

**ISCKMC 2020**  
**International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»**

**REGIONAL BIRTH RATE FEATURES IN THE NORTH  
CAUCASUS**

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**Abstract**

The North Caucasus was and still is a unique region with its natural, socio-cultural, ethno-confessional characteristics. This diversity is naturally reflected in the demographic behavior of the population of the entire district and individual subjects that make up its composition. Analyzing and considering the socio-economic, natural-climatic, ethno-confessional, historical and other characteristics of the region that affect the replacement of the population is the key to efficient regional demographic programs and, ultimately, the entire demographic policy of the state. The most important aspect of the analysis is continuous monitoring of the level and dynamics of indicators. Demographic indicators, as well as factors affecting them, are strongly differentiated across federal districts and constituent entities of the Russian Federation. The differentiation of birth rates by region of residence refers to the North Caucasian Federal District. The retention of the current level of the total birth rate and its ratio with the critical level will have an appropriate impact on the population dynamics of the region in the future. In the North Caucasian Federal District with a coefficient exceeding the critical level, the population will increase, and in the regions with a coefficient below this level, a population decline is expected. The degree of growth or decline will correspond to the difference between the real and critical level of the total birth rate. In both cases, this will happen if the mortality rate remains constant and without migration intervention.

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*Keywords:* North Caucasus, aggregate birth rate



## 1. Introduction

In 2012, after a long demographic crisis, Russia began to recover from the depopulation state. For four years, an insignificant, but still, natural population growth with positive dynamics was recorded.

Apparently, it was not possible to implement the strategic objective of the state demographic policy announced during these years – to maintain and expand the positive dynamics of the country's demographic development.

Scientists and demographers predicted the temporary nature of positive natural population changes, especially birth rate, and warned of the expected backsliding. Soon such undesirable forecasts began to come true. From 2016 to today, more people die again in Russia than are born and the process is gradually aggravated.

It has long been recognized and justified that, firstly, the implementation of state strategic objectives and tasks is impossible with the help of federal demographic policy only, without the development and implementation of regional programs and projects in this area, and secondly, demographic issues should be identified in all significant socio-economic programs and projects at all levels – country, federal district, region, municipality, etc.

Analyzing and considering the socio-economic, natural-climatic, ethno-confessional, historical and other characteristics of the region that affect the replacement of the population is the key to efficient regional demographic programs and, ultimately, the entire demographic policy of the state. It is no coincidence that recently the center of gravity in the development and implementation of the effective demographic policy is clearly transferred to the regions (Elizarov & Dzhanava, 2012).

The most important aspect of the analysis is continuous monitoring of the level and dynamics of indicators. They, and the factors affecting them, are very differentiated across federal districts and constituent entities of the Russian Federation. It is natural that the above refers to the North Caucasian Federal District.

The North Caucasus was and still is a unique region with its natural, socio-cultural, ethno-confessional characteristics, which is reflected in the demographic behavior of the population of the entire district and individual subjects that make up its composition.

## 2. Problem Statement

Relevant statistics show that the intensive population growth of the North Caucasian Federal District is mainly caused by the natural growth.

If not to doubt the reliability of the 1989 census and the current statistics on the population, then from 1989 to the beginning of 2020 the total population growth of the North Caucasian Federal District within the current borders amounted to 2105.2 thousand people, natural growth – 1889.9 thousand people. Thereby it is easy to ascertain the magnitude of the second component of the population change – migration. The balance of migration over these years amounted to 215.3 thousand people (RosStat, 1990).

That is, the share of natural growth in the total population change in the district was 89.8%, while migration only 10.2 %. During the whole analyzed period, migration did not a large-scale, but positive impact on the population change in the district. At certain intervals of this 30-year period, the ratio of

these two sources of formation to the size and composition of the population has constantly changed. However, the defining component, always and in all regions, has been the natural movement of the population.

All its processes are assessed with a huge variety of indicators, including total birth and mortality rates. Despite some shortcomings, they clearly describe the overall demographic situation, the extent and intensity of these major demographic processes, their trends in the country or the region.

Under the influence of the above and other factors, the level and dynamics of the total birth and mortality rates are strongly differentiated across the regions of the North Caucasian Federal District (Table 1).

**Table 1.** Total birth, mortality and natural growth (decline) rates in Russia and the North Caucasus regions (per 1000 people) (GosKomStat, 2019a)

	1989			2019		
	Birth	Mortality	Natural growth	Birth	Mortality	Natural growth
Russia	14.6	10.7	3.9	10.1	12.3	-2.2
NCFD	20.8	8.8	12.0	13.7	7.4	6.3
Dagestan	27.4	6.4	21.0	14.8	4.8	10.0
Ingushetia	24.6	8.4	16.2	16.4	3.0	13.4
Kabardino-Balkaria	21.1	8.5	12.6	11.5	8.3	3.2
Karachay-Cherkessia	17.1	8.3	8.8	10.8	9.1	1.7
RNO-Alania	18.0	9.5	8.5	12.3	10.3	2.0
Chechnya	24.6	8.4	16.2	20.3	4.3	16.0
Stavropol Territory	15.9	10.6	5.3	10.0	11.3	-1.3

Since the seventies of the last century, many vital indicators and, including general birth and mortality rates, have slowly but constantly deteriorated. As a result of such dynamics, by 1989 they could no longer be called progressive. Having reached this point, their level came close to the state typical for the fourth phase of the demographic transition, when the intensity of birth and mortality are almost equal.

In the future, the situation continued to deteriorate intensively, and this was the beginning of a deep demographic crisis. In Russia and in the vast majority of its regions, mortality began to exceed the birth rate.

In the North Caucasus, the crisis was not so deep. Suffice it to note that four of the 13 constituent entities of the Russian Federation (Dagestan, Ingushetia, Chechnya, Kabardino-Balkaria), where the depopulation was not recorded, are part of the North Caucasian Federal District, except for Kabardino-Balkaria, where in 2005, 43 people died more than they were born.

Despite the fact that the demographic crisis in the North Caucasus did not take on such an acute character as in the whole country, the negative dynamics was still recorded. This is quite clearly reflected in the dynamics of the natural population growth rate. It decreased at different rates in all the regions of the NCFD, and in three regions (North Ossetia, Karachay-Cherkessia and the Stavropol Territory), mortality exceeded the birth rate in different years. In the Stavropol Territory, depopulation continues to this day.

The scale of the natural growth in the NCFD regions mainly decreased as a result of the deterioration in birth rate indicators, since the mortality rate in four regions of the district even decreased, and in the remaining three regions increased, but not so much.

Birth rate is crucial for other demographic processes of population replacement and the general demographic situation. Therefore, the analysis of its scope and nature is usually given special attention.

### 3. Research Questions

The subject of the study is birth rates for all constituent entities of the North Caucasian Federal District.

### 4. Purpose of the Study

The purpose of the study is to analyze the total birth rate for all constituent entities of the North Caucasian Federal District.

### 5. Research Methods

During the study, the method of scientific objectivity was used based on the analysis of statistical data. A comparative analysis was also used to compare the nature of birth rates in different constituent entities of the North Caucasian Federal District.

### 6. Findings

The level and dynamics of total birth rates in the North Caucasus regions is clearly shown in Table 2.

**Table 2.** Level and dynamics of total birth rates in the regions of the North Caucasian Federal District (per 1000 people) (GosKomStat, 2019b)

Regions	1989	1995	2000	2005	2010	2015	2019
Russia	14.6	9.3	8.7	10.2	12.5	13.3	10.1
NCFD	20.8	-	-	13.9	17.3	16.6	13.7
Dagestan	27.4	20.7	15.5	15.9	18.0	18.3	14.8
Ingushetia	24.6	25.3	21.5	15.9	27.1	18.5	16.4
Kabardino-Balkaria	21.1	13.1	10.4	10.3	14.6	14.6	11.5
Karachay-Cherkessia	17.1	12.9	10.6	11.5	12.9	12.3	10.8
RNO-Alania	18.0	13.0	10.3	11.2	14.5	14.6	12.3
Chechnya	24.6	19.9 (1992)	24.9 (2003)	25.1	29.9	23.1	20.3
Stavropol Territory	15.9	10.6	9.0	9.9	11.9	13.0	10.0

After 2000 until 2015, the birth rate increased in Russia and in most regions of the North Caucasus. In Chechnya and Ingushetia, the coefficient decreased, but remained significantly higher than in the neighboring regions. Since 2015, the birth rate began to decline at different rates in the country and in all regions of the North Caucasian Federal District.

Regional differentiation of the total birth rate can also be assessed according to Table 03.

**Table 3.** Dynamics of regions in the total population and among newborns in the NCFD (%)  
 (GosKomStat, 2019b)

	1989		2010		2019	
	Share of the region in NCFD population	Share of the region among newborns in NCFD	Share of the region in NCFD population	Share of the region among newborns in NCFD	Share of the region in NCFD population	Share of the region among newborns in NCFD
NCFD	100	100	100	100	100	100
Dagestan	23.2	30.7	30.9	32.1	31.3	33.9
Ingushetia	-	-	4.4	6.9	5.0	6.1
Kabardino-Balkaria	9.8	10.0	9.1	7.8	8.8	7.3
Karachay-Cherkessia	5.6	4.5	5.1	3.8	4.7	3.7
RNO-Alania	8.2	7.1	7.6	6.4	7.1	6.3
Chechnya	-	-	13.5	22.6	14.8	22.0
Stavropol Territory	36.8	28.2	29.6	20.5	28.3	20.6
Checheno-Ingossetia	16.4	19.5	-	-	-	-

According to the data given in the table, the NCFD regions can be clearly divided into two groups: regions with high birth rate ensuring expanded reproduction of the population and regions with low birth rate, not even providing a simple reproduction of the population.

According to the results of the entire considered period, the first group includes Dagestan, Ingushetia and Chechnya, the second – Karachay-Cherkessia and North Ossetia. As for Kabardino-Balkaria, as of 1989 it was part of the first group, and since 2010 it has joined the second group.

The proportion of regions of the first group among newborns is significantly higher than among the entire population of the Federal District.

This means that in other equal conditions the birth rate in these regions contributes to the population growth. This is confirmed by the fact that the proportion of these regions is constantly increasing among the entire population of the North Caucasus. For example, in 1989, the share of these three regions in the total population of the North Caucasian Federal District (within its current borders) was 39.6 %, and by the beginning of 2019 it was much more – 51.1 %.

Accordingly, the share of the regions of the second group (including Kabardino-Balkaria) decreased from 59.4 to 48.9 %. In these regions, the other components of the population change – migration and population mortality – were not able to exceed the negative effects of the birth rate decline or contributed to the decrease in the share of their population.

Over 1989–2018, the special birth rate decreased at different rates in all regions of the North Caucasus (Table 04).

**Table 4.** Level and dynamics of special birth rate in the NCFD regions (per 1000 women of fertile age)  
 (GosKomStat, 2018)

Regions	1989	2000	2005	2010	2015	2018
Russia	59.8	32.6	36.8	47.8	54.6	46.1
Dagestan	112.9	65.7	52.2	61.1	65.0	57.4
Ingushetia	99.4	72.0	45.9	87.6	62.7	56.1

Kabardino-Balkaria	84.2	43.4	33.6	51.1	55.7	49.7
Karachay-Cherkessia	70.5	40.0	41.8	46.2	47.5	42.5
RNO-Alania	73.2	40.3	41.5	54.3	58.4	54.2
Chechnya	99.4	-	88.1	111.7	90.1	81.4
Stavropol Territory	67.1	35.5	36.4	44.5	51.9	44.9

The comparative analysis of the data of the second and fourth tables leads to the opinion that the deterioration of birth rate parameters in Russia and the North Caucasus occurs not only as a result of a deterioration in the age structure of the entire population, but also due to the change in the reproductive attitudes of women of fertile age.

The special birth rate is much better than the overall birth rate. However, it still depends on the characteristics of the age composition not of the entire population, but of women of fertile age. The fact is that within the age group of 15–49 years, the intensity of childbearing varies by age.

Age-related birth rates for five-year age groups of women provide an opportunity to overcome this shortcoming. They show the intensity of childbearing in each five-year age group within the fertility age per 1,000 women of the corresponding age.

In Russia as a whole and, including in the regions of the North Caucasus, these coefficients mainly tend to decline (Table 5).

**Table 5.** Age birth rates and their dynamics in the regions of the North Caucasian Federal District (GosKomStat, 2019b)

Regions	15–19	20–24	25–29	30–34	35–39	40–44	45–49
1990							
<b>Russia</b>	55.0	156.5	93.1	48.2	19.4	4.2	0.1
Dagestan	35.8	225.6	185.6	108.1	45.1	14.0	1.2
Kabardino-Balkaria	57.0	198.9	129.3	70.0	29.4	4.7	0.3
Karachay-Cherkessia	44.2	163.7	119.9	70.8	31.8	6.3	0.1
RNO-Alania	31.6	155.3	133.2	82.8	35.5	8.0	0.3
Checheno-Ingoshetia	40.3	172.2	161.3	117.3	62.4	16.2	0.7
Stavropol Territory	66.0	176.0	102.2	50.4	19.4	4.2	0.2
2018							
Russia	16.1	78.4	96.5	76.1	39.7	8.9	0.5
Dagestan	32.2	129.1	95.6	68.6	36.5	8.5	0.6
Ingushetia	2.4	99.5	108.0	79.1	51.3	17.2	0.8
Kabardino-Balkaria	17.6	96.9	98.4	67.1	35.0	8.1	0.4
Karachay-Cherkessia	12.7	76.1	90.0	65.8	32.5	7.2	0.8
RNO-Alania	13.3	83.2	117.5	89.8	47.9	13.0	1.0
Chechnya	34.5	165.5	146.6	103.2	52.5	14.6	1.4
Stavropol Territory	20.5	90.6	81.7	67.8	33.8	7.3	0.4

Based on the data given in the table, it is difficult to identify stable and common for all regions trends in age coefficients. They are highly differentiated by region and age group. Some coefficients decrease very intensively in all regions, while the others maintain a rather stable level or even increase. This is mainly the case for women aged 35 and above.

During the analyzed period, a general trend for all regions of the North Caucasus is a decrease in the birth rate among all young age groups of women. At a particularly rapid rate, the intensity of childbearing in the age group of women of 20–24 years old decreased almost twice in all regions of the North Caucasian Federal District, with the exception of Chechnya.

As a rule, the so-called total birth rate – the best indicator of this demographic process – is calculated based on age ratios. Its value is almost independent of the characteristics of the age structure of the entire population, including the female reproductive population.

The total birth rate shows how many children an average of one woman gives birth for the entire fertile age. It provides an opportunity to assess the birth rate from the point of view of its influence on the reproduction of the population. For such an assessment, it is only necessary to know its critical value.

A critical (threshold) value with a stable level of mortality provides a simple reproduction of the population. Below this value there is a narrowed, and above – an expanded reproduction of the population. Naturally, the impact of population migration is excluded.

According to 2019 data, the total birth rate in Russia was 1.50 births on average per woman (Table 06).

**Table 6.** Total birth rates and their dynamics in the Russian Federation and in the regions of the North Caucasian Federal District (Demoscope, 2019)

Regions	1990	1995	2000	2005	2010	2015	2019
Russia	1.89	1.34	1.20	1.29	1.57	1.78	1.50
Dagestan	3.07	2.41	1.82	1.70	1.92	2.02	1.80
Ingushetia	2.84	2.74	2.46	1.80	2.99	1.97	1.83
Kabardino-Balkaria	2.45	1.67	1.26	1.20	1.66	1.75	1.51
Karachay-Cherkessia	2.19	1.73	1.39	1.39	1.51	1.54	1.48
RNO-Alania	2.23	1.78	1.39	1.44	1.84	1.93	1.78
Chechnya	2.84	-	-	2.95	3.45	2.80	2.58
Stavropol Territory	2.10	1.53	1.24	1.23	1.44	1.64	1.42

## 7. Conclusion

The retention of the current level of the total birth rate and its ratio with the critical level will have an appropriate impact on the population dynamics of the region in the future. In the North Caucasian Federal District with a coefficient exceeding the critical level, the population will increase, and in the regions with a coefficient below this level, a population decline is expected. The degree of growth or decline will correspond to the difference between the real and critical level of the total birth rate.

In both cases, this will happen if the mortality rate remains constant and without migration intervention. Naturally, in real life, the population changes and composition will be influenced by these processes depending on the nature and intensity of changes in their parameters in each region.

At some intervals of the considered relatively rather long period, under the influence of a huge variety of objective and subjective factors, all analyzed and other characteristics of the birth rate, constantly changed. Continuous and comprehensive study of the scale, intensity and causes of these changes is a prerequisite for the development of effective measures to regulate the reproductive behavior of the population of the entire North Caucasian Federal District and its constituent regions.

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