

**SCTCMG 2019**  
**International Scientific Conference «Social and Cultural  
Transformations in the Context of Modern Globalism»**

**QUALITY OF LIFE ASSESSMENT: REGIONAL FEATURES**

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*Abstract*

The article deals with the assessment of the quality of life of the population at the level of municipalities. A method for constructing a two-dimensional integral rating of the level of territorial differentiation is proposed. Integral assessment considers the degree of change of the analyzed indicator and the direction of the dynamics of the three adjacent years. The system of indicators developed by regional statistics at the municipal level has been defined. Approbation of the method is carried out by the example of municipalities of the Republic of Sakha according to statistical data, reflecting the health and safety of the population by the level of the indicator between municipalities. Private natural indicators are converted into a point system in relation to the maximum and minimum values of indicators for municipal districts. The quality of life of the population was assessed for health status and public safety in a two-dimensional “level – dynamics” space for 2014–2016. Calculations were made in the context of municipalities with the construction of an integrated rating for the region. A significant differentiation of the quality of life for health status and the safety of life of the population based on the developed classification of municipal districts of the Republic of Sakha was revealed. Integral assessment of the quality of life in municipalities is a popular tool for carrying out an active socio-economic policy aimed at improving the level and quality of life of the population.

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**Keywords:** Health, security, quality of life, integral index, metropolitan area.



## 1. Introduction

The quality of life of the population is the most important indicator of the efficiency and effectiveness of the economy, in the regions and local governments. In a single economic and social space, the most important goal of the state is to create and maintain conditions for the convergence of its regional levels (Kuznetsov, Rastova, & Rastov, 2017). The quality of life of the population is determined by the achieved level of development of society, reflecting the level of realization of people's reasonable needs and the degree of satisfaction of their life plans in accordance with economic and social standards (Myreev, Popov, & Fedorova, 2015). The quality and standard of living of the population of the northern regions are inferior to other territories with relatively favorable living conditions. All this necessitates an active state policy aimed at improving the quality of life of the population living in the northern territories of Russia.

Studies are conducted annually, ratings of countries and regions are compiled by quality of life based on various indicators, but monitoring is rarely done at the municipal level, and considering territorial peculiarities, they are almost absent. To improve the quality of life of the population in the region and municipalities, a system for assessing indicators is needed, which allows analyzing the current situation and setting priorities, evaluating the effectiveness of the work of the governing bodies. A special place in assessing the quality of life of the population is occupied by the monitoring of the health and safety of the population. Indicators reflecting the situation in these areas are in demand in almost all ongoing research. Municipal statistics makes it possible to evaluate some characteristics of the standard of living within the regions, even though they reflect only certain aspects of social development, however, the most relevant indicators can be used to calculate integral indices for assessing the situation in municipalities of the region.

The theoretical and methodological basis of the study was research that is mainly based on the calculation of the integral indicator of quality of life, although they have differences in general theoretical and methodological approaches (Ayvazyan, 2002, 2000; Bobkov, Gulyugina, Zlenko, & Odintsova, 2017; Bobkov 2005; Belyaeva, 2009).

Not all generally accepted statistical indicators used to assess the quality of life of the population of a region can be used to evaluate in the context of municipalities in the absence of statistical observations, and not all are relevant or fully reflect the features of the northern territories.

## 2. Problem Statement

Among the regions of the Far East, Yakutia is the undisputed leader in natural population growth and life expectancy at birth. The overall mortality rate in the republic is 8.6 people per 1,000 population, which is a third below the average for the Far East and Russia. The decline was influenced by low mortality rates in 3 large municipalities, where the value of this indicator ranges from 6.3 to 6.6. At the same time, it is necessary to analyze the reasons for the increase in mortality over two years in 5 districts, where mortality increased at a significant pace: Ust-Aldanskii by 17.5%, Niurbinskii by 19.7%, Srednekolymskii by 28.7%, Abyiskii district by 40%.

The mortality rate from neoplasms in Yakutia remains the lowest in the Far East, but in recent years there has been a tendency towards a deterioration in the rate. The average mortality rate from neoplasms in the republic has increased by 11% since 2010 and reached 134.6 per 100 thousand of the population, an

increase in several districts more than 3 times, in others a decrease to 40% was recorded. The reduction in mortality due to external causes represents a significant reserve for increasing life expectancy. Over the last five years, the mortality from external causes has decreased by 26% and reached 135.4 per 100 thousand population. The highest mortality rate in 2016 in the Eveno-Bytantaysky district is 323.7, the lowest in Ust-Maysky is 81.9.

The overall incidence in the country for 15 years has tended to decrease. The highest level was in Amginskii district - 15.5 thousand cases per 10 thousand of the population, the lowest - in the Verkhoyansk district - 4.8 thousand cases per 10 thousand people. The incidence of child morbidity is higher than the national average by 29%, reaching 2310.1 per 1000 population, the maximum incidence rate of the child population is 4 times the minimum, and about 800 children are recognized as disabled for the first time every year.

Since 2005, the number of registered crimes decreased 1.5 times and amounted to 1,287 per 100 thousand population, but the number of crimes committed while intoxicated since 2010 increased 2.6 times.

The analysis of statistical data on the Republic of Sakha (Iakutia), reflecting the state of public health and safety, confirms a stable position in the Far Eastern Federal District, but at the same time indicates a significant differentiation between the municipalities of the republic. That confirms the need for regular monitoring of indicators in the context of municipalities for the subsequent management decisions to improve the situation.

### **3. Research Questions**

Improving the quality of life is the most important task and the main goal of the strategic development of countries and regions in the modern world, respectively, constantly needs to research trends and patterns of quality of life indicators and determines the need for systemic measures for the comprehensive health of the population, ensuring the safety of physical and psychological health as important directions for improving the quality of life of the population.

### **4. Purpose of the Study**

To propose a methodology and assess the quality of life for health and safety of the population with the construction of an integrated rating for municipalities of the region.

### **5. Research Methods**

Despite the long history of studying the question "what is the quality of life," what are its indicators, an exhaustive definition of this concept has not yet been developed. Obviously, with the transition to a post-industrial society, the requirements for quality of life, as well as the very concept of "quality of life", will continue to be significantly transformed (Gordeeva & Suslova, 2014).

The existing methods of studying the quality of life offer various approaches to solving the problem (Ayvazyan, 2002; Grinchel & Nazarova, 2015; Kozlova, Gladkova, Makarova, & Tukhtarova, 2015; ASI, 2010). However, they are united by one thing - almost all of them reflect the essential conditions of human existence, which are expressed in integral indicators.

When identifying indicators, researchers first select relevant indicators that can reflect the quality of life of the population in a region, country, taking into account the current socio-economic situation, problematic issues and strategic objectives to improve the quality of life of the population in the territory.

Thus, one of the indicators of social well-being of the population and human development is the state of children's health. Some generally accepted indicators, such as life expectancy, infant mortality in the selection for research are replaced by others due to the lack of statistical observations in the context of municipalities or taking into account the effect of small statistical aggregates (small numbers) by municipalities, since any statistics becomes less reliable with decreasing size sampling.

Even though harsh climatic conditions are probably the most obvious factor influencing the quality of life of people living in the northern territories, other factors also have a direct impact in many areas. It is impossible not to consider the presence of sparsely populated settlements with up to 200 people, as well as the remoteness of many settlements, where the quality of social services is rather low or difficult to reach. In addition, international experience in assessing the health of the population and the Arctic science community was taken into account, the results of which are proposed in the form of the Arctic Social Indicators project (ASI) (OAAR, 2009; ASI, 2010), as well as studies of social indicators of foreign researchers (Hamilton, Bjerregaard, & Poppel, 2010; Soonman, 2003; Richmond, Filson, Paine, Pfeiffer, & Taylor, 2000).

Ten indicators for assessing the health and safety of the population of Yakutia are selected considering the relevance for the northern territories, which may reflect the situation in a particular municipality and be comparable in temporal dynamics or spatial comparison:

- the mortality of the working age population (per 100 thousand people);
- Mortality from neoplasms (cases per 100 thousand people);
- the ratio of the number of persons under the age of 18 to the number of persons over the age of 18, for the first time recognized as disabled (per 10 thousand of the population of the corresponding age);
- the incidence of children aged 0-14 years for the main groups of diseases (per 1 thousand people of the corresponding age);
- the ratio of the number of children rested in children's health camps to the number of children of the corresponding age.
- number of recorded crimes (per 100 thousand people);
- the death rate from suicides (per 100 thousand people);
- the mortality of the population from external causes (per 100 thousand people);
- number of crimes committed while intoxicated;
- number of road accidents (per 100 thousand people).

In developing the methodology, the approaches of converting natural indicators into scores, developed by Grinchel and Nazarova (2015) and the measurement of the quality of life of the population of the region (Kozlova et al., 2015; Spiridonov, 2010; Mosyakina, 2014). The combination of several methods is more effective and contributes to obtaining a reliable and more objective assessment of the results obtained for the development of recommendations.

In converting natural indicators into point estimates, taking into account the dynamics of the indicator, the integral indicator is calculated using the average geometric value, which is more suitable for

building indicators in the form of chain values, as the ratio of each level to the previous one in a series of dynamics. Expert set the ratio in the distribution of points on the level and dynamics of indicators for 3 years. Thus, ten indicators in one of the areas of quality of life “health and safety of the population” in the amount, when translated into an aggregated point system, can reach a maximum of 200 points. Based on the analysis performed, the following proportion was proposed: 150 per indicator level relative to maximum and minimum indicators for municipalities and 50 points for the indicator dynamics for the study period (3 years). The maximum number of points for one indicator can total up to 20 points: 15 points per level and 5 points for dynamics.

## 6. Findings

When assessing the state of health and safety of the population according to the proposed methodology, high scores were identified in the Arctic Allaikhovskii District (147.7 points), due to the lowest mortality and disability rates of the population, which is not typical of other Arctic regions (Table 01). The lowest mortality rate among the working-age population in the city of Yakutsk did not ensure leadership among the territories in terms of a comprehensive assessment of health status, as the capital has low rates of children's summer vacation and recovery, and there is a deterioration in child morbidity. The safest situation is in the Ust-Ianskii district due to the low rates of the number of registered crimes, including intoxicated people, suicide mortality rates and their annual downward trend.

**Table 01.** Integral index for the block "public health and safety" by municipalities of the Republic of Sakha (Yakutia) for 2016

Above 130 points	From 120 to 130 points	Below 120 points
Allaikhovskii -147.7	Amginskii -129.8	Anabarskii -119.8
Zpiganskii -144.2	Ust-Maiskii-125.4	Tomponskii -119.1
Namskii -142.2	Nizhnekolymskii -125.3	Khappalasskii -119.1
Mirminskii -141.9	Neriungrinskii -125.2	Kobiaiskii -116
Olenekskii -140	Olekminskii -124.4	Yakutsk -115.8
Bulunskii -137.5	Verkhnekolymsky-123.3	Verkhoianskii -115.7
Gornyi -136.6	Churapchinsky-122.2	Viliuiskii -115
E-Bytantaiskii -134.8	Verkhnekolymskii - 121.3	M-Kangalasskii -114.7
Ust-Aldanskii 130.4	Suntarskii -121.3	Lenskii -114.6
Ust-Yanskii -130.0	Tattinskii -120.9	Niurbinskii -111.2
-	-	Momskii -110.1
-	-	Oimiakonskii -106.1
-	-	Srednekolymskii -102.1
-	-	Aldanskii -100.3
-	-	Abyiskii -89.5

Of the maximum 200 points, more than 130 points scored 10 municipalities, in the range from 120 to 130 points - 10 districts, less than 120 points - 15 districts. The minimum score was 89.5 in the Abyiskii district, which is lower than the maximum in Allaikhovskii by 39% (Table 01).

## 7. Conclusion

The study, developed and tested methodology confirms the need to develop criteria for assessing the quality of life of the population by municipalities for an active socio-economic policy aimed at improving the quality of life of the population for the subsequent use of the rating when assessing the effectiveness of management of the municipal entity. The improved methodology, using an integral index, contains a set of relevant indicators adapted to the solution of assessment tasks in the level and dynamics and makes it possible to identify disparities between municipalities. The assessment of the quality of life of the population of the Republic of Sakha (Yakutia) in terms of health and safety revealed a significant differentiation between indicators and scores of the municipalities rating. During the annual monitoring, changes in the positions of municipalities in the ranking are indicative, and the overall rating of the main blocks of the quality of life of the population is required for an integrated vision. It is advisable, based on continuous monitoring of the proposed system of indicators using the developed methodology, to manage changes in the social policy of the region to solve the priority task of improving the quality of life of the population of the region.

## Acknowledgments

The article was prepared within the framework of the fulfillment of the state task of NIRES NEFU for project No. 26.8327.2017 / 8.9.

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