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Population Migration in the Russian Arctic as Reflected in the Media

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Abstract. The purpose of this article is to analyze the informational content of the media in terms of its coverage of population migration processes in the Arctic zone of Russia. In order to achieve this goal, a content-analytical research program was developed, which allows not only studying the popularity and “demand” of the topic of population migration in the Arctic territories in the news space, but also determining the nature of news reports and identifying related semantic elements. Automated data collection and filtering tools in the Python development environment were used to generate a sample of news publications. The final sample size was 735 articles for the period from 2020 to 2023 (formed from 1 online publication of a federal-level media outlet and 9 online publications of regional media outlets — one for each Arctic region). Content analysis of the collected array of media materials was carried out using the specialized program QDA Miner Lite. As a result, it was revealed that public opinion on issues of population migration in the Russian Arctic is not intensively formed in the media examined. The media agenda is characterized by fragmentation, insufficient transparency, and the field of communication most often includes news materials about the influx of medical and teaching personnel under state support programs. Regional differentiation in the information agenda broadcast by the media about population migration in the Arctic Zone of the Russian Federation was revealed. The media of the Republic of Karelia, the Republic of Sakha (Yakutia), and the Chukotka Autonomous Okrug cover this topic the least intensively and deeply. The media of the Murmansk and Arkhangelsk Oblasts, the Yamalo-Nenets Autonomous Okrug and Krasnoyarsk Krai form public opinion on the migration situation in a more comprehensive manner. Based on the results of the analysis, general conceptual recommendations were developed to improve the information model for creating thematic content in the media, including facilitating the attraction and retention of the population in the Russian Arctic.

Keywords: *population migration, Arctic Zone of Russia, media, content analysis*

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Introduction

Population migration in the Arctic zone of the Russian Federation is one of the current areas of modern research, acquiring special significance in the context of the economic and geo-strategic importance of the macro-region and the need to ensure national security of the country.

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In the review article [1, Stepus I.S., Averyanov A.O., Rodion I.V.], it is noted that this topic is studied by various research teams, which demonstrate a wide range of methods and approaches to the study of migration processes in the Arctic Zone of the Russian Federation (AZRF): statistical analysis of migration indicators, population surveys and interviews, methods of correlation and regression analysis to identify dependencies between the indicators of arrival/departure of the population and the parameters of the socio-economic development of the territories, etc.

Experts in the field of migration recognize the paucity of the domestic statistical base in the field of population migration, which is why, according to V.I. Mukomel, sociological research and qualitative methods are becoming the most important source of information on migration processes in Russia [2, p. 208]. In recent years, qualitative research has become popular and in demand against the backdrop of total “onlineization”, when non-reactive (without the direct participation of the researcher) online data (text, photos, videos) are created. An example of such research as it applies to Arctic population migrations can be found in a recent publication by E.V. Nedoseka, Sharova E.N., Shorokhov D.N., where, based on the analysis of the public discourse of online communities on the social network VKontakte, the most significant reasons for the outflow of population from Arctic cities were identified [3].

The media provides rich empirical material for qualitative research, which, due to convergence processes (the transition from traditional forms to Internet publications, social networks, etc.), now has a large audience on the Internet [4, Lin T.T.C., Oranop C., p. 722]. As regards the Arctic, scientists have noted a dynamic growth in Arctic topics in the discourse of modern mass media [5, Gritsenko D., p. 9], as well as an increase in scientific research devoted to studying the context of the broadcast information agenda [6, Simakova A.V., Stepus I.S., p. 235].

The aim of this work is to analyze the information content of federal and regional media in terms of covering the processes of population migration in the Arctic zone of Russia. This topic has not been previously touched upon by Russian researchers and, in the context of demographic restrictions in the development of Arctic territories, seems to be an important and relevant area of research with scientific and practical significance. Understanding the problems, features and specifics of the information field created by the media on issues of reflecting Arctic population migrations can serve as a basis for adjusting the information model for creating thematic content in the media on the issues under study and subsequently bring results in attracting and retaining the population in the AZRF.

Materials and methods

In order to achieve the research goal, the content analysis was used, which is a traditional method for studying media materials [7, Macnamara J.R.]. This method has proven itself successfully in conducting similar content-analytical studies in various areas of regional development, for example, on issues of media coverage of family and demographic policy [8, Rostovskaya T.K., Vasilyeva E.N.], environmental issues [9, Kosovac A., Shermon A., O'Donnell E. et al.], the image of the

territory as a whole [10, Zaitseva L.A., Kuznetsova A.M., Napalkova I.G.], modern medicine and healthy lifestyle [11, Nikolskaya A.V., Kostrigin A.A.; 12, Frolova T.I., Striga E.A.] and others.

For the purpose of conducting a content analysis of the media on the coverage of migration processes in the AZRF regions, a research program was developed that allows not only studying the popularity and “demand” for the phenomenon of Arctic migrations in the news space, but also determining the nature of news messages and identifying related semantic elements. In accordance with the program, the object of the study was publications and news messages of federal and regional media (hereinafter referred to as media materials) on the Internet, the content of which touches on the topic of population migration in the AZRF; the subject was the features and context of media coverage of the migration situation in the AZRF. To achieve the research goal, the following tasks were consistently solved:

- determining the list of media outlets and identifying media materials that directly or indirectly touch upon the topic of population migration in the AZRF;
- determining the quantitative characteristics of media materials devoted to the topic of population migration in the AZRF;
- identifying the context and semantic characteristics of media materials on the migration situation in the AZRF;
- identifying regional differentiation in the broadcast media agenda affecting the migration situation in the AZRF;
- summarizing the conclusions on the nature of information coverage of the Arctic migration phenomenon in media materials and formulating recommendations for improving the information model for creating thematic content in the media in order to shape public opinion on migration processes in the AZRF, including facilitating the attraction of the population to the AZRF.

At the first stage of the study, the operationalization of the main concepts was carried out, and a number of research questions were formulated, such as: how often is the topic of population migration in the AZRF touched upon in the media agenda, what is its intensity and dynamics over time? How is the direction of migration covered, in particular the attraction and outflow of the population? What are the main reasons for the outflow of the population covered? What mechanisms for attracting and retaining the population in the AZRF are given attention in the media? Is there a relationship between the intensity of media coverage of migration issues and statistical indicators? What is the emotional focus of the media’s information agenda regarding population migration in the AZRF? The research questions formed the basis for the development of semantic units for conducting content analysis (analysis categories, analysis units, and counting units), which were used to create a coding system. The final system of analysis categories (13 units) includes formal characteristics of the publication (year, publication topic, mention of actors, availability of statistical data, etc.) and reveals their thematic characteristics (economic/demographic view of migration, direction of migration flow, reasons for outflow from the AZRF

and mechanisms for attracting population to the AZRF, etc.). Units of analysis and corresponding codes (88 units) were established for each category.

Ten media outlets on the Internet were selected for content analysis, including one federal outlet (Rossiyskaya Gazeta) and nine regional outlets, with one source for each Arctic region. The chronological framework of the publications covers 4 years for the period from 01.01.2020 to 31.12.2023. This allows tracking the nature and dynamics of the topic under study from 2020, as the beginning of a new stage in the socio-economic development of the Arctic territories due to the adoption of the most important strategic documents regarding the AZRF, to the present day. The choice of the mass media was determined by the high rating of the source (Medialogia rating), as well as the convenience of marking the pages of the site for automated collection of media materials¹. After collecting the news messages, the collected array was automatically filtered²: 1) for regions partially included in the AZRF, a preliminary filtering for belonging to the AZRF was carried out, in which the keywords were “Arctic”, “arctic”, as well as the names of municipalities and large settlements belonging to the AZRF; 2) the second type of filtering is based on the presence of a migration component in the article, i.e. by keywords characterizing population migration (the list was compiled in advance and includes keywords that determine the presence in the article of the fact of migration as a socio-economic process and movement).

At the final stage, a “manual method” was used to form a sample of meaningful media publications: the researchers reviewed the filtered articles and made informed decisions based on their own ability to understand the text and relate it to the research objectives³. The selection logic was based on excluding articles that were automatically included in the sample (e.g., “migration of animals/birds, not population”, “attracting investments, not population”, etc.), topics that are not the object of the study (e.g., foreign labor migration, crime news, etc.), as well as duplicate materials.

As a result of such a multi-stage selection, about 250 thousand news messages were collected at the first stage; of these, 62 thousand news messages were selected using keywords characterizing population migration and belonging to the AZRF; then, based on the results of expert selection, the final sample covered 735 media materials. Thus, the sample was comprehensive and included all publications related to migration processes in the AZRF and corresponding to the goals and objectives of the study. The characteristics of the final sample are presented in Table 1.

Table 1

Empirical objects of the study selected for content analysis by AZRF regions

AZRF region	Media name, Internet address	Number of media materials included in the final sample
AZRF as a whole	Rossiyskaya Gazeta; https://rg.ru/	102
Yamalo-Nenets AO	Information agency “SEVER-PRESS”;	170

¹ Python programming language, Selenium, Requests, BeautifulSoup libraries.

² Python programming language, pymorphy2 and nltk libraries.

³ Polukhina E.V. (eds.) Practices of qualitative data analysis in social sciences: textbook. Moscow, HSE Publ., 2023, 383 p.

	https://sever-press.ru/	
Murmansk Oblast	Information agency "Nord-News"; https://nord-news.ru/	101
Nenets AO	Nenets information agency — 24; https://nao24.ru/	92
Arkhangelsk Oblast	Information agency "Region 29"; https://region29.ru/	70
Komi Republic	Information agency "Komiinform"; https://komiinform.ru/	75
Krasnoyarsk Krai	Online publication "Taimyr Telegraph"; https://www.ttelegraf.ru/	67
Republic of Karelia	Information agency "Respublika"; https://rk.karelia.ru/	23
Chukotka AO	Internet portal of the newspaper "Krayniy Sever"; https://www.ks87.ru/	18
Republic of Sakha (Yakutia)	Sakhaday; https://sakhaday.ru/	17
Total		735

Content analysis of the collected array of media materials was carried out using the specialized program QDA Miner Lite. The developed coding system, organized in a hierarchical order and including the names of categories and a set of codes for each category, was entered into the program, and the texts of media materials included in the final sample were imported. The content analysis was based on traditional text segmentation, i.e., the selection of text fragments and the assignment of category codes to them, as recorded in the initial version of the categorical apparatus or identified directly in the reading process [13, Miles M.B., Huberman M.A., pp. 55–69; 14, Semenova A.V., Korsunskaya M.V., pp. 10–19].

The text was partially encoded using the Text Retrieval tool (text information search), which, using logical operators, symbols, and thesauri, allows searching not only for single words, but also for related phrases, and linking units of counting to the corresponding codes and categories [8, Rostovskaya T.K., Vasilyeva E.N., p. 241]. Upon completion of the news text encoding, the Coding Frequencies tool (coding statistics) was used to calculate the representation of each unit of analysis for the specified codes and categories.

For a qualitative interpretation and identification of the semantic characteristics of information (context) about migration in the Arctic, all encoded texts of news messages were downloaded with links to the specified codes and categories using the retrieve segments function. The table containing the downloaded fragments of media news reports with assigned codes and categories included 6,865 lines, which were subjected to further qualitative analysis.

One of the elements of the qualitative analysis was the definition of the context of the media information agenda (positive, neutral, negative) about migration processes in the Arctic. Artificial intelligence technologies were used for the initial definition of the context of the information agenda of media news fragments containing a migration component. A model for multi-class classification "cointegrated/rubert-tiny-sentiment-balanced" was used, configured to classify the emotional coloring of Russian-language texts. The results of the neural network were then verified by researchers.

Results of content analysis: general features of media information content

Quantitative characteristics of the formed information array of 735 media materials indicate that migration processes in the AZRF are not covered intensively enough — on average, only about 0.5% of the total number of articles in the analyzed media for 2020–2023 were devoted to the issues under study. In addition, in the selected media articles, migration in the AZRF was the main topic of publication in only 233 articles, and was mentioned indirectly in 502 articles, which indicates fragmentary media coverage of migration processes in the AZRF. In dynamics by years, an annual systematic increase in media attention to the problem of Arctic migrations is observed: from 133 publications in 2020 to 238 in 2023.

Analysis of the emotional tone of media news fragments, carried out using neural network algorithms with subsequent expert verification, showed that the prevailing tone of the information agenda (58.6% of text fragments reflecting migration processes in the AZRF) is neutral; the share of news fragments about migration in the AZRF with positive and negative tones is 29.4% and 12%, respectively. At the same time, clearly negative news items concern outbound migration processes and more often reflect a demographic view of migration, which leads to a decline in population, the risk of depopulation of Arctic territories, and the loss of young working-age residents of the AZRF:

*“This is a very serious problem, and if it is not solved in the near future, people will simply **leave**, and we will get dead cities...”⁴;*

*“We have a bad situation with the outflow of youth. The mood among most of them is to pack their bags after college and **leave**. It is bad that young people do not see a future for themselves here...”⁵.*

In most cases, news items in the media that report on the influx of migrants to the AZRF have a positive tone, reflecting an economic view of population migration as an opportunity to supply the labor market with qualified specialists and eliminate staff shortages:

*“We are interested in **attracting** the best specialists — educated and promising...”⁶;*

*“Improvements in social and infrastructure elements are shaping the brand of the “new generation city”, which helps to **attract** highly qualified specialists from other regions, including for work in related fields...”⁷.*

It is important to note that the most actively analyzed media broadcast the influx of specialists for the social sphere of the regions — medical and educational workers attracted within

⁴ Preferential mortgage at 2% will be extended to the entire Arctic. URL: <https://rg.ru/2023/05/11/dom-na-severe.html> (accessed 28 August 2024).

⁵ Alexander Tsybulskiy named the main problem of the Arkhangelsk Oblast. URL: <https://region29.ru/2020/04/28/5ea81c26764de97381753482.html> (accessed 28 August 2024).

⁶ Yamal has introduced stipends for future doctors who will come to work in the Okrug. URL: <https://severpress.ru/news/obrazovanie/dmitrij-artjuhov-uchredil-stipendiju-dlja-studentov-medikov/> (accessed 28 August 2024).

⁷ Large-scale renovation will transform Norilsk into the city of tomorrow. URL: <https://rg.ru/2022/03/23/masshtabnaia-renovaciia-prevratit-norilsk-v-gorod-zavtrashnego-dnia.html> (accessed 28 August 2024).

the framework of federal and regional programs. Among all the publications covering the incoming migration flow to the Arctic regions, 30% of cases referred specifically to relocation to the AZRF under various programs for attracting qualified personnel (“Zemskiy doctor/paramedic”, “Zemskiy teacher”, “Doctors needed by Yamal”, “Course to the North”, “Arctic challenge”, etc.), providing a wide range of bonuses and preferences that are most important when moving. Such media reports often reveal “dry” statistics on the number of people who moved within the framework of state support programs⁸, and less frequently broadcast the positive experiences of migration in the form of stories/interviews with specialists who have moved to the Arctic⁹.

As the main way to attract people to the AZRF, the analyzed media most often covered material preferences received by migrants upon employment: provision of housing — rental/on preferential terms/with compensation for payment (26% of mentions in the category of measures to attract the population), relocation expenses/one-time payments (22%), northern allowances and benefits (15%), decent wages (10%):

*“The **arrival** of specialists was facilitated by regional support programs — payment of full northern allowances from the first day of work, relocation expenses and assistance with housing...”¹⁰;*

*“Currently, the main task for the development of the region is to make it attractive for living. This primarily concerns housing and income levels, which will **attract** people...”¹¹;*

*“When **moving**, new employees will be paid for travel, luggage, relocation expenses for settling into their new place of residence, and will be provided with housing. The company guarantees all its employees a decent salary, which has increased by 20% this year, a regional coefficient (80%), and a percentage bonus (80%) to their salary from the first day of work...”¹².*

⁸ More than 20 doctors wished to become zemstvo doctors in the Arctic. URL: <https://nord-news.ru/news/2021/01/20/?newsid=129129> (accessed 28 August 2024).

⁹ “I don't like to talk, I like to do”: a math and physics teacher returned to work in his native Kostomuksha from St. Petersburg. URL: <https://rk.karelia.ru/special-projects/realnye-dela/ne-lyublyu-govorit-lyublyu-delat-uchitel-matematiki-i-fiziki-vernulsya-rabotat-v-rodnyuyu-kostomukshu-iz-peterburga/> (accessed 28 August 2024).

¹⁰ More than 500 doctors have come to work in the Yamalo-Nenets Autonomous Okrug over the past year and a half. URL: <https://sever-press.ru/news/sever-press/bolee-500-vrachej-priehali-na-rabotu-v-janao-za-poslednie-poltoragoda/> (accessed 28 August 2024).

¹¹ Preferential mortgage at 2% will be extended to the entire Arctic. URL: <https://rg.ru/2023/05/11/dom-na-severe.html> (accessed 28 August 2024).

¹² Norilsk Nickel opened recruitment center in Ufa. URL: <https://www.ttelegraf.ru/news/nornikel-otkryl-czentr-podbora-personala-v-ufo/> (accessed 28 August 2024).

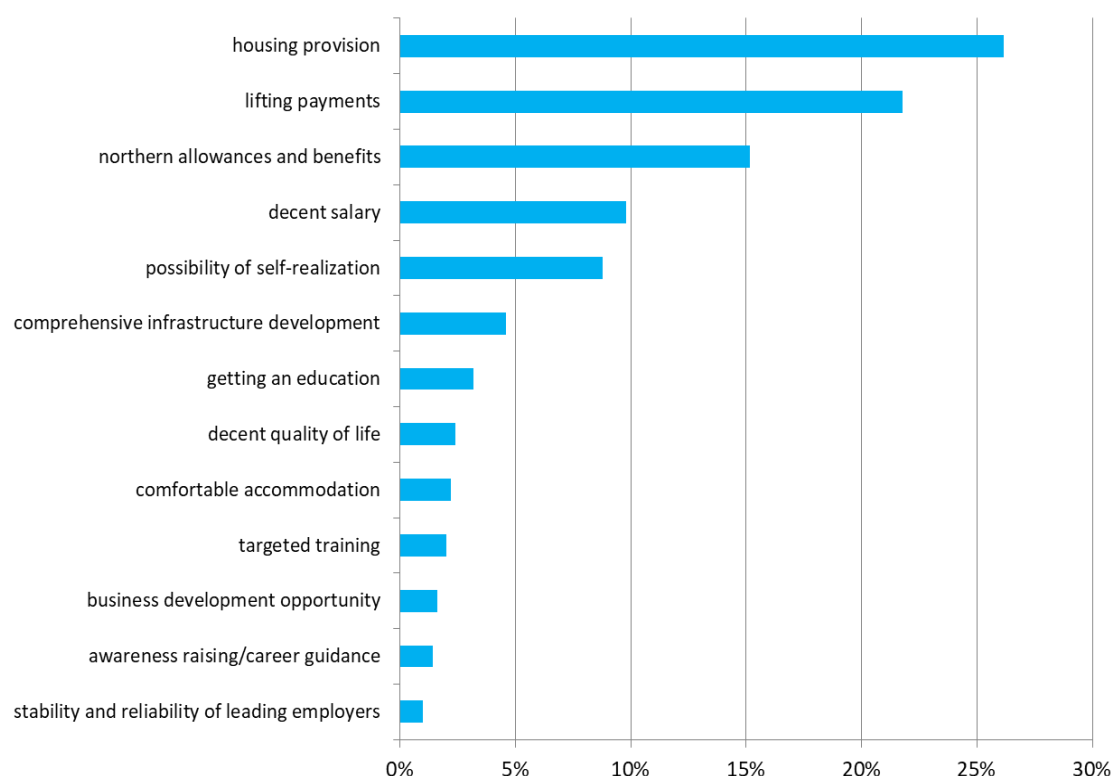


Fig. 1. Measures contributing to the attraction of population to the AZRF, broadcast in the media materials ¹³.

It is worth noting that the dominance of material incentives, revealed during the content analysis of the media, is consistent with the results of scientific research in the field of mechanisms for attracting human resources to the Arctic zone of Russia. For example, a number of sociological and economic studies have shown that material incentives, including the provision of rental housing, high wages, additional paid leave [15, Galimullin E.Z., p. 107], as well as northern additional payments and allowances of a compensatory nature [16, Volgin N.A., Shirokova L.N., Mosina L.L., pp. 37–44], play a primary role in the decision-making process on potential migration to the AZRF.

The second place in terms of the frequency of references in the analysed media is occupied by the block of factors of population attraction associated with the creation of favourable living conditions, infrastructure development and improvement of the quality of life in the Arctic territories — in total, these factors account for about 10% of mentions in the category of measures to attract the population. In the harsh natural and climatic conditions of the Arctic zone of Russia, these factors, along with material incentives, compensate for the difficulties of life in the northern latitudes:

“Comfortable living in the North plays no less important role than income. Cities in high latitudes should be even more modern and comfortable than in the middle zone in order to compensate people for the difficulties of life in high latitudes...” ¹⁴;

¹³ Source: compiled by the authors on the basis of the results of content analysis.

¹⁴ It has been decided to simplify entry into the Arctic for labor migrants. URL: <https://rg.ru/2021/06/22/reg-szfo/trudovym-migrantam-reshili-uprostit-vezd-v-arktiku.html> (accessed 28 August 2024).

“To make people want to live in Komi, comfortable conditions are created inside the cities. Yard areas, sports grounds, children’s playgrounds — young people who come to work in Usinsk will also be able to relax”¹⁵.

In media coverage of the factors contributing to the attraction of the population to the AZRF, only 9% of the cases focused on such an “intangible” factor as the opportunity for self-realization. From this point of view, the Arctic is presented in the media as a springboard for growth, a quick start to a career, and gaining new unique professional experience in knowledge-intensive sectors of the Arctic economy or in the social sphere of strategically important Arctic territories (*“Another piece of advice from the governor is to go to regions that are promising for a quick career. Today, these are the Far East and the Arctic. Taking risks and going to uncomfortable conditions, leaving large cities, is the path to an early career...”¹⁶, “According to him, today’s 20-30-year-old citizens are characterized by a readiness to work on large-scale and significant projects for the country, a desire to quickly advance up the career ladder, and high mobility, which implies a lack of fear of moving and changing environments. Working in the Arctic fits these criteria very well...”¹⁷*).

The problem of population outflow from the Arctic territories and discussion of its causes are not often recorded in the media (in the total array of analyzed publications, the share of news about the outgoing population flow did not exceed 20%). The most frequently mentioned reasons for the outflow of population from the Arctic territories in media materials are objective — harsh natural and climatic conditions and reaching retirement age. In addition, socio-economic factors are highlighted — high cost of living, low availability of health care and education services, insufficient infrastructure development, economic stagnation in a number of Arctic regions. At the same time, the media information agenda on the studied issues for each Arctic territory has its own specifics and requires separate consideration.

Regional specifics of the media’s broadcast information agenda

The study revealed regional differentiation in the media’s broadcast information agenda on population migration in the AZRF both in terms of quantitative characteristics and semantic content. Fig. 2 reflects the relative and absolute indicators of intensity: the number of media news publications on migration in the Arctic territories included in the final sample, as well as the share of selected publications on migration topics in the total number of publications for the Arctic territories. Table 2 shows the frequency of counting units included in the category “Direction of migration” in the regional context.

¹⁵ Usinsk became an example of Arctic territories development for federal experts. URL: <https://komiinform.ru/news/238481> (accessed 28 August 2024).

¹⁶ On the same wavelength with students. Yamal became the first region to act as an employer. URL: <https://severpress.ru/news/sever-press/na-odnoj-volne-so-studentami-jamal-stal-pervym-regionom-vystupivshim-v-rol-i-rabotodatelja/> (accessed 28 August 2024).

¹⁷ The most relevant professions in the Arctic have been named. URL: <https://rg.ru/2021/01/26/reg-szfo/nazvany-samy-e-aktualnye-professii-v-arktike.html> (accessed 28 August 2024).

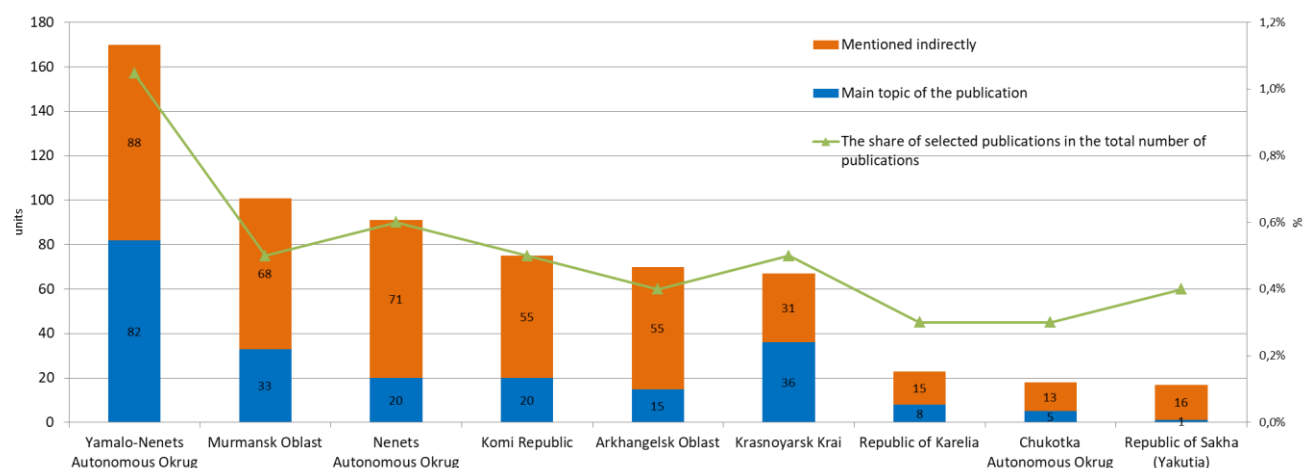


Fig. 2. Number of news publications in the media of the Arctic regions on the topic of population migration to the AZRF, 2020–2023 ¹⁸.

According to the analysis, the media of the Republic of Karelia, the Republic of Sakha (Yakutia) and the Chukotka Autonomous Okrug are the least intensive and in-depth in covering this topic. The few publications of the mass media of these regions touching upon the topic of migration are devoted to citing decisions of the federal center regarding the AZRF — the Arctic strategy, the “Arctic hectare” and “Arctic mortgage” programs as measures to restrain the migration outflow and stimulate the inflow of population, as well as state support programs for attracting specialists in the fields of education and healthcare:

*“Measures to implement the Arctic Strategy and develop the Arctic zone will help to **retain people** in the northern territories of Karelia...” ¹⁹;*

*“The launch of the mortgage program has become a serious support for families and makes the region more **attractive for the relocation** of young specialists...” ²⁰;*

*“Despite the availability of good financial support in the form of two million rubles under the federal program “Zemskiy Doctor”, people are **reluctant to come** to us, since there is a shortage of comfortable housing, high prices for travel and food, weak Internet and a lack of recreational areas...” ²¹.*

The analyzed media materials of the Republic of Karelia practically do not discuss the problem of outflow of population from the Arctic territories of the region, which looks like a clear contradiction against the background of continuous migration loss of population from the Arctic territories of the Republic of Karelia from year to year, which is one of the key factors of resource constraints on the development of the Karelian Arctic and requires urgent and systemic solutions [17, Volkov A.D., Tishkov S.V., pp. 28–29].

¹⁸ Source: compiled by the authors on the basis of the results of content analysis.

¹⁹ Irina Kuzicheva: Development of the Arctic will help keep people in the northern territories. URL: <https://rk.karelia.ru/social/irina-kuzicheva-razvitie-arktiki-pomozhet-zakreplit-lyudej-na-severnyh-territoriyah/> (accessed 28 August 2024).

²⁰ There is the first recipient. URL: <https://www.ks87.ru/46/10909> (accessed 28 August 2024).

²¹ Chief physician of the Olenek central district hospital Nazar Petrov: “Special attention is paid to healthcare in the Arctic regions”. URL: <https://www.sakha.gov.ru/news/front/view/id/3244138> (accessed 28 August 2024).

Table 2

Frequency of counting units included in the category "Direction of migration" in the regional context

Migration direction	Yamalo-Nenets Autonomous Okrug	Murmansk Oblast	Nenets Autonomous Okrug	Komi Republic	Arkhangelsk Oblast	Krasnoyarsk Krai	Republic of Karelia	Republic of Sakha (Yakutia)	Chukotka Autonomous Okrug
Population inflow	142 (72.4%)	62 (47.7%)	77 (73.3%)	30 (33.7%)	26 (34.2%)	41 (52.5%)	17 (65.4%)	6 (35.3%)	13 (65.0%)
Population outflow	6 (3.1%)	44 (33.8%)	13 (12.4%)	28 (31.5%)	32 (42.1%)	10 (12.8%)	1 (3.8%)	8 (47.1%)	3 (15.0%)
Population consolidation	10 (5.1%)	17 (13.1%)	7 (6.7%)	13 (14.6%)	14 (18.4%)	7 (9.0%)	7 (26.9%)	3 (17.6%)	1 (5.0%)
Out-flow_resettlement (under federal and regional programs)	22 (11.2%)	-	4 (3.8%)	10 (11.2%)	-	16 (20.5%)	-	-	1 (5.0%)
In-flow_resettlement (under resettlement programs for compatriots, residents of LPR, DPR)	7 (3.6%)	5 (3.8%)	4 (3.8%)	6 (6.7%)	4 (5.3%)	-	1 (3.8%)	-	2 (10.0%)
Shift migration	9 (4.6%)	2 (1.5%)	-	2 (2.2%)	-	4 (5.1%)	-	-	-
Total	196 (100%)	130 (100%)	105 (100%)	89 (100%)	76 (100%)	78 (100%)	26 (100%)	17 (100%)	20 (100%)

The media of the Murmansk and Arkhangelsk Oblasts form public opinion on the migration situation more comprehensively. The analyzed media publications not only cover the problem of population outflow, which is relevant for these Arctic territories (this topic is touched upon in 34% and 42% of publication fragments, respectively), but also develop further active dialogue on the topic of containing migration outflow and population retention with the participation of local authorities. In addition to basic measures, such as improving the quality of life of the population, solving the housing issue, developing the economy and social infrastructure, the media also focus on new incentives — the creation of public spaces, creative high-quality urban environment, leisure infrastructure adapted to the space of the northern regions and the challenges of the time:

*"We will, of course, first of all, demolish abandoned buildings in order to improve the picture, to free up space, because we have such beautiful nature. And then the internal state of people will change, they will **want to stay here...**"²²;*

²² Oksana Astakhova: The hospital campus in Murmansk is a favorite project. URL: <https://nord-news.ru/society/2020/08/26/?newsid=124700> (accessed 28 August 2024).

*“Our task is to motivate young people to **live and work in our region**, and we are currently actively working on it... And there are two directions: to show young people the prospect of using their professional skills and to create conditions for high-quality self-realization outside of work and home, to improve a high-quality urban environment”²³;*

*“One of my tasks at the moment is to **reduce the outflow** of residents of the Arkhangelsk Oblast — to make sure in the cultural space that people want to stay here”²⁴.*

At the same time, the problem of population outflow is discussed comprehensively both from the standpoint of general demographic trends and from the position of the labor market and the need to preserve the social and labor potential of these regions, to overcome staff shortages in the leading sectors of the economy and social sphere.

The media of the Murmansk and Arkhangelsk Oblasts broadcast the vector of incoming migration through the news, mostly covering the attraction of medical and pedagogical personnel, as well as the opportunities for obtaining quality education in the universities of these regions. According to the study by A.V. Simakova and V.A. Gurtov²⁵, among all the Arctic territories, the professional education systems of the Arkhangelsk and Murmansk Oblasts are characterized by the highest potential for providing admission places for graduates of the 9th and 11th grades. This advantage allows them not only to retain local youth, but also to attract students from other regions for training:

“In particular, NArFU conducted an extensive career guidance campaign not only in the Arkhangelsk Oblast, but also beyond its borders. The result was the enrollment of students from different regions: the Kaliningrad Oblast, the Far Eastern and Southern regions of Russia, regions neighboring Pomorie, from St. Petersburg and Moscow”²⁶;

*“Our task is not only to make sure that the children of the Murmansk Oblast have the opportunity to get quality education in the region, but also **to attract** students from other regions to Murmansk, so that Murmansk becomes an increasingly student city”²⁷.*

In addition, in the issue of attracting talented and ambitious young people, the leadership of these regions relies on the creation of world-class scientific and educational campuses, which is also reflected in the media:

*“The Arctic Star campus is a very powerful growth point for the Arkhangelsk Oblast as an Arctic region. And, of course, this is a very attractive place not only for residents and visitors of the city, but also for young people who **can come to us as students and researchers**”²⁸;*

²³ Alexander Tsybulskiy spoke at the forum “Territory of Meanings”. URL: <https://region29.ru/2020/07/23/5f19a16db0fc18a3ff698d92.html> (accessed 28 August 2024).

²⁴ Book, exhibition and film: on the eve of its 50th anniversary, the Youth Theatre is preparing new projects. URL: <https://region29.ru/2022/11/21/637b749e808803064405e842.html> (accessed 28 August 2024).

²⁵ Simakova A.V., Gurtov V.A. Potential of the professional education system of the territories of the Arctic zone of Russia. URL: <https://lll21.petrus.ru/journal/article.php?id=6053> (accessed 27 August 2024).

²⁶ Nearly two thousand applicants have been admitted to NArFU. The university has announced additional admission to budget places. URL: <https://region29.ru/2022/08/10/62f399ef0afd01c5ff2c7a52.html> (accessed 28 August 2024).

²⁷ The Ministry of Education of the Arctic will develop a mechanism for training specialists for Arctic projects. URL: <https://nord-news.ru/news/2020/03/25/?newsid=119947> (accessed 28 August 2024).

*"By investing in the renovation of the university, we will not just renovate the campus, we will get a fundamentally new university that will become the visiting card of the entire region, applicants from all over the country and even from all over the world will come to us"*²⁹.

The media of the Yamalo-Nenets Autonomous Okrug (hereinafter referred to as YaNAO) broadcasts the topic of population migration in the most comprehensive and positive way. More than 70% of all analyzed news fragments cover the incoming migration flow. The main context of this agenda is the economic view of migration as an opportunity to provide personnel for the labor-deficient regional labor market. The image of an attractive Yamal as a region of high standards of quality of life with many bonuses that a person receives when moving (northern allowances and benefits, relocation expenses, attractive wages, housing, etc.) runs through all news articles:

*"Yamal is a desirable place **to come**, many people strive to Yamal. Our budget sector has high standards, good equipment, high salaries. Yamal has a good reputation"*³⁰.

The regional media pays special attention to the influx of scarce personnel under various programs to attract specialists at both the federal level ("Zemskiy doctor/paramedic", "Zemskiy teacher") and the regional level ("Landmark: Yamal", "Doctors needed by Yamal", "Going to Yamal", "New teacher of Yamal", etc.).

More than half of all news fragments that recorded the incoming flow of population are devoted to post-educational migration of young specialists after graduation from universities outside the YaNAO. Such news reports both broadcast the actual positive experience of young professionals after graduating from universities outside Yamal³¹ and sound like a call to action "come back, you are welcome in Yamal!"³² A special role in this information flow is given to the implementation of the regional project "Landmark: YAMAL", due to which successful university graduates return to work in their native region³³.

The problem of population outflow as a demographic threat or a negative phenomenon is practically not covered in the news space of the Yamalo-Nenets Autonomous Okrug media. News related to resettlement to other regions due to emergency housing or completion of northern work experience is presented exclusively in a positive format, they do not raise the problem of population decline, and the main emphasis is placed on the region's fulfillment of its social obliga-

²⁸ The student campus "Arctic Star", which will be built in Arkhangelsk, will be able to accommodate more than four thousand people. URL: <https://region29.ru/2022/12/09/6392eb7a69e21987ff511cb2.html> (accessed 28 August 2024).

²⁹ The Minister of Construction of the Murmansk Oblast met with the management of the Moscow State Technical University. URL: <https://nord-news.ru/news/2020/06/23/?newsid=122779> (accessed 28 August 2024).

³⁰ In the Yamal-Nenets Autonomous Okrug, college graduates will be compensated for housing rental costs. URL: <https://sever-press.ru/news/obrazovanie/vypusknikam-kolledzhej-janao-budut-kompensirovat-zatraty-na-sem-zhilja/> (accessed 28 August 2024).

³¹ Hospitals in Novy Urengoy have been replenished with specialized doctors. URL: <https://sever-press.ru/news/obschestvo/bolnitsy-novogo-urengoja-popolnilis-uzkimi-spetsialistami/> (accessed 28 August 2024).

³² Vladimir Yakushev: "Yamal is an attractive region for young specialists". URL: <https://sever-press.ru/news/sever-press/vladimir-jakushev-jamal-privlekatelnyj-region-dlja-molodyh-specialistov/> (accessed 28 August 2024).

³³ "Landmark: Yamal". University graduates return to work in the Okrug. URL: <https://sever-press.ru/news/obrazovanie/orientir-jamal-vypuskniki-vuzov-vozvrashhajutsja-rabotat-v-okrug/> (accessed 28 August 2024).

tions to resettle the population within the framework of existing programs³⁴. The problem of educational migration of young people outside the region, which is quite common due to the lack of higher education institutions in the YaNAO [18, Stepus I.S., Simakova A.V., Gurtov V.A. et al., p. 84], is also not covered in a negative context, but is presented by regional media as “admission to the best universities in the country”:

*“Yamal is a region with a labor shortage. We need specialists, but we need the best ones. The best specialists from different regions of the country **come to work** in Yamal, but we always want our children who grew up here to have the first opportunity. And for this they need to get a good education at school, enter the best universities and **return home** as excellent young specialists”³⁵.*

The information agenda of the Nenets Autonomous Okrug media covers the vector of incoming migration quite often (more than 70% of the analyzed news fragments are devoted to the inflow of population). However, the majority of such publications have the format of interviews or presentation of biographies of people of different professions, which contain only indirect mentioning of the fact of the move to the district. Such news stories do not aim to further reveal the positive experience of migration, but only tell about the lives of local residents who once moved to the region^{36, 37}.

The media of the Arctic territories of the Komi Republic cover both incoming and outgoing migration almost equally (the shares of publications devoted to the inflow and outflow of the region's population are 30% and 28%, respectively). However, according to the selected news fragments, the main focus of the migration policy of Komi is exclusively on attracting young personnel in the healthcare sector to the detriment of specialists in other areas of training^{38, 39}.

More than half of the analyzed media materials of the Arctic territories of Krasnoyarsk Krai present an incoming migration flow, which is comprehensively disclosed from the point of view of staffing of the region. A special role in this context is given not only to attracting specialists to the social sector, but also to the image of a stable and reliable employer represented by the city-forming enterprise Norilsk Nickel, which actively offers its employees to move to permanent resi-

³⁴ Three programs for resettlement from the Far North regions are in effect in Yamal. URL: <https://severpress.ru/news/sever-press/na-jamale-dejstvuet-tri-programmy-po-pereseleniju-iz-rajonov-krajnego-severa/> (accessed 28 August 2024).

³⁵ Dmitry Artyukhov spoke about the achievements of schoolchildren in scientific and technical activities at the Congress of Young Scientists. URL: <https://sever-press.ru/news/sever-press/dmitrij-artjukhov-rasskazal-o-dostizhenijah-shkolnikov-v-nauchno-tehnicheskoy-deyatelnosti-na-kongresse-molodyh-uchenyh/> (accessed 28 August 2024).

³⁶ 16 thousand hours in the Sky. Interview with Chief of flight staff Askhat Badrutdinov. URL: <https://nao24.ru/materialy/intervyu/19504-glavnoe-v-grazhdanskoy-aviacii-bezopasnost-poleta.html> (accessed 28 August 2024).

³⁷ Never seen snow, but went to work in the Far North. Interview with the head of the weather station in Shoyna. URL: <https://nao24.ru/obshestvo/36498-nikogda-ne-videla-sneg-no-poehala-rabotat-na-krajnij-sever-intervju-s-nachalnikom-ajerologicheskoy-meteostancii-v-shojne.html> (accessed 28 August 2024).

³⁸ In Komi, there are republican measures to support doctors in addition to federal ones. URL: <https://komiinform.ru/news/253029> (accessed 28 August 2024).

³⁹ Staffing situation with doctors in Komi will be solved "step by step" — Vladimir Uyba. URL: <https://komiinform.ru/news/208845> (accessed 28 August 2024).

dence or shift employment with the provision of highly competitive wages, a wide social package, rental housing and other preferences:

*“This year, the Norilsk Division faces an even more ambitious task of attracting more than six thousand workers. This is a big challenge for all personnel services of the Norilsk Division. Therefore, we plan to **attract people from the mainland** and open recruitment centers in large metallurgical cities of the country, where qualified specialists are available”*⁴⁰;

*“Norilsk Nickel is interested in **attracting** the best personnel to Norilsk, where large investment projects of national scale are currently being implemented. We are ready not only to provide highly professional specialists with stable work, but also to reward them well for it. The company cares about their well-being and health. There is another important advantage — the company is ready to support employees in their desire for personnel growth. And this is only a small part of the opportunities that working in our company provides”*⁴¹.

Stimulation of population inflow to the region through the brand of a large industrial company favorably distinguishes the information agenda of the Krasnoyarsk Krai media. At the same time, the problem of population outflow from the Arctic territories of the region is not often discussed in the media. Most of such news articles are devoted to resettlement to regions with a favorable climate (“to the mainland”), which is carried out under federal and regional programs, including with large-scale financial support from the Norilsk Nickel company⁴².

Discussion and conclusion

The reduction of population in the Arctic territories of Russia due to natural and migration processes is considered by the state as one of the dangers, challenges and threats that pose a risk to the development of the Arctic zone and ensuring the national security of the country⁴³. The need to preserve and attract human capital, without which it is impossible to imagine the future of the Russian Arctic, is of particular importance in the new socio-economic circumstances. Obviously, this task requires a comprehensive approach in various areas of state policy, one of which, according to experts, is a broad information and educational campaign regarding the opportunities that exist in the Arctic [15, Galimullin E.Z., p. 107].

The most important role in shaping the positive image of life and work in the Arctic territories of Russia is played by the mass media, which, as is known, in addition to their main information function, influence the formation of public opinion [19, Hu H., Chen W., Hu Y., p. 1]. Thanks

⁴⁰ In 2022, the Norilsk division plans to attract more than six thousand workers. URL: <https://www.ttelegraf.ru/news/v-2022-godu-norilskij-divizion-planiruet-privlech-bolee-shesti-tysyach-rabotnikov/> (accessed 28 August 2024).

⁴¹ Norilsk Nickel opened first personnel recruitment center in the Urals. URL: <https://www.ttelegraf.ru/news/nornikel-otkryl-pervyj-na-urale-centr-po-podboru-personala/> (accessed 28 August 2024).

⁴² More than 6 thousand families have purchased housing on the mainland under the resettlement program. URL: <https://www.ttelegraf.ru/news/bolee-6-000-semey-priobrel-i-jile-na-materike-po-programme-pereseleniya/> (accessed 28 August 2024).

⁴³ Strategy for Developing the Russian Arctic Zone and Ensuring National Security until 2035: Decree of the President of the Russian Federation No. 645 of October 26, 2020. URL: <http://static.kremlin.ru/media/events/files/ru/J8FhckYOPAQQfxN6Xlt6ti6XzpTVAvQy.pdf> (accessed 28 August 2024).

to a well-chosen information agenda, news publications in the media of the Arctic regions of the Russian Federation can contribute to the incoming migration of the population, informed in advance about the material and non-material advantages of employment and settlement in the territories of the Arctic Zone of the Russian Federation, as well as restrain the outgoing migration of local residents.

However, the results obtained during the study primarily demonstrate that, in general, public opinion on issues of population migration to the AZRF is not formed intensively in the media studied (the share of publications on migration topics is insignificant — about 0.5% in the total number of publications for the Arctic territories) and fragmentary (this topic rarely becomes the central topic of news publications). According to the authors of the article, it is necessary to increase the total number of publications in the media on the topic of population migration in the AZRF as a traditionally important socio-economic issue for the Arctic territories. In addition, recognition of the problem of migration outflow of the population in the media for a number of Arctic regions, followed by a discussion of the possibilities of its solution with representatives of government bodies and the expert community should not be a “weak point”, but the first step towards solving this problem.

Secondly, news articles about the inflow of medical and pedagogical specialists under government support programs are the most frequent sources of communication, which focus exclusively on the material methods of supporting arriving specialists, leaving readers without attention to the non-material advantages of starting a career in the Arctic territories. At the same time, researchers note that today, the following factors play a significant role in motivating people to move to the Arctic: the opportunity for professional development and acquiring unique professional experience; a “shortened” career ladder; social recognition and involvement in strategic projects for the development of Arctic territories; a comfortable balanced rhythm of life in Arctic cities; a lower level of social race compared to large cities, etc. [20, Khotyeva E.A., p. 180]. For the modern generation, “long rubles and northern benefits” are a key, but far from the only motive that determines decisions to move to the Arctic regions. From this point of view, the focus on different aspects of motivation for moving to the Arctic is an important direction for improving the information model of thematic content creation in the media on the issues under study.

The study has shown that the agenda constructed by the media regarding migration processes in the Russian Arctic is largely informational in nature. The media considered practically do not implement political management in relation to increasing the motivation to attract and retain human resources in the Arctic territories. In the authors’ opinion, it is necessary to increase the proportion of news materials reflecting the positive experience of migration to the Arctic regions and providing a real motivation for moving in the format of stories/interviews, detailing the experience of moving, benefits and prospects. It is important to highlight not only successful examples of specialists moving to the social sector of the economy within the framework of state support programs, but also to broadcast the experience of specialists of other professions employed at

leading enterprises in the Arctic regions, as well as entrepreneurs developing small and medium-sized businesses in the Arctic territories. An important work in this direction should also be the broadcasting of news in the format of “Top reasons to live and work in the Arctic territories”, “Top reasons to move to the Arctic”, etc., based on branding elements of the Arctic territories, revealing their unique economic, political, socio-cultural and natural potential, the demand for specialists in the labor market and career opportunities.

Effective adjustment of the information model for broadcasting content on the topic of population migration in the Russian Arctic, taking into account the results of the conducted study, will allow the media not only to implement the function of informing, but also to act as a platform for the development of further dialogue on the topic of migration processes in the Arctic Zone of the Russian Federation, as well as to consolidate in the public consciousness the motives that contribute to attracting the population to the Arctic regions. The materials presented in the article supplement the pool of modern studies on the topic of population migration in the Arctic zone of the Russian Federation. The results of the study will be useful for specialists dealing with the development of Arctic territories, executive bodies of state power, scientists whose field of research is related to population migration, including in the Arctic regions of Russia [1, Stepus I.S., Averyanov A.O., Rodion I.V., p. 270], as well as the journalistic community.

A promising direction for future work is the study of Arctic migrations based on large-scale, non-reactive qualitative data contained on the Internet (specialized forums, communities on the social network VKontakte, blogosphere) and reflecting the public discourse of the online community on this topic.

References

1. Stepus I.S., Averyanov A.O., Rodion I.V. Review of Scientific Publications on the Study of Population Migration in the Russian Arctic. *Arktika i Sever* [Arctic and North], 2023, no. 52, pp. 270–286. DOI: <https://doi.org/10.37482/issn2221-2698.2023.52.270>
2. Mukomel V.I. Migration Studies: Sociological Dimension. In: *Scientific Research in the Field of Ethnicity, Interethnic Relations and History of National Policy. Proceedings of the Session of the Scientific Council of the Russian Academy of Sciences on Complex Problems of Ethnicity and Interethnic Relations*. Moscow, IEA RAS Publ., 2018, pp. 200–210.
3. Nedoseka E.V., Sharova E.N., Shorokhov D.M. Shrinking Cities of the Russian Arctic: Statistical Trends and Public Discourse on the Causes of Population Outflow. *Arktika i Sever* [Arctic and North], 2024, no. 54, pp. 169–189. DOI: <https://doi.org/10.37482/issn2221-2698.2024.54.169>
4. Lin T.T.C., Oranop C. Responding to Media Convergence: Regulating Multi-Screen Television Services in Thailand. *Telematics and Informatics*, 2016, vol. 33, iss. 2, pp. 722–732. DOI: <http://dx.doi.org/10.1016/j.tele.2015.07.005>
5. Gritsenko D. Vodka on Ice? Unveiling Russian Media Perceptions of the Arctic. *Energy Research & Social Science*, 2016, vol. 16, pp. 8–12. DOI: <https://doi.org/10.1016/j.erss.2016.03.012>
6. Simakova A.V., Stepus I.S. The Russian Arctic Image at the Present Stage of Development: Romance or Pragmatism? *Arktika i Sever* [Arctic and North], 2022, no. 49, pp. 234–251. DOI: <https://doi.org/10.37482/issn2221-2698.2022.49.234>
7. Macnamara J.R. Media Content Analysis: Its Uses, Benefits and Best Practice Methodology. *Asia Pacific Public Relations Journal*, 2005, vol. 6, no. 1, pp. 1–34.
8. Rostovskaya T.K., Vasilieva E.N. The Presentation of Family and Demographic Policy in the Media: Results of the All-Russian Study. *Science Journal of Volgograd State University. History. Area Studies*.

- International Relations*, 2022, vol. 27, no. 1, pp. 236–248. DOI: <https://doi.org/10.15688/jvolsu4.2022.1.20>
9. Kosovac A., Shermon A., O'Donnell E., Horne A., Mesikämnen E. Water Courses and Discourses: A Media Content Analysis of Environmental Water Reporting in Australia. *Environmental Science & Policy*, 2024, vol. 154, art. 103703. DOI: <https://doi.org/10.1016/j.envsci.2024.103703>
 10. Zaitseva L.A., Kuznetsova A.M., Napalkova I.G. Image of the Republic of Mordovia in the Media Volga Federal District (Based on Content Analysis of News Publications). *Sociopolitical Sciences*, 2020, vol. 10, no. 4, pp. 44–52. DOI: <https://doi.org/10.33693/2223-0092-2020-10-4-44-52>
 11. Nikolskaya A.V., Kostrigin A.A. Content Analysis as a Method to Research the Attitude to Medicine in Modern Russia on the Basis of the Data Collected from the Users' Posts in Social Networks VKontakte and Instagram. *South-Russian Journal of Social Sciences*, 2019, vol. 20, no. 1, pp. 72–90. DOI: <https://doi.org/10.31429/26190567-20-1-72-90>
 12. Frolova T.I., Striga E.A. Media Discourse of Healthy Lifestyle in Provincial Media: An Effort of a Content Analysis. *Theoretical and Practical Issues of Journalism*, 2020, vol. 9, no. 3, pp. 485–497. DOI: [https://doi.org/10.17150/2308-6203.2020.9\(3\).485-497](https://doi.org/10.17150/2308-6203.2020.9(3).485-497)
 13. Miles M.B., Huberman M.A. *Qualitative Data Analysis: An Expanded Sourcebook*. London, New Delhi, Thousand Oaks, SAGE Publications, 1994, 340 p.
 14. Semenova A.V., Korsunskaya M.V. *Media Content Analysis: Problems and Application Experience*. Moscow, ISRAS Publ., 2010, 324 p. (In Russ.)
 15. Galimullin E.Z. Migration attitudes and mechanisms for attracting young people to the Russian Arctic. *Arktika i Sever* [Arctic and North], 2019, no. 36, pp. 96–109. DOI: <https://doi.org/10.17238/issn2221-2698.2019.36.96>
 16. Volgin N.A., Shirokova L.N., Mosina L.L. Topical Questions of Developing the Russian North: Compensation and Incentive Systems Intended to Attract and Consolidate the Population in the Northern and Arctic Regions. *Living Standards of the Population in the Regions of Russia*, 2018, vol. 14, no. 2, pp. 34–46. DOI: <https://doi.org/10.19181/1999-9836-2018-10013>
 17. Volkov A.D., Tishkov S.V. Strategic Development Priorities for the Karelian Arctic Region in the Context of the Russian Arctic Zone Economic Space Integration. *Arktika i Sever* [Arctic and North], 2022, no. 46, pp. 5–32. DOI: <https://doi.org/10.37482/issn2221-2698.2022.46.5>
 18. Stepus I.S., Simakova A.V., Gurtov V.A., Khoteeva E.A. Migration Flows of School and University Graduates in the Russian Arctic Regions: Volume, Vectors, and Proportionality Assessment. *The North and the Market: Forming the Economic Order*, 2023, no. 1, pp. 80–94. DOI: <https://doi.org/10.37614/2220-802X.1.2023.79.005>
 19. Hu H., Chen W., Hu Y. Opinion Dynamics in Social Networks under the Influence of Mass Media. *Applied Mathematics and Computation*, 2024, vol. 482, pp. 1–17.
 20. Khoteeva E.A. Motives of Youth Migration to the Arctic Zone of the Russian Federation at the Present Stage. *Economic and Social Changes: Facts, Trends, Forecast*, 2023, vol. 16, no. 5, pp. 172–187. DOI: <https://doi.org/10.15838/esc.2023.5.89.10>

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