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The growth of average life expectancy as a factor of the global competitiveness of the Russian Federation

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Abstract. The growth of average life expectancy affecting the economically active period of life is one of the key factors in the global competitiveness of the state. It determined the relevance of the presented study. The purpose of the presented studies is to analyse predictive assessments of the prospects for achieving the national goal of increasing life expectancy in Russia by 2030 up to 78 years. The research revealed the following: it is necessary to take into account the impact of cycles of social economic activity as the factors affecting life expectancy, along with the factors which traditionally considered having the significant impact on world life expectancy (bad habits, climatic and environmental conditions, exposure to chronic stress, nutritional balance, daily physical activity, health care, country economic development, etc.). The scientific novelty of the study concerns with the identification of the main factors allowing the national policy to achieve this particular goal. The practical significance of the results obtained provides the possibility of their use in improving the national policy in terms of both population and labour economics.

Keywords: average life expectancy, global competitiveness factor, Russian Federation.

JEL codes: I12, J11, N30

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Introduction

The goal of «increasing life expectancy up to 78 years» is one of the most significant among the national goals defined by the Decree of the President of the Russian Federation No. 474 of July 21, 2020[1] (Fig. 1) in the unit of goals aimed at preserving the population, health, and well-being of people.

This task is an extremely difficult one. However, especially by the end of 2018 this indicator was 66.91 years in the Russian Federation[2]. Indeed, recently the country was involved into several waves of the COVID-19 pandemic, and other crisis events.

In this regard, it seems quite relevant to assess the prospects for achieving the national goal of «increasing life expectancy to 78 years by 2030».

Therefore, the purpose of the presented studies is to assess the prospects for achieving the national goal of «increasing life expectancy to 78 years» by 2020 in terms of the changes taking place in the political, economic, and social spheres in the country and worldwide.

Methods

The methodological basis of the research was provided by well-known scientific works devoted to the problem of increasing life expectancy of the World Health Organization (WHO)[3], the Presidium of the

[1] *https://www.garant.ru/products/ipo/prime/doc/74304210/(accessed 01.02.2023)*
[2] *Life expectancy according to Rosstat. Available at: https://rosinfostat.ru/prodolzhitelnost-zhizni/?ysclid=l66oapv4pv493880792. (accessed 01.02.2023)*
[3] *The plan of the Decade of Healthy Aging for the period 2020-2030. Available at: https://www.who.int/docs/default-source/decade-of-healthy-ageing/full-decade-proposal/decade-proposal-fulldraft-ru.pdf?sfvrsn=ccd95796_8 (accessed 01.02.2023)*

Russian Academy of Sciences[4], LifeBio[5], as well as such authors as Dvorsky G[6]., Egorushkin S.[7], Kravchenko E.[8], Lomskaya T.[9], Tergesen E.[10], Ulumbekova G.[11], Khel I.[12], Chernyshev E.[13], Shipacheva D.[14], etc.

Results

This study is a logical continuation of previous author's studies (Tebekin, Mitropolskaya-Rodionova & Khoreva, 2021) devoted to assessing the prospects for ensuring sustainable population growth in the Russian Federation, defined by Presidential Decree No. 474 of July 21 2020 in the unit of goals aimed at preserving the population, health, and well-being of people (Fig. 1).

The conducted studies show the presence of the several sources demonstrating an assessment of the national average life expectancy.

The first source is retrospective data from Rosstat, demonstrating data on average life expectancy in Russia from the end of the nineteenth century to nowadays.

The scientific sources devoted to the description of the dynamics of average life expectancy in Russia contain the comparison of life expectancy in the country as follows:

- during the Soviet period (period of prosperity of the USSR) – from the 1960s to the 1980s;
- during the transition period (the period of liberalism in the Russian Federation) – in the 1990s;
- in the period of modern history (the period of state capitalism in the Russian Federation) – since the 2000s.

However, there are different interpretations of these statistics.

Some sources emphasize the achievement of the all-time high for average life expectancy in Russia in the 2010s compared to similar one of the USSR.

Thus, in 2012, the average life expectancy in the Russian Federation was 70.24 years, exceeding the Soviet all-time high of 70.13 years in 1986-1987[15] (Fig.2).

The other sources compare the current values of life expectancy in Russia with the minimum of the 1990s[16] (Fig.3).

Meanwhile, we possess the comparison of the modern development indicators with the absolute minimum during the collapse of the 1990s used by many researchers as fundamentally incorrect one.

In fact, these correlations do not reveal the obvious effectiveness of development processes.

[4] The issue of demography in Russia: specialists of the Russian Academy of Sciences - on ways to resolve the crisis. Available at: https://www.interfax.ru/russia/841475. (accessed 01.02.2023)

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[12] Hel I. How to increase life expectancy? What can be done now? Available at: https://hi-news.ru/research-development/prodolzhitelnost-zhizni.html. (accessed 01.02.2023).

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[14] Shipacheva D. What will be the world in which people live for more than 100 years? Available at: https://reminder.media/post/kak-budet-vyglyadet-mir-v-kotorom-lyudi-zhivut-bolshe-100-let. (accessed 01.02.2023)

[15] How the average life expectancy in the RSFSR and Russia has changed. Available at: https://tass.ru/info/7006937?utm_source=yandex.ru&utm_ medium=organic&utm_campaign=yandex.ru&utm_referrer=yandex.ru (accessed 01.02.2023).

[16] Life expectancy in Russia has reached a record. Available at: https://dobro.press/novosti/prodolzhitelnost-zhizni-v-rossii-dostigla-rekorda. (accessed 01.02.2023)

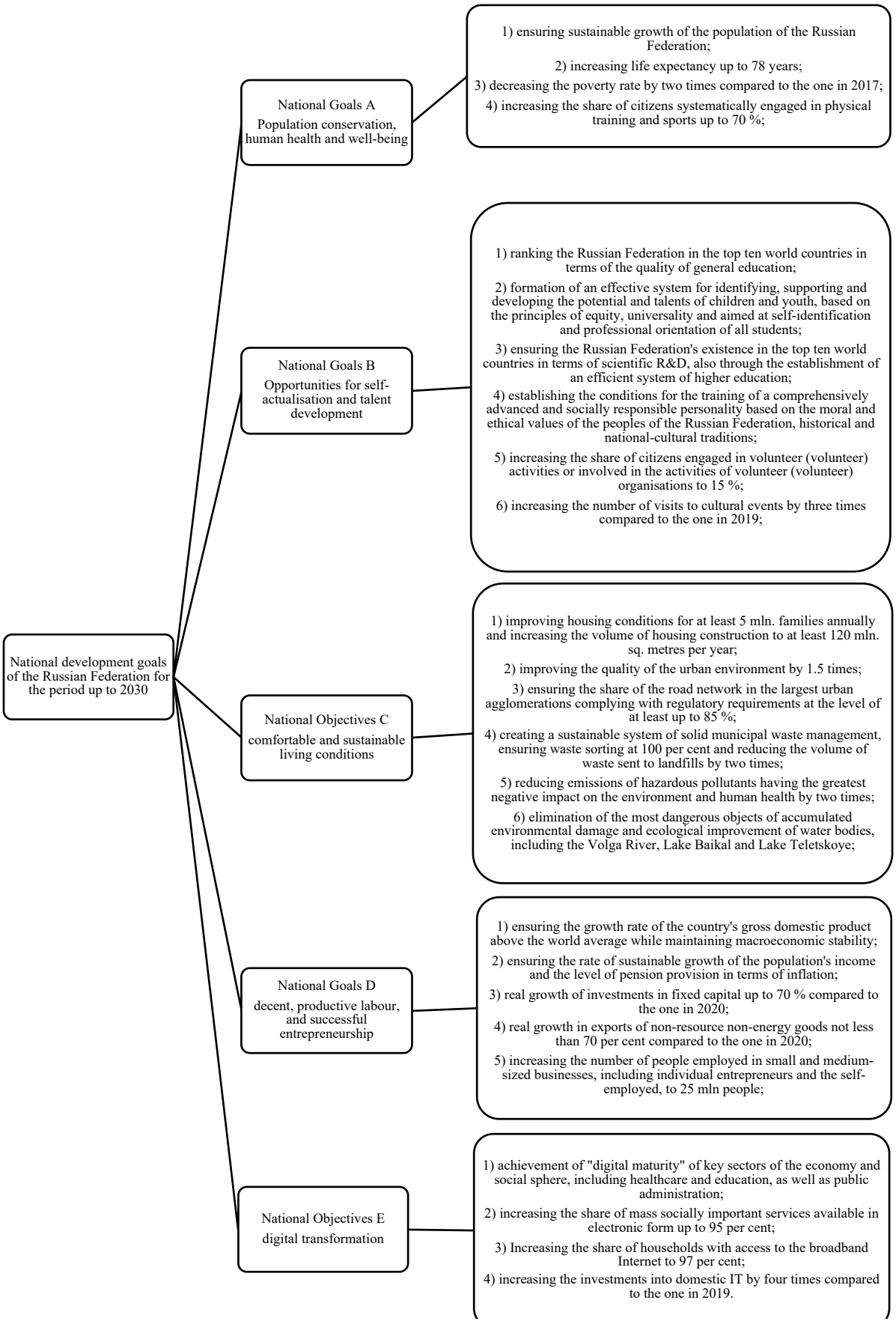

Figure 1. National goals defined by the Decree of the President of the Russian Federation No. 474 of July 21, 2020

Source: Decree of the President of the Russian Federation No. 474 of July 21, 2020

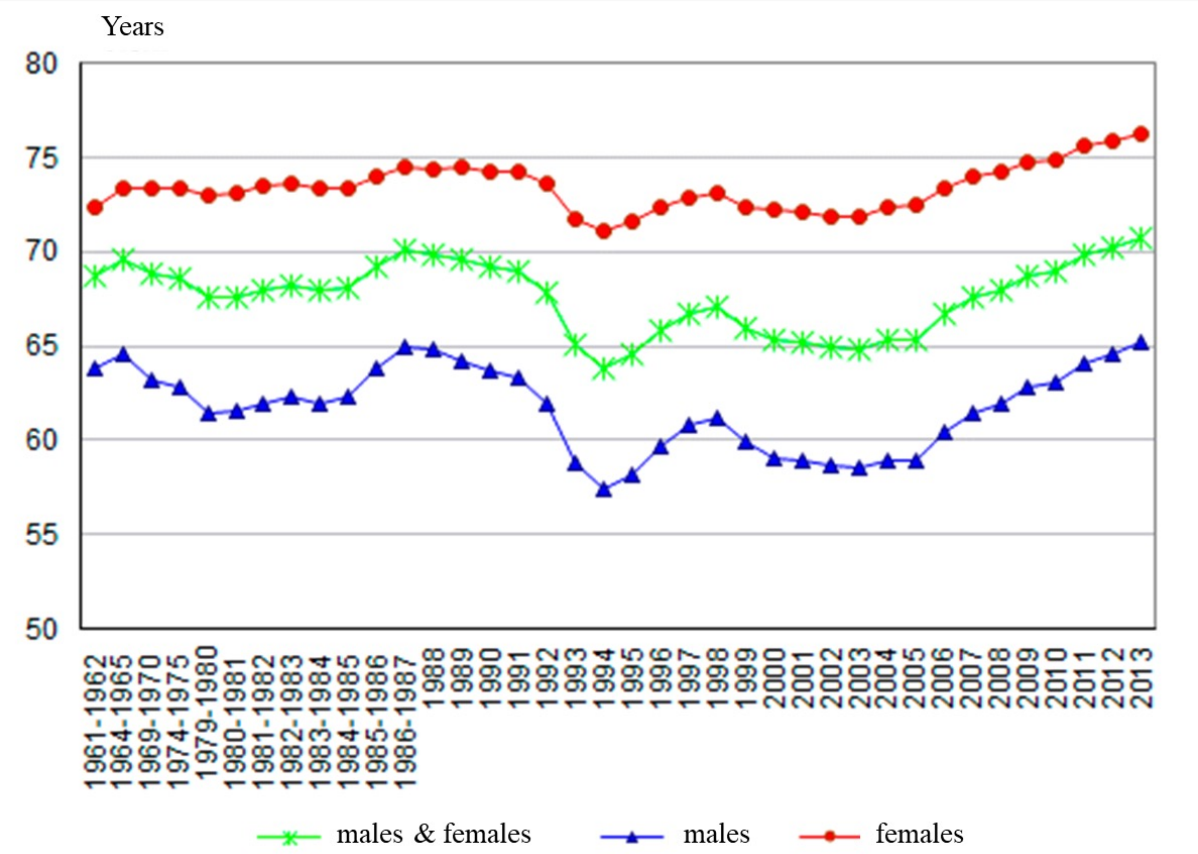

Figure 2. Dynamics of average life expectancy in Russia in the period of 1961-2013
Source: https://ruxpert.ru/Statistics:Continuation_life_Of Russia

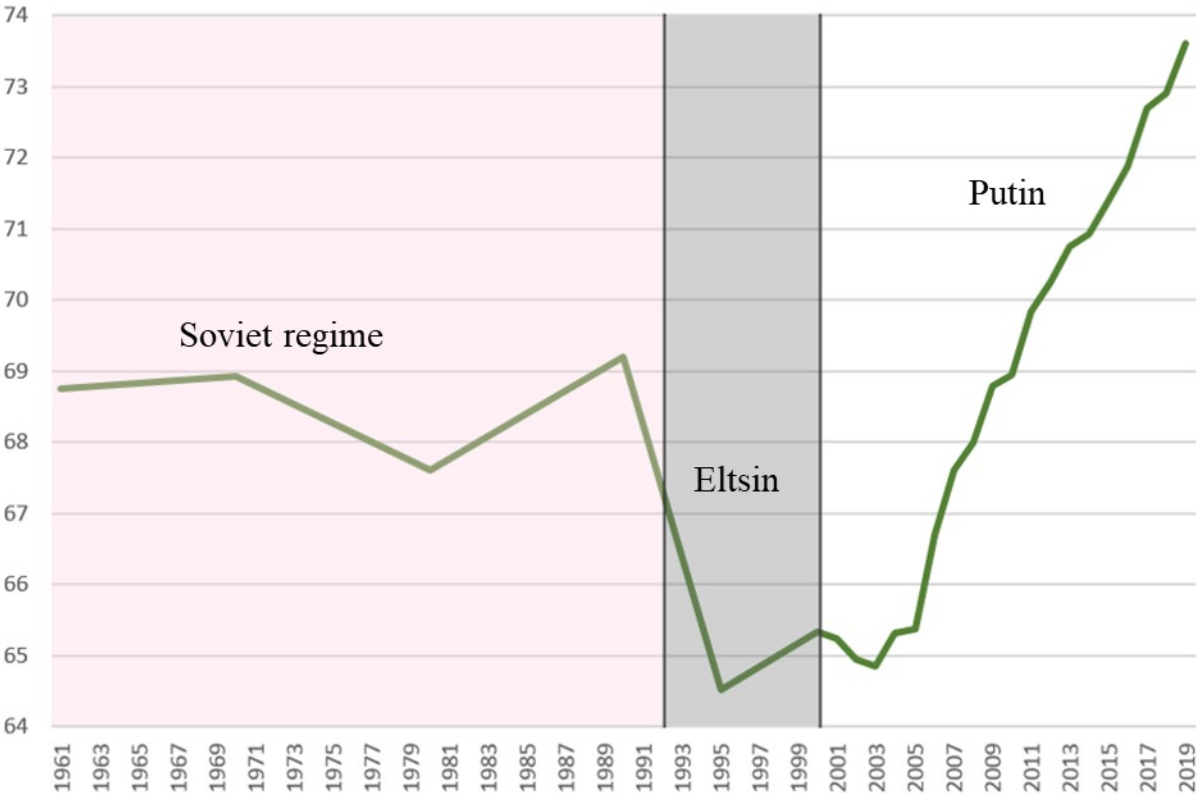

Figure 3. Dynamics of average life expectancy in Russia in the period of 1961-2019
Source: https://ruxpert.ru/Statistics:Continuation_life_Of Russia

According to the historical correlations, during the Soviet era all developmental achievements always compared with the achievements of the pre-revolutionary Russian Empire in 1913. It reveals the extra public achievements (before the outbreak of the First World War), when, for example, Russia's gross industrial production was 5.3% of global one versus 3.6% in 2022 year[17].

Additionally, there is the discrepancy in assessments of average life expectancy in Russia. However, according to Rosstat data in the period 2004-2011 the average life expectancy in the country increased from 65.31 to 69.83 years (or increased by 6.92%). But according to the CIA World Factbook, the average life expectancy in Russia did not increase and was 66.39 years in 2004 and 66.29 years in in 2011 (or decreased by 0.15%)[18].

The author's assessment of the average life expectancy dynamics in Russia is presented in Fig.4.

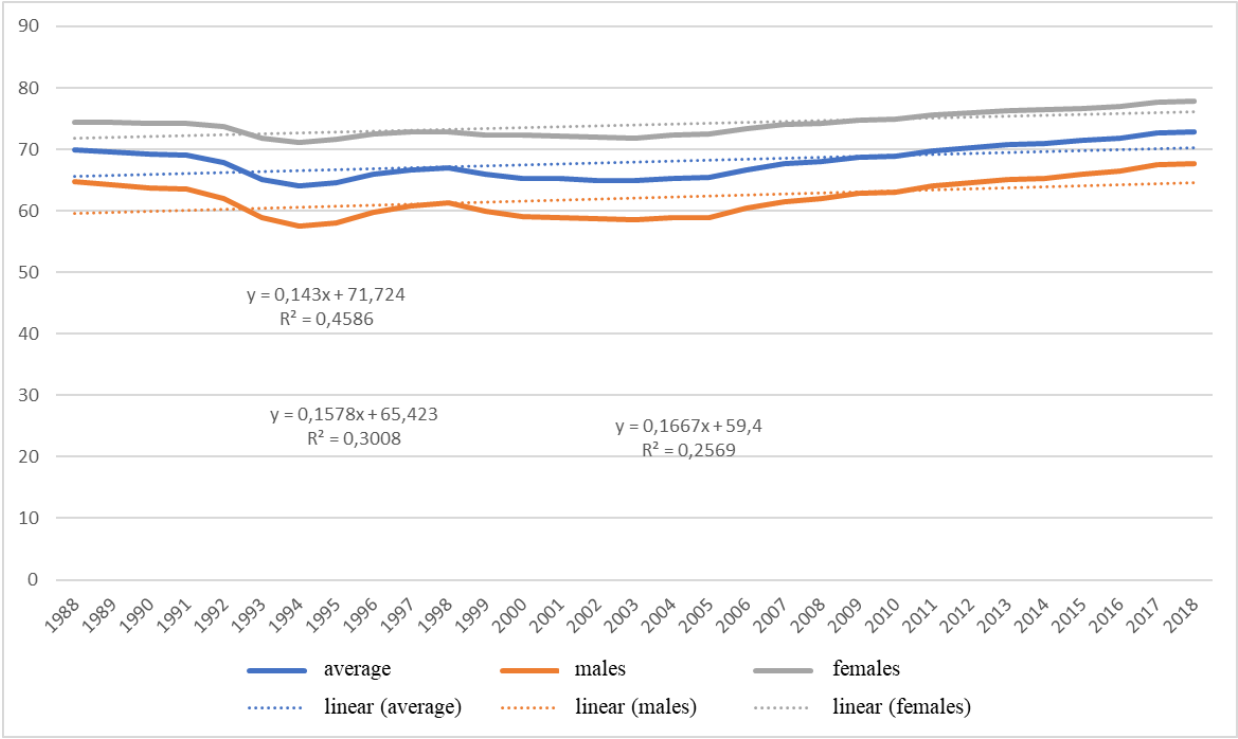

Figure 4. Assessment of the average life expectancy dynamics in Russia in the period 1988-2018
Source: Demographics. https://rosstat.gov.ru›folder/12781

According to statistical data presented in Fig. 4, we can expect the average life expectancy by 2030, if the trends of the last 30 years are maintained as follows:

- 61.04 years for males,
- 73.44 years – for females,
- 67.31 years – for the population in general.

Note these values (67 years) differ significantly from the required value of the indicator – 78 years.

The author's assessments of the national life expectancy dynamics (Fig. 4) are substantially lower than the results of the Rosstat's forecast of the average life expectancy in the Russian Federation until 2035. It is not only for the lowest, but also for the medium (Fig. 5), and high variant of the forecast. According to the forecast variants, in 2030 the average life expectancy in the country is expected to be 74.84, 77.54, and 79.74 years, respectively[19].

[17] *Industries of the world's countries in the table. Available at: https://visasam.ru/emigration/economy/promyshlennost-stran-mira.html. (accessed 01.02.2023)*
[18] *CIA. The World Factbook Life Expectancy. Available at: https://web.archive.org/web/20111026030831/https://www.cia.gov/library/publications/the-worldfactbook/rankorder/2102rank.html?countryName =Russia&countryCode=rs&regionCode=cas&rank=161#rs (accessed 01.02.2023)*
[19] *Demographics. Available at: https://rosstat.gov.ru›folder/12781. (accessed 01.02.2023).*

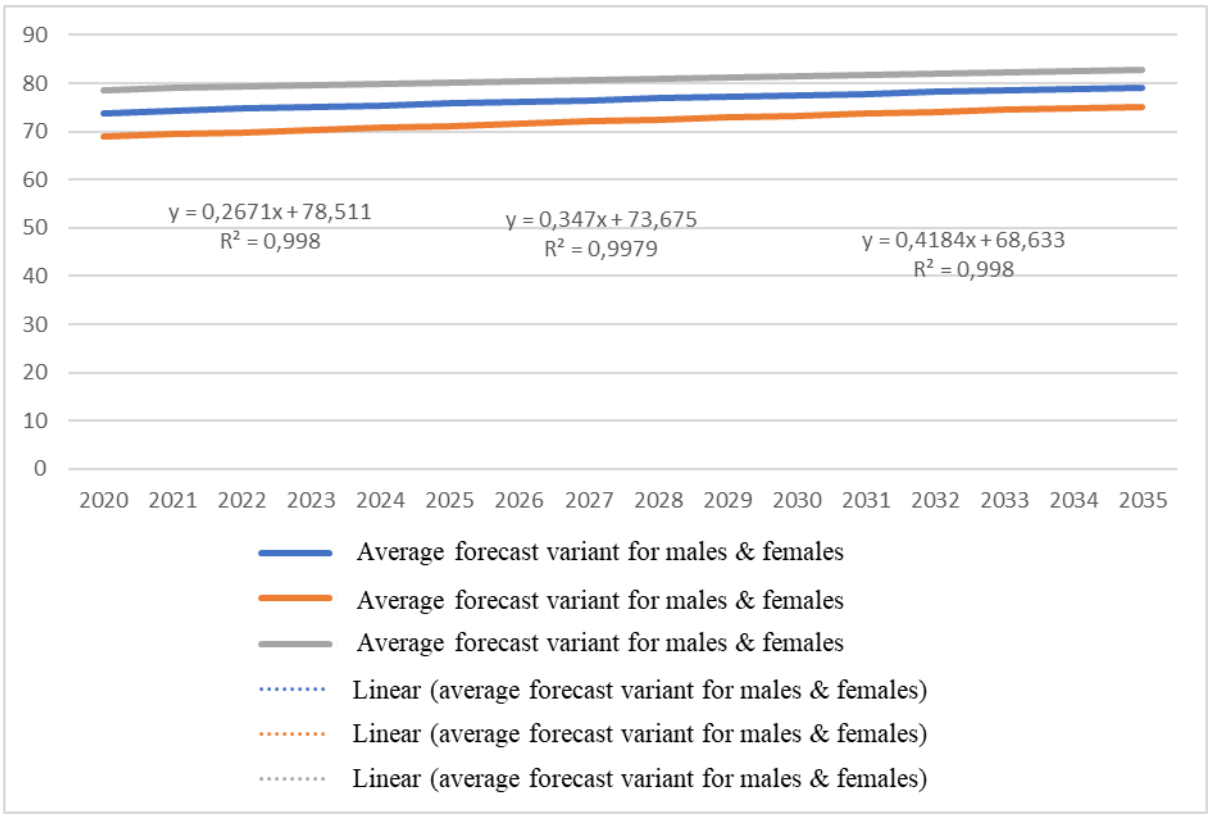

Figure 5. The medium variant of Rosstat's forecast of the average life expectancy in the Russian Federation up to 2035

Source: Demographics. https://rosstat.gov.ru›folder/12781

The level of linearity in Rosstat's forecast assesses the average life expectancy in the Russian Federation up to 2035. It is varying for the low, medium, and high forecast variants within the range of $R^2 = 0.988 – 0.994$. It indicates that these forecasts do not take into account a large number of factors affecting the dynamics of people's life expectancy. In order to understand it, we have to compare the results of Rosstat's forecast of average life expectancy in the Russian Federation for 2020-2035, presented in Fig.5-7, with the results of the analysis of average life expectancy in the Russian Federation in the period 1998-2018. Indeed, its coefficient of determination for the linear approximation model varies within $R^2 = 0.256 \div 0.458$ (see fig. 4).

The insufficient quality of Rosstat's forecasts is confirmed by the absence of accounting for the impact of cyclical processes in the social and economic development, including epidemics, geopolitical, and economic issues.

As for epidemics, it is necessary to take into account the impact of the COVID-19 pandemic on the national average life expectancy. Therefore, according to available assessments, in 2020 the life expectancy of Russians decreased by 1.8 years compared to the previous year and reached 71.5 years (Korolenko, 2022).

By other expert assessments, nowadays Russia is involved into the demographic tragedy. And SMO has aggravated the previous years crisis[20]. Generally, the experts highlight the following components:

- over the past three years, Russia has lost about 2 million people as a result of SMO, diseases, and the citizens departure;

- according to Western experts, from 500,000 to 1,000,000 people migrated abroad (mostly, well-educated youth);

- losses place a significant strain on a shrinking, sickly population. For example, commenting on the increase of the working week length for Russians increased in the first quarter of 2023 to a record level of 38.5 hours since 2010, the Minister of Labour and Social Protection of the Russian Federation A. Kotyakov explained this trend by a shortage of personnel (we mean the aging of the population, the migration of young

[20] *Kolesnikov A. A demographic tragedy is unfolding in Russia. SVO has aggravated the crisis that began even before it began. Available at: https://smart-lab.ru/blog/883343.php. (accessed 01.02.2023).*

people abroad, etc.)[21].

- life expectancy of Russian males has decreased by almost 5 years similar to Haiti. Now Russian males live six years less than Bangladesh ones; 18 years less than Japanese ones;

- Russia may enter a fatal demographic crisis, which began in the 90's (Fig.3). Note, after the peak in 1994, the population began to decrease due to the negative ratio of fertility and mortality (Fig.6), which is not covered by the influx of migrants. Only in 2020 and 2021, according to foreign experts, the population in Russia decreased by 1.3 min people, and the death rate exceeded the birth rate by 1.7 million people. According to Rosstat, the natural population decline in the country in 2021 was 1.04 mln people, exceeding the previous maximum in the history of modern Russia in 2000 – minus 958.5 thousand people. At the same time, mortality in Russia in 2021 increased by 15.1%, reaching 2.44 million people, and the birth rate decreased by 2.3%, amounting to 1.4 million people, which is the lowest since 2002[22].

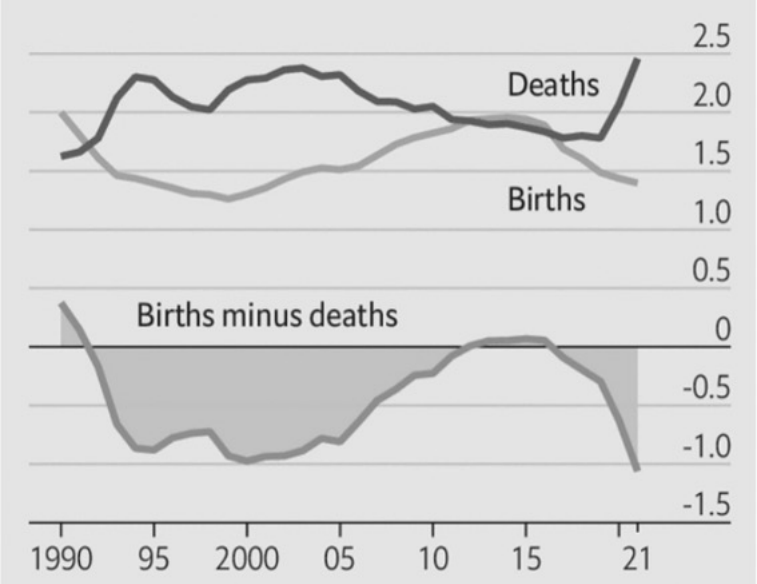

Figure 6. The dynamics of births and deaths in Russia in the period 1990-2021
Source: UN Population Division, 2022

According to the UN forecasts[23], the population in Russia in 50 years may reach only 120 million, even provided the current dynamics models are maintained. They will rank Russia to the world 15th place in terms of population against the 6th place in 1995;

- as a signal indicator of the chronic demographic problems in Russia the number of registered births in April 2022 (after the beginning of the SMO) is highlighted. It recognized the lowest one since the XVIII century;

- population decline not only in Russia, but also in most post-Soviet states is characterized by a process of controlled reduction. However, the restoring of Russian population to a high level of immigration nowadays is absolutely not justified;

- the number of ethnic Russians in the period of 2010-2021 decreased by 5.4 million people, and their share in the country's population declined from 78% to 72%;

- according to official Russian statistics, the death rate from COVID-19 was 388 thousand people. It is considered as a relatively low indicator. But, according to The Economist, USA, the total excess mortality in Russia in the period 2020-2023 is in the range of 1.2 to 1.6 mln people. It is comparable to the population

[21] *Kotyakovexplainedtheincreaseinthelengthoftheworkingweekfor Russians. Availableat:https://ria.ru/20230706/kadry-1882528990.html?utm_source=yxnews&utm_medium=mobile&utm_referrer=https%3A%2F%2Fdzen.ru%2Fnews%2Fstory%2FGlava_Mintruda_Kotyakov_deficit_kadrov_vedet_krostu_prodolzhitelnosti_rabochej_nedeli--511fbca61176f3f7cbe76adea7db0775. (accessed 01.02.2023).*

[22] *The natural decline of the population in Russia for the year exceeded 1 million people. Available at: https://www.rbc.ru/economics /28/01/2022/61f3bbaa9a794767f04fdaa7. (accessed 01.02.2023).*

[23] *World Population Prospects 2022. Available at: https://population.un.org/wpp/ (accessed 01.02.2023)*

losses as a result of the pandemic in China and the USA. Indeed, their population is many times larger than in Russia (9.6 times, and 2.1 times, respectively);

- totally, as a result of deaths from the pandemic and migration from mobilization abroad, Russia in the period 2020-2023, in addition to the usual demographic deterioration, lost from 1.9 to 2.8 min people. This indicator is worse than it was in Russia in the «dashing 1990s», which arose as a result of «shock therapy»[24];

- balance of the sexes has been greatly distorted. Meanwhile, in 2021 the number of females over the age of 18 exceeded the number of males over the age of 18 by 21%. Indeed, after 10% of young people were leaving the country in 2022 (the majority of males with higher education), this imbalance has intensified significantly.

The auditors of the Accounting Chamber also questioned the impact of the consequences of the pandemic and the geopolitical situation on the national goal achievability for an average life expectancy of 78 years[25].

Therefore, factors affecting the average life expectancy in the Russian Federation are traditionally considered to have the greatest impact on its duration in the world:

1) bad habits – smoking, alcohol, and drug addiction;
2) climatic conditions and the state of the environment;
3) chronic stress;
4) balanced nutrition;
5) daily physical activity;
6) health care;
7) economic development.

Considering the dynamics of average life expectancy, experts reasonably note that in Russia it differs significantly from other countries primarily due to the causes of mortality. In terms of their impact Russia ranks several times (!) higher than the leading economically developed countries. These causes are as follows: alcohol poisoning, suicide, cardiovascular diseases, injuries, murders (Demographic Modernization of Russia: 1900-2000, 2006).

Indeed, according to the World Health Organization, Russia ranks world 176th in terms of alcohol poisoning of 189 countries in the rating[26].

In this regard, we can note the people mass poisoning in June 2023 with alcohol under the brand «Mr. Cider» containing life-threatening methyl alcohol and butyric acids. More than 100 people suffered from poisoning in several regions (Kurgan, Nizhny Novgorod, Penza, Samara, Udmurt Republic, Ulyanovsk, Chuvash Republic), 36 of them died[27].

According to the World Health Organization, Russia ranks world 172th in terms of suicide rate of 184 countries covered in the rating[28].

By to the level of cardiovascular diseases Russia ranks world 1st place. Moreover, almost 60% of all deaths in Russia are associated with heart diseases[29].

By the impact of injuries Russia ranks world 49th[30].

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[24] «Shock therapy»: how Russia experienced price liberalization 25 years ago. Available at: https://www.rbc.ru/photoreport/02/01/2017 (accessed 03.02.2023).

[25] The Accounting Chamber saw the risk of not achieving the life expectancy goal, Experts believe that by 2030 it will be 2-3 years below the plan. Available at: https://www.rbc.ru/economics/19/10/2022/634e9bf19a79472a56cbef1d. (accessed 01.02.2023).

[26] World Health Organization: Global Status Report on Alcohol and Health 2018. Available at: https://gtmarket.ru/ratings/global-alcohol-consumption#russia (accessed 01.02.2023).

[27] The number of people poisoned by the drink «Mr. Cider» exceeded 105. 36 of them died. Available at: https://rtvi.com/news/chislo-otravivshihsya-napitkom-mister-sidr-prevysilo-105-chelovek-iz-nih-36-pogibli/.(accessed 01.02.2023).

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[29] Indicators of cardiovascular diseases by country in 2023. Available at: https://translated.turbopages.org/proxy_u/en-ru.ru.54235e01-64a4f83b-210dcd8c-74722d776562/https/worldpopulationreview.com/country-rankings/heart-disease-rates-by-country. (accessed 01.02.2023).

[30] SafetyIndexbyCountry2022.Availableat:https://www.numbeo.com/crime/rankings_by_country.jsp?title=2022&displayColumn=1 (accessed 01.02.2023).

At the same time, according to Rosstat data, there is a positive trend in the industrial accidents (Fig.7)[31].

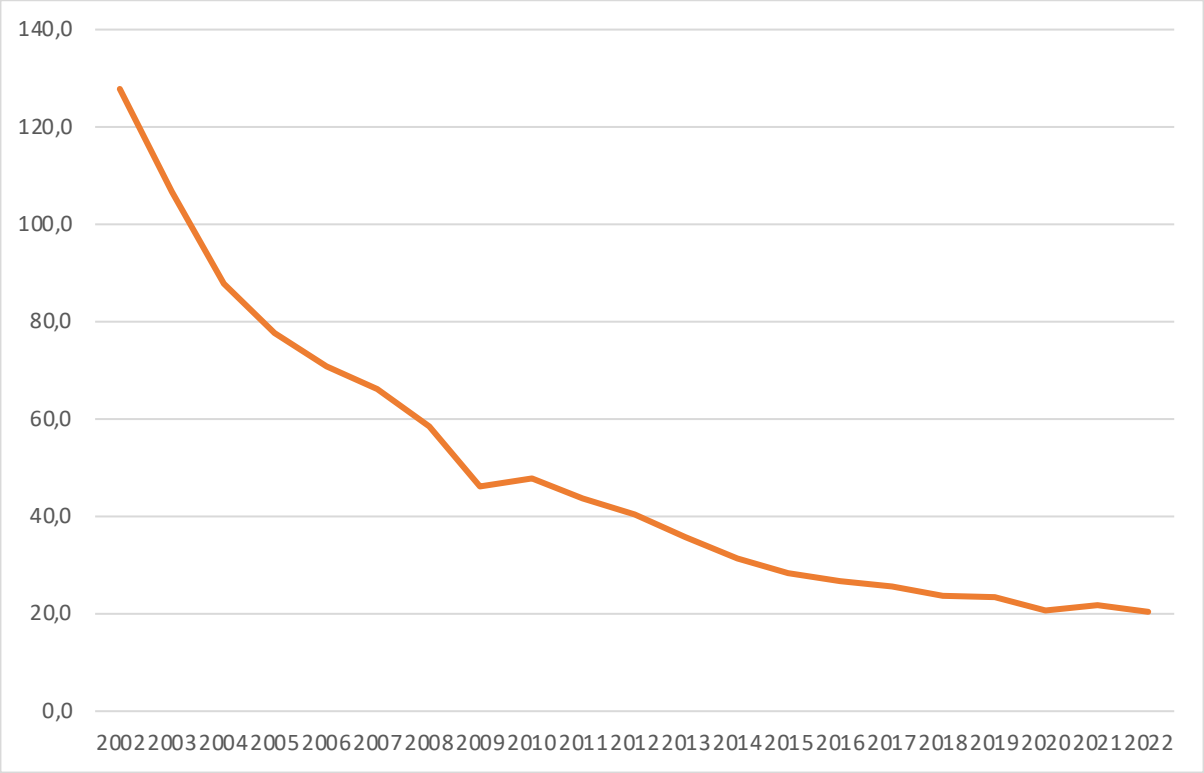

Figure 7. Dynamics concerning the number of people injured in industrial accidents in Russia in the period 2002-2022, thousand people

Source: Industrial injuries. Available at: https://rosstat.gov.ru/working_conditions

However, Rosstat data differ greatly from expert assessments[32].

In particular, experts believe in:

- on the one hand, «companies hide injuries received by employees during the industrial accidents in order not to pay fines and increased rates of contributions to the Social Insurance Fund»;

- on the other hand, official injury statistics do not take into account the huge shadow sector of the economy, where industrial injuries are «framed as a domestic ones».

Experts also pay attention not only and not so much to Rosstat data, but to the data of the International Labour Organization, according to which «Russia remains the leader in the number of deaths in the workplace even among post-Soviet countries» (Fig.8)[33].

Such leadership of modern Russia in industrial accidents (see Fig.8) is very surprising, since the country does not produce a lot (if compared with the USSR). The problem of import dependence nowadays is the evidence.

According to representatives of the Confederation of Labour of Russia, «the victory speeches of officials (regarding the statistics of industrial accidents – author's note) are unjustified. However, the decrease in statistical indicators of injuries (which officials explain by updating labour protection rules, growth of production culture, technological breakthroughs, improvement of machines, introduction of robots, etc.) is not due to the improvement of working conditions, but to the weakening of labour control is associated not with the improvement of working conditions, but with the weakening of control in the labour sphere». Moreover, in Russia:

[31] *Industrial injuries. Available at: https://rosstat.gov.ru/working_conditions. (accessed 01.02.2023).*

[32] *Russia is among the leaders in the number of deaths in the workplace. Available at: https://russian.eurasianet.org/(accessed 01.02.2023)*

[33] *Russia is among the leaders in the number of deaths in the workplace. Available at: https://russian.eurasianet.org/(accessed 01.02.2023)*

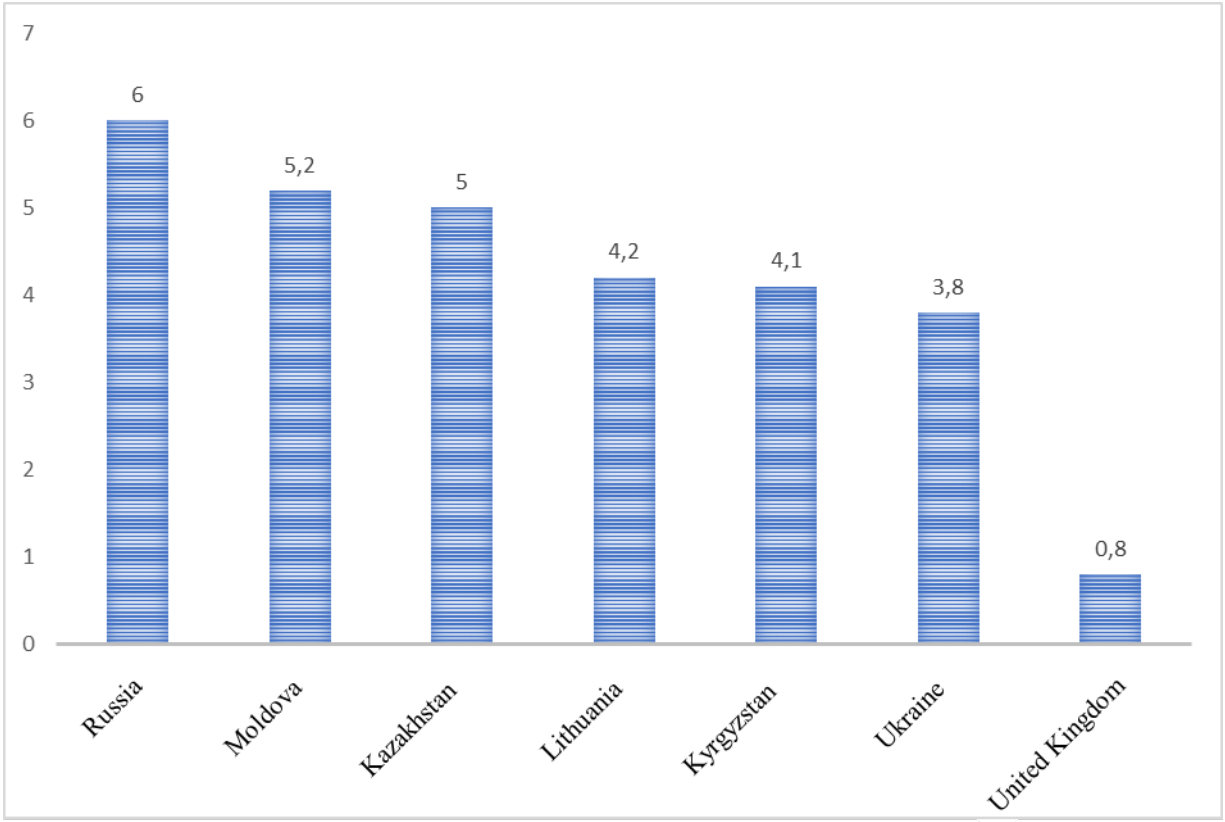

Figure 8. Comparative statistics on the number of deaths in the workplace per 100 thousand people per year
Source: https://russian.eurasianet.org/

- in 2014 was introduced a new electronic declaration system for compliance of labour conditions with public standards;

- since 2016 there has been a moratorium on scheduled inspections by state agencies of small and medium-sized businesses;

- «official statistics» is based on employers' reports. Many of them are hiding accidents, and without a direct statement from employees (about cases of injuries – author's note) inspectors do not come». Thus, according to official statistics, in the period 2010-2016, the number of industrial accidents victims in Russia decreased by 1.78 times (see Fig.7). Althought, the number of work safety inspections during this period, according to Rosstat, decreased by 2.7 times;

- employers prefer to hide industrial accidents, because their indicators directly affect the costs of insurance of employees against accidents (discounts and premiums on insurance premiums can reach 40% of the tariff, not counting fines for violation of labour safety rules) .

Furthermore, real industrial accidents are underestimated in official statistics by the growing shadow sector of the economy. Many employers do not have a labour agreement, paying wages in ''illegal payment in cash» in order not to pay official assessments on the wage fund (WF), including payments to social funds accounting for 30% of the WF.

In the context of domestic injuries, statistics on the death rate in road accidents is the most general one. By this indicator, Russia, according to the World Health Organization, ranks world 114th of 179 countries in the rating .

As for murders according to the UN Office on Drugs and Crime, Russia ranks world 56th of 227 countries in the ranking .

As for the growth of average life expectancy in the country periodically reported by officials, we should mention the statement of the Deputy Prime Minister of the Government of the Russian Federation T. Golikova, who made a following statement in December 2022: «Moscow has almost reached the goal of life expectancy for 2030» . But we also should agree with the opinion of demographer A. Vishnevsky – «we are still far

from European life expectancy» . Indeed, Russia, according to the data of the United Nations Department of Economic and Social Affairs, ranks only 165th of 236 countries in the world. It also ranks world 103th in terms of healthy life expectancy of 183 countries in the rating .

Conclusions

Consequently, the research demonstrates significant difficulties in achieving the national goal of «increasing life expectancy to 78 years» by 2030 due to the geopolitical and economic changes affecting the development of the Russian Federation in the recent years. Besides in general, the existing processes significantly complicate the provision of life expectancy growth positive dynamics in the Russian Federation.

Forecast assessments of life expectancy in the Russian Federation for the period up to 2035, made by Rosstat, have a poor accuracy because they do not consider cyclical patterns in the society's socio-economic development.

The research revealed the following: it is necessary to take into account the impact of cycles of social economic activity as the factors affecting life expectancy, along with the factors which traditionally considered having the significant impact on world life expectancy (bad habits, climatic and environmental conditions, exposure to chronic stress, nutritional balance, daily physical activity, health care, country economic development, etc.).

The paper demonstrates the importance of assessing a country's life expectancy not only in temporal dynamics (based on the «yesterday-today-tomorrow» principle), but also in spatial dynamics (i.e. in comparison with other countries) in terms of global competitiveness.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

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