



REVISTA INCLUSIONES

HOMENAJE A MAJA ZAWIERZENIEC

Revista de Humanidades y Ciencias Sociales

Volumen 7 . Número Especial

Abril / Junio

2020

ISSN 0719-4706

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**ASSESSING THE IMPACT OF THE DEMOGRAPHIC PROCESSES IN THE ARCTIC
TERRITORIES ON THE SOCIAL DEVELOPMENT OF THE REGIONS PARTIALLY
RELATED TO THE ARCTIC ZONE OF THE RUSSIAN FEDERATION**

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Fecha de Recepción: 03 de enero de 2020 – **Fecha Revisión:** 17 de enero de 2020

Fecha de Aceptación: 05 de marzo de 2020 – **Fecha de Publicación:** 01 de abril de 2020

Abstract

The study has been devoted to studying the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the Arctic zone of the country. The article offers the methodology for assessing the impact of demographic changes in the Arctic territories in 2018 as compared to 2012 on the social development of the regions partially related to the Arctic zone of the Russian Federation (the AZ RF). According to the results of the assessment, the impact matrix has been compiled. The result of the study can be used when developing and correcting program and strategic documents of all management levels aimed at regulating the demographic processes in the AZ RF.

Keywords

Arctic territory – Demographic process – Social development – Impact – Region

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Para Citar este Artículo:

Shelomentsev, Andrey Gennadevich; Voronina, Lyudmila Vasilievna; Shikverdiev, Arif Pirvelievich; Smirennikova, Elena Vladimirovna y Ukhanova, Anna Vyacheslavovna. Assessing the impact of the demographic processes in the arctic territories on the social development of the regions partially related to the Arctic zone of the Russian Federation. Revista Inclusiones Vol: 7 num Especial (2020): 284-298.

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Introduction

Over the recent decade, the active attention of state authorities has been focused on the development of the country's Arctic territories and their resources. In order to efficiently and comprehensively develop the Arctic macroregion, its territory should have the demographic potential adapted to the harsh natural climatic conditions. However, for a long time, the Arctic territories have been characterized by a gradual decline in the population. According to the decree of the President of the Russian Federation, the AZ RF includes the whole territories of the Yamal-Nenets, Nenets, and Chukotka Autonomous Districts, as well as the Murmansk Region¹. Only a part of the municipalities of the Republics of Karelia, Komi, Sakha (Yakutia), the Arkhangelsk Region, and the Krasnoyarsk Territory belong to the Russian Arctic. However, in the early 2019, more than one million people lived on their territory, which cannot be "ignored" and actualizes studying the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the AZ RF.

Problem Statement

The impact of the demographic processes on the territory development is considered on the level of countries, regions, and municipalities. Such leading experts in sociology and demography as L.L. Rybakovsky, V.V. Fauser, I. Fedulova et al. and G.N. Todorov et al. speak about the demographic situation on the territory as a factor or criteria for its socio-economic development (labor productivity, employment, security of the territory, etc.)².

E.A. Morozova, A.N. Chelombitko, and L.M. Andreeva write that there is a close relationship between the demographic changes and the socio-economic development of the region³. Despite their apparent independence, all demographic processes are ultimately socially determined, and their intensity is stipulated by socio-economic conditions. A.T. Zatikyan adheres to the similar opinion, and writes about the revealed relationship between the demographic factors and the economic situation, in particular, between the domestic demand, the increase in budget expenditures, and the labor market⁴. According to the researchers, such factors as the number and structure of

¹ Ukaz Prezidenta RF ot 13.05.2019 No. 220 "O vnesenii izmeneniy v Ukaz Prezidenta Rossiyskoy Federatsii ot 2 maya 2014 g. No. 296 "O sukhoputnykh territoriyakh Arkticheskoy zony Rossiyskoy Federatsii". Collection of Legislation of the Russian Federation № 20 Art. 2424 (2019).

² L. L. Rybakovsky, "Narodnaseleniye i ego izmereniye", Social and Demographic Policy, num 5 (2006); V. V. Fauser, "Demograficheskie faktory ekonomicheskogo razvitiya regiona", Corporate Governance and Innovative Development of the North Economy Bulletin of the Research Center for Corporate Law, Management and Venture Investment of Syktyvkar State University, num 3 (2007): 81-90; I. Fedulova; O. Voronkova; P. Zhuravlev; P. Gerasimova; M. Glyzina y N. Alekhina, "Labor productivity and its role in the sustainable development of economy: on the example of a region", Entrepreneurship and Sustainability Issues, 7 Vol: 2 (2019): 1059-1073 y G. N. Todorov; A. V. Kalinina y A. I. Rybakova, "Impact of labour migration on entrepreneurship ecosystem: case of Eurasian Economic Union", Entrepreneurship and Sustainability Issues, 5 Vol: 4 (2018): 992-1007.

³ E. A. Morozova; A. N. Chelombitko y L. M. Andreeva, "Demograficheskaya situatsiya i ee vliyanie na sotsialno-ekonomicheskoye razvitiye regiona", Bulletin of the Kemerovo State University, num 2 (2012): 213-219.

⁴ A. T. Zatikyan, "Vliyaniye demograficheskoy situatsii na sotsialno-ekonomicheskoye razvitiye RA", Regional Problems of Economic Transformation, num 1 (2017): 109-121.

workers and the population as a whole have the primary impact on the socio-economic development. The difficult demographic situation in the region to some extent impedes its socio-economic development. The authors offer a detailed analysis of the demographic situation in the region when developing and implementing strategic, long-term, and short-term plans and programs related to the socio-economic area.

According to A.V. Gavrikov, many factors have impact on the social development of a country and any region. One of the most important ones is the demographic development that in a generalized way represents a demographic situation. When analyzing the social development of the Republic of Bashkortostan, the author offers to analyze the demographic development (both in statics and in dynamics) according to the following indicators: population, demographic burden on the employable population, life expectancy, birth rate, and coefficient of migration growth⁵.

D.M. Karimova and L.A. Tskhai assess the impact of socio-demographic processes on the economic growth⁶. The authors conclude that the change in population is significantly influenced by economic factors and also has considerable impact on these factors. The demographic situation and the situation related to the use of labor developing in some countries and regions have great impact on the state and prospects of their economic and social development, the alignment of economic, and afterwards, political forces on a regional and global scale. When assessing the impact of socio-demographic processes on the economic growth in Uzbekistan, the authors consider such demographic indicators as size, natural growth of the population, urban and rural population, birth rate, mortality, age structure of the population, migration processes, as well as demographic aspects of the social policy (education, healthcare, pension system), and the economic growth. I.N. Novi and M.V. Solomatina note that the state of the population is one of the most important indicators of the socio-economic development of the state, which determines the importance of regulating the demographic processes by the state. When monitoring the demographic situation in the city of Taganrog, as an element of managing the socio-economic development of the territory, the authors offer to analyze the size, gender, and age structure of the population, birth rate, mortality, including infant mortality, medical and demographic indicators, and the coefficient of demographic load⁷. S.A. Rodimtsev, A.V. Rezyakov, N.S. Studennikova, and V.K. Kovalchuk consider the demographic processes as a factor of impact on the development of rural territories⁸. The authors note that only the settlements with good demographic potential contribute to the sustainable socio-economic development of the municipal region⁹.

⁵ A. V. Gavrikova, "Kluchevye tendentsii demograficheskikh protsessov v kontekste sotsialnogo razvitiya", Concept Scientific and Methodological Electronic Journal, num 12 (2018). Available at: URL: <http://e-kon-cept.ru/2018/183081.htm>.

⁶ D. M. Karimova, L. A. Tskhai. Demograficheskie aspekty sotsialno-ekonomicheskogo razvitiya Uzbekistana [Demographic Aspects of the Socio-Economic Development of Uzbekistan]. Demoscop, 583-584 (2014). Available at: <http://www.demoscope.ru/weekly/2014/0583/analit04.php>

⁷ I. N. Novi y M. V. Solomatina, "Monitoring demograficheskoy situatsii na munitsipalnom urovne kak element upravleniya sotsialno-ekonomicheskim razvitiem territorii (na primere g. Taganroga)", Bulletin of the Taganrog Institute of Management and Economics, num 1 Vol: 19 (2014): 84-88.

⁸ V. K. Kovalchuk, "Sotsialno-demograficheskie problemy kak faktor razvitiya sovremennogo rossiyskogo sela", Sociodynamics, num 3 (2019): 33-39.

⁹ S. A. Rodimtsev; A. V. Rezyakov y N. S. Studennikova, "Osnovnye tendentsii razvitiya demograficheskoy situatsii na selskikh territoriyah orlovskoy oblasti i tipologizatsiya selskikh

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V.K. Senchagov, M.P. Taskaeva, and G.S. Vechkanov consider the impact of the demographic situation on ensuring the economic security in the region¹⁰. M.P. Taskaeva identifies such negative consequences of the development of border areas as depopulation of the RF subject's territory, the outflow of labor, low living standards, and depopulation of territories. The author notes that the current level of the socio-economic development of the Trans-Baikal Territory does not ensure its economic security and does not meet national interests.

As stated above, the issues related to studying the impact of the demographic processes on various areas of the socio-economic development are actively studied. However, all studies are mainly devoted to researching at the regional level as a whole, and the contribution of municipalities to the development of the Arctic regions partially related to the AZ RF is not assessed.

The aim of the article is to study the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the AZ RF.

The object of the study is the regions partially related to the AZ RF (the Republics of Karelia, Komi, Sakha (Yakutia), the Arkhangelsk Region, and the Krasnoyarsk Territory).

The sources of initial information used in the study included the data of municipal statistics provided by the administrations of AZ RF municipalities, as well as the information posted on their official websites.

Methods

The main study method is induction when the social development of the regions partially related to the AZ RF is researched by studying the demographic processes in Arctic municipalities.

The assessment of the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the AZ RF included the following stages. At the first stage, a comparative analysis of scientific references on assessing the impact of the demographic processes on the development of the territory from various perspectives (on the employment, territorial security, economic and social development, etc.) was carried out. A hypothesis was formulated about the impact of the demographic processes in municipalities on the social development of regions.

At the second stage the system of assessment indicators according to the main blocks (the population size and structure by the type of settlements, gender, the ability to work by age, as well as the migratory and natural movement of the population (Table 1)) was formed.

poseleniy po pokazatelyam sostoyaniya demograficheskoy sredy", National Interests: Priorities and Security, Vol: 10 num 26 (2014): 37-44.

¹⁰ G. S. Vechkanov, *Ekonomicheskaya bezopasnost* (St. Petersburg: Peter, 2007); V. K. Senchagov, *Ekonomicheskaya bezopasnost. Geopolitika, globalizatsiya, samosokhraneniye i razvitiye* (Moscow, 2002) y M. P. Taskaeva, "Demograficheskaya situatsiya: ugroza ekonomicheskomu razvitiyu regiona", *Problems of Socio-Economic Development of Siberia*, num 2 Vol: 32 (2018): 77-84.

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Ser. No.	Assessment blocks	Assessment indicators
1	Population size	the share of the population in the Arctic municipalities in the total population of the region, %
2	Population structure by type of settlements	the share of the urban population in the Arctic municipalities in the total urban population of the region, %
		the share of the rural population in the Arctic municipalities in the total rural population of the region, %
3	Gender structure of the population	the share of the male population in the Arctic municipalities in the total male population of the region, %
		the share of the female population in the Arctic municipalities in the total female population of the region, %
4	Age structure of the population (employability)	the share of the population under the employable age in the Arctic municipalities in the total population under the employable age of the region, %
		the share of the employable population in the Arctic municipalities in the total employable population of the region
		the share of the population in the Arctic municipalities in the total population older than the employable age of the region, %
5	Natural population movement	the share of those who were born in the Arctic municipalities in the total number of those born in the region, %
6	Migratory movement of the population	the share of the population arrived to the Arctic municipalities in the total number of incomers in the region, %
		The share of the population who left the Arctic municipalities in the total number of those who left the region, %

Table 1

Indicators for Assessing the Impact of the Demographic Processes in the Arctic Territories on the Social Development of the Regions Partially Related to the AZ RF

The main criterion for selecting the indicators for the analysis in terms of the formation and preservation of the demographic potential in the territory was the possibility of quantifying them and the availability of objective statistical data on the municipalities related to the AZ RF.

At the third stage, the database on the indicators characterizing the dynamics of the demographic processes in the Republics of Karelia, Komi, Sakha (Yakutia), the Arkhangelsk Region, and Krasnoyarsk Territory, as well as in all Arctic municipalities that are part of the above RF subjects was compiled.

At the fourth assessment stage, the contribution of the Arctic municipalities to the social development of each region was determined by using the selected indicators. In order to assess the impact, the authors offer to use the standardization scale, where

0 – 20 % is very low degree of impact,

21 – 40 % is a low degree of impact,

41 – 60 % is an average degree of impact,

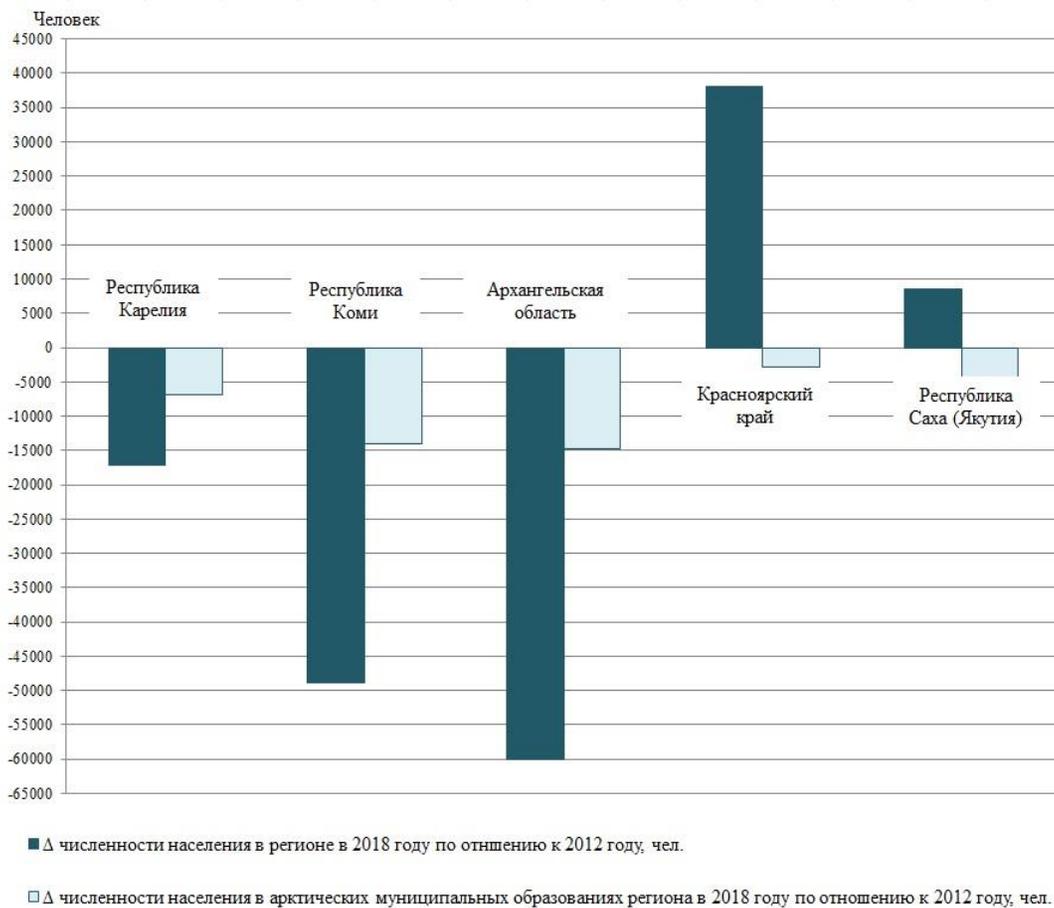
61 – 80 % is a high degree of impact, and

81 – 100 % is a very high degree of impact.

At the final stage, the made calculations allowed making the conclusions and interpreting the results in the context of assessing the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the AZ RF.

Results

It is of interest to study the impact of changes in the demographic processes in the Arctic municipalities on the population structure in the region according to various characteristics. The analysis of Figure 1 makes it possible to conclude about the reduction of the population in all Arctic municipalities of the regions partially related to the AZ RF for the eight-year period under consideration. Since 2012 to 2018 the population of the regions shown in Figure 1 had decreased by almost 80 thousand people. More than 50 % of them lived in the Arctic territories.



Человек	People
Республика Карелия	Republic of Karelia
Республика Коми	Republic of Komi
Архангельская область	Arkhangelsk Region
Красноярский край	Krasnoyarsk Territory
Республика Саха (Якутия)	Republic of Sakha (Yakutia)
Численности населения в регионе в 2018 году по отношению в 2012 году, чел.	Population in the region in 2018 as compared to 2012, people
Численности населения в арктических муниципальных образованиях региона в 2018 году по отношению в 2012 году, чел.	Population in the Arctic municipalities of the region in 2018 as compared to 2012, people

Figure 1

Change in the Population in the Arctic Municipalities and in the Regions Partially Related to the AZ RF, in 2018 as to 2012

All regions shown in Figure 1 can be divided into two groups: 1) the subjects where the population had decreased both in the Arctic municipalities and in the region as a whole, 2) the subjects where the population growth is observed, despite its decline in the Arctic municipalities. The first group includes the regions of the European Arctic – the Republic of Karelia and Komi, and the Arkhangelsk Region, and the second group – the Krasnoyarsk Territory and the Republic of Sakha (Yakutia).

Let us consider the changes in the contribution of the Arctic municipalities to the social development of the region for each Russian subject partly included in the AZ RF in 2018 as compared with 2012. According to the amendments made to the Decree of the President, the Belomorsky, Kemsy and Loukhsky municipal regions of the Republic of Karelia are assigned to the land territories of the Russian Arctic. According to Table 2, in the Republic of Karelia, the values decrease for almost all indicators under consideration, with the exception of the growth of the population below the employable age. In 2018 as compared to 2012, the Arctic territories of the Republic of Karelia had the greatest degree of impact on the structure of the population by type of settlements. In particular, over the eight years under consideration, the urban population of the republic had decreased by more than 1,500 people, including 1,215 (79.8 %) people who lived in its Arctic territories. It is necessary to note that the Arctic municipalities also influence the birth rate of the population in the Republic of Karelia.

Allocation criterion		Share of the AM* in the region, %		Changes in the AM of the region, 2018/2012		Changes in the region, 2018/2012		Contribution of the AM in the region, 2018/2012
		2012	2018	persons	%	persons	%	
By type of settlements	Urban population	2.2	1.9	-1,215	-11.2	-1,523	-0.2	79.8
	Rural population	5.5	5.5	-970	-12.7	-16,164	-11.7	6.0
By gender	Males	2.9	2.7	-731	-8.7	-7,560	-2.6	9.7
	Females	2.9	2.7	-950	-9.4	-9,637	-2.8	9.9
By age (employability)	Under the employable age	3.0	2.8	10	0.4	9,911	9.5	0.1
	Employable	2.7	2.4	-2164	-21.1	-45,545	-11.8	4.8
	Above the	3.4	3.1	162	3.2	18,437	-12.3	0.9

	employable age							
Natural movement	Those who were born	8.5	5.8	-283	-43.0	-1,281	-16.6	22.1
Migratory movement	Those who arrived	2.6	1.9	150	70.4	7,834	50.3	0.5
	Those who left	1.4	1.6	46	10.5	8,603	51.4	1.9

*AM – Arctic municipalities

Table 2
Assessment of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Republic of Karelia

In general, in 2018 as compared to 2012, the number of those born in the Arctic municipal regions of the republic decreased by 43 %, and the share of their significance in this indicator – by almost 3 %. This fact caused the overall decrease in the birth rate in the region by 16.6 %.

At the moment in the Republic of Komi, only the urban district of Vorkuta belongs to the Arctic zone of the country. The decrease in its share is observed in the region for all indicators under consideration. The analysis of Table 3 makes it possible to conclude about the decrease in the male and female population in Vorkuta by more than 15 %, especially that of the employable age (23.9 %) in 2018 as compared with 2012, which in turn had impact on the birth rate in the municipality.

Allocation criterion		Share of the AM in the region, %		Changes in the AM of the region, 2018/2012		Changes in the region, 2018/2012		Contribution of the AM in the region, 2018/2012
		2012	2018	persons	%	persons	%	
By type of settlements	Urban population	13.2	11.7	-14,000	-15.4	-30,232	-4.4	46.3
	Rural population	0.3	0.2	-86	-15.8	-18,732	-9.2	0.5
By gender	Males	10.3	9.3	-6,565	-15.1	-23,576	-5.6	27.8
	Females	10.2	9.1	-7,521	-15.7	-25,388	-5.4	29.6
By age (employability)	Under the employable age	10.4	9.2	-964	-5.8	9,723	6.0	-9.9
	Employable	11	9.9	-14,870	-23.9	-85,171	-15.1	17.5
	Above the employable age	7.6	7.5	1,748	14.1	26,484	16.2	6.6
Natural movement	Those who were born	9.4	8.6	-263	-24.0	-1,984	-16.9	13.3
Migratory movement	Those who arrived	10.9	10.7	747	26.7	7,522	29.4	9.9
	Those who left	18.1	14.5	-298	-4.6	6,959	19.5	-4.3

Table 3
Assessment of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Republic of Komi

The number of residents above the employable age had increased, but this caused an increase in the demographic burden on the employable population with pensioners.

The negative trends at the level of the Arctic municipality had impact on the social structure of the Republic of Komi, as a whole. Thus, the demographic processes in the urban district of Vorkuta had impact on the reduction in the urban population in the republic by almost half, and 17.5 % had impact on the decline in the employable population. The birth rate in the city of Vorkuta influenced the number of births in the region for 13.3 %. The positive migration inflow of the population in 2018 as compared with 2012, including due to the increase in the population who arrived in the city of Vorkuta by more than 25 %, is a positive point. This had impact on growth of the population in the Republic of Komi by almost 10 %.

The Mezensky, Onezhsky, and Primorsky municipal districts and urban districts of Arkhangelsk, Severodvinsk, Novodvinsk, and Novaya Zemlya of the Arkhangelsk Region also belong to the land territories of the AZ RF. In the Arctic territory the majority of the population live in the Arkhangelsk Region among the Russian subjects under consideration. At the beginning of 2019 this number amounted to slightly less than 650 thousand people. The analysis of Table 4 makes it possible to conclude that in 2018 as compared with 2012 the importance of the Arctic municipalities in the region increased by all indicators, except for the ones of the migratory movement of the population.

Allocation criterion		Share of the AM in the region, %		Changes in the AM of the region, 2018/2012		Changes in the region, 2018/2012		Contribution of the AM in the region, 2018/2012
		2012	2018	persons	%	persons	%	
By type of settlements	Urban population	68.3	69.1	-10,801	-1.8	-25,891	-2.9	41.7
	Rural population	18	19.1	-3,461	-7.0	-34,174	-12.4	10.1
By gender	Males	55	56.9	-4,711	-1.6	-26,551	-4.9	17.7
	Females	57.7	59.4	-9,551	-2.7	-33,514	-5.4	28.5
By age (employability)	Under the employable age	52.9	55.8	11,864	11.4	10,993	5.6	107.9
	Employable	58.2	60.5	-45,351	-11.0	-101,159	-14.3	44.8
	Above the employable age	54.4	55.3	19,225	13.2	30,101	11.3	63.9
Natural movement	Those who were born	53.5	57.0	-964	-12.6	-2,567	-18.0	37.6
Migratory movement	Those who arrived	59.2	50.1	3,225	19.7	11,430	41.3	28.2
	Those who left	49.6	49.1	4,607	25.0	9,762	26.3	47.2

Table 4

Assessment of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Arkhangelsk Region

However, it is worth noting that the Arctic municipalities of the Arkhangelsk Region, over the time period under consideration, had seen negative changes in terms of the number of urban and rural people of employable age, both female and male, as well as the migration outflow of the population and the birth rate.

The demographic processes taking place in the Arctic municipalities to some extent had impact on the social development of the region, as a whole. The greatest impact is noted on the growth of the population above and below the employable age, which increases the demographic burden on the employable people with children and pensioners. As stated above, the Arkhangelsk Region is characterized by the most considerable decrease in the population of all subjects under consideration, mainly due to the outflow of residents of the employable age from the region. The Arctic municipalities, including those of the urban type, play an important role in the negative migration of the regions. Almost 50 % of those who left the region were residents of the Arctic municipal regions of the Arkhangelsk Region.

In the Krasnoyarsk Territory, the cities of Norilsk, the Taimyr Dolgan-Nenets and Turukhansky municipal districts are assigned to the Arctic territories. In 2018 as compared with 2012 their total number decreased by less than 1 %. Therefore, these Arctic municipalities have almost no impact on the region. As shown in Table 5, the largest contribution of the Arctic settlements to the social development of the Krasnoyarsk Territory (9 – 11 %) is noted in the reduction in the employable population, especially women, and as a result of this process, the birth rate decreases in the territory.

Allocation criterion		Share of the AM in the region, %		Changes in the AM of the region, 2018/2012		Changes in the region, 2018/2012		Contribution of the AM in the region, 2018/2012
		2012	2018	persons	%	persons	%	
By type of settlements	Urban population	9.6	9.3	-1,727	-0.8	55,036	2.5	-3.1
	Rural population	3.4	3.3	-1,130	-5.0	-16,935	-2.5	6.7
By gender	Males	8.7	8.5	-1,173	-1.0	20,598	1.6	-5.7
	Females	7.7	7.5	-1,684	-1.5	17,503	1.2	-9.6
By age (employability)	Under the employable age	9.8	9.2	3,995	8.3	74,110	15.0	5.4
	Employable	9.2	9.1	-12,183	-7.5	-122,548	-6.9	9.9
	Above the employable age	3.5	3.9	5,331	26.3	86,539	15.1	6.2
Natural movement	Those who were born	8.8	8.7	-290	-8.6	-2,722	-7.1	10.7
Migratory movement	Those who arrived	14.5	13.2	3,350	25.4	34,113	37.5	9.8
	Those who left	18.6	13.7	1,617	10.5	41,151	49.6	3.9

Table 5

Assessment of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Krasnoyarsk Territory

A bit more than 7 % of the total population of the region live in the Arctic territories of the Far Eastern subject of the country – the Republic of Sakha (Yakutia). Its share in the republic tends to decrease. The demographic processes taking place in the Arctic municipalities have considerable impact on the gender structure of the population in the region (66 % – males, 47.4 % – females), which is confirmed by the calculation data

presented in Table 6. The migratory inflow of the population both in its Arctic territories and in the region as a whole is a positive feature of the Republic of Sakha (Yakutia).

Allocation criterion		Share of the AM in the region, %		Changes in the AM of the region, 2018/2012		Changes in the region, 2018/2012		Contribution of the AM in the region, 2018/2012
		2012	2018	persons	%	persons	%	
By type of settlements	Urban population	4.7	4.2	-2,925	-10.0	15,115	2.4	-19.4
	Rural population	12.9	12.6	-1,697	-3.9	-6,644	-2.0	25.5
By gender	Males	7.7	7.2	-2,149	-6.0	3,257	0.7	-66.0
	Females	7.5	6.9	-2,473	-6.7	5,214	1.1	-47.4
By age (employability)	Under the employable age	8.7	7.9	-578	-3.0	15,220	6.8	-3.8
	Employable	7.2	6.7	-6,307	-14.5	-43,207	-7.2	14.6
	Above the employable age	7.5	7.2	2,263	23.5	36,458	28.5	6.2
Natural movement	Those who were born	8.2	7.9	-290	-17.2	-2,406	-14.7	9.6
Migratory movement	Those who arrived	8.4	8.2	3,350	50.5	14,334	54.3	7.8
	Those who left	12	8.4	1,617	-11.5	9,174	25.3	-5.4

Table 6

Assessment of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Republic of Sakha (Yakutia)

As a positive point, it is worth noting that in 2018 as compared with 2012 in the Republic of Sakha (Yakutia) there was a migratory inflow of the population both in its Arctic territories and in the region as a whole.

Based on the detailed study of the demographic processes and their dynamics in the Arctic municipalities, the authors compiled the matrix of their impact on the social development of regions partly related to the AZ RF (Figure 2).

Allocation criterion		Republic of Karelia	Republic of Komi	Arkhangelsk Region	Krasnoyarsk Territory	Republic of Sakha (Yakutia)
By type of settlements	Urban population					
	Rural population					
By gender	Males					
	Females					
By age (employability)	Under the employable age					
	Employable					

	Above the employable age					
Natural movement	Those who were born					
Migratory movement	Those who arrived					
	Those who left					

Figure 2

Matrix of the Impact of the Demographic Processes in the Arctic Municipalities on the Social Development of the Region

Discussion

Thus, having studied in detail the change and contribution of the demographic processes to the social development of the regions partially related to the AZ RF in 2018 as to 2012, it is possible to make the following conclusions.

Firstly, the impact of the demographic processes in the Arctic municipalities on the social development of the regions partially related to the AZ RF is differentiated by subjects and demographic structure of the population. In the Arctic municipalities the demographic processes have the greatest impact in the Arkhangelsk Region, and the least one – in the Krasnoyarsk Territory.

Secondly, a common feature for the Arctic municipalities of the regions partly related to the AZ RF is the decrease in the population, especially that of employable age. This causes the decrease in the birth rate and the increase in the demographic burden on the employable population with children and pensioners. Besides, all above Arctic municipalities can be characterized by the high migration activity of the population.

Thirdly, the change in the urban population is highly influenced by the demographic processes in the Arctic municipalities in the Republic of Karelia, while this impact is medium in the Republic of Komi and the Arkhangelsk Region, and there is slight impact on the change in the rural population in the Republic of Sakha (Yakutia). This fact is also due to the peculiarity of the population living in the Arctic municipalities by type of settlements.

Fourthly, the Republic of Sakha (Yakutia) is distinguished by the impact of changes in the demographic processes in the Arctic territories on the gender structure of the population. Here, there is high degree of impact on the male population, and the medium one – on the female population.

Fifthly, in the Arkhangelsk Region, out of all regions under consideration, the demographic processes in the Arctic municipalities have to a different degree the impact on the age structure of the population by employability in the region.

Sixthly, the impact of the demographic processes in the Arctic municipalities is manifested in the birth rate in the Arkhangelsk Region and the Republic of Karelia. As for the migratory movement of the population, the greatest impact is determined in the Arkhangelsk Region.

Conclusion

The scientific importance of the study is to identify the peculiarities and to develop the methodology for assessing the impact of the demographic processes in the Arctic territories on the social development of the regions partially related to the AZ RF. The study is practically important because its results can be applied when developing and adjusting the program and strategic documents of all levels of management aimed at regulating the demographic processes in the AZ RF. The validity of the scientific results and the reliability of the conclusions contained in the study are confirmed by applying general scientific research methods, sufficient information support, and the complete analysis of theoretical and practical developments.

Acknowledgments

This article has been financially supported by the Russian Foundation for Basic Research within scientific project No. 18-010-00509 A “Factors and Mechanisms of the Mutual Influence of Migration Processes and the Dynamics of Socio-Economic Development of the Arctic Regions of Russia”.

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