Migration attractiveness of the coastal zone of Russia's North-West: local gradients

Sokolova, Flera K.; Lyalina, Anna V.

MIGRATION ATTRACTIVENESS OF THE COASTAL ZONE OF RUSSIA'S NORTH-WEST: LOCAL GRADIENTS

F. Kh. Sokolova [1]
A. V. Lyalina [2]

[1] Northern (Arctic) Federal University
named after M.V Lomonosov
2 Lomonosova pr., Arkhangelsk, 163002, Russia

[2] Immanuel Kant Baltic Federal University
14, A. Nevskogo ul., Kaliningrad, 236016, Russia

A well-acknowledged driver of change, population movement intensifies the development of coastal territories. The Russian North-West holds a vast coastal zone. Granting access to the Baltic, the White, and the Barents Seas, it is an area of geostrategic importance where much of the country's coastal economy — one of the national priorities — is located. Push and pull factors are enormously diverse in the area, as are migration flows forming attraction poles for migrants. There is little research on the issue despite its social and practical significance. Thus, research is required to examine how the coastal factor can benefit the migration attractiveness and human resources of Russian coastal territories of geostrategic importance. This study aims to delineate coastal territories and investigate local migration flows compared to those recorded in inland regions. The research draws on the concept of coastalisation, employing universal, geographical, and statistical research methods. It uses documentary sources and official 2011—2020 statistics. The findings show that the coastal position and maritime economic activity are relevant factors for migration attractiveness. Saint Petersburg and the coastal municipalities of the Leningrad and Kaliningrad regions are more attractive to migrants than more northerly territories. However, there are attraction poles farther north too, and the coastal zone of the Arkhangelsk region attracts more migrants than its inland part. The study demonstrates the growing polarisation of migration space in the coastal areas and especially agglomerations. Changes in the age structure of immigration flows have caused social factors in attractiveness to migrants to replace employment-related factors.

Keywords:
coastal zone, migration attractiveness, migration, coastalisation, attraction poles for migrants, Russian North-West, Arctic

Introduction

Opposite demographic trends in different parts of the world render migration a critical factor in the scaling-up of human resources and socio-economic devel-

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opment of territories. The literature on migration studies abounds with research on the push and pull factors [1—3]. The coastalisation concept also pays considerable attention to population growth due to migration [4—5].

A coastal position is, on the one hand, a factor in attractiveness to migrants since it creates additional economic and transport opportunities. On the other hand, it is a push factor because of the ecological risk of sea-level rise and coastal flooding [6; 7]. This study defines the attractiveness of a region to migrants as a combination of pull factors that constitutes a comparative advantage over other territories and accounts for positive net migration [8]. The attractiveness of a region is always a mixture of push and pull factors.

The following circumstances have been identified as the most significant in making a territory a prime destination.

1. Marine economy. Employment is a powerful incentive to migrate to coastal zones [9]. Research has demonstrated that regions with thriving marine recreation and tourism [10], a strong military marine economy [11] and profitable fishery [12] are extremely attractive to migrants. Jan Merkens et al. [13] emphasise that maritime transport, small-scale fishing and tourism spur coastal migration, along with good coastal management and the overall potential for coastalisation. Bernerd Fulanda et al. [12] write that, for centuries, coastal fishing has been a critical factor in migration to Eastern Africa. The military functions of coastal territories also have a considerable role in coastward migration [11].

2. Nature and climate. A mild climate, a clean environment, comfortable terrain, and water resources are crucial for lifestyle and retirement migration [14—19]. Karen O'Reilly [14] and Michaela Benson [18], the authors of the lifestyle migration concept, take the migration of affluent pensioners from Northern Europe to the coastal resorts of Spain as an example of the phenomenon. The influence of retirement migration on destination regions is manifold. It stimulates construction, the property market and services industries, such as healthcare [17].

3. Education. The internationalisation of marine education, which may be a factor in academic and research migration to coastal areas, has been the focus of few studies so far [20—22].

4.General factors. Cultural life, the ethnic and national composition, cultural standards, the size, appearance and location of the destination, urban comforts and other factors have a role in the attractiveness of coastal areas.

Identifying factors in attractiveness to migrants is an urgent task for the Russian coastal zones of the Baltic, White and Barents Seas. The Spatial Development Strategy of the Russian Federation 2025 names these areas as geostrategic territories, i.e. areas crucial for sustainable socio-economic growth, territorial integrity and national security.[1] It has been argued that the development processes

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[1] Spatial Development Strategy of the Russian Federation 2025. Order of the Government of the Russian Federation of 13 February 2019. No. 207-r. 2019, *Russian Government*, available at: http://government.ru/docs/35733/ (accessed 03.06.2021) (in Russ.).

in these areas, described as the 'zone of influence' of the Baltic Sea, are closely connected [23]. In our opinion, this approach is tenable. The Marine Doctrine of the Russian Federation[2] stresses the importance of the Baltic Sea and the Arctic for the access of the Russian Navy to the Atlantic.

Unlike many other countries, Russia has never produced a legal definition of 'coastal zone'. Since the width of marine buffer zones is usually 500 m, territories with immediate access to the sea will be classified here as the coastal zone of Russia in the Baltic, White and Barents Sea areas. The zone comprises seven regions of the Northwestern federal district: St Petersburg, the Leningrad, Kaliningrad, Murmansk and Arkhangelsk regions, the Republic of Karelia and the Nenets autonomous district (AD).

Migration to these areas has received close academic attention, particularly in works comparing migration processes in the Russian and foreign parts of the Baltic region [4; 24—25]. Russian Baltic regions have different fertility rates. In some of them, migration is critical for population growth; this holds for the Kaliningrad [26] and Leningrad [27] regions and St Petersburg. In their northern counterparts, migration contributes to depopulation caused by natural population decline [28—35]. Yet, the migration situation at a microlevel may have more than one interpretation. Regions with positive net migration have areas of population outflow, whilst those with negative net migration have local poles of attraction. In the Kaliningrad region, most migrants head for the Kaliningrad agglomeration [36]. The coastal city of St Petersburg, the centre of the St Petersburg coastal region, extends its influence of an attraction pole to the neighbouring districts of the Leningrad region [37; 38]. Unfortunately, the local poles of attraction in the Russian coastal zones of the White and Barents Seas have received little attention in the literature. As a rule, the significance of coastal position for development is emphasised in works analysing the socio-economic situation in the Arctic territories of Russia at a regional level [39; 40].

Essential to the situation of these poles, along with gravitation towards agglomerations, is their coastal position. Aleksandr Druzhinin writes that Russian coastal regions (Crimea, the Caspian region, the shores of Kuban, the Rostov and Vladivostok agglomerations and the Kaliningrad region) can sustain population growth. To do so, they need to revitalise the marine economy, create attractive public and self-employment opportunities, build 'communication corridors' and unlock coastalisation potential [41]. Despite the urgent need to investigate the connection between migration and the role of the coastal factor in the economic development of local poles, this topic has only recently started to draw attention in Russia [36; 42; 43].

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[2] The Marine Doctrine of the Russian Federation. Approved by President of the Russian Federation on 26.07.2015, 2021, *Marine Collegium under the Government of the Russian Federation,* available at: http://marine.gov.ru/about/maindocs/ (accessed 11.08.2021) (in Russ.).

Therefore, it seems timely and necessary to identify local attraction poles in the Russian coastal zone of the Baltic, White and Barents Seas areas. This research will lay the groundwork for further examination of pull factors attracting migrants to these territories. Recommendations will be produced on more efficient exploitation of the coastal factor for increasing the attractiveness of Russian geostrategic territories to migrants and scaling up the human resources of these areas.

This study aims to explore differences in the attractiveness to migrants of Russian coastal regions in the Barents, White, and Baltic Sea areas. It also seeks to determine the demographic (age and sex) and spatial (areas of mutual influence) features of the migration development of attraction poles for migrants. These features will be juxtaposed with the economic-geographical situation of these territories and local marine economy components. To understand whether Russian northwestern coastal regions follow a unique or traditional path, we compare these territories to first-level administrative units of neighbouring states (ISO 3166-2). to the same end, Russian coastal municipalities are contrasted with their inland counterparts.

Methods and materials

The concept of coastalisation was central to the methodological framework of this article. The aim of the study was attained using universal and multiscale research methods. Comparative analysis made it possible to describe the migration situations in the study municipalities, the inland parts of the corresponding Russian regions and the coastal areas of neighbouring states. The satistical method was employed to measure the quantitative characteristics and structure of migration, its variation over time and the age and sex structure of migrants.

The study used a wide range of documentary sources: statistics from the websites of the Federal State Statistics Service of Russia and its departments and the national statistics services of Norway, Finland, Poland, Lithuania and Estonia. A valuable source was the Municipal Performance Database 2011—2022. Local marine economy performance was studied using strategic planning documents available at the websites of the municipalities. The attractiveness of Russian coastal territories was assessed based on the principal indicator of migration processes — net migration, as is usually done in Russian and international research [44—48].

The geographical focus of the study is 17 coastal territories[3] of the Russian part of the Baltic, White and the Barents Sea areas (excluding the closed town of Severomorsk, for which there is no data), which had continuously high positive net migration (at least ten people per 1,000 population) in 2015—2020. These are the Vsevolozhsk, Kirovsk and Lomonosov municipal districts of the Leningrad

[3] In March 2020, Druzhinin and Lyalina identified as coastal 181 municipalities (97 municipal districts and 84 urban districts) and two municipality-equivalent cities (one of them a megalopolis) granted the status of regions — St Petersburg and Sevastopol [45].

region; urban districts of the Kaliningrad region (Kaliningrad, Baltiysk, Gur-yevsk, Zelenogradsk, Mamonovo, Pionersky, Svetlogorsk, Svetly and Yantarny); Novaya Zemlya in the Arkhangelsk region; the closed town of Severomorsk (an urban district) and the Lovozero and Tersky municipal districts in the Murmansk region and the city of Naryan-Mar (an urban district) in the Nenets AD. Another coastal territory, St Petersburg, has the status of a region. We also analysed migra-tion in neighbouring countries and Russian inland territories to produce a precise picture of migration in the study municipalities.

The study period is the second decade of the 21st century. This choice is ex-plained by the changes made to the migration statistics system.

Migration in the coastal zone of Russia and neighbouring states

Migration situations in the study coastal regions of Russia and neighbouring countries share many similarities.

Firstly, regions encompassing large urban agglomerations with a population of over 500,000 have positive net migration, and a high migration efficiency ratio distinguishes them at the national level (Fig. 1). The Leningrad region outper-forms all the other coastal territories of Russia and neighbouring states on relative net migration (15 people per 1,000 population) and gross migration (73 people per 1,000 population). The runner-up is Norway's Viken County, whose net migration is less than half that of St Petersburg. Two other Russian territories in the study area with positive net migration are the Kaliningrad region (ranked second in the country) and St Petersburg (third). The values close to those of the latter are re-corded in Finland's capital region of Uusimaa and Åland Islands and in Norway's Vestfold og Telemark County bordering on the capital county of Viken. A counter-part of the Kaliningrad region beyond Russian borders is Estonia's Harju County.

Secondly, the northern coastal regions of Russia and neighbouring countries have negative net migration and a low migration efficiency ratio. The only excep-tion is the Finnish region of North Ostrobothnia, where net migration has been teetering on zero. Its closes Russian counterpart is the oil-rich Nenets AD, whose net migration rate is about one person per 1,000 population. Population outflow from the Arkhangelsk and Murmansk regions is the most substantial amongst the study regions — over six people per 1,000 population. It is comparable to that from Estonia's coastal (not northern) Ida-Viru and Lääne-Viru Counties. The Arkhangelsk region stands out amongst the other northern territories in a negative way for a high migration efficiency ratio: migration losses account for one-fifth of its migration turnover. A conspicuous feature of the northern Russian regions is reduced involvement in migration, which manifests itself in low gross migra-tion values. Only the Murmansk region has a high migration turnover, the second highest amongst the study territories. The abundance of rotation jobs explains this phenomenon.
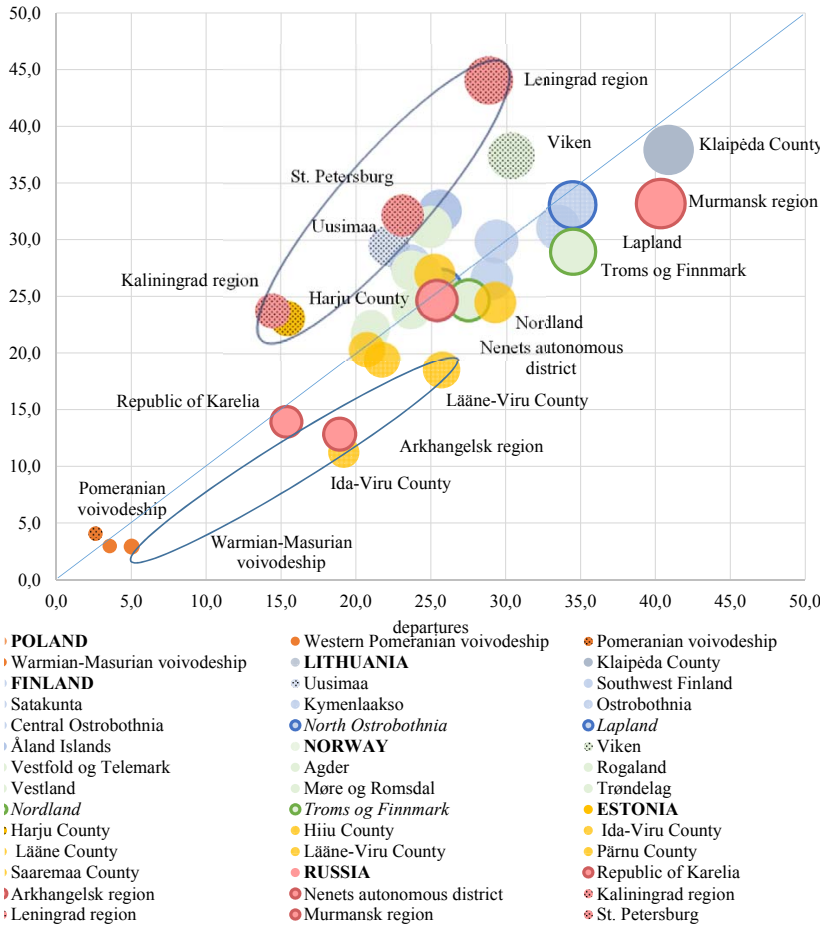
Fig. 1. Arrivals, departures and gross migration in the coastal regions of Russia and neighbouring states, 2011—2020 average, people per 1,000 population (prepared by the authors based on data from Rosstat[4] and official statistics websites of Lithuania,[5] Poland,[6] Estonia,[7] Norway[8] and Finland[9])

Comment: data for Norway are as of 2020 because of changes in the administrative division of the country and the absence of earlier comparable data. The oval circumscribes regions with a high migration efficiency ratio (above 15 per cent). Territories above the zero net migration line are regions with migration gain. The size of the circle corresponds to the intensity of gross migration. Circles with borders represent northern regions. Regions gravitating towards large agglomerations (>500,000 people) are filled with a dot pattern: Viken (Greater Oslo), the Leningrad region and St Petersburg (St Petersburg agglomeration), Kaliningrad region (Kaliningrad agglomeration), Pomeranian voivodeship (Tricity), Uusimaa (Greater Helsinki) and Harju County (Tallinn agglomeration).

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[4] Federal statistics service, 2021, availalble at: https://rosstat.gov.ru/ (accessed 06.06.2021) (in Russ.).

[5] Lietuvos Statistika, 2021, availalble at: https://www.stat.gov.lt/ (accessed 06.06.2021).

[6] Statistics Poland, 2021, availalble at: https://stat.gov.pl/en/ (accessed 06.06.2021).

[7] Statistics Estonia, 2021, availalble at: https://www.stat.ee/en (accessed 06.06.2021).

[8] Statistics Norway, 2021, availalble at: https://www.ssb.no/en (accessed 06.06.2021).

[9] Statistics Finland, 2021, availalble at: https://stat.fi/index_en (accessed 06.06.2021).

Migration situation in Russian coastal and inland municipalities

Migration processes in the Russian northwestern coastal zone show differences when compared to each other and when contrasted with the inland municipalities.

Most of the coastal areas outperform the inland territories on migration (Fig. 2, Table 1). The exceptions are the Murmansk region and Karelia.
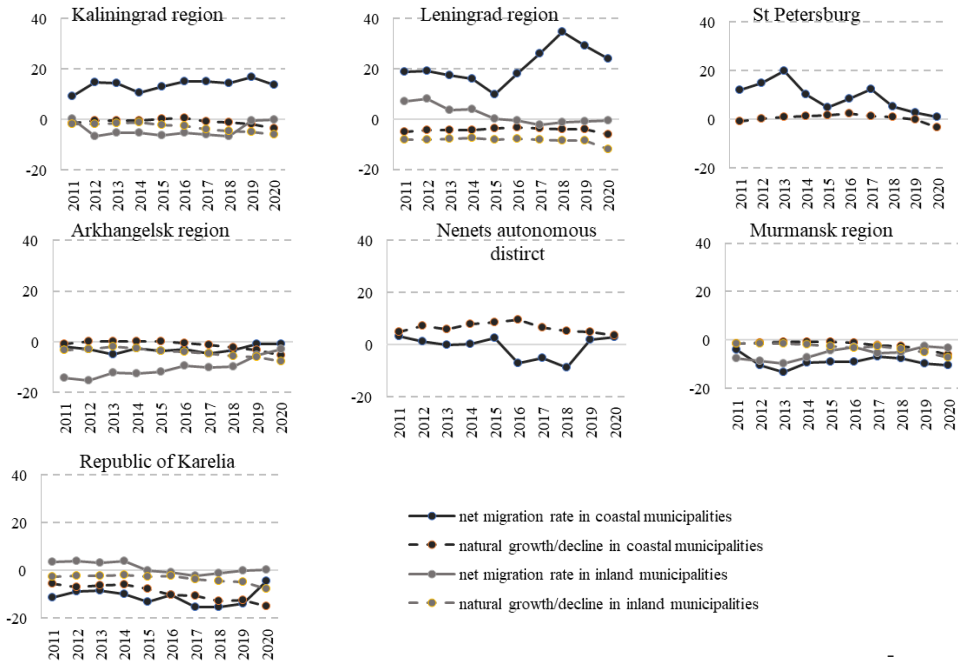

Fig. 2. Population change in the coastal and inland municipalities in Russian regions in the Baltic, 2011—2020, people per 1,000 population (prepared based on data from the Municipal Performance Database[10])

Comment: cumulative values were used

Analysis of average annual net migration rates over the past ten years shows that St Petersburg and the coastal zones of the Kaliningrad and Leningrad regions have become poles of attraction to migrants. At the same time, the inland municipalities are either losing population or experiencing a slight increase. In these areas, migration has the central role in population replacement, making up for natural decline. The opposite is true of the inland part of the Kaliningrad region. Multi-year data on net migration shows that the coastal zones of the Leningrad and Kaliningrad regions have been 'booming' since 2016, peaking in 2018—2019, when net migration values were twice those of 2011.

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[10] *Goskomstat of Russia*, 2021, Municipal Performance Database, available at://rosstat.gov. ru/storage/mediabank/munst.htm (accessed 02.06.2021) (in Russ.).

Table 1

Population change in the coastal municipalities of Russian regions in the Baltic, White and Barents Sea areas, 2011 —2020 average, people per 1,000 population (according to the Municipal Performance Database¹)

Region	Average annual net migration				Average annual gross migration				Average annual rate of natural increase/decline			
	municipal total		municipal average		municipal total		municipal average		municipal total		municipal average	
	CM	IM	CM	IM	CM	IM	CM	IM	CM	IM	CM	IM
Kaliningrad region	13.6	–4.2	9.4	–5.4	74.1	65.7	81.9	68.0	–0.9	–3.1	–1.3	–2.6
Leningrad region	21.4	1.7	13.0	1.7	95.5	75.9	87.1	76.5	–4.3	–8.5	–4.7	–8.7
St Petersburg	9.1	—	9.1	—	76.8	—	76.8	—	0.4	—	0.4	—
Arkhangelsk region	–2.9	–10.4	–1.7	–13.4	56.6	87.9	84.8	91.2	–1.3	–4.2	–2.0	–5.1
Nenets AD	–1.0	—	–2.0	—	107.5	—	108.1	—	6.3	—	6.2	—
Murmansk region (excluding closed towns)	–9.0	–5.7	–8.7	–6.5	85.6	90.2	91.1	93.0	–2.1	–3.1	–4.1	–2.7
Republic of Karelia	–11.1	1.0	–11.3	–4.6	66.4	59.7	67.6	66.4	–9.4	–3.5	–9.6	–5.9

Comment: CM stands for coastal municipalities; IM, inland municipalities.

¹ *Goskomstat of Russia*, 2021, Municipal Performance Database, availeble at://rosstat.gov. ru/storage/mediabank/munst.htm (accessed 02.08.2021) (in Russ.).

Most coastal zones of the northern regions are experiencing migration losses. Only in the Arkhangelsk region, the process is less intensive than in the inland municipalities. In some years, migration loss was below the natural decline on the coast of the Arkhangelsk region. In 2018—2020, it comprised only 30 per cent of the total population decline (in 2011—2013, 95 per cent). A similar trend is observed in the inland part of the region, albeit on a smaller scale. In the Nenets AD, the impact of migration was less substantial than of natural population change over the study period, except for 2018. The net migration rate was irregular, teetering on zero in the last two years. In the coastal zone of the Murmansk region, where the migration situation is more serious than in the inland areas, the rate was even lower. Many closed towns, which we did not analyse in this study, saw a population outflow in some years, explained by departures of people after the end of their contracts. Migration accounts for 70 per cent of the total population decline in these areas. The surplus of migration loss over natural decline has decreased to a factor of three since 2017, compared to the earlier observed ten-twentyfold difference. In Karelia, migration outflow from the coastal zone adds to annual population losses almost as much as natural decline. The only exception, when migration losses were minimum and accounted for 20 per cent of the total decrease, was 2020. The situation in the coastal municipalities remains more alarming: migration losses there are ten times those in the inland areas.

The coastal zone of the Nenets AD, with its many rotation jobs, and the coastal areas of the Leningrad region gravitating towards St Petersburg are deeply involved in migration. Each hundredth person there is a migrant. The migration turnover is high in the Murmansk region (>85 people per 1,000 population), in the inland municipalities almost as high as in the coastal ones. The coastal zone of the Kaliningrad region, whose gross migration is 10 per cent below that in the Murmansk region, outperforms its inland municipalities. The same holds for Karelia. Only the Arkhangelsk coastal municipalities fall behind the other study territories and the inland part of the region itself on migration.

Regional and local coastal poles of attraction for migrants

The coastal zone of the Russian part of the Baltic, White, and Barents Sea areas, which is traditionally attractive to migrants,[11] underwent extensive transformations during the study period. The number and make-up of municipalities growing by migration changed, along with net migration rates (Fig. 3). The situation was changing for the worse until 2016, after which a modest growth began. The number of municipalities attractive to migrants halved by 2019. Yet, in 2020, this group of territories was joined by three municipalities of the Kaliningrad

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[11] Territories with a net migration rate >10 people per 1,000 permanent population.

region (the Baltyisk, Yantarny and Mamonovo districts), which grew extremely attractive to migrants in the pre-Covid period, and the Tersky municipality in the Murmansk region. The proportion of coastal municipalities growing by migration, which fell to 18 per cent, rebounded to almost 30 per cent but did not return to the 2011 level.

As attractive coastal spaces shrink, the migration gains of traditional poles of attraction begin to grow: the migration space of the study coastal zone is polarising, especially in the Kaliningrad and St Petersburg agglomerations.
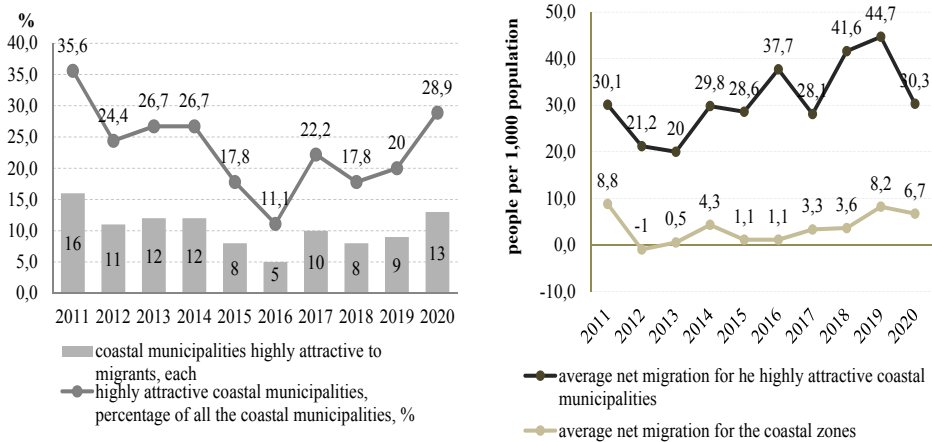

Fig. 3. Features of the attractiveness of Russian coastal zone of the Baltic, White and Barents Sea areas (prepared by the authors based on data from the Municipal Performance Database[12])

Comment: excluding closed towns

In the past ten years, only five municipalities (Table 2) have been continuously attractive to migrants and served as stable poles of attraction. These are the Vsevolozhsk municipality in the Leningrad region and the city of Kaliningrad, the Guryevsk, Zelenogradsk and Svetlogorsk districts in the Kaliningrad region. Whilst migration gains are declining and even being replaced by migration losses in some municipalities, an upward trend s observed in others. Along with the above territories, the Lomonosov and Pionersky districts have become more attractive to migrants over the past five years. The northern territories with a varying net migration rate are also classified as poles of attraction.

The coastal zones of Russian regions in the Baltic, White and Barents Sea areas have two established poles of attraction — the Kaliningrad region and St Pe-

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[12] *Goskomstat of Russia,* 2021, Municipal Performance Database, available at: rosstat.gov. ru/storage/mediabank/munst.htm (accessed 16.07.2021) (in Russ.).

tersburg. They are a product of the centripetal forces provided by the large coastal agglomerations of St Petersburg and Kaliningrad. The coastal zone of these two regions is attractive to migrants at the local, interregional and international levels.

Local poles of attraction are associated with various coastal factors. Analysis of the official municipality profiles covering main socio-economic indicators shows that all the study territories have harnessed the advantages of their coastal geographical position to the benefit of their economies. Tourism and recreation are the economic specialisations of the Zelenogradsk and Svetlogorsk districts and partly the Pionersky district. The coastal Yantarny district is home to amber extraction and processing facilities. Unlocking the tourism potential — a combination of opportunities for recreational salmonid fishing and a burgeoning fishing industry — ensured substantial migration gains in the Tersky municipality of the Murmansk region in 2020. The Svetly district, lying on the banks of a ship canal, owes its success to the port and transport infrastructure, fishery and the ship repair industry. The Navy has a role in the development of the Baltyisk district, Severomorsk and Novaya Zemlya. The Kirovsk municipality is visible in the shipbuilding and ship repair industries and the administrative centre of the Nenets AD, Naryan-Mar, is Russia's largest offshore oil producer.

A coastal position is not always a factor in attractiveness to migrants. The municipalities of the Leningrad region whose rapid population growth is accounted for by migration — the Vsevolozhsk and Lomonosov districts — do not specialise in the maritime economy (although fishery is developing in both). Nor does the fish processing industry attract migrants to the Guryevsk, Mamonovo and Pionersky districts. Migration gains of the Lovozero district of the Murmansk region, whose strongest industry is mining, result from concessions granted to foreigners. Applicants can obtain a residence permit regardless of the quota if they have an asylum-seeker certificate or the status of participants in the repatriation programme. In 2017 and 2019, predominantly Ukrainian citizens (80 per cent of all arrivals in the district) took advantage of this opportunity.

The cities of Kaliningrad and St Petersburg perform many economic functions, including those relating to the marine sector. St Petersburg is the country's largest commercial and passenger port. Shipbuilding is rapidly growing in the city. Tripadvisor has named it the best destination in Russia, visited annually by over 8m tourists. Kaliningrad is home to a commercial seaport, shipbuilding facilities (the Yantar shipyard), fishing equipment manufacturers and an offshore oil producer (Likoil-Kaliningradmorneft). The city is in the top ten tourist destinations of Russia.

Table 2

Local coastal poles of attraction in Russian regions in the Baltic according to the net migration rate (>10 people per 1,000 population in at least one of the study years, based on data from the Municipal Performance Database[13])

Municipality	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	EGS and ME components								
											0	1	2	3	4	5	6	7	8
LENINGRAD REGION	14.9	15.6	12.9	12.0	6.8	12.1	17.1	23.9	20.4	16.8									
Lomonosov district	2.4	1.7	6.6	-2.0	10.4	8.5	34.5	29.1	49.8	29.1	+								+
Vsevolozhsk district	24.2	32.9	42.9	40.1	39.1	60.9	81.9	117.3	94.9	78.7	+								+
Kirovsk district	18.7	24.4	1.9	13.9	-1.2	9.2	11.0	7.0	6.4	8.8	+					+		+	+
Sosnovy Bor district	20.5	1.4	3.1	5.4	2.3	6.6	-0.2	6.6	-6.1	-4.8								+	+
Kingisepp district	17.3	7.1	10.9	4.3	-1.3	-0.3	6.7	-27.9	-10.8	-6.9		+		+	+	+		+	+
Tosno district	29.8	31.0	18.4	13.4	-9.3	2.8	6.1	-5.7	-4.3	-17.2	+					+		+	+
Gatchina district	22.5	21.3	17.1	13.1	3.8	3.1	-0.3	1.4	-15.6	-12.9	+			+	+	+		+	+
KALININGRAD REGION	6.8	9.2	9.4	6.7	8.2	10.1	9.9	9.5	12.9	10.1									
Kaliningrad	6.7	19.0	17.2	11.9	13.5	15.9	17.3	16.6	16.3	12.4	+	+		+		+		+	+
Pionersky district	33.3	29.1	1.6	-7.1	-1.9	-0.4	1.9	16.1	65.1	38.4	+	+			+			+	+
Zelenogradsk district	5.9	4.6	20.6	28.5	17.0	29.2	20.1	20.2	33.9	37.9	+		+	+	+				+
Svetlogorsk district	14.5	9.1	29.1	30.8	28.0	42.4	41.1	47.0	59.5	56.1	+				+				+
Guryevsk district	15.0	18.3	25.5	33.9	44.7	39.9	28.6	24.9	21.9	14.0	+							+	+
Baltiysk district	3.3	-3.7	3.9	5.6	2.4	-0.2	5.4	9.8	2.8	11.0	+	+			+	+	+	+	
Yantarny district	13.2	4.5	0.2	8.5	0.6	-2.5	9.6	1.7	6.6	17.0	+				+				+
Mamonovo district	28.5	-3.5	9.4	-4.7	-0.6	-2.5	-10.7	5.0	7.6	12.9	+								
Bagrationovsk district	29.0	14.3	-4.7	-32.7	-2.3	-3.7	1.4	-11.3	4.8	-0.1	+						+		
Ladushkino district	17.6	5.3	13.5	30.6	-13.6	-4.1	-16.3	-13.0	3.3	-11.9	+						+		
Svetly district	15.1	10.0	12.3	8.3	6.3	5.1	-4.5	-4.5	5.0	1.1	+	+		+		+		+	+
ST PETERSBURG	11.9	14.8	19.7	10.2	4.9	8.5	12.1	5.2	2.7	0.8	+	+			+	+	+	+	+
ARKHANGELSK REGION	-7.7	-8.5	-8.2	-6.5	-6.8	-5.6	-6.9	-6.2	-2.6	-2.1									
Novaya Zemlya district	175.4	-101.1	-36.9	115.4	62.1	-31.2	23.2	61.9	49.3	60.2									
NENETS AD	3.2	1.2	-0.3	0.1	2.3	-7.3	-5.3	-8.9	1.8	2.9									
Naryan-Mar	25.3	17.5	13.6	15.2	14.0	-7.0	-2.7	-4.8	6.6	10.3		+	+						
MURMANSK REGION	-7.7	-10.1	-12.9	-6.5	-5.7	-5.7	-4.6	-5.9	-6.5	-6.9									
Severomorsk district	7.0	8.0	9.0	10.0	11.0	3.0	18.7	26.5	12.9	15.9	+						+	+	
Lovozero district	-26.1	-12.0	-15.9	-9.4	-4.3	-0.5	10.7	-1.5	11.2	-5.4									
Tersky district	-26.8	-26.1	-22.8	-11.2	-19.8	-13.6	-3.0	-0.4	-1.4	16.5				+	+				

Comment: * no data. *Vsevolozhsk district*: inland municipalities classified as coastal s gravitating towards a coastal agglomeration. EGS stands for the economic and geographical situation; ME, maritime economy. 0: part of an agglomeration or conurbation; 1: the municipality has a seaport and logistics facilities; 3: exploitation of marine bioresources; 4: marine recreation and tourism; 5: shipbuilding and ship repair; 6: a navy municipality; 7: marine industries; 8: high quality of life in the coastal zone. Cells with net migration exceeding ten people per 1,000 population are highlighted.

Source: prepared by the authors.

The age and sex structure of migrants at main attraction poles: territories of cooperation

At first sight, the 17 most attractive coastal municipalities of the Russian Baltic, White and Barents Sea areas differ substantially in size, population and administrative-legal status. Amongst them are a federal city (St Petersburg), a regional centre (Kaliningrad) and urban and municipal districts. Migration trends impact differently on these territories.

As to absolute values, the undisputed leader is St Petersburg. Each year, several hundred thousand people arrive in and depart from the city. With migration flows numbering tens of thousands, the Vsevolozhsk district of the Leningrad region and Kaliningrad rank second. The outsiders, with about 1,000 migrants, are the Pionersky, Svetly, Yantarny and Mamonovo districts (Kaliningrad region), the Lovozero and Tersky districts (Murmansk region) and the Novaya Zemlya district (Arkhangelsk region).

If arrivals and departures are considered separately, the picture changes dramatically. The Vsevolozhsk and Novaya Zemlya districts have the highest arrival rate — about 100 migrants per 1,000 population (Fig. 4). They are followed by the Svetlogorsk and Guryevsk districts. St Petersburg, Kaliningrad and the other municipalities welcome fewer than 50 migrants per 1,000 population.

Departure rates account for less considerable differences. Only in the Baltiysk and Mamonovo districts, the variance between the arrival and departure rates is below five people per 1,000 people. These figures point to a low migration efficiency rate. The Lovozero and Tersky district, although attracting migrants in some years, had more departures than arrivals throughout the 2010s.

Analysis of year-on-year changes in migration flows during the study period shows that they were increasing annually. There was a 2.2-fold increase on municipal average; an almost sevenfold, in the Tersky district; fourfold, the Lomonosov district; threefold, the Vsevolozhsk and Zelenogradsk districts. Amongst the study territories, the average departure rate grew by a factor of 1.9, with maximum values observed in the municipalities of the Leningrad region, Kaliningrad and the Pionersky district (2.6—2.8-fold).
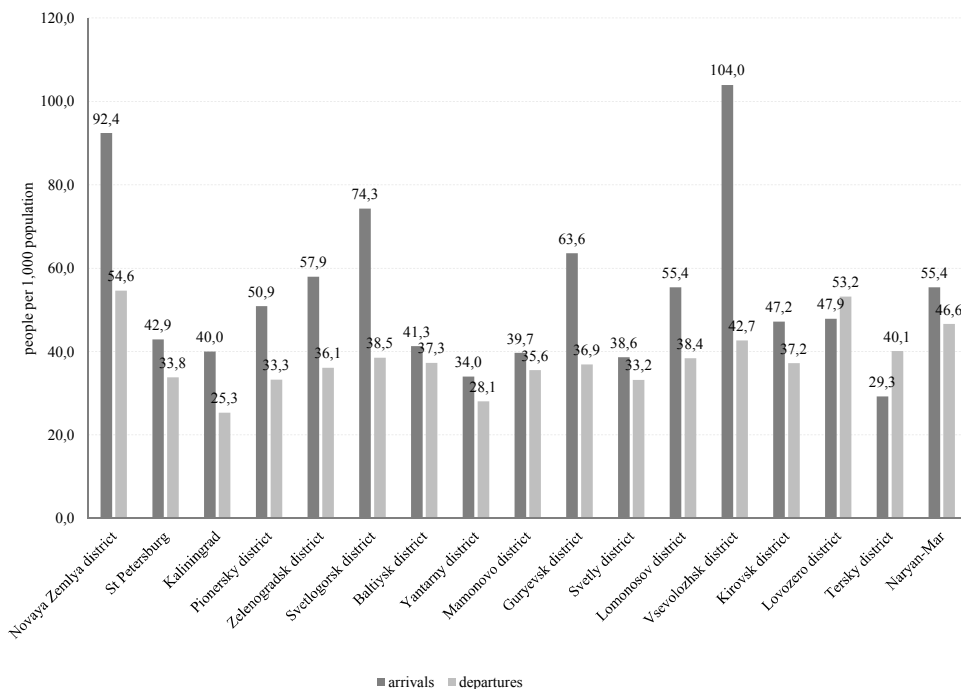
Fig. 4. Arrivals in and departures from the main poles of attraction,
2011—2020 average (based on data from the Municipal Performance Database[14])

Analysis of data on migrant destinations in the study municipalities draws a variegated picture (Fig. 5). The municipalities can be grouped as follows depending on the flow contributing the most to migration gains.

Pure poles of attraction (types 1—4) were dominated by:

• inflows from other Russian regions (type 1). This group includes St Petersburg and the Vsevolozhsk, Kirovsk, Lomonosov, Novaya Zemlya and Pionersky districts;

• migrants from this and other Russian regions (type 2) — the Zelenogradsk and Svetlogorsk districts;

• migrants from this region (suburbanisation) and CIS countries — the Guryevsk district;

• migrants from other Russian regions and CIS countries (type 4) — Kaliningrad.

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[14] *Goskomstat of Russia*, 2021, Municipal Performance Database, available at: rosstat.gov. ru/ storage/mediabank/munst.htm (accessed 22.08.2021) (in Russ.).

Centres of attraction, where in-migration compensates for out-migration. Types 5—8 are identified depending on the source of arrivals and destination of departures:

• in-migration from other Russian regions offsetting intraregional out-migration (type 5) — the Baltiysk and Yantarny districts;

• arrivals from other Russian regions and CIS countries compensating for intraregional out-migration (type 6) — the Mamonovo and Svetly districts;

• intraregional in-migration counterbalancing out-migration to other Russian regions (type 7) — Naryan-Mar;

• an inflow from CIS countries against the background of intra- and interregional out-migration — the Tersky and Lovozero districts, respectively (type 8).

Intraregional mobility is characteristic of the Kalinigrad municipalities: there are job opportunities in the industrial west and the agricultural east; another advantage of the territory is its good transport links. St Petersburg and the rapidly developing districts of the Leningrad region, part of the city's zone of influence, attract interregional migrants. Sixty-five per cent of the population of Novaya Zemlya are military personnel relocating between regions.

A distinct feature of border territories geographically gravitating towards European countries and yet heavily involved in Eurasian migration is the considerable proportion of international migrants (13 per cent of all arrivals and 9 per cent of all departures across all the municipalities). In the Kirovsk and Guryevsk districts, average annual international arrivals and departures have exceeded 20 per cent of all mobility. In St Petersburg, Kaliningrad and the Vsevolozhsk, Svetly and Lovozero districts, they comprise 10 per cent of all movements; in others, above 5 per cent. The exceptions are the Tersky municipality, where international migrants account for barely 2 per cent, and Novaya Zemlya, where international migrants are absent because of the special regime of access to the territory housing military facilities. International net migration is positive in all the other municipalities.
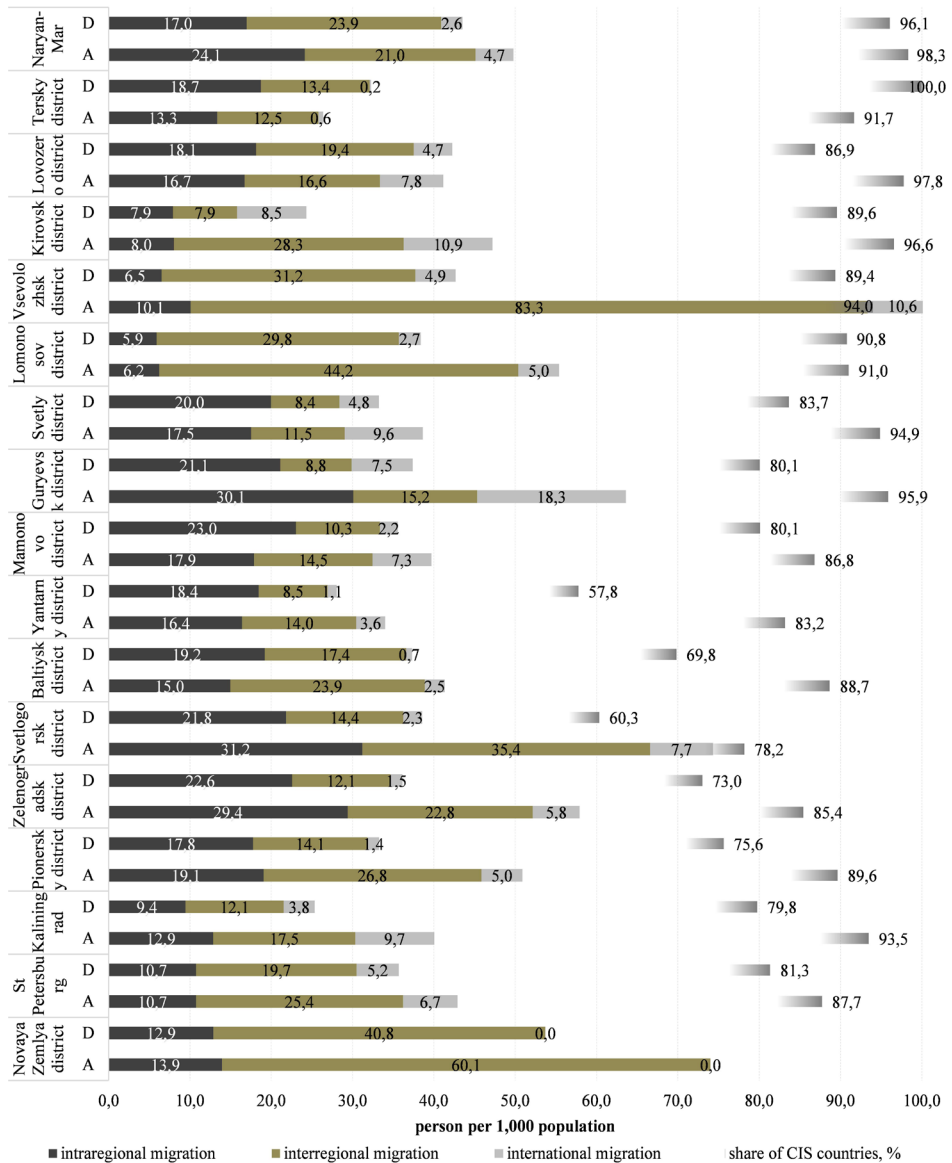
Fig. 5. Sources of arrivals and destinations of departures, 2011—2020 average (based on data from the Municipal Performance Database[15])

Comment: A — arrivals; D — departures.

International mobility was not the same throughout the study period. It was declining in most of the municipalities in 2015—2017 (apparently because of the economic sanctions linked to the incorporation of Crimea by Russia and

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[15] *Goskomstat of Russia*, 2021, Municipal Performance Database, available at: rosstat.gov. ru/ storage/mediabank/munst.htm (accessed: 22.08.2021) (in Russ.).

the political processes in Ukraine). In some other study areas, however, the trend was contrary. The proportion of international migrants was growing in most municipalities of the Kaliningrad region, the Lovozero and Tersky districts and Narayan-Mar. This proportion, however, declined in all the municipalities in 2020 in the wake of the COVID-19 pandemic and associated restrictions on international travel.

Most international migrants are nationals of CIS countries. They account for over 90 per cent of international mobility in the study municipalities of the Leningrad region, the Guryevsk and Tersky districts and Naryan-Mar. In many other study territories, this proportion is as high as 80 per cent. Nationals from neighbouring and other foreign states comprise 20 per cent of the migration turnover in the Svetlogorsk district, whilst over 20 per cent of emigrants from Kaliningrad and the Pionersky, Zeleogradsk, Baltiysk and Yantarny districts head for the so-called 'far abroad' (countries beyond the former borders of the USSR).

Analysis of data on the age and sex structure of migrants points to the feminisation of the process (Fig. 6). The trend towards a rise in the proportion of women was evident in 2011—2020. According to the average annual values, women accounted for over 50 per cent of arrivals and departures in 12 out of 17 study municipalities. The trend is particularly visible in St Petersburg, the Tersky district and the municipalities of the Kaliningrad and Leningrad regions. In most cases, it led to an increase in the female population of destinations. An even sex balance is achieved through migration in Naryan-Mar and the Lomonosov, Svetlogorsk, Svetly and Yantarny districts.

Migration is predominantly male in the municipalities with a chiefly 'masculine' employment structure or a high proportion of 'masculine' industries. The male-dominated districts are Novaya Zemlya, Lovozero and Kirovsk, the latter being the only municipality where gender-specific employment does not affect the structure of the population. The sex-ratio skew is disappearing in the Kirovsk and Lovozero districts, whilst becoming more pronounced in Novaya Zemlya and the Baltiysk municipality.
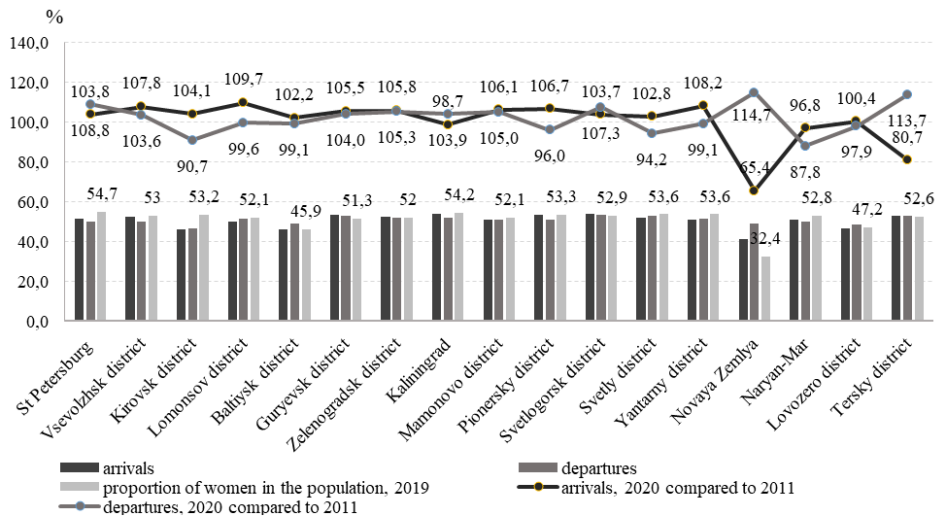
Fig. 6. The proportion of women in the population and migration flows, 2011—2020 average (based on the Municipal Performance Database[16])

The age structure of migrants in the study coastal area is traditional. The main cohort is people aged 25—59, accounting for 45 to 65 per cent of migrants across the municipalities. Over the study period, this percentage decreased in almost all of the study areas. Only in Novaya Zemlya, the age group became more visible: the increase in the proportion of 25—59-year-olds in the arrivals was 117 per cent compared to 2012; in the departures, 120 per cent.

The proportion of the second-largest migrant cohort, 0—14 years old, grew in 2012—2020 to reach 16—24 per cent. This rise testifies to the success of the national population policy. Yet, only in few municipalities, the percentage of this cohort in the arrivals increased substantially to exceed its share in the departures. Amongst these territories are Kaliningrad, Naryan-Mar and the Kirovsk, Lomonosov and the Zelenogradsk districts. In all the other regions, the departures are growing younger, whilst the number of children amongst the departures is constantly higher than amongst the arrivals.

The third-largest cohort is people aged 20—24, who relocate to study or find employment. The average annual data demonstrate a decline in the proportion of people aged 20—24 amongst migrants to an average of 6—8 per cent in 2020. The maximum migration mobility of this group was recorded in the Baltiysk district, where the cohort accounted for 20 per cent of the arrivals and 10 per cent

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[16] *Goskomstat of Russia*, 2021, Municipal Performance Database, available at: rosstat.gov. ru/ storage/mediabank/munst.htm (accessed 22.08.2021) (in Russ.).

of the departures. The situation was similar in Novaya Zemlya, Naryan-Mar, St Petersburg and the Lovozero and Tersky districts: 20—24-year-olds comprised 10—15 per cent of all migrants there. In Kaliningrad and St Petersburg, there were more departures than arrivals in this age group.

The 15—19-year-old cohort accounts for a mere 7 per cent of mobility. Its proportion was above this level only in St Petersburg — a major national destination for university applicants. The percentage of 15—19-year-olds was relatively high amongst the departures in the northern municipalities.

Only five to six per cent of migrants were aged above 65 years. The exceptions were the Arctic municipalities — Naryan-Mar and the Lovozero district, where this proportion was even lower. Pensioners are leaving this area to spend retirement in a better climate. This is especially true of Novaya Zemlya, with very few people of this age amongst the migrants. At the same time, many towns of the Kaliningrad region are welcoming people above 65. The proportion of seniors amongst the arrivals is well above that amongst the departures in the Zelenogradsk, Mamonovo, Pionerksy and Svetlogorsk municipalities.

Conclusion

The Baltic, White and Barents Sea coastal areas of Russia and neighbouring countries differ in the degree of attractiveness to migrants. The same trend is seen in Russian, Norwegian and Finnish regions at the macrolevel: gravitation towards a major urban agglomeration is the crucial pull factor. Population outflow is the most substantial in Russian and Norwegian northern territories. As to the microlevel, an interesting case is the Arkhangelsk region, where a coastal position is associated with less significant migration losses. Moreover, migration makes up for the natural decline in the most attractive coastal municipalities of the Kaliningrad and Leningrad regions.

The Russian part of the Baltic, White and Barents Sea areas has two main attraction poles for migrants — the St Petersburg and Kaliningrad agglomerations. There are also coastal poles of attraction in the northern regions. The attractive coastal space has shrunk over the past ten years, whilst the migration gains of traditional attraction poles have been growing. Thus, the migration space of the study zone is polarising, especially in the Kaliningrad and St Petersburg agglomerations.

Amongst the 17 study areas distinguished by attractiveness to migrants (excluding the closed town of Severomorsk), the prime destinations are St Petersburg and the Leningrad and Kaliningrad regions. These areas boast a variety of

pull factors — a large labour market, a low unemployment rate, high salaries and ample education opportunities. These advantages result, to a degree, from the coastal position and federal support, particularly the measures to encourage investment. The Arctic municipalities have only one pull factor — high salaries (employees receive the so-called northern allowance, which is 100 per cent of the base salary). Thus, total remuneration in the north is twice that in the other Russian regions. The significance of the northern allowance, however, decreased over the study period. In 2019, the average monthly salary of employees in Naryan-Mar (small businesses were not considered) was only 15 per cent above that in the Lomonosov district; 20 per cent, St Petersburg; 55.5 per cent, Kaliningrad. The average monthly salary in Novaya Zemlya was only 5 per cent above that in the Lomonosov district, whilst in the Lovozero municipality, it was lower than in St Petersburg, the municipalities of the Leningrad region and the Yantarny district.[17] Measures to encourage investment into Arctic regions were first introduced in 2021.

In the closed town of Severomorsk (home of the Northern Fleet), the Baltiysk district, where the Baltic Fleet is stationed, and Novaya Zemlya (a territory housing many military facilities), critical factors reducing the inflow of migrants were limited access to the territories and restrictions on economic and business activities. Economic activities are also tightly regulated in the Lovozero district, classified as a protected site of traditional settlement and trades of Russia's small-numbered indigenous peoples.[18]

Although migration usually diversifies the receiving society, newcomers from other Russian regions and abroad (chiefly those of the CIS) are replacing locals in seven poles of attraction. What is remarkable is that the study territories are deeply involved in international migration.

Feminisation recorded in most of the attraction poles adds to gender disproportions in the study areas. The predominance of men amongst migrants accounted for by the 'masculine' structure of the economy in some municipalities requires regional population redistribution efforts, such as the creation of traditionally 'female' jobs.

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[17] Calculated by the authors based on data from the Municipal Performance Database. *Rosstat*, 2021, available at: https://www.gks.ru/dbscripts/munst/ (accessed 22.08.2021) (in Russ.).

[18] On the approval of the list of sites of traditional economic activities of small-numbered indigenous peoples of the Russian Federation and the list of traditional economic activities of small-numbered indigenous peoples of the Russian Federation. Order of the Government of the Russian Federation No. 631-r of 08.05.2009 (as amended on 11 February 2021), 2021, *Electronic Repository of Legal and Research-and-engineering Documents*, available at https://docs.cntd.ru/document/902156317?marker=1ODAS0I (accessed 22.08.2021) (in Russ.).

The dramatic decrease in the proportion of the most economically active migrant cohorts (20—59 years), especially amongst the arrivals, indicates an overall change in the population structure. It also means that social factors in attractiveness, sought by older age groups, are replacing employment-related ones. Migration flows are not growing younger, as it might seem, because younger cohorts tend to emigrate and not vice versa. The ageing of arrivals across the study municipalities is a hard fact confirmed by earlier studies [49]. The exceptions are Novaya Zemlya and the Vsevolozhsk district.

In our opinion, tourism may increase the attractiveness and economic performance of many of the study municipalities, as well as give a boost to small and medium enterprises. With their vast natural beaches, the Baltiysk, Pionersky and Yantarny districts are likely to benefit from a developed tourist industry. The Guryevsk and Mamonovo districts are potential centres for agricultural, heritage and even tourism, whilst the Zelenogradsk municipality is a prospective destination for wellness, agricultural, environmental, nautical and heritage tourism. All the northern and especially Arctic municipalities have enormous potential for Arctic, sports and extreme tourism. Ethnocultural tourism may develop at the sites of the traditional settlement of small-numbered indigenous peoples (Naryan-Mar and the Lovozero district).

The reconstruction of the Northern Sea Route and its new infrastructure may offer an economic advantage to the Arctic territories and create additional pull factors. The Murmansk and Arkhangelsk seaports also await reconstruction, along with the port of Naryan-Mar and its terminal in Amderma. Hopefully, the plans for the Indiga port on the coast of the Barents Sea in the Nenets AD, part of the Northern Sea Route, will be implemented. Come what may, the federal law on support for entrepreneurship in the Russian Arctic, which equates the area to special economic zones, brings hope for further positive changes in the northern coastal municipalities.[19]

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[19] On Governmental Support for Entrepreneurship in the Arctic Zone of the Russian Federation. Federal law No 193-FZ of 13.07.2020, 2020, *Consultant Plus,* available at: http://www.consultant.ru/document/cons_doc_LAW_357078/b6a66c38be962d3c8a290a889e-f73e8df5d4bbbb/ (accessed 18.08.2021) (in Russ.).

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The authors

Prof. Flera K. Sokolova, Northern (Arctic) Federal University named after M.V Lomonosov, Russia.

E-mail: f.sokolova@narfu.ru

https://orcid.org/0000-0002-3063-6128

Dr Anna V. Lyalina, Immanuel Kant Baltic Federal University, Russia.

E-mail: anuta-mazova@mail.ru

https://orcid.org/0000-0002-8479-413X