

## FUTURE CHANGES IN THE POPULATION OF NAVOI REGION

*Sherkholov Olimjon Iskandarovich*

*Independent scientific researcher of Samarkand State University*

*e-mail: [olimjonsherxolov@gmail.com](mailto:olimjonsherxolov@gmail.com)*

**Abstract.** In the article, based on the methods of extrapolation and age shift, the parameters of the forecast of the population, territorial (urban, rural), demographic (age, sex) composition of the Navoi region until 2040 are developed. By the method of extrapolation, the districts of the region, the coefficients of fertility, mortality, natural growth, migration and total population growth were studied only from the demographic indicators of the population of the region by the method of age shift.

**Key word:** birth rate, mortality, natural growth, migration growth, age-sex composition, city, village, extrapolation, age shift.

### Introduction

The socio-economic development of each region is influenced by many factors. The most important of them are the correct placement of productive forces and the territorial division of labor. Today, the main goal of the development of social and infrastructural networks in urban and especially rural areas of our republic is to ensure a good life for the population.

As the population of the republic continues to grow, the need for food, clothing, housing, education, medicine, utilities and other services will also constantly grow. Therefore, based on the capabilities of the regions, it is necessary to develop programs for the development of the social sphere for many years. When developing such programs, it is extremely important to take into account the future population size and changes in its structure.

Main part. The socio-economic and demographic development of each region or district, as well as cities and villages, is closely related to the future size and weight of the population. Therefore, one of the important issues is population forecasting in order to study the potential of the regions of the Navoi region and the scientific justification of their future. By means of the forecast, changes in the population, its growth, the future composition and number of districts of the region are determined and prospects for the development of various industries are determined. In addition, the forecast of the number and composition of the population plays an important role in the correct placement of branches of the socio-economic sphere of the studied territory, the effective use of labor resources. Therefore, future changes in the size and composition of the population of Navoi region were predicted by extrapolation. The forecast of future changes in the total population and the population of the Navoi region districts is calculated for the period up to 2040.

Navoi region, like other regions of the republic, is among the regions with annual population growth. An increase in the number of births as a result of demographic processes and a decrease in the number of deaths will ensure an increase in the province's workforce in the future. However, there are shortcomings in various areas as a result of ignoring population growth, future changes. With the development of the industrial and production sphere in the Navoi region, it should be borne in mind that the republic is a region that attracts migrant workers.

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In terms of natural reproduction, the province occupies an average position among other regions of the republic. And in terms of population density, it occupies the last place. This requires proper use of the workforce in the future. The fact that the area of the region is extremely large, and the population, as indicated above, is ahead of only the Syrdarya region on the scale of the republic, that is, less, further complicates the placement of productive forces, social facilities.

As noted by Z.N.Tajieva, a comprehensive study of the past, present and future of the region through population forecasting is crucial for determining the necessary direction of its development[5;130-b]. From this point of view, the importance of predictive work in the territorial organization of the population of the Navoi region is high. For the further development of the region, special attention should be paid to the districts of Uchkuduk, Tomdi and Conimex, located on the territory of a flat upland. Because only in urban settlements in these areas living conditions are relatively favorable, and in rural areas the lifestyle is much harder. It is in the villages of these districts that the population is declining from year to year. To do this, it is necessary to transplant phytomeleorative measures, increase the number of livestock grazed on desert pastures, establish the processing of livestock products, effectively provide public transport, properly place the social sphere, knowing about the population growth. The fact that the villages of these districts located quite far from each other also complicates the development or territorial organization of social spheres.

Due to the availability of water resources on the territory of Khatirchi, Karmana, Navbakhor and Kiziltepa districts located in the Southern geodemographic region of the region, the main agriculture of the region, including farming is characterized by development. It would not be an exaggeration to say that the large number of indigenous peoples in these areas provides a high natural population growth. Therefore, in the future, the population in these areas will constantly grow. This leads to an increase in the workforce. It is in these areas that it is necessary to focus on the regular deployment and development of manufacturing industries that require a large amount of labor.

The leading economic area of the region is Karmana, in the development of which international railways, highways, the presence of an airport, the location of the regional center on the territory of the district, the presence of a hydrographic network play an important role.

Forecast estimates show that the population of the province will decrease relatively in the period from 2020 to 2025 compared to the retrospective period and will continue to grow in subsequent years. It is during these years that the slowdown in population growth will depend on the increase in the number of deaths during the pandemic. This situation is observed in all districts and cities of the region. But the total population of the province will continue to grow. However, in the areas of Conimex and Tomdi, located only in the plain region, the population has been declining again over the years. However, there is a very slow population growth in the Uchkuduk district.

Rapid population growth in the forecast period will occur in Navbakhor, Kiziltepa, Karmana and Khatirchi districts included in the Southern Geodemographic Region, where natural growth is higher. However, moderate growth is observed in the Nurata district. It is in these areas that the population of the province will continue to grow due to the increase in population.

The population will also continue to grow in the cities of Navoi, Gazgan in the Southern Geodemographic Region and Zarafshan in the Northern geodemographic Region, which are the main cities of the province. The population growth in the city of Zarafshan will be especially active, since the city of Zarafshan acts, so to speak, as the center of a very large northern part of the province.

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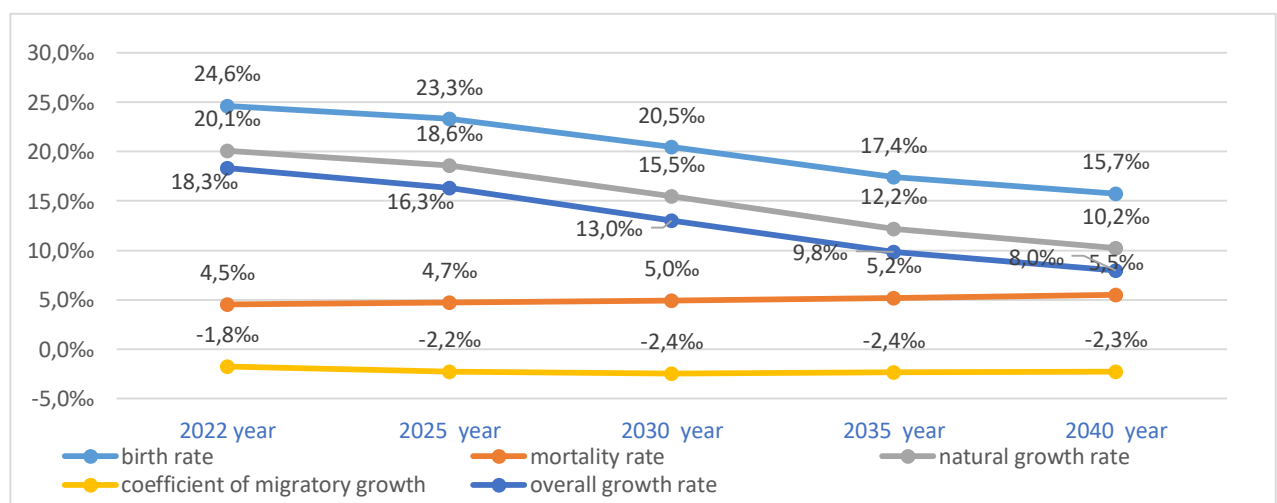
In general, according to the results of the forecast, the population of the region in 2040 will increase by 332.7 thousand people compared to 2020. The largest increase is observed in the Khatirchi area in the Southern Geodemographic Region, where the population will grow by 91 thousand people. This is followed by Kiziltepa, Navbakhor and Karmana districts, where population will increase by 80.4; 65; 61 thousand people, respectively. At the same time, in the Tomdi district, located in the plain region, the population will decrease by 7.8 thousand people, and in the Conimex district-by 3.4 thousand people. In fact, population growth and decline are also a demographic problem. Because planning social and economic spheres, without foreseeing population growth, will undoubtedly lead to negative consequences in the future.

The forecast of the Navoi region population was also calculated using the "age shift" method. At the same time, the forecast was made only for all demographic indicators of the total population of the region. Forecasts are developed in high, medium and low variants.

In the period from 2022 to 2040, the birth rate will decrease by 5,123 people, and the death rate will increase by 2,487 people, which will lead to a decrease in natural reproduction. The number of immigrants to the province is increasing every year, although less than the number of those leaving. At the same time, the number of migrants from the province will also continue to grow, and the migration increase will be negative. From these data it can be seen that the overall population growth of the province will decrease.

In the period from 2022 to 2040, which is the forecast period, the fertility rate will decrease by 8.9 ppm, and the mortality rate will increase by 1.0 ppm. Accordingly, the natural growth rate decreases by 9.9. The negative migration growth rate will also continue to grow, which will lead to a decrease in the total growth rate in the province by 10.3 ppm. When studying the age composition of the population of the Navoi region, it became clear that if in 2022 there was only 1 person aged 100 years and older in the region, then as a result of an increase in the life expectancy of the population in 2040, their number will reach 82.

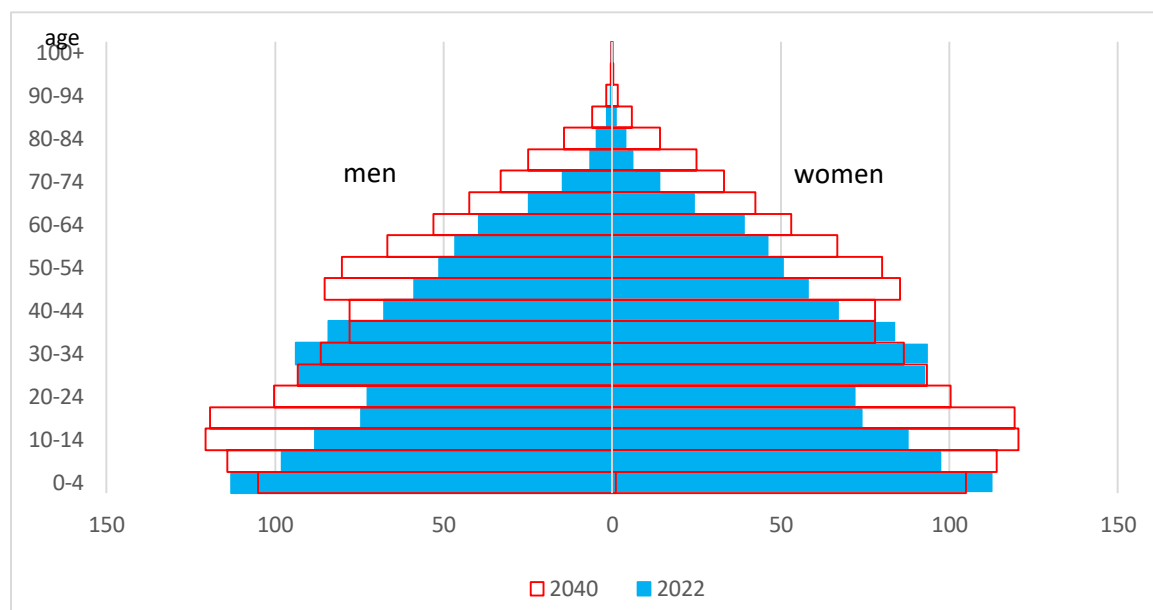
According to the reduced age structure, in 2022 the largest population will be occupied by people aged 0-4 years (113.1 thousand people. or 10.9%), and in 2040-people aged 10-14 years (120.5 thousand people. or 9.3%). In 2022, the number of children aged 20 to 24 years will continue to decline, increasing again at the age of 25 to 34 years, and the population will decline in all subsequent ages.



**Figure 1. Forecast of the average coefficient of demographic indicators of Navoi region until 2040**

By 2040, there will be an increase in the number of children aged 0-4 to 10-14 years, followed by a decrease in the population in the age group up to 44 years and a partial increase in the number of people aged 45-49 years, as well as a decrease in the number of people older than this age with age.

In the forecast of the age-sex composition of the population in 2022, there were more men than women aged 0 to 34 years, while up to 35-54 years there was a multiple shift in the number of representatives of both sexes, and at the age of 55 years and older, women predominated.



**Figure 2. The average reduced age-sex structure of the population of Navoi region in 2022 and 2040. (at the beginning of the year, thousand people)**

By 2040, the proportion of men will decrease relatively, which means that, although men predominate in the population from 0 to 24 years, women make up the majority in all subsequent ages. This requires taking into account the growing number of women in the development of all industries in the region.

**Conclusion.** In general, the natural decline of the population of the province is reduced due to a decrease in the birth rate and an increase in mortality. Similarly, there is an increase between arrivals and departures, but due to the large number of departures, the migration balance increases in the negative direction.

The parameters of the Navoi region population forecast until 2040 are developed on the basis of extrapolation and age shift methods and the scale of influence on future socio-economic changes of the territory is substantiated.

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