Life in the Russian Arctic in population estimates (case study of the Murmansk region)

O N Popova and I V Vicentiy

Apatity branch of Murmansk Arctic State University, Apatity, Russia

oli.ka@rambler.ru, felysite@yandex.ru

Abstract. The Murmansk region, being a strategic Arctic region of Russia, has long been characterized by negative dynamics in the population, mainly due to migration loss. The paper presents the results of a sociological analysis of the living conditions of the Murmansk region population. According to residents, the Murmansk region is a region with adverse climatic and social living conditions. The most urgent problems of the region and its settlements are of a pronounced institutional nature and are associated with the poor development of social infrastructure. Among them are problems in the areas of employment and labor, healthcare, education, leisure, road infrastructure, housing and communal services. In general, residents of the region note the inefficiency of “northern social benefits”, low living standards, poverty, low salaries and pensions amid high prices for goods and services in the region. These factors serve as a motivational basis for the formation of negative migration attitudes of residents of the Murmansk region.

1. Introduction

The Murmansk region is located in the north-west of the Russian Federation and belongs to the territories of the Russian Arctic. The geographical location of this territory determines the extreme climatic conditions of life for the population, such as a long winter period, low average annual temperatures, strong winds, high humidity, polar night and day, sharp pressure drops, low oxygen content in the atmosphere, and high geomagnetic activity. Such living conditions adversely affect the health of the population of the circumpolar territories. This is evidenced by the results of scientific research [1, 2]. In addition, the Murmansk region, as the northern, peripheral region, is significantly removed from the main economic, cultural and recreational centers of the country. However, the Murmansk region has great economic and geostrategic importance in terms of the implementation of both foreign and domestic policies of the Russian Federation [3]. The development of the Murmansk region has a long history. However, the processes of active development of the region fell on the time of Soviet power and the Soviet state. Industrialization was actualized in the 20s of the 20th century, and in the 60s of the 20th century there are processes of an intensive influx of population into this Arctic region of Russia. The leading factor was the state policy of migration stimulation. It was carried out in the form of an integrated system of benefits for people moving to the Murmansk region. Thus, the Kola North is populated mainly in Soviet times due to the mechanical movement of the population. The systematic policy of the state in the field of the formation of the economic sphere determined the demographic situation of the region. So, the demographic picture of 1959 in the Murmansk region was characterized by the following features:
1. An increased influx of individuals from other regions of the USSR (in this case, mainly young people were migrants);
2. As of January 15, 1959, in the age and sex structure of the population, persons under 40 made 82.3% (while in the RSFSR as a whole - 70.5%);
3. Balance of the gender composition of the population - in the total number, the proportion of men was 47.6%, and women - 52.4%;
4. Low mortality rates (5.0%) and high fertility rates (26.3%), which were provided by young populations [4].

The introduction of benefits for workers in the Far North made it possible to solve the problem of providing remote and sparsely populated areas of the country, including the Kola Peninsula, with labor resources. This contributed to the development of these areas and their transformation into economically developed regions [5].

The development processes of the Murmansk region over the 20th century encompass quantitative and qualitative transformations in various fields and the formation of various infrastructures: industrial, transport, social, cultural, scientific, educational, agricultural, etc. The dynamics of the population of the Murmansk region in 1959-2018 is presented in the table 1.

| Year | Entire population, thousand people | Including urban | Rural | In total population, % urban | Rural |
|------|-----------------------------------|----------------|-------|----------------------------|-------|
| 1959 | 568.2                             | 523.1          | 45.1  | 92.1                       | 7.9   |
| 1970 | 801.0                             | 708.2          | 92.8  | 88.4                       | 11.6  |
| 1979 | 978.0                             | 869.8          | 108.2 | 88.9                       | 11.1  |
| 1989 | 1164.6                            | 1071.0         | 93.6  | 92.0                       | 8.0   |
| 2002 | 892.5                             | 823.2          | 69.3  | 92.2                       | 7.8   |
| 2010 | 795.4                             | 738.4          | 57.0  | 92.8                       | 7.2   |
| 2011 | 794.1                             | 737.2          | 56.9  | 92.8                       | 7.2   |
| 2012 | 787.9                             | 730.7          | 57.2  | 92.7                       | 7.3   |
| 2013 | 780.4                             | 723.5          | 56.9  | 92.7                       | 7.3   |
| 2014 | 771.1                             | 714.5          | 56.6  | 92.7                       | 7.3   |
| 2015 | 766.3                             | 709.6          | 56.7  | 92.6                       | 7.4   |
| 2016 | 762.2                             | 705.0          | 57.2  | 92.5                       | 7.5   |
| 2017 | 757.6                             | 700.4          | 57.2  | 92.4                       | 7.6   |
| 2018 | 753.6                             | 695.8          | 57.8  | 92.3                       | 7.7   |

Source: Statistical Yearbook, 2018: Murmanskstat. - 2018 - 198 p.
Since the 90s of the 20th century, the demographic situation in the region has changed dramatically. An active outflow of the population from the Murmansk region is observed. Basically, the region leaves young people (from 16 to 29 years old - 60% of the total) and people of working age (about 70%). A relatively high proportion of elderly people who do not participate in the reproduction of the population and at the same time make a significant contribution to the dynamics of mortality is also observed. A similar trend continues today. Dynamics of the migratory movement of the population in the Murmansk region in 2015-2017 are presented in the table 2.

Table 2. Dynamics of the migratory movement of the population in the Murmansk region in 2015-2017

|                  | 2015     | 2016     | 2017     |
|------------------|----------|----------|----------|
| **arrivals**     |          |          |          |
| Total (person)   | 3818     | 4316     | 43418    |
| migration within | 3296     | 3955     | 39913    |
| Russia           | 4        | 5        | 9        |
| - intraregional  | 1069     | 1070     | 10923    |
| - interregional  | 2226     | 2884     | 24746    |
| international    | 5222     | 3607     | 3364     |
| migration        | 5111     | 4244     | 3213     |
| - with CIS       | 111      | 190      | 151      |
| member states    |          |          |          |
| - with foreign   |          |          |          |
| countries        |          |          |          |

Source: Murmanskstat

A feature of the migration outflow of the population from the North (including the Murmansk region) is that, as a rule, young people leave. This is evidenced by statistical data and research results [6], [7], [8], [9].

From the perspective of the socio-philosophical approach to the problem of expanding ecumenical life in the Arctic, the sociocultural dimension is more important than the natural, geographical, and technogenic dimension. In this context, the development of the territory of the Murmansk region by social agents is considered from the point of view of its social attractiveness and the formation of its
social structure and social infrastructure (in the form of social institutions and organizations), meeting
the needs of the local population [10] [11], [12], [13]. Thus, the key research questions in the context
of the problem of the expansion of ecumene in the Arctic may include the following:
- How far is the habitat socially attractive and comfortable for an individual in the Arctic? From
  this point of view, the Arctic is considered both as a set of natural conditions, and as a social space.
- How are living conditions in the Arctic comprehended by the population?
- What quality of life do northern cities provide for their residents?
- How do the existing social structure and social infrastructure of the region satisfy the social needs
  of the population?
- What migration attitudes dominate the population of the Arctic territories?

2. Materials and methods
The empirical basis of the study is the statistical data of the Federal State Statistics Service of the
Russian Federation and the statistical data of the State Statistics Service of the Murmansk Region. The
empirical basis of the study is the empirical data obtained in the framework of an initiative
representative sociological study on the topic “Quality of life of the population of the Murmansk
region”. This study was conducted with our participation in 2016 in the sociological research
laboratory of the Kola branch of Petrozavodsk State University. The study covered all the socio-
demographic groups of the population of the Murmansk region. The sample size was 702 people. The
sample represents the age-sex structure and the distribution structure of the adult population of the
region. The maximum statistical error in all studies did not exceed + 4.5% with a confidence level of
95.4%. In the process of collecting sociological data, a personalized standardized face-to-face
interview was used. The survey involved residents of industrial monotowns of the Murmansk region:
Apatity, Kirovsk, Kandalaksha, Monchegorsk, Polyarny Zori, as well as residents of remote
settlements of the region, such as urban settlements of Umba and Zelenoborsk. The main share of
respondents in the study is people who live in the Murmansk region all or almost all their lives 68%.
Computer methods of formalization, processing and statistical analysis of empirical data were used
using the SPSS Base 22.0 software [8].

The development of a research model, as well as the analysis and interpretation of the obtained
sociological data, is based on the provisions of the interpretative paradigm. Thus, the Murmansk
region as a social space and living environment is viewed through the prism of ideas and assessments
of the local population regarding the environment in which they live. The key indicators describing the
living conditions of the population of the Murmansk region in the study were the following:
- Representations of the population about urgent problems in the locality, region and country;
- Migration attitudes and their subjective factors.

The questionnaire included a number of open-ended questions using these indicators. The obtained
unstructured sociological data was subject to classification and typification procedures during
processing, analysis and interpretation.

3. The sociological analysis of living conditions of the population of the Murmansk region
The presence or absence of problems in the region forms life conditions of the population in the
region. Actual problems in the region can be considered as a factor of positive or negative migration
attitudes for the local population or for those who come to the region as well as factors of the social
image and attractiveness of the Murmansk region both inside and outside. The presence or absence
of problems in the daily life of the population is one of the empirical indicators of quality of life in our
empirical study. The questionnaire had three open-ended questions, such as: “Please indicate the most
pressing problems: 1. In your town; 2. In the region; 3. In the country as a whole”. The majority of
respondents formulated answers about acute problems in the town (78%), in the region (61%), in the
country (59%). No more than 2% of respondents believe that such problems do not exist either in the
town or in the region or in the country. The structure of the problems and the frequency of their
mentioning at the local, regional and federal levels are presented in table 3. A comparative frequency
and semantic analysis of answers about local, regional and state acute problems showed that they do not have fundamental differences. The content and partly problem ratings for all three levels are similar. The respondents’ descriptions of acute problems lack regional specificity. They all have a systemic or national character. The most acute problem that was called by the residents of the Murmansk region is the problem of unemployment. Respondents note that it is very difficult to find a job in the region, the factories in town are closing down or there is a reduction in factory workers. The next ones in the ranking are health problems. The population is worried about the shortage of qualified medical personnel, the poor quality of medical services and medical care, long queues in medical organizations in general and in clinics in particular, the closure of medical facilities, including the closure of maternity hospitals in towns of the region. Among the problems in the field of housing and communal services residents note garbage, dirt on the streets, poor quality of water in houses and a long period of shutdown of hot water in houses, poor quality of housing and communal services, low level of landscaping near houses, including the lack of benches and ballot boxes. The problem of low salaries and pensions in the region is very worrying for northerners. This problem is often called together with the problem of high prices in the region for all groups of goods and services - food, medicine, utilities, gasoline, housing, etc. Against this background respondents point to low living standards in the region, poverty and even impoverishment, low material conditions, financial difficulties and incomes at the cost of living. In the field of education, respondents noted problems of poor quality educational services and a small number of higher education institutions in the region. In the economic sphere, respondents noted an economic crisis, a bad economic situation, and a financial crisis. Unfavorable climatic conditions of life in the region were noted by only 0.5% of respondents.

**Table 3. The structure of the most acute problems**

| problems                                                                 | in the town % (n=546) | in the Murmansk region % (n=415) | in the country % (n=428) |
|--------------------------------------------------------------------------|------------------------|----------------------------------|-------------------------|
| 1. the problem of unemployment and job cuts in factories                 | 39,2                   | 25,8                             | 13,3                    |
| 2. medical problems                                                      | 26,0                   | 20,7                             | 14,0                    |
| 3. bad road problems                                                     | 15,9                   | 16,9                             | 9,3                     |
| 4. problems in the field of housing and communal services                | 12,1                   | 6,0                              | 3,5                     |
| 5. problems in the field of law and order (lawlessness and crime)        | 1,6                    | 3,4                              | 9,8                     |
| 6. the problem of low salaries and pensions                              | 8,1                    | 9,2                              | 7,9                     |
| 7. high prices (for food, housing and communal services, medicines, housing, gasoline) | 7,0                    | 8,0                              | 6,1                     |
| 8. ecological problems                                                   | 3,7                    | 5,1                              | 4,0                     |
| 9. educational problems                                                  | 3,5                    | 4,1                              | 4,9                     |
| 10. economic problems                                                    | 1,8                    | 4,8                              | 14,3                    |
| 11. problems in the sphere of government and governance                  | 0,7                    | 4,6                              | 7,2                     |
| 12. low standard of living and poverty                                   | 3,1                    | 4,3                              | 5,8                     |
13. social problems                          2.0  1.4  2.3  
14. leisure problem (including youth leisure) 1.8  0.2  -   
15. the problem of alcoholism and drug addiction 1.3  1.2  0.9  
16. the problem of population migration from the region 1.1  0.5  -   
17. the problem of transport and parking spaces 0.9  0.2  -   
18. the problem of housing conditions          0.9  0.5  0.9  
19. adverse climatic conditions of life        0.5  0.5  -   
20. the problem control for dogs              0.4  0.2  -   
21. the problem of immorality                 0.4  0.2  0.2  
22. the problem of working conditions         0.2  -    -    
23. problems in the field of small business support 0.2  0.5  -   
24. international policy challenges           -   -    2.8  
25. crisis                                    0.9  2.4  3.7  
26. other                                    7.3  21.2 19.9  
27. no problem                               1.8  1.4  2.1  
Total                                        142.5 130.8 133.2  

* the sum on columns exceeds 100% as respondents could specify several variants of the answer

The majority of respondents live in the Murmansk region since birth (69 %, n=692). A third of respondents were born outside the Murmansk region (32 %). It is equally, both men and women, the average age of 45 years (range is 64, standard deviation is 16.7) and live in the Murmansk region for an average of 25 years (range is 63, standard deviation is 14.9). The main reasons for moving North were getting a job with higher earnings than in other regions-40.7 % and family circumstances (moving to relatives) - 29.9 %. Also, the reasons for moving were the improvement of housing conditions-6 %, for the purpose of higher education-6 %. Most people moved North of their own accord. Among the reasons for the forced move to the North is the move on distribution after study-3.6 %, the move on distribution in connection with the military service of her husband or father-3.6 %, because of repression, collectivization-1.2 %.

Over the past decade, there has been a migration decline in the Murmansk region. What makes people leave the North? The results of the study showed that only 16% of respondents have migration intentions to leave the North (n = 111). Unfavorable climatic conditions (62%) were cited as the main reason for moving, followed by socio-economic reasons, which can be designated as factors of forced migration. This is, first of all, the lack of prospects for the development of the region (7.4 %), low living standards in the region (6.3%), unemployment (6.3%). Half of the respondents (52 %, n=365) said they did not want to leave the North. The main factor of staying in the North is socio-psychological rootedness, namely: "here is my homeland, my home" (19 %), family-related and friendly relations (17%), "like it here, everything suits" (18%). At the same time, a quarter of respondents (24 %) noted that they are forced to stay in the North due to lack of financial and age opportunities to leave. Almost a quarter of respondents (26 %; n = 183) still found it difficult to answer the question about migration intentions. At the same time, half of them (53 %, n=96) gave reasons why they could leave the Murmansk region (table 4).
Table 4. Possible reasons for moving outside the Murmansk region

| reasons for moving                                                                 | proportion, % (n=96) |
|-----------------------------------------------------------------------------------|----------------------|
| good job (career growth, high salary) in another region                            | 21,9                 |
| because of the harsh climate                                                      | 20                   |
| in case of unemployment (if I do not find a job in my town) or loss of job, reduction of wages | 18,6                 |
| if I have my house in another region                                              | 10,3                 |
| for family reasons: for the sake of parents or children, divorce from spouse      | 6,3                  |
| no prospects, the town is dying, no production                                     | 5,2                  |
| continuing my education, children education                                       | 4,2                  |
| for new emotions and experiences, it's boring here                                 | 3,1                  |
| in the case of health problems of family members                                   | 3,1                  |
| retirement                                                                        | 2,1                  |
| war, hanger                                                                       | 2,1                  |
| abolition of Northern benefits                                                     | 2,1                  |
| the resettlement program                                                           | 1,0                  |
| Total                                                                             | 100                  |

We can conclude that the main factor in the attractiveness of life in the North, as before, remains the availability of job with a higher level of wages than in other regions of the country. How many northerners want to see their income? Respondents say that the size of the monthly income per family member should be equal on average: 100,000 rubles (1562 dollars) - to live very well, in anything not denying; 55,000 rubles (860 dollars) - to live well; 30,000 (470 dollars) rubles - to make ends meet (when transferring monetary units, the ruble exchange rate was used to the dollar as 1/64). The actual average monthly income of respondents averaged 23,000 rubles ($360). The results of the comparative analysis of the average monthly income of respondents with their subjective assessment of the financial situation of the family are presented in table 5 (n=419).

Table 5. Comparative analysis of the average monthly income of respondents with their subjective assessment of financial situation

| Assessment of financial situation                     | Average income of the Respondent, rubles (and dollars, the ruble/dollar = 1/64) | Standard deviation, rubles (and dollars, the ruble/dollar = 1/64) |
|-------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------|
| There is not enough money for the most necessary      | 14692 (230)                                                                     | 8815 (138)                                                       |
| Enough for daily expenses                             | 18392 (287)                                                                     | 12190 (190)                                                      |
Basically enough money, we can save them 26372 (412) 13285 (207)
We can not deny ourselves anything 45458 (710) 36210 (566)

It is important to note that the existing system of Northern benefits is assessed ambiguously by respondents. On the one hand, they note its necessity, on the other hand, they note its inefficiency. According to respondents in the past, this system of Northern benefits and compensation attracted people to the North, and today in other regions you can earn as much and even more (especially in Moscow).

Modern Russian laws provide benefits and compensation for northerners and provides additional payments to wages in the form of:
1. a coefficient or allowance for the northen district;
2. extra rest days and other guarantees and benefits, such as extra day off for one of parents without pay, a shorter working week for women;
3. guarantees and compensation for fly-in/fly-out workers in the North;
4. guarantees and privileges to pensioners [5].

So, the study showed that the most problematic in the region according to population estimates are the sphere of labor, health, education, leisure, road infrastructure, housing and communal services. Content analysis of the acute problems of the region showed that they describe primarily the functioning of the socio-economic infrastructure of the region. This institutional sphere shapes the quality of life of the population. The institutional sphere is problematic and characterized by a low level of development according to the residents of the region. In social representations, the region has a low level of socio-economic infrastructure that leads to the low quality of life of the population and causes negative migration, out-migration from the region and prevents the inflow of qualified personnel in the Murmansk region.

4. Conclusion
The study showed that the living conditions in the Murmansk region in the estimates of its residents are described by a range of negative indicators. From this point of view, the region offers its residents extremely uncomfortable living conditions. Therefore, the current political task in the current conditions is to preserve the existing population of the region and attract qualified personnel to the region. To do this, it is necessary to improve the indicators of social attractiveness of the region and the quality of life of the population living in the Arctic, mainly through the solution of a number of problems that are mainly institutional in nature. The most urgent among them are problems in the sphere of labor and employment, health care, education, leisure, road infrastructure, housing and communal services. At the same time, measures to improve the living standards of the population are in demand, including measures to revise the structure of northern social benefits in terms of their stimulating opportunities and social significance.

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