

CDSSES 2020**IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin****PROBLEMS OF PENSIONERS AND OTHER RESIDENTS OF THE
RUSSIAN ARCTIC MONOTOWNS**

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Abstract

The paper presents the authors' vision of single-industry towns' residents' problems in the Russian Arctic. The methodological prerequisites for the research were reviews of approaches to assessing the state and development trends of single-industry towns, as well as domestic and foreign practices for solving their residents' problems. It has been shown that life in monotowns in the Russian Arctic is hampered, on the one hand, by systemic crises in the functioning of city-forming enterprises. On the other hand, by natural and geographical features of the northern territories. The paper reveals trends in the population size in monotowns in the Arctic. The Arctic zone of the Russia Federation and the monotowns located in it have been shown on the map. The reasons for systemic unemployment have been determined. The factors that form the systemic problems of single-industry towns' inhabitants in the Arctic have been revealed. Particular attention is paid to pensioners' problems since they are the least well-off category of single-industry towns located in the Arctic territories. It has been concluded that the problems cannot be solved by the forces of the population itself, local government bodies, and large mining companies without direct government control. The only way to solve the problem is government programs to help single-industry towns at the federal level. Such programs are available and are being realized now.

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Keywords: Monotowns, pensioners, population, socio-economic problems, the Arctic zone of the Russian Federation

1. Introduction

The research's relevance is due to the need to reveal the problems of pensioners and other residents of Russian monotowns formed under the influence of large companies and located in the Arctic zone of the Russian Federation. Monotowns (single-industry towns) in the Russian Arctic began to form in the Soviet Union as these rugged lands were developed (Samarina et al., 2018).

Single-industry towns' residents' problems have been of concern to Russian and foreign researchers for several years. We agree with most Russian and foreign researchers' opinion that monotowns, especially those located in the Arctic, are constantly at risk due to a whole range of objective and subjective reasons (Ma & Zhao, 2019; Shastitko & Fakhitova, 2016). Objective reasons are associated with the peculiarities of most always industry towns' economy: firstly, the production of city-forming enterprises is secondary, that is, it always obeys the trends of economic development of the country and the world; secondly, the economy is characterized by low diversification; thirdly, the economy of monotowns is closely related to the city-forming enterprises; at least 20% of the workforce employed in the economy of single-industry towns work at such enterprises; most often these are primary breadwinners in the families. Therefore their families are also directly dependent on the activities of the city-forming enterprises. Subjective reasons are associated with the peculiarities of life in the Arctic: firstly, unfavorable climatic conditions of high latitudes (short summer, low temperatures, lack of sunlight and oxygen), and secondly, geographical conditions (remoteness of settlements from the administrative center, often accompanied by inaccessibility).

2. Problem Statement

Life in the Russian Arctic's monotowns is hampered, on the one hand, by systemic crises in the functioning of city-forming enterprises. On the other hand, by natural and geographical features of the northern territories. In this regard, it is necessary to study Arctic monotowns' residents' problems, paying particular attention to pensioners as the least socially and economically protected category of the population.

3. Research Questions

We are faced with the following issues to be addressed:

- to reveal the trend of change in the population size in the Arctic's monotowns;
- to determine the causes of systemic unemployment in Arctic monotowns;
- to identify the factors that form the systemic problems of residents of monotowns in the Arctic;
- to outline the problems of pensioners living in monotowns in the Arctic.

4. Purpose of the Study

To reveal the problems of pensioners and other residents of monotowns in the Arctic and outline the directions for their solution. A similar situation is observed worldwide in monotowns formed by mining companies (Li et al., 2016; Macedo & Monasterio, 2016; Mejía, 2020; Shastitko & Fakhitova, 2016).

5. Research Methods

The methodological prerequisites for the study are reviews of approaches to assessing the state and development trends of monotowns, as well as domestic and foreign practices for solving the problems of their residents.

The object of the research is monotowns located on the territory of the Russian Federation's Arctic zone. The location of these towns is shown in Figure 1.



Figure 1. Monotowns of the Russian Federation's Arctic zone

The numbering of single-industry towns corresponds to the numbering in Table 1. As shown in Figure 1 and Table 1, monotowns and settlements are not evenly distributed across the Arctic. The Murmansk Region accounts for the most of them: 7 settlements out of 14. Three more monotowns are located in the Arkhangelsk Region..

Arctic monotowns' choice as the objects of the research is significant because, firstly, city-forming enterprises are the basis of the economy of the territory of presence, providing processing Russia's enterprises with ore and non-metallic raw materials. They form a significant share of Russian exports as well. At the same time, the problems of single-industry towns' residents are challenging to resolve.

Table 1. Monotowns of the Russian Federation's Arctic zone

No	Municipal unit	Region	City-forming enterprise
1	Kirovsk	Murmansk Region	Kirov branch of JSC "Apatite", JSC "FosAgro"
2	Kovdor	Murmansk Region	JSC "Kovdor GOK", JSC "MCC "EuroChem"
3	Revda settlement	Murmansk Region	LC "Lovozerky GOK", LC "Fin-Project"
4	Nickel settlement	Murmansk Region	Kola Mining and Metallurgical Company", JSC MMC Norilsk Nickel
5	Monchegorsk	Murmansk Region	Kola Mining and Metallurgical Company", JSC MMC Norilsk Nickel
6	Zapolyarny	Murmansk Region	Kola Mining and Metallurgical Company", JSC MMC Norilsk Nickel
7	Olenegorsk	Murmansk Region	JSC "Olcon", JSC "Severstal"
8	Onega	Arkhangelsk Region	JSC "Onezhsky LDK", Segezha Group
9	Novodvinsk	Arkhangelsk Region	JSC "Arkhangelsk Pulp and Paper Mill", Pulp Mill Holding GmbH
10	Severodvinsk	Arkhangelsk Region	JSC "Northern Center of Shipbuilding and Repair", JSC "United Shipbuilding Corporation"
11	Norilsk	Krasnoyarsk Territory	Polar branch of JSC "MMC "Norilsk Nickel"
12	Vorkuta	The Republic of Komi	JSC "Vorkutaugol", JSC "Severstal" LC "Gold Company"
13	Pevek	Chukotka Autonomous Area	"Maiskoye", JSC "Polymetal", LC "Artel of Prospectors "Chukotka"
14	Beringovskiy settlement	Chukotka Autonomous Area	JSC "Mine "Nagornaya", JSC SUE "Chukotsnab"

We consider the population's size to be an indicator of the problems of Russian monotowns in the Arctic. To identify trends, the number of residents in the selected towns has been analyzed for the period from 2012 to 2020. The value of the indicator growth, in percent, summarized the data evaluation.

6. Findings

6.1. Change in the number of residents of Russian monotowns in the Arctic

Population change can be considered as an indicator of the problems of Russian monotowns in the Arctic. This is explained by the fact that the intensification of problems leads to an outflow of the population, and an improvement in socio-economic situation is accompanied by an influx of labor force and residents of single-industry towns. In order to reveal trends, we will analyze the number of residents in the selected towns for the period from 2012 to 2020. The results are presented in Table 2.

Table 2. Population in monotowns of the Russian Arctic

Municipal unit	2013	2014	2015	2016	2017	2018	2019	2020	growth %
Kirovsk	28074	27686	27250	26971	26687	26581	26206	26020	-7.92
Kovdor	17991	17630	17389	17110	16892	16623	16435	16244	-11.66
Revda settlement	8122	7979	7908	7822	7873	8004	7923	8002	-2.25
Nickel settlement	12364	12112	11823	11601	11599	11437	11244	11012	-12.31
Monchegorsk	44007	43470	43213	42893	42581	42099	41482	41145	-7.84
Zapolyarny	15589	15424	15288	15211	15194	15037	14902	14706	-6.43
Olenegorsk	21736	21301	21003	21097	21039	20847	20697	20364	-9.11
Onega	20620	20284	20051	19706	19381	19110	18812	18493	-12.01
Novodvinsk	39937	39613	39222	38906	38735	38465	37973	37699	-6.43
Severodvinsk	188539	187284	186172	185075	183996	183255	182291	181990	-4.26
Norilsk	177738	176559	176251	177428	178018	179554	180976	181830	2.57

Vorkuta	64353	61638	60368	59231	58133	56088	54223	52776	-21.35
Pevek	4969	4718	4721	4743	4547	4329	4053	4494	-5.87
Beringovskiy settlement	1102	1003	983	837	755	759	816	938	-23.30

The research shows that against the background of the increase in Russia's population from 2013 to 2020 by 2.37%, the number of inhabitants in almost all monotowns and settlements of the Arctic has decreased. The only exception is Norilsk, whose population grew by 2.57%. In the past decade, there was an outflow of population from Vorkuta – one of the largest cities in the Arctic: the decline was 21.35%; the population of Kovdor has decreased by 11.66%. The population of settlements also sharply declines: by 23.30% Beringovskiy settlement; 2.31% Nickel settlement. Thus, the dynamics of the population size shows systemic problems in the monotowns of the Arctic.

6.2. Reasons for the formation of systemic unemployment in the Arctic's monotowns

City-forming enterprises in the Arctic are most often companies of ferrous or non-ferrous metallurgy. These companies unite enterprises engaged in extracting ore minerals (iron ore or ores of non-ferrous and precious metals), their enrichment, and producing a finished product. By supplying materials for construction, machine-tool and mechanical engineering, weapons production, and other sectors of the national economy, mining companies developed following the country's economy. Many researchers consider metallurgical and mining companies' performance to be an indicator of the development of the national industry (Barclay & Everingham, 2020; Cehlár et al., 2020). This is because during crises, the activity of metallurgical companies immediately and sharply decreases, and during the recovery from crises, it increases rapidly. To a lesser extent, large mining companies in the non-metallic sector are represented. They extract apatite, coal, crushed stone, sand, etc.

Like no others, these companies in the USSR needed labor resources. The production processes taking place in the mining companies were very labor intensive, i.e. demanded many workers. The labor productivity of mining companies in the Soviet Union was low compared to Europe, America, Australia and Japan (Savon, 2018; Williams & Nikijuluw, 2020). This also led to the growth of single-industry towns and an increase in their population.

The situation has changed at present. The following factors can be emphasized:

- modern industry no longer needs such an amount of ferrous and non-ferrous metals, since various materials were developed and could replace them;
- work linked to the extraction of minerals and the production of a product from them has become noticeably less labor-intensive, since most of the processes were automated and even robotized;
- many mineral resources have been developed or recognized as sub-economic, because in the Arctic conditions the cost of production, transportation and production is too high.

Thus, life in monotowns is hampered by systemic crises in the functioning of city-forming enterprises.

6.3. Factors forming systemic problems of single-industry towns' residents in the Arctic

As a result of the changing situation in the Russian economy's mining sector, the need for labor resources of mining companies has sharply decreased. However, the problem of Arctic single-industry towns, like monotowns in general, is that they are very little differentiated. Having lost their job at city-forming enterprises, people cannot find occupational work. At the same time, many of them are burdened with children and other dependents. People pay loans to banks or mortgage funds.

Another factor aggravating the problem of Arctic monotowns is climatic. Single-industry towns are located in high latitudes, characterized by low temperatures and short summers (Howe et al., 2014; Khoreva et al., 2018). Attracting skilled labour to the North: Migration loss and policy implications across Russia's diverse Arctic regions. *Polar Record*, 54(5-6), 324-328. (Korchak et al., 2019). Therefore, subsidiary agriculture, which could be occupied by residents having lost their jobs, is practically not developed in the Arctic.

It is also quite difficult to get a new profession and retraining. Firstly, funds are needed for the realization of these plans. Secondly, it is quite difficult to master a new profession for elderly people. Thirdly, skilled workers have a significant problem: having made a career in a mining company and having achieved a certain status and level of prosperity, they do not want to start from scratch in a new field. Fourth, management personnel often have specialized knowledge that is of little use for other activities.

The unfavorable environmental situation aggravates the problems of residents. City-forming large industrial companies adversely affect all elements of the natural environment: from groundwater to atmospheric air (Tost et al., 2020; Witkowski & Hejmanowski, 2020). Experts note that the Arctic environmental problems are exacerbated by the low degree of self-healing of the natural environment (Tishkov et al., 2020). In the Arctic, all pollution remains in the natural environment for a longer time and, accordingly, has a longer impact on humans. Environmental diseases caused by the negative impact of city-forming enterprises are more serious, since they are superimposed on the body's general condition, weakened by the lack of vitamins and sunlight.

6.4. Situation of retired people in Arctic monotowns

We should especially note the position of pensioners in the Arctic monotowns. As in the Soviet Union, and in modern Russia, legislation allows residents of the Far North and equivalent territories to retire earlier than other Russians. In addition, people who work in mining companies in difficult working conditions retire even earlier. Thus, at the time of retirement, Arctic residents have a longer lifespan than other Russian citizens (Skufina et al., 2019). Many pensioners are leaving the Arctic territories. This is especially true for retirees who have housing outside the Arctic. It as well concerns those pensioners whose children previously left the Arctic. However, retirees who do not have capital in the form of accommodation most often remain in single-industry towns.

Arctic retirees, as a rule, do not have the opportunity to earn extra money and support their material well-being with wages due to unemployment in single-industry towns. Also, due to the unfavorable northern climate, pensioners cannot productively engage in agriculture, grow vegetables and fruits, and raise poultry, pigs, rabbits and other animals. Long snowy and frosty winters reduce the possibility of outdoor walks and sports. Poorly developed infrastructure does not allow visiting cultural and sports events. Underdeveloped healthcare reduces the quality and volume of medical care. Such problems are inherent not only in Russian, but in foreign Arctic monotowns as well (Gill, 2002; Howe et al., 2014; Trippel & Otto, 2009).

The inhabitants of the Arctic territories receive an increased pension. However, the relatively high pension payments are offset by the fact that all products and services' cost is significantly higher than in central Russia. Thus, in addition to the fact that pensioners' lives in the Arctic are more complicated than in central Russia, it is also costly.

7. Conclusion

The population of single-industry towns cannot independently solve the problem associated with reducing the activities of the city-forming enterprises. If families have a financial and organizational possibility, they leave Arctic monotowns. Our research has shown this quite clearly: in all Arctic monotowns (except for Norilsk), the population has decreased and continues to decline.

The municipalities of the Arctic towns are also unable to solve the problem of systemic unemployment: reduced employment leads to a reduction in taxes. At the same time, the Arctic monotowns, built during the Soviet period, have a dilapidated housing stock, broken roads, and other infrastructural problems that drag municipal finances away from monotowns' problems.

It seems expedient to involve city-forming enterprises in solving the problems of single-industry towns more widely. Large foreign companies have this experience (Mejía, 2020; Peng et al., 2020). In Russia, large city-forming companies are socially responsible, annually disclosing information about the implemented social events. At the same time, at present, each company itself settles the task concerning solving single-industry towns' problems. It is not possible to make large mining companies responsible for solving the problems of single-industry towns legally. However, certain tax breaks could initiate more activity by companies in this matter. And here we again turn to the need for decision-making at the federal state level.

Despite all undertaken efforts, the country's economy remains extractive. Thus, the state is responsible for both monotowns generated by this economy and the population of these towns. The population itself, local governments, large mining companies cannot solve the problem without direct government control. For example, the problems of Arctic pensioners are practically not solved. The only way to do it is government programs to help single-industry towns at the federal level. Such programs are available and are being realized at present. However, single-industry towns' problems are too large-scale, and the resolution mechanism has not been fully developed yet.

Acknowledgments

The published work incorporates the results of the Federal Research Center "Kola Science Center of the Russian Academy of Sciences" performing state task No. 0226-2019-0027 (in terms of the factors that form the systemic problems of residents of single-industry towns in the Arctic) and the works supported by grant № 19-010-00022 of the RFBR (in terms of the problems of pensioners in single-industry towns in the Arctic).

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