Assessment of the impact of the socio-economic situation on the quality of life of the population of the Arctic zone

T Ushakova 1, N Zykova 2 and O Ikonnikova 3

1 Northern State Medical University of the Ministry of Healthcare of the Russia Federation, Arkhangelsk, Russia
2 Northern State Medical University of the Ministry of Healthcare of the Russia Federation, Arkhangelsk, Russia
3 Northern (Arctic) Federal University named after M.V. Lomonosov, Arkhangelsk, Russia

ushakovatn@gmail.com

Abstract. The article discusses the socio-economic indicators that determine the quality of life of the population of the Arctic regions of the North-West Federal District of the Russian Federation. The results of a comparative analysis of the impact of the socio-economic situation on the assessment of the quality of life of the population of the Municipal unit "City of Arkhangelsk" and the Municipal Unit "Severodvinsk" of the Arkhangelsk region, which are part of the Arctic zone of the Russian Federation, are presented. The weak sides of the development of the Arkhangelsk region should include difficult climatic conditions, peripherality, high production costs, population outflows, a high level of risk for investors and an increased long-term investment in Arctic projects. The Arkhangelsk region belongs to the subsidized regions of the Russian Federation and as a result needs multilateral support from the state. To study the impact of the socio-economic situation on the quality of life of the population, indicators such as age and gender characteristics, type of activity, level of accessibility of medical care, etc. were used. Subjective tools for assessing the quality of life were the answers of respondents characterizing the conditions and quality of life in the Arctic region. The results of sociological studies of the quality of life of the population allowed to identify "problem points". After analyzing the quality of life of the population on the basis of objective indicators and subjective assessment, contradictions and complexity were revealed in comparing these indicators. The authors have developed recommendations for the implementation of the policy pursued by state authorities, which should be directed to legislatively developed and adopted unified social standards for the level and quality of life, as well as to the Spatial Development Strategy of the Russian Federation, focused on improving the quality of life.

1. Introduction

In Russia in recent years, interest in the Arctic has especially increased. The Arctic zone attracts with its practically inexhaustible rich resource potential, which ensures the political and economic interest in the use of its resources and contributes to the strengthening of international political influence. The current economic situation in Russia dictates the need to develop new solutions for the Arctic zone of the Russian Federation (AZRF). In terms of the implementation of the strategy for the development of the Arctic zone of the Russian Federation and to ensure national security for the period up to 2020, improving the quality of life of the population living and working in the Russian Arctic is crucial. [8]
The adopted strategy determines the importance of such components of the quality of life of the population, such as raising the level of social and cultural services, as well as ensuring positive demographic processes. The effective socio-economic development of the Arctic region depends on these determinants. An important factor of socio-economic development of the territories of the Russian Arctic is to ensure the reproduction of human and social capital and the preservation of labor resources.

The purpose of this study is to determine the impact the socio-economic situation has on the assessment of the quality of life of the urban population of the City of Arkhangelsk municipal union and the Severodvinsk municipal formation of the Arkhangelsk region. These municipalities (MO) of the Arkhangelsk region became part of the Arctic zone in accordance with the Decree of the President of the Russian Federation of May 2, 2014 N 296.

2. Analysis of the rating of the Arkhangelsk region on socio-economic indicators and quality of life among the regions of the North-West Federal District of the Russian Federation that are part of the Arctic Zone of the Russian Federation

The Russian Arctic regions are heterogenic both in the field of social and economic development, and by their culture and history. Each region has its strengths and weaknesses. [1-7,9,11-12]

The strengths of the Arkhangelsk region, as well as for all the Arctic regions, include: rich mineral and raw material potential; [1] a favorable geographical position for the development of international cooperation (proximity to the Northern Sea Route); potentially high investment attractiveness of the proposed resource development projects. Characteristic strengths for the Arctic regions of the Arkhangelsk region: the potential has been created for the development of local industry in the production of equipment and marine equipment for offshore production, offshore production platforms, equipment for oil and gas processing; Regional shipbuilding and engineering enterprises successfully master the production of drilling platforms, equipment for the extraction and processing of oil and gas, the production of bulk metal structures, and various ship equipment. A shipbuilding cluster functions in the region. The activities of the cluster members: shipbuilding, shipbuilding, ship repair and engineering. The cluster includes 41 enterprises. The key organizations involved are shipbuilding and ship repair enterprises. [13]

Difficult climatic conditions, peripherality, high production costs, seasonality and uneven development of the regional economy, relatively low transport accessibility, population outflow, deterioration in the quality of human capital should be attributed to the weak sides of the development of the Arkhangelsk region; high level of risk for investors and increased long-term investment in Arctic projects. The Arkhangelsk region belongs to the subsidized regions of the Russian Federation and, as a result, needs multilateral active support from the state.

To determine the quality of life in the regions and assess the identified imbalances in this area, the experts of the Rating Agency “RIA Rating” of the “Russia Today” media group, conduct annual surveys and compile regions of the quality of life based on objective indicators, which are calculated using published official statistics. [16]

The rating score, which is used as a tool for assessing differences between regions and as a criterion for ranking regions, is calculated on the basis of 72 indicators compiled and developed. The sources of information for compiling the rating are data from the Federal State Statistics Service (Rosstat), the Ministry of Health of the Russian Federation (Ministry of Health of Russia), the Ministry of Finance of the Russian Federation (Ministry of Finance of Russia), the Central Bank of the Russian Federation (Central Bank of the Russian Federation).

To make a rating, the developed and selected indicators are combined into 11 groups. Each group allows you to assess and analyze the main aspects of living conditions in the region, such as the level of economic development, income of the population, the provision of the population with various types of services, as well as the category of climatic conditions in the region of residence, etc.

After analyzing the rating position of the Arkhangelsk region in the ranking of the subjects of the Russian Federation among the regions of the North-West Federal District of the Russian Federation
that are part of the Russian Arctic by indicators belonging to the Level of Economic Development group, it should be noted that the Arkhangelsk region ranks last among the regions of the North-West Federal District members of the Arctic zone of the Russian Federation on such an indicator as the volume of production of goods and services per capita and the penultimate place in such indicators as the volume of investments in private capital per inhabitant and by the share of own revenues in the total income of consolidated budgets. [14, 16]

Analysis of the ranking position of the studied region in the ranking of subjects of the Russian Federation among the regions of the North-Western Federal District of the Russian Federation, included in the Russian Arctic by indicators, of the "Incomes of the population" group showed that the region ranks 32nd in terms of "The ratio of money incomes of the population to the cost of a fixed set of consumer goods and services" in the Russian Federation, and among the territories of the North-West Federal District that are part of the Arctic zone, it is ahead of only the Republic of Karelia. [14,16]

In terms of indicators compiled in the Demographic Situation Group, the Arkhangelsk Region ranks 80th in terms of the Population Change in Three Years indicator among the constituent entities of the Russian Federation, and among the NWFD territories of the Arctic zone only the Komi Republic is ahead. This indicates a large outflow of the population and an alarming demographic situation in the studied region. [14,16]

Assessing the overall indicator of the quality of life of the population of the Arkhangelsk region, it should be noted that this indicator decreased in 2017 compared to 2016. The data are presented in table 1. [14,16]

| Subject                         | Position in rating in 2017 | Position in rating in 2016 |
|---------------------------------|---------------------------|---------------------------|
| Murmansk region                 | 42                        | 48                        |
| Komi Republic                   | 65                        | 59                        |
| Nenets Autonomous Okrug         | 67                        | 68                        |
| Republic of Karelia             | 70                        | 70                        |
| Arkhangelsk region              | 74                        | 71                        |

As can be seen from table 1, among the regions of the North-West Federal District of the Russian Federation, which included into the Arctic Zone of the Russian Federation, the Arkhangelsk region occupies the last place.

As a conclusion, it should be noted that in the Arkhangelsk region there are both objective opportunities for effective economic development and serious threats. And one of the threats is the low quality of life, which entails a migration outflow of the population from the region.

3. Assessment of the quality of life of the urban population of the City of Arkhangelsk Municipal Formation and the Severodvinsk Municipality of the Arkhangelsk Region

Various methods are used to objectively assess the quality of life. Each of them takes place, as today there is no generally accepted methodology.

In our study, the following parameters were used to assess the quality of life: income level; accessibility and quality of education; availability and quality of medical care; quality of housing conditions and housing and communal services; livability and infrastructure of the residential area; the state of the social environment; the level and quality of work of local governments. [10]

Using a subjective assessment of the quality of life, it is possible to obtain the necessary information about the priority components of the quality of life at the level of an individual. These components make it possible to establish the general characteristics of the environment in which
people live, as well as to find and analyze a variety of modified particular situations. After analyzing foreign literature, you can find confirmation of the above. In different countries, depending on the varying circumstances, people assess the quality of life differently. So in the most developed countries, middle-aged people rate the quality of their lives not as high as the young and the elderly. In this case, the income level of the latter may be lower than that of the former. [17,18] And, as a rule, the subjective assessment does not always coincide with objective indicators.

Our study was conducted in the Municipal unit “City of Arkhangelsk” and the Municipal unit “Severodvinsk” of the Arkhangelsk region, which are part of the Russian Arctic. Social survey was created on the site - survio.com. Following the survey, 200 people were interviewed.

Arkhangelsk is the administrative center of the Arkhangelsk region. Located on the shores of the Northern Dvina and the islands of its highly developed delta 40 - 45 km from its confluence with the White Sea. The distance to Moscow is 1308 km. The territory of the municipal formation "City of Arkhangelsk" is 29442 hectares.

As of January 1, 2017, the population of the city of Arkhangelsk was 358.6 thousand people. Taking into account the natural decline and negative migration balance, the population of the city of Arkhangelsk as of January 1, 2018 amounted to 356.9 thousand people. Migration decline in 2017 amounted to 1,353 people. The number of labor resources in the city of Arkhangelsk in 2017 is 219.1 thousand people. [15]

The average monthly accrued wages in the organizations of the city of Arkhangelsk in 2017 (excluding small business entities) amounted to 45.1 thousand rubles and increased by 5.5% compared to 2016.

The total number of organizations registered in the city of Arkhangelsk, as of January 1, 2018 - 11,561 units (as of January 1, 2017 - 12,063 units), of which 1,435 organizations working in the construction industry, 889 organizations engaged in transportation and storage, 654 organizations engaged in processing industries, 100 organizations providing electricity, gas and steam, 66 organizations supplying water, wastewater, organizing the collection and recycling of 25 organizations involved in the extraction of minerals. [15]

Severodvinsk - a city of regional subordination, the leading industrial center of the Arkhangelsk region and North-West Russia, is located 35 kilometers west of Arkhangelsk on the coast of the White Sea. Founded as a satellite city of the largest shipbuilding complex in the country.

Over the past year, the population of Severodvinsk decreased by 766 people (0.4%). Numerical population losses in 2017 were similarly caused by natural loss and migration outflow of the population. [15]

The average monthly salary (without social payments) accrued to those employed in enterprises and organizations of the city (without small businesses) for 2017 amounted to 54,673 rubles and increased compared to the previous year by 7.0%. [15]

To identify the social characteristics of the life of the population of the two largest municipalities of the Arkhangelsk region, indicators such as marital status, occupation, gender and age structure of the respondents, income, comfort level of living conditions, quality of residential infrastructure, quality of education, quality of medical care were used. , the level of satisfaction of local authorities, the quality of road conditions, the quality of public functioning of transport.

Comparing the results of a study to assess the quality of life of the population, among the people surveyed, in both cities there was an equal ratio of respondents: 81% of women and 19% of men. This structure is explained by the fact that the female half of the population is more open and is located to this kind of surveys and studies.

The composition of respondents by age division in Arkhangelsk and Severodvinsk is similar: about 40% of respondents aged from 25 to 34 years old, about 30% of people aged from 35 to 44 years old. Those who answered those over 55 years old in Severodvinsk - 6%, and in Arkhangelsk only 1%. Consequently, the young and adult generation is socially more active and interested in improving the quality of life of the population.
The study showed that there are more people employed in Arkhangelsk than in Severodvinsk. Among the residents of Arkhangelsk 79% of respondents have a job. In Severodvinsk, the indicator is lower, but only slightly - 67% of respondents indicated a stable type of activity.

The results of the salary plans in the Arkhangelsk region show that the majority of respondents in both cities have low wages (from 11 to 25 thousand rubles, average wages (from 26 to 39 thousand rubles) - 35% of respondents.

In Arkhangelsk, 21% of the surveyed population has a wage above average (from 40 to 79 thousand rubles), while in Severodvinsk only 10% of the respondents. The presence of high (more than 80 thousand rubles) salaries was indicated in the answers of only 4% of respondents in both cities.

The satisfaction of citizens in the infrastructure in Severodvinsk is much higher than in Arkhangelsk. According to the survey results, 55% of respondents in the city of Severodvinsk are satisfied with the infrastructure and 24% are not satisfied. In Arkhangelsk, the situation is more critical. Among those surveyed in the capital Pomorye, 74% of the population are not satisfied with the infrastructure of the city. And only 17% are satisfied.

Housing conditions in Arkhangelsk were rated as good by 65% of respondents. In Severodvinsk, the results are less unambiguous: only 51% answered that the living conditions were good and 36% chose a negative answer. The results show that in Arkhangelsk the population has better living conditions.

The assessment of the quality of housing and utilities is the opposite. Residents of Severodvinsk are 51% sure that the quality of services corresponds to a high level. 53% of the respondents in Arkhangelsk are convinced of the poor quality of housing and communal services in the city of Arkhangelsk.

The opinions of people in the cities of Arkhangelsk and Severodvinsk coincided with the prices of housing and communal services. According to the results of the survey, more than 60% of respondents believe that prices for housing and public utilities are too high and do not correspond to the quality of services. The condition of the infrastructure of the districts in both cities was assessed as negative. After analyzing the results of answers to questions about the state of the infrastructure and the amenities of the cities of Arkhangelsk and Severodvinsk, it should be noted that residents of Severodvinsk are more comfortable with their place of residence than residents of Arkhangelsk.

The respondents rated the quality of care in medical institutions in Arkhangelsk and in Severodvinsk unanimously - poor. When asked which medical institutions are preferred by the residents of Arkhangelsk and Severodvinsk, the overwhelming number of people surveyed (more than 60%) attend government medical institutions. A small proportion of respondents prefer private medical facilities.

According to a study on the quality of life of the population of the MO City of Arkhangelsk and the Severodvinsk municipal district, it follows that the population of the cities has little knowledge of the activities of local governments or is not familiar at all, but at the same time is satisfied with the work. Thus, a contradiction between the assessment of the activities of local governments and the awareness of the population about their work was revealed. Perhaps a greater awareness and interest of people in the activities of local governments would play an important and crucial role in their lives, in the infrastructure of cities.

Residents of the cities of Arkhangelsk and Severodvinsk believe that there are not enough places for leisure in their places of residence. One reason can be the lack of interest of local governments in maintaining urban recreation areas for residents.

Also, the population of both cities do not have enough equipped places for physical culture and sports. This is an important indicator in people's lives, it is also an indicator of the health of the nation as a whole. A comparative analysis of the assessment of the main factors affecting the quality of life of the population of the MO City of Arkhangelsk and MO Severodvinsk was summarized by the authors of the study and is given in Table 2. The evaluation was conducted mainly on a four-point system: excellent, good, satisfactory, unsatisfactory.
Table 2. Comparative analysis of the assessment of the main factors affecting the quality of life of the population of the MO City "Arkhangelsk" and MO "Severodvinsk"

| Indicators                                           | MO "City of Arkhangelsk" | MO "Severodvinsk" |
|------------------------------------------------------|--------------------------|-------------------|
| Income level                                         | Satisfactorily           | Satisfactorily    |
| Living conditions                                    | Good                     | Good              |
| The quality of housing and communal services         | Satisfactorily           | Good              |
| City amenities and infrastructure                    | Satisfactorily           | Good              |
| The quality of education                             | Good                     | Good              |
| Quality of care                                      | Satisfactorily           | Satisfactorily    |
| Satisfaction with the work of local governments      | Satisfied                | Satisfied         |
| Road condition                                       | Unsatisfactory           | Unsatisfactory    |
| The quality of public transport                      | Satisfactorily           | Satisfactorily    |
| General assessment of the quality of life of the population of the municipality | Satisfactorily | Satisfactorily |

4. Conclusion

The main results of the research can be presented by the following conclusions and suggestions:

1. Comparison of objective and subjective assessments of the quality of life of the population revealed contradictions. In general, the results of the subjective analysis show that the population of the two largest cities (MO "City of Arkhangelsk" and MO "Severodvinsk") of the Russian Arctic satisfactorily assess the quality of life, while by objective indicators the Arkhangelsk region, which includes these municipalities, is among the Arctic regions North-West Russia in terms of quality of life ranks last.

2. After analyzing the quality of life of the population in the municipalities "City of Arkhangelsk" and "Severodvinsk", which are part of the Russian Arctic, based on objective indicators and subjective assessment, it can be concluded that there is a difficulty comparing these indicators due to the lack of uniform criteria.

3. To obtain an objective picture of the quality of life of the population in the Arctic region, there is a need to develop a methodology that will allow to determine the rating of municipalities in the region. In the new methodology, criteria should be developed, which are determined in a particular municipality and which should be constantly regulated by observing and predicting the quality of life of the population. Assessment of the quality of life of the population of municipalities should be made taking into account the criteria developed and determined by the methodology. In drawing up the rating of the quality of life of the population, the volumes and norms that cover all spheres of human activity and the factors that influence them should be used.

4. The policy pursued by state authorities should be aimed at legislatively developed and adopted unified social standards for the level and quality of life, as well as the Spatial Development Strategy of the Russian Federation for the period up to 2025, which is focused on improving the quality of life of the population of the Arctic regions.

5. Local governments of large cities (which include municipalities “City of Arkhangelsk” and municipal unit “Severodvinsk”) should pursue a policy of “securing” the population, through economic and social tools that contribute to providing the region with labor resources, as well as positively dynamic natural growth rates.

6. Effective quality of life management, a real and stable improvement of the quality of life of people, is possible under the condition of a promptly operating system of local government bodies.

Acknowledgment
The study was carried out with the financial support of RFBR in the framework of the scientific project №18-410290002 "Socio-economic aspects of the quality of life of the population of the Arctic zone of the Arkhangelsk region and NAO"

References

[1] Galtsev N V et al 2017 Regional Economics: Theory and Practice B 1 pp 85–100
[2] Lazhentsev V N et al 2007 North: problems of peripheral territories Syktyvkar Komi Scientific Center Ural Branch of the Russian Academy of Science p 420
[3] Lazhentsev V N et al 2005 North as an object of complex regional studies Syktyvkar Komi Scientific Center Ural Branch of the Russian Academy of Sciences p 512
[4] Lazhentsev V N et al 2012 Spatial and temporal trends of socio-economic processes in the Russian North Syktyvkar Komi Scientific Center Ural Branch of the Russian Academy of Sciences p 346
[5] Lukin Y F 2014 Status, composition, population of the Russian Arctic Arctic and North B 15 pp 57-94
[6] Lukin Y F 2012 Russian Arctic in a changing world Arkhangelsk Available from: http://narfu.ru/aan/Russian_Arctic_Lukin/Russian_Arctic_Lukin.pdf
[7] Neustroeva A B 2015 The quality of life of the population and the social risks of economic activity in the Arctic conditions Arctic: prospects for sustainable development Yakutsk Yakutsk Scientific Center Siberian Branch of the Russian Academy of Sciences pp 123-128
[8] Strategy of the spatial development of the Russian Federation for the period up to 2025 Available from: http://government.ru/docs/35733 [Accessed 2nd February 2019]
[9] Tatarkin A I et al 2008 North: The Arctic Vector of Socio-Ecological Research Syktyvkar Komi Scientific Center Ural Branch of the Russian Academy of Sciences p 408
[10] Ushakova T N 2017 Formation factors and criteria for assessing the quality of working life European Social Science Journal B 11 pp 120-127
[11] Fauzer V V et al 2001 The Komi Republic in the 20th century: demography, resettlement, migration Syktyvkar Polygraph Service p 124
[12] Fauzer V V et al 2012 Tendencies and prospects of social and economic development of the northern regions of Russia: demography, labor, migration, resettlement Ekon-inform p 311
[13] Kuzmina E 2018 Arkhangelsk region: industrial, scientific and innovative potential - in shipbuilding Available from: http://spec-technika.ru/2018/07/arkhangelaskaia-oblast-promyshlennyy-nauchnyy-i-innovacionnyy-potencial-v-sudostroeni / [Accessed 20th February 2019]
[14] Official site of the Federal State Statistics Service Available from: http://www.gks.ru [Accessed 14th February 2019]
[15] Office of the Federal State Statistics Service for the Arkhangelsk Region and the Nenets Autonomous District Available from: http://arhangelskstat.gks.ru [Accessed 24th February 2019]
[16] Rating Agency “RIA Rating” Available from: http://www.riarating.ru/infografika/20180214/630082471 [Accessed 24th February 2019]
[17] Kozlov A et al 2017 Human and economic factors of long-distance commuting technology: Analysis of arctic practices Advances in Intelligent Systems and Computing 487 pp 409-420
[18] Romashkina G F et al 2017 Socioeconomic modernization of Russia and its Arctic regions Studies on Russian Economic Development 28 (1) pp 22-30
[19] Leksin V N et al 2017 Socio-economic priorities for the sustainable development of Russian arctic macro-region Economy of Region 4 pp 985-1004