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Shrinking Cities of the Russian Arctic: Statistical Trends and Public Discourse on the Causes of Population Outflow

Elena V. Nedoseka^{1✉}, Cand. Sci. (Soc.), Senior Researcher

Ekaterina N. Sharova², Cand. Sci. (Soc.)

Danil M. Shorokhov³, student

¹ Sociological Institute of the RAS, Branch of the Federal Center of Theoretical and Applied Sociology of the RAS, ul. 7-ya Krasnoarmeyskaya, 25/14, Saint Petersburg, Russia

^{1,2} Murmansk Arctic University, ul. Egorova, 15, Russia

³ Saint Petersburg State University, Universitetskaya naberezhnaya, 7/9, Saint Petersburg, Russia

¹ nedelena@socinst.ru ✉, ORCID: <https://orcid.org/0000-0003-1944-0367>

² kateshar1@yandex.ru, ORCID: <https://orcid.org/0000-0002-9042-3570>

³ shdm0023@gmail.com

Abstract. The purpose of the article is to determine the most significant causes of population decline in the regions of the Russian Arctic. The object of the study was the urban population of the subjects of the Russian Arctic. The concept of a shrinking city, which has received various interpretations both in foreign and domestic scientific thought, was chosen as a theoretical framework for understanding the problem. In this article, the shrinkage of cities is understood as a cumulative result of economic and demographic factors that cause population decline in the form of natural loss and migration outflow. On the basis of statistical data, a steady demographic decline was recorded in the cities of the subjects of the Russian Arctic. This made it possible to confirm the validity of the use of this concept in relation to these territories. Based on the materials of domestic and foreign studies, the most general, systemic factors of population decline in the regions of the Russian Arctic were identified, such as: the historical context and the policy of Soviet industrialization, the specifics of the local (regional) identity of the inhabitants of the northern territories, global demographic trends. At the empirical level, a more detailed analysis of the subjective perception of the reasons for the outflow of the population from the Murmansk Oblast, reflected in the public discourse of the participants of the online community of the city of Murmansk in the social network VKontakte, was carried out. The initial analysis base included posts and comments of the community for 2021–2022 (a total of 23.817 posts and 926.583 comments), the target sample included 268 posts and 2621 comments. Open and axial coding techniques were used to identify three groups of urban development issues as causes of the outflow of population from the region: 1) natural and climatic conditions, 2) quality of life, 3) prospects for the development of the city. Quantitative analysis of the number of comments (under posts) and likes (under comments) allowed us to identify the most significant and persistent problems, which, of course, are of increased interest to representatives of municipal and regional authorities.

Keywords: *shrinking cities, Arctic Zone of the Russian Federation (AZRF), Murmansk Oblast, population outflow, public discourse, online community*

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Introduction

Despite the growing interest in the topic of shrinking cities, it is necessary to note the lack of both a generally accepted definition of shrinking cities and a general theory of this process. Attempts to define and conceptualize shrinking cities are widely used in the scientific literature, but remain controversial [1, Olsen A.]. Depending on what aspects and points of view are studied, the term “shrinking city” can refer to completely different objects and problems: from the economic competitiveness of the city on a global scale to serious social problems such as marginalization, segregation, crime and poverty [2, Wu C.T. et al., p. 392].

In the scientific literature, the most common definition of a shrinking city remains its understanding as a municipal unit with a minimum population threshold of 10.000 inhabitants, which is experiencing population decline for more than two years and is undergoing economic transformation with some symptoms of structural crisis [3, Pallagst K. et al.; 4, Wiechmann T.]. In this approach, a characteristic feature of shrinking cities is a steady loss of population, and most often the research focus is on demographic problems and structural crisis [5, Haase A. et al.; 6, Haase A. et al., 7, Bernt M.; 8, Hollander J.B.].

Population decline occurs against the background of the preservation of borders and the urban model [9, Oswald P., Rieniets T.; 10, Grossmann K. et al.]. The logical consequence of the above is a change in the requirements for the urban landscape and infrastructure, which were originally planned for a different population size [11, Weaver R., Knight J.]. Structural crises and deindustrialization are often mentioned in the context of urban shrinkage [8, Hollander J.B.]; however, their occurrence and intensity vary greatly across countries and regional contexts.

The research of Antonov E.V. and others is devoted to the problem of shrinking cities, focusing on decline as a cumulative effect at the local level of economic and demographic factors, as well as changes in the settlement system. Using the example of cities in the Komi Republic, the authors analyzed the process of functioning of northern cities in conditions of a significant population decline [12]. Attention should be paid to the works of researchers Gunko M.S., Eremenko Yu.A., Batunova E.Yu., who propose a quantitative criterion for analyzing shrinking cities with a population decline of 25% or more (since 1989), which corresponds to about 1% per year [13]. Theoretical approaches to the phenomenon of shrinking (declining) cities and foreign experience of management under shrinking conditions are presented in the works of Brade I. and Plisetsky E.E. [14; 15]. It should be noted that in the Russian scientific tradition, as well as in the foreign one, there is no single approach to defining the concept of shrinking cities. The scientific literature most often uses “decreasing”, “shrinking”, “declining”, “depressive”, etc. as synonymous concepts.

In this paper, the decline of cities is considered as a cumulative result of economic, demographic factors affecting the settlement system [16, Rink D. et al.]. An indicator of a city’s decline is a reduction in population (both as a result of natural decline and migration processes).

However, the concept of urban shrinkage includes not only a reduction in population, but also numerous consequences that are manifested in the appearance of empty housing, excess in-

frastructure and economic distress, in general increase in the imbalance between supply and demand in various areas. Urban shrinkage has consequences in almost all spheres of urban life — from municipal budgets, land use and urban planning, communal and social infrastructure, housing market and residential mobility, labor market and employment, to such characteristics of urban communities as inclusion, the role of neighborhood contacts, cohesion [12, Antonov E.V. et al.].

Statistical trends of population decline in the regions of the Russian Arctic

The object of this study is the cities of the Arctic zone of the Russian Federation, which over the past three decades have had a steady trend of intense population decline (data are presented in Table 1).

Table 1

Permanent urban population in the regions of the Russian Arctic (persons, average per year)

	1990	2000	2010	2020	2022
Republic of Karelia	646 667	544 427	502 994	495 941	421 853
Komi Republic	943 979	791 558	695 682	639 397	566 906
Arkhangelsk Oblast	1 159 076	1 032 473	929 011	891 101	784 247
Nenets Autonomous Okrug (Arkhangelsk Oblast)	33 074	25 554	28 411	32 743	30 785
Arkhangelsk Oblast (except Nenets Autonomous Okrug)				858 358	753 462
Murmansk Oblast	1 088 977	859 691	739 411	679 298	616 034
Yamalo-Nenets Autonomous Okrug (Tyumen Oblast)	395 158	414 249	444 422	458 078	433 540
Krasnoyarsk Krai	2 335 784	2 265 499	2 157 502	2 219 640	2 266 588
Republic of Sakha (Yakutia)	745 317	615 345	615 693	646 889	669 353
Chukotka Autonomous Okrug	116 211	39 730	32 868	35 608	33 003

In terms of urban population, the subjects of the Arctic zone can be divided into two types. The first is the subjects that are fully included in the AZRF, among them the Murmansk Oblast is the leader in terms of urban population. The second type is the subjects that are not fully included in the AZRF, with the Krasnoyarsk Krai having the largest urban population and the Nenets Autonomous Okrug having the smallest one.

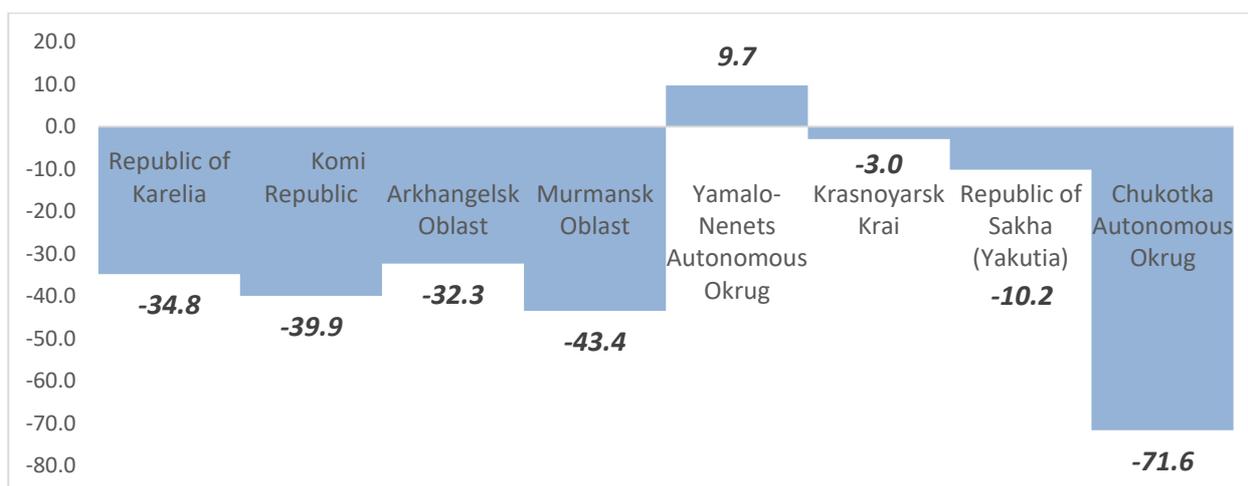


Fig. 1. Dynamics of the urban population of the AZRF subjects (2020 compared to 1990, in %).

Over 30 years, the cities of the Chukotka Autonomous Okrug (-71.6%) and the Murmansk Oblast (-43.4%) have suffered the greatest population losses. Growth is observed only in the Yamalo-Nenets Autonomous Okrug (9.7%) (see Fig. 1).

The natural increase rate has been steadily declining and reached a negative value in 2020 (see Table 2).

Table 2
Coefficient of natural population growth by the constituent entities of the AZRF (per 1000 people)¹

	2015	2016	2017	2018	2019	2020	2021
<i>Arctic zone of the Russian Federation</i>	3.9	3.1	2.2	1.5	0.7	-1.0	-3.6
Republic of Karelia	-10.7	-13.0	-12.5	-15.2	-14.7
Komi Republic	3.6	0.9	1.3	0.6	-1.1	-2.5	-4.5
Arkhangelsk Oblast	0.3	-0.5	-1.3	-2.3	-3.3	-5.5	-9.0
Nenets AO	8.4	9.6	6.6	5.1	4.7	3.4	0.4
Murmansk Oblast	0.3	-0.3	-0.8	-1.5	-2.4	-4.7	-7.6
Yamalo-Nenets AO	11.3	10.1	9.1	8.7	7.9	6.9	6.3
Krasnoyarsk Krai	8.3	7.3	6.6	6.3	6.0	5.0	3.4
Republic of Sakha (Yakutia)	6.0	7.0	5.2	4.5	3.3	2.8	0.8
Chukotka AO	4.1	3.6	3.7	1.6	1.4	0.4	-0.7
<i>For reference: Russian Federation</i>	0.3	-0.01	-0.9	-1.6	-2.2	-4.8	-7.1

In 2021, the natural decline in the AZRF constituent entities amounted to 3.6 permille, which is generally significantly lower than the all-Russian level (-7.1). The Republic of Karelia (-14.7), the Arkhangelsk Oblast (-9.0) and the Murmansk Oblast (-7.6) suffered the greatest losses as

¹ Natural population growth rate in the Arctic zone of the Russian Federation per 1000 population. URL: https://rosstat.gov.ru/storage/mediabank/pok_84_2022.xlsx (accessed 02 April 2023).

a result of natural population loss. In these subjects, the coefficient value exceeds the all-Russian level. The most favorable situation is observed in the Yamalo-Nenets Autonomous Okrug, where natural increase has been maintained during 2015–2021, with the coefficient value steadily decreasing (from 11.3 in 2015 to 6.3 in 2021).

The migration growth rate is characterized by a reverse trend (see Table 3). During 2015–2021, there has been a decrease in migration loss — from -9.6 in 2015 to -1.0 in 2021. Despite this, the migration situation in the regions of the Russian Arctic remains quite difficult. For comparison: the all-Russian migration growth rate has a positive value and amounted to 2.9 permille ².

Table 3

Coefficient of migration growth of the population by the constituent entities of the AZRF (per 1000 average annual population) ³

	2015	2016	2017	2018	2019	2020	2021
<i>Arctic zone of the Russian Federation</i>	-9.6	-5.9	-6.0	-5.1	-3.8	-3.0	-1.0
Republic of Karelia	-15.5	-15.4	-13.8	-1.7	-3.0
Komi Republic	-22.0	-18.0	-36.3	-34.3	-20.9	-3.4	-5.4
Arkhangelsk Oblast	-3.3	-3.1	-4.7	-3.7	-0.7	-0.6	0.03
Arkhangelsk Oblast (except Nenets Autonomous Okrug)	-3.6	-2.8	-4.7	-3.4	-0.9	-0.8	-0.2
Nenets Autonomous Okrug	2.3	-7.3	-5.3	-8.9	1.8	2.9	3.1
Murmansk Oblast	-5.7	-5.7	-4.6	-5.9	-6.5	-6.0	-3.9
Yamalo-Nenets Autonomous Okrug	-22.3	-6.5	-4.5	-3.2	-2.4	-2.0	3.0
Krasnoyarsk Krai	-6.8	-8.8	-3.3	-2.1	-3.9	-1.7	-0.4
Republic of Sakha (Yakutia)	-9.3	-3.8	-13.0	-5.4	-3.4	-0.6	-10.8
Chukotka Autonomous Okrug	-11.7	-10.3	-13.2	4.8	11.1	-15.2	11.1

Among the subjects of the Russian Arctic, the Republic of Sakha (Yakutia) (-10.8), the Komi Republic (-5.4), Murmansk Oblast (-3.9) and the Republic of Karelia (-3.0) suffered the greatest losses as a result of migration loss — the coefficient value exceeds the average level for the subjects of the Russian Arctic. The most favorable situation is observed in the Chukotka Autonomous Okrug (11.1), while an extremely unstable situation is noted here during 2015–2021 (for example, in 2020 the value was negative and amounted to -15.2 permille).

² Shcherbakova E. Migratsiya v Rossii, predvaritel'nye itogi 2021 goda [Migration in Russia, preliminary results of 2021]. URL: <http://www.demoscope.ru/weekly/2022/0937/barom04.php> (accessed 02 April 2023)

³ Natural population growth rate in the Arctic zone of the Russian Federation per 1000 population. URL: https://rosstat.gov.ru/storage/mediabank/pok_84_2022.xlsx (accessed 02 April 2023).

Factors of population decline in the regions of the Russian Arctic

When analyzing the causes of population decline of the study area, it is necessary to pay attention to the factors influencing this process.

Firstly, it is worth pointing out the historical context of the emergence of Arctic cities. Most of the settlements that belong to the Russian Arctic appeared as a result of the Soviet industrialization policy aimed at the resource development of remote territories and the dispersal of the industrial potential of the Soviet state [17, Meerovich M.G.]. The first stage chronologically falls at the end of the 1920s–40s, when predominantly small industrial towns (monotowns) associated with coal mining, metallurgy and timber industry emerged in the North. The massive settlement of the Far North was directly related to the repressive nature of Soviet policy. Special contingent consisting of prisoners, including political and special settlers who were deported from various areas for social (for example, dispossessed kulaks) or ethnic (Caucasians, Germans, Koreans, etc.) reasons were brought to build settlements and resource industries. By the end of the 1930s, an entire settlement network consisting of many dozens of special settlements and correctional labor camps had been formed throughout the European North.

The second stage is the 1950s — the emergence of large infrastructure centers associated with the operation of ports and large railway hubs, for example, Magadan, Norilsk, Inta, etc. [18, Averkieva K., Efremova V.]. Since the mid-1950s, the nature of settlement changed radically: first of all, this was due to the announcement of a general amnesty in 1953 and the voluntary nature of the resettlement of civilian specialists, mainly coming to the north for material reasons because of the benefits that implied polar allowances, affordable housing, long vacations and a “northern” pension. As cities anticipated the migration influx, they were, on average, provided with better infrastructure and housing.

Socio-economic restructuring that began in the 1990s led to the closure or privatization of city-forming enterprises, which directly affected the reduction of employment, lower wages, and, together with the reduction of subsidies and the high cost of living, influenced the intensive outflow of population from northern cities. Thus, the artificially created northern cities, as a result of the settlement policy of the Soviet state, were not ready to integrate into the new capitalist reality, which resulted in “stress migration” [18, Averkieva K., Efremova V.].

The second factor of shrinking of Arctic cities is due to the fact that no rooted host community with a stable local identity has emerged on their territories. The temporary nature of settlement only aggravated the erosion of the local identity of non-northern residents [19, Razumova I.A.; 20, Burtseva A.V., Sharova E.N., Oman S.; 21, Matveeva E.G., Petrov N.V., Petrova N.S.]. The strategy of life in these cities was to earn money and return or move to more southern regions upon retirement [22, Razumova I.A.].

Despite the importance of economic restructuring in the emergence and formation of shrinking cities, demographic structures and natural population changes should not be underestimated [23, Wolff M.; 4, Wiechmann T.]. The third factor of the reasons for the decline concerns

the trend that began in the late 1980s and is associated with a decrease in fertility and intensive ageing of the population [24, Kashnitsky I. et al.; 25, Ba-tunova E., Perucca G.]. This trend is worldwide and is defined as a demographic transition [26, Lesthaeghe and Van de Kaa D.]. The demographic structure of Arctic cities reflects this trend in full. Moreover, the migration decline concerns the economically active population, which reinforces the predominance of older age groups in the age structure of Arctic cities.

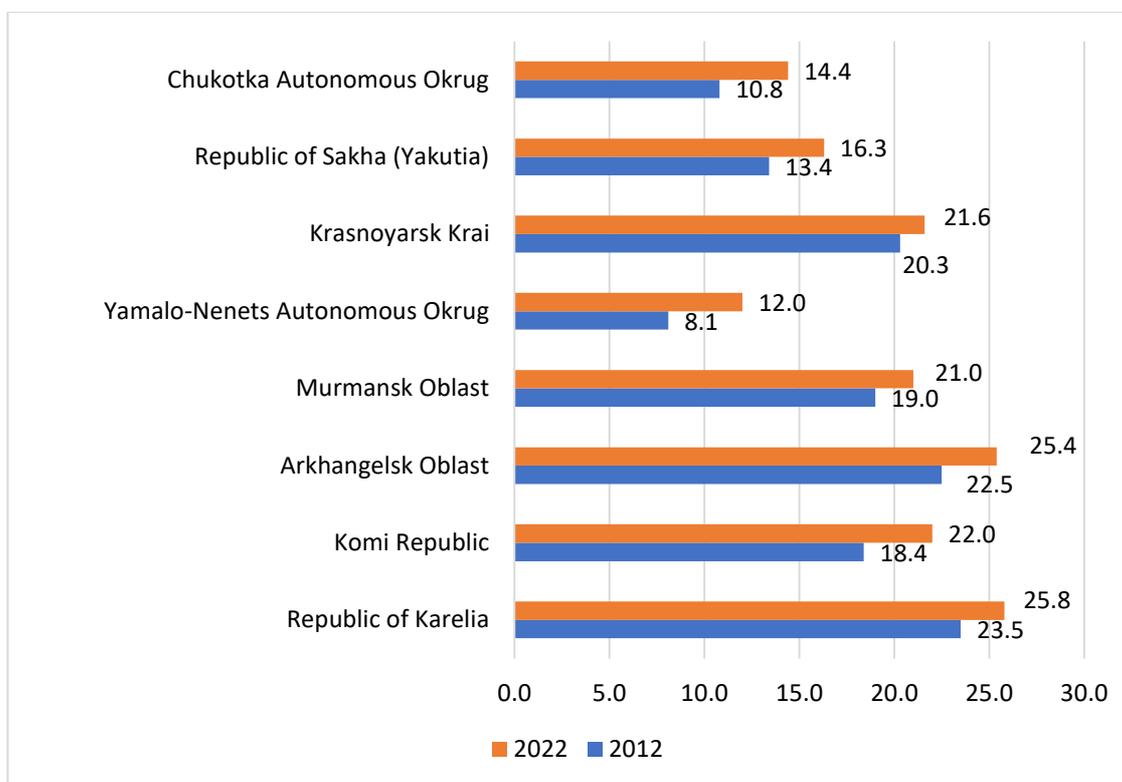


Fig. 2. The share of the permanent population above working age in dynamics for 2012–2022 (as of January 1), in %⁴.

The share of the permanent population over working age increased by 2.8% on average and amounted to 19.8% (see Fig. 2). This share is comparatively higher in the Republic of Karelia (25.8%) and the Arkhangelsk Oblast (25.4%), and lower in the Yamalo-Nenets Autonomous Okrug (12.0%) and the Chukotka Autonomous Okrug (14.4%).

⁴ Structure of the resident population at the beginning of the year (January 1) by gender and age groups. URL: <https://www.fedstat.ru/indicator/43219> (accessed 02 April 2023).

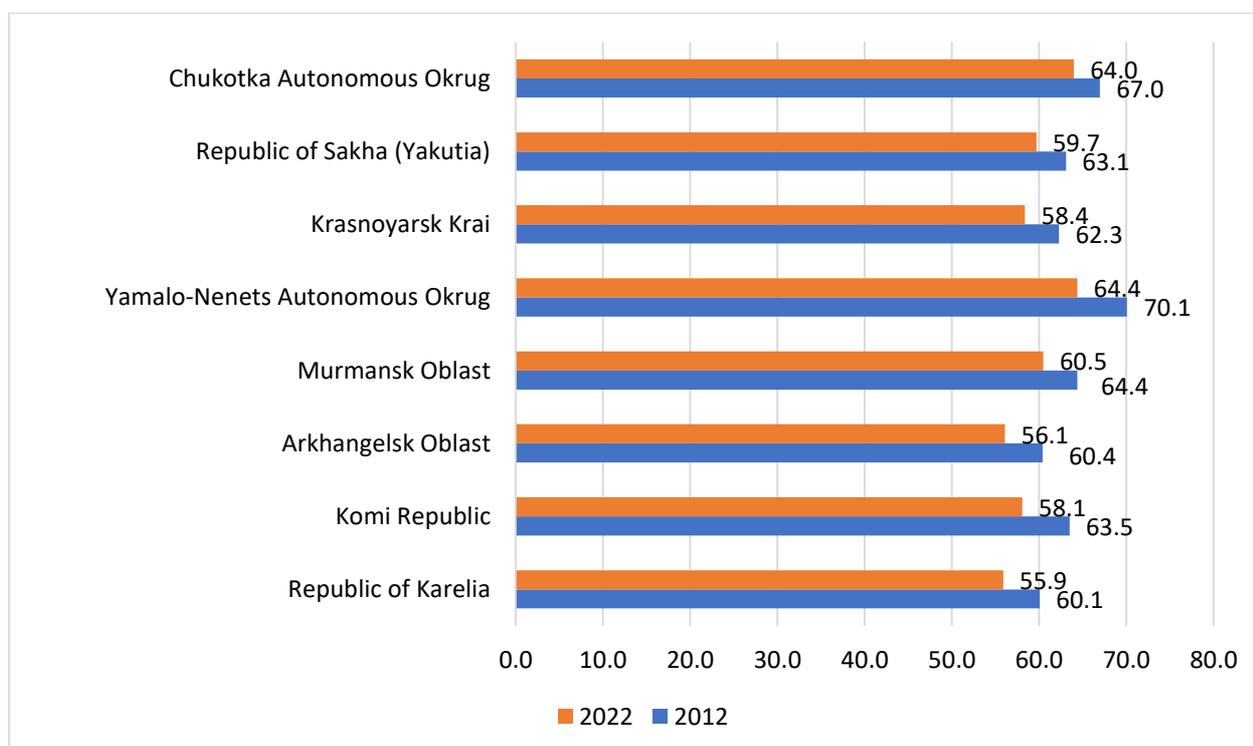


Fig. 3. The share of the permanent working-age population in dynamics for 2012–2022 (as of January 1), in %⁵.

The share of the permanent working-age population decreased by an average of 4.2% to 59.6% (see Fig. 3). This share is comparatively higher in the Yamalo-Nenets Autonomous Okrug (64.4%) and the Chukotka Autonomous Okrug (64.0%), and lower in the Republic of Karelia (55.9%) and the Arkhangelsk Oblast (56.1%).

The process of depopulation, which occurs in most Arctic cities, is associated with such socio-economic consequences as a decline in investment attractiveness, shrinking labor market, increasing unemployment, erosion of human capital, reduction of local budgets, including tax deductions to budgets, increasing problems in the development of urban infrastructure (for example, the growth of emergency and dilapidated housing, deterioration of communal infrastructure, road funds, deterioration of the crime situation, etc.) [15, Plisetsky E.E.].

Today, demographic losses form an important part of the management agenda in almost all Arctic regions. However, counteracting depopulation is the only possible strategy at all levels of management [27, Batunova E., Gunko M.]. For example, the Murmansk region has a strategic plan “Live in the North!”, one of the goals of which is to retain the population in the region. In terms of urban planning and management, municipal authorities are much more focused on small-scale urban development and beautification projects that require modest funding and bring immediate political benefits [28, Zupan D., Gunko M.], as opposed to comprehensive renewal projects for shrinking cities that suffer from underfunding, staff shortages and deteriorating infrastructure.

In the empirical part of the study, we focused on the subjective perception of city residents about the main urban problems that influence their migration sentiments. The object of empirical

⁵ Structure of the resident population at the beginning of the year (January 1) by gender and age groups. URL: <https://www.fedstat.ru/indicator/43219> (accessed 02 April 2023).

research was the city of Murmansk, one of the most intensively losing population cities in the Arctic zone of the Russian Federation. Murmansk is the administrative center of the Murmansk Oblast, which is completely included in the Arctic zone of the Russian Federation. The city was founded in 1916, but its intensive development began in the post-war years. The economic specialization of the city is directly related to the peculiarities of its geographical location, which determined its position as a port and outpost city. Today, traditional industries for Murmansk — fishing, fish processing, maritime transport, ship repair — are experiencing the crisis consequences of the economic transition period of the early 1990s. The social sphere and infrastructure of the city are characterized by serious problems and are the objects of increased managerial attention. The dynamics of the city's population are characterized by a long-term negative balance (see Fig. 4).

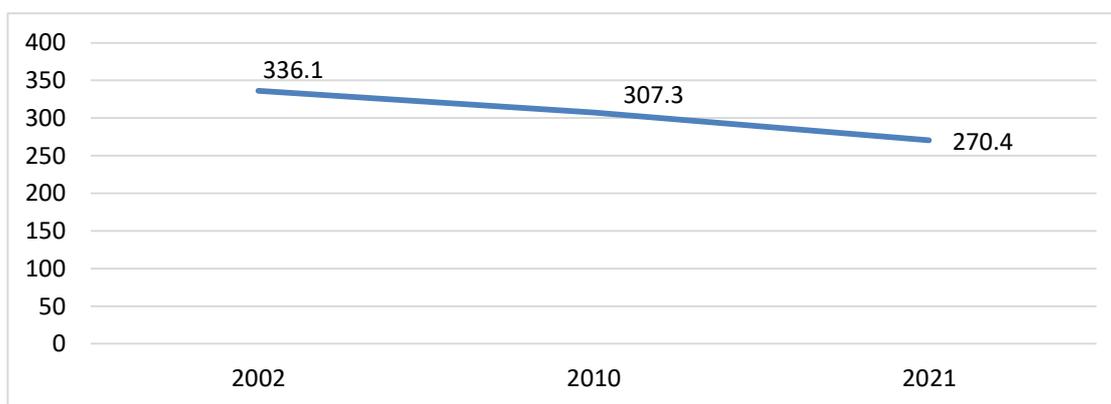


Fig. 4. Population of the city of Murmansk according to the results of the population census of 2002, 2010, 2021 (thousand people) ⁶.

According to the results of the 2020 census, the permanent population of the city of Murmansk as of October 1, 2021 amounted to 270.4 thousand people, decreased by 12% compared to 2010 and by 20% compared to 2002.

Characteristics of the empirical base of the research

The methodology for analyzing the subjective perception of residents is based on identifying problematic conceptualizations of the state of urban life, reflected in the public discourse of online communication. In this study, public discourse is understood as the totality of reflective knowledge and reactions of individuals about any phenomena and facts that are submitted for wide (including mass) discussion [29, Klyuev Yu.V., p. 336–337]. Quantitative and qualitative discursive characteristics of the problems discussed are important from the point of view of the theory of discourse analysis. For example, the theory of discourse analysis by T.A. Van Dyck [27; 30] connects the reproduction of texts, the cognitive ability of individuals and their social environment. Subjective perceptions of urban development problems are manifested in the discourse of

⁶ Results of the 2002 All-Russian Population Census. Rosstat. URL: <http://www.perepis2002.ru/index.html?id=13> (accessed 02 April 2023); Results of the All-Russian Population Census 2010. Murmanskstat. URL: <https://murmanskstat.gks.ru/storage/mediabank/13.doc> (accessed 02 April 2023); Results of the All-Russian Population Census 2020 (as of October 1, 2021). Murmanskstat. URL: [https://murmanskstat.gks.ru/storage/mediabank/1.4\(6\).xlsx](https://murmanskstat.gks.ru/storage/mediabank/1.4(6).xlsx) (accessed 02 April 2023).

communities through interpretations, assessments, and descriptions of personal experiences that residents represent during discussions. They can be considered as qualitative characteristics of the subjective image of the city and the experience of living in it, since they reflect community-specific attitudes, preferences, phobias towards the city and city/regional government, and also reflect the local language that is formed by the community to describe the surrounding context. In this paper, using empirical material from the digital urban community, we will demonstrate the formation of qualitative characteristics of urban development in public discourse, focusing on the subjective perception of citizens' "pain points" that influence or explain migration sentiments and intentions. The number and intensity of mentions of various problems, the duration of their discussions, support for specific messages by the number of "likes" can also be considered as quantitative characteristics of the discourse about urban development problems [31, Nenko A.E., Nedoseka E.V.].

As empirical material, this article examines text messages reflecting the public discourse of the online community of Murmansk, active at the time of writing this paper. In the process of selecting the online community for analysis, groups on the social network VKontakte were considered. The community selection criteria were as follows:

- urban community, thematically dedicated to the city of Murmansk, its history, problems and events;
- high popularity of the community in the information field (determined by the search query method in the VKontakte search aggregator);
- constant high intensity of communication within the community (at least 2 posts per day over the past year);
- discussion of city problems on the community wall;
- history of the community (at least 5 years);
- positioning the community specifically as local (urban) [31, Nenko A.E., Nedoseka E.V.].

Thus, a search query for the keyword "Murmansk" on the social network VKontakte provides 22.495 communities containing this word in the name. The "Murmansk" group, formed in 2008, has 384.2 thousand subscribers, which makes this community one of the most popular among other communities in the presented social network (see Table 4).

Table 4

Rating of communities dedicated to the city of Murmansk on the social network VKontakte

Name of community	Type of community	Subscribers, thousand people ⁷
Murmansk	City's community	384.2
Podslushano Murmansk PVM №1 [Overheard in Murmansk]	City's community	121.6
Murmansk	Internet media	102.6
Murmansk — stolitsa Arktiki [Murmansk — the capital of the Arctic]	Internet media	93.2
Podslushano Murmansk	City's community	83.1

⁷ as of May 11, 2023.

[Overheard in Murmansk]		
Murmansk	City's community	50.5

Users with active accounts (not blocked or deleted) — 82.7% of the total number of subscribers. Users with available age information are 37% of the total number of users and 44.8% of active ones. The most numerous categories of users are 31–40 years old (31.9%), 21–30 years old (21.8%) and 41–50 years old (17.2%). Almost all community users are identified by gender (over 99%), of which 47% are men, 53% are women.

The collection of discussion data in the online community was automated using the Python 3.8.10 programming language. The data collected included text notes — posts and comments — on the community “wall”. As a result of parsing, records for 2021–2022 were uploaded to the database: the total number of posts is 23.817 units, the total number of comments is 926.583 units.

Next, the posts were sorted in descending order of the number of comments, and the minimum threshold for their “popularity” was determined at 100 comments. As a result, 268 posts were selected to form a purposive sample for more in-depth analysis using an open coding technique with the names of discussion topics. This made it possible to identify the main subdiscourses concerning the main problems of the city, which act as subjectively perceived reasons for the outflow of the population.

In the course of the work, posts were identified that were thematically devoted to collecting the opinions of Murmansk residents about the reasons for the move, the directions of the move, and encouraging subscribers to speak out on this issue (19 posts).

Murmansk residents, why do you think more and more people are leaving our city?	06.04.2021	1 170	https://vk.com/wall-5608669_7406441
The Murmansk Oblast may become a rotational region in the near future	24.08.2022	721	https://vk.com/wall-5608669_8611329
Over five years, the population of Murmansk will decrease by almost 18 thousand people — by 2025 there will be a noticeable population decline	25.10.2022	566	https://vk.com/wall-5608669_8702801
Pensioners are moving out of Murmansk en masse	17.11.2021	545	https://vk.com/wall-5608669_7946414
Murmansk is a city of unfulfilled expectations	19.10.2021	545	https://vk.com/wall-5608669_7851446
Do you agree with the opinion from TikTok that Murmansk is a dying city?	26.09.2021	407	https://vk.com/wall-5608669_7788519
Why do many people leave Murmansk?	06.11.2021	402	https://vk.com/wall-5608669_7907050
“Leave no more stay”: everyone puts a comma where they think it is necessary!	07.01.2022	361	https://vk.com/wall-5608669_8085909
Murmansk population has returned to the level of 1967	18.07.2022	334	https://vk.com/wall-5608669_8558853
“Leave no more stay”: everyone puts a comma where they think it is necessary!	04.12.2021	333	https://vk.com/wall-5608669_7996893
Most often, people leave a small town to dream of returning there. And others stay to dream of leaving it.	28.11.2022	289	https://vk.com/wall-5608669_8140792
Where do Murmansk residents most often move to?	15.04.2022	286	https://vk.com/wall-5608669_8355188

Karelia — to live, Murmansk — to leave?	20.08.2022	223	https://vk.com/wall-5608669_8605185
Famous blogger Ilya Varlamov compiled a rating of endangered cities in Russia. Murmansk was also included in it.	24.04.2021	212	https://vk.com/wall-5608669_7460818
The Kola region continues to empty out — the population of the Arctic has decreased by 1.8 thousand people since the beginning of the year.	11.05.2022	192	https://vk.com/wall-5608669_8416896
“We are not Moscow and St. Petersburg. And that’s normal”: no housing is being built in Murmansk	25.10.2021	159	https://vk.com/wall-5608669_7868689
In Murmansk, the mortality rate exceeded the birth rate by more than two times	18.02.2022	159	https://vk.com/wall-5608669_8196067
Murmansk — a “melting” city?	21.02.2022	149	https://vk.com/wall-5608669_8209469
Murmansk residents, do you agree that Murmansk is a dying city?	05.10.2021	125	https://vk.com/wall-5608669_7814518

A total of 7.178 comments were downloaded from the selected posts, which were first sorted and selected by the number of likes (at least 50 likes) as indicators of support from community members (4.454 units in total). Further, uninformative and irrelevant to the purposes of the study judgments (including prepositions, interjections, punctuation marks, various symbols, etc.) were excluded from this array of comments. The final array of comments amounted to 2.621 units and was subjected to axial coding in accordance with the categories previously identified during open coding of posts.

In working with posts and comments, we relied on coding methods (open and axial) proposed by representatives of “grounded theory” using the general research scheme of N. Pidgeon and K. Henwood [32]. Thus, the analysis of posts using the open coding technique made it possible to categorically determine the list of topics being debated, and the analysis of comments through axial coding was carried out on the basis of the existing system of categories in the direction of distributing comments into categories. To illustrate dominant opinions, we selected the most likesupported comments from subscribers.

As a result of processing the comments, the reasons for the outflow of the population, which were most actively discussed by the community of citizens, were identified.

The most intense subdiscourse is about the attractiveness of living in a city with harsh climatic conditions (category “Climatic conditions”). Climate is an ambivalent characteristic in the discourse of city residents. Thus, the beauty and uniqueness of northern nature is noted, which is expressed in private posts of photographs of the city in different seasons, accompanied by positive comments and declarations of love. At the same time, when analyzing the reasons for the decline, climate, in conjunction with the socio-economic living conditions in the region, acts as a concomitant factor in the outflow. Life in harsh climatic conditions, according to community members, should be encouraged and supported by the state. Comments that refer to the Soviet period of the city’s existence, when polar allowances stimulated motivation either to move to the north or to keep the population in northern cities, have significant support with likes.

“If during the Soviet Union they came here for polar allowances, then what’s the point of rotting here now!? Salary is the same as in the middle zone, all prices and housing and communal services are 2 times higher, plus 9 months of winter and almost complete absence of summer! What for the sake of putting up with all this?!” (434 likes)

“They used to go to the north to earn money, but now the “salaries” are less than those of Muscovites... and then what is there to do here now?” (99 likes)

The next subdiscursive block, “Quality of Life”, included interrelated topics that were most discussed by the community: “low salaries”, “high tariffs for housing and communal services”, “high prices for housing, food, recreation”, “availability of social infrastructure”.

“It has become harder and harder to live here! I love my region, but it has become so hard! We are being squeezed out! Expensive utilities, ridiculous salaries! I really want to leave! It hurts for my small Motherland!” (214 likes)

“...renting housing is unreasonably expensive, 15 thousand a month, food prices for some goods are more expensive than in Moscow, fish is expensive, meat is also expensive, fruits and vegetables are very expensive, and there is little normal work, and if there is, everything is occupied long ago, living in Murmansk is too expensive...” (99 likes)

One of the unfavorable trends for the northern regions in general is the equalization of salaries with regions located outside the Arctic Circle. Once the main reason for migration to the north — polar allowances — is gradually losing its advantage.

“Everything is expensive in Murmansk, except salaries” (469 likes)

“A disgrace, not a salary for the north!” (208 likes)

It should be noted that the state of social infrastructure, in particular the opportunity to receive quality medical care and education, is accompanied by comments regarding the quality of life, as key indicators of the deterioration of living conditions in the city. The state of the medical care sector is one of the most pressing topics in the community. The shortage of specialized doctors, the inability to receive medical care in a timely and high-quality manner, and the level of medical care are the most pressing issues. It should be noted that the comments were written during the Covid-19 pandemic, which in general turned out to be a difficult period and a serious burden on the Russian healthcare system.

“So well, what to do in Murmansk? Huge communal prices, no medicine, no work, huge prices, hellish conditions for living, unless for drinking and in Murmashi and that’s all, I also left in 2015 and do not regret at all” (175 likes)

“No normal work, huge prices for communal services, no medicine, lots of homeless people, dogs, garbage, crazy food prices, what’s the point of living in a city like this?” (50 likes)

The cost of housing in the city is one of the most discussed and sensitive topics. The vast majority of statements can be described as “indignation” and “non-understanding” of the current situation. Housing prices are perceived by residents as unreasonably high; Combined with intensive population decline, natural and climatic conditions and living standards, residents do not see

the point in buying housing. The comments are dominated by the opinion that it is inappropriate to purchase housing in the absence of cost differences in other regions.

“Who to build for? The population is declining, those who can buy property in a new building are buying it in other cities” (252 likes)

“...Where do apartment prices come from in Murmansk? Where from?...” (154 likes).

The intensity of the discussion is distinguished by the thematic block related to the cost of utilities. Payments for housing and communal services are perceived as overpriced and very expensive.

“So what to do in Murmansk? The communal services are huge...” (172 likes)

“...wages in the north are lower than in the middle zone, where at least the climate is normal and utilities are half the price. The question is, what’s the point of staying here?... You can't get enough of the beauty of the north. It is better to come here as a guest, if you feel sad behind the Khibiny and snows....” (142 likes)

The next subdiscursive block, identified by the intensity of the discussions, is designated “City development prospects” and concerns the implementation of investment projects in the region and urban improvement. The launch of the largest regional investment projects, which involve the economic development of the region and its administrative center, for all its apparent attractiveness and scale, is controversial, which is reflected in the comments of residents. The construction of the seaport “Lavna” (the largest port concession) and “Arctic LNG 2” (extraction and production of liquefied natural gas) attracts a large number of migrants and shift workers who are not motivated to integrate into the local community. According to the subscribers of the “Murmansk” community, the personnel policies of companies implementing investment projects rely on shift workers from other regions/countries. When analyzing community posts, attention is drawn to the high activity of subscribers under posts related to migrants and shift workers. While the average number of comments for two years under one post is 52, the average number of comments under posts concerning the attitude towards migrants and shift workers employed in investment projects is 450. The dominant opinion is that the attraction of outside labor puts a strain on the labor and real estate market in the city, which has caused an increase in housing prices in general.

“Negative! (note: we are talking about attitude towards migrants) Give jobs to your fellow countrymen” (967 likes)

“It didn’t matter before, when there were few of them. Now it has become really irritating and annoying... They have recruited them just to save money and not to pay polar allowances to the locals.” (438 likes)

“Not everyone lives in hostels or hotels; apartments are rented for them, because of this the price rises, and for ordinary people, renting an apartment within the acceptable range, up to about 20 thousand, is no longer possible.” (147 likes)

At the same time, it should be noted that there are opinions about the unwillingness of the residents themselves to work in the proposed vacancies:

“Get a job in their position, but you will not be satisfied with either the level of salaries or the conditions in which they work.” (101 likes)

The next topic within the subdiscourse “City development prospects”, which is characterized by a richness of assessments and comments, is the loss of the city’s industrial potential associated with its fishing specialization and port infrastructure. Crisis phenomena associated with economic restructuring in the early 1990s led the city’s leading industries into decline. This circumstance is painfully perceived by the population and appears in comments as the reasons for the futility and dying of the city.

“Yes, it died when all the fleets were plundered, when industries collapsed and thousands of people were left without work. When the polar allowances became just a name. And now Murmansk is not a city, but a nest of bureaucrats and the taxi drivers and salesmen serving them. If those who remained had the opportunity to leave, it would have been a ghost town long ago.” (297 likes)

“It feels like all this is being done on purpose, apparently the authorities don’t need the big city of Murmansk, they will reduce the population to a minimum to serve the commercial port and small urban infrastructure and that’s all. But the fact that this is a hero city, a hard-working city and once a fishing city does not bother anyone...” (189 likes)

Thus, the analysis of the subjective perception of the reasons for the population outflow by subscribers of the “Murmansk” community made it possible to discover three key subdiscourses, differing in the intensity of discussions and maximum support for comments from community members. Thus, in the subdiscourse “Climatic conditions”, climate appears as a pushing factor, but a careful analysis reveals the secondary importance of this factor. The subdiscourse “Quality of life” included such most discussed topics as: “low wages”, “high tariffs for housing and communal services”, “high prices for housing, food, recreation”, “availability of social infrastructure”. The problematization of these topics by the group members is predominantly critical, meaningfully revealing the subjective understanding and assessment of the causes of the intensive decline in the urban population. It is important to note that assessments of the quality of life are more likely based on the perception of personal experience of everyday life, focusing on the so-called micro-level problems that subscribers personally encounter on a regular basis in everyday life.

In addition, the subdiscourse “City development prospects” has been identified, which concerns the strategic conditions of the city’s existence, its production profile and industrial potential. The attitude and assessment of subscribers are reduced to a painful perception of the loss of the former importance of the fisheries and port infrastructure of the city. New investment projects, declared by municipal and regional authorities as projects for the development of the region as a whole, have meaningfully revealed topics that, from our point of view, reveal “pain points” that require careful attention on the part of agents influencing public opinion. The high level of

intolerance and the predominance of aggressive commentators towards groups of migrants and shift workers are associated with the increased level of pressure that these external groups have placed on the labor and real estate markets, in fact, acting as an additional pushing factor in the subjective perception of subscribers.

Conclusion

The specifics of shrinking cities are largely determined by the history of the development of cities in the Arctic zone of the Russian Federation in the 20th century. The emergence of new urban-type settlements in unfavorable climatic and environmental conditions through various forms of forced migration led to the formation of specific urban communities, which are characterized by a weakly rooted population with conditional motivation to live in extreme conditions. The changed priorities and capabilities of the Russian state after the collapse of state socialism led to a rapid migration outflow from many cities of the North and Far East. Increased “stress” migrations [19, Averkieva K., Efremova V.] occurred against the backdrop of serious demographic crises with a decrease in the birth rate and increasingly high mortality.

The negative migration and natural balance in the analysis of urban population losses in the Arctic zone of the Russian Federation is a logical consequence of the policy of economic restructuring of the industrial sector of the Arctic subjects. At the same time, the nature of shrinking cities in settlements with different population sizes requires taking into account different threshold criteria. As noted by researchers Averkiev K.V. and Efremova V.A., high relative population decline in small towns can have “soft” consequences for the urban economy, built-up environment and infrastructure. On the contrary, in large cities, relative changes in numbers are less pronounced, but high absolute values of population decline lead to pronounced negative effects. Taking into account the specifics of large cities (multi-apartment housing stock, centralized utilities and infrastructure), even a small relative decrease in population should be carefully studied and taken into account when developing policy and planning [19, Averkieva K., Efremova V.].

At the same time, the subjective perception of residents contains significant information regarding the social well-being of people living their daily lives in conditions of intense decline. Analysis of the public discourse of participants in the online community made it possible to identify the so-called “pain points”, which are also the most debated in the private sphere. An assessment of the quantitative indicators of discourse — the number of comments (for posts) and likes (for comments) — indicates the formation and stability in the minds of broad sections of the population of the main agenda of urban development problems that require attention from representatives of municipal and regional authorities.

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