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Excessive Social Inequality as a Serious Challenge to the Demographic Security of Modern Russia with Considering the Supply Chain Strategy Effects

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Abstract. **The article substantiates the idea that increasing social inequality and persistent large-scale poverty in post-Soviet Russia should be considered as one of the main reasons for the low birth rate in the country and a serious challenge to ensuring its demographic security. The authors propose a concept of demographic security and outline its primary indicators and their threshold values—the methodological basis for diagnosing and forecasting demographic processes from the perspective of Russia's national and economic security. The authors analyzed the influence of excessive social inequality on the demographics in the country for the period from 1990 to 2018. The authors used a step-by-step analysis algorithm and built a multiple regression equation that reflects the impact of various socio-economic factors, including excessive inequality and deformation of people's social behavior, on life expectancy. The equation has a high explanatory power (the adjusted coefficient of determination is$\bar{R}^2$= 0.914).Thus, it can be used as the methodological basis when proposing measures for maintaining and increasing life potential of society that is an optimal solution for ensuring demographic security in present conditions. The study presents recommendations on the development of an active national socio-economic policy aimed at overcoming excessive social inequality in Russia and ensuring its demographic security.**

Keywords: demographic potential of the country, demographic security, social inequality, relative and absolute poverty, supply chain strategy, indicators of demographic dynamics, life expect ancyat birth, life potential of society, functional fertility borders, demographic tax, social contract.

1. Introduction

1.1 Introducing the Problem

The problems associated with studying and ensuring the demographic security of Russia and its regions are becoming increasingly important since the end of the 20th and the early 21st century, and there is a good reason for it. "Demographic security" is not an abstract or opportunistic concept, but it is directly linked with the concept of "national se-curity" that has become one of social priorities and an integral part of the domestic and foreign policy of the United States and other countries. Considering the interconnection of the country's demographic potential (in other words, its population) with the growth of the real national income, one can say that maintaining and increasing the country's population are among the main conditions for ensuring its socio-economic security [1]. Considering the above, demographic security can be defined as such a state of a country's demographic potential and all its aspects that enables the continuous natural renewal of generations and life security even under adverse internal and external conditions. From this perspective, demographic security is the most important indicator of socio-economic, political and ethnic development of the country (region). Russia has traditionally assumed that its demographic potential is very high. It grew particularly fast in the 19th century, and by 1897 estimated about 4% of the world population [2]. The average annual population of Russia reached its maximum in 1992(148.7 million people), and in 2017 it estimated 146.8 (including the population of the Republic of Crimea). The country today accounts for 1.9% of the world population. It should be noted that the natural population growth observed in Russia in the past has been replaced by a natural decrease since 1992, which is not covered by increasing migration. Considering the obvious discrepancy between Russian population today and the size of its territory, the length of its borders, huge spaces that should be developed, as well as its proximity to densely populated states (some of them occasionally put forward claims on Russian territory), the current demographic situation should be seen as a serious challenge to the national and geopolitical interests of the country. To deal with it, it is necessary to research the main directions and mechanisms of demographic policy and to develop a strategy for the near and distant future. It should be

said that even today, when the Russian government pays great attention to solving demographic problems, judging by the measures taken (introducing the maternity capital, increasing child benefits, promoting healthy lifestyle, and repatriation programs), the state policy in this area is still inconsistent, not of systemic or comprehensive nature, since it often fails to take into account various socio-economic and socio-psychological factors, as well as mechanisms underlying the observed demographic processes [3]. In this case, according to well-known American scientist W.E. Deming, "... events that at first sight or by common sense should have had a positive effect often do not lead to the desired result, and sometimes systematically reduce the control targets"[4]. Against this background, it is crucial to explore the impact various socio-economic factors and social institutions on demographic dynamics. Social inequality and poverty are among the most important ones since their "influence on the demographic dynamics can be compared with the impact of such systemic factors as climate or ecology on the development and functioning of biological organisms" [3].

1.2 The Importance of the Problem

In the beginning of the 21st century all countries, including Russia, experienced rapid differentiation of real incomes and consumption, which resulted in a sharp increase in social inequality, "... a huge gap between poverty and wealth, isolating the "golden billion" countries from the rest of the world regarding their economic development and income, and the growth of internal non-equality" [5]. Today, we can observe a persistent negative trend when a small group owns an increasingly larger share of world wealth. According to the experts of Swiss financial company Credit Suisse, 1% of the richest people owned 50.8% of world wealth in 2016,compared 45.8% in 2012, and 48% in 2014 [6]. However, in 2017, according to the report "An Economy for the 99%," the total wealth of 50% of the world population equaled that of the eight richest people on the planet [7]. According to WID.world, in 2016 incomes of the richest 10% estimated: 76% in the USA, in China—66%, in France–53%, and in the Russian Federation—87% [8]. Social inequality has reached a catastrophically high level in modern Russia. This statement is confirmed, for example, by the ratio of average per capita incomes of the richest 10% and the poorest 10%, which in 2016 estimated 15.6 times compared to 3 times in the USSR, 5–6 times in Japan, the Czech Republic, Hungary, Finland, Sweden and Norway, 7–9 times in Belarus, Bulgaria, Kazakh-

stan, Poland, Switzerland, France, Germany, Canada and India, and 10–11 times in Italy and Spain [9]. As world experience shows, the range of rational (optimal) values for this indicator is 6–12 times [1]. A major indicator of inequality, the Gini index, which reflects distribution of total income, increased from 0.289 in 1992 to 0.412 in 2017, exceeding the critical value for this indicator by 30–40% [10]. It should be mentioned that in countries with a social market economy (Sweden, the Netherlands, and Denmark) the value of this indicator is 0.30 or less, while in Great Britain and France it estimates 0.33 [5]. Such distribution of income and wealth resulted in a huge number of poor people. According to the World Bank, in 2017, in Russia13.3% had cash incomes below the subsistence minimum (while the maximum permissible value of this indicator is 7.0%). According to the European poverty line (60% of the median income), the level of poverty in the whole population reached 21.3%, and among families with children—26.5%(in comparison, in the EU countries, the share of the poor according to this criterionin 2017 estimated 16.9%). These factual data prove that in modern Russia inequality is not just high, but excessive, especially when compared with the leading European countries. Such a situation leads to a so-called "poverty trap", in which people lose motivation to economic activity, including labor. They become more dependent and inert, the quality of human reproduction decreases, and its transformation into human capital is hindered [11, 12, 13, 14]. Here it should be noted that as early as 2006, the World Bank drew public attention to inequality and poverty in the debates on human development, economic growth, new global effects of inequality on the demographic dynamics and the quality of human potential [15].

1.3 Literature Review

Today, the problem of increasing social inequality and poverty has become one of the major ones for global economics (as well as sociology, political science, psychology, etc.). The growing interest of the scientific community and politicians to this issue is connected with the search for the optimal (normal) level of inequality that can help overcome some steady negative trends (primarily, incomes polarization and an increasing gap in society, concentration of capital and wealth in the hands of ever more narrow groups, persistent large-scale poverty, etc.). Solving these issues would facilitate economic growth and/or help achieve greater social justice. For instance, in his book "Capital in the Twenty-

First Century" (2015), French economist T. Piketty calls high inequality the fundamental contradiction of capitalism. He writes: "Inequality ... means that recapitalization of property accumulated in the past occurs faster than production and wages growth. This inequality reflects a fundamental logical contradiction" [16] .D. Dorling emphasizes that "more babies survive in countries with higher equality, and people there in general are healthier and happier. Equality pays "dividends" at all stages of human life, from childhood to old age" [17]. The works of [18], [19], and [11, 12] make one ponder on the economic, social, political and other consequences of excessive inequality in the 21st century and are based on different interpretations of the hypothetical curve [20]. These studies represent current theoretical and methodological basis for further study of inequality and the mechanisms of its influence on other socio-economic processes, including demographic dynamics. From our perspective, when assessing inequality and poverty today, the most common theoretical approaches to this problem are the deprivation approach and the concept of functional capabilities that were profoundly developed by British economist [21]. He used the expert method to create a list of "deprivations" acting as signs of poverty. Later, [22] adjusted this list after a survey of households. The concept developed by Nobel laureate [23] implies that human well-being is associated not with utility or a set of consumer goods that they have, but with a set of their functional capabilities. According to the scientist, "just as the budget size in the product space represents the freedom of an individual to buy consumer goods, the "set of capabilities" in the function space reflects the individual's freedom to choose a lifestyle" [24]. In addition to the above approaches, when determining the poverty line scientists use such well-known competing concepts as absolute, relative and subjective poverty. Their combination allows one to construct a multi-criteria poverty line [13, 25]. At the same time, modern researchers are paying less attention to the study of the impact of inequality and poverty on demographic dynamics. What is more, research results are often fragmented and controversial. In this regard one should mention the works of Russian scientists [26] with a detailed analysis of statistical data on demographic indicators. However, the authors do not provide sufficient theoretical substantiation of the results obtained.

1.4. Stating the Hypothesis

A working scientific hypothesis of this study implies accepting that excessive social inequality and large-scale poverty have aprofound and systemic effect on the dynamics of fundamental demographic indicators (birth and death rates and life expectancy at birth) in modern Russia. The elimination of excessive social inequality is the most important factor in ensuring the demographic security in Russia.

2. Method

The hypothesis about the effect of excessive inequality and large-scale poverty on the demographic dynamics and ensuring demographic security was tested with a range of methods:

2.1. Database building

(Representative statistical samples and collecting the required statistical data) which included:

– time series (population size, the birth and death rates, natural population growth, life expectancy at birth, total migration, the share of population with incomes below the subsistence minimum, and the distribution of total cash incomes by 20% population groups)with the statistical data of the Russian Federation for the period from 1990 to 2017;

– panel data of Russia's regional statistics for the period from 2013 to 2017 (380 observations, 24 factors) characterizing the dynamics of economic development, education, health care, ecological environment, as well as the dynamics of excessive inequality and the deformation of social behavior in Russia's regions;

– spatial data characterizing the average life expectancy in 2017 and the global dynamics of the main indicators of socio-economic inequality for the period from 1990 to 2017.

2.2. Intelligent data analysis

(Data Mining) performed with Statistica software (http://statsoft.ru) that included:

– factor analysis of data with subsequent grouping (classification), building the main components (integral indices) characterizing indicators of economic development, ecological environment, social inequality, deformation of social behavior, education and health care;

– modeling of the main components as linear combinations of normalized exogenous variables reflecting latent core characteristics of each of the groups;

– constructing a multiple linear regression equation for the main components using an algorithm of step-by-step analysis to identify the

data structure, the relationships between variables (their classification and reduction), as well as to reduce the correlation between the explained variables and minimizing the risk of losing factors statistically insignificant in a t-test;

–   Verification of the constructed models using the adjusted coefficient of determination, testing the statistical hypothesis about the reliability of the regression according to the F-test, testing the statistical hypothesis about the reliability of the regression parameter estimates according to the t-test.

In this research, we used the data published on the website of the Federal State Statistics Service of the Russian Federation (http://www.gks.ru) and various international databases (Eurostat 2019.http://ec.europa.eu/eurostat/web/microdata/european-union-statistics-onincome-and-livingconditions) and others.

3. Results

We found that the effect of inequality on the demographic dynamics manifests itself in two opposite ways. On the one hand, the possibility of achieving high incomes and consumer standards has a posi-

tive effect allowing the person to realize his social and demographic functions (A. Sen calls them "functional capabilities"), including reproductive behavior. On the other hand, inequality expressed through "deprivations" of large groups of population, when people feel hopeless about their socio-economic situation since they cannot improve it themselves. Such a situation undermines the motivation of social behavior and has a devastating effect on health, the birth rate and average life expectancy in the country, that is, on the fundamental elements of demographic security. It is clear that in the situation of great social inequality and high absolute poverty, the phenomenon under study will have primarily negative influence on the demographic situation in the country. A comprehensive analysis of the population reproduction in Russia for the period from 1990 to 2018 included studying the dynamics of natural growth rates, total and aggregate birth and death rates. We revealed long-term dynamics of natural population decline (Fig. 1). Only for the period from 2000 to 2018 natural decline estimated 7.8 million people (about 433 thousand people on average per year).
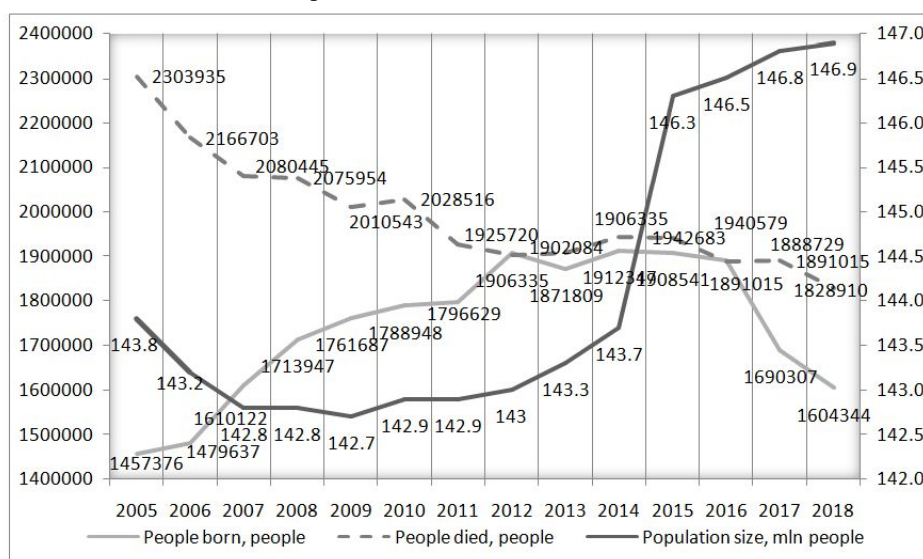
Figure1. The dynamics of the main demographic indicators in Russia for 2005–2018.

The main reason for this situation is a drop in the birth rate compared with 1990 that can be observed over the entire analyzed period. This is evidenced by the dynamics of the aggregate fertility rate (the number of births per 1000 people) and the total fertility rate (per 1 woman). In the postwar year of 1950 the total fertility rate for Russia's population was 2.8, whereas in 1990 it dropped to 1.89 and, despite measures taken by the Government of the Russian Federation to stimulate fertility in the country, in 2007–2018 it did not reach the threshold value required forincreasing reproduction (2.15–2.17) or the

level of 1990 (Table 1). In other words, for many years Russia has had the birth rate insufficient even for simple replacement of generations.

Table1. Changes in the population of Russia in 1990–2018.

Year	Indicator				
	Per 1000 people			Total fertility rate, children per woman	Migration growth, people
	Born	Dead	Naturalincrease		
1990	13.4	11.2	2.2	1.892	456062
1995	9.3	15.0	−5.7	1.337	603198
2000	8.7	15.3	−6.6	1.195	241755
2001	9.0	15.6	−6.6	1.223	81781
2002	9.7	16.2	−6.5	1.286	87149
2003	10.2	16.4	−6.2	1.319	43884
2004	10.4	15.9	−5.5	1.344	41275
2005	10.2	16.1	−5.9	1.294	107432
2006	10.3	15.1	−4.8	1.305	132319
2007	11.3	14.6	−3.3	1.416	239943
2008	12.0	14.5	−2.5	1.502	242106
2009	12.3	14.1	−1.8	1.542	247449
2010	12.5	14.2	−1.7	1.567	158078
2011	12.6	13.5	−0.9	1.582	319761
2012	13.3	13.3	0.0	1.691	294930
2013	13.2	13.0	0.2	1.707	295859
2014	13.3	13.1	0.2	1.750	299990
2015	13.3	13.0	0.3	1.777	245384
2016	12.9	12.9	−0.01	1.762	261948
2017	11.5	12.4	−0.9	1.621	211878
2018	10.9	12.5	−1.6	1.579	124854

There are many reasons for the decline in the birth rate (low cash income of many families, lack of normal housing conditions, an increase in the number of single-parent families, etc.). However, in conditions of excessive inequality and poverty (see Section 1.2.), the main reason for such dynamics in the birth rate, in our opinion, is the inadequate compensation of disposable income compared to the functional boundary for birth (long-term income during the period of upbringing children). The death rate is the second component of natural population growth. Judging by the data in Table 1, in Russia in 1990 the total death rate per 1000 people per year was 11.2, whereas in 2000 it estimated 15.3 people, in 2005—16.1, and in 2018—12.5 people. At the same time, the threshold value should not exceedeight people with a steady birth rate. In a situation of excessive social inequality, a high death rate can be explained by the high morbidity rate, deformation of social behavior (increasing alcohol and drug addiction, smoking, suicide and homicide), as well as lack of leisure activities promoting a healthy lifestyle. It should be mentioned that a natural decline in the population of Russia over the analyzed period was only partially covered by migration growth. In addition to those considered above, the demographic security of the country is assessed with the indicator of life expectancy at birth (average life expectancy). At the present stage of social development, threshold values for this indicator are directly connected with the development of world economies over the past two decades and should estimate at least 75 years old [1]. All leading world economies have an outstanding rate of 80 years old (Fig. 2). According to the average life expectancy in the examined countries, Egypt (70.5) and Tajikistan (74.5) are the ones closest to Russia.

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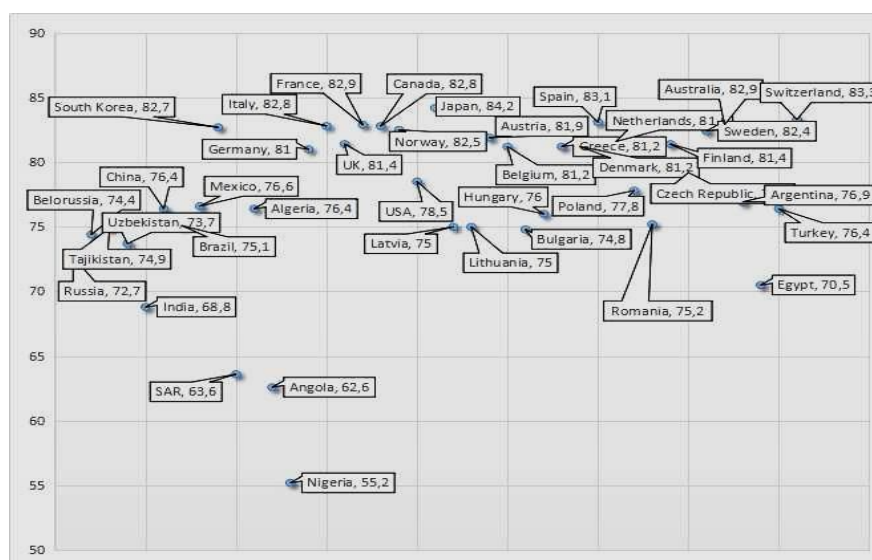
Figure2. Average life expectancy (years) throughout the world in 2017.
From: Rosstat. Section "International Comparisons –Demographics".
http://www.gks.ru/wps/wcm/connect/rosstatmain/rosstat/ru/statistics/icstatistics/incomparisons/#

What is more, life expectancy at birth is the most important indicator of the quality of life, which is determined, among other factors, by different types of inequality and reflects the life potential of population. The latter is estimated for a number of people regarding their lived or aggregate time [2]. The number of people can become smaller with a greater number of years lived and, therefore, higher capabilities. It is a historically new phenomenon when most people live a long life and remain healthy for such a long period. In the context of the decreasing population growth in Russia later transforming into a stable natural decline it is crucial to explore ways of maintaining and increasing the life potential of society (primarily to increase the length of a healthy life). Actually, the new national project "Demographics" (the implementation period from January 01, 2019 to December 31, 2024) developed by the Government of the Russian Federation in accordance with the Decree

of the President of the Russian Federation of July 05, 2018 is aimed at setting a new threshold of healthy life at67 years old. Such a goal increases the role of health care as a social institution for maintaining health and working capacity of the population. The long stagnation in Russian health care system leads to enormous losses in the life potential of the population. Such losses affect all its main components: the total working life and the total lifetime in both economically active and economically inactive condition. It should be said that a long-term natural population decline increases the effect of an unfavorable age structure of mortality, which leads to a drop in the country's life potential. This is precisely the situation that was observed in Russia in the period from the 1990s to the early 2000s. Dynamics of life expectancy at birth (Y) in the Russian Federation from 1990 to 2017 is presented in Figure 3.

$$Y = 0.027t^2 - 108.025t + 108\,073.674$$
$$R^2 = 0.846$$
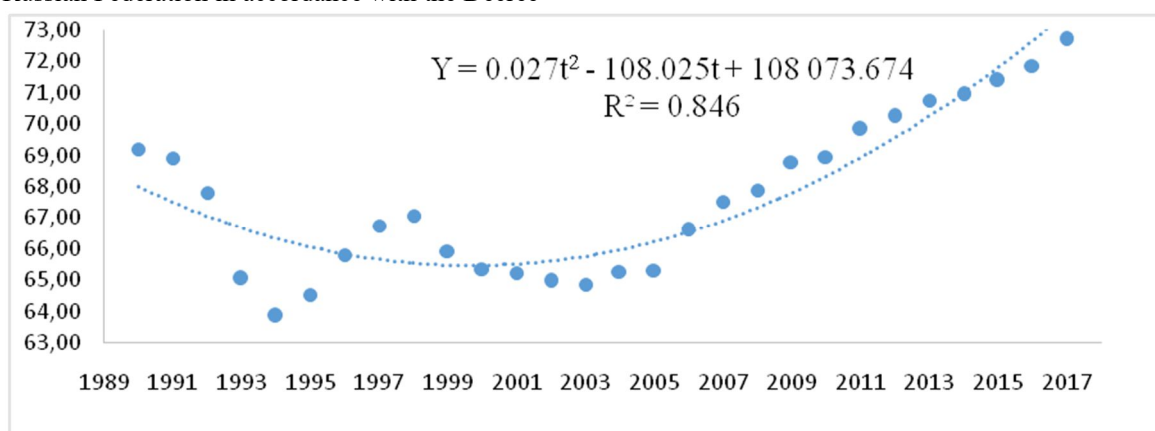
Figure3. Dynamics of life expectancy at birth in the Russian Federation in 1990–2017,years.

We built an econometric model to identify the most significant factors affecting life expectancy in the Russian Federation. This model includes the panel data of the regional statistics for the period from 2013

to 2017 (380 = 76 regions × 5 years of observations) characterizing the indicators of economic development, ecological environment, social inequality, deformation of the social behavior of the population,

education and health care. We excluded Moscow, St. Petersburg, and the Chukotka Autonomous Okrug as anomalous observations (outliers), and replaced the missing values with averages (the Chechen Republic, the Ingushetia Republic, Sevastopol, and the Republic of Crimea). To identify the structure of the relationships between the variables (their classification), to reduce the data and the correlation between the explanatory variables and to minimize the risk of losing factors that are statistically insignificant inattest, we built a multiple regression equation using the algorithm of a step-by-step analysis for the main components. Before that for each group of factors we estimated integral indices (main components) as linear combinations of normalized exogenous variables, reflecting the latent core characteristics of each of the factor groups (Table 2).

Table2. Factors affecting life expectancy in the Russian Federation

Integral Index	Indicator
Economic development	Labor force, thousand people X_{11}
	GRP per capita PPP, USD X_{12}
	Average per capita cash income per month, rubX_{13}
	Gini coefficient X_{14}
	Unemployment rate,% X_{15}
Excessive inequality and deformation of social behavior	Share of household expenditures on alcohol and tobacco products, % X_{21}
	Share of household expenditures on non-food items, % X_{22}
	Number of recorded crimes per 100,000 people X_{23}
	Number of crimes committed by minors and with their complicity per capitaX_{24}
	Number of murders and attempted murders per capitaX_{25}
	The share of population with incomes below the subsistence minimum, % X_{26}
	Share of urban population, % X_{27}
Ecological environment	The volume of emissions into the atmosphere from stationary sources, thousand tons per 1 km^2 X_{31}
	Screening of air polluting substances from stationary sources, thousand tons per 1km^2 X_{32}
	Discharge of polluted wastewater into surface water bodies, mlnm^3 per 1 km^2 X_{33}
Education as a source and transmitter of knowledge and spiritual values	Share of children enrolled in preschool education,% of the number of children of the relevant age X_{41}
	Share of household expenditures on education, %X_{42}
	Number of students enrolled in training programs for skilled workers and employees per 10,000 people, persons X_{43}
	Share of university students in the population, %X_{44}
Healthcare as a social institution for maintaining health and working capacity of the population	Relative morbidity of the populationX_{51}
	Share of doctors per capitaX_{52}
	Medical staff per capita X_{53}
	Share of household expenditures on health care, %X_{54}
	Infant mortality rateX_{55}

Finally, we obtained models of the following integral characteristics for several significant components:

Economic development (the first main component):

$$F_{11} = 0.311 \cdot X_{11} + 0.482 \cdot X_{12} + 0.534 \cdot X_{13} + 0.247 \cdot X_{14} - 0.189 \cdot X_{15}, \sigma_{11}^2 = 65.45\,\% \quad (1)$$

Excessive inequality and deformation of the social behavior of the population (the second main component):

$$F_{21} = -0.012 \cdot X_{21} + 0.182 \cdot X_{22} - 0.014 \cdot X_{23} - 0.04 \cdot X_{24} - 0.019 \cdot X_{25} - 0.319 \cdot X_{26} + 0.584 X_{27}, \sigma_{21}^2 = 64.75\,\% \quad (2)$$

Ecological environment (the first main component):

$$F_{31} = -0.491 \cdot X_{31} + 0.512 \cdot X_{32} - 0.157 \cdot X_{33}, \sigma_{31}^2 = 72.45\,\% \quad (3)$$

Education as a source and transmitter of knowledge and spiritual values (the second main component):

$$F_{42} = 0.711 \cdot X_{41} + 0.382 \cdot X_{42} + 0.144 \cdot X_{43} - 0.047 \cdot X_{44}, \sigma_{42}^2 = 58.75\,\% \quad (4)$$

Healthcare as a social institution for maintaining health and working capacity of the population (the second main component):

$$F_{52} = -0.254 \cdot X_{51} + 0.272 \cdot X_{52} + 0.178 \cdot X_{53} + 0.487 \cdot X_{54} - 0.504 \cdot X_{55}, \sigma_{52}^2 = 57.48\,\% \quad (5)$$

The cumulative (accumulated) percentage of total variance for each group exceeds$\sigma_j^2 \geq 57\%$.

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In accordance with the given integral characteristics (equations 1–5), the regression equation on the main components will have the following form:

$$Y = 60.211 + 0.012F_{11} + 0.251F_{21} + 0.114F_{32} + 0.008F_{42} + 0.237F_{52} + \varepsilon_2 \qquad (6)$$

It should be noted that the obtained regression equation (6) has a high explanatory power (adjusted determination coefficient $\bar{R}^2 = 0.914$).According to the t-test, the parameters of the constructed regression are reliable at the significance level $\alpha = 0.1$. The calculations in the constructed multiple regression equation allowed us to draw some conclusions. Excessive social inequality, deformation of social behavior of people, and the condition of the healthcare system have the greatest direct effect on life expectancy at birth in the Russian Federation. Environmental conditions, economic factors, and education are less influential. The latter can be explained by the fact that economic growth has an indirect influence on life expectancy through factors related to the healthcare system, education, and social inequality. Ecological environment and access to education influence average life expectancy with a certain delay, that is, by investing resources in ecology and developing the education system now, it is possible to increase the average life expectancy after a certain period of time. Thus, the constructed equation of multiple regression reflecting the relationship of life expectancy and various economic, social and environmental factors, in our opinion, can be considered as a scientific and methodological basis for identifying priority areas and developing measures necessary to improve demographic dynamics and increase life potential of people in Russia.

4. Discussion

Persistent negative trends in the demographics of new Russia are caused, to a large extent, by excessive inequality and large-scale poverty. They cannot be overcome without an effective state social and economic policy. Given the current practice of the leading countries in implementing the UN Development Program that has been actively introduced for more than 20 years, scientific developments related to redistribution and demographic policies, as well as specific features of poverty in Russia, we can claim that this policy should include "active industrial policy— progressive taxation—targeted social support of the poor and socially vulnerable groups" [24]. In modern Russia, active industrial policy should involve accelerated neo-industrial modernization of the economy—digital, knowledge-intensive, and technotronic. Its qualitative measure is a progressive change in the nature of labor and employment, accompanied by a smaller share of physical labor and a larger share of

mental labor, and then the latter should become massive and predominant. Its quantitative measure is the share of automated, digitized jobs in the national economy, primarily in material production that ensure the growth of labor productivity and decent pay for the latter [27]. In this context, the new industrialization in Russia is of fundamental importance as it can reverse such a negative trend as growing economic inactivity and dependency among the working-age population against the background of weak motivation to work. Such a policy would contribute to improving the quality of human potential and increasing incomes, expanding (in accordance with the concept of A. Sen) people's functional capabilities, including "the ability to avoid premature death", "have children", etc. An effective redistribution policy is the most important condition for solving demographic problems in the context of high social inequality [28, 29]. The experience of the leading economies clearly demonstrates the potential of various mechanisms of income redistribution and, primarily, progressive taxation. Since 2001, Russia has abandoned this approach to taxation and practices a single tax rate on personal income of 13%. We agree with those experts who believe that a single tax multiplies excessive inequality, when incomes of the poor decrease, while the rich are becoming richer. These researchers also substantiate the need for introducing a progressive income tax scale. Considering the fact that social inequality and poverty have crucial influence on the demographic dynamics in modern Russia, it seems viable to consider the so-called functional fertility border as the methodological basis when constructing a progressive taxation scale [3]. In other words, it is a threshold level of per capita income above which the reproductive function can be effectively performed. If the average per capita income exceeds the functional fertility border, it is subject to a "demographic tax" in accordance with the established rates. The amount of taxes collected in this way is redistributed between those whose per capita income is below this functional border proportionally to the difference between the border and the income (income deficit). Such a tax, of course, is progressive: with a higher percentage-wise income there is a greater difference between the latter and the functional fertility border, and it would be practically zero for income close to the functional boundary [30]. At the same time, the targeted social support programs for the poor and people with a high risk of poverty should be more closely connected with family life cycles and include a combination of incentive measures for self-sufficiency and cash benefits. For example, in modern Russia these can be regional "social contract" programs increasing self-sufficiency of

families, paying monthly allowances from unused maternity capital, etc. This would increase the country's social protection of poor families with children. In addition, the demographic situation in Russia can also be improved by shifting focus to traditional family values and promoting a healthy lifestyle. These measures should be implemented at different levels (from school courses to feature films, TV advertising and stories in the media). Another significant factor is a campaign against alcohol abuse, drug addiction, mortality at work and road accidents, which emphasizes the growing role of the social sphere in improving the quality of life, and, consequently, in fulfilling people's basic and social functional capabilities.

5. Conclusion

Depopulation processes in new Russia are not detrimental. The combined effect of an active industrial policy (economic growth) and the measures of income redistribution can improve the demographic dynamics, ensure positive natural population growth annually, and increase the life potential of the society—the key criteria for ensuring the demographic security of the country.

Acknowledgments

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