



Reconstruction Of The Population In The Fergana Valley Regions And Its Territorial Characteristics

Temirov Zokirjon Abdilvoxidovich

Basic doctoral student, Andijan State University, Uzbekistan

Annotation: During the years of independence in Uzbekistan, special attention has been paid to the regional aspects of demographic issues based on the human factor, the principle of a healthy mother and a healthy child. The course of demographic processes changes in accordance with the natural, socio-economic and geographical conditions of the regions. The Fergana Valley is the most densely populated region of Uzbekistan, with a small area, heavy demographic load and the largest demographic potential. This article examines the reproduction of the population of the Fergana region, the general, special, specific and cumulative birth rates, survival, gross and net coefficients, and draws conclusions.

[Temirov Zokirjon Abdilvoxidovich. **Reconstruction Of The Population In The Fergana Valley Regions And Its Territorial Characteristics.** *N Y Sci J* 2021;14(1):26-31]. ISSN 1554-0200 (print); ISSN 2375-723X (online). <http://www.sciencepub.net/newyork>. 5. doi: [10.7537/marsnys140121.05](https://doi.org/10.7537/marsnys140121.05).

Keywords: total birth rate, demographic transition, survival rate, geodemographic waves, specific birth rate, specific and total birth rate, gross and net birth rates.

Introduction.

Population dynamics, demographic composition, location, population regeneration processes change in accordance with the natural, socio-economic geographical features of the regions. About one third of the country's population lives in the Fergana Valley and has a unique demographic situation and demographic development. Therefore, the reproduction of the population in the regions of the Fergana Valley and the study of its territorial features is one of the most important issues of scientific and practical importance.

Research method

The following demographic indicators are used in population reproduction:

1. **Survival coefficient or Pokrovsky-Pirl index.** The index, adopted in 1897 by the Russian scientist VI Pokrovsky and in 1921 by the American scientist Pirl, is determined by the following formula:

$$K_x = \frac{N}{M}$$

Here N is the number of births at a given time

M is the number of deaths during this period.

This coefficient is the number of births that correspond to the number of deaths per person, and is an approximate calculation of the number of deaths to be filled by the new generation.

2. **Natural growth rate:**

$$K_{n-m} = \frac{N-M}{S} * 1000 = n-m$$

Where n is the total fertility rate; m is the total mortality rate; S is the average population.

3. **Population turnover ratio:**

$$K_{aylanma} = n+m$$

This ratio shows how much the average annual population growth per thousand people.

4. **Coefficient of utilization of population reproduction:**

$$K_{a.t.k.} = \frac{n-m}{n+m}$$

It reflects the contribution of the natural growth rate of the population to its total turnover.

The above figures are distinguished by the simplicity of the calculation, which does not allow to have a complete picture of the population reproduction.

It is also advisable to use indicators that do not depend on the age-sex composition in order to fully reveal the nature of population reproduction. Indicators of population regeneration include:

- Total birth rate;
- Gross population recovery rate;
- Gross population recovery rate;

The total fertility rate indicates the average number of children per woman (family). This ratio is one of the primary general characteristics of population reproduction and has some shortcomings. In particular, the re-emergence of a new generation does not indicate the amount of girls that women will leave behind in the future. It also does not take into account how many newborns can die before their mother reaches the age of majority.

The gross rate of population reproduction is the number of girls a woman can have during the reproductive period and is expressed by the following formula:

$$R = d \sum_{15}^{49} f_x$$

Where R is the gross coefficient of population reproduction; d is the proportion of girls among births (it is assumed to be 0.488 and is the same for all age groups of women); \sum_{15}^{49} – the total birth rate in the age group 15-49; f_x is the birth rate by age group.

The net coefficient of population reproduction

is the average number of daughters a woman gives birth to in her lifetime. It also means that girls can reach their mother's age from birth. The net population recovery rate is determined using the following formula:

$$R_n = RL_x$$

Where R_n is the net coefficient of population reproduction; R is the gross coefficient of population reproduction; L_x are girls who lived to the age of their mother.

Results.

During the years of independence, the population of the country has followed a unique path of demographic development. The predominance of natural movement can be seen in the re-establishment of the population of the republic. The importance of mechanical movement in the development of the country's population and the renewal of generations is insignificant.

In the Fergana region from 1991 to 2019, the overall birth rate decreased from 36.5 ‰ to 23.2 ‰, and the overall mortality rate decreased from 6.2 ‰ to 4.9 ‰. The natural growth rate decreased from 30.3 ‰ to 18.3 ‰. Birth and natural growth rates were high at the beginning of the period under study, i.e. in the early years of independence. As a result of changes in the economic conditions and social opinion of the population, the birth rate decreased in 1991-2000. Between 2000 and 2006, the birth rate and natural growth rate were the lowest. In the following years, the birth rate increased again. At the same time, the increase in the average life expectancy is an important factor in the reduction of the mortality rate, which can be explained by the fact that the overall birth rate was high in 1985-1990 and the natural growth rate was high, and those born in that period reached the marriage age after 2006.

Practical work in the Fergana region, such as improving the living standards of the population, creating the necessary conditions for the future of children in the family, caring for them, is leading to a decrease in the average number of children in the family. This was reflected in the declining number of births and the overall birth rate in the region. The birth of the fifth, sixth, seventh, and even tenth of children in families typical of the former Soviet era, consciously declined during the years of

independence. The share of first, second and third births in families is constantly increasing.

During the demographic transition in Uzbekistan during the years of independence, the employment of women in the region, the increase in education, began to reflect a sharp change in attitudes to the number of children born in the family.

In 1991, more than 200,000 babies were born in the Fergana region, accounting for 27.6 percent of all births in the country. This figure has changed in recent years. 26.1% of babies born in the country in 2000, 28.6% in 2010 and 29.1% in 2019 were in the Fergana region. In 2000, 49 percent of all babies born 3 or later were mothers aged 25-29. 60 percent of the 2 children in the family and 70 percent of the 1 child were mothers aged 20-24 years. In 2010, this figure was 45% of mothers aged 3-2 and subsequent, aged 25-29, 48% of 2 children and 67% of 1 child aged 20-24. By 2019, this figure was 42.7 percent, 42.3 percent and 68.1 percent, respectively. Also, mothers aged 15-19 in the family accounted for 15.8% of 1 child in 2000, 15.0% in 2010 and 10.8% in 2019. In 2000, 89.8 percent of births in the region and in 2019, 91.3 percent were mothers aged 20-35.

In 1991-2019, **the overall birth rate in the districts** and cities of the Fergana region had regional differences (Table 1).

The Table was calculated by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan.

In 1991, the overall birth rate was moderate in the cities of Fergana and Khanabad, where the ethnic composition of the Fergana region is complex and the employment rate is high, and the average birth rate was higher than in Kokand and neighboring Uzbekistan, as well as Andijan and neighboring Andijan districts. In Besharik and Mingbulak districts of the Fergana Valley, which have unfavorable natural conditions for living, are located in a desert area and have a low population density, this ratio was very high. In other districts and cities of the Fergana region (77.3% of the population) a high level of the overall birth rate was observed. By 2019, the overall birth rate in 74.2% of the population of the Fergana region was on average. In particular, in Fergana, one of the major cities of the valley, a low level of this ratio was observed. Only the city of Namangan, which has its own traditions and religious views, as well as Namangan, Kosonsoy, Turakurgan, Uychi, Dangara, Khojaabad, Altynkul and Shahrihan districts, was above average.

In the process of population reproduction, the survival rate or the Pokrovsky-Pirl index is used. In this case, if the vital coefficient is greater than $K > 1.0$, it means that the population will increase naturally and the population will increase. In the population of the

Fergana region, this figure was $K = 5.8$ in 1991, 3.9 in 2000, 4.6 in 2010 and 4.9 in 2019. The higher the survival rate, the faster and more efficient the population renewal will be.

The vitality rate of districts and cities of Fergana region has been high for many years in Ulugnor, Buvayda and Sokh districts, but in recent years no high rate has been observed in any district. Slow population renewal was observed in Fergana and Kokand. The decline in birth and death rates will lead to an increase in the number of regions where the rate of population renewal will decline in the near future.

The population turnover, which is the sum of the birth and death rates, shows that it was very rapid in the early years of independence and declined in the following years. In particular, in the Fergana region in 1991 the birth rate was 35.3 per thousand people and the death rate was 6.2 people, and the population turnover was 42.5 ‰. In 2018, this figure was 22.8 ‰ births and 4.7 ‰ deaths, and the population turnover was 27.5 ‰. During this period, the country's rate decreased from 41.4‰ to 28‰. (Table 2)

Table 1. Estimation of the total fertility rate according to the classification of districts and cities of Fergana region B.Urulanis

Birth rate description	Total fertility rate (per 1,000 people)	Number of districts and cities belonging to groups by total fertility rate, pcs				Percentage of population, in percent			
		1991 year	2000 year	2010 year	2019 year	1991 year	2000 year	2010 year	2019 year
Extremely low	10 and less	-	-	-	-	-	-	-	-
Very low	11-15	-	2	-	-	-	3,8	-	-
Low	16-20	-	28	1	1	-	62,0	3,0	3,0
Average	21-25	2	17	43	39	4,4	34,2	91,5	74,2
Above average	26-30	4	-	2	9	14,8	-	4,5	22,8
High	31-40	39	-	1	-	77,3	-	1,0	-
Very high	41-50	2	-	-	-	3,5	-	-	-
	total	47	47	47	47	100	100	100	100

Table 2. Life expectancy of the population of districts of Fergana region, per thousand

Life expectancy	Regions by the group		
	2000 year	2010 year	2018 year
2,5 each	Fergana city, Kokand city	-	-
2,6-4,0 each	Andijan, Khanabad, Altynkol, Andijan, Asaka, Balikchi, Jalalquduk, Izbosgan, Kurgantepa, Pakhtaabad, Namangan, Kosonsoy, Namangan, Naryn, Uchkurgan, Quvasoy, Margilan, Dangara, Rishtan, Uzbekistan, Furkat	Andijan, Kosonsoy, Fergana, Kokand, Quvasoy, Margilan, Furkat	Andijan, Khanabad, Andijan, Jalal-Abad, Izbosgan, Kurgantepa, Khojaabad, Kosonsoy, Fergana, Kokand, Margilan, Altariq, Furkat
4,1-5,5 each	Boz, Buloqboshi, Marxamat, Khojaabad, Shahrihan, Mingbulak, Pop, Turakurgan, Uychi, Chartak, Chust, Yangikurgan, Altariq, Qoshtepa (Akhunboboev), Baghdad, Besharik, Kuva, Sokh, Toshloq, Uchkuprik, Fergana, Yazyovan	Khanabad, Altynkul, Andijan, Asaka, Balikchi, Boz, Buloqboshi, Jalal-Abad, Izbosgan, Kurgantepa, Marxamat, Pakhtaabad, Khojaabad, Shahrihan, Mingbulak, Namangan, Naryn, Pop, Turakurgan, Uychi, Uchkurgan, Chartak, Chartak Altiyarik, Koshtepa (Akhunboboev), Baghdad, Besharik, Dangara, Kuva, Rishtan, Toshloq, Uzbekistan, Uchkuprik, Fergana, Yazyovan,	Altynkul, Asaka, Balikchi, Boz, Bulakbashi, Marxamat, Pakhtaabad, Ulugnor, Shahrihan, Namangan, Mingbulak, Namangan, Naryn, Pop, Turakurgan, Uychi, Uchkurgan, Chartak, Chust, Yangikurgan, Quvasoy (Qoshtepa), Qoshtepa., Baghdad, Beshariq, Buvayda, Dangara, Kuva, Rishtan, Sokh, Toshloq, Uzbekistan, Uchkuprik, Fergana, Yazyovan
5.6 and larger	Ulugnor, Buvayda	Ulugnor, Buvayda, Sokh	-
average:	3,9	4,6	4,3

The table was calculated by the author on the basis of data from the State Statistics Committee of the Republic of Uzbekistan. In 1991, the only city in the Fergana region with a small population turnover was Fergana city. In recent years, the population turnover in all districts and cities of the region was less than 30 %. During the period under study, there was a slowdown in population turnover in the districts and cities of the Fergana region, ie a decrease in the average population growth rate per thousand people. The territorial distribution of such declining natural population movements creates a "geodemographic wave" that gradually shifts from regional centers to remote areas.

The impact of demographic factors on the birth rate among the population is less significant. In particular, in the Fergana region in 1991, women of childbearing age accounted for 45.6% of all women. The total fertility rate was 35.2 ‰. In recent years, the

share of women of childbearing age in total women has increased, reaching 51.3 percent in 2000, 57.5 percent in 2010, and 53.2 percent in 2019. However, the overall fertility rate increased during these years, reaching 20.4 ‰, 23.0 ‰, and 25.5 ‰, respectively. In the Fergana Valley region in 1991-2019, an increase in the proportion of women of childbearing age in general women and a decrease in the birth rate were observed. The decrease in the birth rate with the increase in the weight of women of childbearing age can be explained by the decrease in the specific, specific and cumulative birth rates (Table 3.).

The highest birth rate in the Fergana Valley shows that women aged 20-29 have the highest birth rate. Also, in 2000-2010, the birth rate in women aged 15-19 in the valley regions increased and decreased in the years following 2010. In this case, the total number of women in this age group is women

Table 3. Changes in the specific and aggregate birth rates in the Fergana Valley (2000-2019)

Mother's age group	Andijon			Namangan			Fergana			Fergana region			Republic of Uzbekistan		
	2000	2010	2019	2000	2010	2019	2000	2010	2019	2000	2010	2019	2000	2010	2019
15-19	16,5	24,6	24,3	30,2	27,2	27,1	20,0	26,2	29,8	21,8	26,0	27,3	21,6	24,0	19,3
20-24	190,0	194,1	241,9	212,0	181,7	237,5	209,6	200,5	230,3	204,0	192,9	236,1	207,7	186,5	185,2
25-29	147,3	160,7	185,1	146,2	152,0	185,2	138,4	156,3	167,0	143,5	156,4	178,1	162,6	163,8	158,4
30-34	78,4	79,5	98,4	75,6	66,0	100,0	67,2	67,4	90,7	73,2	70,9	95,9	90,3	78,7	85,1
35-39	24,7	24,5	33,5	21,3	18,9	32,0	20,4	18,1	27,8	22,1	20,4	30,9	31,6	27,1	30,2
40-44	4,8	3,8	3,7	1,4	2,6	2,8	4,0	2,6	2,3	3,5	3,0	2,9	7,3	5,1	4,7
45-49	0,8	0,2	0,1	0,4	0,2	0,1	0,2	0,2	0,1	0,5	0,2	0,1	0,8	0,4	0,3
Number of mothers aged 15-49	586884	766280	814308	502966	684003	746921	703971	925188	988165	1793821	2375471	2549394	6288956	7945440	8982282
Birth number of bloods	43897	59953	77561	40772	50799	71825	53168	70622	87730	137837	181374	237116	527580	634810	814960
SBR	74,8	78,2	95,2	83,1	74,3	96,2	75,5	76,3	88,8	76,8	76,4	93,0	83,9	79,9	90,7
ABR	2,3127	2,4374	2,9354	2,4352	2,2428	2,9237	2,2992	2,3560	2,7399	2,3431	2,3490	2,8564	2,6089	2,4278	2,6306

The table was prepared by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan.

SBR- Specific birth rates, ABR -Aggregate birth rates The change in share is a key factor. Between 2000 and 2019, the birth rate of mothers aged 40-44 and 45-49 decreased, and the birth rate in the 35-39 age group increased accordingly. This situation means that the birth age of mothers is decreasing.

The total birth rate, which represents the average number of children in a family, was 2.3-2.6 in the valley regions in 2000-2019, which was relatively lower than the national average. The main factors in

this are the high population density, small land area and large demographic capacity in the valley regions. Although there is no significant difference in the aggregate birth rate in the study area, there are regional differences in urban and rural areas. In 2017, the total birth rate in the districts of the study area was 2.7, while in urban areas it was 2.2. High level of urbanization in Fergana region, social problems the total birth rate in cities is not only among the valley regions, but also among the regions with the lowest rates in the country. In urban areas of Fergana region in 2017, the average number of children was 2.0, while in Andijan and Namangan it was 2.3.

Table 4. Average number of children in Fergana region (2019)

The value of the cumulative birth rate	Assessment of the birth rate and the order of population reproduction	Districts and cities
1.8 and less	Birth rates throughout the world have dropped dramatically already	-
1,8-2,15	If the birth rate is low and remains at this level for a long time, the re-establishment of the population will inevitably lead to a narrow circle.	Fergana city (3%)
2,15-2,17	The limit of normal reproduction of the population	-
2,17-2,4	At this birth rate, even if mortality rises significantly, normal reproduction of the population will continue and growth will also be observed	Honobod, Quvasoy (1,4)
2,4-3,0	The average birth rate, an expanded form of population reproduction, and its steady growth are observed	Andijan, Andijan, Boz, Buloqboshi, Jalakuduk, Ulugnor, Kurgantepa, Marhamat, Mingbulak, Namangan, Naryn, Pop, Uychi, Uchkurgan, Chartak, Chust, Yangikurgan, Kokand, Margilan, Oliariq, Koshtepa, Baghdad, Uchkuprik, Rishtan, Сўх, Тошлок, Ўзбекистон, Фарғона, Ёзёвон (63,5%)
3,0-4,0	Birth rates are above average, and population reproduction is widespread and growing rapidly	Altynkul, Balikchi, Izboskan, Asaka, Shahrihan, Pakhtaobod, Khojaabad, Namangan, Kosonsoy, Turakurgan, Buvayda, Dangara, Furqat (32.1%)
4.0 and higher	Birth rates throughout the world have dropped dramatically already, as has the rate of population growth	-

Table 5. Gross and net ratios per thousand women in the Fergana Valley (2010-2019 yy)

Provinces of the Fergana Valley		2010		2019	
		<i>Rb</i>	<i>Rn</i>	<i>Rb</i>	<i>Rn</i>
Andijan region	Total	1189	1183	1224	1217
	City	1104	1097	1148	1141
	Village	1322	1319	1307	1300
Namangan region	Total	1094	1089	1195	1188
	City	936	931	1103	1096
	Village	1432	1427	1365	1358
Fergana region	Total	1150	1143	1123	1118
	City	1122	1115	972	967
	Village	1221	1214	1324	1318
Fergana region	Total	1146	1139	1176	1170
	City	1055	1048	1076	1071
	Village	1324	1318	1332	1325

Table 4 was prepared by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan

As of 2019, the average number of children in a family in the city and districts of Fergana region alone is 1,904, and the population is growing in a narrow circle. The average number of children in the family is 2.3703 in the beautiful city of Honabad and 2.2885 in the industrial city of Quvasoy. The average birth rate

in 63.5% of the region's population is an expanded form of population reproduction, while in 32.1% of the population the population is growing rapidly and rapidly.

The gross birth rate, which represents how many daughters each 1,000 women will have after them, increased from 1,143 in 2000 to 1,176 in 2017, or 1.03 times (Table 3.1.4). In Andijan region, *Rb* increased from 1,128 in 2000 to 1,224 or 1.09 times in 2017,

while in Namangan region it increased from 1,188 to 1,194, 1.01 times, respectively. There was almost no change in the Fergana region, which increased from 1,122 to 1,123 during the same period. In the cities of the valley regions in 2017, the Rb was 1,074, in Andijan 1,148, in Namangan 1,103 and in Fergana 0.972. In the Fergana region, if the demographic processes in the urban population continue in this state, it is expected that in the near future there will be a complete reduction of the population. In rural areas, Rb was 1,332 in the region and 1,307, 1,364 and 1,324 in the provinces, respectively.

Table 5 was prepared by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan.

The net coefficient, which represents the average number of daughters a woman gives birth in a lifetime, reflects the true picture of population reproduction. A pn greater than > 1.0 indicates that the population will have expanded reproduction. In the Fergana Valley region, the number of girls born per 1,000 women in 2000-2017 increased from 1,134 to 1,170, an increase of 1.03. In 2000, the lowest rate was in Fergana region, where $R_n = 1,113$, while in 2017 it increased to $R_n = 1118$. In urban areas, the net ratio was also lower than in rural areas. In 2017, the lowest rate was $R_n < 1$ for the urban population of Fergana region. Due to the high level of urbanization and low birth rates in Fergana region, the population is not expected to be self-sufficient in the coming years.

Conclusion

This research allows us to draw the following conclusions:

- In the Fergana region, it can be observed that the difference between the age of the first child and the period of childbearing, ie the intergenetic interval increases, and the average number of children in the family decreases. Also, the number of children born in recent years has declined from the older generation to the younger generation. This has led to a reduction in the childbearing age of women, or "**mother rejuvenation.**" In the districts and cities of the valley regions there was a slowdown in population turnover, ie a decrease in the average population growth rate per thousand people. The territorial distribution of such declining natural population movements creates a "geodemographic wave" that gradually shifts from regional centers to remote areas. In the provinces of the Fergana Valley, the still-expanding population

among the population means that the re-establishment of the population is continuing;

- In the regions of the Fergana Valley, the overall fertility rate decreased in 1991-2000, in 2000-2006 this ratio was the lowest and increased in recent years, and has periodic fluctuations.

- The overall current level of the survival rate means that the population of the Fergana Valley will not decrease in the coming years, ie will continue to increase. The decline in birth and death rates will lead to an increase in the number of regions where the rate of population renewal will decline in the near future.

- The regions of the Fergana Valley ensure the normal reproduction of the urban population and high population growth in rural areas. In general, it means that the population of the Fergana Valley, which is still expanding, continues to recover.

- The valley regions will continue to be the largest in the country in terms of population. Population growth is exacerbating the population density in the region and a number of related social problems.

References:

1. Abdullaev O. Fergana Valley. -Namangan, 2000. -289 p.
2. Abduraxmonov A.D. Development of statistical study of population reproduction // Scientific electronic journal "Economy and Innovative Technologies". № 3, 2014.
3. Abdurahmonov Q., Abduramanov X. Demography. T.: Noshir, 2011.-296 p.
4. Ahmadaliev Yu. Geocology of land use.-T.: Science and technology, 2014. -340 p.
5. Burieva M.R. Family demography in Uzbekistan. -T.: Universitet, 1997. -181 p.
6. Burieva M.R. Fundamentals of Demography. -T. 2001. -120 p.
7. Valentey D.I., Kvasha A.Ya. Basic demographics. -M.: Mysl, 1989. -283 p.
8. Tojjeva Z.N. Population of Uzbekistan: growth and location. T.: - 2010.
9. Tojjeva Z.N. Population geography. T.: Nodirabegim, 2019. 254 p.
10. Qayumov A.A., Yakubov O.Sh., Abdullaev A.G. Population geography and demography. T.: Science and Technology, -160 p.
11. Qodirov R.B. Population and labor resources of Fergana region. T.: Navruz, 2016. -168 p.
12. www.stat.uz