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THE IMPACT OF DEMOGRAPHIC PROCESSES ON THE SUSTAINABLE DEVELOPMENT OF THE TERRITORY

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Abstract

Modern demography has a significant impact on the stability of socio-economic processes in the territories of different geographical coverage. However, at present, mainly negative trends have entered the active stage, affecting the development of the country's territory as a whole and its regions. Such factors include depopulation, decrease in real money incomes of the population, growth of external and internal instability, decline in economic growth rates and, consequently, growth of inflation and the shadow economy. Furthermore, the demographic situation in the country is recognized to be in the crisis, which in itself, poses threat to sustainable development both in terms of human resources and economic growth. In this regard, the diagnostics of interrelation between the main demographic and economic indicators on the example of the regions of the Siberian Federal District was conducted in this study. The results of the work confirmed the increasing territorial differentiation between the regions, their diversity in socio-economic indicators, as well as negative processes in the demographic sphere. The high correlation between the working-age population, per capita money income and per capita gross regional product indicates a significant role of living standards in the demographic sphere. Currently, a number of indicators characterizing the social and economic spheres indicate a recession in the economy of the macro-region and, accordingly, the unstable development of the territory. Nevertheless, the implementation of state policy tools for regional development can contribute to economic growth even in conditions of internal and external instability.

1. Introduction

For Russian science and practice the problem of sustainable development of the territory is of particular importance due to the debatable question of setting priorities: stability or stagnation, stability or ability to withstand crises. The modern Russian economy has acquired a number of signs of sustainable development (Gagarina, Chaynikova, & Archipova, 2018). The resistance of the economy to depopulation, which was formed in the late XX-early XXI centuries is one of such signs. In addition, there is a positive trend in the financial sector related to state support of regional budgets and their surplus. Stabilization of the real sector of the economy has been proved by many development indicators. However, there are factors that have an adverse impact on the socio-economic situation of the country: negative natural population growth, decline in living standards, etc. In modern conditions, the state uses mechanisms and tools to ensure a stable situation in the main sectors of the economy, culture, health, education (Small & Nicholls, 2003). These include national projects adopted in early 2019. They are expected to have a positive impact on the macroeconomic situation and, in particular, on the demographic sphere. The "Center-Periphery" model that highlights features of interregional interaction is of great importance for the study of the regional problems (Krugman & Venavles, 1996).

2. Problem Statement

The demographic sphere of any state greatly affects its socio-economic development and the stability of the economy. Maintenance of population as a strategic resource and its growth is regarded as one of the main priorities by the country's leadership. The main objective of the study is to assess the impact of demography on the resistance of the territory to external and internal challenges. The Siberian Federal District, one of the largest macro-regions of the Russian Federation, has been chosen as an example.

The role of the demographic sphere in the stability of socio-economic parameters is significantly high due to the fact that it reveals the reasons for the outflow of population from problem regions to the most successful ones (Cohen et al., 1997). Thus, its impact on the resistance of the territory to the outflow of population is determined.

The relevance of the problem is expressed in the fact the "Demography" project is given a significant place among the national projects. In this regard, the diagnosis of target indicators provided for in the documents may reveal the possibility of their implementation. The traditional way to improve the situation is to finance activities that improve the situation in the regions. But despite the state financial support and long-term state projects and programs, the situation is not substantially improving, positive trends in demography are not formed**.**

3. Research Questions

3.1. How is it possible to assess the demographic situation in the regions of the Siberian Federal District from the perspective of sustainable development of the territory.

3.2. To what extent do interregional differences and territorial differentiation influence its sustainable development?

3.3. What will the analysis of correlation between the main social and economic indicators of the territory's development of the Siberian Federal District show?

4. Purpose of the Study

The main purpose of the study is to identify the interrelation between demography and sustainable development of the territory. Over the past decades, a steady trend towards depopulation has emerged. Low birth rate and high mortality have led to this effect. In this regard, it is necessary to:

- identify the main trends in the dynamics of demographic indicators in the current period on the example of the selected macro-region;

- determine the interrelation between economic growth and demographic security indicators on the example of the Siberian Federal District;

- use one of the indicators of economic stability – average per capita income of the population – to compare the situation in the Siberian Federal District with the Russian Federation as a whole;

- diagnose one of the most important indicators of the quality of life of the population – the level of poverty in the regions of Siberia.

5. Research Methods

The main methods of research, contributing to the analysis of interrelation between demography and stability of the territory are traditional economic and mathematical methods: statistical, comparative, analytical, systematic, method of correlation analysis.

5.1. The statistical method allowed to use the data of the Federal State Statistics Service in the study of both the Russian Federation as a whole and its regions. As a result of studying the dynamics of natural population movement in the Siberian Federal District (SFD), it is determined that in all regions of the SFD for the period of 2013-2017, there is a decrease in natural population growth, and the most negative dynamics is observed in the Kemerovo region, Altai Krai, Omsk region, the Republic of Khakassia. The same dynamics is observed in all regions in terms of the rate of natural population growth. Negative trends in population change in this macro-region were observed until the early 2000s. Then they acquired a positive character, but since 2017 they have moved to negative values. This is especially true for the Altai Krai and Omsk region.

5.2. Diagnostics of the demographic situation in the country as a whole and its regions helps to identify the level of stability of modern processes in accordance with the criteria approach, when the state of the territory is assessed from the point of view of its attribution to a particular type (Belyakovskaya-Plotnik, Sorokina, Cherednichenko, & Gubarev, 2018). For this purpose,

one of the methods of regional analysis - a comparison of macroeconomic indicators with their threshold values, which are presented as the average Russian indicators, is used in the study. In this regard, it can be noted that according to the "Share of working-age population" indicator, only three constituent entities of the Siberian Federal District exceed the average values for both the macro-region and the Russian Federation as a whole statistics – the Krasnoyarsk Krai, Novosibirsk and Tomsk regions. At the same time, the share of the young-age population (The Republic of Tuva is the leader) and the elderly population (The Altai Krai is the leader) is growing.

5.3. The method of comparative typology allows to identify the most problematic areas and highlight the main demographic problems (Dmitrieva, Fedotova, Prigozhina, & Stolyarova, 2018). Thus, the territories allocated on a national basis (The Republic of Tuva and the Republic of Khakassia) are considered as areas of great concern in demographic terms. The situation is relatively favorable in Omsk, Novosibirsk and Tomsk regions, which have the most diversified economy and a high standard of living.

5.4. The analytical method allowed to identify one of the threats to the demographic stability of the territory of the Siberian Federal District – migration outflow of population. The most unfavorable situation was formed in the Omsk region – 50.1 per 10 thousand people. At the same time, over the past seven years, the outflow of population from the Republic of Tuva, where the migration outflow rate in 2010 accounted for 126.3 per 10 thousand people, has significantly decreased. By 2017, it had decreased by 4 times. Among the regions characterized by population influx there are only two entities: the Novosibirsk region and Krasnoyarsk Krai.

5.5. Correlation analysis, which reveals the dependence or interrelation between indicators of different nature, is chosen as one of the research methods. Thus, the closest interrelation is highlighted between the indicators of working-age population and the per capita income. Secondly, the interrelation between the working-age population and the per capita gross regional product. Thirdly, money income of the population and gross regional product (Table 01).

Table 01. Correlation analysis of interrelation between socio-economic indicators of the entities of the Siberian Federal District (%), the year of 2017.

Indicators	Per capita money income (RUB.)	Per capita gross regional product. (RUB.)
Working-age population (share, %)	**71%**	**68%**
Per capita money income (RUB) and place in the RF	-	**62%**
Migration population growth rate per 10,000 people	-	48%

The migration movement of the population does not produce such a significant impact compared to the above-given indicators, however, the influence of the population concentration on its economic and, consequently, sustainable development is obvious.

6. Findings

One of the most negative trends in the Siberian Federal District is a steady decline in natural population movement, including negative natural growth in all entities of the macro-region. This indicates depopulation. Migration growth does not compensate for the negative trends in the reproduction processes of the macro-region. Changes in the demography of the Siberian Federal District did not create prerequisites for this population growth. The growth of the economy in the early 2000 did not ensure the growth of the birth rate of the population necessary for the Russian Federation.

Financial (money income of the population) and social (divorce rate) indicators are used as examples. With an annual revenue growth, a deviation of the per capita incomes in the regions of Siberia from the Russia's average values has been formed. This stimulates the outflow of population to regions with higher money incomes. The dynamics of divorce shows a positive trend in most regions of Siberia, which, however, has no positive impact on the overall situation.

The main results of the study include the identification of problems that constrain demographic growth:

6.1. The rule of sustainable reproduction process, which is provided by the family, meets the requirements of sustainable demographic development. One of the negative trends is the short life cycle of the family, i.e. the time from the moment of its creation to the collapse is short, children are not born. There are 582 divorces per 1,000 marriages. Moreover, the uncertainty of the population in the prosperous and sustainable future of the family was formed.

6.2. The lack of growth in real money incomes. The average monthly income of the population is increasing (in Russia as a whole from 25.7 thousand rubles in 2013 to 33.0 thousand rubles in 2018), but real disposable income at the end of 2018 amounted to 98.0%. This indicates a decline in the standard of living of the population.

6.3. The National Project "Demography" claims the increase of the total birth rate to 1.7 per woman to be one of the target indicators. However, the number of women in fertile age is decreasing: in 2010 there were 1010 women per 1000 men, while in 2018 the figure was 994. The main problem is the decline of this part of the population in all age groups.

6.4. Demographic problems are a large-scale phenomenon that affects the stability of the economy. It is therefore logical to analyze and evaluate them in the context of a country, its regions and cities (Martin & Ottaviano, 2001). One of the problems is the decline in natural growth or depopulation. In 2013, there was a positive increase of + 0.2 ppm, but since 2016 it has moved into a negative trend and in 2018 accounted for - 1.6 ppm.

6.5. A distinctive feature of the Siberian Federal District, as well as other macro-regions, is the complex and heterogeneous nature of the demographic processes dynamics (Zverev et al., 2017).

6.6. Differentiation of regions is high, in terms of both demographic potential, economic security (Silchenkova, 2018), and economic development (Table 02).

Table 02. Heterogeneity of the regions of the Siberian Federal District in socio-economic indicators

Regions	Share in the population of the district	Share of the per capita GRP	Share of investments in fixed assets
Krasnoyarsk krai	16.7	24.8	27.9
Novosibirsk region	16.3	15.0	11.5
Kemerovo region	15.6	12.0	13.7
Irkutsk region	14.0	15.0	16.9
Altai krai	13.6	7.0	5.5
Omsk region	11.3	8.8	6.6
Tomsk region	6.3	6.8	6.2
the Republic of Khakassia	3.1	2.6	1.5
the Republic of Tuva	1.9	0.7	0.6
the Republic of Altai	1.3	0.6	0.9

The data from Table 02 indicate a relatively high level of economic development of the regions occupying the first four positions. These are the leading regions, which concentrate on their territory a significant part of the population, provided with jobs, stable money income, social services. Approximately 50% of the regions are lagging behind. In terms of economic development, they are among the most disadvantaged regions in the Russian Federation. Inequality between regions has been increasing throughout the 20-year period (Zubarevich & Safronov, 2013).

7. Conclusion

The main findings of the research studying the impact of demographic processes on the stability of territory is the conclusion about the high degree of interrelation of these processes, the formation of the strongest demographic security, which traditionally have considerable success in socio-economic development, a high degree of investment attractiveness, usually due to rich natural resource endowments. Such successful entities of the Siberian Federal District include Krasnoyarsk Krai, Irkutsk region, the Republic of Khakassia. Also, among the most prosperous regions are Novosibirsk, Tomsk and Omsk regions, which do not have rich reserves of natural resources, but their economy is based on the significant involvement of human capital, the development of modern technology parks, scientific, cultural and educational centers, territories of advanced socio-economic development.

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