SOI: 1.1/TAS
DOI: 10.15863/TAS
Scopus ASJC: 1000

ISSN 2308-4944 (print)
ISSN 2409-0085 (online)

№ 08 (124) 2023

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

Philadelphia, USA

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

08 (124)

2023

International Scientific Journal
Theoretical & Applied Science

Founder: **International Academy of Theoretical & Applied Sciences**

Published since 2013 year. Issued Monthly.

International scientific journal «Theoretical & Applied Science», registered in France, and indexed more than 45 international scientific bases.

Editorial office: http://T-Science.org Phone: +777727-606-81

E-mail: T-Science@mail.ru

International Scientific Journal
Theoretical & Applied Science

Editorial Board:

				Hirsch index:
31	PhD	Mamazhonov Akramzhon Turgunovich	Uzbekistan	-
32	PhD	Ravindra Bhardwaj	USA	h Index Scopus = 2 (5)
33	Assistant lecturer	Mehrinigor Akhmedova	Uzbekistan	-
34	Associate Prof.	Fayziyeva Makhbuba Rakhimjanovna	Uzbekistan	-
35	PhD	Jamshid Jalilov	Uzbekistan	-
36		Guzalbegim Rakhimova	Uzbekistan	-
37	Prof.	Gulchehra Gaffarova	Uzbekistan	-
38	Prof.	Manana Garibashvili	Georgia	
39	D.Sc.	Alijon Karimovich Khusanov	Uzbekistan	
40	PhD	Azizkhon Rakhmonov	Uzbekistan	
41	Prof.	Sarvinoz Kadirova	Uzbekistan	
42	Prof., D.Sc.	Shermukhamedov Abbas Tairovich	Uzbekistan	
43	PhD	Bekjanova Ainura	Uzbekistan	
44		Anzhelika Bayakina	Russia	h Index RISC = 3 (18)
45	PhD	Abdurasul Martazayev	Uzbekistan	
46	PhD	Ia Shiukashvili	Georgia	
47	Associate Prof.	Lali Elanidze	Georgia	h Index Scopus = 0 (1)
48		Maka Kochauri	Georgia	

International Scientific Journal
Theoretical & Applied Science

ISJ Theoretical & Applied Science, 08 (124), 312.
Philadelphia, USA

Impact Factor ICV = 6.630

Impact Factor ISI = 0.829
based on International Citation Report (ICR)

The percentage of rejected articles:

ISSN 2308-4944

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2023 **Issue:** 08 **Volume:** 124

Published: 05.08.2023 **http://T-Science.org**

Issue Article

Artur Alexandrovich Blagorodov
Institute of Service and Entrepreneurship (branch) of DSTU
Master

Vladimir Timofeevich Prokhorov
Institute of Service and Entrepreneurship (branch) of DSTU
Doctor of Technical Sciences, Professor,
Shakhty, Russia

Maria Lvovna Vilisova
Institute of Service and Entrepreneurship (branch) of DSTU
Candidate of Economics, Associate Professor

Galina Yurievna Volkova
LLC TSPOSN «Ortomoda»
Doctor of Economics, Professor
Moscow, Russia

THE ROLE OF THE TOURISM POTENTIAL OF THE ARCTIC REGIONS OF THE RUSSIAN FEDERATION FOR THEIR EFFECTIVE SOCIO-ECONOMIC DEVELOPMENT

***Abstract**: in the article, the authors analyze the tourism potential of small and medium-sized cities in the Arctic regions of the Russian Federation, which have an unprecedented socio-economic and cultural potential for the development of Russian regions, which is manifested in their unique features: compactness, historical heritage, the existence of rare industries and local economy. At the same time, today in Russia the realization of their potential is hindered primarily by the existing system of political institutions and federal authorities. Exploring the development potential of small and medium-sized cities, in relation to the Russian context in various sectors of the economy (primary, secondary and tertiary). The practical significance of the study lies in the possibility of using in the practice of Russian management the experience of developing the potential of small and medium-sized cities in various sectors of the economy. As a result, it is concluded that small and medium-sized cities can be economically and socially efficient settlements, that is, a completely competitive urbanized unit. However, the tools for the development of such territories should be implemented in the presence of a federal strategy to support promising areas of development for small and medium-sized cities, to provide them with the opportunity for independent and responsible development.*

In the article, the authors examined the current problems of the development of the tourism industry in the Arctic regions of the Russian Federation. Practical proposals and recommendations are given, priority tasks are formulated to solve the main socio-economic problems of using the tourist and recreational potential, developing inbound and domestic tourism for the sustainable development of regions, unique territories and tourism centers. The results can be used to improve the legislative and regulatory acts of the tourism industry, to increase the competitiveness of the tourism industry in the North of Russia.

The promotion of the Arctic tourism product is possible only if an integrated approach is used and an understanding of the versatility of the tourism potential of the Arctic zone, the biological and cultural diversity of the Russian north. An important role in this process can be played by the small indigenous peoples of the Arctic, who should be involved in ongoing business initiatives aimed not only at making a profit, but also at preserving the unique culture and traditions of these peoples. The article discusses the specific features of the tourism industry in the Arctic zone of Russia, its key problems and further prospects for sustainable development.

Key words: *Arctic tourism, Russian Arctic tourism, sustainable development of tourism in the Arctic, development of the Arctic, urbanization, sectors of the economy, development potential, spatial development, socio-economic potential, territory development, small towns, medium-sized towns, resources, effective state and municipal management.*

Language: *English*

Citation: Blagorodov, A. A., Prokhorov, V. T., Vilisova, M. L., & Volkova, G. Yu. (2023). The role of the tourism potential of the Arctic regions of the Russian Federation for their effective socio-economic development. *ISJ Theoretical & Applied Science, 08 (124),* 101-130.

Soi: http://s-o-i.org/1.1/TAS-08-124-12 ***Doi***: https://dx.doi.org/10.15863/TAS.2023.08.124.12

Scopus ASCC: *2000.*

Introduction

UDC 338.48:374.58.

Tourism is one of the largest, highly profitable and most dynamic sectors of the world economy. As a modern sector of the economy, it has long gone beyond national boundaries and plays an important role in the interaction and mutual enrichment of cultures. The tourism industry, which has a multiplier effect, helps to diversify the economy, improves the quality of life of the population, opens up opportunities for generating income and new jobs, this is especially important for the Arctic regions of the Russian Federation.

The European North of Russia occupies one of the most favorable positions in terms of tourism development, due to the presence of natural recreational conditions and the largest cultural heritage sites. It includes the republics of Karelia and Komi, the Arkhangelsk region with the Nenets Autonomous Okrug, the Vologda and Murmansk regions. During the Soviet period, the European North was called the Northern Economic Region. At present, along with the former Northwestern economic region, it is part of the Northwestern Federal District (NWFD).

The European North opens up broad prospects for the development of water, cruise, cultural, educational, ecological, business, event, rural, pilgrimage, sports and other types of tourism. This is a monument of world culture, the identity of various peoples and ethnographic groups (Saami, Pomors, Nenets, Komi, Karelians, Vepsians, Finns, Russians) is represented here, which predetermines wide opportunities for the development of ethnographic tourism, which is so necessary for these regions. Another name for the European North - the Russian North - is more of a historical and cultural concept than a geographical or administrative name.

In recent years, tourist flows from Russia and abroad have rushed here, which is facilitated by the unique wealth of tourist resources, the preserved traditional types of nature management, folk crafts and crafts, and the special geographical position of the European North as a subarctic and coastal region.

Russia has great infrastructural and natural opportunities for the tourist development of the European North, taking into account the importance of preserving the unique ecosystem of the region and the way of life of the indigenous peoples of the North. Tourism contributes to the development of territories and local communities in the Arctic and the North: it stimulates entrepreneurial activity, the creation of new jobs and social infrastructure, and promotes cultural and natural heritage.

In the Western Arctic, the focus is on the development of tourism in the high-latitude Spitsbergen archipelago and the Russian Arctic National Park. A detailed analysis of the development of the tourism sector in the Murmansk region, in particular in Teriberka, was carried out. The effective development of ecological tourism in the region is shown, the equipped ecological trails of the Murmansk region are described.

In the Russian North, the main attention is paid to the development of tourism in historical cities and rural settlements. The problems of preservation and revival of the historical and cultural heritage as a factor in the sustainable development of tourism are analyzed.

After analyzing promising tourism investment projects and routes in the regions of the European North, measures to stimulate the increase in competitiveness and socio-economic efficiency of the development of the tourism industry are substantiated. Strategic directions and tasks are identified, the implementation of which by government agencies and tourist companies involved in the development of tourist and recreational resources will allow maintaining Russia's competitive advantages in the northern and Arctic regions. The developed recommendations and proposals can be used to prepare the Strategy for the Development of Arctic Tourism until 2035 and to adjust the regional tourism programs of the Russian North.

Main part

The tourism sector has the ability to quickly recover from all sorts of cataclysms, as the need for travel does not go anywhere. At present, the main tourist destinations are being transformed and tourist flows are being redistributed. With the closure of Russia's borders, Russian tourists began to travel more within the country. With partial removal of restrictions. The demand for not crowded, independent tourism to the Arctic regions of the

Russian Federation has significantly increased. Russians began to travel more in small groups and families in cars. In the European North, amateur sports tourism has again become popular with hiking and cycling trips, water rafting with overnight stays in tents in sparsely populated areas. Another trend is independent travel planning without using the services of a tour operator, which significantly reduces the cost of a tourist trip. To support the industry and "budget" tourists, the Rostourism program "Cashback for tours in the Russian Federation" was launched - a refund of 20% of the cost of the tour when paying with a Mir card.

The peak of the tourist flow fell on the New Year holidays, despite the restrictions imposed on tourists from other regions. At the Murmansk airport, there was a large crowd of tourists at the entrance to the building and at check-in for the flight. Travelers from Asia were replaced by tourists, mainly from large Russian cities. Almost all places of accommodation in the most popular tourist centers in the region were booked at the end of November. The most popular location for the New Year was Teriberka, the infrastructure of which could not cope with the large flow of guests. Prices for hostels, rented apartments, hotels, local restaurant service, and private transport services have skyrocketed. In particular, the fare from Murmansk airport to the city reached two thousand rubles (against the usual cost of about five hundred rubles).

The Khibiny ski resorts were opened in December mainly for residents of the Murmansk region, and starting from mid-January 2022, all restrictions for tourists from other regions were lifted. Also at the end of December, charter flights to Murmansk were introduced with organized tourist groups of Russians with the winter program "New Year's Adventures in Russian Lapland". Currently, the tourism industry is undergoing a process of transformation, new trends have emerged. The consumer of the tourism product, along with everyone else affected by the negative impact of the pandemic, has changed. Interests, product requirements, purchasing power have changed. That is, there are many factors that primarily affect the tourism industry.

The main trend is an increase in safety requirements and sanitary and epidemiological standards. Both the authorities and consumers have a number of requirements for the hotel and tourism business: first of all, keeping a distance, sanitizing premises, rented equipment and clothing for active tourism. This, obviously, will increase the cost of forming a tourist product and, consequently, will lead to an increase in the price of it. But at the same time, the purchasing power of residents of large cities (these are the main suppliers of tourists to the Kola North) has significantly decreased. Thus, despite the increase in the cost of the product, there is still a need to keep prices at a level attractive to visiting tourists, and to find a balance between affordable tourism for locals and the high cost of regional tourism products. Measures are needed to support the industry and local tourists, for example, an analogue of the tourist cashback program at the regional level for local residents. This is especially true given the post-pandemic trend that people will drive close and preferably in their own transport, as it is safer in the current conditions: a person who interacts little with others is less likely to get infected. Starting from July, an explosive growth of tourist flow in all directions was noted in Karelia, hotels and camp sites were completely filled. In the second half of 2022, the most popular location in Karelia was the Sortavalsky district, where there was almost 100% occupancy of placements until the end of September. And in late autumn, Karelian weekend tours from Moscow and St. Petersburg were especially popular. According to forecasts, in 2023 the total tourist flow to the Murmansk region was supposed to be about 324 thousand people. Recovery of 2019 indicators (458 thousand people) is expected in 2024–2025. The third stage of the tourist cashback program is planned.

It should be noted the unprecedented state support measures that became available for the tourism business in the Arctic region in 2023. These are tax incentives, preferential financing of investment projects, infrastructure support. It was decided to extend to the Arctic a service that is already operating in the Far East - the “Far Eastern Hectare”. It will allow private tourism businesses to take land for free for use, and then for ownership. The experience of the Far East has shown that land plots are often taken to accommodate camp sites, campsites and glampings. In the Russian Arctic, the service was launched on June 1, 2021. In September 2022, the Russian Arctic became the world's largest special economic zone with unprecedented preferences for new investment projects worth from 1 million rubles.

For the development of the tourism industry in the Arctic, it is necessary to create an appropriate infrastructure. In 2023, in the Murmansk region, the amount of subsidies aimed at the implementation of infrastructure projects has been increased from 4 to 10 million rubles - the creation and improvement of hotel, tourist and recreational complexes, as well as the organization of events to preserve crafts and local products. The main measure of state support for the industry during the pandemic was the annual competitive selection of projects in the field of domestic and inbound tourism in the Murmansk region. As part of the competition in 2023, more than one hundred applications were considered. Fifteen winning companies received subsidies totaling 10 million rubles. Among the projects are the creation of a roadside service, the arrangement of a hotel infrastructure, the construction of a dormitory complex, tourist facilities and public catering

facilities, as well as the acquisition of specialized specialized tourism equipment. Another support tool is a long-term business project competition held by Norilsk Nickel. Participants are invited to implement industrial-investment and cultural-exhibition projects on the production area in the Pechenga region that has ceased operation using a number of supporting instruments - from a subsidy for paying interest on a loan to co-financing a project. The authorities are confident that active state support for tourism in general can increase the investment attractiveness of the Arctic regions of the Russian Federation. Among the new areas of northern tourism after the lifting of restrictions will be children's tours and digital tourism. Children's tour therapy is relaxation, combined with cleansing the body of harmful toxins from large cities in sparsely populated areas. And all this in an ecologically clean environment of the North. Digital tourism is an exclusive tourism product with digital technologies. There are also prospects for the development of an innovative type of ecological recreation - plogging ("garbage races"), which has been widely developed in the Scandinavian countries. Plogging is an environmental movement based on the combination of jogging (jogging) with garbage collection, i.e. it combines physical activity with care for a clean environment. For the right to participate in the plogging race, participants usually pay a small registration fee. Among the innovative types of ecological tourism infrastructure, the most promising are glampings, which are widely used in the countries of Northern Europe. Glamping is a well-maintained campsite with all amenities. Starting from 2018, the first glampings begin to appear in the European North of Russia - in the Murmansk region and the Republic of Karelia. The most famous glamping is Aurora Village, located 50 kilometers from Murmansk towards Teriberka. The tourist complex of ten domed houses with panoramic windows, cafes and all amenities in the tundra is designed primarily for observing the northern lights.

In winter, the cost of living in a house for four is 20 thousand rubles, in summer the prices are reduced to 6 thousand rubles per day.

Russian experts and analysts have formulated some trends and forecasts regarding the development of Arctic tourism in the post-coronavirus period, namely:

1. *Deferred demand for tourism products*. As soon as the epidemiological situation stabilizes, administrative restrictions are lifted, and the primary needs of people are satisfied, significant pent-up demand for tourism products, formed during the period of self-isolation, will begin to be realized. Since the purchasing power of the population will be lower than in the pre-crisis period, and the need for travel, reinforced by quarantine, will increase, relatively inexpensive destinations will be most in demand.

2. *Changing market conditions*. The development of Arctic tourism will be affected by a significant change in market conditions. For Russian citizens, domestic tourism destinations will be more preferable than outbound ones. The Russian Arctic may be in demand by foreign tourists due to its relatively low cost. However, one can hardly expect a quick return of international tourist traffic to pre-crisis levels.

3. *Change of actors*. Apparently, all participants in small and medium-sized businesses will suffer significantly, not excluding the largest players focused on super-expensive tourism products, which, in the absence of foreign tourists, will either have to make their services more accessible or transfer their activity from the Arctic zone to other regions.

4. *"Resetting" directions and brands*. In the current situation, when the world economy is being reformatted, the tourism industry as a whole, including its Arctic segment, will face the actual "zeroing" of all initial positions. After the quarantine period, many destinations and brands will have to be recreated in many respects, as the market conditions and market participants will change, and many popular destinations will disappear. This will open a window of opportunity for new players creating and promoting brands or trying to gain a foothold in market segments vacated after quarantine. At the same time, one cannot exclude the possibility of the complete elimination of some areas of tourism in the Russian Arctic due to a long-term lack of demand.

There will also be a “zeroing” of the perception of the Arctic tourism itself as an elite form of recreation. For a long time, one of the most expensive components of this direction, icebreaking cruises to the North Pole, will fade away, which is unlikely to seriously affect the activities of FSUE Atomflot, for which they were only an additional source of income. At the same time, a surge of interest in the most logistically accessible Arctic destinations in Russia, located on the coasts of the Barents and White Seas and nearby islands, is possible. With favorable developments in the medium term, the Russian Arctic may become a popular and even fashionable destination in the post-pandemic world, responding to the wishes of consumers for an environmentally friendly and secluded vacation spot that is great for emotional unloading.

In the case of the implementation of pessimistic options, Arctic tourism, which has a high cost and is organized in difficult climatic and transport conditions, will give way to areas with a resort and recreational specialization, which are much more accessible geographically, while it itself will become the lot of a few supporters of extreme recreation.

Transformation of Arctic tourism. The processes taking place in the world, most likely, will lead to the transformation of tourism in the Arctic. He is likely to gradually move away from package tours towards

self-planning trips using online services. Due to the decrease in the purchasing power of the population, the number of "savage" travelers will increase, and the share of tourist trips planned in advance will inevitably decrease, especially in the first post-pandemic months.

From the point of view of tourism development in the Russian Federation, one of the most advantageous positions is occupied by the European North of Russia. There are 22 historical cities, ten national natural parks, seven resorts, six world-class architectural and historical museum-reserves, the largest (Kirillo Belozersky) and the most ancient (Valaam) monasteries in Russia, about 19 thousand objects of cultural heritage on the territory of the region. Four sites of the European North are included in the UNESCO World Cultural and Natural Heritage List - Ferapontovo, the Solovetsky Archipelago, the Kizhi Museum-Reserve and the virgin forests of the Komi Republic (Pechora-Ilychsky Reserve and the Yugyd-Va National Park). The Valaam archipelago, Karelian petroglyphs (Onega and White Sea), Kenozero National Park are included in the preliminary UNESCO World Heritage List. The Russian North is the north of Russia, its European part. This concept is rather vague, not having a precise definition. The belonging of this or that region to the Russian North is not generally accepted. This area is more historical and cultural than administrative or geographical. Russian geographers prefer to attribute the Republic of Komi to the Ural region rather than to the Russian North, and the Murmansk region to the zone of the Euro-Arctic region. Most experts under the concept of "Russian North" mean primarily the territory of the Vologda and Arkhangelsk regions. Russian geographers prefer to attribute the Republic of Komi to the Ural region rather than to the Russian North, and the Murmansk region to the zone of the Euro-Arctic region. Most experts under the concept of "Russian North" mean primarily the territory of the Vologda and Arkhangelsk regions. Russian geographers prefer to attribute the Republic of Komi to the Ural region rather than to the Russian North, and the Murmansk region to the zone of the Euro-Arctic region. Most experts under the concept of "Russian North" mean primarily the territory of the Vologda and Arkhangelsk regions.

The formation of the European North as an integral region, first of all, was influenced by the geographical position. It is characterized by several important features that affect both its nature, and the characteristics of the settlement, and the development of the economy:

northern position. Although the district is located in the European part of the country, most of its territory, with the exception of the Vologda Oblast, belongs to the zone of the Far North.

seaside position. In contrast to many regions of Russia, the European North extends on a wide front to the vast waters of the Barents and White Seas. This largely determines the benefits of the economic and geographical position of the region. Large ports - Murmansk and Arkhangelsk, which arose on the coasts of the northern seas, play an important role in the transport system of Russia and its foreign trade. Access to the seas also affects the geopolitical position of the region.

The most accessible regions of the European North in terms of transport are the Republic of Karelia and the Vologda Oblast (a night train ride from Moscow and St. Petersburg). Arkhangelsk and Murmansk regions can be reached by train in 1–1.5 days or in 1.5–2 hours by plane from the two capitals. The most remote region is the Nenets Autonomous Okrug (the most non-tourist region in Russia), which can only be reached by plane. The most expensive region in terms of providing tourist services is the Murmansk region. For example, the cost of a one-day excursion by minibus from Murmansk around the region can reach up to 3-5 thousand rubles per person, which is on average 2-3 times more expensive than the cost of a similar excursion from Petrozavodsk or Arkhangelsk. The Russian North is a miraculously surviving island of historical Russia, after all, the North escaped the Tatar-Mongol invasion. The Russian North for many centuries has preserved ancient customs, the traditional system of rural settlements and forms of nature management, the appearance of ancient ancient Russian villages and cities, and historical folk crafts. Most of the surviving monuments of stone and wooden architecture date back to the 17th–19th centuries. Friendly, hospitable and hospitable local population, peace of mind, lack of crowds and constant metropolitan rush make the European North even more attractive for tourists. The unique natural heritage is represented by a variety of natural landscapes - from mountain ranges to endless tundra, virgin forests, emerald lakes, waterfalls, rivers rich in fish of valuable species. In the Russian North are the largest lakes in Europe - Ladoga and Onega, became the centers of especially popular cruise tourism. The European North occupies an exceptional place in the historical and cultural development of Russia due to the pronounced manifestation here of primordially Russian traditions, customs, the presence of wooden religious architecture, the traditional living culture of the Pomors, as well as the specificity of the modern way of life of the local population. A harmonious combination of natural and anthropogenic principles has led to the formation of a unique type of specially protected areas - cultural landscapes.

Due to the fact that national parks occupy an important place in the system of protected areas due to their natural and historical and cultural value, they have become one of the main organizational forms for the protection of cultural landscapes - natural and cultural territorial complexes formed as a result of the evolutionary impact of nature and man, his

sociocultural and economic activities. and consisting of characteristic stable combinations of natural and cultural components that are in close interconnection and interdependence. The national parks of the Russian North have become one of the main organizational forms for the protection of cultural landscapes, while they have a colossal historical, cultural and eco-tourism potential. In recent years, there has been a tendency for tourism activities to move into the cultural space of national parks (Kenozersky, "Russian North").

The development of tourism in the northern regions is hampered by: the seasonality factor; large spaces that do not allow for dynamic and rich tourism products; harsh climate; monotony of tourist products; lack of long-term planning in tourism and systematic work to create an attractive image of the Russian North.

The key problems of northern tourism are also the lack of quality accommodation facilities, the low level of service, the poor condition of the road and transport infrastructure, the lack of financial resources for the creation of new display facilities and the restoration of architectural monuments.

In order to fully implement all plans for the development of tourism in the North, large-scale modernization and construction of tourist and road transport infrastructures are necessary. The lack of infrastructure facilities and their significant deterioration are the main obstacles to the development of tourism.

In the regions of the European North, a network of tourist and recreational clusters (TRCs) is being formed in order to expand and increase the competitive advantages of regional tourism products. Innovative investment projects in the field of tourism should attract tourists to the region, which will provide additional investments (in the form of public-private partnerships) in the modernization of infrastructure and the further sustainable development of unique territories.

At the present stage, tourism is actively developing in all regions of the European North, and there is an annual increase in the tourist flow. The main tourist season is summer. Only two regions of the Russian North - the Murmansk and Vologda regions - attract tourists also in winter and early spring. New Year holidays and Chinese New Year are considered high season, when Veliky Ustyug, Kirovsk, Vologda, Teriberka, Murmansk, the Sami village "Saam Syit" receive a large number of tourists. During this period, mainly groups from China come to the Kola North.

Europe's largest network of nature reserves and architectural and ethnographic open-air museums, which is being formed in the Russian North, can be considered as the main factor for the sustainable development of tourism.

Types of tourism and tourist routes. The most popular tourist routes of the Russian North are water lake-river cruises along the Volga-Baltic (Cherepovets, Goritsy-Kirillov, Vytegra), Ladoga (Valaam) and Onega (Petrozavodsk, Kizhi) lakes. In the Arkhangelsk region, along the Northern Dvina from Arkhangelsk to Brin-Navolok and Severodvinsk, as early as 2019, river cruises were carried out on the oldest paddle steamer in Russia, Nikolay Gogol, built in 1911. Cruise tourism requires solving the problem of shipowners with a river register and lack of regions of the Russian North, ships of the river-sea class. Due to pollution and shallowing of large navigable rivers (Sukhona, Northern Dvina, Vychegda, Mezen), cruise and passenger traffic (except for ferries) has been almost completely stopped.

In addition to water cruises, the following types of tourism are actively developing in the Russian North: cultural and educational, skiing, ecological, ethnographic, rural, event, business, recreational fishing, sports, religious and pilgrimage.

The most promising inter-regional tourist routes in the region are: the mega project "Silver Necklace of Russia" (uniting all regions of the Northwestern Federal District), the projects "Hanseatic Roads of Russia", "Dear Lomonosov", "Patterns of Russian Cities". Innovative types of tourism in the European North are Arctic sea cruises, hunting for the northern lights, watching marine animals, traveling to filming locations, gastronomic, industrial, border, geological and mineralogical, socially responsible tourism. Out door tourism is also promising - outdoor recreation and leisure, entertainment and sports at the same time.

Interregional destinations within the framework of the historical, cultural and tourism project "Silver Necklace of Russia".

1. "Silver Necklace of Russia": Kaliningrad - Pskov - Veliky Novgorod - Vologda - Syktyvkar - Naryan-Mar - Arkhangelsk - Murmansk - Petrozavodsk - Leningrad region (Lodeynoye Pole, Novaya Ladoga, Staraya Ladoga, Shlisselburg) - St. Petersburg.

2. "The Great Way in the Russian North": Vologda - Veliky Ustyug - Syktyvkar - Inta - Vorkuta - Pym-VaShor - Arkhangelsk - Murmansk - Zaonezhye - Pudozh - Medvezhyegorsk - Shunga - Tolvuya (the birthplace of Zosima Solovetsky) - Great Guba - about. Kizhi - Povenets - Chelmuzhi (Church of the Epiphany, place of exile of the nun Martha, Princess Romanova, mother of the future Tsar Michael) - Pyalma - Vytegra - Vologda - Arkhangelsk - Vologda - Totma.

3. "Journey to Ancient Rus'": Veliky Novgorod - Izborsk - Staraya Ladoga - St. Petersburg - Olonets - Belozersk - Kirillov - Veliky Ustyug - Syktyvkar - Pustozersk.

4. "In the footsteps of the Varangians": Republic of Karelia - Priozersk - Vyborg - St.

Petersburg - Staraya Ladoga - Veliky Novgorod - Tikhvin - Kirillov - Belozersk.

5. "Outposts of Russia": Kaliningrad - St. Petersburg - Vyborg - Priozersk - Shlisselburg - Staraya Ladoga - St. Petersburg - Olonets - Border Kondushi - Kolatselga - Kinerma - Kem - Murmansk - Arkhangelsk - Vologda - Pskov - Veliky Novgorod - Murmansk - Arkhangelsk - Pustozersk ; Izborsk - Pskov - Ivangorod - Koporye - St. Petersburg - Vyborg - Priozersk - Republic of Karelia (along the border of the Russian Federation).

6. "Across the Holy Places": St. Petersburg - Pskov - Veliky Novgorod - Tikhvin - Vologda - Republic of Karelia (Murom Monastery, St. Elias Volozero Hermitage) - Arkhangelsk Region (Solovki Islands); St. Petersburg - Novaya Ladoga - Staraya Ladoga - Tikhvin - Belozersk - Kirillov - Vologda - Totma - Veliky Ustyug.

7. "Living Water of the North-West of Russia": Moscow - Cherepovets - Goritsy - Vytegra - Mandrogi - Lodeynoye Pole - Staraya Ladoga - Pskov - Veliky Novgorod - Moscow); St. Petersburg - Lodeinoye Pole - Mandrogi - Petrozavodsk - Kizhi - Kem - Solovetsky Islands; Arkhangelsk - Onega - Sumposad - Virma - Belomorsk - Kem - Gridino - Umba - Varzuga (Pomor settlements of the White Sea); Yarensk - Syktyvkar - Vorkuta - Pym-Va-Shor (hot radon springs).

8. "Northern ports of Russia": St. Petersburg - Belomorsk - Kem - Kandalaksha - Murmansk - Arkhangelsk - Naryan-Mar (Pechora port) - Amderma.

9. "Wooden architecture": Republic of Karelia (Kizhi) - Leningrad region (Podporozhsky district) - Vologda region (Vytegra, Vologda) - Veliky Novgorod (Museum of wooden architecture "Vitoslavlitsy"); Arkhangelsk region (Museum of wooden architecture "Small Korely") - Murmansk region (Varzuga, Tersky district).

10. "Tree of Life" (ancient Vepsian settlements): Republic of Karelia (Prionezhsky district, Sheltozero) - Leningrad region (Podporozhsky district, Vinnitsa, Voznesenye) - Vologda region (Babaevsky district).

11. “Indigenous peoples of the “Silver Necklace of Russia”: Pskov region (Sigovo village) - Republic of Karelia (Prionezhsky district, Sheltozero; Pryazhinsky district; Lakhdenpokhsky district) - Leningrad region (Kingiseppsky district, Vistino village (Izhora and Vod peoples), Podporozhsky district, Vinnitsa , Voznesenye) - Murmansk region (Pomors, Tersky district; Saami, Lovozersky district) - Nenets Autonomous Okrug (Krasnoye village, agricultural production cooperative "Kharp").

12. "Ghost towns of the North": Korzunovo (Murmansk region) - Charonda (Vologda region) - Khalmer-Yu (Komi Republic) - Amderma (Nenets Autonomous Okrug).

For a brief description of the region on a European scale, the slogan “The Russian North is the wild nature and water expanses of Europe” can be used. This is the main factor for the development of ecological tourism - the sector of the fastest growth of tourism.

Ecological tourism mainly develops in the national parks Yugyd-Va (Komi Republic), Paanayarvi, Kalevalsky, Vodlozersky (Republic of Karelia), Kenozersky, Russian Arctic, Onega Pomorye and Vodlozersky (Arkhangelsk region), "Russian North" (Vologda region). The Vodlozersky National Park is located on the territory of two regions of the European North at once. Any form of regulated tourism (especially ecological and eco-cultural) is the preferred activity for most national parks.

Mass flows of amateur tourists mainly prefer rafting on the rivers and reservoirs of Karelia and the Murmansk region, hiking and skiing in the Khibiny.

Ethnographic tourism. The European North is a real reserve of traditional folk culture of world importance. The cultures of various peoples and ethnographic groups are represented here: Saami, Pomors, Nenets, Komi, Karelians, Veps, Finns, Russians, which predetermines wide opportunities for the development of ethnographic tourism.

From the point of view of preserving the indigenous peoples and the living traditional culture of the Russian North, it is much more effective to develop small-scale low-cost cultural and natural tourism, which opens up opportunities for finding livelihoods throughout the region and does not require large investments. The initial impetus for the implementation of the new idea could be the creation of innovative cores based on ethno-cultural centers and ethno-natural parks in different parts of the European North. The integration of cultural heritage into the local zones of the ethno-cultural center makes it possible to combine the idea of preservation with the idea of reviving a unique territory in the best possible way.

The open-air museum ethnopark is an object of cultural tourism that interprets the dialogues of different cultures through authentically created ethnoyards, where tourists can live and learn the technology of making folk art crafts from local craftsmen.

Currently, there are four architectural and ethnographic open-air museum-reserves in the European North: the largest in Russia - "Small Korely" in the Arkhangelsk region, "Kizhi" in Karelia, "Semenkovo" in the Vologda region, Finno-Ugric ethnopark in the Komi Republic (Yb village).

On the Kola Peninsula, the main centers of ethnographic tourism are the village of Lovozero (the place of compact residence of the Saami and Komi-Izhma), the Saami village "Saam Syit", the village of Umba, the museum Pomor tonya Tetrino, the village of Loparskoye.

Tourists are also attracted by the preserved culture of the Old Believers in the historical

settlements of Kimzha (Arkhangelsk region) and Ust-Tsilma (ancestral homes and the site of the Ust-Tsilemskaya Gorka folklore festival) in the Komi Republic. Of interest are also Olonets (the most ethnically Karelian city in Karelia), the village of Kalevala (the birthplace of the Kalevala epic) and the national village of Izhma (the place of compact residence of Komi-Izhma residents in the Komi Republic). Rural tourism is actively developing in the villages of Karelia, Vologda and Arkhangelsk regions. Promising in the European North and industrial tourism (Cherepovets, Kirovsk). Orthodox pilgrimage tours are focused mainly on Valaam, the Solovetsky Archipelago, the Kirillovsky District, Vologda, the Antoniev Siysky Monastery, and the Orthodox monasteries of the Komi Republic. Health resort tourism has spread in the republics of Karelia (Marcial Waters), Komi (Seregovo resort), Arkhangelsk region (Belomorie, Krasnoborsk, Solvychegodsk resorts), Vologda region (Ledengsky resort, Totma). Maritime Arctic tourism is actively developing in the Murmansk and Arkhangelsk regions. Recreational fishing has spread mainly on the salmon rivers of the Kola Peninsula.

Gastronomic tourism is gaining great popularity among tourists. All regions of the European North are included in the federal project "Gastronomic Map of Russia" in order to promote local culinary brands and traditions. Tourists can try such dishes of traditional northern cuisine as Pomeranian shangi, Karelian kalitki, fishmongers, salmon fish soup, pies with berries, venison, and cod. For example, in the Murmansk region, the umbrella brand "Made in the Arctic" has been formed to support producers of arctic cuisine. The Kola North will be able to compete in venison dishes with other northern regions, and in seafood - with the Far East Republic of Karelia.

The Republic of Karelia favorably combines an advantageous transport and geographic position with a preserved natural resource potential, a rich cultural, historical, ethnographic and religious heritage. This rather unique combination of various tourist and recreational resources creates a good basis and prospect for the development of various types and forms of tourism.

Sixteen ethno-cultural historical territories with a preserved historical and cultural environment have been identified in the republic, more than 4,500 cultural heritage sites have been concentrated.

Tourism in the Republic of Karelia is recognized as a priority sector of the economy, which is becoming increasingly important in the development of the entire economic potential of the republic. Karelia traditionally holds a leading position among Russian regions in terms of tourist attractiveness.

The tourist flow to the Republic of Karelia has been steadily growing over the past years. The share of organized tourists in the total number of visitors is about 60% (800 thousand people in 2018). The total flow of visitors, including sightseers, in 2018 amounted to 1320 thousand people. Among the tourist centers in terms of attendance, the leaders are: the mountain park "Ruskeala" - 350 thousand tourists, the museum "Kizhi" - 220 thousand people, the reserve "Kivach" - 120 thousand people, the island of Valaam - 100 thousand people. (Fig. 1, 2).

Figure 1. Mountain Park "Ruskeala"

Figure 2. Museum-Reserve "Kizhi"

The tourism industry of Karelia in the last three years has a leading growth rate among all sectors of the regional economy. At the end of 2019, the tourist flow of organized tourists amounted to 830 thousand people, and the closed borders in the context of the pandemic and the relatively calm epidemiological situation in the spring and summer of 2020 made Karelia even more attractive for tourists. According to the Tourism Department of Karelia, only in July and August 2020, 350 thousand people visited the republic, while for the full summer season of 2019 - 100 thousand less, the growth in tourist flow was about 40%, and according to At the end of 2020, 790 thousand people visited the republic (Table 1). Attendance at the mountain park "Ruskeala" has almost doubled, and in the neighboring Sortavala there were no empty rooms in the hotels.

Table 1. Tourist flow to the Republic of Karelia

2017	2018	2019	2020
The volume of organized tourist flow, thousand people			
780	800	830	790

In the structure of the gross regional product, the share of tourism is 4-5%. In the structure of the all-Russian volume of tourist services, the share of the republic is more than 3%.

In total, the tourist complex of the republic is able to provide up to 3 million overnight stays per year in comfortable accommodation facilities. However, with a steady increase in the number of tourists visiting the region, today there are not enough hotels, especially in the budget, as well as high and premium price segments. A feature of Karelia is the uneven distribution of the tourist flow across the regions of the republic due to the different levels of development of the tourist infrastructure and the availability of tourist resources. Currently, the main tourist load falls on two areas - the center and the Northern Ladoga region, where two world-famous attractive tourism centers are located - the Kizhi Museum-Reserve and Valaam, as well as the capital of Karelia - Petrozavodsk, which are the most visited objects of the republic. The Karelian tourist flow has a pronounced seasonality, since it falls mainly on three summer months. Due to these circumstances, there is a problem of exceeding the maximum recreational load on the main tourist sites (Kizhi, Valaam).

Tourism in Karelia is an integrated type of economic activity that allows, with relatively small investments, to ensure the economically viable use and reproduction of local tourism resources and potential. Therefore, for the conditions of Karelia, it is legitimate to choose the tourist direction of the

region's development as a priority in relation to its industrial development.

The rapid growth of the tourist flow to the border mountain park "Ruskeala" gave the region a synergistic effect, uniting about three hundred people around the project - representatives of small businesses and travel companies (Figure 3). The main thing here is not to disturb the existing natural balance, not to turn the protected area into a typical mass amusement park.

Figure 3. Mountain park "Ruskeala". Boat ride on the platform

The border town of Sortavala is also one of the tourist centers of the Republic of Karelia. An important role in this is played by its role as one of the starting points of tourist routes to Valaam and to the Ruskeala mountain park, which is served by the Nikolaevsky Express retro train. A large flow of foreign tourists is provided by the so-called nostalgic tourism for the former inhabitants of the Ladoga region, now living in Finland, as well as the participation of the city in the international tourist route "Blue Road", stretching from the coast of Norway through Sweden and Finland to the Karelian Pudozh. Sortavala is the only historical city of the Republic of Karelia that has preserved its integral architectural and historical appearance. There are about two hundred architectural monuments in the styles of Finnish wooden romanticism, northern interwar modernism, functionalism, neoclassicism, wooden empire style of the mid-19th - early 20th centuries. The city has a well-developed service and hospitality sector, there is a huge number of mini-hotels, guest houses for a small town. A possible increase in the status of the city of Sortavala to the level of a historical city of federal significance will provide an opportunity to receive additional funding from the federal budget to create an attractive urban environment, in particular, to improve and create new comfortable public spaces. This will also increase the tourist attractiveness of the border town, through which guests of Karelia go to Valaam. In 2016, the city received the status of the New Year's capital of Russia, having received a large number of tourists in the winter. With the introduction of the high-speed train "Lastochka" in 2018, plying between St. Petersburg and Sortavala, in the foreseeable future, the tourist flow to the border city is expected to triple. In 2019, Russian Railways launched a new direct route Moscow - Sortavala - Ruskeala Park. In 2019, the implementation of the Legends of Karelia shopping mall was launched on the territory of the republic. Also formed in 2021 was the Karelian White Sea shopping mall.

The Arkhangelsk region is a kind of repository of ancient Russian culture and traditions of the spiritual life of the Pomors. On the territory of the region there are unique historical and cultural landscapes, world-famous monuments of wooden and stone architecture, on the coast of the White Sea - ancient Pomeranian villages. The Arkhangelsk region ranks 5th in Russia in terms of the concentration of cultural heritage sites (Figure 4).

Figure 4. Arkhangelsk. Embankment of the Northern Dvina

The Arkhangelsk region is notable for its wooden architecture and Pomeranian cuisine. Here is the largest open-air museum of wooden architecture in Russia "Malye Korely" (Figure 4). The region focuses on the development of Arctic, rural and ethnographic tourism. Currently, there are more than a hundred ethnographic sites, on the basis of which tourists are offered excursion programs and master classes aimed at preserving traditional folk traditions and crafts (Figure 5). Gastronomic tourism is becoming more and more popular in Pomorie. A gastronomic notebook-map of the Arkhangelsk region has been created, which provides information from the districts of the region about local culinary dishes and farm products.

In 2018, 409,000 organized tourists visited the Arkhangelsk region (of which 9,000 were foreigners), which is 4.6% more than in 2017. At the end of the 2019 tourist season, the tourist flow increased to 427,000 people. More than 1 million people take part in excursion programs of the region. Most often, residents of Moscow and St. Petersburg come to the region. Representatives of Germany, Finland, Sweden, France, Italy, Norway and the Netherlands are leading among the foreign guests of Pomorie. New objects of tourist infrastructure are being opened in the region, new projects, excursion programs and routes are being developed.

In the Arkhangelsk region, 21 tour operators for domestic and inbound tourism are registered, more than a hundred tour programs have been developed, and twelve TICs operate. Guests of the region are welcomed by 169 hotels, hostels and sanatoriums. In 2022, the greatest entrepreneurial activity in the field of tourism was noted in Arkhangelsk, Kotlas, as well as in Kotlas, Pinezhsky, Nyandoma and Krasnoborsky districts (Figure 5 and 6).

Figure 5. Museum "Small Korely". Hip bell tower inscribed in the natural landscape

Figure 6. Museum-reserve "Small Korely". Architectural and landscape exposition

Figure 7. View of Pinega from Krasnaya Gorka (Krasnaya Gorka village, Pinega district)

Figure 8. Shrines of Permogorye (Permogorye village, Krasnoborsky district)

Pinezhsky and Mezensky districts have become active centers for the development of rural tourism. The main problem here is transport accessibility: for example, on the Arkhangelsk-Golubino-Pinega-Mezen highway, the road is constantly broken by timber trucks and becomes impassable after rains. The road to Mezen must be built simultaneously with the development of roadside services and infrastructure.

Of particular note are the projects that, in order to increase the tourist and investment attractiveness of the region, are designed to contribute to the socio-economic development of the territories, among them: "Travel with taste" (development of infrastructure for popular tourist destinations), "ARHIprodukt" (promotion of northern products in the key of gastronomic tourism) and "ARCHITsentr" (a new socio-cultural public space in Arkhangelsk in the building of the Sea and River Station). "ARCHITsentr" will allow guests and residents of the region to get acquainted with the historical and cultural heritage of Pomorie with the help of modern museum and multimedia tools.

At present, the implementation of the investment project of the Belomorsky tourist cluster (Arkhangelsk, Lomonosovo village) has begun in Pomorie. Previously, it was planned to submit a joint application from the Arkhangelsk and Murmansk regions (TRC "Belomorsky" and "Belomorye") for entry into the federal target program for the development of tourism for 2019-2025. in RF. Tourism in the Arkhangelsk region is, first of all, a sustainable way of developing the territory, which improves the quality of life of the local population through attracting guests.

Traveling around the region starts from Arkhangelsk, the first seaport in Russia, the starting point for the development of the Arctic. The Arctic theme has become the leitmotif of the development of tourism in the capital of Pomorye: the tourist route "Arkhangelsk: here the Arctic begins" is one of the branded tours of Russia and includes visits to the main sea and Arctic attractions. In 2021, 120 thousand tourists visited Arkhangelsk, which is 9% more than in the previous year.

New arctic weekend tourist routes have been developed in the Primorsky region (“Patrakeevka is the birthplace of captains”, “Heathland is the birthplace of pilots”), in the village of Voznesenye and the Onega region (“Pomors near the White Sea”, “Onega is the residence of Princess Moroshka”).

The number of people wishing to visit the ancient city of Kargopol is growing: in 2020, its white-stone architecture and numerous museums attracted more than 9 thousand tourists, which is 18% more than in 2019. This is largely facilitated by the tourist routes of Kargopol, approved as branded tours Russia "Kargopolye - the land of hidden time" and "Kargopolskaya gosteba". Bright event events - the annual winter festival of bell art "Crystal Ringings" and the holiday of folk craftsmen of Russia, aimed at preserving and developing traditional folk crafts - in different years became national events of the year in

Russia according to the tour portal "National Calendar of Events". The gastronomic traditions of Kargopol are being developed by the eco-gastronomic festival “Lamb Sunday”. For foreign tourists, the Russian North is attractive primarily for its original wooden architecture. For example, the Kargopol-Kenozersky tourist region is known as the territory where the largest number of sacred monuments of wooden architecture is concentrated in the world. The brand of this territory is the preserved ancient wooden churches and chapels with unique "painted skies", votive worship crosses and holy groves. In the Kargapolsky district and the Kenozersky sector of the Plesetsky district there are unique villages, one of the last islands of the original Russian way of life, culture, traditions, outstanding examples of the cultural landscape of the Russian North. Some of these tourist villages are located on the territory of the Kenozero National Park, the only one in Russia where about a hundred architectural monuments have been preserved, among them are masterpieces of Russian wooden architecture of the 18th–19th centuries, which have no analogues in the world.

The development of the Kenozero National Park is a rare example of a SPNA contributing to the revival of villages through projects to restore architecture: temples, clubs and historical buildings.

As an example of best practices, Kenozersky National Park is included in three federal tourism collections at once: “Best practices of ecological tourism in the Russian Federation”, “Best practices of ethnographic tourism in the Russian Federation” and “Best regional practices for the development of rural tourism”.

The developed tourist infrastructure of the national park contributes to the development of domestic and inbound tourism in the Arkhangelsk region: nine ecological trails, seven excursion routes, 114 tourist stops (including picnic spots), two bicycle rental points, eight viewing platforms, sixteen museums (including expositions, landscape theatres), three visitor centers, six information centers, two eco-classes and three conference rooms. The park organizes accommodation and meals for tourist groups, equipped kitchens in hotels for self-catering.

The cultural landscapes of the Kenozero National Park most fully and successfully illustrate the features of the historical and cultural development of the territories of the North of Russia and the exceptional role of the natural component in this process. Particular attention is paid to the study of elements of traditional living culture as the most important mental component of the cultural landscape of Kenozero with a subsequent assessment of its role in the development of regulated tourism. National parks have become in Russia one of the main organizational forms for the protection of cultural landscapes, while they have a colossal historical, cultural and eco-tourism potential. In recent years, there has been a tendency for tourism activities to move into the cultural space of national parks, into the space of cultural landscapes.

The Kenozero National Park is an example of the most vivid manifestation of primordially Russian traditions here, elements of the traditional living culture of the Pomors, wooden religious architecture in harmony with the natural component of the territory. The assessment of the natural and cultural-historical heritage of a given territory from the standpoint of cultural landscape science and the principles of organizing cultural space acquires significance as a kind of factor in the formation of ecological culture and ecological consciousness through tourism.

In the Arkhangelsk region, rural tourism is actively developing, which has become one of the priority areas for the development of the tourism industry. The region is among the leaders in terms of rural tourism development in Russia, which can become one of the factors contributing to the diversification of the rural economy, increasing employment and incomes of the rural population; development of small business and, as a result, improvement of the quality of life in the countryside. The Arkhangelsk region is distinguished by a large number of preserved authentic villages of interest to tourists. A network of guest houses is being built to accommodate them. For the active development of rural tourism, it is necessary to allow the opening of mini-hotels in private homes on a notification basis.

On the territory of the Russian North there are 22 historical cities of regional significance, of which five are small towns that have the status of a historical city of federal significance. The shortened list for 2021 of particularly valuable historical cities in Russia includes small towns in the Russian North that have retained most of the old buildings: the Vologda cities of Belozersk, Totma and Veliky Ustyug, the Arkhangelsk cities of Kargopol and Solvychegodsk. Such large cities as Arkhangelsk, Cherepovets and Vologda have lost the official status of a historical city. The most visited regional center of the Russian North is the ancient Vologda; over the past five years, the flow of tourists to the cultural capital of the Russian North has grown by 70% as a result of the active development of the tourist infrastructure and a competent marketing policy to promote the city in the tourist market.

According to economic calculations, on average, one tourist leaves at least 10 thousand rubles in Vologda. This is about 3.5 thousand rubles per day in a hotel, 2 thousand rubles in cafes and restaurants, 1 thousand rubles when buying souvenirs and 3.5 thousand rubles when visiting excursions and museums. If 700 thousand tourists and sightseers come to Vologda a year, and 30% of them stay for at least a day, it turns out that investments in the city's economy amount to at least 2 billion rubles. Of the

700-800 thousand tourists a year, 70% are sightseers, 30% are tourists. More than half of the guests stay in the city for business purposes, 23% of tourists are people who travel to Vologda to get to know the city, its architecture and history (Figure 7). Another 21% of tourists come to events.

The problem of preserving one of the main brands of Vologda - carved wooden architecture - causes concern. Instead of demolished and burnt wooden architectural monuments, as a rule, featureless structures made of glass and concrete grow, at best, the so-called fake-makers, only imitating the appearance of historical buildings. In the capital of Pomorye, Arkhangelsk, there is also a trend towards demolition and the loss of environmental wooden buildings.

The best examples of the successful development of tourism in the small historical settlements of the Russian North, along with Veliky Ustyug, are Totma, Kirillov, Belozersk and Yarensk. The tourist flow is growing here, new jobs are being created, additional investments are being attracted, the revenue side of local budgets is being replenished, and new event events are being developed.

A specific problem of small historical towns in the Russian North lies in a significant proportion of the aging wooden fund of valuable environmental development, the loss of which and the corresponding change in the urban historical environment means the erosion of the identity of the settlement. The sphere of cultural and historical heritage (protection of architectural monuments and preservation of authentic appearance) is the main problem of small towns in terms of culture and tourism.

Figure 9. Vologda. Kremlin

Among the small towns of the Arkhangelsk region, Kargopol, Velsk and Solvychegodsk should be especially noted, in which, despite the small tourist flow, the system of tourist information navigation is actively developing in the historical center near the main display objects (Figure 8). The city-museum of Kargopol is the only one among the cities of the Russian North, accepted into the Association of Small Tourist Cities of Russia, a venue for bright year-round festivals and holidays. The city is visited annually by about 10 thousand tourists (Figures 10 - 12).

The Kargopol Museum has prepared a new brand project “Kargopol is the birthplace of the President of Russian America A. Baranov”, within the framework of which it is planned to create a cultural and business complex in the historical part of Kargopol, where temple white-stone ensembles and part of the civil buildings of the late 19th - early 20th centuries have been preserved. The most significant object of this project is the museum of Alexander Baranov, the president of Russian America from Kargopol. It is also planned to create a memorial museum-apartment of the Kargopol artist Gennady Kulishov "Artist's House" and the exhibition and trade complex "Gostiny Dvor".

The historical center of ancient Velsk is replenished with new cultural display objects. The park of wooden sculptures of the Tree of Life festival was opened, and a pedestrian museum quarter was created on the central square. In 2018, the exposition and exhibition complex "Museum of House Art Paintings of Povazhye" was opened in the Kichev house, a monument of wooden architecture transported from the outback.

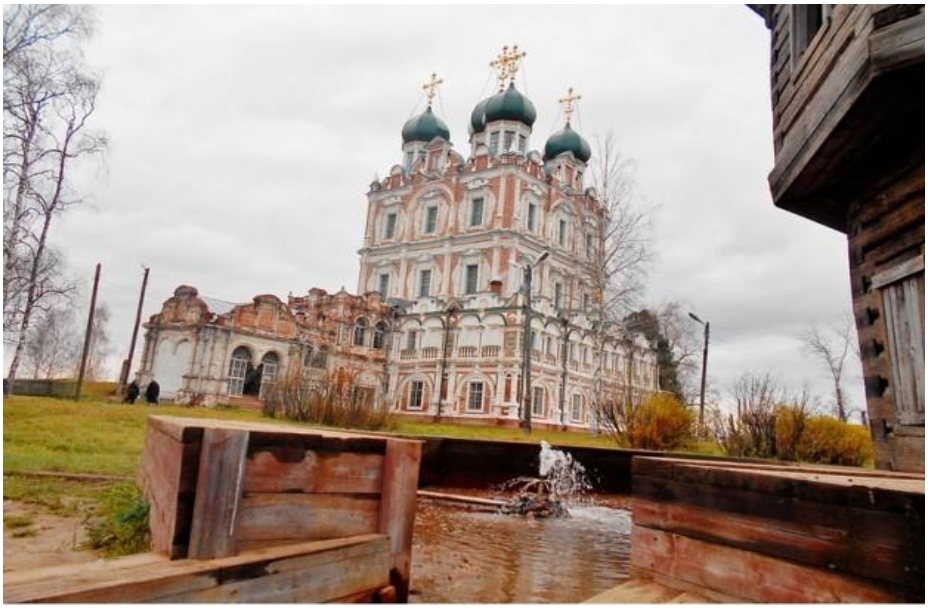


Figure 10. Solvychegodsk. Vvedensky Cathedral

Figure 11. Kargopol. Nativity Cathedral

Figure 12. Kargopol. Trinity Church

And in Solvychegodsk, one of the smallest cities in Russia with a unique mud treatment resort and a powerful cultural heritage associated with the Stroganov dynasty, information stands about the history of existing and lost architectural monuments were installed, a sculpture park of the Kozma Prutkov festival was created, and the first comfortable accommodation facility was opened - a hotel " Merchant". The former county town of Shenkursk is attractive to tourists not only for its well-preserved historical buildings, but also for its natural heritage - within the city there are several old-growth pine forests on the hilly banks of the Vaga. Because of this feature, a tourist brand of the city was developed - "Pine Holidays in Shenkursk".

Potential candidates for joining the ASKDGR are small towns of the Russian North that have preserved authentic architectural monuments, the original culture of local residents and the traditional historical habitat - Kirillov and Belozersk (Figure 13). In 2020, the candidate cities of Kargopol and Solvychegodsk have already been included in the association. Kargopol in the same year received the status of a UNESCO creative city among the creative cities of the world in the field of crafts and folk art. In Russia, apart from Kargopol, only two cities, Ulyanovsk and Kazan, have such a high status. This network brings together cities based on creativity: arts and crafts and folk art, music, design, literature and gastronomy. The cities that are part of the UNESCO network define creativity and the creative economy as one of the priority areas in their development.

Figure 13. Kirillo-Belozersky Monastery

Among the small historical cities of the Russian North, Kirillov occupies the first place in terms of attendance, receiving about 360 thousand tourists a year (of which 66 thousand are foreigners), mainly as part of a water cruise along the Volga-Baltic River, the most popular tourist route in the European North. The economic potential of the Kirillovsky district is 45% formed by the tourism and services sector. Kirillov is one of the three most popular small towns in Russia among tourists. In the summer season, the Gorica pier annually receives up to 500 cruise ships.

Several residences of the Arkhangelsk region are included in the federal project "Fairytale Map of Russia". The most famous among tourists are the brands of the former county town of Yarensk, Lensky district, "Motherland of Mother Winter" and "I'll leave everything, I'll go to Yarensk." Despite the transport remoteness of Yarensk, the tourist flow to the ancient village has increased from 200 people. in 2012 up to 19 thousand people. in 2020. Unfortunately, the deplorable state of most of the historical buildings of the village does not allow it to count on potential inclusion in the ASKDGR in the near future, but it is sincerely a pity.

Small towns, especially those with a rich historical heritage, are waiting for simple and quick solutions for their development, a sharp increase in the number of tourists, and hence an increase in income and employment. Cultural tourism is the basis for economic growth and an opportunity for the sustainable development of the historic city. However, one should not expect mass tourism in small towns, especially in cities with underdeveloped logistics (for example, Kargopol and Mezen). Tourism for such cities will not become a city-forming industry, but can be an important development factor.

Mass tourists, as a rule, choose the most affordable, optimal places to visit in terms of price and quality. Any successful examples of tourism development in the northern towns are associated either with strong branding, mainly using federal resources (for example, Veliky Ustyug), or with a favorable geographical position (for example, Kirillov).

Each small historical city should look for its own special zest, which could be the main elements in creating an attractive image of local identity. It is necessary to look for some little things that could become branded products, symbols of the city and which are specific or even unique. For example, in Kargopol there are public wash basins. These are places where clothes are still rinsed in river water after washing, and there are specially adapted buildings for this. Absolutely usual thing for a Kargopol citizen, but completely unusual and interesting for a tourist. Even in Kargopol there is a well-known Kargopol toy and “sushchik”, dried fish in a special way for cooking fish soup. Perhaps, with good marketing, all these artifacts could become a commercial product, subject to an increase in the tourist flow to the city.

Obviously, for successful development, the economy of a small town can only be diversified. Moreover, the accelerated development of tourism and the experience economy as the dominant one

carries certain risks for the identity of the city. A small town like Kargopol can earn partly from timber processing, partly from agriculture, and partly from tourism (mainly domestic). Sustainable development requires something that generates external demand for the city's attractiveness.

In small towns, the departing youth can be replaced by people (for example, the creative intelligentsia), who, on the contrary, are ready to leave the big and expensive city, where they already experience discomfort from the high pace of life. How can Kargopol attract them? Calmness, social homogeneity, relatively low cost of living. A mutually beneficial exchange is possible: a big city needs active, young people, and a small city needs creative, calm and mature people. It should be a new economy of services associated with a different workforce, this approach can be effective for small towns. We must try to "sell" the attractiveness of solitude and locality. Places like Kargopol can offer this. In Kargopol it is possible to find your own unique core, which can be a common passion for history, folk culture, crafts or unusual customs. In the conditions of the almost complete destruction of the real sector of the economy of a small historical city, only culture and the creative industry can become a source of sustainable development. This fundamental reversal implies that the result of activity will have a cumulative effect, i.e., it will accumulate for a long time before its visible manifestation, and the increase in income and well-being of the population will not occur at the first stages. The difficult conditions of Kargopol, associated with social conservation and economic stagnation, together with the surrounding natural landscape and the ancient history of the North Russian lands, make the idea of a reserved northern Russia the most promising. Unification of the interpretation of the medieval history of Kargopol as the center of the Russian North, plus the unification of mythologems with the subsequent creation of museums,

One of the serious problems of small towns is the low social activity of residents, the lack of effective technologies for involving the population in the development of the city. An example should be taken from Totma, where a very active initiative community was formed on the basis of local museum historians: both activists and business became more active, the authorities supported, everyone was connected by one specific goal - the survival and development of the city at the expense of the socio-cultural sphere and tourism. This synergy worked and captivated the entire population of the city.

In the historical cities of the Russian North, it is necessary to create a comfortable urban environment based on the development of friendly public spaces and new attractions (pedestrian zones, embankments, bike paths, the museum quarter, street art objects and murals, creative installations, small urban sculpture) and tourist information navigation on base for the installation of signs, information boards and stands with tourist maps on historical streets and cultural heritage sites. The stands can display a photo story or a legend associated with a particular architectural monument. It is possible to organize pedestrian thematic tourist routes with drawing them and display objects on information stands with maps and even color marking of routes on the sidewalks (the best examples are the historical settlements of the Perm Territory, the city of Kotelnich).

When designing urban cycle paths and cycle lanes, it must be taken into account that they must be safe and separated from pedestrian paths and the roadway. To create a developed cycling infrastructure in cities and use it all year round, one can take into account the positive experience of developing cycling in northern European cities and Russian Almetyevsk, where people ride bicycles all year round, including winter.

The quality of working out a comfortable urban environment directly affects the tourist attractiveness of the city. The formation of profiles of high-quality public spaces is the first step towards the sustainable development of hospitable territories, a necessary factor in the return of the tourist flow. The main principles of open public spaces are: safety (from crime and cars), comfort, the presence of points of attraction and activities for local residents and tourists. Public spaces need to be created where they will be in real demand, with good accessibility for people. On a crowded pedestrian street or embankment with saturated places of attraction, investment and tourist attractiveness increases, small and medium-sized businesses are actively developing, and the level of street crime is decreasing.

With existing problems with budgetary financing in cities, it is possible to use the innovative method of tactical urbanism in the transformation of urban public spaces. Tactical urbanism is a relatively new concept introduced in 2010. In fact, this is a general term that describes methods for rapidly changing the urban environment with a minimum of financial resources and the active participation of local communities. Urban designer Eric Reynolds described the term as follows: “Easy. Fast. Cheap". After all, the idea of tactical urbanism is to take part of the territory of the city and transform the urban environment as soon as possible and with minimal effort.

To date, the Arkhangelsk region is the leader among the constituent entities of the Russian Federation in terms of the number of settlements accepted in the ASKDGR (six villages and two cities). In 2018, it included the village of Oshevensky Pogost, Kargopolsky district, in 2019 - Kimzha, Mezensky district, in 2020 - Kilets, Mezensky district, and Verkola, Pinezhsky district (Figure 14).

In 2020, the status of the most beautiful villages in Russia was replenished with the villages of

Cherevkovo in the Krasnoborsky District and Zekhnova (Kenozersky National Park). The Pomor villages of Kimzha and Kiltsa became the first Arctic villages in the association, since the Mezensky District is part of the Arctic zone of the Russian Federation. The inauguration of the villages made it possible to increase the flow of tourists to the Kargopol region by 17%, to the Mezen region by 15%.

Figure 14. Verkola village

The Mezensky District is the custodian of the natural and cultural heritage of the Russian North. Undisturbed natural landscapes and ancient northern villages have been preserved here, which have not lost real Pomeranian traditions and way of life. Over the past ten years, the number of tourists in the Arctic village of Kimzha has increased twenty-fold to 1,113 people. Kimzha is a kind of naturally preserved reserve of wooden architecture, a natural, historical and cultural phenomenon, a unique original traditional settlement of Russian and international significance. The cultural landscape of Kimzha has survived to the present time almost in its original form (Figures 15 - 16).

Figure 15. Kimzha village

Figure 16. Kimzha village. Holistic cultural landscape

Today Kinerma is a unique complex monument of folk wooden architecture of Karelia in the 19th century. Karelian Livviks. Since 2001, there has been an international project for the preservation and revival of the villages of the Vedlozero region “Vedlozerye. Kinerma". It is aimed at the preservation and development of the historical village of Kinerma, including the preservation of the architectural heritage, the development of local traditional culture, and the creation of conditions for the development of cultural tourism. At the initiative of the Kalmykov family, who were born in Kinerma, a private enterprise was created to receive and service tourists. Among the objects of tourist infrastructure there is a restored bathhouse in a black way, a traditional peasant house adapted for an ethnocultural center, an economic part of the house-complex decorated as a dining room, a recreated historical barn for the sale of souvenirs, a traditional well, fences, etc. Kinerma village is one of the seven wonders of the Finno-Ugric world according to the site FINUGOR.RU. Local residents are actively engaged in the preservation of the Karelian culture and language.

The Association of the most beautiful villages and towns in Russia is a project for the integrated and sustainable development of rural areas, aimed at improving the quality of life of the local population, designed for active people who honor their traditions and identity. The status of "the most beautiful village" is assigned for five years. A “quality charter” is signed with the settlement, an agreement under which the association undertakes to promote the most beautiful villages at the Russian and international levels, and the municipalities undertake to comply with the criteria put forward. A road map is being jointly developed to enhance the aesthetic appearance of the village and develop infrastructure, and actively involve the local population in the development of the project. Considerable attention is paid to the preservation of historical and cultural heritage, tourist information and gastronomic aspects.

The association is part of the Federation of the most beautiful corners of the world - this is a very high status, claiming to be included in the UNESCO heritage list. On the one hand, this brand helps to attract additional attention of tourists, on the other hand, it can influence the perception of identity among local residents and become a significant incentive for sustainable development. A rural settlement can earn additional income through the sale of local souvenirs, culinary dishes and tourist products. At present, on the Association's website, the guide to the most beautiful villages includes 44 settlements in Russia, of which 29 are located in the Russian North - 24 villages in the Arkhangelsk region, two Karelian villages, and three small settlements in the Vologda region. Most of these rural settlements have the status of "halt", the criteria for inclusion in which are not so strict, as for the status of "the most beautiful village in Russia". Many historic villages are difficult to access, rarely accessible by public transport due to poor roads, and some can only be reached by boat by ferry or SUV (for example, Kilza).

Regarding possible membership in ASKDGR, a survey of local residents is conducted at a general meeting, the decision to join the association is made by a majority of votes. Some villagers are afraid of excessive attention from guests. A balance should be maintained between tourism and the traditional way of life. So, in 2017, at a local gathering, residents (mostly seasonal summer residents) of the Pomeranian Onega village of Vorzogory unexpectedly refused membership in the association. And residents of the Karelian village of Kinerma asked to be protected

from annoying tourists who flooded into their small village after joining the association. Local residents explain this by the fact that only five people live permanently in Kinerma, and the tourist flow to the village has grown to 3 thousand tourists a year, which is why there are not enough local personnel to conduct excursions and resources to accommodate numerous guests.

In the Arkhangelsk region in 2019, a new tourist route was developed along the three northernmost beautiful villages of Pomorie (Kiltsa, Kimzha, Verkola) with guests staying at the Golubino forest hotel. The developers of the modular route plan to involve local residents in the project as much as possible and give impetus to sustainable development and the preservation of villages. In order for rural areas to develop, local residents should conduct master classes and arrange a program for guests. Thus, they will have the opportunity to earn, which is very important for the preservation of the villages. With the growth of the tourist flow to the most beautiful villages, there is an increase in the activity of local communities, they come to life, residents begin to apply for various grants. In the future, this becomes beneficial for neighboring rural settlements. According to the results of the sixth expedition of the association to the Russian North in 2024 several more settlements of Pomorye can claim the title of the most beautiful village in the country. Among them are the remote villages of Bolshiye Nisogory and Chulasa in the Leshukonsky District, as well as the village of Edomy in the Pinezhsky District. The association's experts noted the positive changes that have taken place in four villages that have already become one of the most beautiful villages in Russia. So, in Kimzha, with state support, the guest house “Shelter of the Traveler” was renovated, in the village of Oshevensk, on the basis of a peasant house, an artisan estate was created, uniting local craftsmen for the production of handicrafts. Oshevensk has already firmly entered the list of branded routes in Russia: a visitor center has been created there, the Oshevenskaya Wedding program has been developed, and event events are organized (Figure 16).

It is planned to open a new guest house in Verkol, the House of Culture is being reconstructed, in February 2020, events related to the centenary of the writer Fyodor Abramov were successfully held (Figure 16). In Kielce, with the support of the French National Federation of Companions, an old well has been restored.

The Arkhangelsk region may become the first Russian region where satellite villages, or halt villages, will appear. The French experience of using such settlements, which do not fall under the criteria of the ASKDGR participant, but have great tourism potential, is interesting. In the Arkhangelsk region, the village of Lomonosovo, Kholmogorsky district, can become one of such places.

It makes sense to stop at such points along the way to the most beautiful villages to eat and relax. This will help to involve a wider range of settlements. Such halts, among other things, ensure the safety of tourists during travel.

Association experts should also pay attention to other rural settlements of the Russian North, which have preserved authentic monuments of folk wooden architecture, the original culture of local residents and the traditional historical habitat. Potential candidates for joining the ASKDGR are: Karelian (Panozero, Khaikolya, Sheltozero, Shueretskoye), Vologda (Fire - the national village of the Russian North is visited by up to 15 thousand tourists a year, Goritsy), Arkhangelsk (Vershinino, Sura, Dorogorskoye) villages, Old Believer the village of Ust-Tsilma in the Komi Republic, as well as the village of Varzuga in the Murmansk region (Figure 17).

Figure 17. Oshevensk village

Figure 18. The village of Verkola is the birthplace of Fyodor Abramov

Figure 19. Art object in the village of Sura, which is the birthplace of John of Kronstadt

One of the promising driving forces for the sustainable development of small historical settlements in the Russian North is territorial public self-government (TPS). For example, tourist projects of TOS in the Arkhangelsk region are recognized as one of the best in Russia (Kimzha, Yarensk).

In the village of Kimzha, the local CBT developed and implemented the brand "The northernmost mills in the world" with the creation of a museum exposition. During its work, TOS "Kimzha" has implemented more than thirty projects, including several international ones.

In TOS "Kimzha" folk crafts are preserved today: weaving, pottery, felting from wool. At the same time, the residents of the village of Kimzha are actively involved in the implementation of TOS tourism initiatives: an individual entrepreneur provides accommodation services in the guest house “Shelter of a Traveler”; a cultural program with a performance by a folklore ensemble is organized at the Politov House Museum of Peasant Life, a Mezen treat awaits tourists in a cafe with traditional cuisine Kimzhenska pauzna. In addition, representatives of the TOS "Kimzha" conduct excursions around the village and always lead guests to the famous mills. The small northern village of Kimzha implements more than one project a year, receives foreign guests, artists, and scientific expeditions. In Kimzha, all projects are connected into a single whole, the results are in demand, there is a vision of the integrity of the tourism product. The CBT project of the village of Yarensk participated in the first international competition "Tourist brand: best practices - 2015" in the nomination "The best territorial brand in the category" Tourist brand of the region / municipality "". According to the results of the competition, the project "Yarensk - the birthplace of Mother Winter" took first place.

The CBT initiative is an important tool that can attract an active population to projects aimed at developing tourism, preserving cultural and historical heritage, folk traditions and crafts in small towns and villages of the Russian North. As a result of the implementation of local TOS projects, tourism infrastructure facilities appear on the territory, which can be the beginning of serious tourism business projects. An important role in the life of the CBT is played by local public enthusiasts from among the local residents who coordinate all the work of local communities, for example, Tatyana Sedunova (Pinezhsky District), Evdokia Repitskaya, head of the tourist cultural and museum center "Kimzha", Nina Nikolaevna Selivanova, organizer of the first guest house in Kimzha, Nadezhda Kalmykova (Kinerma village). Thanks to these people, with the help of the development of tourism and the socio-cultural sphere, the historical villages of the Russian North are being revived. In order to preserve the traditional historical environment and cultural landscapes, the unique rural areas of the Russian North can receive the status of a historical and cultural reserve (for example, Kimzha) or a landmark of regional or federal significance. First of all, it is necessary to maintain a balance between tourism and the traditional way of life.

In the rural historical settlements of the Russian North in the field of hospitality, it is advisable to develop a system of private guest houses using original local culinary brands in the meals of guests. Currently, in Russia there is an acute problem of preserving the historical and cultural heritage, which is often perceived by the authorities, the professional community of urban planners and architects as a serious obstacle to the development of cities.

Historical settlements and their borders, which have become the subject of heated discussions, are considered a heavy burden. The leadership of a number of historical settlements is trying by any means to get rid of this status or to replace the federal status of the settlement with a regional one.

The real brand of the Russian North is folk wooden architecture. Two types of traditional wooden residential buildings in Rus' predominate here: Russian (three-slope roofs, often with carved architraves and a light) and Finno-Ugric (Northern Russian, with gable roofs). As a rule, the most authentic buildings have been preserved in remote villages. Unlike monuments of church architecture, historical rural wooden buildings for the most part do not have the status of objects of cultural heritage (CHO). It is also necessary to note the lack of information about the architectural and historical heritage of rural settlements. In traditional guidebooks for the regions of the Russian North, only the most famous monuments of church architecture and historical cities are widely represented. In order to preserve the most valuable environmental buildings both in rural settlements, and in cities, it is necessary to revise the regional registers of CHOs (mainly in the Vologda, Arkhangelsk regions and the Komi Republic) and include them in the list of newly identified protected CHOs. In the Republic of Karelia and the Murmansk region, almost all historical buildings, due to their small number, have the status of OKN. If the building does not have the status of a CHO, the appearance of the house often depends on the tastes of the private owners of the object, which can completely change the historical appearance of the building. If the house is recognized by the OKN and is under the protection of the state, then its owner does not have the right to any restructuring without the consent of the relevant authorities. In large historical cities of Russia, degradation of the urban environment is noted, the demolition of ordinary historical buildings.

In any old European city, the streets with wooden historical buildings become the center of active city life, a place of attraction for tourists, small businesses with the attraction of money to the city budget. The potential of Russian historical cities is clearly underestimated. Such beautiful carved lace architraves, as in Russia, are nowhere else in the world. In the cities of Western Europe, wooden carved decor is much more modest than in Russia. Wooden folk architecture is an original Russian style in architecture. Russia gave the world constructivism and a Russian hut. A distinctive feature of Russian historical cities is a holistic urban environment, formed by wooden buildings of the second half of the 19th - early 20th centuries, which demonstrates the national architecture that is disappearing in modern Russia. The wooden architecture of Russian cities of this period is considered by experts to be a unique phenomenon of world culture and a national treasure of Russia. Among the cities of the Russian North, a relatively integral historical environment has been preserved in all five small historical cities that have the official status of a historical settlement of federal significance, as well as in such cities as Ustyuzhna, Velsk, Shenkursk and Sortavala. In large cities, the most valuable wooden buildings have been preserved fragmentarily in Vologda and Arkhangelsk.

The most important principle of preserving cultural and historical heritage is that there is no history without authenticity. Replica copies that only imitate the lost monuments, for example in Vologda, have no value. At the same time, Vologda is one of the three cities in Russia (along with Tomsk and Irkutsk), where unique wooden architecture has been preserved in all its stylistic diversity. It is important to preserve the little that remains in the city, using the positive experience of restoration and reconstruction of such buildings in Irkutsk (Irkutskaya Sloboda, or the 130th quarter) and Tomsk.

In order to save wooden Vologda, city defenders propose to create clusters where wooden buildings have been preserved, and designate a special status for these territories, which would allow developers to understand that it is possible to build here, attract small businesses, and create conditions for the development of tourism infrastructure (Figure 19). It is also necessary to ban the construction of fake replicas on the site of the burnt and demolished originals, because otherwise the monuments will be demolished and set on fire ad infinitum. According to experts, a federal targeted program is needed that will unite historical centers (Vologda, Arkhangelsk, Irkutsk and Tomsk). Today it is recognized that the preservation of the architectural heritage is of value not only for culture, but also for the economy of the regions, as it increases their investment and tourist attractiveness.

Arkhangelsk, where ordinary wooden buildings are also being lost, is saved by the fact that the city has a reserved pedestrian street - Chumbarova-Luchinsky Avenue, where samples of folk wooden architecture were transferred in a timely manner, which became a popular object of display for tourists (Figures 21 - 22).

Figure 21. Vologda. Wooden architecture

Figure 22. Pomorsky Arbat (Arkhangelsk city)

Figure 23. Monument to Senya Malina (Arkhangelsk city)

In order to preserve the remaining memorial houses and give them a new life, the Tom Sawyer Fest festival is being held in the ancient cities of Russia - a public initiative project for restoring the historical urban environment with the help of volunteers and sponsors. Tom Sawyer Fest is a festival for those who want to make the city better, move from words to deeds, tidy up the appearance of the city, pay attention to the value of the historical environment and unite urban activists into an active community. Particular attention is paid to the restoration of wooden houses. Most of the objects of the festival are buildings that do not have a special conservation status of an architectural monument or historical heritage. Andrey Kochetkov, a journalist from Samara, became the ideological inspirer of the festival. The festival was founded in Samara in 2015 and since then has been developed throughout Russia. In 2019 "Tom Sawyer Fest" reached the Russian North. Interesting wooden buildings were chosen in Arkhangelsk, Vologda and Totma for renovation and restoration of facades. For example, in Arkhangelsk, a well-known architectural monument, the Marfin House on a pedestrian street, was chosen for restoration.

To restore the architectural heritage, the Attention Foundation (a charitable foundation for the preservation of historical heritage in Russia) was also created by Ilya Varlamov and Maxim Katz, which provides assistance in raising funds, advises and helps to save cultural heritage sites of our country from destruction. The Foundation is creating a model structure that can raise funds quickly and efficiently and contribute to the conservation and restoration of sites. In the European North of Russia, the Attention Foundation has begun a public fundraiser for the restoration of the wooden town hall in Sortaval, a club in the village of Ust-Pocha (Kenozersky National Park), a wooden church of St. John the Evangelist in the village of Anisimovo, Vologda Region. In order to preserve the valuable cultural and historical heritage of historical cities and settlements of the Russian North, it is necessary to expand the federal list of historical cities, including ancient cities and settlements in which valuable and integral historical buildings have been preserved. Historical rural settlements of the Russian North with an untouched cultural landscape and unique architectural monuments can receive the status of a historical and cultural reserve or a landmark of federal or regional significance.

The preservation of national identity, history and culture, materialized in the architecture of the historical settlements of the Russian North, will contribute to the growth of national identity and love for one's place of residence, continuity in the formation of a comfortable living environment, and the development of domestic and inbound tourism. The most striking example of the successful development of rural tourism in the outback of Russia is the village of Vyatskoye, Yaroslavl region. Entrepreneur, scientist and philanthropist from Yaroslavl Oleg Zharov set a goal - to create mechanisms for the socio-economic development of a unique rural area based on the revival of cultural and historical heritage. The village of Vyatskoe, depressive and “dying”, but possessing the most unique cultural and historical heritage, was chosen as a research site.

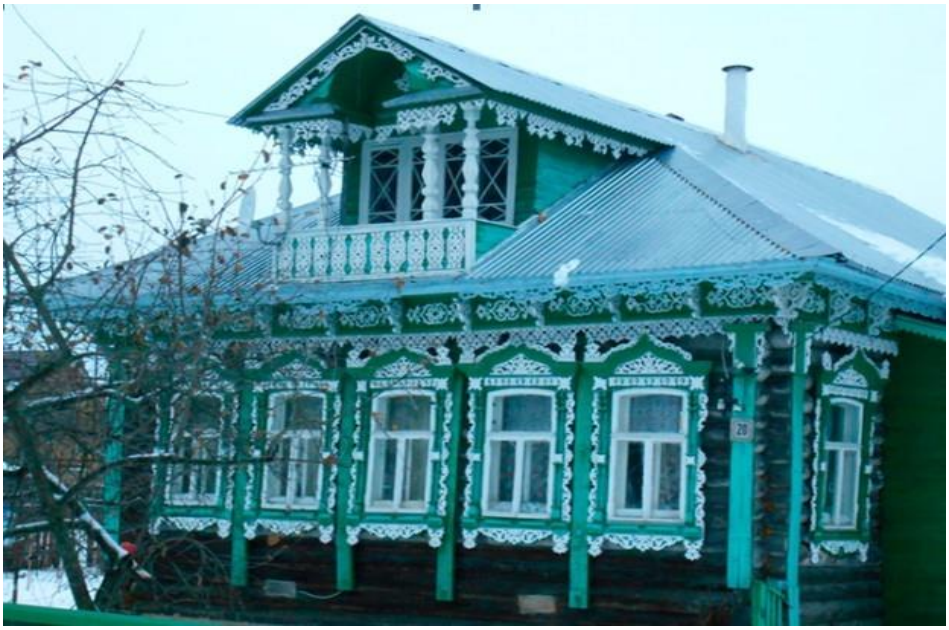


Figure 24. Vyatskoye village

Since 2007, Yaroslavl Investment and Financial Company LLC (headed by Oleg Zharov) has been implementing a village reconstruction program with the aim of turning it into a museum and tourist center. As part of the program, work is underway to reconstruct the buildings of the historical part of the village, as well as the construction of new structures and buildings. Oleg Zharov began to buy destroyed merchant houses, restore them and sell them. First of all, he called the local residents to subbotniks in order to ennoble the appearance and clean the territory of the village from garbage. He carried out sewerage, water supply, opened a hotel, a restaurant, seven museums (including the Museum of Russian Entrepreneurship) in restored buildings. An Orthodox church has been restored, two holy springs have been ennobled. A local brand "Vyatskoe - Cucumber Country" was created. At the moment, the village of Vyatskoye is the most attractive and comfortable village in the Yaroslavl region, a comfortable environment and infrastructure for life and business has been created, and with little or no government assistance or attraction of budgetary funds. 30 historic buildings were restored in the village, a new cottage town was built, and $15 million of private investment was invested in infrastructure modernization.

In total, 80 jobs have been created in Vyatsky in the field of tourism and hospitality, of which 50 are for local residents. As a result, the tourist flow to the village reached 120 thousand tourists a year. Entrepreneur O. Zharov proved that the rural historical and cultural complex can be a profitable business, and the revival of cultural heritage is financially viable. In 2015, the village became the first member of ASKDGR. The number of mini-museums in Vyatka has been increasing in recent years and has now reached twelve.

Conclusion

The study, the result of which is this book, allows us to conclude that the tourism industry in the European North of Russia is in the stage of active development. At the moment, it is important to develop competitive innovative tourism products and investment projects. Tourism is actively developing in all regions of the Russian North, there is an annual growth in tourist flow.

Based on an expert assessment of the analysis of the current state, main problems and prospects for the development of tourism in the regions of the European North of Russia and the western sector of the Russian Arctic, the economic, geographical and sociocultural aspects of the sustainable development of the tourism industry have been studied. Emphasis is placed on the most dynamically developing areas and types of tourism. Particular attention is paid to the development of Arctic, environmental, international, cultural, educational, event, cruise and rural tourism in the regions. Among the new trends are gastronomic, industrial, scientific, socially responsible (“volunteer holidays”) tourism.

Tourism in the northern regions is rapidly diversifying, but in the system of development of the hospitality sector for each territory, a regional strategy for the quality of service is needed, the availability of not only basic services, but also those that increase the attractiveness of the trip through event events, the emergence of new attractions, tourist information navigation and quality improvement. urban environment.

It is shown that the COVID-19 pandemic had a significant impact on the development of the tourism industry in 2020. At present, the main tourist destinations are being transformed and tourist flows are being redistributed. In the pandemic and post-pandemic periods, special attention should be paid to active types of natural and ecotourism in sparsely populated places, individual and family tours, car and cycling tourism. Among the new areas of northern tourism after the restrictions are lifted will be digital detox tours (time spent away from the Internet, computers and phones) and plogging. Among the innovative types of ecological tourism infrastructure in the Russian North, the most promising are glampings and eco-hotels, which have become widespread in the countries of Northern Europe.

The main factors contributing to the investment and tourist attractiveness of the regions of the Western Arctic and the European North of Russia are identified: the presence of unique display facilities and high-quality infrastructure, geographical location and transport accessibility, tourist potential and branding of tourism centers, the price of a tourist product and its profitability, advertising and informational fame of the region, the level of security for tourists, the level of state support for entrepreneurs.

The main problems of tourism development in the Western Arctic are identified, due to the high cost of tourism and transport services, the underdevelopment of the relevant infrastructure, the lack of ice-class ships, institutional and environmental restrictions. The key problems of northern tourism are also the lack of quality accommodation facilities, the low level of service, the poor condition of the road transport network, the lack of funds for the creation of new display facilities and the restoration of architectural monuments, the inaccessibility of unique territories and the seasonality factor.

To implement plans for the development of tourism in the Russian North, a large-scale modernization and construction of tourism and transport infrastructure is necessary. The lack of infrastructure facilities and their significant deterioration are the main obstacles to the development of tourism.

Tourism is one of the promising areas for diversifying economic activities in small settlements of the North.

The most cost-effective, competitive and promising for the development of unique tourist and recreational areas of the European North is the use of a cluster approach. Innovative investment projects in the field of tourism should increase the tourist flow, which, in turn, will attract additional investment in the modernization of infrastructure and the further sustainable development of unique territories, and improve the quality of life of the local population.

A specific problem of small historical towns in the Russian North lies in a significant proportion of the aging wooden fund of valuable environmental development, the loss of which and the corresponding change in the urban historical environment means the erosion of the identity of the settlement. The sphere of cultural and historical heritage - the protection of architectural monuments and the preservation of the authentic appearance - is the main problem of small towns in terms of culture and tourism.

The priority strategic tasks for the development of tourism are formulated, namely:

1) increasing the availability of unique Arctic and northern territories and remote tourism centers for tourists with different income levels;

2) organization of regional tourism and recreation clusters based on the modernization of transport and tourism infrastructures;

3) attracting investments in the tourism industry in the form of a public-private partnership;

4) a strategy for the global promotion of the tourism potential of the Russian Arctic and the Russian North;

5) the development of competition in the field of transport, the simplification of logistics, the combination of sea cruises with air tourism will make it possible to reduce the cost of travel for those wishing to visit the unique high-latitude Arctic territories and increase the tourist flow;

6) minimization of anthropogenic impact on the natural environment of the Russian North;

7) preservation of objects of historical, cultural and natural heritage;

8) expansion of the list of historical cities and settlements of federal significance, revision and addition of the register of cultural heritage objects of the European North;

9) in the cities of the region, it is necessary to increase the level of comfort of the urban environment through the development of friendly public spaces and new attractions (pedestrian zones, embankments, bike paths, museum quarters, street art objects and murals, creative installations, small urban sculpture) and tourist information navigation;

10) creating an attractive image of local identity and branding tourism centers in the Arctic regions of the Russian Federation.

References:

1. Agarkov, S.A., Kozlov, A.V., Fedoseev, S.V., & Teslya, A.B. (2018). The main directions of improving the efficiency of economic activity in the Arctic zone of the Russian Federation. *Zapiski Gornogo Instituta*. 2018. V. 230, pp. 209-216.
2. Bertosh, A.A. (2019). Arctic tourism: conceptual features and features. *Proceedings of the Kola Scientific Center of the Russian Academy of Sciences*. 2019. Vol. 10. No. 7-17, pp. 169-180.
3. Grushenko, E.B. (2018). Ecological tourism as a factor in the sustainable development of the Western Arctic. *Arktika i Sever*. 2018. No. 32, pp. 18-29.
4. Dzyuban, V.V. (2020). Tourism in the Arctic: problems and development. *Archon*. 2020. No. 3(18), pp. 10-13.
5. Zhelnina, Z.Yu., & Tereshchenko, N.V. (2019). Motivation and cultural stereotypes as factors in the development of Arctic tourism. *Society: philosophy, history, culture*. 2019. No. 2(58), pp. 72-76.
6. Kuklina, M.V., & Galtaeva, A.L. (2020). Prospects for the development of Arctic tourism. *Youth Bulletin of ISTU*. 2020. V. 10. No. 2, pp. 74-79.
7. Menshikova, T.N. (2019). Spatial analysis of tourism development in the regions of the Arctic zone of the Russian Federation based on the cluster approach. *Bulletin of the Moscow State Regional University. Series: Geographic environment and living systems*. 2019. No. 2, pp. 94-100.
8. Sevastyanov, D.V. (2020). Arctic tourism in the Barents Sea region: current state and limits of the possible. *Arktika i Sever*. 2020. No. 39, pp. 26-36.
9. Tsvetkova, Yu. (2018). Some issues related to the implementation of Arctic tourism, not regulated by Russian legislation. *Ocean Management*. 2018. No. 1, pp. 117-123.
10. (2021). *National tourism portal. Regions of Russia. News.* Retrieved 20.01.2021 from https://russia.travel/
11. (2021). *Arctic tourism in Russia* / otv. editor Yu. F. Lukin; comp. tourist guide for the regions of N. K. Kharlampiev; Sev. (Arctic) feder. un-t; St. Petersburg. state un-t. (p.96). Arkhangelsk: NArFU.
12. Lukin, Yu. F. (2021). Arctic tourism: rating of regions, opportunities and threats. *Arktika i Sever*. 2021 No. 23, pp. 116-122.
13. (2023). *Expert: in the Arctic, it is necessary to create mini-tour clusters within the framework of protected areas.* Retrieved 07/10/2023 from https://tass.ru/ekonomika/6316401
14. Leonidova, E. G. (2018). *Development of tourism in the regions of the Arctic zone of the Russian Federation. North and the Arctic in the new paradigm of world development*. Luzin Readings - 2016: Materials of the VIII Intern. scientific-practical. conf. (Apatity, April 14-16, 2016). (pp.206-211). Apatity: IEP KSC RAS.

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2023 **Issue:** 08 **Volume:** 124

Published: 05.08.2023 **http://T-Science.org**

Issue Article

Artur Alexandrovich Blagorodov
Institute of Service and Entrepreneurship (branch) of DSTU
Master

Lyudmila Borisovna Tomilina
Institute of Service and Entrepreneurship (branch) of DSTU
Senior lecturer

Vladimir Timofeevich Prokhorov
Institute of Service and Entrepreneurship (branch) of DSTU
Doctor of Technical Sciences, Professor,
Shakhty, Russia

Galina Yurievna Volkova
LLC TSPOSN «Ortomoda»
Doctor of Economics, Professor
Moscow, Russia

ECONOMIC PARADIGM AND THE MAIN DIRECTIONS OF DEVELOPMENT OF SMALL AND MEDIUM-SIZED CITIES IN THE ARCTIC REGIONS OF THE RUSSIAN FEDERATION AS A FRONTIER

Abstract*: the article deals with the actual problems of development of small and medium-sized enterprises in the North of Russia in the so-called Arctic regions of the Russian Federation, in the high-latitude territories of the Western Arctic, in the regions of Russia. Practical proposals and recommendations are given, priority tasks are formulated to solve the main socio-economic problems of business development, the effective use of tourist and recreational potential, the development of inbound and domestic tourism for the sustainable development of regions, unique territories and tourism centers. The results can be used to improve the legislative and regulatory acts of the tourism industry, to increase its competitiveness in the regions of Russia.*

The article discusses solutions to the problems of developing small and medium-sized businesses that are relevant in the context of the new industrialization of Russia, especially for the Arctic regions, in order to significantly reduce population migration, identifying relevant patterns and trends, taking into account the characteristics of entrepreneurship in the regions of the Arctic, assessing what has been achieved by entrepreneurial structures to date level in various types of economic activity, as well as the prospects for further enhancing the role of entrepreneurship for these regions. The research is based on the construction of economic and mathematical models using the methods of logical, correlation, regression and dispersion analysis and the analysis of statistical data.

Key words*: Arctic regions of the Russian Federation, northern sea route, efficiency, social development, priority, population, comfort, tourism, hotel business, paradigm, economic policy, financial stability.*

Language*: English*

Citation: Blagorodov, A. A., Tomilina, L. B., Prokhorov, V. T., & Volkova, G. Yu. (2023). Economic paradigm and the main directions of development of small and medium-sized cities in the Arctic regions of the Russian Federation as a frontier. *ISJ Theoretical & Applied Science, 08 (124)*, 131-154.

Soi: http://s-o-i.org/1.1/TAS-08-124-13 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2023.08.124.13

Scopus ASCC*: 2000.*

Introduction

UDC 332.35:364.54.

By now, it has become clear that the theoretical paradigm, which asserted that enterprises increase in size, and their fixed assets (capital) are continuously concentrated, has not found its practical confirmation. In recent years, there has been an increase in the share of people employed in small and medium-sized enterprises in all industrialized countries. These structural shifts in the organization of production confirmed the fundamental reassessment of the role of entrepreneurial structures (small, medium-sized enterprises and individual entrepreneurs), hereinafter referred to as MSIP. The emergence of such structures is considered as the main source of growth in the number of jobs, labor income, and, consequently, the well-being of people. UN data show that in the global economic system, small and medium-sized enterprises are employers for almost 50% of the working population. In various countries, small and medium businesses produce from 33% to 67% of the gross national product. Entrepreneurial structures have shown their advantage in many types of economic activity compared to large firms. This sector of the economy has the potential to play the role of a catalyst for innovation and regional growth. The high dynamism of MSIP and the massive coverage of almost all areas of the internal market of the regions ensure the sustainability of the development of their economies and contribute to the stability of the political climate. Representatives of entrepreneurial structures are distinguished by the fact that their living conditions and activities, as well as the position of an active producer and at the same time a consumer in the domestic market, it helps to strengthen ties with its regular and potential customers from various social groups. All of the above determines the behavior of MSIP, based on direct dependence on local and national interests.

In the process of research, the methodological approach proposed by the author was used, based on the consideration of three types of business entities - small enterprises, medium-sized enterprises and individual entrepreneurs as a single structural system complex. At the same time, it is taken into account that they are characterized by the same main types of economic activity, they compete in the same markets, have a largely similar production technology, and carry out risky activities. When the institutional and economic conditions of functioning change, the transition of these structures from one type to another may occur. Modern business is a complex system. First of all, it is a set of a large number of independent economic entities, each of which determines its own goals and objectives, based on the specific situation, and is an active participant in socio-economic processes. Considering that entrepreneurial structures arise and cease their activities in a natural way, they should be studied as self-organizing and self-developing economic entities. Based on these provisions, the most important is the analysis of their role and place in the national economy. This analysis was carried out using the descriptive method.

In general, entrepreneurship can be considered as the most dynamically developing sector of the economy. Individual entrepreneurs and enterprises, among other things, solve the problems of self-realization of a creative person, as well as the team as a whole, carry out risky activities to form consumer demand, increase the overall level of supply, and produce new economic resources and benefits. The accession of the Russian Federation to the World Trade Organization (WTO) put forward the development of small and medium-sized businesses as the main way to increase the efficiency of the national economy as one of the most pressing problems. The urgency of solving this problem is due to the fact that the possibilities for further development of the resource-based economy and related industries at the present stage are practically exhausted. It is these companies.

To date, in the Russian Federation for a relatively short period (20 years) a new sector of the economy has been formed - small and medium-sized businesses. In 2018, there were 1.62 million small businesses in Russia. Small enterprises employed about 16.16 percent of the country's economically active population. The volume of products produced by these enterprises amounted to 18925 billion rubles. There were more than 27 thousand medium-sized enterprises, they employed 2.5 million people. The volume of production of medium-sized enterprises reached 7277 billion rubles. There were over 2.9 million individual entrepreneurs. Including employees, the number of employed was more than 5.3 million people. The volume of production exceeded 4548 billion rubles.

At the same time, entrepreneurship in our country has not yet reached the required level, has been repeatedly noted in the messages of the President to the Federal Assembly and decisions of the Government of the country. There is a significant differentiation in the level achieved by entrepreneurial structures by regions of the country and types of economic activity. Therefore, at present, it seems relevant to develop scientifically based recommendations for the further development of entrepreneurship in the subjects of the country, increasing the role of entrepreneurial structures in all regions and sectors of the national economy. This paper presents the results of scientific and applied research by the authors on the problems of the formation and functioning of entrepreneurial structures, the development of tools for economic analysis and designing the development of this sector of the economy, aimed at improving its activities and ensuring a positive economic effect in the regions and

the Russian Federation as a whole. The main tasks solved in the process of research and reflected in this article were, namely:

– development of theoretical aspects of entrepreneurship and development of periodization of its formation and functioning;

– development of methods and tools for entrepreneurship research;

– analysis formation and development of varioustypes of entrepreneurship;

– transformation of the national economy based on the development of entrepreneurship;

– study and analysis of the spatial organization of small and medium-sized businesses;

– determination of the features of the formation, functioning and modernization of business structures in our country;

– assessment of regional differentiation of business structures and trends in its development;

– identification of the main problems in the formation of entrepreneurship in the subjects of the country;

– analysis of the role of institutional factors in the development of entrepreneurship;

– development of proposals for state regulation and support of entrepreneurial activity;

– study of trends, patterns, factors and conditions for the functioning and development of business structures in the regions;

– analysis of the existing differentiation of the role of entrepreneurial structures, due to regional characteristics of socio-economic development;

– methodological problems of MSIP classification;

– monitoring the level achieved by MSIP in the Russian Federation and developed foreign countries;

– comparison and ranking of regions according to the level of development of entrepreneurial structures;

– diagnosing problems hindering the development of MSIP;

– analysis of features and evaluation of the effectiveness of regional economic policy in the field of entrepreneurship;

– development of a methodology for analyzing and evaluating the functioning of small and medium-sized businesses;

– analysis of the efficiency of the use of resources by business structures in the subjects of the country and municipalities;

– forecasting structural changes in the development of entrepreneurship;

– determination of directions for the formation and development of the system of infrastructural support for entrepreneurial activity;

– development of concepts of strategic planning and forecasting of entrepreneurial activity;

– the use of multi-criteria assessments of the effectiveness of entrepreneurial activity;

– development and development of a mathematical apparatus for the analysis of entrepreneurship in the country and its subjects, as well as municipalities;

– methodology of economic and mathematical modeling of the activity of the MSIP aggregate;

– consideration of the possibilities and ranges of application for studying the MSIP of production functions, cluster and regression analysis, density functions of the normal distribution;

– construction and applied analysis of economic models of the business sector and its role in the national economy;

– development of target indicators for the development of MSIP based on domestic and foreign experience.

Main part

The current state and the multitude of problems of socio-economic development of medium and small towns in Russia in a developing market economy, necessitate further research in this area and, first of all, the very essence of the concepts of "small city" and "medium city" needs to be considered and clarified. .

In this regard, it is important to highlight the following main characteristics and common features that reveal the essence of the studied concepts of "small city" and "medium city" (Table 1). In addition, summarizing the numerous research experience, it must be recognized that in order to clarify the concepts of a small and medium-sized city, a number of indicators that determine their features should be taken into account.

Table 1. Main characteristics, common features and indicators that determine the characteristics of small and medium-sized cities

Main characters sticks	1. Compactness, integrity and "visibility" of society, the possibility of maximum degree to take into account all the interests and relationships within it;
	2. Save money and time. "Closedness" and the rapid dissemination of new information in a separate small town make it possible to achieve the expected results at the lowest cost and in a shorter time;

	3. Significantly less bureaucratic obstacles. The possibility of establishing more trusting and open relations with the local administration;
	4. As a rule, openness and willingness to cooperate on the part of local partners who are not spoiled by the attention of federal structures, and even more so - international organizations;
Are common traits	5. Ability to quickly replicate the successful results of the program in a separate small town of their transfer to other cities in the region;
	6. A very stable type (class) of settlements, since over the centuries, despite various approaches, the range of a small city (in terms of the number of inhabitants) ranges from 5 (10) to 100 thousand people;
	7. The "blurring" of the boundaries of both small and medium-sized cities remains. Often the differences between a large city and a small city become more significant than between a small town and a village. The problematic nature of this issue is especially expressed in the definition of the extreme lower and upper boundaries of small and medium-sized urban settlements. Numerous discussions have not led to a unanimous opinion of the designated boundaries and currently remain very conditional values;
	8. The content of the functions performed by small towns is changing. Political, economic, institutional and social changes have led to fundamental transformations covering all spheres of human activity. In this regard, the economic opportunities of small and medium-sized cities have significantly expanded: the development of entrepreneurship and small businesses based on the use of local resources, the formation of municipal property, the attraction of private, state and foreign investments, the increase in information security, the restoration of traditional crafts and folk crafts.
Peculiarities	9. City size (population);
	10. The number and scale of the function of the city (the nature of the main activity of the majority of residents);
	11. The nature of the architectural and planning environment;
	12. Development of social infrastructure (capacity of utility networks, commercial, cultural, educational and information services, the need for intracity transport);
	13. The nature of the lifestyle of the population.

Thus, a modern small town is a stable and, at the same time, a dynamic type of settlement, on the territory of which there is a municipality with a population of 10 to 50 thousand people, characterized by a certain development of the production base, with separate elements of market infrastructure and landscaping, which stands out low-rise buildings, close proximity of households to land plots and their active participation in the local economy and, in most cases, performing organizational and managerial functions of the center of the territory.

In the group of small towns, two subtypes can be distinguished: small towns of a transitional type to rural areas with a population of up to 15 (20) thousand inhabitants and small towns proper with a population of 20 to 50 thousand people. The peculiarity of most of the former are: the presence of a non-specialized (up to 10 thousand inhabitants) or a specialized one branch of the economy, or a sub-branch of the economic structure, a clearly predominant low-rise building, no need for urban transport, and the rural nature of the lifestyle of the population inherent in this subtype of small towns. Actually, small towns are distinguished by a more developed production base, the emergence of high-rise buildings, the availability of public transport, a higher degree of housing and communal services, and the appearance of city-forming features characteristic of medium-sized cities.

Modern average city- this is a stable and at the same time dynamic type of urban settlement, on the territory of which there is a municipality with a population of 50 to 100 thousand people, characterized by the development of enterprises in various sectors of the national economy, diversified economic specialization, the presence and

accessibility of industrial facilities for the population, market, transport and social infrastructure, and acting mainly as an integral territorial unit of local self-government, for the most part, having the status of a city of regional (regional) significance.

The place and role of small and medium-sized cities in the integrated development of the territories of the region is determined by the following provisions, namely:

Firstly, the objectively conditioned stability and mass character of small and medium-sized cities contributes to their transformation into one of the forms of the most effective integrated use of the resources of the territory and the solution of the most important economic tasks of the state. At the same time, lagging behind in their socio-economic development, they continue to play the role of "secondary" municipalities (unlike large cities), which not only contributes to the deepening of spatial differentiation, but significantly reduces the level of their investment attractiveness and limits the degree of their participation in integration and cooperation at various territorial levels;

Secondly, the formation and development of small and medium-sized towns is the realization of the needs of society, on the one hand, in the organizational center of a particular territory; on the other hand, in a specific urban environment, which has qualitatively different (compared to large cities) properties and characteristics;

Thirdly, Russia's transition to a new society in the period of information technology transformations and globalization of the economy determines the new mission of small and medium-sized cities, developing as components of regional and local urban settlement systems, including urban (and rural) settlements of all types. At the same time, a completely different combination of functional dominants is being formed in them, capable of: adequately responding to changes in market conditions, significantly increasing the importance of the service sector in the economic structure of small towns, promoting the development of entrepreneurship, increasing their competitive advantages, and significantly intensifying the inflow of investment resources;

fourth, during the formation of local self-government, a revision of the strategic orientation of small and medium-sized cities is required, aimed at recreating the abilities of this category of urban settlements for independent development (self-development), mainly on the basis of their own resources and capabilities, taking into account their specifics;

Small and medium-sized cities in Russia are a key model of the Russian local community. There are several reasons for this conclusion, namely:

−small and medium-sized cities are fairly local and unified communities, permeated with social and interpersonal ties;

−small and medium-sized cities, being urban settlements, at the same time, as a rule, are also social, economic and cultural centers of the rural areas surrounding them and maintain close contact with them;

−small and medium-sized cities have elected local governments, and, as a rule, an independent budget.

That is why this group of cities is an ideal object for exerting a systemic influence on local self-government in Russia, which is the basis of civil society. It is at this level that power is as close as possible to the voter, accountable to him and focused on his interests. At the level of local self-government, each citizen can directly participate in the management of the socio-economic development of the city's territories, defend their interests and influence the formation of a development strategy for their municipality in accordance with their interests. Thus, it is the group of small and medium-sized cities that should become a key link in the implementation of the principles and ideals of an open society in Russia. The relevance of studying the problems of socio-economic development of small and medium-sized cities and their management is determined by their unique role, first of all, as sub-regional economic, cultural, spiritual innovation centers of Russia. Traditionally, in the domestic economic literature, the following groups of factors for the location of small and medium-sized cities are distinguished, namely:

natural;
demographic;
economic and geographical;
economic (Figure 1).

In the foreign theory and practice of municipal management, a slightly different classification of factors is adopted, two large groups are distinguished: "hard" and "soft" (Table 2). The ratio between the individual factors of socio-economic development of small and medium-sized cities and their significance are in constant motion. The most important trend in the ratio of factors is the shift in the importance of hard factors in favor of soft ones. It is soft factors that are increasingly becoming the key to the success of the socio-economic development of the city.

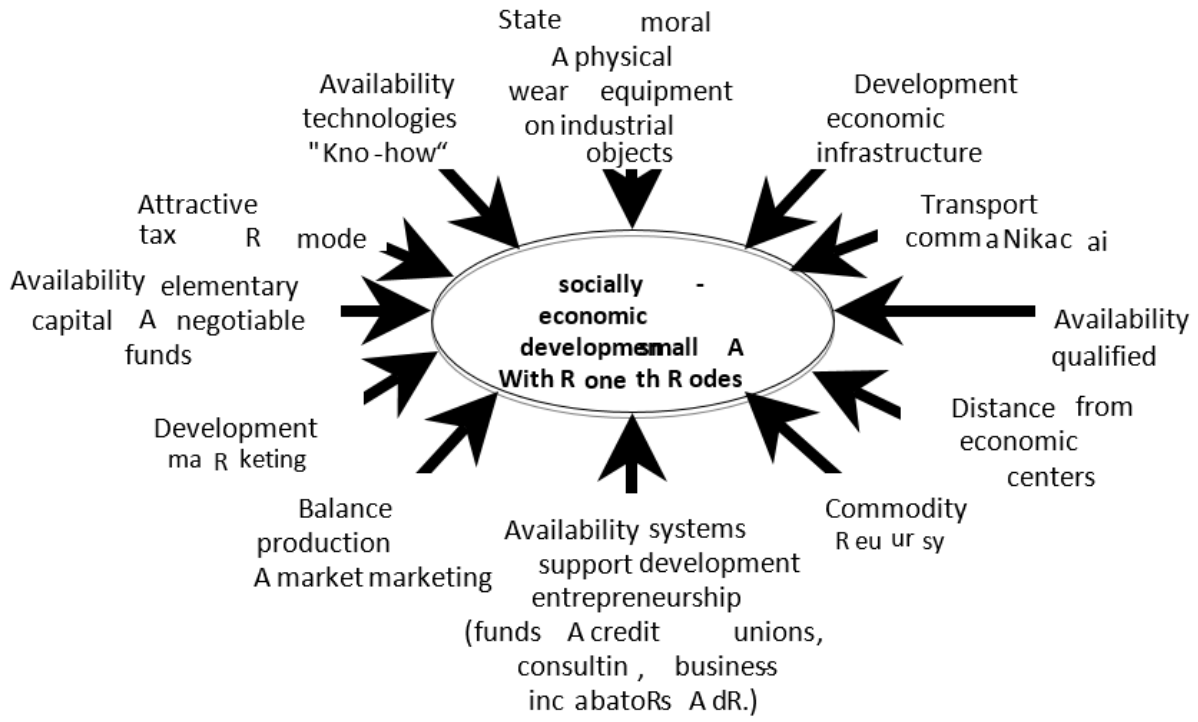


Fig.1. The influence of environmental factors of functioning on the socio-economic development of small and medium-sized cities

Table 2. Classification according to the degree of influence of factors influencing the socio-economic development of medium and small towns

Hard Factors	**Soft Factors**
Oriented to production resources: - Earth; - work force; - capital;	Quantitatively difficult to measure categories that determine the level of development of the social environment of a settlement: - stability of the political situation and social climate; - qualifications of employees; - the structure of the city's economy and individual enterprises; - the quality of the system of education and professional training; - equipping the city with universities, technology centers, research organizations; - the presence of factors focused on the production of services (economic and tax consulting, advertising, marketing); - the attitude towards the economy of the main actors of the city (enterprises and unions of entrepreneurs, employees and trade unions, communal and municipal administrations, politicians); - quality of life in the city (quality of housing, ecological situation, cultural and recreational opportunities).
Oriented to the production and marketing of products: - proximity of cooperation partners; - infrastructure; - structure of the population and consumption;	
State established: - taxes; - management system; - subsidies and support programs.	

However, according to the author, in the current conditions of the development of market relations, it is advisable to classify the factors in accordance with the nature of their impact on the socio-economic development of small and medium-sized cities - factors that hinder and promote development (Table 3).

Table 3. Classification according to the nature of the impact of factors influencing the socio-economic development of medium and small towns

Factors hindering the development of small and medium-sized cities	Factors contributing to the development of small and medium-sized cities
1. Constant and spasmodic growth in the cost of energy, which leads to the rupture of transport links with large centers that are vital for many small and medium-sized cities. Another consequence of rising energy prices is the localization of social and cultural contacts, economic life, the isolation of most small and some medium-sized cities.	*1. Administrative factor*- plays a leading role in the transformation of the entire network of settlements, both urban and rural, including small and medium-sized cities, in connection with the development of local self-government and a significant increase in the importance of small and medium-sized cities as centers of municipalities. The formation of the image (image) of the city, its inclusion in the system of intra-regional and international relations is of great importance.
*2.*The principles of state building, which come largely from the outdated principles of organizing local power: retain many of the main features and shortcomings of a multi-level administrative-command management structure; significantly limit the powers of local representative and executive authorities; the issues of distribution of competence between the city level, the levels of management of the subjects of the federation and the federal level are unsatisfactorily resolved; hinders the independence of city authorities in the formation of the local budget and its transformation into the basis of the financial resources of the city.	*2. Competitive factor*the strengthening of the influence of which in all the listed markets, especially non-price competition - competition in the field of quality of life and innovation, contributes to the development of this group of cities.
	3. Market factor- Interpenetration of urban, regional, national and world markets. For Russia, its regions, medium and small towns, in particular, the most significant are the liberalization of foreign trade and the removal of protectionist restrictions in the near future as a result of the entry into force of the agreement with the EU and Russia's accession to the WTO.
	4. Set of economic factors, in particular: the development of the territorial division of labor - which determines the technological specialization of the city, the territorial and sectoral structure and external relations; transport development; development of industry and trade.
*3.*New border position (for small and medium-sized cities in the west of the European part of Russia, the Volga region, the south of the Urals and Western Siberia). Dozens of small and medium-sized cities suddenly found themselves on the periphery, in the new "bear corners" of the country.	*5. Geographic factors*. The following stand out in particular: economic and geographical position (EGP) population, volume and scale of the functions performed by the city, their interaction is in direct connection with the EGP; the natural resource factor as a result of the development and extraction of Russia's natural resources; climatic features.
*4. Concentration of capital, investments, including foreign ones, in the largest cities of the country,*mainly in Moscow and St. Petersburg. The degree of this concentration is so high that it significantly hinders the development of cities.	*6. Informational*- a system of institutions and communications that provides access to information
	7.Institutional- growing importance of cities as subjects of economic activity in the regional structure of consumer markets.
	8. Organizational and managerial– art, professional knowledge and skills of municipal authorities.

Since the factors favorable today for placement on the territory of enterprises, tomorrow mean additional opportunities for attracting investments, increasing employment and solving other urgent problems in the city. That is, they simultaneously become conditions for the successful socio-economic development of cities in the future.

Thus, it is necessary to take into account the impact of these changes on the competitiveness of both economic entities and the group of cities under study. For example, for small and medium-sized cities, this means that some develop as economically the most powerful territories, are able to mobilize their own resources and attract additional investment. Others remain on the periphery, others develop only in certain specific areas (an example is tourism). Therefore, it is necessary to carefully study and pay close attention to what factors should be taken into account by business entities in the first place, and what factors should be improved by the municipal authorities in order to enhance socio-economic

development and increase the competitiveness of the territories under their jurisdiction.

Features and differences in the structure of the mechanism of municipal development management are due to preferences or the need to use a variety of tools, forms and methods of regulating the economy and social sphere of the city. Structural features of the development of the economy and the social sphere of the city are the main factor determining the specifics of the mechanism for managing socio-economic development.

In this regard, in order to identify the features of the functioning of the mechanism for managing the socio-economic development of small and medium-sized cities, an analysis of the socio-economic development and an assessment of the above factors were carried out using the example of a specific small town - Chernushka, Chernushinsky district, Perm region.

The small town of Chernushka is a new town formed during the years of industrialization, war and post-war times of the last century. The history of Chernushka as a separate settlement is 150 years old. The appearance of the railway station at the beginning of the last century was a powerful impetus towards the territorial, economic and cultural development of Chernushka. For residents of the Perm region, this city is associated with the word "oil", and this is natural - the Chernushinsky oil region provides 1% of all Russian oil and 40% of the regional one. An analysis of the socio-economic development of the city shows that the features of the geo-economic situation, as well as the existing production and infrastructure potential, create prerequisites for the development of Chernushka not only as the center of the district, but also as the center of a vast area of cooperation. In the city and its environs, it is advisable to place production facilities focused on the raw material base and markets for neighboring areas. This center should also provide a wide range of services to residents of the city of Velsk, Velskinsky district and neighboring areas. Proceeding from this, already today, when planning the socio-economic development of the territory of the district and forming a mechanism for managing this development, it is necessary to take into account and emphasize the inter-district role of the city. This will allow attracting additional investment resources for the development and implementation of joint projects in the area of cooperation.

So, the mechanism for managing the socio-economic development of the city of Chernushka is based on the presence of a number of competitive advantages of the district, namely:

−rich natural resource base, production and infrastructure potential;

−availability of qualified personnel and labor resources;

−developed transport infrastructure, availability of access to the main transport routes of railway, road, river transport;

−relative financial independence of the district from the regional center (the district is a donor in the regional budget);

−political, national, interfaith stability and a consistent policy for the development of local self-government;

−use of new opportunities and directions for strengthening the financial and economic base of the city and the region (development of oil and gas resources, the border position in the region and the presence of prerequisites for expanding border trade).

As proved by the results of the analysis, the structure of the economy and its potential are significantly influenced by geographical, territorial, demographic, transport and other features of small and medium-sized cities, which significantly determine the specifics of the economy, the structure of municipal government and, accordingly, the mechanism for managing socio-economic development. cities. In the context of solving development problems, the tools and methods of the mechanism for managing the socio-economic development of small and medium-sized cities come to the fore.

Features of the mechanism for managing individual subjects of the local community are manifested:

1. In the structure of methods of managerial influences, the totality of which is an instrumental and methodological part of the management mechanism. However, this does not happen in the form of new or special formations, but by changing the "weights" of various methods and the strength of their impact in specific conditions. The set of management methods should have the status of subsystems or separate blocks for ensuring the interaction of the subject and object of management, which are local governments and certain types of expedient activities of people in the city;

2. Since any management system is characterized by the presence of a single set of management functions (planning, organization, stimulation, accounting and control, coordination and regulation), their totality characterizes the functional part of the municipal management mechanism, regardless of the level and type of management object.

The above analysis of the socio-economic development of the city of Velsk makes it possible to identify the main features of the existing mechanism for managing this development (Table 4).

Table 4. Features of the mechanism for managing the socio-economic development of the city of Chernushka

Functions, methods and tools	**Features in the implementation of the functions of the control mechanism, the use of tools and methods**
Functional part of the control mechanism	
Development of the information function	- development of television and radio broadcasting in the city; - spread of the Internet; - presentation of the city of Velsk and the district at the regional level.
Planning	- developed the "Concept of socio-economic development Velskinsky district of the Arkhangelsk region for 2018 - 2035"; - the main strategic goals, objectives and directions of the city development are formulated.
Control	- monitoring of the main indicators of the socio-economic development of the city and analysis of the results achieved.
Regulatory function	- redistribution of income and subsidization of municipal enterprises by private and oil industry enterprises; - transfer of a number of consumer services enterprises that are local natural monopolies (mainly the provision of services in the housing and communal services sector - heat supply, sewerage, etc.) to private hands.
Instrumental and methodological component of the control mechanism	
Ensuring public safety	- an anti-terrorist commission has been formed and is successfully operating on the territory of the city of Velsk; - power structures of the city are actively working.
Development of industry, entrepreneurship and small business	- the Municipal Fund for the Support of Entrepreneurs and Industrialists has been established and is functioning effectively; - developing economic cooperation with the Arkhangelsk region and large companies in large-scale investment projects; - Assistance is provided for the city's enterprises to enter new markets and strengthen their positions in the already mastered ones.
Development of labor resources and human resources	- development of a network of educational institutions of secondary and vocational education and a network of branches of universities; - development and implementation of the regional program for social support of young families, improvement of the demographic situation through the formation of state approaches to solving the housing problem of a young family; - holding events on the day of professional holidays, competitions of professional skills, media coverage.
Development of social infrastructure	- full funding of institutions in the areas of "Culture", "Law enforcement", "Housing and communal services", "Environmental protection", "Transport, communications", "Mass media", "Health care"; - 47 programs and projects are being implemented on the territory of the Velsk district for a total amount of almost 24.6 million rubles, which are financed to a greater extent from the district budget, as well as from the federal, regional budgets, sponsorship and competitions of social projects of Lukoil-Perm LLC .

The general features of the mechanism for managing socio-economic development, characteristic of the entire group of small and medium-sized cities, are the following (Table 5).

Table 5. General features of the mechanism for managing the socio-economic development of small and medium-sized cities

Elements of the control mechanism	Features of the mechanism for managing the socio-economic development of small and medium-sized cities
Structure and composition control mechanism	They depend on the strategic goals and programs of socio-economic development, which, in the group of cities under study, have significant differences due to the specifics of each individual small and medium-sized city - unique local conditions, the availability of resources, the development of industries and agriculture, the influence of external factors, political situation, administrative structure, accumulated potential, etc.
Functional part of the control mechanism	There is a need to transfer a number of functions of municipalities to private structures, today these include housing and communal services, medical services, preschool and school education, household services, legal and security services, cultural services, physical education and sports, communication services, etc.
	The increase in the degree of economic independence and economic isolation of small and medium-sized cities, the recognition of the city as an independent object of management in accordance with the concept of local self-government, led to the emergence of new functionality and new levers for regulating economic relations associated with the formation of municipal property. City authorities become full participants in market relations in the territory.
Instrumental - methodological part of the control mechanism	In a market economy, when the city relies in its development on its own funds and resources, on the accumulated economic and scientific potential, production assets and personnel, the importance of the budget in the financial support of urban socio-economic development programs is noticeably increasing. Program-targeted and innovative-heuristic methods are becoming one of the most significant and effective methods of managing the socio-economic development of cities.
	Social, political, economic, and cultural development cities are increasingly dependent on monetary and financial instruments, the main of which is the city budget, by managing which city self-government bodies acquire leverage on the general economic situation in the city and the possibility of enhancing entrepreneurial activity.
	Interacting with elements of the external and internal environment, cities participate in the competition to attract investments, resources and industries to their territory, which increases the importance of a number of market tools and management mechanisms, such as information technology, marketing of goods, services, consumers, organizations, local economic and social processes, competent management of municipal property, development of entrepreneurship, the growth of the importance of the image and positioning of the city in the external environment of its functioning, etc.

The content of the table clearly illustrates the fact that modern information technologies are gradually being introduced into the practice of municipal government, the management of the city's development is increasingly based on managerial and financial innovations.

There is a gradual transition from the traditional administrative management model, in which the main thing was following instructions, to a new management model, in which the focus on achieving results becomes the central backbone element. At the same time, the result is not only high efficiency at all levels of management and in the city as a whole, but also an increase in the level of life support and livelihoods of the population, infrastructure.

However, in a rapidly changing market environment, it is extremely difficult and practically impossible for local authorities to adapt the existing mechanisms for the socio-economic development of cities to a dynamic environment. The studied city of Velsk is no exception - the mechanism for managing the socio-economic development of this municipality is in principle formed and functioning, however, it is obvious that there is a significant untapped potential and unrealized opportunities for the development of the city's territory, which the existing mechanism for managing socio-economic development is not able to cover and use for the benefit of the population and for the purpose of further development of the territory.

municipal management is the science and practice of managing the socio-economic processes of city development in a market economy, it functions in accordance with the laws of the development of a market economic system, and its mechanism should provide flexible regulation of socio-economic processes in the city in market conditions.

In the first case, municipal management is revealed as the whole set of organizational and economic relations implemented in these territorial systems by state, regional, municipal authorities and administrations, economic non-state structures, political parties and other public amateur organizations of the population, confessions, mass media.

In the second case, we are talking about municipal management as the practice of regulating socio-economic and socio-political processes in cities and districts, settlements by the forces and means of local governments within their competence.

Management as a management science is faced with the task of finding and developing mechanisms, methods and means that will ensure the most effective achievement of the goals and objectives of the socio-economic development of small and medium-sized cities. The conceptual foundations of municipal management in a systematic way are presented in Table 6.

Table 6. Conceptual foundations of municipal management (MM) of small and medium-sized cities

Essence MM	The practice of regulating socio-economic and socio-political processes in cities and districts, settlements by the forces and means of local governments within their competence.
	The whole set of organizational and economic relations implemented in these territorial systems by state, regional, municipal authorities and administrations, economic non-state structures, political parties and other public amateur organizations of the population, confessions, and the media.
An object MM	Territorial economy in cities, districts and other municipalities, including the production and social sectors of the economy.
Subject MM	Local territorial governments: municipality, local government, local administration.
Tasks MM	*Scientific:* - substantiation of ways to overcome the crisis in the municipal structures of Russia and mechanisms for sustainable socio-economic development; - study of methods to improve the efficiency of municipal management; - studying the formation of a new culture of management and self-government in small and medium-sized cities and regions of the country; - disclosure of the processes of adaptation of the domestic practice of municipal management to the processes of state and regional management.
	Practical: - ensuring expanded reproduction of the living conditions of the population of the city, a high level and quality of life; - economic and social transformation of the municipal economy, analysis, forecasting and programming of municipal development; - optimization of financial flows, formation of conditions and mechanisms for strengthening the economic base of municipalities; - ensuring environmental safety in the city, protecting the environment; - formation and implementation of structural, investment and scientific and technical policy in the city, creation and development of market infrastructure.
MM functions	- analysis, evaluation, development of forecasts, scenarios, programs and plans for the socio-economic development of small and medium-sized cities in the regions; - stimulating the increase and use of the labor potential of municipalities of small and medium-sized cities, their scientific, technical and intellectual core; - maintenance and development of social and industrial infrastructures; - initiation of competition in the provision of services to the population, including municipal structures; - filling the local budget and its rational use, obtaining extra-budgetary resources; - possession and disposal of municipal property, its rational use; - creation of conditions for the development of the market environment, its infrastructure and entrepreneurship;

	- organization of jobs, optimization of employment and demographic burden on the economy of municipalities of small and medium-sized cities and the economically active population; - establishing and strengthening economic and industrial ties with other cities and regions; - interaction of local authorities with commercial banks, investment, insurance and other structures, including those located in other regions and abroad of Russia.
Principles MM	*Are common:* -principles of consistency, scientific character, allocation of the main link, sustainable development, socio-economic efficiency, etc.
	Specific: - the principle of allocated competence - the optimal combination of federal and regional government with local government; - the principle of orientation of local self-government structures towards social services for the population; - the complexity of the socio-economic development of small and medium-sized cities and regions, their self-development based on building up and the most complete realization of their potential in market conditions; - the principle of the integrity of territorial structures; - the principle of goal-setting in municipal management is dynamically reoriented from processes to results - economic, social, environmental, etc.; - the principle of democracy - the direct participation of the population in self-organization and public control over the actions of local authorities; - the principle of decentralization is to move decision-making from central government to market agents; - the principle of partnership implies a departure from rigid hierarchical vertical subordination; - the principle of subsidiarity consists in the allocation of financial resources for predetermined purposes; - the principles of mobility and adaptability ensure the ability of the municipal government system to respond sensitively to changes in the external environment.
Methods and models MM	*General methods:* -normative, balance, method of system analysis, statistical.
	Methods specific: - organizational methods - a system of influencing organizational relations to achieve specific goals - these are organizational-stabilizing, administrative and disciplinary methods of influence; - economic methods of management - a set of methods of influence by creating certain economic conditions for the fulfillment of tasks - these are financial and price levers, forecasting, creating economic incentives, approving cost accounting; - socio-psychological methods of management - methods of influence based on the use of socio-psychological factors, which include character traits of a municipal employee, his abilities, temperament, etc.
	Models and main directions of mathematical modeling: - modeling of territorial proportions; - modeling the placement of economic sectors; - models of the socio-economic system of a territorial entity; - control system models.

The main features of the new "manager" concept in municipal government are the following:

−focusing on the management itself (management process), and not on politics, as well as on evaluating its effectiveness;

−disaggregation (separation) of public bureaucratic structures and the transformation of their parts into agencies interacting with each other on the basis of payment for any service provided;

−the use of quasi-market mechanisms and the conclusion of contracts with private entrepreneurs;

−cost reduction;

−the use of the actual management mechanisms, including determining the success of the activity by the end result, concluding contracts with managers for

a limited period, monetarist motivation for their activities and providing them with greater freedom in management activities. The latter is directly related to the concept of personnel management and is of particular importance due to a number of features of civil service systems in developed countries.

The difficult social, political, economic and financial situation in the country, as well as the fact that the local self-government system is currently in its infancy, make it possible to introduce management elements into municipal government initially, and not in the process of fundamental restructuring of the municipal government system.

The most striking examples of the introduction of management elements in the field of municipal government are, namely:

−removal of the system of local self-government from the system of public authorities of the Russian Federation, i.e., providing it (at least theoretically) with a sufficiently large autonomy and independence (the goal is a gradual transition from centralized to decentralized government by transferring powers and resources to municipalities for independent resolution of issues local value);

−the use of forms and methods for the implementation of development programs that can be considered as characteristic of the municipal management system (creation of information networks of local self-government);

−implementation of state support for local self-government in the areas most important for the implementation of municipal management (development of the status of a municipal employee, formation of municipal property).

Further detailing of the concept is carried out by developing long-term strategies for the development of administrative territories, taking into account their characteristics and conditions of social development. The implementation of these ideas and principles is possible with the use of all strategic management tools, including such concepts as: mission, concept, strategy, development programs and budgets, plans for their implementation, as well as control over the use.

Under the management of the integrated socio-economic development of the municipality of a small and medium-sized city is understood the management of mutually agreed programs (projects) for the development of all spheres of life of the municipality, agreed on resources, deadlines and performers in accordance with the priorities accepted by the population, as well as accepted for execution on the basis of contracts or by law federal and regional development programs.

Development activation means the process of modernization, reconstruction and replacement of individual links, methods and tools of the socio-economic development management system in order to increase its effectiveness and efficiency. Such renewal may be partial or complex. As a rule, it should be carried out in stages. At the same time, the organizational and personnel structures of management can change significantly.

Development Strategy small and medium towns and districts of the region should contain a detailed study at the level of each small and medium town and district of the main prerequisites and limitations in development. Finding a possible core for activating the development of the economy of the territory should be the result of substantiating the directions for the development of a small or medium-sized city and region from the standpoint of the interests of the socio-economic system of a given territory and the interests of the region as a whole.

The need to develop a strategy for enhancing the development of small and medium-sized cities is due to the following fundamental provisions, namely:

* development of a strategy for activating the integrated socio-economic development of small and medium-sized towns is a necessary condition and a scientifically based prospect for their effective development; at the same time, this is a priority strategic resource of Russia, which must be quickly put into action;

* each of the small and medium-sized cities of Russia potentially has the necessary resources for strategic development: the problem is the ability to use the main - intellectual resource for exploration, research and disclosure of all internal and external resources in order to develop scientific and technological, urban planning, investment and other projects and programs accelerated development of the territorial formation, skillful organization of their implementation;

* it is necessary to form a more effective system of targeted management of the development of small and medium-sized cities, nominate leaders and form management teams that show interest and ability for strategic thinking, the ability and willingness to move from the tasks of survival and inertial existence to large-scale tasks of an economic breakthrough and sustainable strategic development.

Based on the above considerations, the development of a strategy for enhancing the integrated socio-economic development of small and medium-sized cities involves the following activities (Figure 2).

Figure 2. Algorithm for developing a strategy for enhancing the integrated socio-economic development of small and medium-sized cities

Expected results of the activation of the integrated socio-economic development of small and medium-sized cities, namely:

* providing a set of conditions conducive to the revival and further development of the social and economic spheres of small and medium-sized cities, as an essential part of the structural transformation of the country's economy;

* creation of a progressive system of jobs that meets the diverse needs of citizens and contributes to the formation of a favorable socio-demographic structure of the population in small and medium-sized cities;

* a radical increase, based on the intensification of the development of the urban economy, the standard of living of the population, the improvement of the urban environment and the improvement of the moral and psychological climate.

In general, small and medium-sized cities have a set of favorable conditions that allow them to find their place in the new economic conditions. Moreover, the role of small and medium-sized cities should increase significantly, given their traditional focus on serving the population and economy of rural areas gravitating towards them.

At the present stage, the development of regions is carried out through the implementation of regional policy aimed at the socio-economic and spatial development of territories. The goals of the socio-economic development of the regions are determined on the basis of strategic planning documents developed at the federal level. At the same time, the features of the spatial development of a particular region are taken into account extremely poorly. In order to solve the scientific problem of this study, in accordance with the principles of the territorial-spatial approach, A.G. Granberg singled out the northern region according to the criteria of focal distribution of productive forces and, largely due to this, the predominance of small and medium-sized cities in the structure of the urban settlement system, the low density of their location and the relatively high proportion of the population living in them. Taking into account the peculiarities of the economic development of the northern territories and the settlement system that has developed with this in mind, it can be concluded that small and medium-sized cities, as the predominant type of urban settlements, play a very important role in the development of the economy and social sphere of the region, in retaining its economic space. Therefore, at the regional level, it is necessary to have a strategy for the socio-economic development of small and medium-sized cities, the most important part of which should be a section that reflects the issues of spatial development. This requires the adoption of a law or other legal document regulating the mandatory development and adoption of this strategy at the regional level. This document should define the general strategic goals and guidelines for the development of small and medium-sized cities in the northern region, the key priorities of its spatial framework. When developing municipal strategies, small and medium-sized cities should choose strategic goals and priorities for their development not only in the socio-economic, but also in the spatial dimension, providing for the development of their economy, mainly through integration into the economic space of the region and the country, as well as taking into account the interests of economic entities.

The first ones are:

ensuring sustainable economic growth;

modernization and diversification of the economy;

improving the level and quality of life of the population.

The spatial development of the region will be ensured by the inclusion of economic entities of the city in the system of regional and national economy; infrastructure support for the development of the economy and the social sphere; increasing the sustainability of the region's settlement system; ensuring the unity and territorial integrity of the regional space; development of these settlements as inter-municipal service centers for rural areas. The harmonization of the goals of the socio-economic and spatial development of small and medium-sized cities, carried out in this way, will make it possible to take into account the specifics of the region, streamline the organization of its economy and ensure an increase in the connectivity of the regional economic space. Based on the study of theories of the organization of economic space, it has been established that cities are centers of economic, social, cultural, political life, perform a wide range of different functions, determined by the specifics and historical features of their development. Taking into account the territorial scale of Russia, the development of the country's economy is due to the cumulative effect obtained through the operation of enterprises concentrated mainly in large cities and agglomerations. Consequently, they ensure the development of the country and the retention of the economic space, while the goals and priorities of their development are determined at the federal level. The socio-economic development of the regions and the retention of the regional economic space, along with large cities and agglomerations, is provided mainly by small and medium-sized cities, which is especially clearly seen in the northern region. The task of regional public authorities is to set strategic goals and priorities for their development.

It has been established that due to what happened during the period of economic reforms in the 1990s. the destruction of the existing economic base of cities, the degradation of social infrastructure facilities, as well as the rupture of industrial ties, the problem of natural decline and migration outflow of the

population has become aggravated in the north of Russia. In large and large cities of the northern region, the losses amounted to 260 thousand people. or 8.7%, and in small and medium towns - almost 428 thousand people. or 25.4%. However, if in 2018-2022. the demographic situation in most large cities has generally stabilized, while most small and medium-sized cities (54 out of 61) continue to lose population.

Based on Zipf's law, an assessment of the balance of the region's urban settlement system over three time periods (1959, 1989 and 2019) allows us to conclude that disproportions are growing and the concentration of residents in large and large cities is increasing. In particular, this is evidenced by the increase in the Zipf coefficient: k1959=1.1359; k1989=1.2017; k2019=1.2427. An analysis of the dynamics of the number of cities and the share of the population living in them in the total number of inhabitants of the cities of the region confirmed the identified trends. Taking into account the low density of cities in the northern region, the results obtained suggest an increase in the sparsity of the regional economic space. It was revealed that the high rates of demographic loss of population in small and medium-sized cities of the northern region are largely due to the presence of problems, both in the economic, as well as in the social sphere. In terms of the level of provision with educational, cultural and sports facilities, and social infrastructure, small and medium-sized cities are significantly inferior to large cities. The issues of the state of housing and communal services and the improvement of territories are quite acute. For example, in a number of cities, less than 60% of the housing stock is equipped with centralized heating, while the deterioration of networks reaches 78%; the urban environment of only 1/3 of the cities is recognized as favorable. In a number of settlements, the mono-industrial structure of the economy is preserved: 20 out of 61 have the status of a single-industry town. Only a small number of cities with a resource-based economy are of investment interest for business.

It has been established that state regulation of the socio-economic development of medium and small towns is carried out mainly through the implementation of targeted state programs and projects in the field of healthcare, education, culture, housing and communal services, etc. Based on a survey conducted by us in 2022 of representatives of local governments in small towns of the Arkhangelsk region, it was revealed that other tools for regulating the socio-economic development of territories are used extremely rarely. Investment activity is low in small and medium towns. Thus, investments in infrastructure development are carried out in 8 out of 12 cities of the region, and in production and services - only in five cities. Entrepreneurship support institutions operate in seven cities, at the same time, only 8.3% of respondents noted their effectiveness. The problem of the lack of own sources of income and weak financial support from representatives of state authorities is urgent, which was noted by 91.7% and 66.7% of respondents, respectively.

The analysis of strategic planning documents of the constituent entities of the Russian Federation made it possible to conclude that the issues of development of the cities under study are only partially touched upon, considered exclusively in the context of the problems of socio-economic differentiation of territories; in fact, the presence of various types of settlements is also ignored. At the regional level, in relation to medium and small towns, there is no unified system of regulatory methods and tools that takes into account the trends in the socio-economic and spatial development of the northern region.

It was revealed that at the municipal level a strategic approach to the development of small and medium-sized cities is rarely used due to the current legislation, as well as due to the lack of financial and human resources. Socio-economic development strategies have been developed only in 10 out of 61 small and medium-sized towns in the northern region (Vorkuta, Inta, Usinsk, Ukhta, Vuktyl, Kotlas, Apatity, Aleksandrovsk, Ostrovnoy, Ostrovnoy, Ostrovnoy). Peaceful). Based on the content analysis of municipal strategies, shortcomings were identified both in the field of goal setting (template, lack of emphasis on the specifics of the city), and in terms of organizational and methodological support (limited analysis methods and tools, lack of a clear mechanism for implementing measures. Based on our forecast, it is shown , which, subject to the preservation of the observed in 2018-2022. average annual rate of population decline, by 2035 the total number of inhabitants of small and medium-sized cities will decrease by another 6.5% or 81.2 thousand people, which will lead to further desertification of large areas of the northern region. Most of the region's population will be concentrated in large cities, which will become a serious threat to the development of poorly developed peripheral territories and the connectivity of the economic space.

Taking into account the high importance of small and medium-sized cities in ensuring the balance of the settlement system of the northern region, in our opinion, it is necessary to determine the goals and guidelines for their development at the regional level within the current planning horizons. Based on the strategic priorities of the state, enshrined in the National Development Goals of the Russian Federation for the period up to 2035, the Strategy for Spatial Development of the Russian Federation for the period up to 2025, the Fundamentals of the State Policy for Regional Development of the Russian Federation for the period up to 2025, the National Security Strategy of the Russian Federation, the Strategy for Scientific and Technological Development of the Russian Federation, Strategies for

the development of the Arctic zone of the Russian Federation and ensuring national security for the period up to 2035, we believe that the main strategic goals for the development of small and medium-sized cities in the northern region are, namely:

- preservation of the existing network of small and medium-sized cities as organizational and economic centers of the supporting frame of the region's settlement;
- intensive development of the local economy in the most promising sectors of production and services;
- integration of small and medium-sized cities into the socio-economic space of the region;
- development of human potential of small and medium towns;
- ensuring favorable socio-economic conditions for the life of the population.

The implementation of these strategic goals within the current planning horizons will make it possible to achieve the following indicators of the socio-economic development of medium and small towns in the northern region (Table 7).

These goals and guidelines should be fixed in regional strategies, they should also be taken into account when developing strategies for the social and economic development of the cities under study. This will help to improve the balance of the regional settlement system, strengthen ties between large, small / medium-sized cities and rural settlements through inter-municipal interaction.

Table 7. Target indicators of socio-economic development of medium and small towns in the northern region

Index	Fact (2020)	Plan 2025	Plan 2035
Mortality rate of the population, ppm	14.6	12.7	10.4
Urban environment quality index, score	176	220	264
Average salary of employees of organizations, rub.	68042	91857	129280
The share of investments in fixed assets in the total volume of investments in the northern region, %	12.8	19.2	25.6

Taking into account the position of small and medium-sized cities in the settlement system of the northern region, five scenarios for their further development have been identified, namely:

scenario 1: small/medium city- satellitecore cities of a mono-centric agglomeration;

scenario 2: a small/medium city is one of the cores of a polycentric agglomeration;

scenario 3: small/medium city - the center of development of adjacent rural territories (the center of rural agglomeration);

scenario 4: territorially isolated small/medium city capable of independent development and/or not having the possibility of interaction with other territories (for example, ZATO); scenario 5: shrinking small/medium city.

A new approach to regulating the socio-economic development of medium and small towns in the northern region should take into account these scenarios and be based on the active use of strategic planning for their development both at the regional and local levels.

The main goal of the regional strategy should be to achieve a high standard of living for the population of medium and small towns through their integration into the economic space of the region and the country. Since cities are not a homogeneous group, it is advisable to use a differentiated approach when choosing management methods and tools through their typology. As part of the study, on the basis of an integrated approach, we identified seven types of cities according to their economic profile (Table 8), for each of them priority areas of economic development were identified based on their specialization.

Table 8. Distribution of small and medium-sized cities of the northern region by their types

Экономическая специализация	*Перечень городов*
Аграрные и лесопромышленные	Кадников, Грязовец, Вельск, Онега, Шенкурск
Добывающие (сырьевые)	Оленегорск, Ковдор, Воркута, Инта, Вуктыл, Костомукша
Индустриальные	Сокол, Коряжма, Новодвинск, Полярные Зори, Мончегорск, Кондопога, Заполярный, Печора, Сегежа, Медвежьегорск, Кемь
Транспортные	Котлас, Бабаево, Няндома, Мезень Микунь
Туристические	Великий Устюг, Тотьма, Кириллов, Устюжна, Каргополь, Сольвычегодск
Неспециализированные	Кола, Гаджиево, Полярный, Снежногорск, Североморск, Никольск, Харовск, Красавино, Сортавала, Пудож, Олонец, Лахденпохья, Мирный, Островной, Заозерск
Диверсифицированные	Апатиты, Кировск, Ухта, Сосногорск, Белозерск, Вытегра, Нарьян-Мар, Кандалакша, Усинск, Емва, Беломорск, Питкяранта, Суоярви.

This scientific approach is proposed as a basis for the development of municipal strategies and tested on the example of Ustyuzhna, a small town in the Vologda Oblast. Through the SWOT analysis, the advantages of the city were identified, the mission was formulated, the strategic goal and priorities for the socio-economic development of the city of Ustyuzhna for the period up to 2035 were determined (Figure 3), a number of municipal programs and projects for the development of tourism were proposed.

Figure 3. Mission, goal and priorities of the socio-economic development strategy of the city of Ustyuzhna for the period up to 2030

Of all the variety of areas of the tertiary sector, the development of the tourism sector is often the only option for solving problems for small towns. This is due to the fact that a rich cultural and historical heritage is concentrated in Russian small towns. Many of them have an almost inexhaustible resource potential that can be used to replace popular foreign destinations in the niche of weekend tours. The development of tourism can help revive small towns by creating new jobs and attracting investment, which, in turn, will contribute to the growth of the city budget, and hence the standard of living of the population. Moreover, it solves the previously identified problem of infrastructure quality, since tourism investment and user fees will contribute to the active development of the territory and the

improvement of the socio-economic development of small towns. In addition, tourism can contribute to the introduction of sustainable ways of development. For example, small towns with high tourism potential can benefit most from slow tourism, which involves the use of a cycling road network. For these purposes, investment attractiveness should be formed through federal and regional programs. Since the investment attractiveness of small towns and capitals of the regions is interconnected, then, first of all, it is necessary to link and cooperate between them.

An example of the quality development of tourism is the city of Uglich in the Yaroslavl region, which has a rich historical and cultural heritage. In the early 2000s in the city, a watch factory was closed, which acted as a city-forming enterprise. At the same time, private firms began to appear, engaged in the restoration of folk crafts, the creation of souvenirs and the provision of tourist services. Accepting the specifics of the city, the leadership of Uglich, together with entrepreneurs and urban communities, in 2002 developed a strategy that designates the tourism sector as the main point of growth for the city's economy. At the moment, the entire tourist infrastructure of the city relies on 14 private or shared museums and one public one, as well as the operation of 8 hotels and 20 guest houses. Since the end of 2009, its own information center has been opened.

As a result, as of 2022, about 405 thousand tourists visited Uglich. If we take into account the population of a small town of 32.1 thousand people, then there are 13 tourists per inhabitant. More than 7,500 residents have direct or indirect income from the tourism sector, and the budget has direct income that is invested in the restoration and maintenance of the historical heritage and infrastructure of the city.

The development of tourism in Uglich shows how it is possible, thanks to a working strategy, to revive a small town, attract investment and create jobs, contributing to an increase in the standard of living of the population and the city budget. In this case, Uglich has an effective tool for solving economic and social problems. However, it must be taken into account that not all small towns have tourism potential or favorable geographical location, and their industrial production may develop slowly or be in decline. In this case, it is possible to use the resources of the scientific environment. As Kwiatk-Solys notes, urban development today depends not only on the workforce, but also on the availability and quality of knowledge transfer. Scientific knowledge is becoming more international in nature and is the result of the interaction of scientific communities.

From Lazzeroni's point of view, universities also play an important cultural role in the city, as they often restore historic buildings and facilities for their own use, as well as create new ones for research and teaching. At the same time, the university can play a civic role by providing support in the creation of social spaces and in defining a common vision for the development of the city. In this sense, the contribution of universities to urban development includes social inclusion, democratic participation and territorial sustainability. All this directly and indirectly contributes to the economic development of the city. An example of the qualitative interaction between a small town and the academic environment is the city of Pushchino, Moscow Region, with a population of 21,000 people. The city-forming institutions of the city are 9 institutes of the Russian Academy of Sciences, predominantly of a biological profile, as well as a branch of the Physical Institute of the Russian Academy of Sciences, which employs about 2,500 people. There are more than 20 active industrial enterprises in the city that actively cooperate with the scientific community. Their activities are connected with the introduction of the achievements of fundamental research into medicine, biotechnology, and agriculture. For example, "Deacon-DS" is engaged in diagnostic control in the field of medicine, "DC" manufactures tools for burn centers, and "NPF Albit" produces chemical plant protection products. The scientific potential of Pushchino also allowed the development of small and medium-sized businesses, such as Perftoran, which is the only company in the world that produces a blood substitute with a gas transport function based on a submicron perfluorocarbon emulsion, or "Test Pushchino" - a laboratory for quality control of food products. These businesses generate more than 35% of the city's tax revenue. As a result, over the past three years, coupled with the implementation of city and regional targeted programs, there has been an increase in the local budget's own revenues. Attracting investments in science-intensive industries is one of the main ways to stimulate the socio-economic development of the city. Thus, the development of Pushchino shows that in Russia there is an opportunity to form a small town as a center of scientific research, carrying out targeted science-intensive state programs that provide world-class research in the field of physical and chemical biology and biotechnology. In such cities, socio-economic problems are comprehensively solved.

Conclusion

Thus, today in Russia the situation of growing capital-centrism is increasingly observed, when a significant part of the financial resources, economic activity and population of the country is concentrated in regional capitals, while small towns are characterized by economic backwardness, which is often associated with their low economic potential. The purpose of these studies was to analyze this potential and answer the question about the economic efficiency of small and medium-sized cities, approaches were given to the definition of the concept of "small city" and "medium city", demonstrated the theoretical roles that small and medium-sized cities

can play in the agricultural and non-agricultural activities, as well as in the development of the economic and social space of the Arctic regions. It turned out that they act as stable centers of territories, preserve the domestic culture of the country and natural attractiveness.

Thus, using the example of the foreign city of Baena, it can be argued that developed agricultural small and medium-sized cities play an important economic role and can easily master the primary sector of the economy. Given that the economy of a huge number of small and medium-sized cities in Russia is represented in the secondary sector, the example of the city of Gubakha was intended to reveal the key role of small and medium-sized cities in the industrial sector. Following this, it was taken into account that not all small and medium-sized cities can afford to develop industrial production, so the experience of Uglich was necessary to demonstrate the capabilities of small and medium-sized cities in the tertiary sector. Due to the fact that the development of cities today depends on the quality of knowledge transfer, the example of Pushchino showed that that small and medium-sized cities can quite successfully participate in the development of a modern innovative economy of the quaternary sector. The results of the analysis reveal the successful resolution of economic and social problems by small and medium-sized cities. Thus, Baena demonstrates that at the initial stage, agricultural orientation solves the problem of employment and investment attractiveness; industrial Gubakha shows how it is possible to create a modern market-oriented production; Uglich is an example of a tourism strategy that has attracted investment and increased living standards, and, finally, Pushchino, which has managed to form as a center of scientific research.

Now we can say that small and medium-sized cities are not able to solve their political problems, since there is a situation of real dependence of the municipal level on the central government. This is mainly due to the controlled distribution of transfers, when the municipal level depends on financial subsidies from the center, and part of the significant taxes is administered by the federal level. In such a situation, it is impossible to start investment projects or implement a development strategy, since it is necessary to expect the missing financial resources that a small town could have had initially. The deprivation of a significant part of income and asymmetric redistribution provokes an increase in dependency and passivity at the municipal level, an increase in corruption and the unpopularity of local authorities. There is a threat to the effective management of municipal property and profit from its use. In such a situation, which was the result of the dependence of municipal authorities on higher levels, a small town is deprived of any economic and political tools for the qualitative disclosure of its economic potential. To solve this problem, it is necessary that the development policy of small towns be aimed at stimulating independent development and carrying out activities mainly on the basis of their own capabilities. This process can be successful only in the case of equal interaction of all levels, when small towns can independently manage their resources on favorable terms. This will become possible only as a result of the adoption at the federal level of a program

Such decentralization is a difficult transition, but it provides an opportunity to replace the expectation of federal transfers with policies to improve institutions in the face of competition for investment and human capital. The introduction of these changes is necessary due to the fact that the economic potential is concentrated in small towns, which the existing political practice does not allow to reveal. In a relatively short period of time, a fundamentally new sector of the economy has been formed in our country. It includes small and medium enterprises as well as individual entrepreneurs. This sector plays an important role in the economy of the Russian Federation. It accounts for a significant part of the volume of production of goods and services, almost a third of the economically active population is employed in this sector.

1. An integrative approach has been developed and substantiated based on the consideration of three types of entrepreneurial structures - small enterprises, medium-sized enterprises and individual entrepreneurs as a single structural and systemic complex, called entrepreneurial structures or MSIP. This approach is based on the analysis, which showed that the types of structures under consideration are characterized by the same main types of economic activity, MSIP compete in the same markets, have largely the same production technology, and carry out risky activities. When the institutional and economic conditions of functioning change, the transition of these structures from one type to another may occur. The proposed problem - oriented approach develops the theoretical and methodological basis of entrepreneurship in Russia.

2. Based on the analysis of scientific views and the systematization of practical experience, the conceptual apparatus that characterizes entrepreneurial structures and their activities has been expanded and supplemented. It is proposed to expand the scope of the category of small and medium-sized businesses based on the inclusion of individual entrepreneurs in it. Substantiated is the replacement of the term profit in the criteria for classifying economic objects as entrepreneurial structures by the term income. It is proposed to correct the signs of classifying economic entities as individual entrepreneurs: to introduce size categories for individual entrepreneurs by analogy with small and medium-sized enterprises; establish a limit on the number of employees of individual entrepreneurs. A

refined classification of entrepreneurial structures by the number of employees, providing for the allocation of six classes: first class - up to 5 people, second class - from 5 to 15 people, third class - from 15 to 50 people, fourth class - from 50 to 100 people, fifth class - from 100 to 130 people, sixth class – from 130 to 250 people. Such a classification is more fruitful than the traditional one and can be used in the institutional sphere, in particular, to improve the regulatory and legislative framework, taxation and the system of state support.

3. The author's approach to the periodization of the formation and formation of entrepreneurial structures in our country is proposed. It is based on an analysis of the main features and indicators that characterize the level achieved by entrepreneurship from 1985 to the present. The following four stages were distinguished: the first or initial stage includes the period from 1985 to 1991, the second stage, called the transformation stage, corresponds to 1992-1998, the third stage or the formation stage includes the period from 1999 to 2007, the fourth stage, which began in 2008 and continues to the present, should become a stage of accelerated development of entrepreneurship.

4. It is shown that the main types of economic activity characteristic of business structures, both in our country and abroad (in the countries of the European Union and the USA) are trade, manufacturing, construction, transport and communications, real estate transactions. In the Russian Federation, these types of activities account for 82 percent of employees and 92 percent of the total turnover of business structures. For small businesses, these figures are 83 percent and 92 percent, respectively, for medium-sized businesses, 72 percent and 91 percent, and for individual entrepreneurs, 84 percent and 93 percent. Enterprises specialized in commercial activities predominate among entrepreneurial structures, employing a third of all employees and accounting for 58 percent of turnover.

5. A methodology for studying the regularities and trends in the formation of entrepreneurial structures is proposed, based on the consideration of the totality of entrepreneurial structures in the regions. The methodology provides for the use of such economic and mathematical models as distribution density functions for describing indicators characterizing the activities of small and medium-sized enterprises, as well as individual entrepreneurs. The conducted studies have shown the universality of the proposed methodological approach, which can be used to study sets of entrepreneurial structures not only in the subjects of the Russian Federation, but also in the municipalities included in these subjects, as well as in foreign countries.

6. An algorithm has been developed for assessing the role and place of entrepreneurial structures in the economy of the country's subjects, based on determining the share of entrepreneurial structures in total production volumes. It is proved that the shares of entrepreneurial structures in the total production volumes for the five main types of economic activity differ significantly. It is shown that the share of these structures in the total volume of production is large in such activities as trade (72 percent), construction (71 percent) and real estate transactions (68 percent).

7. The existence of a significant differentiation of the performance indicators of a set of business structures by types of economic activity and by subjects of the country is proved. For its analysis, it is proposed to use the developed economic and mathematical models that reflect the distribution of such indicators as the average turnover per one enterprise (entrepreneur), turnover per employee, investment in fixed assets per one business structure and one employee, average the number of employees of one enterprise structure. Average values of indicators and intervals of their change, characteristic for the main types of activity, are determined.

8. A methodical approach to assessing the existing size structure of MSIP in the regions of our country has been proposed and tested. Regularities have been established that characterize small enterprises, medium-sized enterprises and individual entrepreneurs in terms of the number of their employees. It is shown that in our country small enterprises with the number of employees from 8 to 11 people prevail, medium-sized enterprises with the number of employees from 106 to 121 people. For the majority of individual entrepreneurs, taking into account employees, the number of employees is in the range from 2 to 4 people. In general, the average number of employees in business structures does not exceed 6 people.

9. It has been proved that there is an inversely proportional relationship between the size of entrepreneurial structures and their share in the total number of enterprises (entrepreneurs), as well as the number of employed workers. It has been established that the trend, the larger the size of entrepreneurial structures, the smaller their share in the field of entrepreneurship, is stable for the 4th stage of entrepreneurship development.

10. The possibility of using such indicators as the share of entrepreneurial structures in the total volume of production and the volume of production of goods and services produced by these structures per capita is considered. The first of these indicators characterizes the role and place of entrepreneurial structures in the total volume of production, and the second characterizes the degree of saturation of the regional economy with products and services of small enterprises, medium-sized enterprises and individual entrepreneurs. The results of monitoring the level of entrepreneurship development achieved in the regions

using cluster analysis and normal distribution density functions are presented.

11. Based on the analysis of statistical data and the results of global monitoring of entrepreneurship, an assessment was made of the level of entrepreneurial activity achieved to date.

12. The trend of decreasing inter-subject differences in the development of entrepreneurial structures for the period from 2018 to 2022 is shown. The presence of -convergence and -convergence has been proved in terms of such indicators as the number of small enterprises and the number of their employees per 100,000 inhabitants, the volume of production of small enterprises per inhabitant of the region and per employee, as well as the number of employees employed in one small enterprise .

13. Formed methodological foundations for the development of production functions, as tools for the analysis of stable, regular dependencies of resources and production volumes of business structures. The greatest influence on the turnover of entrepreneurial structures of such factors of the production function as investments in fixed assets and wages of employees is substantiated. A distinctive feature of the methodology is the use of spatial data, which are represented by absolute values of indicators that describe the activities of aggregates of small, medium-sized enterprises, and individual entrepreneurs. It is proved that the best model specification approximating the dependence of the production volume of entrepreneurial structures on these factors is a power-law production function.

14. On the basis of the methodology proposed by the author, a set of production functions has been developed that describes the activities of both sets of business structures in general, and small enterprises (including micro enterprises), medium enterprises, individual entrepreneurs according to data from all subjects of the country, as well as for a number of subjects by municipality data. The following patterns have been established that characterize the activities of entrepreneurial structures: with an increase in the values of each of the two factors, the volume of production increases, while the factors increase, the value of this indicator increases faster than the values of the factors grow, that is, there is an increasing effect of scale; the wage factor influences the volume of production to a greater extent.

15. A methodical approach to the development of a new class of production functions used to analyze the activities of a population of small enterprises based on prolonged spatial data, called panel data, is proposed and tested. Three production functions were constructed corresponding to the time-averaged values of the factors, as well as with fixed and random effects, based on the generated two-dimensional arrays of statistical data on the totality of small enterprises in each of the subjects of the country for three years, with their subsequent integration into a common information base. It is shown that the production function with random effects has a higher quality among the constructed three functions.

16. A number of important aspects of creating a system for evaluating the effectiveness of entrepreneurial activity and monitoring the level achieved by entrepreneurial structures in the constituent entities of the country using production functions and dependencies built on their basis (isoquants, isocosts, optimal expansion trajectories) are substantiated. Proposals have been developed for the use of production functions and their applications for solving problems of analysis and improvement of the activities of entrepreneurial structures. The effectiveness of business management in the constituent entities of the Russian Federation is assessed. Recommendations have been formulated to optimize the proportions between investments directed to this sector of the economy and wages in the Ulyanovsk region.

17. The concept of a strategy for the development of small and medium-sized businesses is proposed on the example of the Ulyanovsk region. The growth of the role and place of small, medium-sized enterprises and individual entrepreneurs in the regional economy for the future is substantiated, based on an analysis of the reserves for increasing the share of entrepreneurial structures. Criteria for saturating the economy with the products of entrepreneurial structures are proposed and their values are substantiated. The problems hindering the development of entrepreneurship are highlighted. The main directions for improving the management system of business structures are determined. A forecast calculation of the target indicators of the entrepreneurship development strategy was made, taking into account that the growth rates of production volumes of entrepreneurial structures should be different for each of the main types of economic activity.

The theoretical significance of the work lies in the development of theoretical and methodological provisions that can be used in further studies of MSIP. The economic and mathematical models developed in the work can be used to assess the level achieved by entrepreneurship in the country and its regions, to substantiate the necessary resources for the development of this sector of the economy, as well as to formulate entrepreneurship development programs. The results of the study can be used to improve the educational process in higher educational institutions in such training courses as "Entrepreneurship", "Regional Economics", "State Regulation of the Economy", "Management", "Organization of Business Structures", "Economic Analysis", "Investment Analysis".

The effect of the implementation of the proposed measures, according to the calculations, will be as follows, namely:

firstly, under the base scenario of development and preservation of the tourist flow at the level of 2021, i.e. 36 thousand people per year, the profit of collective accommodation facilities and public catering enterprises will increase by 2035 to 3645 thousand rubles. and 432 thousand rubles. per year, respectively; with an optimistic scenario and an increase in the tourist flow to 70 thousand people. per year - up to 13807.5 thousand rubles. and 7875 thousand rubles. per year, respectively;

secondly, about 230 new jobs will be created both in the field of tourism and in related industries;

thirdly, the volume of own budget revenues of the city of Ustyuzhna will increase by 1,086 thousand rubles, or by 5.5% of the figures for 2021; the growth of budget revenues of the Ustyuzhensky municipal district will amount to more than 2 million rubles. or 1.8%;

fourthly, due to the development of inter-municipal cooperation in the field of tourism and related industries, rural areas adjacent to the city will receive an impetus for further development.

Thus, strategic planning of the socio-economic development of medium and small towns will ensure positive regional dynamics and an increase in the connectivity of the northern region.

In custody the main conclusions and results of the study are presented.

1. The harmonization of the goals of the socio-economic and spatial development of small and medium-sized cities as the predominant type of urban settlements in the region will help streamline the organization of the regional economic space.
2. The development and retention of the regional economic space is provided by small and medium-sized cities, since they act as points of economic growth and the main structural elements of the spatial framework.
3. Solving socio-economic problems and increasing the connectivity of the space of the northern region requires making adjustments to the policy implemented by regional government bodies.
4. Negative trends in the socio-economic and spatial development of the northern region are the result of poor attention on the part of regional government bodies to the problems of municipalities, ignoring the specifics of cities and the low level of use of strategic planning.
5. For the development of small and medium-sized cities in the north, within the current planning horizons, it is necessary to define targets, the achievement of which will ensure a balance in the settlement system and strengthen ties along the line "large city - medium / small city - village / village" at the regional level.
6. Positive regional dynamics and the growth of connectivity in the Arctic region in the long term can be ensured by the implementation of strategic directions and development priorities, determined depending on the type of city.

References:

1. Bufetova, A. N. (2015). Socio-economic development of Russian cities: main trends and factors. *Bulletin of the Novosibirsk State University. Series: Social and economic sciences.* 2015. Vol. 15, no. 4, pp. 124-138.
2. Bukhvald, E. M., Valentik, O. N., Kolchugina, A. V., & Odintsova, A. V. (2017). Strategic planning for small towns in Russia. *Bulletin of IE RAS*. 2017. No. 3, pp. 53-70.
3. Zubarevich, N.V. (2014). Regional development and regional policy in Russia. *ECO*. 2014. No. 4, pp. 7-27.
4. Klimova, S. G., & Klimov, I. A. (2015). Interaction of citizens with authorities: competent participation and the problem of intermediaries. *Sociological research*. 2015. No. 4, no. 372, pp. 51-57.
5. Mkrtchyan, N. V., & Florinskaya, Yu. F. (n.d.). *Labor spatial mobility of Russians on the example of residents of small towns*. (p.72). Moscow: RANEPA.
6. Oborin, M. S., Sheresheva, M. Yu., & Ivanov, N. A. (2017). Substantiation of strategic guidelines for the socio-economic development of small towns in Russia. *Bulletin of the Perm University: Economics*. 2017. V. 12, No. 3, pp. 437-452.
7. Frolova, E. V. (2014). Social infrastructure of Russian municipalities: the state and resources of modernization. *Sotsiologicheskie issledovaniya*. 2014b. No. 12, no. 368, pp. 51-58.
8. Sekushina, I.A. (2021). Factors and conditions for the development of small and medium-sized cities in the European North of Russia. *Issues of territorial development*, 2021, V. 9, No. 1, 1.0 - DOI: 10.15838/tdi.2021.1.56.2.
9. (2001). *Efficiency and quality management.* Modular program: Per. from English. / ed. I. Prokopenko, K. Norta: at 2 pm - Part 1. (p.800). Moscow: Delo.
10. (2021). *National tourism portal. Regions of Russia. News.* Retrieved 20.01.2021 from https://russia.travel/

11. (2021). *Arctic tourism in Russia* / otv. editor Yu. F. Lukin; comp. tourist guide for the regions of N. K. Kharlampiev; Sev. (Arctic) feder. un-t; St. Petersburg. state un-t. (p.96). Arkhangelsk: NArFU.
12. Lukin, Yu. F. (2021). Arctic tourism: rating of regions, opportunities and threats. *Arktika i Sever*. 2021 No. 23, pp. 116-122.
13. (2023). *Expert: in the Arctic, it is necessary to create mini-tour clusters within the framework of protected areas*. Retrieved 07/10/2023 from https://tass.ru/ekonomika/6316401
14. Bertosh, A. A. (2019). Arctic tourism: conceptual features and features. *Proceedings of the Kola Scientific Center of the Russian Academy of Sciences*. 2019. V. 10, No. 7-17, pp. 169-180.

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2023 **Issue:** 08 **Volume:** 124

Published: 05.08.2023 **http://T-Science.org**

Issue Article

Artur Alexandrovich Blagorodov
Institute of Service and Entrepreneurship (branch) of DSTU
Master

Vladimir Timofeevich Prokhorov
Institute of Service and Entrepreneurship (branch) of DSTU
Doctor of Technical Sciences, Professor,
Shakhty, Russia

Victoria Sergeevna Belysheva
Institute of Service and Entrepreneurship (branch) of DSTU
Candidate of Economics, Associate Professor

Galina Yurievna Volkova
LLC TSPOSN «Ortomoda»
Doctor of Economics, Professor
Moscow, Russia

PROBLEMS AND OPPORTUNITIES FOR SOCIAL AND ECONOMIC DEVELOPMENT OF SMALL AND MEDIUM-SIZED CITIES IN THE ARCTIC ZONE OF THE RUSSIAN FEDERATION

Abstract: *in the article, the authors analyzed the Federal Strategy for the Development of the Arctic Zone of Russia until 2035 with the development of regional target programs for innovative economic development, including its diversification, which contribute to the intensification of tourism activities in the region. It is becoming one of the drivers in the development of the economy in the Arctic. Its modern structure constantly increases the variety, which meets consumer demand. An important factor is the export role of tourism products. In the next 15 years, it is planned to increase the annual number of tourists in the Arctic zone to three million people, which, however, is significantly lower than in the foreign Arctic. In this regard, the development of polar Arctic tourism is possible so far only in Russia, as well as the organization of astroparks, the number of which is very limited in the world, are promising areas of tourism. Based on the analysis and generalization of thematic publications, the features of the development of pole tourism and the prospects for organizing an astropark in Teriberka, Murmansk region are considered. A number of measures have been proposed to promote them in the tourism market: expansion of the tourism product based on further scientific research; increasing the export value of new tourism products through active introduction to the international market; development of mechanisms to stimulate domestic demand through a flexible tax policy, infrastructure development, and broad information support. The development of tourism contributes to the improvement of the socio-economic situation in the region: it creates new jobs that are attractive to young people, the female population, creates opportunities for the preservation of traditional forms of management of indigenous ethnic groups, strengthens the geopolitical position of Russia in the Arctic, the article analyzes the problems and prospects for the socio-economic development of small towns and regional centers in the Russian Federation. Key approaches to determining the socio-economic potential of the region (including medium and small towns) are given. The types and elements of socio-economic potential, extensive and intensive factors of development are considered. A scheme of the socio-economic potential of small and medium-sized cities is proposed, the problems and advantages of the studied territories in comparison with large agglomerations are identified.*

Key words: *Arctic, polar tourism, astroparks, development, socio-economic potential, territory development, small town, medium town, resources, state and municipal management.*

Language: *English*
Citation: Blagorodov, A. A., Prokhorov, V. T., Belysheva, V. S., & Volkova, G. Yu. (2023). Problems and opportunities for social and economic development of small and medium-sized cities in the Arctic zone of the Russian Federation. *ISJ Theoretical & Applied Science, 08 (124),* 155-168.
Soi: http://s-o-i.org/1.1/TAS-08-124-14 ***Doi***: https://dx.doi.org/10.15863/TAS.2023.08.124.14
Scopus ASCC: *2000.*

Introduction

UDC 336.24:339.46.

The Federal Strategy for the Development of the Russian Arctic until 2035 against the backdrop of rapid climate change in the region, the development of targeted programs for innovative economic development of the Arctic, contribute to the intensification of tourism activities in the region. The tourism industry is becoming one of the drivers in the development of the economy in the Arctic. It was included in the programs of socio-economic development of the Murmansk, Arkhangelsk regions, the Republic of Komi, YNAO and other subjects of the Arctic zone of the Russian Federation located in the Arctic region of Russia. A similar process is typical for other polar countries of the world, which contributes to the development of international cooperation in this area. The established areas of Arctic tourism include: ecological, business, ethnographic, event, scientific, hunting, extreme, Its structure is constantly expanding, indicating that it is in demand even during pandemic economic difficulties. At the same time, there was a decrease in the export role of Arctic tourism in 2020-2021, associated with the pandemic, as well as with geopolitical factors. At the same time, despite the difficulties that have arisen, the investment attractiveness of the tourism sector of the economy continues to grow, which is facilitated by the growth in demand for recreation in areas with undisturbed nature not only in Russia, but also in other countries of the world. The Ministry of the Russian Federation for the Development of the Far East and the Arctic in the next 15 years plans to increase the annual number of tourists in the Arctic zone to 3 million people, despite the longer payback period for tourism projects than in more southern regions. Note that in Northern Norway, having a much smaller Arctic space, this figure has already been reached. The contribution of the tourism industry to the formation of the GRP of the Arctic regions of the Russian Federation ranges from 0.3% to 2% and gradually decreases as you move from west to east, which is not due to significant differences in recreational resources, but to transport accessibility and the quality of tourist infrastructure. The development of tourism contributes to the improvement of the socio-economic situation in the region: it creates new jobs for young people and the female population; opens up new opportunities for involving representatives of indigenous peoples in this area of activity, while at the same time ensuring the preservation of their traditional nature management, etc. The significance of the development of the tourism industry in the Arctic region encourages the study of its new promising areas.

The study was prepared on the basis of the analysis and generalization of thematic scientific publications, own developments on promising types of tourism activities and field research in the region. The main study areas were the water area, island territories and the coast of the Barents Sea.

A promising direction for the development of Arctic tourism is the polar cruise, which has its own characteristics compared to cruises along the coast of the Arctic, a few of which took place even this year against the backdrop of all kinds of pandemic restrictions. Pole Arctic tourism is developing in the western sector of the Arctic and includes two tourist destinations: visiting the North Pole and Hooker Island of the Franz Josef Land archipelago, which is part of the Russian Arctic National Park. In 2022, the possibility of including the cluster of this park located on the Severny Island of the Severnaya Zemlya archipelago in this route was considered. A feature of polar Arctic tourism is that it is still unique and is carried out only by the Russian nuclear-powered ship "50 Years of Victory". The duration of the trip is 10-14 days.

The second promising area for the development of Arctic tourism is astrotourism. The main goal of astrotourism is to observe the iconic objects and phenomena of the dark sky, which is possible in the absence of its anthropogenic illumination, the territory of the Arctic belongs to such areas. Interest in astrotourism is stimulated by the growing process of light pollution that accompanies urbanization. Astrotourism destination areas are astroparks (Dark Sky parks). They have exceptional conditions for observing the sky at night, as well as features of the "night life" of nature (nocturnal birds, mammals, active at night, etc.). Such areas are protected for scientific, educational purposes, as well as a natural and cultural heritage site, which have received such a status from the International Dark Sky Association.

The possibility of organizing the first astropark in Russia was studied by us near the village of Teriberka, Murmansk region in the summer of 2021 (Figure 1), the following were carried out: instrumental measurements of the illumination of the sky and visual measurements on the Bortl scale, a landscape description of the territory was made, and an initial assessment of the aesthetics of landscapes in promising areas of tourist routes was carried out.

Teriberka is located on the coast of the Barents Sea, which creates excellent conditions for exploring the nature of the Arctic. The territory in the relief represents a small hilly and coastal flat part of the coast of the Teriberskaya Bay. The absolute elevations are 0–177 m, the relief is erosion-denudation, sharply dissected. The climate of the territory is maritime, subarctic. In the landscapes, shrub and shrub-lichen tundras are most widespread; forest-tundra thickets of hypoarctic shrubs, subarctic light forests, coastal meadows, and swamps occupy smaller areas. Remoteness from urban and industrial centers determines the low level of atmospheric pollution, ensuring its transparency, which is conducive to observations of the night sky. On a clear night, light pollution measurements with a luxmeter gave results of less than 1 lux, and on the Bortl scale - class 2, which indicates the absence of light pollution. Important objects for observing the night sky are the constellations Ursa Major and Ursa Minor with the North Star, the northern lights are especially clearly visible in March. The possibility of observations is limited to periods with the lowest density of clouds, strong winds, etc. The creation of astroparks implies the presence on the territory not only of the possibility of observing celestial phenomena, but also of natural, cultural and historical objects that are attractive to tourists. Although Teriberka has a high recreational potential, it has become an important tourist attraction relatively recently, after the release in 2014 of Andrey Zvyagintsev's feature film Leviathan, which was filmed there. This explains the greatest interest of tourists in the associative cultural landscapes of Teriberka.

Picture 1. The abandoned grocery store from the Leviathan movie as an example of an associative cultural landscape.

Tourist activity can be stimulated by educational tours to observe the phenomena of the Polar day and Polar night, unfamiliar to most Russians, unique bird colonies on the shores of the Barents Sea, visits to aesthetically valuable natural landscapes of the coastal zone and the river valley of the river. Teriberka (Figure 2).

Figure 2. Landscapes near the village of Teriberka

The development of sports tourism is possible - skiing and hiking, diving, as well as fishing tourism. The village is located 130 km east of Murmansk, which can be reached by private or public transport. However, in winter, the only road is often closed due to snowstorms for 3–5 days. In the last 3-5 years, a modest hotel chain (branches of Murmansk hotels, private hotels of local residents) and catering places have appeared in the village. The considered promising areas for the development of tourism in the Arctic allow us to propose a number of measures for their promotion in the tourism market, which include, for example, the following, namely:

- expansion of the structure of the tourism product on the basis of further scientific research;
- increasing the export value of new tourism products through active introduction to the international market;
- development of mechanisms to stimulate domestic demand through a flexible tax policy, the development of transport and tourism infrastructure, and broad information support.

The Russian Arctic, which occupies a significant part of the circumpolar space, where more than half of the entire population of the region lives, has all the prerequisites to become the world leader in Arctic tourism, which will contribute not only to the socio-economic development of the region and the strengthening of Russia's geopolitical positions in the Arctic.

Main part

Key modern approaches to the definition of the concept of the socio-economic potential of the region are shown in Table 1.

Table 1. Approaches to the definition of the concept of the socio-economic potential of the region

No.	Definition
1	The system of material labor resources and factors that ensure the achievement of production goals
2	Production resources, its quantitative and qualitative parameters that determine the maximization of production capabilities at a particular point in time
3	The ability of the region to use the full range of its resources, including the characteristics of the current and future structure of the economy and geographical location
4	Intra-regional resources and inter-regional synergies that promote mutually beneficial resource efficiency improvements through specialization or other tools
5	The total ability of the region's economy, its industries, enterprises, farms to carry out production and economic activities, produce products, goods, services, meet the needs of the population, social needs, ensure the development of production and consumption
6	Expression of the material base of the region, taking into account the volume of property of the territorial entity, expressed in quantitative indicators, as well as in qualitative indicators that determine the possibility of selling this property in the region
7	The ability of the region to solve not only economic problems, but also social ones, improving the quality of life of the population
8	The ability of the region to create conditions for improving the quality of life using the entire range of resources available in the region, as well as using external resources
9	Possibility of development of the region when using territorial resources, features of the economic activity of the region and its geographical location in the interests of the population of the region

Speaking about the socio-economic potential of the region, there are several types of it, namely:

* basic potential - a potential capable of resolving problems and issues of local self-government within the framework of socio-economic development;
* hidden potential - potential that can create innovations;
* excessive potential - potential that does not give a socio-economic effect;
* negative potential - the potential is not sufficient to address issues of local self-government;
* total potential.

As for the total potential of the territory, a significant number of elements are distinguished in its composition, the key of which are, namely:

* natural resource potential - the potential of natural reserves, the state of the environment;
* production potential - the potential of industrial production, fixed capital and the degree of its depreciation, the level of technological and reproductive structure of fixed capital, the competitiveness of products;
* social potential - the potential of the social structure of society and the degree of differentiation of the population, the potential of personal and public security, social infrastructure;

* consumer potential - the potential of the purchasing power of the population of the region;

* innovative potential - the potential of research and technical activities in the region, the use of progressive traditional high technologies, the formation of the results of intellectual activity;

* infrastructural potential — the potential of the region's infrastructure;

* labor (demographic) potential - the potential for labor activity of the population and the educational level of the population of the region;

* institutional potential - the potential for the development of institutions and social production;

* financial potential — the potential of tax revenues to municipal budgets.

In the regional economy, two groups of factors for development and building up the socio-economic potential of the region are distinguished - these are extensive and intensive factors of development:

extensive factors include a quantitative increase in the volume of resources used (material, labor, financial, industrial, natural, etc.);

to intensive - a qualitative improvement in the resources used, an increase in the efficiency of their use.

Thus, the basis of all definitions of the socio-economic potential of the region is its resource component and the efficiency of its use.

The advantages of small towns in comparison with medium and large ones are in the possibility of prompt mobilization of available resources, in the high centralization of municipal government, which gives good prospects for using network interaction with other cities and regional centers, including development within a cluster (tourism, industrial, cultural, etc.).

Nevertheless, small towns and regional centers of Russia face a number of serious problems in the course of their development. The most important of them is demographic - the outflow of the population from small towns to larger settlements, which can lead to their degradation and transformation into infrastructurally undeveloped rural areas. The outflow of the able-bodied population occurs due to the lack of qualified jobs, the concentration of educational centers in large cities, etc. In general, the population of small towns has decreased by 10–15% over the past 5–10 years. It can be noted that in the post-Soviet period, the country has developed a tendency for government non-intervention and disregard for the development of small towns and regional centers, which are considered unpromising and uncompetitive, in connection with which their budgetary support is not considered effective. In addition, it is argued that the presence of a large number of small towns and district centers predetermines the growth of social inequality and poverty, reduces social stability in society. Of course, the weaknesses in the development of small towns in Russia cannot be denied. Thus, small towns are distinguished not only by an insufficient economic base, but also by unfavorable positions in terms of attracting qualified specialists and investments; at the same time, they face an acute problem of unemployment. A significant proportion of small towns are single-industry towns with a predominance of one industry and a high dependence on the activities of city-forming enterprises. Plants and factories in small towns lose out to competitors from larger cities in most industries. According to some estimates, doubling the size of the city leads to a 5% increase in the productivity of enterprises.

The formation and development of market relations presupposes the free and equal coexistence and development of various forms of ownership and various sectors within each form of ownership. Considering the private sector of the economy, we can talk about three groups of enterprises, which, according to generally accepted terminology, are defined as large, medium and small enterprises, depending on their size, as well as a group of individual entrepreneurs. Each of these four groups has its own internal interests that determine the strategy of their economic behavior, their attitude towards the state and its policy, towards socio-economic, political and national problems. Big business mainly determines the economic and technical power of the country. For the purposes of self-preservation and development, it gravitates toward integration, absorbing or concentrating smaller partners on the one hand, and on the other, uniting into international structures, losing part of their independence and falling under the influence of stronger partners. At the same time, guided by the situation on the international market and fulfilling the will of stronger partners, big capital becomes an instrument for the expansion of international business structures in the domestic market of the country. Medium-sized businesses are more dependent in their activities on the domestic economic situation and are forced to compete within their own group, as well as with large domestic and foreign capital. This determines the interest of medium-sized businesses in protecting the domestic market through the implementation of a protectionist state economic policy and the formation of certain rules for market relations.

Small business, including individual entrepreneurship, is a numerous layer of small proprietors, who, due to their mass nature, largely determine the socio-economic and, to some extent, the political level of the country's development. In terms of their standard of living and social status, they belong to the majority of the population, being at the same time both a direct producer and a consumer of goods and services. The small business sector represents the most extensive network of enterprises and individual entrepreneurs, operating mainly in local markets and directly connected with the mass

consumer of goods and services. Together with the small size of small enterprises, their technological, production and management flexibility, this allows us to respond sensitively and in a timely manner to changing market conditions. The small business sector is an integral, objectively necessary element of any developed economic system, without which the economy and society as a whole cannot exist and develop normally. Although the "face" of any developed state is made up of large corporations, and the presence of a powerful economic force - big capital, to a large extent determines the level of scientific, technical and production potential, the true basis of the life of a country with a market economy system is small business as the most massive, dynamic and flexible form of business life. It is in the small business sector that the bulk of national resources are created and circulate.

High adaptability and mass coverage of almost all areas of the country's domestic market ensure the sustainability of economic development and contribute to the stability of the state. The owners of small enterprises, on the one hand, are small owners and are united by corporate interests in property with large and medium-sized capital. On the other hand, representatives of small enterprises and individual entrepreneurs are distinguished by the fact that their living and working conditions, as well as the position of an active producer and at the same time a consumer in the domestic market, force them to strengthen ties with their regular and potential customers from various social groups in everyday life. All of the above determines the social behavior of small business representatives, based on direct dependence on local and national interests.

In our country, the advantages of large-scale production have been promoted for a long time. With certain positive aspects, such absolutization led to the absence of conditions for the formation of competitive relations. At the same time, the opportunities for small businesses are very high, especially in modern conditions. Many years of experience in developed countries have shown that without a wide network of small enterprises, the functioning of the commodity market is impossible. The presence of a sufficiently large number of small enterprises makes it possible to intensively rebuild the structure of the economic complex.

One of the reasons for the successful development of small and medium-sized businesses in advanced economies is that large-scale production is not opposed to small-scale. In the USA, Japan, Germany and other developed countries, small and medium enterprises form a stable, as it were, double structure: "small plus large". In these countries, the principle of cooperation between large and small enterprises is cultivated, and large associations do not suppress small businesses, but complement each other, especially in the field of specialization of individual industries and innovative developments. It is known that Japanese supergiants rely on thousands of family businesses and micro firms with a high level of detailed (operational) specialization and responsibility, with the highest level of computer support. The relations of the latter with the state and big business are regulated by a legal framework developed over decades. Small business dominates in production, construction, services, and now in high technologies. The exception to some extent, especially in the United States, is the aerospace and electronics industries, and to a certain extent, the automotive industry.

Firms of different sizes play different roles in ensuring the stability and competitiveness of a market economy, and have different risks and benefits (Table 2).

Table 2. Strengths and weaknesses of large and small businesses

	Strengths	Weak sides
Big business	- the ability to actively change the external environment of entrepreneurship - the ability to create and accumulate the achievements of scientific and technological progress, procedures and rules of rational business - saving on production costs - sustainability	- reduction of incentives to increase production efficiency - an opportunity to limit the access of other firms to the achievements of scientific and technical progress and rational business - a drop in efficiency growth management - inflexibility, the possibility of losing contact with the consumer

Small business	- flexibility - higher profitability compared to big business - use of unemployed resources from informal markets - dependence on the support of large firms and the state	- high risk nature - intuitive nature and non-specialized control - limited access to high quality resources - lack of financial resources, difficult access to information and scientific achievements

Big business defies simple definition. Usually the concept of "big business" is applied to such giants as, for example, General Motors. The largest companies in the world include such firms as General Electric (USA), Royal Dutch (Great Britain - Denmark), Coca-Cola (USA), Nippon Telegraph & Telephone (Japan), Exxon (USA), Gazprom (Russia) and others. It is thanks to large enterprises that business is developing, which is based on mechanisms for reducing production costs. Large firms are the bearers of scientific and technological progress (STP), they accumulate and then implement the methods of rational entrepreneurship.

Most modern large firms are international companies operating in global markets, which allows them to take advantage of the relatively cheap resources of the world economy by locating different stages of production in different countries. With the greatest clarity, these properties of big business manifested themselves in the activities of modern transnational corporations (TNCs). The latter, thanks to the huge concentration of resources and the centralization of financial and material flows within the corporation, are able to create for themselves an effective market and social infrastructure. Coming to less developed countries, TNCs themselves create communications, form a model of behavior of workers and consumers, and actively influence domestic and international legislation.

Along with competitive advantages, large business also has weaknesses. The growth of the company is often accompanied by a decrease in the effectiveness of its management. Very often, large firms have the ability to regulate the demand and prices of their products, which reduces the incentive to increase efficiency, and makes big business inflexible. These features of large firms create opportunities for sustainable business development in medium and small sizes.

The concept of "big business" is a concept mainly economic. The legislation of both foreign countries and Russian does not specifically highlight this concept. The concept of "small business" is defined both economically and legally. As the experience of countries with highly developed economies shows, it is the most important component of the market economy. In its most general form, small business is understood as economic activity carried out by subjects of a market economy under certain conditions established by law, state bodies and other authorized organizations that determine the essence of this concept. The strengths and weaknesses of small businesses will be discussed in the following paragraphs.

In addition to large and small businesses, a significant layer of medium-sized businesses remains in the modern market economy. Just like big business, medium business does not have a special legal status. It occupies an intermediate position between small and large businesses located at different poles of the economy and plays an extremely important role. It acts as an intermediary and a link between large and small businesses, between small businesses and the state. The small size of firms, the instability and high riskiness of small businesses do not allow them to establish stable ties with large businesses directly. Medium business assumes this role, creating a complex network of relations of various forms, legal and organizational formalities, both with large and small businesses. These connections are called the network economy.

Thus, a modern market economy is characterized by a complex combination of industries of various scales - large, with a tendency to monopolize the economy, medium and small enterprises that arise in industries that do not require significant capital, volumes of equipment and cooperation of many workers. The size of enterprises depends on the specifics of industries, their technological features, and on the effects of economies of scale in production. There are industries associated with high capital intensity and significant production volumes, a large share of fixed assets and entrepreneurial costs. Most of the large businesses are concentrated in these industries. These include the automotive, pharmaceutical, chemical, metallurgical industries, most enterprises in the extractive industries. The fastest growing industries determining scientific and technological progress (STP), since they accumulate financial, production and human resources faster than others. In industries with low capital costs, where the share of personnel costs in the costs of entrepreneurs is large, small enterprises are preferable.

The place of small business is predetermined by objective economic laws, since it is approximately the same, regardless of the peculiarities of the political

structure, the history of the country's development, the sectoral structure of the economy, and other factors.

The perception of problems in single-industry towns depends on the specific situation in each of them. For different single-industry towns, the severity of even common problems (Figure 3) is different.

Representatives of the executive authorities of the subjects of the federation are most concerned about the situation with the social burden on business due to the need to make social payments related to the status of the northern territories. The same problem was named among the main ones by some mayors of cities, as well as a number of federal experts and businessmen themselves.

Figure 3 - Main problems in single-industry towns

Another barrier to the development of single-industry towns is the system of redistribution of tax revenues. The current tax policy, according to which only a part of personal income tax remains in the local budget, while VAT and some other types of revenues go directly to the federal and regional budgets, creates a deficit in local budgets. Even with the active economic development of the territories, the heads of single-industry towns do not predict a reduction in the deficit by more than 20%.

In addition, processing industries do not pay taxes on the resources used to the local budget at all, which significantly reduces the amount of budget revenues for several single-industry towns at once. At the same time, taxes paid by businesses on pollution of territories, use of the roadway, etc. are higher than in non-Arctic regions. There is a situation when the basis of budget revenues - deductions from large industries - is a destructive factor for business, but even in this form it does not satisfy the needs of municipalities.

The heads of single-industry towns note the situation in housing and communal services and the transport system and the outflow of personnel among the significant problems. For example, for the city of Vorkuta, the key issue is the resettlement of nearby villages, in which practically no one lives, but which have to be heated and lit. Every year the city has to spend about 100 million rubles for these needs. Transport problems imply high wear and tear of the existing roadway and the impossibility of replacing it due to high capital intensity, in which the need for transport provision of the territories does not decrease.

For more successful single-industry towns, such as Norilsk and Severodvinsk, one of the problems is the lack of housing construction, which does not allow attracting new qualified personnel. It can be said that some Arctic single-industry towns suffer from an excess of housing stock, for the maintenance of which they do not have enough funds, while others suffer from a shortage. The same problem causes the migration of the young population to more affluent cities in the regions.

For remote single-industry towns, such as the city of Pevek, a serious problem is the duration of auction procedures for public procurement of goods and services. The short period of summer navigation poses a threat of supply disruption due to the need to meet the deadlines for tenders.

Some of the respondents refer to the existence of projects to address these problems. However, these projects involve the creation of new infrastructure facilities, which exceed the financial capabilities of the municipalities, but are not supported by the regional authorities due to limited resources.

According to business representatives, the new cadastral system of immovable property taxation greatly undermines the profitability of production. For mining industries that own quarries and large areas for storage and processing, the corresponding expense item, according to businessmen themselves, has

increased up to 100 times. At the same time, no benefits were provided to enterprises.

Also, business representatives note a reduction in capacity and a slight increase in unemployment. Its growth rates are low: surges are recorded only when large-scale production facilities are closed, such as, for example, Kovdorslyuda.

Business, according to respondents, is highly dependent on geopolitics. For example, at Onegales, the fleet was updated in favor of foreign equipment, but the imposition of sanctions against Russia in the future will require abandoning such initiatives.

Another problem of doing business in the Arctic was the lack of interest in building the company's image and launching marketing strategies. The products of many companies are little recognizable, and some enterprises do not have a strong brand to attract outside investment.

In the course of the interviews, specific problems concerning individual single-industry towns were also noted. For the city of Zapolyarny, the situation with the maintenance of military units of the Ministry of Defense of the Russian Federation is important - many service items are outsourced to other cities and regions (for example, bed linen is washed in St. Petersburg). For the city of Nikel, the border status is of particular importance: it requires maintaining the improvement of territories in order to attract consumers and producers from among the citizens of the fifty-kilometer border zone. Pos. Beringovsky remains today without any way to earn money independently.

Evaluation of the effectiveness of state support measures for the Arctic single-industry towns also differs significantly depending on which group the respondent belongs to (Figure 4).

Federal experts are the most critical. They note the insufficiency of support measures, and some of them even doubt that such targeted support is being carried out. Their main claims are the lack of a strategy for the development of the Arctic single-industry towns and the Arctic as a whole, the lack of allocated funds and the lack of a diversified approach based on the specifics of each individual single-industry town.

Figure 4 - Evaluation of the effectiveness of state support for single-industry towns

Representatives of the regional authorities noted rather the support measures that need to be implemented at the federal level. The regions themselves, among their own support measures, named a deferment on the payment of regional taxes, penalties and fines for city-forming enterprises, as well as benefits on corporate property tax and corporate income tax when implementing investment projects.

The opinions of the heads of medium and small towns on the issue of state support measures were divided: some of them noted the existence and effectiveness of these measures related to the implementation of large infrastructure projects funded by the federal budget; the other part called the existing measures ineffective or pointed to their absence. That is, the assistance of the federal center is significant only in the form of support for large infrastructure

projects. Those medium and small towns that were able to receive funding feel supported, while those who do not are skeptical about it. The existing mechanisms are somewhat limited, as they are aimed at creating new industries, while there is a need to promote the development of already established enterprises. Such support is exclusively targeted.

Assistance from the regional authorities is noted by all heads of medium and small towns. For them, the main form of support is subsidies from the regional budget. At the same time, neither federal experts nor regional authorities named the poor quality of city management as a problem. Also, there is a lack of focus of the heads of small and medium-sized cities to attract investment, with the exception of representatives of the Murmansk and Arkhangelsk regions.

The heads of mono-settlements see the effective assistance of the center in the field of education, providing budgetary organizations with stable and full wage payments, participation in regional co-financing under development programs. The heads of small and medium-sized cities also note the support of the city-forming enterprise in the field of social policy, housing and communal services, and improvement of the urban environment.

Business notes the need for support from the authorities, but mainly in the issue of revising the legislative framework (tax policy, personnel policy, etc.), rather than in the form of subsidies. In general, the survey shows that cities and towns need state support rather than enterprises themselves.

On the issue of changing the situation in small and medium-sized cities in the Arctic, there is the greatest dispersion of opinions (Figure 5).

Some of the interviewed experts note that the only effective tool to support small and medium-sized cities could be the expansion of mining. But this way of resolving economic problems is in conflict with the threat of depletion of resources and has little effect on improving the socio-economic living conditions of the population. In general, it is necessary to revise the exclusively mining profile of enterprises, its gradual transformation towards deep processing. According to respondents, support for the modernization of existing extractive industries is especially relevant for those regions where the extraction of raw materials is seasonal in nature and forms the occupancy of warehouses in the off-season in volumes of up to 50% of the total production volumes.

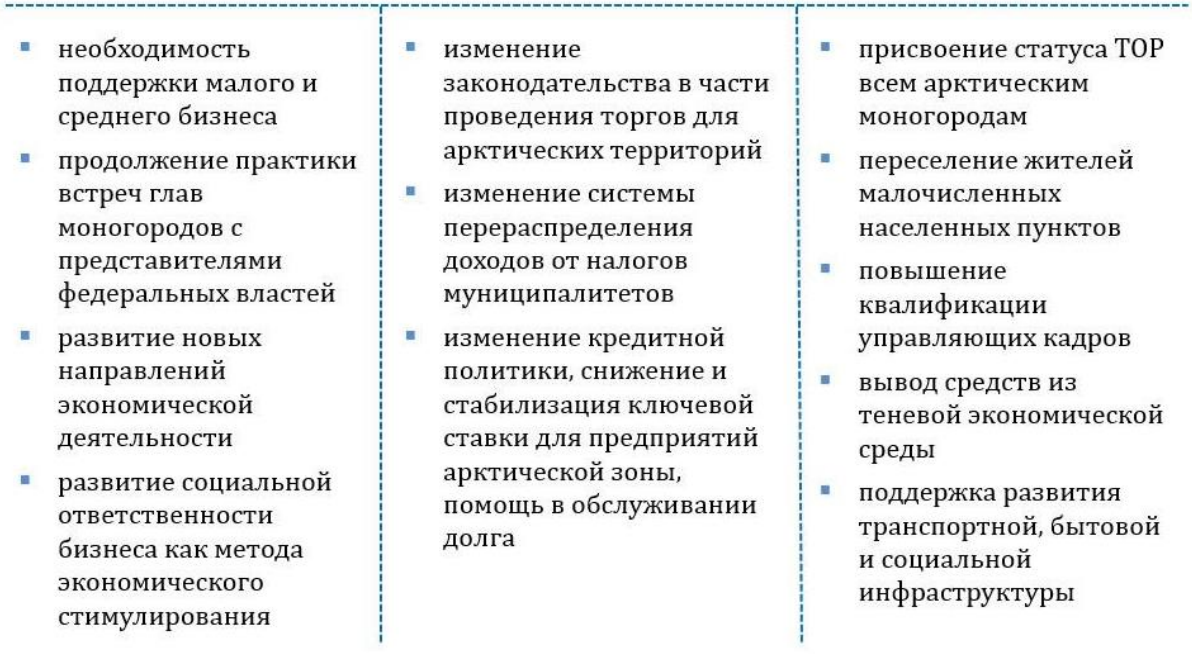


Figure 5 - suggestions for improving the situation

At the same time, the most common proposal was to assign the status of ASEZ to all Arctic small and medium-sized cities. So, all the proposals of representatives of the regional authorities, in fact, came down to support mechanisms within the framework of the ASEZ: tax incentives, preferential lending and expansion of the territory of the ASEZ beyond the boundaries of small and medium-sized cities on the basis of connectivity, the creation of the ASEZ without being tied to specific projects, etc.

Federal experts also pointed to the need to support the development of small and medium-sized businesses. For example, the experience of the city of Severodvinsk in effective support of small businesses through the SME Financing Fund is noted. A number of interviewed experts stressed the importance of

continuing the practice of meetings between the heads of small medium-sized towns and representatives of the federal authorities, but on a systematic basis. The development of new areas of economic activity was also noted as a significant factor in improving the situation in small and medium-sized cities in the Arctic. We are talking about creating infrastructure for small and medium-sized businesses in the field of tourism, public services, etc.

The heads of small and medium-sized cities, in addition to the above, called such necessary, in their opinion, measures as:

- ❖ resettlement of residents of small settlements;
- ❖ changes in legislation related to bidding for the Arctic territories;
- ❖ change in the system of redistribution of revenues from taxes of municipalities;
- ❖ advanced training of management personnel;
- ❖ development of social responsibility of business as a method of economic stimulation;
- ❖ change in credit policy, reduction and stabilization of the key rate for enterprises in the Arctic zone, assistance in debt servicing;
- ❖ withdrawal of funds from the shadow economic environment;
- ❖ support for the development of transport, household and social infrastructures.

Problem

There is no detailed strategy for the development of the Arctic small and medium-sized cities of the Russian Federation, fixing the mechanism of their systemic federal support. Such a strategy should take into account the specifics of single-industry towns in the Arctic, which is completely ignored in the existing list of all small and medium-sized specialized municipalities in the country. Each Arctic small and medium-sized city has its own problems, often unique to them, which makes a stereotyped, average approach ineffective.

Foundations

The lack of a comprehensive, highly specialized strategy puts the Arctic small and medium-sized cities in a position in which the implementation of support from the federal center does not lead to the expected economic growth and development of the territories due to the lack of consistency and consideration of the specifics. The existing regulations for the support of small and medium-sized cities are designed for 319 administrative-territorial units, of which only 14 are small and medium-sized cities in the Arctic. At the same time, the support and development programs of the subjects of the federation, which include small and medium-sized cities, although they reflect regional specifics, are designed for all categories of settlements, and, therefore, are not always effective in small and medium-sized cities.

The lack of an innovative scenario for the development of small and medium-sized cities in the Arctic also slows down investment development, allowing the municipal authorities to concentrate solely on maintaining the current state, instead of developing the territory.

Attention to small and medium-sized cities of the Arctic zone is irregular, significantly inferior, for example, to the attention paid to the Far East. The symbiosis of Arctic and multidisciplinary specifics requires the creation of a team of qualified specialists in regional development issues, which are usually absent in regions and municipalities, which makes it almost impossible to develop such a strategy by small and medium-sized cities themselves.

Offer

Develop a comprehensive Strategy for the development and systemic state support of small and medium-sized specialized municipalities in the Arctic zone of the Russian Federation, reflecting:

- ❖ general specifics of the region;
- ❖ economic conditions for the existence of small and medium-sized cities;
- ❖ features of the position of the territory of small and medium-sized cities;
- ❖ investment climate improvement scenario;
- ❖ mandatory measures of state support;
- ❖ conditions for obtaining state support;
- ❖ options for combining state support measures to achieve a multiplier effect;
- ❖ a plan for legislative revision of the provisions of the fiscal state policy for the regions under consideration;
- ❖ forms and methods of stabilizing the demographic situation in small and medium towns;
- ❖ KPI (key performance indicators) for the implementation of support measures, etc.

Problem

The study showed that SMEs in the Arctic zone, despite a wide range of government support measures for lending, do not actually use them. In addition to poor awareness, this is evidence that the existing mechanisms are inaccessible to entrepreneurs. This is especially true for companies whose profile is different from the profile of a city-forming enterprise, which, having no financial capabilities, are unable to increase production, which hinders the diversification of the economy of small and medium-sized cities.

Foundations

Existing programs to support lending to SMEs provide for the presence of at least 30% of own funds or assets to secure a loan. This condition turns out to be unbearable for small and medium-sized enterprises of small and medium-sized cities in the Arctic zone, since there is isolation in the domestic sales market, due to extremely high logistics costs when entering foreign markets.

In addition, traditional state support measures (creating a greenfield or brownfield) aimed at

developing competition due to the geographical specifics of the Arctic zone also do not work.

Offer

According to experts, it is necessary to introduce a lending model for small and medium-sized businesses in the Arctic zone, which reduces the obligations of SMEs to 10-15% of the required amount or the corresponding amount of collateral. By analogy with mortgage lending, which did not develop under the requirements of 50% availability, developed poorly at 30%, and began to be actively used when the restrictions were reduced to 10-15%. At the same time, it is important to provide consulting and organizational and managerial assistance to businesses in the process of project implementation.

The lending model can be specialized and apply only to reducing logistics and transportation costs, giving small and medium-sized businesses the opportunity to enter foreign markets.

It is also necessary to expandtypes of economic activity that are subject to concessional lending for the territory, taking into account priority industries and including the service sector in them. In the Arctic small and medium-sized cities there is a shortage of enterprises of this profile, which distinguishes them from the cities of the central part of the country, where this area is highly developed and profitable.

Also expedientwider involvement of regional guarantee funds and the inclusion of state and municipal authorities in the process of reviewing loan applications and providing a bundle of forms of state support for small and medium-sized businesses.

Problem

The majority of heads of small and medium-sized cities and representatives of the executive power of the subjects of the federation that are part of the Arctic zone lack the necessary investment thinking, which is the basis for understanding effective methods and forms of development of territories with this specificity.

Foundations

During the study, it turned out that most of the heads of small and medium-sized cities called only the subsidized scenario of financing the budget deficit as a measure of state support. Only some representatives of the municipal authorities are aimed at attracting investments as an effective lever for improving the economic situation of the territories. This approach of the majority of decision makers is destructive due to the limited federal and regional budgets.

Offer

Develop a training program for senior and middle managers in small and medium-sized cities in the Arctic. Include in the program representatives of the executive authorities of the subjects of the federation that are part of the Arctic zone, federal experts together with representatives of private business of mono-profile municipalities. The training program, with its annual implementation, should become a new specialized platform for communications on the development of Arctic small and medium-sized cities.

Problem

The creation, maintenance and modernization of transport, housing and communal, social and other infrastructure is in most cases extremely capital-intensive. Local budgets of small and medium-sized cities do not have the necessary amount of funds for investment in order to fully meet the needs of the population and industries in high-quality infrastructure.

Foundations

For the comprehensive development of the infrastructure of small and medium-sized specialized municipalities, significant extra-budgetary funds are required. The existing measures to attract private investment in small and medium-sized cities do not cause an increase in the investment proposal, so there is a request to use a new tool in this area.

Offer

Introduce an instrument of bonded loans to finance large infrastructure projects. The implementation mechanism includes the following elements:

- a large bank issues a loan at a preferential rate (for example, 19.5% per annum);
- VEB buys and "packages" these loans;
- VEB issues targeted bonds secured by these loans under its own guarantee, and the coupon rate on the bonds is equal to the rate on federal loan bonds with a comparable maturity + 1%.

Table 3. Categories of socio-economic status of single-industry towns in the Arctic zone (2018-2035)

Name of small and medium towns	Monotown region	Category of small and medium cities (2018)	Category of small and medium cities (2035)
Kirovsk	Murmansk region	1st category	1st category
Onega	Arhangelsk region	1st category	1st category
settlement Revda	Murmansk region	1st category	1st category
Kovdor	Murmansk region	2nd category	1st category*
Zapolyarny	Murmansk region	2nd category	2nd category

Monchegorsk	Murmansk region	2nd category	2nd category
Novodvinsk	Arhangelsk region	2nd category	2nd category
Olenegorsk	Murmansk region	2nd category	2nd category
settlement Beringovsky	Chukotka	2nd category	2nd category
settlement Nickel	Murmansk region	2nd category	2nd category
Severodvinsk	Arhangelsk region	2nd category	3rd category*
Norilsk	Krasnoyarsk region	2nd category	3rd category*
Pevek	Chukotka	3rd category	2nd category*
Vorkuta	Komi Republic	3rd category	2nd category*
** The red color in the table indicates the deterioration of the positions of cities in 2035 (transition to a less favorable category), green - improvement in positions (transition to a more favorable category).*			

Conclusion

Rehabilitation and restoration of small and medium-sized cities as engines of growth for the region and the country as a whole seems to be a cost-effective and essential step that creates new incentives for the socio-economic revival of the vast surrounding rural areas and contributes to the preservation of the cultural traditions and historical heritage of the region. Modern realities give small and medium-sized cities in the Arctic zone of Russia new chances and prospects for intensive development. For small and medium-sized cities and regional centers, it is necessary to search for new branches of specialization that contribute to the preservation and growth of the level and quality of the socio-economic potential of these territories.

In this regard, the problem of identifying internal reserves for the socio-economic development of regions with small and medium-sized cities is becoming increasingly relevant. The solution to this problem is the search and implementation of new approaches to determining the structure, methods and tools for assessing the socio-economic potential of the region. In this regard, state and municipal management should be aimed at ensuring the sustainable development of regions, and the concept of managing the potential of regions should be focused on identifying, identifying, evaluating and effectively using available resources to increase opportunities for socio-economic growth. Thus, it is necessary to create a system for monitoring the socio-economic development of the regions, which will provide the governing bodies with complete, timely and reliable information about the processes

In order to improve the efficiency of realizing the potential of small and medium-sized cities in Russia, it is necessary to expand the range of functions performed, including the solution of scientific, educational, tourism, recreational, cultural and other tasks.

References:

1. Bezuglova, M.N., & Markaryan, Yu.A. (2017). Problems of small business and its role in the socio-economic development of the national economy. *Science and education: economy and economy; entrepreneurship; law and management*, 2017, No. 1 (80), pp. 11-13.
2. Bykovskaya, Yu.V., Ivanova, L.N., & Safokhina, E.A. (2022). Small and medium business in modern Russia: state, problems and directions of development. *Bulletin of Eurasian Science.* 2018. No. 5 [Electronic resource]. https://esj.today/PDF/12ECVN518.pdf
3. (2021). *National tourism portal. Regions of Russia. News.* Retrieved 20.01.2021 from https://russia.travel/
4. (2021). *Arctic tourism in Russia* / otv. editor Yu. F. Lukin; comp. tourist guide for the regions of N. K. Kharlampiev; Sev. (Arctic) feder. un-t; St. Petersburg. state un-t. (p.96). Arkhangelsk: NArFU.
5. Lukin, Yu. F. (2021). Arctic tourism: rating of regions, opportunities and threats. *Arktika i Sever*. 2021 No. 23, pp. 116-122.
6. (2023). *Expert: in the Arctic, it is necessary to create mini-tour clusters within the framework*

of protected areas. Retrieved 07/10/2023 from https://tass.ru/ekonomika/6316401

7. Bertosh, A. A. (2019). Arctic tourism: conceptual features and features. *Proceedings of the Kola Scientific Center of the Russian Academy of Sciences.* 2019. V. 10, No. 7-17, pp. 169-180.
8. Leonidova, E. G. (2018). *Development of tourism in the regions of the Arctic zone of the Russian Federation. North and the Arctic in the new paradigm of world development*. Luzin Readings - 2016: Materials of the VIII Intern. scientific-practical. conf. (Apatity, April 14-16, 2016). (pp.206-211). Apatity: IEP KSC RAS.
9. (n.d.). How to tame a wild tourist in the Arctic.
10. Khotenov, A. V. (2023). *500 places of the Russian North that you need to see.* (pp.3-4). Moscow: Martin, 2023. p. 3-4.
11. (2002). *Karelia: epic tourism program "Kalevala":* Sat. report and theses. message intl. scientific-practical. conf. (Republic of Karelia). Petrozavodsk, November 20-21, 2002). (pp.59-86). Moscow: RIB "Tourist".
12. (2023). *Official Internet portal of the Republic of Karelia. News // Tourism*. Retrieved 07/18/2023 from http://gov.karelia.ru/news/?tags=15
13. (2023). *Investment portal of the Republic of Karelia. Tourism.* Retrieved 07/18/2023 from http://kareliainvest.ru/republicforinvestors/projects/turizm/
14. (2023). *Unified tourist passport of the Republic of Karelia.* Retrieved 07/18/2023 from https://ar.investinrussia.com/data/image/regions/unif-turpass2016.pdf
15. (2023). *Karelia: Tourist portal. Kinerma*. Retrieved 10.07.2023 from http://www.ticrk.ru/regions/region/settlement/?PID=7515&ID=8172

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS
International Scientific Journal
Theoretical & Applied Science
p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)
Year: 2023 **Issue:** 08 **Volume:** 124
Published: 10.08.2023 **http://T-Science.org**

Issue Article

Abrorbek Akbarjon ogli Akhmadzhanov
Andijan Mechanical Engineering Institute of the Republic of Uzbekistan
scientific researcher
Tel:+998947167799
Abrorbek4747@gmail.com

Gulbadan Abdulakhatovna Arslonova
Andijan Mechanical Engineering Institute of the Republic of Uzbekistan
Senior Lecturer, Department of Higher Mathematics
Phone:+998902175091
Arslonova1969@icloud.com

KEY SUCCESS FACTORS IN THE COMPETITION

Abstract: *The article discusses the issues of the company's commodity-market strategy. The strengths and weaknesses of the company are analyzed to ensure success factors.*

Key words: *commodity-market mechanism, professionalism, key success factors, CFU, characteristics of the company, infrastructure, strategy of the company.*
Language: *English*
Citation: Akhmadzhanov, A. A., & Arslonova, G. A. (2023). Key success factors in the competition. *ISJ Theoretical & Applied Science, 08 (124),* 169-175.
Soi: http://s-o-i.org/1.1/TAS-08-124-15 ***Doi***: https://dx.doi.org/10.15863/TAS.2023.08.124.15
Scopus ASCC: *2000.*

Introduction

To identify threats and opportunities of the external environment for the company, it is necessary to analyze the factors of the internal environment to determine the strengths and weaknesses of the company. Information about the factors of the internal environment includes data on the company's commodity-market strategy; marketing strategy; the company's products, its pricing policy, sales channels, advertising and other means of promoting goods to the market. In addition, the main indicators of the company's activity include its financial potential, internal culture, personnel, employee interest in the effective operation of the company, motivation of the company, experience, education, organizational structure of the company.

Knowledge of the state of the company's production and sales potential and the availability of information technology is an important problem in the analysis of the company's work.

The strengths of the firm include such internal factors that give advantages in the competitive struggle. These include: high quality of goods, high professionalism of employees, flexible pricing policy, effective advertising, good sales network, strong financial potential of the company, etc. [l].

Among the strengths, it is important to identify key success factors (CFCs) which play an important role in the company's activities. As you know, the CFU determines the strengths of the company, which reveal advantages that are difficult to achieve for competitors. CFU defines the strengths of the company. Thus, high quality of the product, flexible pricing policy, timely delivery, good business relations with partners, etc. are the strengths of the company in a competitive environment.

As the analysis showed, a firm's strength may not be a key success factor if competitors have or can do the same. So, if a firm is leading in the market, then it has a great advantage in costs, inaccessible to competitors, and if it pursues a flexible pricing policy, then such a policy can be considered as a CFU. If the pricing policy of the company is flexible enough, then this is the strength of the company. Thus, the CFU, with the right marketing program, should inspire and attract buyers, highlight the company's offer against

the background of offers from other companies. So, the Japanese at one time focused on high quality products, significantly ahead of their competitors in this. This allowed them to become leaders in global marketing.

CFCs can be considered as: excellence in innovation policy; production of materials that have no analogues and are of high value to consumers, or exclusive rights to sell such materials, etc. [2]. Firms should pay serious attention to CFU when developing strategies and plans; when solving current problems, since the competitiveness of the firm largely depends on this.

Unfortunately, often the directors of firms, actually possessing CFCs, poorly use them in their activities. In order to properly allocate and use CFCs, it is necessary to determine what consumers want; find out what competitors are doing; decide what the company needs to do, taking into account its goals and resources [3].

This can be solved by using the following measures:

- Identify customer requirements and rank them by priority;
- Find out what competitors are doing to meet these requirements;
- Determine where there is a discrepancy between the requirements of consumers and the offers of competitors;
- Decide whether the company's goods (services) cover these inconsistencies (if yes, the company has real competitive advantages, if not, the company has no real competitive advantages);
- Determine how strong these advantages are (i.e., how valuable they are for consumers and how quickly and easily competitors can use them), whether the company will be able to protect its advantages;
- How can the advantages of the company be emphasized in the promotion and sales programs of the goods;
- Determine the company's position in the field of research, development, production and marketing of goods, as well as to consider the company's position for the realization of existing and potential competitive advantages, as well as to determine the list of necessary resources it will require.

Weaknesses include internal factors that make the firm weaker than its competitors. For example: small financial potential, low professional level and poor motivation of staff, small size of the company compared to its main competitors, higher prices for manufactured goods, weak advertising, etc. The key success factors (CFI) of the company are a list of system elements, the implementation of which can provide the company with a significant economic effect as a result of commercial activities in the target market in a certain industry.

The composition of the CFU largely depends on the target market in which this company operates, as well as on the competitive strategy adopted by it. The economic importance of each individual CFU for the company is not the same and they are changeable over time. It is necessary to rationalize and automate those basic business processes, on the effectiveness of which the commercial success of the company directly and mainly depends. The key success factors of the company determine the competitive strategy, goals and objectives of its activities.

CFCs of a general nature include [4]:

• Competitive strategy adopted for execution;

• Properties of goods on the basis of which consumers choose a particular brand for the supplier;

•Investments attracted to the production sector that are necessary in terms of volume, ensuring that the company wins the competition in the target market;

• Professionalism and practical experience of managers and performers, ensuring a sufficiently high level of labor productivity;

• Most effective ways of market behavior that create a sustainable and long-term strategic competitive advantage.

M. Porter identifies five most typical innovations that give a competitive advantage as key success factors [5];

• New technologies;
• New or changed customer requests;
• Emergence of a new market segment;
• Changes in the cost or availability of production components;
• changing government regulation.

Key success factors specific to each target market (industry of the national economy), these are consumer properties of the product, accumulated practical business experience, professional knowledge, competitive opportunities and commercial success.

In other words, everything that increases the level of profitability (efficiency of functioning) of the company belongs to the CFU.

Table 1.

FIELD OF ACTIVITY	NAME OF FACTORS
Production	• Low cost of production (economies of scale). • High quality products (low scrap, reduced need for repair, maintenance, etc.). • Intensive use of fixed assets. (Very important in capital-intensive industries).

	• Profitable location of the enterprise (savings on the costs of transportation of goods, raw materials, materials, etc.). • Constant influx of qualified personnel (ensured by proximity to large educational centers). • High productivity (important for industries requiring significant labor resources). • Lower production costs (low design and product design costs). • Ability to make goods to order. (possibility of additional profit)
Marketing	• Fast and convenient technical support. • High level of customer service. • Accurate fulfillment of customer orders (few returns and errors). • A wide range of assortment groups (types) of goods • Highly qualified sales staff. • Attractive design (packaging). • Warranties for buyers. (especially in catalog trading, e-commerce, the sale of expensive and new goods). • Highly effective advertising. • Effective marketing communications. • Discipline and self-control.
Sale	• Wide network of wholesale distributors (dealers). • Extensive access to retail locations (proximity to these points). • A well-developed system of own retail outlets. • Low sales costs. • Accurate fulfillment of customer orders (just-in-time method). • Quick delivery to the buyer. • Reasonable prices for goods (services). • Share of the target market won. • Relative market share (equal to the market share of the company divided by the market share of the most dangerous competitor). • Favorable location of points of sale (especially in retail). • Benevolence of all employees in contact with consumers.
Technologies	• Quality of scientific research (especially important in pharmaceuticals, medicine, space and other high-tech industries). • Innovation in the manufacturing process. • Development of new products on a systematic basis. • Mastering modern technologies. • Use of the Internet for commercial activities.
Professional preparation	• High professionalism of employees (especially in the provision of financial and banking services). • Know-how in product quality control. • Design prowess (especially in the high fashion and clothing industries; in addition, this is one of the factors in reducing production costs). • Extensive practical experience in a specific technology area. • Relatively fast introduction of new products into production.
Organizational capabilities	• Use of business process reengineering (which implies a major redesign of these processes). • Advanced Information Systems. (especially in air travel, car rental, credit card issue, hotel business, etc.). • Quick reaction to market change. (established process of making operational management decisions, rapid introduction of new goods to the market). • Using the Internet for business (commerce). • Quality management (provided by attracting highly professional employees). • Quickly update the product range and respond quickly to new customer requirements. • Development of innovative and modernization of existing products. • Successful logistics organization. (by selecting the most efficient vehicles and optimal delivery routes).

	• Introduction of highly efficient innovative venture capital (high-risk) projects with high economic efficiency. • Quality management (provided by attracting highly professional employees). • Quickly update the product range and respond quickly to new customer requirements. • Development of innovative and modernization of existing products. • Successful logistics organization. (by selecting the most efficient vehicles and optimal delivery routes). • Implementation of highly efficient innovative venture capital (high-risk) projects with high cost efficiency of implementation. • Implementation of a system of universal quality management. • Insurance of various types of risks. • Economic security of entrepreneurship (due to the creation of special structures in the enterprise management system). • Access to financial markets (especially for young companies). • Patent protection.

The potential for value creation in many businesses is provided by the use of new knowledge, system innovations and services of specialized enterprises (organizations). The above classification of CFCs can be supplemented with new factors (Table 2)

Table 2. ADDITIONAL RECOMMENDED KEY FACTORS COMPETITIVE SUCCESS [7]

FIELD OF ACTIVITY	FACTOR NAME
Organizational	• Continuous professional development of employees. • Effective change management across the enterprise. • Benchmarking. • Outsourcing. • Production leasing. • leasing of personals. • Controlling. • Strategic alliances. • Coaching. • Merchandising.
Sales	• Brand name. • Product design. • Brand. • Operational Brand Support. • Location of the outlet (store). • Distribution form. • Personnel qualification. • Established permanent and loyal customer base. • Good reputation (goodwill) of the company among buyers • Public Relations (PR).
Information providing	• Modern Information Technology. • Production Management Information Systems. • Competition Management Information Systems. • HR Management Information Systems potential.

Strategic alliances, as a rule, ensure that businesses achieve the declared strategic goals, while maintaining the necessary flexibility and adaptability due to the possible rapid change of partners. If a corporate competitive strategy requires certainty for the long term, then such alliances may be too informal. In this case, joint ventures, mergers and acquisitions look economically more preferable.

Considering the critical importance of the bankruptcy prevention strategy for the company's continued existence in the target market, we have considered modern forecasting techniques that can prevent the occurrence of a bankruptcy situation [8].

• Main indicators of the company's competitiveness;

• Main technical and economic indicators of the company over the past five years and for the planned

period, a brief description of the main production assets, the structure of the capital used, the level of qualification of personnel at the company;

• Basic principles, as well as methods applied in the company's management system;

• Facts confirming the reliability of the company's presence in the target market, legal and financial guarantees.

We consider it advisable to analyze the characteristics of the company to disclose the following questions [9]:

• Company's mission objectives;

• Accepted legal form;

• Established ties with the external environment, reputable partners, companies;

• Organizational structure of the company;

• Characteristics of manufactured goods, level of their competitiveness in the target market and in its segments;

• Key economic and financial performance indicators achieved, as well as future plans.

And the company's marketing strategy should include information related to [10]:

• Strategic marketing concepts applied by the firm;

• Composition of the main functions performed by the marketing department;

• Applied technology and achieved results of strategic segmentation of the target market;

• Adopted strategy for pricing and forecasting of commodity prices;

• Strategies for market capture (penetration into new markets);

• Strategies for developing new types of goods;

• Choosing a cost-effective resource strategy;

• Selection of distribution methods in the market of goods;

• Strategies to generate demand and stimulate the sale of goods;

• Choosing a strategy for advertising goods;

• Choosing a long-term strategy for the development of the company;

• Planned standards of competitiveness of goods.

The company's competitive advantage strategy should include the following results [11]:

• Analysis of possible impact of macro- and microenvironment factors;

• Analysis of the state of equipment and applied technology, organization of production, personnel potential, quality of management;

• Analysis of the Marketing Strategy section;

• identify the competitive advantages of the firm;

• justifying the choice and use of strategic factors that determine the competitive advantages of the company.

The strategy for updating the nomenclature of the company's products should be reflected [12]:

• Results of expert review of marketing strategy;

• Formulated strategy for improving the quality of goods;

• Developed resource saving strategy at the company;

• Forecast of the main indicators of the competitiveness of the company's goods, as well as its main competitors;

• Scientific principles, methods, technologies that were applied in the development of a strategy for updating the products produced by the company;

• Feasibility study of investment projects.

The competitive strategy for production development should reflect [13]:

• Results of analysis of the organizational and technical level of production;

• Results of analysis of the achieved level of social protection of the company's staff;

• Results of analysis of the company's activities in the field of environmental protection;

• Results of analysis of the competitive strategy for production development adopted for use;

• Results of the economic justification of the forecasts made.

We consider it expedient to pay attention to the strategy of providing production with resources, where the following issues should be covered [14]:

• Analysis of the quality of methodological, informational, resource, legal support of production and identification of bottlenecks, organization of ensuring production with everything necessary;

• Establishment of economically most profitable links with suppliers of resources, information, documents;

• Development of a new strategy for ensuring production with regulatory and methodological documents, all types of resources, information;

• Feasibility study and coordination of measures to implement a new production strategy.

In large firms in the West, great attention is paid to staffing of human resources. The concept of human capital has come into use, which means the necessary and sufficient modern knowledge, skills and skills of a person, contributing to a significant increase in his productivity, and therefore earnings.

A number of economists define the concept of human capital as a combination of hereditary and acquired physical, as well as spiritual qualities and properties of a person, which can be used for a certain period for the production of goods and the provision of services, as well as in the ability to provide their owner with a fairly high income. Therefore, modern production is the interaction of human and physical capital services, resulting in everyone earning an income on their own capital.

In order to most fully meet the needs of firms in human resources, personnel agencies of lessors appeared, which are engaged in leasing personnel. The concept of personnel leasing is conditional, but its introduction into circulation is related to the need to

indicate its similarity with physical capital, Personnel Leasing is considered as a form of temporary or urgent involvement of the necessary personnel from the outside. Using this form of recruitment, a company can successfully solve the problem of providing itself with highly qualified employees. In Uzbekistan, leasing of the following categories of personnel is most likely: office personnel, sales personnel, technical personnel and highly qualified workers.

The company's strategic financial plan should describe the following issues [14]:

• Economic indicators (price, profitability, efficiency) of specific goods in competitive markets;

• Economic indicators of the company's functioning (sales volume, profit, indicators of the use of various types of resources, general economic indicators, firm stability, crisis-forecast indicators, etc.);

• Forecast of absolute and relative changes in financial indicators for goods, markets and the company as a whole;

• Justification and coordination with all interested services of the firm's strategic financial plan.

The company's international strategy should address the following issues:

• Exporter's strategic objectives;

• Importer's strategic objectives;

• Forecasting and selection of the main strategy of the company's international activities;

• Business case for the chosen strategy of the firm's international activities.

And in the strategy for the development of the management system should be presented:

• Analysis of the quality and efficiency of the company's management system over the past years (preferably at least 5 years);

• Identification of bottlenecks in the management structure, content and relationships of the company's management system components:

• Substantiation of the management system development strategy.

The investment strategy contains the composition of business projects contained in the former investment portfolio, as well as a plan for their implementation both in the short and long term.

E-Commerce Implementation Strategy "outlines the milestones associated with the creation of all necessary infrastructure components. The cost-effectiveness of creating, implementing and operating this system is assessed.

The organization of the implementation of the company's competitive strategy is covered by the following issues:

• Analysis of the current organization system, which reflects the methodology for implementing the company's strategy used over the past five years;

• Identification of bottlenecks in the organization of production processes (primarily in terms of the implementation of the principles of their continuity, direct accuracy, proportionality and rhythm), control and accounting of the implementation of strategic plans of the motivation and regulation system.

References:

1. Abdullaev, A.M., et al. (2021). *Teorija i praktika predprinimatel`skoj konkurencii*. (p.534). Tashkent: Fan va tehnologija.
2. Abdullaev, A.M., et al. (2006). *Malyj biznes i chastnoe predprinimatel`stvo*. (p.248). Tashkent: TGJeU.
3. Ahmatova, M. (2003). Teoreticheskie modeli konkurentosposobnosti. *Marketing*, 2003 №4, p.21.
4. Makronov, A.G. (2014). *Konkurencija i konkurentosposobnost`*. Moscow.
5. Lific, N.M. (2009). *Konkurentosposobnost` tovara i uslug*. (p.460). Moscow: Jyrist-izdat.
6. Min`ko, Je.V. (2004). *Kachestva konkurentosposobnosti*. (p.268). Piter.
7. Savel`ev, N.A. (2009). *Upravlenie konkurentosposobnost`u firmy*. (p.386). Moscow:Feniks.
8. Smit, A. (1997). *Issledovanija o bogatstvah narodov*. (p.352). Moscow: Respublika.
9. Govorova, N. (2016). Konkurentosposobnost` - osnovnoj faktor razvitija sovremennoj jekonomiki. *Problemy teorii i praktiki upravlenija*, 2016. №4, pp.15-16.
10. (2008). *Konkurentosposobnost` i strategicheskie napravlenija razvitija regiona*. (p.527). Novosibirsk: IJeOPP SO RAN.
11. Gel`vanovskij, M.I., et al. (2010). *Konkurentosposobnost` nacional`noj jekonomiki. Problemy statisticheskogo soprovozhdenija. Poisk metodologicheskoj adekvatnosti*. (p.345). Moscow: Statistika Rossii.
12. Porter, M. (2012). *Konkurentnaja strategija. Metodika analiza otraslej i konkurentov*. (p.294). Moscow: Al`pina Biznes Buks.

13. Nazarov, Sh.H. (2014). *Metodologicheskie aspekty povyshenija konkurentosposobnosti regionov*. (p.212). Tashkent: IFMR.

14. Jankovskij, K.P. (2021). *Vvedenie v innovacionnoe predprinimatel`stvo*. (p.284). SPb.: Piter.

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2023 **Issue:** 08 **Volume:** 124

Published: 10.08.2023 **http://T-Science.org**

Issue Article

M. G. Grdzelidze
Akaki Tsereteli State University
Ph.D.
Professor of the Department «Design and Technology»,
Dean of Engineering-Technological Faculty,
Georgia, Kutaisi

N. N. Tkhelidze
Akaki Tsereteli State University
Ph.D.
Engineering Sciences PhD. Associate Professor,
Head of Department Design and Technology,

I. J. Charkviani
Akaki Tsereteli State University
Ph.D.
Georgia, Kutaisi

ANALYZE OF THE CONDITIONS AND NEEDS FOR THE SAFE USE OF SPORTS SHOES IN PRACTICE, IN ORDER TO JUSTIFY THE NEED FOR A SCIENTIFIC APPROACH TO THE ISSUE

Abstract: *A necessary attribute of sports training for a competition is shoes and clothes, i.e. sports equipment, which is obviously very diverse both visually and in terms of the materials used, constructive-technological and ergonomic-consumer parameters. Their choice should be approached with special care, because properly selected and convenient sportswear is comfortable, facilitates training, increases motivation and, most importantly, protects against injuries. The latter is directly related to shoes.*

For the scientific substantiation of the design of sports shoes and the optimization of all specific parameters associated with it, it is necessary to know the anthropodynamic, morphofunctional and biomechanical features that are characteristic of the foot and are directly related to the sport and the qualifications of the athlete.

For a sport where running is considered the leading movement, the main problem of an athlete is injuries. The rational solution to this problem with modern approaches lies in the normalization and prevention of problems of the musculoskeletal system, providing the athlete with comfortable shoes and corrective means, and not in the treatment of injuries caused by a fall.

Key words:*sport, shoes, injuries.*

Language: *Russian*

Citation: Grdzelidze, M. G., Tkhelidze, N. N., & Charkviani, I. J. (2023). Analyze of the conditions and needs for the safe use of sports shoes in practice, in order to justify the need for a scientific approach to the issue. *ISJ Theoretical & Applied Science, 08 (124),* 176-186.

Soi: http://s-o-i.org/1.1/TAS-08-124-16 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2023.08.124.16

Scopus ASCC: *2209.*

АНАЛИЗ УСЛОВИЙ И ПОТРЕБНОСТЕЙ БЕЗОПАСНОГО ИСПОЛЬЗОВАНИЯ СПОРТИВНОЙ ОБУВИ НА ПРАКТИКЕ, С ЦЕЛЬЮ ОБОСНОВАНИЯ НЕОБХОДИМОСТИ НАУЧНОГО ПОДХОДА К ВОПРОСУ

Аннотация: *Необходимый атрибут спортивных тренировок состязании - обувь и одежда, т.е. спортивная экипировка, которая очевидно, весьма разнообразен как визуально, так и по используемым материалам, конструктивно-технологическим и эргономическо-потребительским параметрам. К их выбору следует подходить с особой тщательностью, ведь правильно подобранная и удобная спортивная одежда комфортна, облегчает тренировки, повышает мотивацию и самое главное – защищает от травм. Последнее напрямую связано с обувью.*

Для научного обоснования конструкции спортивной обуви и оптимизации всех связанных с ней специфических параметров необходимо знать антроподинамические, морфофункциональные и биомеханические особенности, характерные для стопы и непосредственно связанные с виду спорта и квалификации спортсмена.

Для вида спорта, где бег считается ведущим движением, основная проблема спортсмена – травматизм. Рациональное решение этой проблемы при современных подходах заключается в нормализации и профилактике проблем опорно-двигательного аппарата, обеспечение спортсмена удобной обувью и корректирующими средствами, а не в лечении травм, вызванных падением.

Ключевые слова: *спорт, обувь, травмы.*

Введение

Последнее время значительно изменились требования, предъявляемые к спортивной обуви. Это связано не только многообразием спортивных занятий и различными требованиями спортивному экипировку, предъявляемыми к разным видам спортивной обуви, но и повышая уровень информированности населения о потребительских свойствах обуви. Помимо характера, нагрузки и продолжительности движений в зависимости от специфики вида спорта, важное значение имеет условия эксплуатации спортивной обуви, вид поверхности пола спортзале и покрытия на стадионе.

Необходимый атрибут спортивных тренировок состязании - обувь и одежда, т.е. спортивная экипировка, которая очевидно, весьма разнообразен как визуально, так и по используемым материалам, конструктивно-технологическим и эргономическо-потребительским параметрам. К их выбору следует подходить с особой тщательностью, ведь правильно подобранная и удобная спортивная одежда комфортна, облегчает тренировки, повышает мотивацию и самое главное – защищает от травм. Последнее напрямую связано с обувью.

Для научного обоснования конструкции спортивной обуви и оптимизации всех связанных с ней специфических параметров необходимо знать антроподинамические, морфофункциональные и биомеханические особенности, характерные для стопы и непосредственно связанные с виду спорта и квалификации спортсмена.

По антропоморфологическим данным не вызывает сомнения наличие разницы в пропорциях тела спортсмена, стопы и голеностопного сустава в зависимости от вида спорта. Большинство спортсменов также легко можно отличить от неспортсменов по увеличенным размерам фигуры и их соотношению. Недостаточное соотношение всех размерных признаков фигуры человека прямо отражается (и не может не отражаться) на размерах лодыжки и пропорциях отдельных ее участков.

При исследовании стоп спортсмена необходимо уточнить, какой тип стопы характерен для того или иного вида спорта, а также изучить, для какого типа наиболее характерны морфофункциональные изменения размеров и формы отдельных участков стопы, чтобы оценить их существенность. Кроме того, необходимо научно изучить условия эксплуатации специальной обуви, характерные для соответствующих видов спорта.

Главный показатель качества спортивной обуви – ее удобство-комфортност. Под комфортом понимается обеспечение нормального функционирования стопы и всего тела в различных условиях и на протяжении всего периода эксплуатации в зависимости от назначения обуви. Одним из важных факторов, определяющих удобство спортивной обуви, является оптимальное соответствие формы и размера стопы внутренней форме и размеру обуви. То есть, антропометрическое соответствие в статике и динамике, и способност поддерживать определенный влажностно-температурный режим во внутреннем пространстве обуви (так называемая гигиеничность).

Для тех, кто плохо разбирается в этом вопросе, такой подход может показаться несерьезным, что все технологии уже придуманы, а все новые подходы могут считаться маркетинговой уловкой. Среди профессиональных спортсменов (и даже любителей) не будет сомнений, что это чрезвычайно важно. Каждый в этом легко убедится, если немного углубится в дело, или возложит на стоп иную нагрузку, чем повседневную. Для профессиональных спортсменов этот вопрос родной и проблемный. Вот почему в перечне профилактических мероприятий Всемирной организации здравоохранения важнейшее место занимает

подбор и разработка соответствующих ортопедических средств, в том числе обуви и необходимых корригирующих средств для нормализации патологических деформаций голеностопного сустава [1]. Если до начала спортивной карьеры у спортсмена наблюдалась какая-либо деформация или патология на стопе, что часто встречается у детей, как врожденная, так и приобретенная [2, 3, 4], то активная спортивная деятельность является фактором, способствующим прогрессированию этих патологий, что напрямую связано с ухудшением общего состояния спортсмена, особенно со стороны опорно-двигательного аппарата, которое сопровождается формированием деформации позвоночника и в целом опорно-двигательного аппарата [5-9], может стать причиной не только травм, но и прекращение спортивной карьеры вообще. Вынужденное прекращение спортивной карьеры в активном спортивном возрасте, для целеустремленного спортсмена может стать причиной большой морально-психологической травмы.

В развитых странах в этом направлении ведется большая работа и потребительские параметры спец-спортивной обуви оптимизируются на основе научных исследований и анализа результатов процесса длительной опытной эксплуатации при активном участии спортсменов. Всемирно известные компании Nike, Adidas и многие другие десятилетиями работают над оптимизацией спортивной обуви, и в их обуви учитываются все важные факторы, даже мельчайшие нюансы, которые могут возникнуть в процессе занятий спортом. Но обувь этих фирм не соответствуется стоп грузинских спортсменов из-за различного распределения размеров и полноты в совокупности [10, 11]. Это хорошо известная проблема при стандартизации вещей личного потребления. Однако они достаточно дороги. Спортивная обувь отличается меньшей износостойкостью в связи с эксплуатацией в экстремальных условиях и требует частой смены, поэтому она менее доступна для населения многих стран. В то же время рынки этих страны насыщены дешевой продукцией, внешне похожей, но некачественной спортивной обувью, которая вводит потребителя в заблуждение, а в процессе эксплуатации их дискомфорт, наличие негигиеничных и менее прочных материалов пакета и конструкции. Следовательно, становится понятным малое время эксплуатации, т.е. недолговечность. Кроме того, большинство спортсменов, не знают основных критериев, которые необходимы при подборе обуви и напрямую связаны с телосложением и массой тела спортсмена, спецификой вида спорта, типом покрытия игрового поля, размер деталей обуви, тип материалов поверхности и состав пакета материалов, внутренние и промежуточные детали, материалы деталей низа, особенно стельки и рельеф опорной поверхности в соответствии с подошвенной частью стопы.

В связи с тем, что увеличение масштабов химической промышленности сопровождается увеличением пределов разнообразия материалов, используемых в областях промышленного производства, ассортимент материалов, используемых в обувной промышленности, также стал значительно разнообразнее. Это помогло расширить ассортимент, как по визуальным, так и по используемым материалам, но несколько ухудшилось гигиенические характеристики обуви. Следует учитывать, что развитие химической промышленности также способствует развитию биоматериалов, где учитывается соблюдение норм гигиенических характеристик. Однако такое разнообразие не достигается без материальных затрат, что в свою очередь влияет на себестоимость новой продукции.

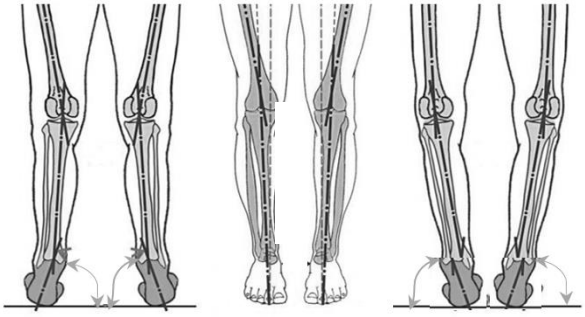
Знаниями о биомеханике стопы и голеностопного сустава, этиологии спортивных травм и мерах профилактики должны в полной мере владеть все спортсмены, занимающиеся активными видами спорта, а также тренеры и особенно спортивные врачи.

Для вида спорта, где бег считается ведущим движением, основная проблема спортсмена – травматизм – это трудности при ходьбе, беге и падениях из-за неуклюжей, неудобной обуви. Мы считаем, что рациональное решение этой проблемы при современных подходах заключается в нормализации и профилактике проблем опорно-двигательного аппарата (обеспечение спортсмена удобной обувью и коррегирующими средствами), а не в лечении травм, вызванных падением [12-18].

Ходьба и бег, казалось бы, простое движение, представляет собой сложный функциональный процесс, являющийся результатом согласованной работы опорно-двигательной системы, биомеханическим центром которой является стопа (особенно его плантарная часть) [12]. Поэтому он имеет более высокую нагрузку по сравнению с другими членами этой системы. Нормальный свод стопы представляет собой универсальный амортизирующий механизм, созданный природой и адаптированный к движению человека обеими стопами. Когда лодыжка соприкасается с поверхностью для ходьбы, ее свод становится плоским, сжимая ее и в то же время нагружая ударом. Его действие напоминает нам принцип работы автомобильной рессоры. Свод также включает большеберцовую кость, которая изгибается внутрь и поворачивает стопу, что, в свою очередь, увеличивает амортизацию. Увеличение площади контактной поверхности обеспечивает дополнительную

устойчивость и улучшает отталкиваные стопы от поверхности. Из двигательной системы лодыжка превращается в жесткую, но гибкую опору, которая накапливает энергию для следующего фазы движения. Способность сгибания свода стопы обеспечивает оптимальное распределение ударной нагрузки по поверхности и важна для надлежащей амортизации.

Как правило, состояние стопы (с точки зрения здоровья) имеет хорошую корреляцию с формой свода. Иными словами, определяя форму свода стопы, можно, скорее всего, правильно определить характер деформации - пронация или супинация (рис. 1). Наилучшим способом для этого является функциональная диагностика стопы на современном педографе, позволяющем определить нагрузку на каждый квадратный сантиметр плантарной части и характер ее распределения на подошвенную часть стопы.



Пронация Нормальная стопа Супинация

Рис. 1. Схемы характера деформации стопы.

Характер пронации также можно определить, если внимательно наблюдать за стопой спортсмена в момент приземления на опору и отражения от опоры. Это также хороший показатель для изучения топографии износа подошвы старой обуви, очевидно, что лодыжка имеет тенденцию быть на стороне интенсивности износа.

На топографию износа подошвы оказывает влияние распределение веса тела на подошвенную часть стопы. На патологической стопе, особенно при плоскостопии и вальгусной деформации, центр тяжести тела смещается на внутреннюю сторону стопы. Соответственно, супинационная часть получает повышенную нагрузку - 26,63%. В это время интенсивность износа с внутренней стороны обуви больше. В случае использования ортостелки пяточная часть выпрямляется и распределение веса приобретает нормальный вид. Это обеспечивает долговечность и сохранение формы обуви.

Патогенез опорно-двигательного аппарата у спортсменов связан со многими факторами. При напряженном тренировочном режиме, длительных занятиях в плоской или неуклюжей (не оптимально подходящей) спортивной обуви снижается мышечный тонус и ослабевает сухожильный аппарат, нарушаются локомоция и координация ходьбы и бега, ходьба и бег перестают быть плавным. При снижении мышечного тонуса ослабевает стабильность опорно-двигательного аппарата, увеличиваются поперечные размеры стопы, вниз опускается супинационный часть, вследствие уменьшения или в худшем случае потери основной функции внутреннего свода, рессорной способности нарушается плавность движений. Спортсмены, наряду со многими другими заболеваниями, особенно склонены остеопорозу. Такое разнообразие этиологии деформаций определяет актуальность проблемы и необходимость особого подхода к состоянию стопам спортсменов, так как с возрастом приобретенная деформация стопы постепенно прогрессируется. Со временем функционирование всех органов и систем ослабевает, что также усугубляется с возрастом, посколку с возрастом у человека появляется склонность к прогрессированию патологических процессов.

Анализ перечисленных заболеваний подтверждает, что наличие у значительной части спортсменов патологий, приобретенных путем отклонения формы и размеров стопы, является предпосылкой, ставящей перед специалистами необходимость разработки специфических требований к совершенству конструкция спортивной обуви. Наряду с совершенной конструкцией в процессе эксплуатации важны ее утилитарно-потребительские свойства. Поэтому, для них необходимо иметь обувь специальной конструкции, размера и формы, где будут учитываться динамические изменения, характерные для соответствующего вида спорта, а также травмоопасные факторы риска и деформации, уже сформировавшиеся на стопах от конкретного вида спорта, использование индивидуальных ортопедических элементов, облегчающих патологическое отклонение стопов.

Для внедрения орто-элементов, особенно орто-стелек в спортивную практику спортивно-технического направления (свойства демпфера - амортизатора) целесообразно на основании проведения соответствующих исследований [19-27]. Минимизация ударных нагрузок в процессе локомоций происходит как в двигательном аппарате, так и в спортивной обуви, в которой он тренируется. Кроме того, вероятность и патогенез микротравм, болевого синдрома, а также степень комфорта при выполнении упражнений существенно зависят от демпферирования нагрузок в данной индивидуальной системе [28, 29].

Анализ антроподинамических и морфофункциональных исследований стоп регбистов, баскетболистов и футболистов привел нас к выводу о том, что данная проблема часто игнорируется и мало информирована. Спортсмены обычно выбирают спортивную обувь спонтанно, не учитывая антропометрических особенностей своего стопа и рекомендаций, основанных на их физическом строении. В некоторых странах такие рекомендации даже не разработаны, этот вопрос на высоком уровне в развитых странах и их формированием занимаются ученые. В связи с этим не менее важна разработка и внедрение рекомендаций спортсменам, тренерам и спортивным врачам, которые несут непосредственную ответственность за профилактику травматических риск-факторов у спортсменов, так как после компетентной, научно-аргументированной рекомендации комфорт во время тренировок в выбранной спортивной обуви стал значительно выше и они отметили, что это был для них полезный совет. Установление и соблюдение этих рекомендаций особенно важно для начинающих спортсменов и спортсменов-любителей, чтобы начать и успешно продолжать свою карьеру без травм.

Среди множества факторов, определяющих удобство спортивной обуви, важное значение имеют следующие: ее гигиеничность (воздухопроницаемость, влагопроницаемость, токсикологические свойства материалов и др.);

- твердость и эластичность используемых материалов для верхней, внутренних и промежуточных деталей;
- соответствие конструкции обуви и пакета материалов к виду спорта;
- подошвенный материал, толщина, форма и масса;
- рельеф носовой части и опорной части пятки;
- внутренняя форма и размеры обуви, а именно ширина и обхват опорной части и их оптимальное соотношение с соответствующими параметрами стопы.

Обеспечение необходимого уровня гигиены спортивной обуви является важной задачей, так как использование негигиеничной обуви может вызвать и сформировать гипергидроз, грибковые заболевания и другие патологии стопы. Условия работы стопы различны для каждого климато-географического региона. Соответственно, к температуре окружающей среды добавляется температура, выделяющаяся в результате интенсивной работы стопы, что усиливает выделение пота. В случае имеющегося гипергидроза, ухудшается климат внутри обуви и качество комфорта, низкая способность материалов проводить воздух и влагу способствует прогрессированию негативных результатов. В то же время чрезмерный пот вызывает быстрое разрушение материалов.

Для решения проблемы создания спортивной обуви с высокими потребительскими свойствами для спортсменов стратегия исследований предусматривает следующие группы задач (аналогичная работа нами было проведены для потребителей с заболеванием синдромом диабетической стопы [29-32]) (табл. 1.):

Таблица 1. Группы задач для создания спортивной обуви с высокими потребительскими свойствами для спортсменов.

№	Категория задач	Теоретические	Экспериментальные	Результат
1	Функциональные	Изучение и анализ приобретенных патологий, характерных для стоп спортсменов, их этиология, степен и интенсивность выявления, география, причины и условия.	Проведение антроподинамической и морфофункциональной диагностики путем антропометрического и педометрического исследования стоп спортсменов,	На основе анализа статистических параметров разработка новых параметров основных стандартных сечений стелек спортивной обуви для спортсменов (в зависимости от вида

			статистическая обработка результатов исследований	спорта (по мере необходимости)) и, соответственно, Разработка стандартов: 1. "Спортивная обувь"; 2. «Стельки спортивной обуви».
		Изучение и анализ закономерностей распространения, определение оптимальных параметров		Разработка рекомендаций по формированию навыков выбирать оптимальный вариант спортивной обуви у юношей и лиц, занимающихся активными видами спорта.
2	Материаловедческие	Разработка оптимальных методов подбора материалов верха, низа, подкладочных и промежуточных материалов, изучение свойство материалов отдельно и в пакете. Создание для этого теоретических и других необходимых баз данных.	Испытание материалов отдельно и в пакете, уточнение взаимовлияние и степень взаимодействия гигиенических, физико-механических и упругих свойств материалов в пакете.	Оптимальный пакет материалов для верха, низа и ортопедических приспособлений и элементов
		Разработка методов оптимизаций композиционных материалов низа для снижения веса подошви и улучшения упругих свойств пакета низа		
		Разработка оптимального пакета материалов верха и подошвы обуви по физико-механическим и гигиеническим характеристикам	Оценка и исправление неточностей (при их обнаружении) в пакете материалов после анализа результатов опытной эксплуатаций (ношения) разработанной спортивной обуви	
3	Конструктивные	Разработка конструкций ортопедических приспособлений и элементов (оптимальный рельефный поверхность, вкладыши, супинаторы и др.) в зависимости от вида и степени патологии	Опытная эксплуатация и уточнение конструкции ортопедических приспособлений и элементов	Оптимальные ортопедические приспособления и элементы в зависимости от вида и степени патологии
		Разработка оптимальных методов рационального конструирования ортопедической обуви и создание для этого теоретических, антропометрических, конструкционных и других необходимых баз данных	Оценка и исправление неточностей (при их обнаружении) в конструкции после анализа результатов опытной эксплуатаций (ношения) разработанной спортивной обуви	Создание конструкций специальной обуви ортопедическими элементами для спортсменов с патологическими и деформированными стопами
		Разработка конструкций специальной обуви с ортопедическими элементами для спортсменов с патологическими и деформированными стопами, которая будет предназначена для: нормализации патологий стопы,	Опытная эксплуатация и уточнение конструкции специальной, спортивной обуви ортопедическими элементами	

		коррекции деформаций, облегчения состояния, профилактики и лечения		
		Оптимизация противоскользящего рельефа, формы боковой поверхности и поверхности для ходьбы подошвы		
4	Технологические	Разработка оптимальных методов рационального и инновационной технологии ортопедической обуви и создание для этого теоретических и других необходимых баз данных	Оценка и исправление неточностей (при их обнаружении) в технологии после анализа результатов опытной эксплуатаций (ношения) разработанной спортивной обуви	Создание специальной обуви ортопедическими элементами для спортсменов с патологическими и деформированными стопами
		Подбор способов прикрепления поверхности с подошвой и их совершенствование-оптимизация - с целью повышения качества эластичности и понижения веса обуви		
Примечание: самое главное, чтобы специалисты делились друг с другом своим опытом и результатами исследований, чтобы внести свой интеллектуальный вклад в достижения мировых ученых и сделать деятельность и карьеру людей, активно занимающихся спортом, максимально безопасными в отношение к обуви. То есть обеспечить минимизацию риск–факторов, Что в свою очередь поможет способствовать долгой и успешной карьере спортсменов и, соответственно, обеспечению их долгой, здоровой жизни и старости, ведь здоровое старение является необходимым условием долголетия.				

В современном спорте обоснование применения орто-стелька считается актуальной проблемой. В мире уже существует практика использования ортопедической стельки в домашней и повседневной обуви. В странах Америки и Европы, где высоко развиты профилактика и лечение заболеваний опорно-двигательного аппарата, характерен комплексный подход к лечению заболевания.

Орто-стелька – это изделие – индивидуально разработанное, спроектированное с инженерными подходами, которое изготавливается с учетом распределения статических и динамических нагрузок на плантарную часть стопы. Само сооружение орто-стелька имеет следующие особенности, независимо от его назначения:

- Балансировка передней части ботинка обеспечивает естественное положение и устойчивость передней части лодыжки;
- Форма свода стельки аналогична форме анатомического свода стопы и покрыта специальным материалом с антимикробными свойствами;
- Размер углубления пяточной части обуви обеспечивает устойчивость пятки и голеностопного сустава;
- Сочетание эластичных и прочных материалов рассчитывается индивидуально для каждого спортсмена в зависимости от вида спорта, веса спортсмена, возраста и текущего состояния стопы и голеностопного сустава.

Основные свойства обувных материалов должно быть следующие:

- **Свойство хорошего формования**. Материалы верха должны быть мягкими и эластичными, должно иметь свойство хорошо приформовываться по стопе. Эта особенность наиболее характерна для натуральных кож, так как она обладает способностью при относительно низких усилиях растягиваться на 5-10%, особенно при увлажнении (при глубоком увлажнении продольная деформация достигает 22%), У большинства синтетических и текстильных материалов такие свойства отсутствуют. Более того, при растягивании может случиться деструкция, или после снятия силы натяжения, они возвращаются к своим первоначальным размерам, т. е. они не владеют свойством остаточной деформации. Свойство быстрого приформовывания обувных материалов для верха на стопе имеет особое значение не только в случае длительного ношения обуви. Трение стопы со внутреннюю поверхность обуви происходит постоянно, во время ходьбы, особенно при беге. Поэтому, неудобная и неподходящая к стопе поверхность может за короткое время, всего за несколько минут, вызвать механическое повреждение кожи, а при длительном использовании и мягких тканей. Затем следуют соответствующие последующие процессы;
- **Сорбционные свойства**. Сорбционные свойства материалов должны быть пропорциональны виду спорта, а именно интенсивности и продолжительности движения,

которое сопровождается выделением пота из организма. Сорбционные свойства материалов должны быть тем лучше, чем интенсивнее и длительное спортивные занятия. Так, например, в нормальных условиях стопа при ходьбе выделяет в час около 5–7 г пота, а при значительных спортивных нагрузках этот показатель может увеличиваться до 20 г в час и более [33].

В нормальных метеорологических условиях кожа человека выделяет влагу в виде водяного пара. При температуре выше 30ºС и относительно высокой влажности воздуха, а также при напряженной физической работе, вместе с паром выделяется пот в виде капель.

Испарение пота с поверхности стопы легко возможно, если относительная влажность воздуха в обуви значительно ниже и несколько превышает влажность наружного воздуха. Поэтому для создания нормальных условий для стопы человека и всего тела, необходимо, чтобы стопа находился в среде с низкой температурой и влажностью, то есть на поверхности стопы будет нормальный микроклимат.

Исследования показали, что в большинстве случаев относительная влажность воздуха внутри обуви не превышает 60-75 %, и только при напряженной физической работе и при температуре воздуха выше 30ºС влажность в помещении может повышаться до 90-95 %. Если обувь, а прежде всего ее поверхность, отличается хорошей паропроницаемостью, количество влаги в обуви быстро выровняется. Однако, одной паропроницаемости недостаточно для создания в обуви нормального микроклимата.

В связи с тем, что обувь в основном представляет собой закрытую систему (это не относится к летней или обуви с отверстиями), влага, выделяемая стопой, выбрасывается в окружающую среду уже после снятия со стопы обуви. Поэтому материалы для верха обуви и подкладки должны обладать свойство как влагопоглощением, так и влагоотдачей. Это необходимо прежде всего для обуви, которую носят длительное время в течение дня, как например обувь для активного отдыха. Перенос влаги от промокших от пота носков на внутренние стенки обуви происходит в основном за счет их тесного соприкосновения и частично через воздушное пространство, разделяющее мокрую носку и внутренние стенки обуви. Поэтому, в идеальном виде явление паро- и водопроницаемости не может иметь место в обуви. Поэтому, материалы верха обуви с удовлетворительными гигиеническими свойствами должны обладать хорошими влагопоглощающими свойствами при тесном контакте с мокрыми носками. Натуральная кожа в среднем (зависимости от типа кожи, типа покрытия поверхности и температуры окружающей среди), может поглощать влагу в количестве до 23-27% от своей массы, материалы из шерсти и хлопка (зависимости от и структуры ткаы) - до 18%, синтетические материалы - до 6% и ниже [33]).

Исследования подтверждают, что пользователь чувствует комфортные условия во внутреннем пространстве обуви при относительной влажности до 90% и температуре 21-25ºС. Установлено, что относительная влажность 90% внутри обуви с поверхностями из синтетической кожи достигается через 1,5-2 часа носки, а с обувью из натуральной кожи через 5 часов. При этом паропроводность как кожи, так и синтетической кожи была одинаковой, но коэффициент сорбции натуральной кожи в 5 раз превышал коэффициент сорбции синтетической кожи. По этим показателям натуральная кожа обладает определенными преимуществами перед другими материалами верха. В некоторых случаях возможно использование текстильных материалов из синтетических волокон, обладающих необходимыми влагопоглощением и влагоотдачей, но при конструировании такой обуви следует учитывать плохую формуемость синтетических материалов.

Конструкция современной обуви такова, что 42 % площади поверхности не участвует в процессе выделения пота, а весь процесс локализован в основном на союзке, которая составляет 30% всей площади поверхности обуви. а это ухудшает гигиенические свойства обуви и ускоряет ее выход из строя, вследствие ее постоянного намокания и в результате накопления солей, выделяемых стопой в значительном количестве в порах кожи.

На основании эксперимента сделан вывод, что паропроницаемость материалов поверхности обуви определяется температурой, а способность впитывать влагу - относительной влажностью воздуха внутри обуви, поэтому для созданыя комфортных условии, следует учитывать, что подбор материалов должно произойти с полным учетом обоих показателей.

- **Свойство материалов для подкладки**. Большое значение для спортивной обуви имеет правильный выбор подкладки. Использование несоответствующих материалов для подкладки, может ухудшить комфортность обуви. Во многих случаях (даже в высококачественной обуви) подкладка обладает низкими сорбционными свойствами. Чаще всего в качестве подкладки используют дешевые искусственные кожи с покрытием ПВХ, или синтетический ткан. При длительном ношении такой обуви в течение дня возникают неприятные явления, не только для стопы, но и с точки зрения гигиенических характеристик внутреннего пространства обуви, таких как влажная среда, что в свою очередь

способствует быстрому размножению бактерий в обуви, что проявляется в неприятный запах и соответственно дерматологических проблемах стопы.

Чтобы защитить стопу от влаги, использование современных, мембранных материалов для подкладки (что уже часто встречается на практике) также помогает аккумулировать влагу у поверхности. Кроме того, после снятия обуви из стопы, уже невозможно вытеснить влагу с поверхности мембраны из-за ее способности проводить влагу в одном направлении. Хотя этот процесс приемлем для стопы, но с другой стороны ускоряет процесс деструкции верха обуви.

Правильный выбор подкладки, особенно в пяточной и пучковой части, позволит сделать обувь более удобной в эксплуатации.

- Свойство материалов для деталей низа. Подошвенные материалы в спортивной обуви имеют особое значение. На протяжении нескольких последних лет, благодаря быстрой развитии химической промышленности, произошла резкая смена подошвенных материалов, применяемых в производстве спортивной обуви. Вид спортивной обуви и область ее применения определяют вид и свойства используемых в ее производстве подошвенных материалов. Внедрение полимеров в обувное производство позволило получать подошвы с разными свойствами. Например, монолитная полиуретановая подошва может обладать эластичностью, высокой механической прочностью, характеризуется износостойкостью и, следовательно, более длительным сроком службы. Для обуви тех видов спорта, которые происходит на паркете, до сих пор лучшими считаются подошвы из специальных видов резины, так как они не скользят на всех видах покрытий в спортзалах, обеспечивают необходимое торможение и не подвержены разрушению, как другие подошвенные материалы, под действием возникающих в результате трения тепловых нагрузок.

Специальные вкладыши в подошве баскетбольных кроссовок, т.н. волна (wave), который был налажен в производстве не так давно, обеспечивает очень хорошее демпферирование за счет перераспределения ударных нагрузок по всей площади контакта с беговой поверхностью. Стабильность технологии достигается за счет разницы уровней внутренней и внешней поверхностей спортивной обуви. Такая технология не позволяет сжимать подошву в зонах повышенного давления. Основные параметры вышеупомянутой технологии амортизации и устойчивости позволяют подобрать оптимальный вариант для любого типа бега.

В обуви, для футбола применяются подошвы из жесткой резины и из особого вида нейлона. Шипы на футбольной обуви в настоящее время завинчивают в специальные гнезда на подошве. Для других видов спорта, в частности для легкой атлетики, широко распространена обувь с низом из легких полимерных материалов.

Результатом внедрения новых технологии стала легкая ультрасовременная спортивная обувь для профессионального спорта. Также важно разработать оптимальный вариант изображения ходовой поверхности подошвы - с целью ограничения возможности проскальзывания обуви и увеличения трения об игровую поверхность. Спортивные группы, с которыми мы уже работали, — регбисты, футболисты, баскетболисты, а также люди, интересующиеся активным отдыхом, — постоянно обращают внимание на эту проблему [2, 4].

Современные обувные материалы в основном соответствуют требованиям, которые предъявляет к ним производство спортивной обуви. Однако во многих случаях отсутствуют данные о влиянии свойств обувных материалов на комфортность спортивной обуви в целом.

В процессе бега в зависимости от свойств материала подошвы спортивной обуви амплитуда давления во времени изменяется быстрее. Избежать этого помогает уменьшение плотности отдельного слоя подошвы и других деталей низа. Увеличение времени ударной волны, даже при очень жесткой подошве, может обеспечить орто-стелка, что приводит в улучшении демпферирования ударных нагрузок в стопе спортсмена. Это мероприятие является одной из важнейших конструктивных задач в процессе создания удобной спортивной обуви. Материалы основной и вкладных стелек прежде всего должны обладать хорошими влагопоглощающими свойствами.

В течение многих лет считалось, что спортивная обувь должна иметь меньшую массу. Это достигалось за счет упрощения конструкции обуви, уменьшения расхода и облегчения самих обувных материалов. При этом, однако, не учитывалось, что с облегчением материалов и конструкций часто происходило ухудшение прочностных свойств обуви в целом, за счёт ухудшения свойств пакета материалов. В настоящее время разработаны условия, при которых следует проводить испытания обувных материалов, и требования к химическому составу и свойствам материалов. Это позволит оценить величину их остаточных деформаций после длительных испытаний, а также релаксационную способность.

Предприятие, специализирующееся на производстве материалов для спортивной обуви, должно находиться в постоянном контакте с

учеными в данной области, которые в свою очередь сотрудничают со спортсменами, ведь без научных исследований, опытной эксплуатации и широкого внедрения успешных практик невозможно создание комфортных условии для группы спортсменов.

References:

1. (n.d.). Retrieved from https://www.who.int/home/search
2. Grdzelidze, M. (2017). The research of trauma correction of sportsmen foot and means of prevention of it. *Scientific enquiry in the contemporary world: theoretical basiss and innovative approach*, 120. DOI: http://doi.org/10.15350/L_26/10/5
3. Grdzelidze, M. G. (2011). The foot as a biomechanical center of the musculoskeletal system. *Georgian Engineering News. GFN. International Engineering Academy*, (2), 133-136.
4. Grdzelidze, M.G., & Shalamberidze, M.M. (2012). O potrebitel`skih svojstvah sportivnoj obuvi. Zhur*nal Georgian Engineering News. GEN*, №4, pp.117-120. https://gen.techinformi.ge/
5. Grdzelidze, M. G., Tkhelidze, N. N., & Charkviani, I. J. (2023). Foot and shoes - an important scientific problem. *ISJ Theoretical & Applied Science*, 06 (122), 151-161.
6. Grdzelidze, M. (2016). *Obuv`, kak osnavnaja prichina jetiologij zabolevanyj stopy.* Mezhdunarodnaja issledovatel`skaja organizacija «COGNITIO»VIII Mezhdunarodnaja nauchno-prakticheskaja konferencija «Aktual`nye problemy nauki XXI veka». Sbornik statej, chast` 1. g. Moskva, 31.03.2016. pp.90-94. Retrieved from http://mio-cognitio.com/main#&panel1-3
7. (2008). Grdzelidze M. Katamadze A. O probleme detskoj obuvi, vyzvannoj patologiej. *Zhurnal Georgian Engineering News. GEN*, №4, 2008, pp.196-198. https://gen.techinformi.ge/
8. Grdzelidze, M. G., Charkviani, I. J., & Tkhelidze, N. N. (2021). The risks and prevention means of professional diseases. *ISJ Theoretical & Applied Science*, 01 (93), 66-71. Soi: http://s-o-i.org/1.1/TAS-01-93-12 Doi: https://dx.doi.org/10.15863/TAS.2021.01.93.12
9. Katamadze, A., Grdzelidze, M., & Katamadze, G. (2007). Analiz biomehanicheskih svojstv stopy. Novye tehnologii Tekstil`noj i legkoj promyshlennosti. *Special`nyj vypusk zhurnala Georgian Engineering News*. *GEN*, Iun`, 2007. pp. 16-18. https://gen.techinformi.ge/
10. Grdzelidze, M., & Katamadze, A. (2007). K voprosu postroenija polnotnogo assortimenta obuvi razlichnyh polovyh grupp detskogo i unosheskogo vozrasta. Soobshhenie 1. Znachenie postroenija polnotnogo assortimenta. *Vestnik Kievskogo nacional`nogo universiteta tehnologii i dizajna*. Kiev. №5 (37), pp.125-128.
11. Grdzelidze, M.G., Katamadze, A. G., & Shalamberidze, M. M. (2011). Rezul`taty antropometricheskih issledovanij zhitelej Gruzii s zabolevaniem diabeta. *Vestnik Kievskogo nacional`nogo universiteta tehnologii i dizajna*. Kiev. №2 (58), pp. 168-172.
12. Grdzelidze, M. G. (2011). Dinamika i struktura hod`by. *Zhurnal Georgian Engineering News. GFN*, (1), 144-148.
13. Grdzelidze, M. (2016). *The problem of drawing out the means of normalizing foot age deformations in Georgia.* Scope Academic house. 4th International Conference "Economy Modernization: New Challenges and Innovative Practice". October 20, 2016, Sheffield, United Kingdom of Great Britain and Northern Ireland. DOI: http://doi.org/10.15350/UK3/4 http://www.colloquium-publishing.ru/doc_konf_eng/UK_3_4.pdf
14. Grdzelidze, M. G. (2009). Znachenie povyshenija utilitarnyh svojstv obuvi dlja normal`nogo funkcionirovanija stopy. *Georgian Engineering News, GFN*, (2), 219-221.
15. Grdzelidze, M. G. (2010). *Stopa podrostkov i racional`naja obuv`*. Monografija. (p.226). Kutaisi.
16. Grdzelidze, M. (2017). The problem of dimensional typology of the foot for the normal functioning of the musculoskeletal system. *The Scientific journal "Norwegian Journal of development of the International Science*". #5. part 2. http://www.njd-iscience.com/wp-content/uploads/2017/04/NJD_5_2.pdf
17. Grdzelidze, M. (2008). O neobhodimosti razrabotki polnotnogo assortimenta obuvi dlja podrostkov. *Zhurnala Georgian Engineering News. GEN*, №1, pp. 178-180. Retrieved from https://gen.techinformi.ge/
18. Krans, V.M., Kolesnikova, N.A., & Lukovenko, G.V. (1980). *Morfologicheskie osobennosti*

razvitija detskoj stopy. - Moskva: Izd-vo CITO #20.
19. (2007). *Lechenie zabolevanij stop-Podiatry.ru-2007*.
20. (n.d.). Retrieved from http://www.diagnostika-morfo-funkcionalnyx-svojstv-stopy.html
21. Katamadze, A., Grdzelidze, M., & Katamadze, G. (2007). Optimizacija parametrov vykladki obuvi. Novye tehnologii Tekstil`noj i legkoj promyshlennosti. *Special`nyj vypusk zhurnala Georgian Engineering News*. *GEN*, Iun`, 2007. pp. 19-20. https://gen.techinformi.ge/
22. Grdzelidze, M. (2008). Novyj razmerno-polnotnij assortiment obuvi s uchjotom trjoh razmernyh faktorov. *Zhurnal Georgian Engineering News. GEN*, №2, pp. 181-183. https://gen.techinformi.ge/
23. Grdzelidze, M. G. (2018). Klasterizacija patologij stop po zakonomernym priznakam k otnosheniu trebovanijam komfortnosti obuvi. Multidisciplinary Scientific Edition-WORLD SCIENCE. *RS Global Sp. z OO, Scientific Educational Center Warsaw*, Poland, 30(2), 22.
24. Grdzelidze, M. G., Tkhelidze, N. N., & Charkviani, I. J. (2021). Requirements for ortho-shoes, formed according to he categories of foot pathology. *ISJ Theoretical & Applied Science*, 12 (104), 182-187. Soi: http://s-o-i.org/1.1/TAS-12-104-8 Doi: https://dx.doi.org/10.15863/TAS.2021.12.104.8
25. Grdzelidze, M. G. (n.d.). Covershenstvovanie metoda klassifikacii obuvi. *Ministerstvo osviti i nauki ukraïni,* 103.
26. (2007). Retrieved from http://www.patologia
27. (n.d.). Retrieved from http://www.stopa.info
28. Grdzelidze, M. (2017). Statistical evaluation and analysis of the results of shoes wear test method for a pilot study. *Magyar Tudományos Journal.(Budapest, Hungary)*, 11, 30-34. http://magyar-journal.com/en/magyar-tudomanyos-journal/
29. Grdzelidze, M. (2014). Statistical assessment of results of research of inhabitants of Georgia with a diabetes disease. *"Scientific enquiry in the contemporary world: theoretical basiss and innovative approach"* Research articles. B&M Publishing. San-Francisco, California, USA, (L26-5), 46.
30. Grdzelidze, M. (2015). Stady of the anatomy of the Diabetic foot, taking into account the categories of patology. *Pressing issues and Priorities in Development of the Scientific and Technological complex.* Research articles. B&M Publishing. San-Francisco, California, USA. L17/2.
31. Grdzelidze, M. (2015). Requirements for Diabetic shoes generated by category of patients with Diabetic foot syndrome. *Pressing issues and priorities in development of the scientific and technological complex*, 46.
32. Grdzelidze, M. G. (2023). The combined foot pathology caused by a common etiology of flat and diabetic feet. *ISJ Theoretical & Applied Science*, 05 (121), 86-91.
33. Gusev, A.S. (1987). *Materialy dlja sportivnoj obuvi. Obuvnaja promyshlennost`*. Jekspress-informacija. Moscow.

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 8.771	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2023 **Issue:** 08 **Volume:** 124

Published: 10.08.2023 **http://T-Science.org**

Issue Article

İsrail Musa oglu Mammadov
Azerbaijan State Pedagogical University
PHD in sciences physical
Baku, Azerbaijan

Rasim Kochari oglu Huseynov
Ganja State University
PHD in physical sciences associate professor,
Ganja,Azerbaijan

Rizvan Muhammedali oglu İmanov
Ganja State University
PHD in physical sciences associate professor,
Ganja,Azerbaijan

Saida Abdulali kyzy Tagieva
Ganja State University
PHD in technical sciences
Ganja,Azerbaijan

Leyla Elman kyzy Yusubova
Azerbaijan State Agrarian University
Assistant, Ganja, Azerbaijan

INVESTIGATION OF THE FEATURES OF THE DISTRIBUTION OF RESISTIVITY OVER THE THICKNESS OF A SILICON WAFER

Abstract: *The high level of integration achieved in the modern microelectronics industry has led to the creation of devices with high speed and an unprecedented level of interconnection between elements. Such a rapid development of semiconductor electronics dictates the tightening of requirements for the perfection of the crystal structure and uniformity of the distribution of electrical properties in the bulk of the material. A serious problem in obtaining large-diameter single crystals without dislocations is the need to reduce the size of the microdefects involved in them. Because they significantly affect the performance of integrated circuits. The real prospects for creating extremely high-frequency circuits based on epitaxial heterostructures arouse the interest of researchers in the problems of obtaining layered structures and quantum-scale nanostructures.*

Key words: *resistivity, silicon wafer, microelectronics.*

Language: *English*

Citation: Mammadov, İ. M., Huseynov, R. K., İmanov, R. M., Tagieva, S. A., & Yusubova, L. E. (2023). Investigation of the features of the distribution of resistivity over the thickness of a silicon wafer. *ISJ Theoretical & Applied Science, 08 (124),* 187-191.

Soi: http://s-o-i.org/1.1/TAS-08-124-17 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2023.08.124.17

Scopus ASCC: *2504.*

Introduction

Determining the homogeneity of semiconductor materials has always taken an important place both in the study of their physical properties and in the design of multi-purpose devices used in various areas of solid-state electronics. Along with other

semiconductor materials, this also applies to silicon. It occupies a special place among other materials as the most interesting material for deep fundamental research and has great potential for practical applications. In this work, determination of microhardness and specific resistance spatial distribution of silicon substrates with donor and acceptor additives was considered.

3 brands of silicon substrates differing in their electrophysical parameters were studied: 1. ESEC-0.01 type n-Si (additive element Sb) with specific resistance $\rho = 0{,}01$ Ohm·cm; 2. SDB type p-Silicon with specific resistance $\rho = 0{,}005$ Ohm·cm (additive element B-boron); 3. 16.5 SEF-4 type epitaxial structure with $\rho = 4$ Ohm·cm (additive element phosphorus-P). With the methodology described in [1-2] and developed by us, wedges (left-hand slides) were obtained on these bases and specific resistance (ρ) was measured on them. ρ was measured on 5 boards from each brand. After the last chemical-mechanical polishing, the bases are for removal of the damaged layer after special mechanical treatment.

2. In SDB-0.05 type plates, the specific resistance is more evenly distributed along the thickness of the base. The results obtained from layer-by-layer etching also prove this (corresponding points are marked with circles) (Fig. 3).

3. As can be seen from Fig. 4, the specific resistance in the p-region on the 16.5 SEF-4 type epitaxial structure decreases significantly towards the p-n junction, and in the n-region, the specific resistance gradually increases depending on the thickness of the substrate. Note let's say that the nature of the distribution of specific resistance in epitaxial layers is very complex and may depend on many factors: for example, the level of substrate doping, the concentration in the layer, the distribution of dopants, etc. besides, the distribution profile of ρ in epitaxial layers is strongly influenced by the following reasons: 1) diffusion of additives from the substrate to the layer and vice versa; 2) self-precipitation of the layer due to the movement of additives through the gas phase. According to the works of [3,4,5,6,7,8,9], at the initial stage of the growth of epitaxial silicon plates, instead of two-dimensional sprouts in stationary growth conditions, the formation of three-dimensional ones is preferred. These results show that mechanical factors play an important role in the initial stage of epitaxial layer growth. The latter are related to elementary processes on the substrate surface and determine the formation of three-dimensional sprouts. When the system reaches equilibrium, the kinetic factors related to surface reconstruction become secondary and the growth mechanism changes, in other words, two-dimensional growth prevails. In this case, it can be expected that the concentration of charge carriers will decrease monotonically to the level determined by stationary growth conditions. According to [8], the above-mentioned factors lead to an uneven distribution of the concentration of electrons along the thickness of the plate. The nature of dependence shows the uneven distribution of additives on the thickness of the epitaxial plate.

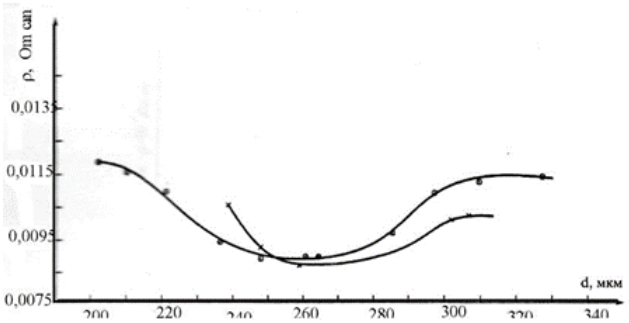


Fig. 1. Dependence of the specific resistance of the ESEC-0.01 type silicon plate on the thickness of the etched layer

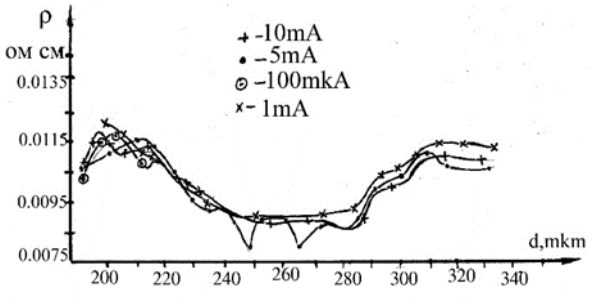


Fig. 2. Erosion of specific resistance at different values of electric current for ESEC-0.01 type silicon wafer dependence on the thickness of the applied layer

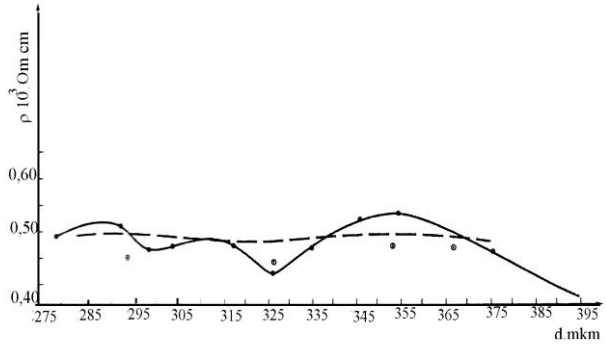


Fig. 3. Dependence of the specific resistance of the SDB-0.005 type silicon plate on the thickness of the eroded layer

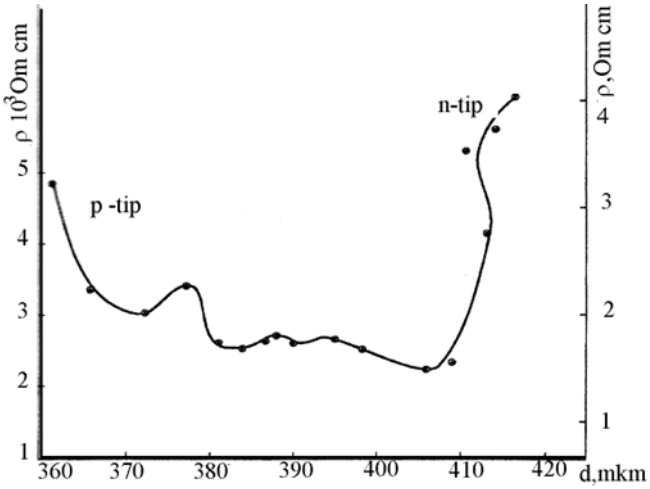


Fig. 4. Dependence of the specific resistance on the thickness of the eroded layer

In order to obtain more detailed information about the properties of semiconductor substrates, studies have been conducted that study the effect of some factors on their specific resistance. The following were studied: a) the effect of the current passing through the single crystal on the value of ρ, b) the effect of illumination on the course of the curve of dependence of the resistance on the current, c) the effect of the distance between the probes on the value of ρ . SEF and SDB type silicon plates with different specific resistances and thicknesses were studied (Fig. 5a,b). From the pictures, the following characteristics were found for the dependence of specific resistance on current: 1) regardless of the type of conductivity, at small values of current $I < 1 \cdot 10^3 A$ $\rho = f(I)$ The dependence of f(I) is non-linear, more precisely, with increasing current, the value of ρ decreases sharply, 2) the value of the specific resistance depends on the value of the current at values of current passing through the sample $I < 1 \cdot 10^3 A$ doesn't happen.

To clarify the reason for the non-linearity of the $\rho = f(I)$ dependence, verification experiments were carried out both in light and in the dark. The photoconductivity caused by illumination does not provide an opportunity to explain the non-linear nature of the $\rho = f(d)$ dependence. The observed feature of the $\rho = f(I)$ dependence cannot be explained by the influence of the probe-semiconductor contact. Probably, such dependence $\rho = f(I)$ is related to the uneven distribution of additional centers in the volume of the single crystal. Also, it can be monotonous and jump

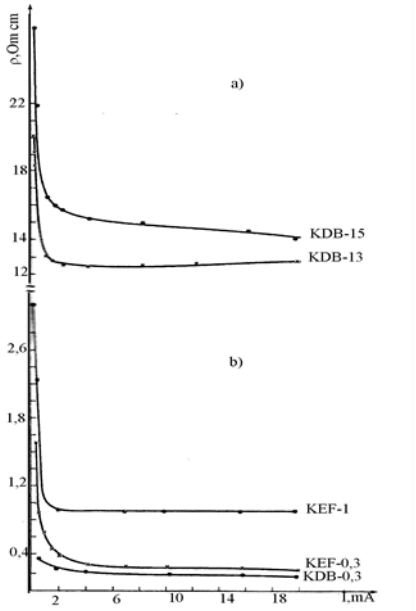


Figure 5. Dependence of specific resistance on current strength.

According to [9,10], when additives are unevenly distributed in a single crystal, an electric field whose intensity is given by the following equation is created:

$$E = \frac{kT\left(\mu_p \frac{dP}{dx} - \mu_n \frac{dn}{dx}\right)}{e(\mu_n \cdot n + \mu_p \cdot p)} \qquad (1)$$

Here, E is the intracrystalline field intensity; k-Bolsman constant; T-absolute temperature; e-electron charge; concentration of p-holes; concentration of n-electrons; μ_n and μ_ρ - charge of electrons and holes; dp/dx and dn/dx are the longitudinal gradients of holes and electrons.

It can be seen that at small values of the current passing through the sample, that is, at small external fields, the internal field of the crystal due to the uneven scattering of the above-mentioned dopant centers has the same design as the external field, and as a result, the dependence of the specific resistance on the current has a unique form for different samples. Besides, the nonlinear dependence $\rho = f(I)$ observed in the experiment is most likely due to the non-additive connection of the internal and external electric fields of the crystal.

The observed current dependence $\rho = f(I)$ can be applied to estimate the dopant distribution, and in this case it is necessary to take it into account in the design of semiconductor devices. In addition, 4

In the measurement of specific resistance by the -probe method, it is necessary to get the dependency $\rho = f(I)$ experimentally, and it is necessary to determine ρ in the area of $\rho(I) = const$. This will allow to reduce the errors made during the measurement of the specific resistances of the primary substrates. This is also important because resistances and usable output are significantly reduced in both conventional and large integrated circuit designs.

References:

1. Godzhaev, E.M., Huseynov, R.K., Hasanli, Sh.M., & Safarov, N.Yu. (2007). Methods of determining the homogeneity of semiconducting plates and structures on their basis. *News of Baku University Physics-mathematics series.* 2007 No. 4, pp. 175-180.
2. Godzhaev, E.M., Khalilova, Kh.S., Huseynov, R.K., & Hasanli, Sh.M. (2007). Features of the distribution of resistivity of semiconductors in the thickness of silicon wafers. *"Azerbaijan Airlines" National Aviation Academy*

SCIENTIFIC JOURNALS, 2007, Vol. 9, No. 4, pp. 32-37.

3. Kozchanyuk, S. (1986). Mechanical stresses introduced into silicon wafers in the process of manufacturing semiconductor devices and microcircuits. *Elektronika*, 1986, v.27, №9, pp. 11-15.
4. Koshelev, O.G., & Guseva, E.A. (2007). Method for determining the distribution of photoconductivity through the thickness of high-resistance semiconductor plates. *Vestnik MGU. Sir. 3. Physics, Astronomer*, 2007. v. 3, pp. 69-7.
5. Nashelsky, A.Ja. (1987). *Tehnologija poluprovodnikovyh materov.* (p.238). Moscow: "Metallurgija".
6. Renyan, V.R. (1963). *Semiconductor silicon technology*. Perevod s Anglijskogo pod ed. Shashkova Yu.M. (p.58). Moscow: "Metallurgy".
7. Sobolev, N.A. (2001). Silicon, alloyed with erbium, new semiconductor malleable material for optoelectronics. *Rossijskij himicheskij zhurnal*, 2001, tXLV, No. 5-6, p. 95.
8. Chiradze, G.D., & Gerasimov, A.B. (1999). About the distribution of the microhardness value in the depth of the sample. *Solid body physics*. 1999, p.41, v.7. p. 1225.
9. Suzuki, T., Yesinaga, H., & Takueti, S. (1989). *Dynamics of dislocations and plasticity*. (p.294). Moscow: Mir.
10. Bekterov, A.V., & Volyntzev, A.B. (1995). Dislocation ensemble behavior under random mechanical stress influence. *Phys. St. Left*. (a). 1995, vol. 148, pp. 107-112.

Contents

p.

12. **Blagorodov, A. A., Prokhorov, V. T., Vilisova, M. L., & Volkova, G. Yu.** 101-130
The role of the tourism potential of the Arctic regions of the Russian Federation for their effective socio-economic development.

13. **Blagorodov, A. A., Tomilina, L. B., Prokhorov, V. T., & Volkova, G. Yu.** 131-154
Economic paradigm and the main directions of development of small and medium-sized cities in the Arctic regions of the Russian Federation as a frontier.

14. **Blagorodov, A. A., Prokhorov, V. T., Belysheva, V. S., & Volkova, G. Yu.** 155-168
Problems and opportunities for social and economic development of small and medium-sized cities in the Arctic zone of the Russian Federation.

15. **Akhmadzhanov, A. A., & Arslonova, G. A.** 169-175
Key success factors in the competition.

16. **Grdzelidze, M. G., Tkhelidze, N. N., & Charkviani, I. J.** 176-186
Analyze of the conditions and needs for the safe use of sports shoes in practice, in order to justify the need for a scientific approach to the issue.

17. **Mammadov, I. M., Huseynov, R. K., Imanov, R. M., Tagieva, S. A., & Yusubova, L. E.** 187-191
Investigation of the features of the distribution of resistivity over the thickness of a silicon wafer.

Scientific publication

«ISJ Theoretical & Applied Science, USA» - Международный научный журнал зарегистрированный во Франции, и выходящий в электронном и печатном формате. **Препринт** журнала публикуется на сайте по мере поступления статей.

Все поданные авторами статьи в течении 1-го дня размещаются на сайте **http://T-Science.org**.

Печатный экземпляр рассылается авторам в течение 3 дней после 30 числа каждого месяца.

Импакт фактор журнала

Impact Factor	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
JIF		1.500								
ISRA (India)		1.344				3.117	4.971		6.317	
ISI (Dubai, UAE)	0.307	0.829							1.582	
GIF (Australia)	0.356	0.453	0.564							
SIS (USA)	0.438	0.912								
РИНЦ (Russia)		0.179	0.224	0.207	0.156	0.126		3.939	0.671	
ESJI (KZ)		1.042	1.950	3.860	4.102	6.015	8.716	8.997	9.035	8.771
SJIF (Morocco)		2.031				5.667			7.184	
ICV (Poland)		6.630								
PIF (India)		1.619	1.940							
IBI (India)			4.260							
OAJI (USA)						0.350				

Deadlines

	Steps of publication	Deadlines	
		min	max
1	Article delivered	-	
2	Plagiarism check	1 hour	2 hour
3	Review	1 day	30 days
4	Payment complete	-	
5	Publication of the article	1 day	5 days
	publication of the journal	30th of each month	
6	doi registration	before publication	
7	Publication of the journal	1 day	2 days
8	Shipping journals to authors	3 days	7 days
9	Database registration	5 days	6 months

INDEXING METADATA OF ARTICLES IN SCIENTOMETRIC BASES:

International Scientific Indexing ISI (Dubai, UAE)
http://isindexing.com/isi/journaldetails.php?id=327

Research Bible (Japan)
http://journalseeker.researchbib.com/?action=viewJournalDetails&issn=23084944&uid=rd1775

РИНЦ (Russia)
http://elibrary.ru/contents.asp?issueid=1246197

Turk Egitim Indeksi (Turkey)
http://www.turkegitimindeksi.com/Journals.aspx?ID=149

DOI (USA) http://www.doi.org

Cl.An. // THOMSON REUTERS, EndNote (USA)
https://www.myendnoteweb.com/EndNoteWeb.html

Scientific Object Identifier (SOI)
http://s-o-i.org/

Google Scholar (USA)
http://scholar.google.ru/scholar?q=Theoretical+t-science.org&btnG=&hl=ru&as_sdt=0%2C5

Directory of abstract indexing for Journals
http://www.daij.org/journal-detail.php?jid=94

CrossRef (USA) http://doi.crossref.org

Open Academic Journals Index (Russia)
http://oaji.net/journal-detail.html?number=679

Japan Link Center (Japan)
https://japanlinkcenter.org

Kudos Innovations, Ltd. (USA)
https://www.growkudos.com

AcademicKeys (Connecticut, USA)
http://sciences.academickeys.com/jour_main.php

Cl.An. // THOMSON REUTERS, ResearcherID (USA)
http://www.researcherid.com/rid/N-7988-2013

RedLink (Canada)
https://www.redlink.com/

TDNet
Library & Information Center Solutions (USA)
http://www.tdnet.io/

RefME (USA & UK)
https://www.refme.com

Collective IP (USA)
https://www.collectiveip.com/

PFTS Europe/Rebus:list (United Kingdom)
http://www.rebuslist.com

Korean Federation of Science and Technology Societies (Korea)
http://www.kofst.or.kr

Sherpa Romeo (United Kingdom)
http://www.sherpa.ac.uk/romeo/search.php?source=journal&sourceid=28772

Cl.An. // THOMSON REUTERS, ORCID (USA)
http://orcid.org/0000-0002-7689-4157

Yewno (USA & UK)
http://yewno.com/

Stratified Medical Ltd. (London, United Kingdom)
http://www.stratifiedmedical.com/

THE SCIENTIFIC JOURNAL IS INDEXED IN SCIENTOMETRIC BASES:

Advanced Sciences Index (Germany)
http://journal-index.org/

SCIENTIFIC INDEXING SERVICE (USA)
http://sindexs.org/JournalList.aspx?ID=202

Global Impact Factor (Australia)
http://globalimpactfactor.com/?type=issn&s=2308-4944&submit=Submit

CiteFactor (USA) Directory Indexing of International Research Journals
http://www.citefactor.org/journal/index/11362/theoretical-applied-science

JIFACTOR
http://www.jifactor.org/journal_view.php?journal_id=2073

Eurasian Scientific Journal Index (Kazakhstan)
http://esjindex.org/search.php?id=1

SJIF Impact Factor (Morocco)
http://sjifactor.inno-space.net/passport.php?id=18062

InfoBase Index (India)
http://infobaseindex.com

Электронно-библиотечная система «Издательства «Лань» (Russia)
http://e.lanbook.com/journal/

International Society for Research Activity (India)
http://www.israjif.org/single.php?did=2308-4944

International Institute of Organized Research (India)
http://www.i2or.com/indexed-journals.html

Journal Index
http://journalindex.net/?qi=Theoretical+%26+Applied+Science

Open Access Journals
http://www.oajournals.info/

Indian citation index (India)
http://www.indiancitationindex.com/

Index Copernicus International (Warsaw, Poland)
http://journals.indexcopernicus.com/masterlist.php?q=2308-4944

Signed in print: 30.08.2023. Size 60x84 1/8

«Theoretical & Applied Science» (USA, Sweden, KZ)
Scientific publication. The circulation is 90 copies.
http://T-Science.org E-mail: **T-Science@mail.ru**

Printed «Theoretical & Applied Science»