Why young people leave the Arctic: the results of sociological research

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Abstract. The article deals with the issues of technogenesis and the evolution of relations with the environment through the example of the industrial development of the Arctic. The economic, environmental, and social aspects of the behavior of the indigenous population, the migration sentiments of the young people in connection with the implementation of investment projects for the development of the territory are analyzed. Particular attention is paid to identifying the relationship between the migration processes and the industrial development of the Arctic, substantiating the participation of mining companies to improve the socio-economic development of the Russian Arctic, and promoting employment. The subject of the study are the economic and social relations, migration attitudes of the local population, and youth, which arise in the process of the industrial development of the territory in the Arctic. Based on the example of conducting sociological surveys of the local population in Taimyr, in the Arctic regions of Yakutia, Karelia, and the Murmansk Region, recommendations are formulated for managing migration processes, promoting employment, income growth, and socio-economic development of the territory within the framework of mining companies' activities to implement investment projects for the industrial development of the Arctic.

1. Introduction

On the one hand, the implementation of industrial development projects in the Arctic can increase the impact on the state of the environment, the processes of technogenesis and environmental transformation. On the other hand, such economic development in compliance with the environmental conditions, and support of the traditional crafts of the indigenous peoples and their ethnic group, can create prerequisites for solving many socio-economic, environmental, and social problems [1, 2].

The majority of Arctic regions are characterized by common problems in terms of the population outflow, underdevelopment of infrastructure, social welfare as well as transport and logistics. Thus, the economic development of the Arctic should help to bridge the gaps in the social sphere, improve the quality of life and work of people, and preserve the native habitat of the local population. One of the important economic and social tasks of the Arctic development is to create opportunities, new jobs for the local population, especially for young people, reduce poverty and increase people's incomes [3, 4]. In order to identify the trends in the economic behavior of young people, especially in terms of migration attitudes, and to find an answer to the question: why do young people leave the Arctic, it is proposed to use sociological research as part of the ethnological expertise of projects [5].
In the ‘Strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period up to 2035’ (2020), special attention is paid to the issues of effective management of migration processes in the Russian Arctic. It is expected that the migration growth rate of the population of the Arctic zone in 2035 will be 2%, and the unemployment rate will be 4.4%. In order to achieve these target indicators, which are directly or indirectly related to migration processes in the Arctic, it is necessary to form a modern urban environment in settlements, state support for housing construction, stimulating the participation of investors in the creation and modernization of social, residential, communal and transport infrastructure, as well as the development of the national minorities, places of their traditional residence and their traditional economic activities, the creation of a system of preferences for citizens working and living in the Arctic zone of the country.

In the ‘Strategy of socio-economic development of the Arctic zone of the Republic of Sakha (Yakutia) for the period up to 2035’ (2020), as targets for its implementation, it is planned to maintain the level of natural growth and reduce the migration outflow of the population, increase the standard of living of the Arctic regions by 1.8 times compared to the baseline level and create new jobs in the Arctic zone of the republic. In these conditions, we substantiate the need to expand the participation of mining companies in the socio-economic development of the territory and promotion of employment through the implementation of investment projects for industrial development of the Arctic. Understanding the reasons for the departure from and, vice versa, the arrival of people in the Arctic regions is largely the basis for developing a strategy for the development of the Arctic regions.

In the Arctic regions of the country, the population is declining, there is a trend of outflow of young people and the highly qualified personnel, which does not allow for meeting the demand of the labor market for adequately qualified personnel. To prevent these negative trends associated with the process of ‘demographic desertification’ of the Arctic territories, measures of state support and implementation of policies to consolidate and attract the population, especially young people, are necessary. The Arctic zone of Russia is often a territory of conflicting interests of companies and the indigenous people, since the tactical task of enterprises is to make a profit, which is not always consistent with the development objectives of specific Arctic regions.

The main demographic trends in the development of the northern regions of Russia are largely associated with the insufficiently comfortable conditions for organizing the life of the population. This approach is determined by a series of problems related to the quality of life of the population, having to do with employment and income of the population and the economic development of the northern territories and affecting the demographic security of the northern territories. It is estimated that every job created in the Arctic creates another 14 jobs across the country. Most development strategies of the Arctic territories focus on securing and attracting young professionals in the field of healthcare, education, and agriculture. The implementation of a complex of mining projects in the Russian Arctic will lead to a positive economic effect. Such projects, for example, lead to the creation of new jobs, act as a catalyst for the development of industry and the social sphere [6].

A new trend to consolidate the population from among the indigenous ethnic minorities of the North in the places of their traditional residence in the Republic of Sakha (Yakutia) is the directing young people there to master the required specialties, for example, related to the extraction of minerals with their subsequent employment in the developed mining fields of the Arctic regions. Such experience has been accumulated in the companies of ‘Almazy Anabar’ and ‘Arctic Capital’. Among the new factors contributing to the migration processes in the Arctic zone are the influence of the industrial development of the territory and mining on the state of the environment, the climatic changes, the native habitat of indigenous peoples of the North, which affects the conditions of the traditional nature management [7]. Although, on the other hand, it is the industrial development of the Arctic territories, subject to the requirements of ethnological expertise that can contribute to the creation of new jobs, promote employment, and increase the incomes of the local population.

2. Research and Methods
The theoretical basis of the study is the concept of benefit sharing in the implementation of projects for the industrial development of the Arctic, which involves strengthening the participation of mining companies in the socio-economic development of the territory, promoting employment, income generation by the population and infrastructure development, which is an important condition for reducing migration flows. As the available research shows, the unemployment and the possibility of job loss are considered by the population to be among the most significant social problems.

The empirical basis of the study were the sociological surveys of the population of the Arctic regions, which were conducted as part of the study of the economic behavior of the local population during the implementation of the industrial development projects of the territory. Such studies were conducted by the author in Norilsk and Dudinka of the Krasnoyarsk Territory and the Republic of Sakha (Yakutia). The results of the sociological surveys in the Arctic zone of Karelia and the Murmansk region are also presented. These surveys were aimed at studying the migration attitudes of the local population in the context of managing the human potential of the region. The empirical research program was aimed at studying the behavioral and social attitudes of the local residents in the areas of investment projects and problems related to the activities of mining companies.

The tasks of the sociological surveys of the population consisted in identifying and ranking socio-economic and environmental problems in the territory under consideration, conducting a socio-demographic analysis of the population living in the mining company's area of activity, identifying the attitude of local residents to the activities of the mining company, state and other structures in the area of activity at the license area, analyzing the needs and attitudes of local residents that the company needs to take into account when carrying out the work, as well as determining priority measures for the socio-economic development of the territory in the project's area of influence, including employment, increasing incomes, development of the transport and social infrastructure.

Based on the sociological surveys of the population within the framework of the ethnological expertise of investment projects in the Arctic, it is proposed to create a model of interaction between stakeholders (mining companies, local population and authorities), which will allow to identify and assess the interests, needs, expectations of the population and substantiating the measures to promote employment and improve the quality of life.

3. Results and Discussion
Assessment of migration behavior of young people in the conditions of industrial development of the Arctic. As part of the study, a sociological study of residents of the Arctic zone of Karelia and the Murmansk region was conducted. A face-to-face questionnaire survey was used as a research method. The study sample included citizens aged 18 to 72 years. The sample of the study was 1488 people. Respondents were asked to answer the question: ‘In the future, do you allow the possibility for yourself or your family of moving to another region or country?’ 45% of respondents surveyed in the region are considering moving for themselves or their family. The results of sociological surveys of residents, for example, of the Murmansk region show that women and men treat many causes of migration differently, but at the same time there is a general tendency for such factors as the need to ensure the future of children and climatic conditions to dominate.

The share of those who indicate the relevance of environmental issues among the young people (under 29 years old) reaches 74%, which is 16 percentage points more than among people aged 30 to 54 years (58%). Among the priority economic and social problems, the youth of the Arctic regions of Karelia under the age of 29 highlights: the unemployment and income decline (1), accessibility and quality of health services (2), poverty and social inequality (3), personal security, for example, crime (4).

The most urgent environmental problem, according to the residents of the Arctic part of Karelia, is the air and water pollution: 69% of the respondents described these problems as ‘very important’. Less acute for citizens is the loss of biodiversity (50%) and climate change (53%). Women, compared to men, are much more likely to note the extreme importance of most environmental problems, especially such as the extinction of animal and plant species. In the context of socio-demographic groups, there is
a tendency when women, compared with men, are more likely to perceive environmental changes more negatively. According to the young people (a group of respondents under the age of 29), the environmental situation in the Arctic regions of Karelia ‘has improved’ (4.1%), ‘has not changed’ (30.2%), ‘has worsened’ (60.7%), ‘I find it difficult to answer’ (5.0%) of the total number of respondents in this age group. By priority, a group of young people under the age of 29 identified the following environmental problems: air pollution (1), water pollution (2), industrial and household waste generation (3), depletion of natural resources (4), climate change (5), reduction of biodiversity (6).

The following differences can be noted in socio-demographic groups. For example, the proportion of women willing to change their lifestyle in order to solve the environmental problems is higher than the proportion of men who responded in the same way. In other words, women have a higher degree of concern for the environmental problems and a willingness to solve them.

This suggests the need to take into account the gender approach in the issues of youth behavior, including migration, environmental protection in the industrial development of the Arctic [12]. The level of willingness to change their lifestyle for the benefit of the environment among young people is a level compared to representatives of the age group. Most likely, this is due to the greater mobility of the young people, which, in turn, is associated with less commitment. In direct dependence on the age of the respondent, the relevance of such threats as illegal landfills created by the population (among people under the age of 29 – 74%), the activities of mining enterprises, unauthorized fishing (50% – in the younger), illegal logging (49% among young people). On the contrary, young people are more likely to note the importance of such threats as landfills, underdevelopment of transport and infrastructure.

Industrial development of the Arctic territories is associated not only with the improvement of the socio-economic situation in the area of the presence of mining companies, but also with possible environmental problems in connection with the activities of such companies. An example of this is the consequences of an emergency diesel fuel spill at the CHP-3 in Norilsk, Krasnoyarsk Territory in May 2020 [8]. Therefore, in this context, it is necessary to consider the results of a sociological survey of the local population in connection with an emergency spill of diesel fuel on Taimyr. The survey was conducted by means of an Internet survey from August to October 2020. The sample of the study was 170 people. So, about 5% of respondents noted that as compensation they would like to receive help in moving the local population from the affected areas.

The field sociological research conducted in the summer of 2021 in the village of Volochanka on Taimyr included a survey among representatives of indigenous ethnic groups - Dolgan and Nganasan. The village is home to about 400 people who work in the public sector: kindergarten, school, library, post office. The main difficulties are the lack of mobile communication, the Internet, the remoteness of the village from civilization. This village is characterized by a low level of income and a difficult situation in terms of housing. The locals live in houses with stove heating, without running water and sewerage. Young people tend to leave their native places and build their lives in the city, but most of them return after a while. Perhaps this is due to a weak adaptation to the urban pace of life [13].

As part of the study, the sociological surveys of the population pertained to the impact of the implementation of mining projects on the socio-economic and cultural life. Such data were obtained based on the results of a sociological survey of the population, which was conducted in 2020 on the territory of the Anabar district in Yakutia. A face-to-face questionnaire survey was used as a research method. The selection of respondents was carried out by the method of nest sampling, where localities act as nests, namely Olenek and Kharyalakh. The sample of the study was 130 people.

According to the results of these studies, it can be noted that 47.3% of the respondents are concerned about the problem of youth leaving their native places, this is the second most important problem among the local population, the first is the problem of preserving language and culture (60.5% of the respondents). The respondents associate the departure of the young people from their native places with the lack of work. The local population sees the solution to this problem in the help
of mining companies that operate in the Arctic regions, so 46.2% of the respondents noted that the primary prospect for the development of their region is the employment of the young people.

Considering the problem of the outflow of the younger generation from the Arctic regions of the Republic of Sakha (Yakutia), it is necessary to note the trend in the behavior of the elderly part of the population. Many respondents note that in order for the younger generation not to leave their native places, they are ready to make concessions. For the local population, this means that they are ready to start cooperating with the mining companies so that they can help retain the young people in their native territory. The departure of the younger generation from the Arctic regions of Yakutia changes the outlook of the local population. The younger generation is more mobile, they have a desire to try and discover new things. The elderly population is changing their worldview and agrees to cooperate in the processes of the industrial development of the Arctic in order to reduce the departure of the younger generation from their native places.

The sociological surveys carried out as part of the ethnological examinations of the Verkhne-Munskoye deposit and the construction of the Udachny passage – Verkhne-Munskoye deposit of the Republic of Sakha (Yakutia) showed that the local population has concerns about the development of this project, in particular, in connection with the influx of visitors. The positive expectation of the population from these projects, for example, in the village of Olenek is associated with the emergence of new jobs (58.4%) and the improvement of villages (44.5%), a reduction in the outflow of the young people (5.2%). The population hopes that the industrial companies will focus on local the labor resources. Respondents do not approve of people coming to their area for the following reasons (table 1).

| Respondents’ responses | Kharyalakh | Olenek | Eyik | Syuldyukar |
|------------------------|------------|--------|------|------------|
| It is necessary to focus on the local labor resources | 28.6 | 32.4 | 47.0 | 28.9 |
| Migration causes environmental stress | 12.2 | 17.3 | 3.0 | 11.1 |
| The village is not able to provide work for all visitors | 33.7 | 23.7 | 19.0 | 18.9 |
| Crime and other negative phenomena will increase | 36.7 | 31.2 | 15.0 | 27.8 |
| Other | 1.0 | 2.3 | 1.0 | 6.7 |

*a* the respondents could choose several answers.

Similar surveys of the population within the framework of the ethnological expertise of projects on geological exploration of natural resources on the territory of the Olekminsky and Srednelensky districts in the Republic of Sakha (Yakutia). The completed sociological surveys of the local population show that the main reasons for migration intentions are the lack of jobs in the specialty (13.0%) and low incomes (12.3%) [14].

The positive expectation of the population from the projects under consideration is associated with the emergence of new jobs and the improvement of villages. In the villages of Kharyalakh and Olenek, the residents hope for investments in the social sphere and the prospects in housing construction. Improving the transport links is also of concern to the residents of remote settlements: Kharyalakh, Olenek, Eyik. The concerns of the population are primarily related to the deterioration of the environment and a decrease in fish and hunting stocks, and the changes in the migration routes of wild deer, which may deprive the population of a significant source of nutrition. Men in all areas tend to believe that these projects can lead to the seizure of land from the local population. Women are afraid of the possible negative consequences associated with the growth of migration, believing that with an increase in the number of visitors, the levels of alcoholism and drug addiction will increase, and the
number of crimes will increase. Taking into account the age-sex structure, most of those who want to take part in the construction and operation of the passage are observed among the young men aged 18-34 years. In all districts, mainly the population with secondary special education is focused on getting a job. In the village of Eyik, the picture is a little different, the higher the level of education, the more people are willing to take part in projects. The population hopes that the industrial companies will focus on local labor resources.

It is worth noting the migration outflow from the rural to urban settlements, especially among the young people. The area of implementation of the planned activities in the Olekminsky district of Yakutia is characterized by a fairly intensive migration exchange. Particular migration activity is observed in the age group of 20-39 years among men. The main reasons for migration intentions are the lack of a job in the specialty (13.0%) and low incomes (12.3%). In general, the local population has a positive attitude to the new industrial projects and hopes to solve a number of social issues: the emergence of new jobs and the improvement of villages.

To support the population, for example, in Yakutia, a decision was made to exempt the residents of the Arctic regions from a number of taxes, a draft law on zeroing the transport tax is being considered. It is planned to introduce a benefit on zeroing the property tax of individuals on the land tax. The Russian federal legislation should adopt a legal norm that a subsurface user in the Arctic should participate in the socio-economic development of a subject of the Russian Federation, a municipality on the territory of which economic activity is carried out.

Since 2020, grant support for the local entrepreneurial initiatives has been implemented, which is aimed at creating jobs in remote settlements. Within the framework of this grant support program, a quota has been established for economic initiatives of indigenous minorities of the North. An important effective compensation for changes in the natural and ethnosocial living conditions of the indigenous peoples in the process of industrial development of the North could be the development of the sphere of consumption, the purpose of which would be to expand the types and quality of consumer goods, especially the food produced locally. These measures aimed at improving the quality of life by improving living conditions, accommodation, and employment growth can become the main means of resolving the conflicting interests of the indigenous people and the mining companies in the implementation of the industrial development projects in the Arctic.

We need a new model of interaction of stakeholders in the industrial development of the Arctic: federal and regional executive authorities, local self-government, business, indigenous peoples of the North. The essence of the model is as follows: the federal and regional governments subsidize the construction of major transport infrastructure facilities. Business, in turn, creates production facilities and high-paying jobs in the Arctic regions. At the same time, it is necessary that the commercial structures, when obtaining licenses for the development of large deposits, take on a certain social burden with a mandatory indication in the license agreement of the list of social facilities and the timing of their commissioning.

That is, the recipient of a mining license must prepare a comprehensive plan for the development of a growth point, including a technical project for the development of the deposit, its feasibility study, an environmental project, a plan for the construction of housing, social facilities, as well as a business project for the development of a reference point of growth, including local industry, agriculture, traditional economic sectors in the Arctic, including deep processing of the products received.

For example, when entering the Kychus gold mining field, Arctic Capital assumed the social burden and obligation to build residential buildings with a total area of 6000 m² in the Ust-Yansky district of Yakutia, social infrastructure facilities – 2 schools for 250 and 200 places, a kindergarten for 240 places, a hospital complex, an outpatient clinic for 150 visits, a multifunctional cultural center with administrative premises, a sports complex with a treadmill and a swimming pool. The total cost of these facilities, according to preliminary estimates, is 12 billion rubles. This approach will also be applied in the village of Batagay of the Verkhneyansky Ulus of Yakutia since the deposits are located on the territory of the two districts of the republic. As a result, the residents of the Arctic will receive new high-paying jobs, free high-comfort housing, and the opportunity to receive high-quality services.
in the field of education, healthcare, and other social services in the settlements with reliable communications. Finally, there will be a prospect for the young people to return to their native area after receiving vocational education. This approach should become a model for the industrial development of the Arctic.

4. Conclusions and Recommendations
As a result of the performed research, the hypothesis was confirmed and the relationship between the industrial development of the territory in the Russian Arctic and migration processes was revealed. It is established that the implementation of investment projects for the extraction of minerals, on the one hand, creates conditions and prerequisites for the socio-economic development of the territory, contributes to solving employment problems and creating new jobs, contributes to the growth of incomes of the local population and the fight against poverty, thereby reducing the migration sentiment of the local population.

On the other hand, such projects allow the younger generation to get the necessary education at the expense of the mining companies and in the future be employed in their native places at the enterprises of the subsoil user. Some Yakut companies have voluntarily established a quota for hiring employees (up to 30% of the total number of employees under the project) from among the local population, which reduces social tension and stabilizes the migration situation.

The industrial development forces the younger generation to get an education and study in order to be able to work in mining companies, while remaining to live in their native land and preserving cultural traditions. The older generation is less inclined to move due to the industrial development of the territory. This is due to both the development of infrastructure in their places of residence, and a decrease in the outflow of the younger generation. The main trend in the migration behavior of the residents of the Arctic regions is the desire to improve the lives of their children. This trend can be seen from the results of individual sociological surveys in various regions of the Arctic Russia.

In this regard, the projects of industrial development of the Arctic are a factor in stabilizing the situation with the migration of the younger generation from the Arctic regions. This trend can be traced by the results of the research, where the local population claims to be ready to support the projects of industrial development of the Arctic in order for the younger generation to continue living on the land of their ancestors, preserving cultural traditions. The solution of the migration issue is directly related to the development of comprehensive measures to retain the younger generation in the Arctic regions. Such measures include an assessment of the psychological readiness of the older generation for the ongoing changes in the development of the Arctic regions, as well as programs for socio-economic development, job creation and infrastructure needed by the younger generation.

The indigenous population is ready to accept the industrial development, taking into account the fair compensation policy of the mining company. For this purpose, compensation funds can be used, which are proposed to be created at the expense of the mining companies as part of compensation for the harm to the indigenous peoples during the development of minerals in the territories of traditional nature use [15]. Such a compensation package also indirectly affects the migration processes and includes measures to support traditional crafts, the construction of housing, social infrastructure facilities, assistance in preserving culture and ethnicity, which generally restrains the outflow of the indigenous people and the young people from the Arctic.

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