarya, Kashkadarya), where high birth rates and natural growth rates are observed, special attention should be paid to the issues of employment and social infrastructure. In the regions of the Fergana Valley with a high population density, it is important to accelerate the processes of urbanization and develop industrial centers.

Demographic processes observed in Tashkent city and Tashkent region (low birth rate, high death rate) indicate the aging of the population. Improving the social protection system and developing healthcare services in these regions is an urgent issue.

**Discussion.** The Republic of Uzbekistan has significant demographic potential, which creates a favorable opportunity for the development of the country's economy. The steady growth of the population, the high percentage of young people and the increase in the number of the working-age population make it possible to use the demographic dividend.

<sup>12</sup> Bloom, D.E. and Canning, D. (2008) 'Global demographic change: Dimensions and economic significance', *Population and Development Review*, 34, pp. 17-51.

However, regional characteristics of demographic development should also be taken into account. There are significant differences between regions in terms of birth rates, death rates, natural growth rates, and population distribution. This shows the need to develop and implement a demographic policy, taking into account the specific characteristics of each region.

In order to effectively use the demographic potential, it is advisable to implement measures in the following directions:

- development of human capital, especially improving the quality of education and vocational training;
- improving the labor market, creating new jobs and increasing employment;
- optimization of population location, management of urbanization processes;
- elimination of imbalances in socio-economic development of regions;
- improvement of demographic policy, strengthening of family institution;
- development of the health care system, increasing the life expectancy of the population.

**Conclusion.** In order to effectively use the demographic potential, it is necessary to implement complex measures for the development of human capital, improvement of the labor market, management of urbanization processes, elimination of disparities in the socio-economic development of regions, improvement of demographic policy and development of the health care system.

In the future, it is desirable to continue research on the assessment of the impact of demographic processes on economic growth, the improvement of demographic forecasting methods, and the evaluation of the effectiveness of demographic policy. This allows to use the demographic potential of Uzbekistan more effectively.

### References

1. Bloom, D.E. and Canning, D. (2008) 'Global demographic change: Dimensions and economic significance', *Population and Development Review*, 34, pp. 17-51.
2. Lee, R. and Mason, A. (2010) 'Fertility, human capital, and economic growth over the demographic transition', *European Journal of Population*, 26(2), pp. 159-182.
3. State Statistics Committee of the Republic of Uzbekistan (2024) Information on the demographic situation. Tashkent., [https://api.siat.stat.uz/media/uploads/sdmx/sdmx\\_data\\_248.pdf](https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_248.pdf)
4. Saliyev, A. (2005) *Socio-economic development of regions of Uzbekistan*. Tashkent: Science.
5. Tajiyeva, Z.N. (2018) 'Demographic transition processes in Uzbekistan', *Information of the Geographical Society of Uzbekistan*, 54, pp. 42-46.
6. Ubaidullayeva, R.A. and Ata-Mirzayev, O.B. (2011) *Demography of Uzbekistan*. Tashkent: University.
7. United Nations, Department of Economic and Social Affairs, Population Division (2019) *World Population Prospects 2019*. New York: United Nations.

8. Vishnevsky, A.G. (2009) 'The demographic revolution and its interpretations', *Sociological Research*, 48(3), pp. 75-99.
9. World Bank (2023) *World Development Indicators*. Washington, DC: World Bank.
10. Zokirov, S.S. (2020) 'Demographic situation in Uzbekistan and its regional aspects', *Economy and innovative technologies*, 2, pp. 23-32.

## C O N T E N T S

### PRIMARY PROCESSING OF COTTON, TEXTILE AND LIGHT INDUSTRY

<b>Dadadzhonov Sh., Akhunbabaev O., Muxamadrasulov Sh., Akhunbabaev U., Erkinov Z.</b>	<b>3</b>
Practice of production of polycomponent threads from a mixture of natural and chemical fibers	
<b>Korabayev Sh.</b>	<b>13</b>
Determining the direct resistance coefficient of cotton fiber in the confusor tube	
<b>Kulmatov I.</b>	<b>19</b>
Study of a new technological equipment for cleaning cotton raw materials from gross pollution	
<b>Musayeva L., Polatova S.</b>	<b>24</b>
Choosing the main features of special clothing for riders, taking into account the requirements of consumers	
<b>Djurayev A., Khudayberdiyeva M., Urmanov N.</b>	<b>31</b>
Kinematic analysis of a cam mechanism with elastic elements of the mechanism with elastic elements of paired cams of a boel mechanism of a weaving loom	
<b>Rakhmonov H., Matyakubova J., Sobirov D.</b>	<b>41</b>
Analysis of the influence of the filling coefficient of the screw cleaner system with seeded cotton on the current consumption of the system	
<b>Madrahimov D., Tuychiyev Sh.</b>	<b>48</b>
Impact of saw spacing on lint removal efficiency and quality in the linting process	
<b>Monnopov J., Kayumov J., Maksudov N.</b>	<b>53</b>
Analysis of mechanical properties of high elastic knitted fabrics for sportswear design	
<b>Kamolova M., Abdukarimova M., Usmanova N., Mahsudov Sh.</b>	<b>59</b>
Study of the Prospects for the Application of Digital Technologies in the Fashion Industry in the Development of the Creative Economy	
<b>Ergasheva R., Khalikov K., Oralov L., Samatova Sh., Oripov J.</b>	<b>71</b>
Comprehensive assessment of two-layer knitted fabrics	

### GROWING, STORAGE, PROCESSING AND AGRICULTURAL PRODUCTS AND FOOD TECHNOLOGIES

<b>Aripov M., Kadirov U., Mamatov Sh., Meliboyev M.</b>	
---	--

Experimental study of sublimation drying of vegetables by applying ultra – high frequency electromagnetic waves	74
<b>Alamov U., Shomurodov D., Giyasova N., Zokirova Sh., Egamberdiev E.</b>	81
Chemical composition analysis of miscanthus plant leaves and stems	81
<b>Vokkosov Z., Orifboyeva M.</b>	88
Production of technology for obtaining oil from peanut kernels and refining the oil obtained in short cycles	88
<b>Khalikov M., Djuraev Kh.</b>	95
The importance of systematic analysis in the drying process of fruit and vegetable pastilla	95

### CHEMICAL TECHNOLOGIES

<b>Kuchkarova D., Soliyev M., Ergashev O.</b>	101
Production of coal adsorbents by thermochemical method based on cotton stalks and cotton shells and their physical properties	101
<b>Askarova D., Mekhmonkhonov M., Ochilov G., Abdikamalova A., Ergashev O., Eshmetov I.</b>	108
Some definitions about the mechanism of public-private partnership and its role in strengthening the activities of business entities and small businesses	108
<b>Ganiyeva N., Ochilov G.</b>	117
Effect of bentonite on benzene vapor adsorption in order to determine the activation conditions of log bentonite	117
<b>Kayumjanov O., Yusupov M.</b>	122
Synthesis of metal phthalocyanine pigment based on npk and calculation of particle size using the debye-scherrer equation	122
<b>Mukumova G., Turaev Kh., Kasimov Sh.</b>	127
Sem analysis and thermal properties of synthesised sorbent based on urea, formaldehyde, citric acid	127
<b>Amanova N., Turaev Kh., Beknazarov Kh., Sottikulov E., Makhmudova Y.</b>	133
Corrosion resistance of modified sulfur concrete in various aggressive environments	133
<b>Eshbaeva U., Alieva N.</b>	141
Study of the effect of adhesive substances on paper strength properties	141
<b>Turayev T., Bozorova G., Eshankulov N., Kadirov Kh., Dushamov A., Murtozoeva Sh.</b>	146
Cleaning of saturated absorbents used in natural gas cleaning by three-stage filtration method and analysis of their properties	146



<b>Muxamedjanov T., Pulatov Kh., Nazirova R., Khusenov A.</b>	<b>158</b>
Obtaining of phosphoric cation-exchange resin for waste water treatment	

**MECHANICS AND ENGINEERING**

<b>Abdullaev A., Nasretdinova F.</b>	<b>165</b>
Relevance of research on failure to power transformers, review	

<b>Muhammedova M.</b>	<b>173</b>
Anthropometric studies of the structure of the foot	

<b>Sharibayev N., Nasirdinov B.</b>	<b>181</b>
Measuring the impact of mechatronic systems on silkworm egg incubation for premium silk yield	

<b>Abdullayev L., Safarov N.</b>	<b>189</b>
Electron beam deposition of boron-based coatings under vacuum pressure and experimental results of nitrogenation in electron beam plasma	

<b>Kadirov K., Toxtashev A.</b>	<b>195</b>
The impact of electricity consumption load graphs on the power	

<b>Makhmudov I.</b>	<b>204</b>
Theoretical basis of the methodology of selecting wear-resistant materials to abrasive corrosion	

<b>Adizova A., Mavlanov T.</b>	<b>209</b>
Determining optimal parameter ratios in the study of longitudinal vibrations of threads in weaving process using a model	

<b>Turakulov A., Mullajonova F.</b>	<b>215</b>
Application of the dobeshi wavelet method in digital processing of signals	

<b>Djurayev Sh.</b>	<b>222</b>
Analysis and optimization of the aerodynamic properties of a new multi-cyclone device	

<b>Djurayev Sh.</b>	<b>228</b>
Methods for improving the efficiency of multi-cyclone technology in air purification and new approaches	

<b>Ibrokhimov I., Khusanov S.</b>	<b>236</b>
Principles of improvement of heavy mixtures from cotton raw materials	

<b>Utaev S.</b>	<b>241</b>
Results of a study of the influence of changes in oils characteristics on wear of diesel and gas engine cylinder liners	

<b>Abdovakhidov M.</b>	<b>249</b>
Review of research issues of determination of mechanical parameters of compound loading structures and working bodies	

<b>Abdovakhidov M.</b>	<b>256</b>
Equilibrium analysis of flat elements of the saw working element package	

<b>Kudratov Sh., Valiyev M., Turdimurodov B., Yusufov A., Jamilov Sh.</b>	
Determining the technical condition of diesel locomotive diesel engine using diagnostic tools	<b>262</b>

<b>Juraev T., Ismailov O., Boyturayev S.</b>	
Effective methods of regeneration of used motor oils	<b>269</b>

<b>Umarov A., Sarimsakov A., Mamadaliyev N., Komilov Sh.</b>	
The oretical analysis of the fiber removing process	<b>276</b>

<b>Tursunov A.</b>	
Statistical evaluation of a full factorial experiment on dust suppression systems in primary cotton processing facilities	<b>282</b>

### **ADVANCED PEDAGOGICAL TECHNOLOGIES IN EDUCATION**

<b>Yuldashev A.</b>	
Historical theoretical foundations of state administration and the issue of leadership personnel	<b>294</b>

### **ECONOMICAL SCIENCES**

<b>Israilov R.</b>	
Criteria, indicators and laws of small business development	<b>299</b>

<b>Eshankulova D.</b>	
Demographic authority and its regional characteristics	<b>305</b>

<b>Kadirova Kh.</b>	
Assessment of the efficiency and volatility of the stock market of Uzbekistan	<b>310</b>

<b>Mirzakhalikov B.</b>	
Some definitions about the mechanism of public-private partnership and its role in strengthening the activities of business entities and small businesses	<b>316</b>

<b>Ganiev M.</b>	
Income stratification of the population and opportunities to increase incomes	<b>321</b>

<b>Aliyeva E.</b>	
Assessment of innovation activity enterprises using the matrix method	<b>327</b>

<b>Azizov A.</b>	
Industry 4.0 challenges in China	<b>335</b>

<b>Azizov A.</b>	
Industrie 4.0 implementation challenges in Germany	<b>341</b>