

LEVEL OF EDUCATION IN RUSSIA: INTERREGIONAL DIFFERENCES AND PROSPECTS FOR CHANGE BETWEEN 2002 AND 2010

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Abstract

Given the low birth rates in Russia, the issue of the qualitative reproduction of the population is very important, since this strongly affects the pace of the country's socio-economic development. We consider the changes that occurred in the educational structure of Russia's population between the 2002 and the 2010 censuses. Our focus is on the regions, since the differences between them in terms of the level of education of the population can be notable, although there are similar trends. The educational structure of the population was worse in the less developed agrarian regions. We show that the main trend for the period under consideration is an increase in the share of the population with postgraduate and higher education, against the background of a slow decline in the share of the population with primary and secondary vocational education. These changes are related both to the growth in the number of people with higher levels of education and to the attrition of the population with general education as a result of death. The share of those with complete general education has remained virtually unchanged, while the share of those with basic general education and lower levels of education has declined.

Key words: level of education, labor force, Russia, census

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Introduction

In September 2021, Russia will carry out a population census; this has been postponed for a year because of Covid-19. This will provide a great deal of data on Russia's population and its reproduction trends. Although census data are not fully studied and used by researchers, censuses are necessary because they are the only way to obtain representative statistics nationwide on many issues. First and foremost, these statistics concern the number and composition of households and families, the ethnic composition of the population, and the level of education of the population.

Under conditions of fertility below the replacement level, the question of population reproduction is the most important for the existence of society. There are no reasons for the growth of the total fertility rate (TFR) to the level of 2.1, so the Russian population will not reproduce quantitatively due to fertility in the nearest 10–20 years. In this connection, reproduction of the qualitative composition of the population, which should be understood primarily as bringing the educational structure of the population in line with the needs of the economy and society, becomes especially important, as it allows economic losses that result from the decline in the working-age population to be reduced.

Russia's regions vary greatly in their level of socio-economic development and natural and climatic conditions. This leads to significant interregional differences in the level of education of the population. How great are these differences, how has the distribution of the population of the Russian regions according to level of education changed between the censuses of 2002 and 2010, and what features of this distribution can be highlighted? Answers to these questions will help define trends in the reproduction of the population and labor force, and identify areas for improvement in the state policy in the country as a whole and its regions.

1 Research methods and literature review

Higher education became widespread in the second half of the twentieth century, since economically developed countries began to view it as a crucial investment to produce social mobility, economic growth, and equality (Brown et al., 1997; Trow, 2010). As a result, the value of higher education is still continuing to grow in both developed (Alves & Tomlinson, 2021) and developing countries (Jacob, 2020). This is true even at high levels such as master's degrees (Yang & Chan, 2020). However, the dynamics of the changes in the structure of the population by level of education are studied less frequently than they should be. Such a study has been done for Czechoslovakia, for example (Boguszak, 1987a, 1987b).

The Soviet censuses and the dynamics of the educational structure of the population until 2002 have been analyzed in detail. It has been concluded that the increase in the level of education of the population was carried out at the expense of young people (Shcherbakova, 2008) and was driven by economic reasons (Repinetskii, 2010). Nevertheless, despite the expansion of higher education, there are still significant inequalities in access to it (Prakhov, 2015; Smolentseva, 2017). Access to higher education is based on household status and the resources invested in the preparation for the unified state examination (USE).

In this paper, we consider the educational structure of the population, by which we mean the distribution of the population over 15 years of age according to level of education. The data sources are the materials of the 2002 and 2010 Russian censuses. We try to associate the interregional differences in the educational structure of the population with the level of economic development of the regions. This approach was followed by Kulagina (2012). We do not address the relationship between unemployment, employment, and the level of education of the workforce, although it would be useful to expand the results of Korovkin et al. (2014) and Varshavskaya (2020) to the regional level.

2 Educational structure of the population in 2002

In 2002, the share of the population with postgraduate education (ISCED-8) was 0.30% in the country as a whole. In seven regions it was higher than the national average. In Novosibirsk and Tomsk Oblasts, and the Republics of Ingushetia and North Ossetia, it was between 0.30 and 0.37%. In Moscow Oblast, 0.47% of the population had postgraduate education. In St. Petersburg and Moscow the shares were 0.79% and 1.00%, respectively. Overall, 40.7% of all people with postgraduate education lived in the three latter regions, although the share of the total population living there was only 15.6%. This can be explained by the high number of universities and research institutes located in these regions. If we exclude these regions, the share of the population with postgraduate education in the country as a whole decreases to 0.21%. Using these figures, 37 regions had a share of the population with postgraduate education at the national average level or above.

The share of those with incomplete higher education (those who had not graduated from a higher educational institution, but had received a certificate stating that they had enrolled for study) is not high. In 2002 they accounted for 3.1% of the total population, and in 2010 the share was 4.5%, so we do not consider them.

In 2002, the national average percentage of the population with higher education (ISCED-6 and ISCED-7) was 15.7%, or 13.8% if we exclude the three main regions, where 25.5% of the total population with higher education resided. This percentage ranged from 7.1% in the Chechen Republic to 28.9% in Moscow. St. Petersburg (25.3%) and Moscow Oblast (20.2%) were also in the top group, as expected. The Republic of North Ossetia was close (19.5%). Hierarchical clustering based on Ward's method allows us to identify a cluster of regions with a higher share of the population with higher education (ranging from 15.1% to 17.4%). This group is heterogeneous and includes regions with different levels of economic

development but in proportion to total number of such regions. The remaining regions fall into a different cluster. A significant number of regions with low and the lowest levels of economic development were among the regions with the lowest share of the population with higher education (less than 12%).

The population with primary and secondary vocational education (ISCED-4 and ISCED-5) formed the core of the labor force in almost all regions. For the country as a whole, this percentage was 39.8%. Despite some variations, the distribution among the regions was homogeneous. This is supported by the fact that only one large cluster was identified based on Ward's method. Within the cluster, the share of the population with primary and secondary vocational education was between 36.5% and 47.5%. Very low values were found in the Republics of Ingushetia (24.6%), Dagestan (22.7%), and Chechen (16.9%). Voronezh Oblast and the Republics of Kalmykia, Karachay-Cherkessia, North Ossetia, Stavropol Krai, Moscow, and St. Petersburg stood out somewhat. In these regions, the share was between 31.1% and 35.8%. This is due to the high share of agriculture in the economy or the financial specialization of a region. By contrast, in the northern regions that specialize in the extraction of minerals, the percentage of the population with primary and secondary vocational education was more than 45% (there were nine regions in total in this group).

For the country as a whole, the share of the population with both higher, and secondary and primary vocational education was 58.9%. Consequently, we can talk about the universality of vocational education. The share of the population with vocational education was below 50% in the most depressed republics of the North Caucasus: Dagestan (39.8%), Ingushetia (41.5%), and Chechen (26.9%).

In 2002 the proportion of the population with complete general education (ISCED-3) was comparable to the proportion with higher education, amounting to 17.5%. It was at its highest (more than 20%) predominantly in the national republics and the less developed regions. Three regions of the North Caucasus stand out. In the Republics of Ingushetia, Dagestan, and Chechnya the shares were 31.7%, 32.4%, and 38.1%, respectively. The fourth place was occupied by the Republic of Karachay-Cherkessia, which accounted for only 25.7%. There were no regions that can be described as less developed among the regions with the lowest share of the population with complete general education (less than 15%), but there was a disproportionately high number of developed regions.

The share of the population with basic general education (ISCED-2) was 13.8%. This is a fairly high value, but 61.7% of the people with this level were aged 15-17 or over 60. The lowest shares were in Moscow (8.1%) and St. Petersburg (8.2%), where there were the

highest shares of the population with both higher, and secondary and primary vocational education. These regions were followed by Yamal-Nenets (10.5%) and Khanty-Mansi (10.6%) Autonomous Okrugs, where the population was younger than in the country as a whole, so the level of education was higher. Murmansk Oblast (11.8%) and other regions came next. The regions with the highest share (over 16%) were quite heterogeneous, but among them the basis was formed by the less developed regions. The only exception is the leader (Nenets Autonomous Okrug), in which, because of the high proportion in the total population of indigenous peoples of the North with lower levels of education, the percentage of the population with a basic general education was 21.0%.

The share of the population with primary general education (ISCED-1) was 7.7%. However, 81.6% of this entire number was concentrated in those aged over 60, and another 6.5% were young people aged 15-17, so that these age groups together accounted for 88.1% of the total population with such an educational level. We do not consider this group in detail, because its influence on the structure of those in employment was small.

The share of those without primary general education (ISCED-0) for the country as a whole was 1.0%, and the percentage of those who were illiterate was 0.6%. The majority of those without even such a level of education (71.5%) and those who were illiterate (65.8%) were over 65 years old. In the leading economic regions (St. Petersburg and Khanty-Mansi Autonomous Okrug), the share of the population with less than primary general education was 0.21%. The lowest percentages of illiterate people were in St. Petersburg (0.06%), Moscow (0.07%), and Khanty-Mansi Autonomous Okrug (0.11%). The share of the population without primary general education was 0.6% or less in 13 highly developed regions and regions of the Far North. In 30 regions the share of those who were illiterate was less than 0.5%. The share of those without primary general education was more than 1.5% in 14 regions, predominantly the less developed agrarian regions. In nine regions the share of those who were illiterate exceeded 1%. The Republics of the North Caucasus, which were affected by military operations, stand out especially strongly here. In Ingushetia, the two groups had shares of 3.8% and 2.7%, respectively, and in Chechnya, 5.5% of the population had no primary general education and 4.0% were illiterate.

3 Educational structure of the population in 2010

By 2010 the share of the population with postgraduate education in the country as a whole had increased, and amounted to 0.58% of the total population over the age of 15. The shares

of the population with postgraduate education were highest in the Republic of Ingushetia (1.59%) and Moscow (1.09%). The percentage was higher than average in the least developed regions of Southern Russia, Siberia, and the Far East. This is because postgraduate education had a high return in these regions, as it allowed the individual to occupy a high position in the public sector. This means that postgraduate education acted as an important tool for upward mobility. Although Moscow Oblast, Moscow, and St. Petersburg continued to be the regions with the largest number of people with postgraduate education, their share of the total decreased to 25.5%, and Krasnodar Krai, which was in fourth place, had only four thousand fewer people than Moscow Oblast. The distribution between regions had become much more even.

During the intercensal period, the share of the population with higher education increased to 22.1% (or 19.6% if we exclude the three regions with the highest number of people with higher education). There was an increase of 40.8% (or 42.0% if we exclude those three regions). The distribution of regions became more even, which was reflected in the fact that the two main clusters became more equal in terms of the number of regions in each. There was still a noticeable gap between the Chechen Republic and the other regions, but the Chechen Republic also saw a 62.4% increase in the population with higher education (to 11.5% of the total population). The shares of the population with higher education in Moscow and St. Petersburg increased to a lesser extent than in the country as a whole, while in Moscow Oblast the increase was at the national average level. However, because of the high initial values, the shares were 40.1%, 32.2%, and 28.6%, respectively. The Republic of North Ossetia retained fourth place. The distribution of regions by the share of the population with higher education did not undergo significant changes compared to 2002.

There were several reasons for the growth in the proportion of the population with higher education. First, parents considered higher education as an important tool of social mobility. Second, employers sought to hire people with higher education, even in cases where they could have chosen workers with lower levels of education. Third, as a result of the socio-economic transition, the prestige of physical labor decreased greatly against the background of structural transformations in the Russian economy and the growth in the prestige of office work.

By 2010, the share of the population with primary and secondary vocational education had dropped to 35.7%. This share exceeded 40% in only nine regions, primarily those in which the extraction of minerals was important. In the Chechen Republic it increased slightly (to 19.4%), while in the other regions with low shares there was a decrease or the value

remained practically unchanged. The homogeneity of the distribution of regions by the share of the population with primary and secondary vocational education increased.

Because of the growth in the number of people with both higher, and secondary and primary vocational education, the share increased to 62.9% in 2010. In Moscow, which led by a considerable distance, 79.7% had such a level of education. The share remained the lowest in the Republics of Dagestan (45.7%) and Chechen (35.8%). It was 50.2% in the Republic of Ingushetia. The increase in the level of education of the population was not only due to the increase in the number of people with such education. The outgoing elderly population, for the most part, was limited to complete or incomplete general education.

The share of the population with complete general education was almost unchanged during the intercensal period, and amounted to 17.7% in 2010. The homogeneity of the distribution increased, meaning that there was a decrease in the number of regions with the largest and the smallest shares; in other words, the regions became concentrated around the average values. Only five regions had a share of 15% or less, compared with 11 regions in 2002. The number of regions with a share of more than 20% increased from 17 to 20, but the percentage exceeded 23% in only three regions (in 2002, there were six such regions): the Republics of Ingushetia (26.2%), Dagestan (31.9%), and Chechen (35.7%).

By 2010, the share of the population with a basic general education had decreased to 10.7%. This was due to a decrease in the population with such a level of education both in the young (due to the low birth rates) and the old (due to death) age groups. Moscow (4.6%) and St. Petersburg (4.8%) continued to lead, but in 18 regions the share of the population with a basic general education was less than 10%. There were no regions in which it exceeded 20%, and it was greater than 14% in only nine regions. Despite some changes, the leading and outsider regions retained their positions, which corresponded to their level of development.

The number of people with primary general education decreased by three million in 2010 compared to 2002, and the share was 5.2% of the total population. Nevertheless, the share of the main age groups (age groups of those who were under 17 and over 60 years old) with this level of education was close to the share of 2002 and amounted to 85.7%.

In 2010, the share of the population without primary general education decreased to 0.6%, and the share of the population of those who were illiterate became 0.3% because of the attrition of the elderly population. The proportion of those over 70 years old among the total population without primary general education was 49.3%, and this proportion was 37.8% for those who were illiterate. The next largest group was young people aged 20–24. They accounted for 7.4% of all those without primary general education and 9.2% of all those who

were illiterate. Moscow, St. Petersburg, and Khanty-Mansi Autonomous Okrug continued to lead. The share of the population without primary general education was below 0.5% in 21 regions, and in 18 regions the share of those who were illiterate was less than 0.25%. The number of regions in which the share of the population without primary general education was more than 1% decreased to seven, and the percentage exceeded this value in only two regions. These regions were the Republics of Ingushetia (1.7%) and Chechen (1.8%).

Conclusion

The 2000s were a period of recovery after the significant socio-economic transformations of the 1990s. Changes affected all aspects of life. Education was no exception. During this time, new trends were formed and old ones became stronger.

The most important trend is the growth in the number and share of the population with higher education. In Soviet times, the competition for higher education was strong. Higher education was of good quality, so the population believed that getting a higher education was a direct path to success. In the 1990s, many new higher education institutions appeared. Most of them were private, but the quality of education in them was often poor. Nevertheless, the demand for their services was great. Society and entrepreneurs demanded a population with higher education, not just primary and secondary vocational education. As a result, it became more difficult to get a job if one did not have higher education. Studying at university allowed one to get a deferment from the army, which was very important at that time. In the 2000s, the processes in the area of education began to be streamlined, but the existing distortions in favor of higher education were not corrected.

To a large extent, this situation was due to the decline in machine-building and other industries associated with real production, low wages, and the low prestige of physical labor. In this regard, achieving only primary or secondary vocational education was considered as a failure and somewhat of a lowering of social status. As a result, and as the demand for employees with primary and secondary vocational education decreased, the share of the population with such education slowly decreased and became concentrated in the older age groups. This trend is the second most important.

The share of the population with general education only has been declining. It was mainly the elderly who did not have higher, secondary or primary vocational education, and their numbers dropped significantly during the intercensal period. The demand for unskilled labor began to be met by migrants from Central Asia, who received very low wages, so it was

impossible to compete with them. As a consequence, higher, secondary or primary vocational education has become an urgent necessity for young people, even in rural areas where the requirements for workers are lower.

We can expect all of these trends to have continued throughout the 2010s. The 2021 census will show a further increase in the share of the population with the highest levels of education, a decrease in the share of the population with primary and secondary vocational education, and a significant decrease in the share of the population with the lowest levels of education. The 2021 census will likely indicate that the share of the population with higher, secondary or primary vocational education is at least 70%. Nevertheless, in the 2030 census, the share of the population with primary and secondary vocational education may increase, since in recent years there has been an increase in the number of applicants to colleges.

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