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**THE STATE OF HUMAN CAPITAL AS A FACTOR OF RUSSIA'S  
ARCTIC DEVELOPMENT**

O.M. Lenkovets (a)\*, N.Y. Kirsanova (b), S.N. Maksimov (c)

\*Corresponding author

(a) Saint-Petersburg Mining University, 21st Line, Vasilevskiy Island, 2, St-Petersburg, Russian Federation,

(b) Saint-Petersburg Mining University, 21st Line, Vasilevskiy Island, 2, St-Petersburg, Russian Federation,

(c) Saint-Petersburg State University, University embankment 7-9, St-Petersburg, Russian Federation,

***Abstract***

Today, a vital criterion of a nation's economic competitiveness implies strong human capital. Russia, with its huge area, faces a challenge of uneven social and economic progression by regions. Hence, investing in the Arctic is a priority enshrined in Russia's 2025 Strategy for the Economic and Social Development. The social and economic level of the Arctic is worse comparing to other regions with more beneficial conditions. The Arctic offers various mineral resources with many reserves still unexplored. The Arctic's natural wealth and technology innovations alone cannot drive its economic sustainability. The paper sets a relevant goal of identifying factors that contribute to the Arctic's human capital as the region cannot progress without a skilled workforce capable of living and working in the extreme North. Russia will be able to unlock the resource potential of its Arctic territories only if it creates a sizeable population and talent pool with the capacity required to address the economic challenges faced by the region. Therefore, a good social infrastructure is critical for robust human capital – it directly affects the economic enthusiasm of people developing the potential of the Arctic Zone of the Russian Federation. The state policy should be formulated using a system approach to implementation methods of socio-economic programs in the Arctic zone of the Russian Federation.

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**Keywords:** Human capital, socio-economic development, state policy, Arctic Zone of the Russian Federation.



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## 1. Introduction

The Arctic region has abundant mineral resources, many of which are yet to be discovered – according to the estimates by Russia’s Ministry of Natural Resources, over 90% of the offshore and about 53% of the onshore territories remain undeveloped. The Arctic occupies about 25.7% of the country’s total area. The population is more than 2.4 million people, and the figure accounts for less than 2% of the country’s population and about 40% of the population living in the entire Arctic (State Commission for Arctic Development, 2018).

The economic role of the region is becoming increasingly important with the continuing loss of sea ice and ice cap reduction for longer periods than before. The trends help discover previously inaccessible areas and tap into them for various activities such as navigation, trawl fishing and oil exploration. Scientific research in the Arctic raises new questions over and over again and the questions cannot be tackled completely at the moment (Selin, Skufina, Bashmakova, & Toropushina, 2016). The main barrier impeding the study of the Arctic is a need to adopt an integrated approach to research and engage expertise in various knowledge areas to address challenges and work on long term R&D projects.

Many nations are interested in having a share in the development of the Arctic’s rich natural resources. The increased focus on the region has become visible in the late 20th century as a result of technology advances and research initiatives designed to evaluate the reserves of the resource base available in the Arctic territories and seas. Russia needs to strengthen its position in the region and pursue thorough policies, as many countries have similar economic interests in the region (The President of the Russian Federation, 2013).

Investing in such region as the Arctic is envisioned as a priority in the 2025 Strategy for the Economic and Social Development of the Russian Federation. In August 2017, a new version of the state program – “Socioeconomic development of the Arctic zone of the Russian Federation” – was ratified. The time frame to implement the state program was extended until 2025 (Government of Russia, 2017).

The state program comprises three sub-programs:

- Creation of Core Development Zones, Maintaining their Operation and Creating Favorable Conditions for the Rapid Socioeconomic Development of the Russian Arctic Zone;
- Development of the Northern Sea Route and Maintaining Arctic Navigation;
- Developing Equipment and Technologies for the Oil and Gas and Industrial Engineering Sectors needed to Develop Mineral Deposits of the Arctic Zone of the Russian Federation. (The previous version of the state program included only one sub-program – Coordination of Activities of State Agencies as regards the Socioeconomic Development of the Arctic Zone of the Russian Federation.)
- The new document defines objectives of the state program:
  - improving the quality of life and boosting people’s safety in the Arctic zone;
  - creating favorable conditions for the development of the Northern Sea Route as a national transportation artery in the Russian Arctic and expanding the hydro-meteorological support system for local shipping;
  - developing science and technology and boosting the efficiency of using the Arctic zone’s resources and those of the Russian Arctic continental shelf;

- boosting the efficiency of state management of the Arctic zone's socioeconomic development.

The state program's deployment is hampered by inadequate funding, and this directly jeopardizes further development of the Russian Arctic and successful exploitation of the country's industrial and intellectual assets as a whole.

For this reason, the Arctic region socially and economically drags behind other areas with more beneficial conditions. Over many years, the socioeconomic progression of Russia's Arctic zone has proceeded at an uneven pace resulted from the prevailing economic situation (Lazhentsev, 2018).

The authors believe that it is human capital that is the pivotal factor capable of driving the growth of the Russian Arctic. Russia's strategical focus should include efforts to increase its presence in the Arctic. Unlocking natural riches, promoting Russia's geoeconomic interests in the Arctic and addressing the need to populate the Arctic territory to maintain the country's national security are impossible unless Russia preserves and realizes the area's unique human potential – people with valuable skills and knowledge, who can live and work in harsh northern environments.

## **2. Problem Statement**

The study deals with the need to take a package of measures to develop human capital in the Arctic, and this, in turn, will improve the quality of life of the population and mitigate depopulation trends. Virtually each region of Russia's Arctic is characterized by a high poverty level, and this situation negatively affects the attempts to exploit the resource potential of the Arctic Zone of the Russian Federation and creates risks for the country's national security.

## **3. Research Questions**

This study aims to identify essential barriers that hamper human capital improvements in the Arctic Zone of the Russian Federation.

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

Human capital, if it is consistently cultivated and enhanced, is a key immediate contributor to the development of Russia's Arctic. A comprehensive study into the levels achieved by efforts to develop human capital will allow to develop an integrated approach to problems of development of the region.

## **5. Research Methods**

When reviewing the impact of the enhanced human capital on the development of the resource potential of the Russian Arctic, the authors employed a wide array of methods, such as analysis, comparison, generalization, as well as comparative geographic, historical, economic, statistical, sociological methods and other tools. The basis for the study is built on the identified and generalized views and opinions expressed by acknowledged experts in Arctic research. The key sources that provided information for the research include: fundamental, scientific and scholarly materials (monographs, proceedings of conferences, symposiums, forums, academic papers articles, etc.); electronic materials, state, international, interstate and regional information systems; official Internet portals listed in the federal system of legal, statistical and analytical information.

## 6. Findings

Many economists have estimated human capital as more valuable than the material one (W. Petty, A. Smith, T. Schulz, G. Becker, L. Thurou, M. Friedman, J. Kendrick, V.I. Martsinkevich, R. Kapelyushnikov and others).

Key factors that influence the status of human capital comprise the level of education, upbringing, healthcare, household income, as well as the costs associated with job seeking (including the search for required information, labour migration, etc.).

The growing investment in human capital is one of the critical conditions predetermining the innovative transformation and journey. The development of human capital ensures increased work performance and production efficiency, and also drives the improvement of national competitiveness.

One of the crucial objectives to be addressed by the state policy on the Russian Arctic should be the development of human capital, raising the quality of life for the indigenous and non-indigenous population, and increasing the number of the employed population.

The challenges posed by the task to nurture human capital in Russia are attributed to inadequate social and economic development and investments in education and science if compared with developed nations.

In Russia's Arctic regions, we can see a precarious social situation – the population is declining, the land is being depopulated, public health is deteriorating, and people are living in severe poverty. The negative trends are resulted from multiple factors, including inadequate or suspended funding in the 1990s and early 2000s.

Table 1 shows data confirming the ongoing depopulation process. For example, the Arkhangelsk Oblast has lost 7.3% of its population in the past 9 years alone, which in absolute terms amounts to 92.6 thousand people – and about 40% of these were young people aged from 15 to 29. The population in the region is annually decreasing by about 6-7 thousand people (Rossiyabudushchego, 2017-2035). One of the primary reasons behind this is the insufficient quality of life offered by the region. For example, the social infrastructure in Arctic cities and settlements, if compared with average levels across Russia and foreign Arctic (Agarkov, Kozlov, Fedoseev, & Teslya, 2018), is outdated and wants major retrofitting. In addition, the local health care system, housing programs, utility services and other issues should be given top priority.

**Table 01.** Population size in the Arctic Zone of the Russian Federation as of January 1, 2014 to 2016 (people) (Lukin, 2017)

Constituent entities of AZRF	2014	2015	2016
Arctic Zone of the Russian Federation	2,400,580	2,391,631	2,378,234
Komi Republic (Vorkuta Urban District)	84,707	82,953	81,442
Sakha (Yakutia) Republic	26,447	26,194	26,107
Krasnoyarsk Territory	228,493	227,205	227,546
Arkhangelsk Oblast	656,624	655,100	652,867
Murmansk Oblast	771,058	766,281	762,173
Nenets Autonomous District	43,025	43,373	43,838
Chukotka Autonomous District	50,555	50,540	50,157
Yamalo-Nenets Autonomous District	539,671	539,985	534,104

Table 2 shows the data of a sociological survey on the population of the Murmansk Oblast (oblast – a territorial and administrative unit in Russia, a region), which reveals the most urgent issues that people are concerned about. The analysis aimed to study the current social and economic environment in the Murmansk Oblast, as well as in other Arctic regions, using a sociological survey of the population, demonstrated that the root causes that underlie migrations are not connected with an extremely severe climate, rather with socio-psychological and socio-economic problems that the local population has to deal with.

**Table 02.** The most urgent problems in the Murmansk Oblast as assessed by the population, % (Gushchina & Polozhentseva, 2014)

No.	Name of metric	%
1	Low quality of infrastructure (utilities, roads, transport, etc.)	49.5
2	Corruption, bribery	35.3
3	Harmful, polluted environment	32.1
4	Inflation (continuous price growth)	31.9
5	Economic instability	27.7
6	Low standard of living, poverty	26
7	Unavailability of health care, low quality of medical services	23
8	Social insecurity of people	21.8
9	Population stratification into the “poor” and the “rich”	21.8
10	Growing alcoholism	21.8

Figures in Table 2 allow us to conclude that the population estimates its financial situation as deplorable. Poverty and uneven income distribution reproduces the poverty of people, and is the cause of other problems blocking the way to improve human capital.

Tapping the resource potential of Russia’s Arctic territories largely depends on the population’s income generation in this region. Income differentiation is a main indicator reflecting the level and quality of life of the population in different regions (Stetsyunich, 2017).

The findings of the study confirm that the optimal balance of income differentiation across regions has not been achieved in the Russian Federation. The data in Table 3 demonstrates the uneven distribution of income in the Arctic. For example, the Gini coefficient is constantly rising and stands above the critical level (0.3) throughout the period under review. The value of the decile ratio also shows a high level of social inequality, where the difference in incomes in some regions of Russia reaches 19 times, while we can speak of 5–6 times in industrial countries. This also reflects the existing negative trends shared by both the Arctic and the country in general.

**Table 03.** Degree of uneven income distribution among AZRF population (Dregalo & Ulyanovsky, 2017)

<b>Russian constituent entity</b>	<b>Income ratio for 10% of the wealthiest and 10% of the poorest groups</b>	<b>Gini coefficient</b>
Republic of Karelia	11.6	0.371
Komi Republic	16.9	0.423
Arkhangelsk Oblast with NAD	13.2	0.389
Nenets AD	19.9	0.445
Murmansk Oblast	13.8	0.398
Khanty-Mansi AD	19.1	0.429
Yamalo-Nenets AD	14.2	0.440
Chukotka AD	15.9	0.415
Kamchatka Territory	12.4	0.381
Magadan Oblast	15.9	0.415
Sakhalin Oblast	15.5	0.411
Tyva Republic	11.9	0.375
Krasnoyarsk Territory	17.0	0.424
<b>Russian Federation</b>	<b>15.5</b>	<b>0.414</b>

As natural environments, climatic conditions and cost of labour vary significantly in different Russian regions, high living costs should be offset by higher salaries.

With a small population (about 2% of the population in Russia), according to various sources, the percentage of the Arctic in Russia's GDP is about 10-15%, and the region provides 20-25% of Russia's exports. In addition, some regions based on the per capita GRP generation are listed in the top ten most efficient regions from year to year (for example, the Murmansk Oblast has the 14th position in Russia and the 4th place in the North-Western Federal District in terms of gross regional product per capita) (Ryabova, 2012; Ministry of Economic Development of the Murmansk Region, 2005-2018). But, despite these high performance indicators, the level and quality of life of the population in the Arctic do not differ from other regions in Russia, which are not stuck in such serious situation, or stand much lower. We can conclude that the salary levels do not compensate for the costs required to live in the Arctic.

The introduction of preferences for the population in the Arctic will reduce the high cost of living. It is necessary to:

- bring northern social benefits and compensations in line with the high cost of living in the Arctic;
- return the unreasonably curtailed northern social benefits;
- develop measures to ensure that northern social benefits and compensations are provided in the same amount to every person who works in the Arctic, regardless of their employment area – in the public sector or in private business;
- tighten the accountability of employers in the private sector for stipulating minimum salary rates and implementing northern benefits;
- as the government set the priority to develop the abundant mineral resource base of the Arctic, it should seek to create jobs in the Arctic zone, to roll out large-scale resource and transport projects (Leksin & Porfiryev, 2017).

In the current context, there is a danger that human capital will not be able to become a contributor that helps unlock the resource potential of the Arctic territories of Russia. The social and economic disproportion among Russian regions poses an obstacle to develop talent pool at the regional level.

## 7. Conclusion

The conducted studies allow for a conclusion that Russia will be able to unlock the resource potential of its Arctic territories only if it creates a sizeable population and talent pool with the capacity required to address the economic challenges faced by the region.

The analysis revealed that Russia's Arctic territories increasingly suffer demographic degradation. The key factor behind the trend is the socioeconomic insecurity of the population.

The authors believe that the country will be able to implement goals prioritized in the Russian Arctic development policy only if it ensures the retention and growth of the permanent population and makes provisions for people's sustainable living, while simultaneously attracting workforce to the region.

The state policy should be formulated using a system approach to implementation methods of socio-economic programs in the Arctic zone of the Russian Federation. The policy should be designed so that it could enhance the level and quality of life of the population, create new jobs and increase actual salaries in the region.

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