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**THE REGIONAL ASPECTS OF THE RESEARCH ON THE  
POPULATION'S QUALITY OF LIFE**

A. A. Bayanova (a)\*  
\*Corresponding author

(a) Irkutsk State Agrarian University named after A.A. Yezhevsky, Molodezhnyj village, Irkutsk region, 664038,  
Russia, Bainova.aa@mail.ru

*Abstract*

The regional aspects of the quality of life of the population of the city of Sayansk in the Irkutsk region are analyzed. Studies have revealed the dependence of the quality of life of the population in mono-city on the activities of the city-forming enterprise, which is a part of the Sayan industrial unit, consisting of the leading company "Sayanskkhimplast", a thermal power plant and enterprises of the construction industry. During the construction of the Sayan industrial hub and the city, the created common engineering support system determined a high degree of development of communal infrastructure in terms of centralization of water supply, heat supply, and sewage. The existing infrastructural capabilities make it possible to more actively use the status of the territory of priority social and economic development in a mono-city, contributing to the implementation of measures to diversify the economy through the development of agricultural production. Realizing the possibilities of sports and water tourism, further development of improvement with the preservation of accepted traditions of urban landscaping. In general, the existing efficiency of the city-forming enterprise can significantly contribute to a positive impact on the quality of life of citizens. Recommendations are given on improving the quality of life of the population and the rational and efficient use of the territory. It can significantly contribute to improving the quality of life of the population and, in turn, lead to a positive dynamics in its number.

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**Keywords:** Mono-city, quality of life, activities, improvement.



## 1. Introduction

The quality of life reflects the diverse aspects of the life of the population (Atokhodzhaeva, 2013; Danilina & Salin, 2015; Kryukov 2018; Morozova & Mukhacheva, 2017; Mukhacheva & Mishchuk, 2016). A quarter of Russia's population lives in mono-cities, which depend mainly on the activities of city-forming enterprises (Petrikova, 2010; Rostovtseva & Manaeva, 2016; Turgel, 2010). In cities with a diversified economy, the inefficiency of individual enterprises can be offset by the wealth and success of others. In mono-cities, such opportunities are limited; therefore, the emerging socio-economic problems are becoming especially acute (Antonova, 2018; Simonova & Trusova, 2012; Zuykina & Bratchikrva, 2016). In this connection, the research topic that we have chosen is relevant. The purpose of the research is to study the regional aspects of the quality of life of the population of one of the mono-cities of the Irkutsk region. The research method is analytical. The tasks are: to analyze the regional aspects of the quality of life of the population of the city of Sayansk, Irkutsk region, to give recommendations on improving the quality of life, as well as the efficient and rational use of the territory.

## 2. Problem Statement

Sayansk is one of the youngest cities in the region. Located at a distance of 290 km from the city of Irkutsk on the right bank of the Oka River in the taiga zone. Its construction began in 1970, in connection with the creation of one of the main enterprises of the chemical industry. The basis for the construction of the enterprise was the presence of Ziminsky rock salt deposit. The field is used to produce sodium chloride brines for the production of chlorine and caustic soda from the city-forming enterprise Sayanskkhimplast JSC.

## 3. Research Questions

During the construction of the Sayan industrial hub and the city, a common engineering support system was created, occupying a significant area of about 800 km<sup>2</sup>. That determined a fairly high level of development of communal infrastructure. The proportion of the housing stock is provided by centralized sewage, heating, hot and cold water supply within 100%, which exceeds the average indicators of cities in the region (Bayanova, 2019). In 1985, Sayansk, until then a workers' settlement, was given the status of a city of regional subordination, that gave an impetus to the development of the economic base, local administrative structures, and the social sphere.

At the same time, for the period from 2011 to 2019, according to the Federal State Statistics Service for the Irkutsk Region, the dynamics of the population of the city is mainly negative due to migration loss, as well as due to natural aging (Table 01).

**Table 01.** Population of Sayansk

Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019
Population	40629	39895	39453	39198	38887	38957	38897	38968	38674

#### 4. Purpose of the Study

The research questions are aimed at researching regional aspects of the quality of life of the population of the city of Sayansk in the Irkutsk region.

#### 5. Research Methods

The industry is the basis for the development of the economy and social sphere of the city; it accounts for more than 60% of the total revenue. The flagship of the industrial sector is the city-forming JSC Sayanskkhimplast which produces about 40% of all polyvinyl chloride in the country. The leading enterprise OJSC Sayanskkhimplast is a part of the Sayan industrial center along with a thermal power plant and enterprises of the construction industry. At the same time, in the non-residential territory of the city, the largest area is occupied by forests and forest parks - 45.31%, industrial lands account for 8% (Table 02).

**Table 02.** Modern use of land in the village of Sayansk

Item number	Type of use of the territory	Area, ha	Area, %
1	Total land area	5610	100%
2	Residential area	848.865	15.13%
2.1	Residential quarters and micro-districts	330.8	6%
2.2	Service facilities	84.8	1.51%
2.3	Sports and fitness facilities	1.465	0.02%
2.4	Green spaces	31.3	0.6%
2.5	Streets, driveways, squares, parking lots	400.5	7%
3	Non-residential areas	4761.425	84.87%
3.1	Industrial	471.2	8.4%
3.2	Territorial and storage facilities	11.63	0.21%
3.3	External transport	3.695	0.07%
3.4	Agricultural facilities	232.9	4.15%
3.5	Forests, forest parks	2542	45.31%
3.6	6 Water bodies	-	-
3.7	Other land	1500	26.73%

Residential and non-residential zones are located on a plateau, into the slopes of which wide forested river valleys are incised. The residential zone occupies the western and northern parts of the plateau; the non-residential zone is located on its eastern part, adjacent to the valley of the Molty River.

From 1970 to the beginning of the 2000s, the city developed and gained momentum, there was an extensive use of the territory. The period from the beginning of the 2000s to 2014 was characterized by stagnation in both territorial and economic development, the pace of development reached minimum values. Since 2014, the extensive use of the city territory is gaining momentum again. This is due to an increase in the number of land plots for individual housing construction.

## 6. Findings

Sayansk is one of the cultural centers of the Irkutsk region. Secondary schools, kindergartens, art schools, libraries, an art gallery, museums, cultural centers, sports clubs, youth schools, a physical training center work to meet the cultural, educational, sports demands of residents. In general, residents are adequately provided with social and cultural institutions. General educational institutions, with the exception of one school, have now switched to one-shift and five-day studies. There are enough preschool institutions. The availability of places in hospitals and clinics is close to normal. However, it is worth noting the lack of qualified medical personnel.

A qualitative feature of the residential zone of Sayansk is the growth of the development of micro-districts in the forest, its conservation and use as the basis of urban gardening. Thanks to the joint actions of the customer, builders and designers, significant areas of forest that have been well preserved over the past 50 years of the city's life are included in the urban development. Today, taiga pines are organically woven into the silhouette of urban development. The active use of forests in development makes it necessary and advisable to apply maximum standards of landscaping, creating on this basis the ecological framework of the city.

Along with the fact that a small number of courtyards form micro-districts with a fairly compact layout, which are also compactly located relative to each other and enclosed in a kind of ring on the main highway, all cultural, recreational, sports facilities and a business center are within a 20-minute walk. Each micro-district has its own internal educational and sports facilities, which significantly improves the quality of life of the population.

Despite the existing industrial production, environmental indicators are within acceptable levels. This is facilitated by the removal of the main industrial hub from the residential territory of the city by more than 10 kilometers. And also the fact that the design of the industrial hub and the city took into account the wind direction. At the same time, the envisaged set of measures aimed at eliminating existing environmental problems and optimizing the environmental situation also works (Belaya & Parshina, 2013) (table 3)

**Table 03.** Activities and recommendations for the environmental conservation in the city of Sayansk

Item Number	Problems	Activities and Recommendations
1	Ensuring clean air	
1.1.	On the territory of the Sayan industrial unit	Reducing emissions of pollutants at the enterprises of the Sayan industrial unit by improving technological processes, increasing the efficiency of existing gas treatment plants; Organization of car parking on the factory territory;
1.2.	On the territory of the city of Sayansk, the growth of emissions of pollutants from vehicles	Carrying out activities to reduce emissions from vehicles - renewal of the bus fleet and carrying out restoration repairs; -organization of control over the toxicity of emissions from vehicles; Organization of parking lots near public buildings and in residential neighborhoods

2	Ensuring the purity of the aquatic environment	Reconstruction and construction of local industrial wastewater treatment facilities. Construction of treatment facilities for rain sewage in the industrial hub and the city
3	Soil protection against pollution	
3.1.	Non-compliance of existing urban landfills and industrial unit storage sites with sanitary requirements	Redevelopment of landfill sites and industrial waste storage sites; Construction of a solid waste landfill with a storage site for the industrial unit;
3.2.	Lack of organized snow dumps	Construction of a snow dump in accordance with environmental requirements;
3.3.	Lack of a cemetery for pets;	Design and construction of a cemetery for pets;
4	Protection of green spaces	
4.1.	Formation of a system of urban forests	Categorization of forests in the city into the category of urban forests;
4.2.	Lack of a structure for the protection and control of the use of urban forests	Creation of urban forestry;
4.3.	Lack of inventory of urban forests	Inventory of urban forests;
5	Continue monitoring the state and quality of the environment	Development of the existing system of environmental monitoring of the state of the atmosphere, water bodies, soils, and the impact of physical factors.

## 7. Conclusion

At the same time, despite the fact that Sayansk is one of the most comfortable cities for living in the region, the negative dynamics of the population due to the migration outflow remains predominant.

To improve the quality of life of the population, as well as for the efficient and rational use of the territory, positive dynamics of the population, it is recommended:

1. To use in full the status assigned in 2018 of the territory of advanced social and economic development in mono-cities, which will diversify the economy and reduce dependence on the city-forming enterprise.

2. To continue to develop agricultural production. In particular, the development of livestock production is possible due to the location of agricultural areas around the city, which can ensure the availability of food supply. Existing infrastructure opportunities (electricity, heat, water, wastewater, transport accessibility) can become the site for the construction of a pig-breeding complex with a total capacity of 15.5 thousand tons of pork live weight per year. The construction of it was started in the 1980s, and was frozen in the 1990s. In addition, it is possible to restore the previously existing greenhouse complex with an area of 6 hectares, which also has all the necessary infrastructure. The implementation of these investment projects will provide the city with high-quality products and increase the food security of the Irkutsk region and neighboring regions (Bayanova, 2015, 2019).

3. To realize the prospects for the development of sports tourism, investing in the infrastructure of the existing ski base "Severnaya". This is a popular place for recreation and sports not only among local people, but also among residents of the neighboring territories. In addition, there is a possibility of

developing water tourism on the Oka River, as this is an attractive place for lovers of extreme rafting and fishing, who appreciate the unique nature of the Baikal region.

4. To develop the city improvement, continuing the tradition of growing the development of micro-districts in the forest using the forest as the basis of urban landscaping.

A set of recommended measures can contribute to improving the quality of life of residents, efficient and rational use of the territory, and the population increase.

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