

CONTENTS

Geopolitics

- Sergunin, A. A.* Societal security in the Baltic Sea Region: the Russian perspective 4
- Olenchenko, V. A., Mezhevich, N. M.* The Visegrad Group and the Baltic Assembly: coalitions within the EU as seen through Russian foreign policy... 25
- Barakhvostov, P. A.* The remaking of geopolitical space and institutional transformations: the case of the Baltic Region 42
- Neverov, A. N., Markelov, A. Yu., Airapetian, A. S.* Evaluating the impact of integration processes on the ethnopolitical competition of languages in the Baltic Region 58

Geoeconomics

- Smorodinskaya, N. V., Katukov, D. D., Malygin, V. E.* Global value chains in the age of uncertainty: advantages, vulnerabilities, and ways for enhancing resilience 78
- Katorgin, A. D., Tarkhov, S. A.* The spatial structure of Baltic Sea ferry services..... 108
- Efimova, E. G., Volovoj, V., Vroblevskaya, S. A.* Ports of Eastern Baltic and Russian transit policy: competition and cooperation 125

Digitalization

- Podgorny, B. B.* The population of the Kaliningrad region and the digital economy: a sociological analysis..... 149
- Mikhaylova, A. A.* Valuating the appropriation of digital technologies across Russian regions 168

SOCIETAL SECURITY IN THE BALTIC SEA REGION: THE RUSSIAN PERSPECTIVE

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This study discusses whether the concept of societal security is embedded in the Russian formal and informal discourses as well as in the Russian strategic documents on national security and the Baltic Sea region. Particularly, the paper describes four paradigms of international relations (neorealism, neoliberalism, globalism and post-positivism) and theoretical approaches to the concept of societal security formulated in them. On a practical plane, Russia has managed to develop — together with other regional players — a common regional approach to understanding societal security threats and challenges in the Baltic Sea region. These challenges include uneven regional development, social and gender inequalities, unemployment, poverty, manifestations of intolerance, religious and political extremism, separatism, large-scale migration, climate change, natural and man-made catastrophes, transnational organized crime and cybercrime, international terrorism, so-called hybrid threats, disharmony between education systems, etc. In 2017, Russia and other Baltic countries agreed that the Council of the Baltic Sea States would be the regional institution to implement a common societal security strategy exemplified by the Baltic 2030 Agenda Action Plan.

Keywords:

societal security, Russia, Baltic Sea region, Council of the Baltic Sea States, Baltic 2030 Agenda Action Plan

Introduction

The concept of societal security is relatively new for the Russian political discourse and is still not embedded in Russian security thinking and national security policies. There is no adequate translation of the term into the Russian language. Some scholars translate it as “social/public security” (*obshchestvennaya bezopasnost*). Others prefer to use the phrase “security of the society” (*bezopasnost obshchestva*), which is closer to the original “societal security” concept coined by Barry Buzan and Ole Wæver of the Copenhagen School (international relations). According to this tradition, societal security is about the survival of a community as a cohesive unit. Societal insecurities arise when

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“communities of whatever kind define a development or potentiality as a threat to their survival as a community” [1].

The understanding of the societal security concept has later been expanded by Buzan’s and Wæver’s followers and now covers not only existential threats to society but also soft security challenges, such as socioeconomic inequalities, social deprivation, lack of access to education, culture and telecommunications, environmental problems, food and water quality, etc. This study is based on such — enhanced — understanding of the societal security concept.

The post-Copenhagen School approaches that try to connect the notion of societal security to the concepts of human security, sustainability and resilience are slowly gaining momentum in the Russian political discourse; however, they are still not very popular in the academic community or among decision-makers. With very few exceptions, there is almost no research done on societal security in the Baltic Sea region (BSR) [2–4].

This study aims to examine how the societal security concept is perceived by both governmental actors and different Russian schools of international relations (IR). The paper also discusses whether this concept has become a part of the Russian discourse on the BSR. Moreover, Russia’s role in shaping the Council of the Baltic Sea States (CBSS) societal security agenda is studied.

Theoretical framework, data and methodology

This study is based on two main theoretical approaches. As far as the Russian formal and informal discourses on the BSR societal security is concerned, the *sociology of knowledge approach to discourse* (SKAD) by Reiner Keller is used [5]. SKAD interprets any discourse as a practice of power/knowledge. It, therefore, claims to be more than text or language-in-use analysis: it considers the knowledge side and the power effects of discourses, the infrastructures of discourse production as well as the institutional effects and external impacts on practice emerging out of discourses meeting fields of practices. SKAD is based on the assumption that discourses do not speak for themselves but are rather brought to life in historically situated processes of interaction and institution-building by social actors, and their communication (inter-) acts within pre-existing social fields of practice and institutional structures. SKAD places various data types and interpretation steps in relation to one another, for example, more classical research strategies of individual case analysis or case studies combined with detailed close analyses of textual data. In contrast to other qualitative approaches in social sciences, SKAD is not interested in the consistency of meaning inherent to *one* particular document of discourse *per se* but rather assumes that such data articulates some elements of discourse or maybe appears as a crossing point of several discourses.

This study is also based on the so-called *liberal intergovernmental approach* (LIGA), or *liberal intergovernmentalism*. Based on the mix of various neoliberal theories by Putnam, Ruggie and Keohane it was designed as a coherent theory

by Andrew Moravcsik [6]. Among other things, the LIGA aims at explaining why states with diverging and even conflicting interests as well as with different systems of government and economies (Russia and other BSR countries) still can cooperate and integrate with each other. Russia's love-hate relations with its BSR neighbours represent an exemplary case from the LIGA point of view.

States' decisions to cooperate internationally are explained by the LIGA in a three-stage framework: states first define national preferences, then bargain to international agreements, and finally create or adjust institutions and regimes to secure those outcomes in the face of future uncertainty. The LIGA aims at examining what drives national preferences, bargaining strategies and the nature of international institutions and regimes that emerge as an outcome of such a multicausal process. Regional and global integration is understood by the LIGA as a series of rational choices by national leaders. These choices respond to constraints and opportunities stemming from the socio-economic, political and cultural interests of powerful domestic constituents, the relative power of states deriving from asymmetrical interdependence, and the role of institutions in supporting the credibility of interstate commitments.

This study demonstrates that there are powerful domestic and international incentives that encourage Russian political leadership to opt for a cooperative rather conflictual type of behaviour in the BSR and seek solutions to the regional societal problems *via* negotiations, compromises and strengthening governance mechanisms and institutions (for instance, CBSS).

The data for this research are drawn from various sources:

- Russian national security documents and official documents related to Moscow's policies in the BSR;
- CBSS documents;
- Scholarly works by Russian and international authors on societal security in general and in the BSR in particular;
- Media publications.

In dealing with various categories of sources, it is quite difficult to create a reliable database. Different sources can contradict each other and/or be fragmentary. Available statistics is sometimes misleading or incomplete. As far as academic works are concerned, their authors differ by their methods of assessment and interpretation of the empirical data. That is why it is important check and double-check available sources in terms of their reliability as well as to compare them with each other to exclude unreliable or erroneous data and biased judgements.

More specifically, I use three main principles to select and interpret empirical data:

1. Sources should be representative, i.e., they need to reflect typical rather than irregular developments in the Russian discourse on the BSR societal security;
2. Preferences are given to the data that provide valuable and timely information on Moscow's policies in the region;
3. Priority is also given to the sources that reflect original data as well as

fresh/non-traditional approaches both to the Russian BSR discourse and Moscow's policies within the CBSS.

With the help of these research tools, the above-mentioned shortcomings of my empirical base can be successfully overcome and a set of reliable data for this study can be effectively created.

The Russian discourse on societal security

This discourse includes two levels. The first level is the official discourse shaped by various Russian doctrinal/conceptual documents. The second level is represented by expert and scholarly narratives on national and international security and includes views developed by different Russian IR schools.

Official discourse

Russia's national security documents do not contain the societal security concept as such but address the related soft security problems. For example, the Law on Security of the Russian Federation (1992) defines the very notion of security, "Security is freedom from internal and external threats to the vital interests of the individual, society and state."¹ In line with the Western political thought, the authors of the document singled out not only state and military security, but also the economic, social, information, and ecological aspects of it. In contrast to the Soviet legislation, which had focused on state or Communist party interests, this document stated — at least at the level of declaration — the priority of interests of the individual and society. It also established a national security system of the newly born Russian Federation. Along with the already existing bodies such as the Ministry of Foreign Affairs, Ministry of the Interior, Ministry of Security (later, Federal Security Service), Foreign Intelligence Service, Ministry of Environment, the Law recommended setting up a Security Council, Ministry of Defense, and several committees, including the Border Guards Committee, and so on.

However, this document was too abstract and vague to design a coherent national security strategy, including its societal component. It took several years to develop a special national security doctrine based on a complex approach to security, including its societal dimensions.

The first Russian national security concept, adopted in 1997, asserted that Russia faced no immediate danger of large-scale aggression, and that, because the country was beset with a myriad of debilitating domestic problems, the greatest threat to Russia's security was now an internal one.²

This was a distinct departure from previous doctrines. For example, the military

¹ Yeltsin, B. 1992, The Law on Security of the Russian Federation, *Rossiyskaya Gazeta*, 6 May, p. 5 (in Russ.).

² Yeltsin, B. 1997, The National Security Concept of the Russian Federation, *Rossiyskaya Gazeta*, 26 December (in Russ.).

doctrine of 1993 was based on the assumption that the main threat to Russia's security was posed by external factors, such as local conflicts or territorial claims of foreign countries.

The 1997 concept clearly suggested that the current, relatively benign, international climate afforded Russia the opportunity to direct resources away from the defense sector and towards the rebuilding of the Russian economy.³ In general, it placed this rebuilding effort in the context of continued democratization and market development. In particular, the document focused on the dangers posed by Russia's *economic* problems, which were described frankly and at length. The concept highlighted a number of major threats to economic security, such as a substantial drop of production and investments; destruction of the R&D capacity; disarray in the financial and monetary systems; shrinkage of the federal revenues; growing national debt; Russia's overdependence on the export of raw materials and import of equipment, consumer goods and foodstuff; brain drain, and uncontrolled flight of capital.

The document also pointed to internal social, political, ethnic and cultural tensions that threatened to undermine both the viability and the territorial integrity of the Russian state. Among these, it stressed social polarization, demographic problems (in particular, decline in birth rates, average life expectancy, and population), corruption, organized crime, drug trade, terrorism, virulent nationalism, separatism, deterioration of the health system, ecological catastrophes, and disintegration of the 'common spiritual space'. In fact, the 1997 doctrine identified Russia's societal security agenda without the use of the societal security concept itself.

The new version of the national security concept adopted by Vladimir Putin after his coming to power in 2000, in principle retained the focus on internal threats to Russia's national security and kept the description of societal security challenges similar to the those conceptualized in 1997, although some external threats, such as NATO's eastward enlargement and its aggressive behaviour on the Balkans were also identified. The 2000 doctrine linked the internal threat of terrorism and separatism (clearly with Chechnya in mind) to external threats: it argued that international terrorism involved efforts to undermine the sovereignty and territorial integrity of Russia, with a possibility of direct military aggression. However, in dealing with these threats the document called for international cooperation.⁴

The novelty of the national security strategy (NSS) adopted by President Dmitry Medvedev in 2009, was its introduction of the system of indicators to characterize the state of affairs in the field of national security. This system of indicators included the following parameters: (a) level of unemployment; (b)

³ Yeltsin, B. 1997, The National Security Concept of the Russian Federation, *Rossiyskaya Gazeta*, 26 December (in Russ.).

⁴ Putin, V. 2000, The National Security Concept of the Russian Federation, *Nezavisimaya Gazeta*, 14 January, p. 4 (in Russ.).

decile coefficient;⁵ (c) consumer price increase rates; (d) external and national debt as a percentage of the GDP (%); (e) governmental spending on health care, culture, education and research as a percentage of the GDP; (f) rates of annual modernization of weapons, as well as military and special equipment; (g) supply rates for the country's demand for military and engineering personnel.⁶

Although these indicators were incomplete, the very idea of using them to monitor the national security system was innovative and relevant. The NSS-2009 anticipated the possibility of regular review and update of the indicator system.

On December 31, 2015, Russian President Vladimir Putin approved a new NSS. The doctrine paid considerable attention to the internal aspects of Russia's security. In particular, security threats such as terrorism, radical nationalism and religious fanaticism, separatism, organized crime and corruption were identified.

To mitigate the risks listed above, Russia should seek economic growth, development of the country's R&D capacity, "the preservation and augmentation of traditional Russian spiritual and moral values as the foundation of Russian society, and its education of children and young people in a civil spirit".⁷ This included "the introduction of a system of spiritual-moral and patriotic education of citizens".

On July 21, 2020, President Putin signed a decree "On National Development Goals of the Russian Federation for the Period up to 2030". Three of the five national goals are related to societal security: (a) taking care of the population, its health and well-being; (b) opportunities for self-realization and development of peoples' talents, and (c) comfortable and safe environment.

The 2020 decree introduced some specific indicators to evaluate progress in the implementation process. For example, the goal of a comfortable and safe environment included the following benchmarks:

- improving the living conditions of at least 5 million families annually and increasing the volume of housing construction to at least 120 million square meters per year;

⁵ The decile coefficient (DC) is a correlation between the incomes of 10% of the wealthiest and 10% of the poorest population. This coefficient reflects the level of income disparity and social differentiation. The DC varies from 5 to 15. Experts believe that if the country's DC is more than 10, there are grounds for social instability and even an uprising. According to the Russian Committee on Statistics, the Russian DC for 2010 was 14 (Distribution of total cash income, 2020, *Federal State Statistics Service*, available at: http://www.gks.ru/free_doc/new_site/population/urov/urov_32kv.htm (accessed 05.05.2020) (in Russ.).

⁶ Medvedev, D. 2009, National Security Strategy of the Russian Federation up to 2020, Security Council of the Russian Federation, 12 May, available at: <http://www.scrf.gov.ru/documents/99.html> (accessed 05.05.2020) (in Russ.).

⁷ Putin, V. 2015, On the National Security Strategy of the Russian Federation, *Security Council of the Russian Federation*, 31 December, available at: <http://www.scrf.gov.ru/documents/1/133.html> (accessed 05.05.2020) (in Russ.).

- improving the quality of the urban environment by one and a half times;
- making sure that at least 85% of the road network in the largest urban agglomerations meets regulatory requirements;
- creating a sustainable solid municipal waste management system that ensures 100% waste sorting and reduces the volume of waste sent to landfills by half;
- reducing emissions of hazardous pollutants that have the greatest negative impact on the environment and human health by half;
- elimination of the most dangerous objects of accumulated environmental damage and cleaning of most important rivers and lakes, including, first and foremost, the Volga river and the Baikal and Teletskoye lakes.⁸

Despite the fact that some of these indicators look too technocratic and quite unachievable, the 2020 decree still sets the state authorities a strategic development vector that allows them to address and solve the most significant problems related to societal security.

On July 2, 2021, President Putin approved a new NSS that retained the 2020 decree's approach to the societal security agenda.⁹ It is noteworthy that the new strategy, along with the national security concept, actively uses the *social/public* security concept although it is still different from the *societal* security concept. This document contains a detailed description of the threats and challenges to Russia's public security. In addition to the traditional threats and challenges, the NSS-2021 identifies such problems as the negative consequences of climate change for the Russian society and cyber threats occurring both from within Russia itself and from outside. Special attention is paid to the epidemiological safety of the population, which is, obviously, a reaction to the COVID-19 pandemic. A characteristic feature of the new strategy is its emphasis on external sources of threats and challenges to Russian national security. In contrast to the national security doctrines of 1997 and 2000, the NSS-2021 is based on the assumption that the socio-political and economic situation in Russia as a whole is stable, and destabilizing factors occur from outside.

To sum up, the societal security concept is still absent in Russian official documents, but, at the same time, the main problems related to the sphere of societal security are quite comprehensively addressed: the ways and means of coping with these threats and challenges are determined, including the efforts of both the state and public institutions.

⁸ Putin, V. 2020, Decree "On National Development Goals of the Russian Federation for the Period up to 2030", 21 July, *President of Russia*, available at: www.kremlin.ru/events/president/news/63728 (accessed 05.05.2020) (in Russ.).

⁹ Putin, V. 2021, Decree "On the National Security Strategy of the Russian Federation", 2021, 2 July, no. 400. <http://publication.pravo.gov.ru/File/GetFile/0001202107030001?type=pdf> (accessed 05.05.2020) (in Russ.).

Russian IR schools

Russian IR schools significantly differ from each other by their perceptions/approaches to societal security.

The Russian neorealist school hardly acknowledges the very concept of societal security, preferring to use a relatively traditional notion of social/public security. This school tends to interpret social/public security as a component/level of national security which consists of individual, social, and state security. The neorealists identify the following threats to social/public security both in Russia and the BSR: socio-economic disparities/inequalities, poverty, low living standards, poor social security system, street violence and crime, corruption, alcoholism and drug addiction, inefficient health care, environment degradation, political, ethnic and religious extremism, separatism, threats to information security, cultural integrity and traditional moral and family values, etc. [7; 8; 9] As mentioned above, these concerns have been reflected in the Russian national security documents since the 1990s because they have been developed under the influence of the dominant neorealist school.

The Russian neoliberal IR paradigm has several sub-schools as regards the understanding of the societal security concept. One interpretation is based on the assumption that societal security is indebted to the human rights tradition (the ideas of natural law and natural rights). This approach uses the individual as the main referent and argues that a wide range of issues (i.e., civil rights, cultural identity, access to education and healthcare) are fundamental to human dignity. The liberals argue that the goal of societal security should be to build upon and strengthen the existing global human rights legal framework [10; 11; 12, p. 274–286; 13]. This sub-school focuses on ethnic, religious, cultural and sexual minority rights, believing that, in a healthy society, minorities should be protected and have a full freedom of expression. Neoliberals both nationally and globally heavily criticize the Russian government for its inability to effectively implement this concept. They also believe that the best safeguard against societal challenges and threats is a well-developed civil society and its institutions, which are currently lacking in present-day Russia.

Another branch of Russian neoliberalism views societal security as a synonym of community security. According to this sub-school, societal security means societal resilience, namely securing the key elements of a society — economic equality, reflexive cultural traditions and social justice — through robust civic engagement. The community's security agenda also includes migration, migrants' integration into society, multiculturalism, minority rights, social cohesion. This version of neoliberal thinking pays much attention to the security of the Russian ethnic communities in the Baltic States [14; 15]. On the other hand, this sub-school examines how resilient the ethnic minorities, such as the Ingrian Finns [16] and Setu [17], are in the Russian North-West.

Another neoliberal sub-school prefers a broader vision of societal security, trying to equalize it with the human security concept put forward by the UN [18]. They accept the UN Development Programme (1994) definition of *human security*, which includes seven components: economic security; food security; health security; environmental security; personal security; community security; and political security.¹⁰

According to this sub-school, the BSR has unique features, which are formed around its natural environment — the environment that is distinct from that of any other region. Neoliberals believe that the entire BSR community shares some norms and values, which provide them with the incentive for a cohesive society [19; 20]. However, society is affected both positively and negatively due to the ongoing and rapid changes, mainly resulting from the geopolitical, geoeconomic and ecological dynamics in the region and its neighbourhood. While some of the changes bring new opportunities for the BSR, others adversely affect the community as socio-environmental factors and cultural integrity forming the society is threatened.

According to this sub-school, societal challenges are widespread and cross-cutting, are shared to different extents by the entire population of the region across the borders that separate them in the states of the BSR. This situation, therefore, calls for a regional assessment of the specific and diverse needs and aspirations of the population beyond those of its respective government.

The Russian globalist school challenges both the narrow understanding of societal security as public security, suggested by neorealists and the neoliberal legalist and human rights approaches. At the same time, globalists agree with those neoliberal currents that prefer a broader understanding of societal security, particularly as human security.

On the other hand, this school tends to interpret societal security as a version of the sustainable development concept [21]. They argue that economic growth is insufficient to expand people's choice or capabilities; and that health, education, technology, the environment, and employment should not be neglected. At the same time, the lack of human security has adverse consequences on economic growth, and therefore development. Globalists underline that imbalanced development that involves horizontal inequalities is an important source of conflict. Therefore, vicious cycles where the lack of development leads to conflict and, subsequently, to the lack of development, can easily emerge. Likewise, virtuous cycles are also a possibility, with high levels of security leading to development, which promotes further security in return.

¹⁰ United Nations Development Program, 1994, *Human Development Report 1994: New Dimensions of Human Security*, Oxford University Press, New York, p. 24–33, available at: http://hdr.undp.org/sites/default/files/reports/255/hdr_1994_en_complete_nostats.pdf (accessed 05.05.2020) (in Russ.).

However, over the last decade, the so-called *integrated approach* to sustainable development principles and strategies has gained momentum in the Russian academic community [22]. According to this approach, sustainable development is conceptually broken into three constituent parts: environmental, economic and social.

The Russian experts identify the following dimensions of Moscow's sustainable development strategy in the BSR:

- *Economic* dimension of sustainable development includes sustainable economic activity and increasing prosperity of the BSR communities; sustainable use of natural resources (including living resources); development of transport infrastructure (including aviation, marine and surface transport), information technologies and modern telecommunications.
- *Environmental* dimension has the following priorities: monitoring and assessment of the state of the environment in the BSR; prevention and elimination of environmental pollution in the region; the Baltic Sea marine environment protection; biodiversity conservation in the BSR; climate change impact assessment in the region; prevention and elimination of ecological emergencies in the BSR, including those relating to climate change.
- *Social* dimension includes the health of the people living and working in the BSR; education and cultural heritage; prosperity and capacity-building for children and the youth; gender equality; enhancing well-being, eradication of poverty among BSR people [23].

The Russian post-positivist school does not suggest a unified approach to societal security. For example, post-modernism, the most radical sub-school of post-positivism, heavily criticized the 'positivist' security concepts but did not develop any security concept of its own [24].

Russian social constructivism, another post-positivist sub-school, prefers to interpret societal security through the concept of *identity*. In line with the Copenhagen IR school, Russian constructivists believe that state security confronts societal security: state security has sovereignty as its ultimate criterion, and societal security has identity [25]. According to this sub-school, societal security, which is socially constructed, can only be ensured if actors' identities are formed in a non-confrontational way [26]. Otherwise, multiple identities clash with each other and do not favour a desirable level of societal security.

Constructivists call for a paradigmatic change of the Russian BSR discourse: instead of perceiving the region as a marginal and hostile source of security threats, the Russian state and society should see the BSR as a region having a considerable potential for cooperation [27; 28]. According to the Russian constructivists, the BSR should have a more positive and attractive image and be associated with the ideas of growth, prosperity and innovation. Moreover, Moscow should perceive the BSR as a region of peace and stability, where different identities can be reconciled and harmonized. At the same time, constructivists

continue to monitor some negative processes and factors that still generate imperialistic and nationalistic sentiments within the Russian society and elites and impede international cooperation in the BSR [29].

To conclude the discussion on the Russian societal security debate, it should be noted that there are serious problems with embedding the societal security concept in the Russian political discourse. These problems boil down to the following:

- The Russian national security thinking is hierarchical: individual, social and state/national security levels are identified where state security — in reality, not at declarative level — is still the most important.
- The Russian society is not an independent social actor. Civil society is still in an embryonic phase and for this reason, neither the society nor an individual can be real referent objects of security.
- The concept of identity is too vague for most of the Russian foreign policy schools and — except post-positivists — they are not ready to interpret societal security through this prism.
- Societal security does not necessarily matter to individuals whose personal security is much more important.
- Since anti-globalism and inward-looking sentiments are relatively strong in Russia, resistance rather than resilience prevails in the country's social/community psychology.
- Post-sovereign mentality and politics are still unpopular in Russia. Since both common people and the elites believe that Russia operates in a rather unfriendly or even hostile international environment, the theme of national sovereignty, which is closely related to state rather than societal security, is very important in the Russian political discourse.

At the same time, while not recognizing the societal security concept itself, the Russian IR schools, nevertheless, largely agreed in their views on the nature of the societal problems existing in the BSR.

Russia and the CBSS societal security agenda

Although many Russian BSR neighbours perceive Moscow as a source of security threat in the aftermath of the Ukrainian crisis, the Kremlin insists that it has no aggressive intentions in the region and prefers cooperation, not confrontation. From the theoretical point of view, the LIGA suggests a plausible explanation why Moscow prefers a cooperative, non-confrontational policy line in the BSR. In terms of national preference formation, it should be noted that the Kremlin has a rather busy domestic agenda which should be given priority over the international problems in the region.

As mentioned above, Russian leadership realizes that most of threats and challenges to its security originate from inside rather than outside the country. These problems are rooted in a confluence of factors, including the degradation of Soviet-made economic, transport and social infrastructure in the Russian north-western regions, the current resource-oriented model of the Russian economy, and the lack of funds and managerial skills in Russia to properly develop the Russian part of the BSR. It follows that Russia's current Baltic strategy is of an inward- and not an outward-looking nature. It aims to solve existing domestic problems rather than focus on external expansion. Moreover, in developing its north-western regions, Moscow seeks to demonstrate that it is open to international cooperation, to foreign investment and know-how.

It should be noted that Russian national preferences result in a quite pragmatic international strategy that aims at using the BSR cooperative programs and regional institutions for solving first and foremost Russia's own specific problems rather than addressing some abstract challenges.

The CBSS is seen by Russia as both a centrepiece and cornerstone of the regional governance system, a stance which is confirmed by the Russian strategic documents¹¹ and numerous statements of its leadership.¹² Compared to other regional and subregional organizations, forums and programs (such as the EU, Nordic institutions, Northern Dimension, etc.), the CBSS is viewed by the Kremlin as a more representative (in terms of its geographic scope), multidimensional (in terms of areas covered by its activities), research-based and efficient international entity [30; 31]. Despite the fact that ten other CBSS member-states belong to Western institutions that do not include Russia (NATO, EU, Nordic organizations), Moscow still feels comfortable in the Council because there it functions as an equal member and it can partake in the CBSS decision-making.

Moscow also sees the CBSS as an important tool for overcoming the political and diplomatic isolation that Western countries have tried to plunge it into. With the help of the CBSS, it retains its ability to influence regional socio-economic, political, environmental and humanitarian processes.

Despite the growing tensions between Russia and the rest of the BSR countries in the context of the Ukrainian crisis, Moscow has not abandoned multilat-

¹¹ Putin, V. 2016, *The Foreign Policy Concept of the Russian Federation*, 2016, 30 November, available at: <http://publication.pravo.gov.ru/Document/View/0001201612010045?index=0&rangeSize=1> (accessed 05.05.2020) (in Russ.).

¹² Statement and responses to mass media by the Minister of Foreign Affairs S.V. Lavrov at the news conference on the results of the Council of the Baltic Sea States ministerial online meeting, Moscow, 19 May 2020, 2020, *Ministry of Foreign Affairs of the Russian Federation*, 2020, available at: https://www.mid.ru/sovet-gosudarstv-baltijskogo-mora/-/asset_publisher/3qDBE0PYRt7R/content/id/4133375 (accessed 05.05.2020) (in Russ.); Statement by the First Deputy Minister of Foreign Affairs V.G. Titov at the Council of the Baltic Sea States ministerial meeting, 20 June 2017, 2017, *Ministry of Foreign Affairs of the Russian Federation*, available at: https://www.mid.ru/sovet-gosudarstv-baltijskogo-mora/-/asset_publisher/3qDBE0PYRt7R/content/id/2794141 (accessed 05.05.2020) (in Russ.).

eral diplomacy in the region, including the CBSS. Russia played a crucial role in the reformulation of the CBSS long-term priorities, which took place amidst the Ukrainian crisis. In light of an evaluation and review of the CBSS five long-term priorities approved at the 7th Baltic Sea States Summit, held in Riga in 2008, the CBSS — under the Finnish presidency (2013—2014) — decided to mainstream three renewed long-term priorities: Regional Identity, Sustainable & Prosperous Region, and Safe & Secure Region.¹³

Russia actively contributed to and supported the CBSS Baltic 2030 Action Plan (June 2017)¹⁴ which offers a framework to support macro-regional, national and sub-regional implementation of the sustainable development strategy for the BSR. The Baltic 2030 Action Plan includes six priority focus areas, representing a practical way to address the complexity of the 2030 Agenda in the BSR. The Focus Areas are deeply interconnected and reflect a holistic approach to achieving the 2015 UN Sustainable Development Goals (SDGs) and, at the same time, the regional societal security agenda:

- Partnerships for sustainable development. Macro-regional, multi-stakeholder, inclusive partnerships are at the core of the Baltic 2030 Action Plan. According to this document, all stakeholders should take responsibility for increasing regional cooperation and achieving sustainable development. Existing and new partnerships in the BSR should focus on the exchange of knowledge and the development of innovative, concrete and practical solutions to common challenges.
- Transition to a sustainable economy. Transnational cooperation is crucial for successful transition to a sustainable economy. This focus area includes several interconnected challenges: to increase energy efficiency and provide affordable clean energy, reduce waste, manage resources wisely, adopt sustainable consumption and production practices and lifestyles, create sustainable agricultural systems, reduce water pollution and protect ecosystems, ensure productive employment and decent work for all, promote research and innovation, and support ‘silver’, ‘circular’, ‘blue’ and ‘green’ economies. Interestingly, Moscow, whom the Baltic states, Denmark and Poland often accuse of ‘energy imperialism’ has enthusiastically supported these initiatives.
- Climate action. Work on climate change should integrate both mitigation and adaptation, which requires enhanced regional cooperation. This focus area encompasses several related dimensions: emergency preparedness and disaster risk reduction management related to climate and weather risks, monitoring emerging health risks, food security risks, responding to stresses in regional ecosystems, and other challenges. The goal in this area is to mainstream climate change ad-

¹³ Annual Report for the Finnish Presidency 2013—2014, 2014, *CBSS*, p. 28, available at: https://cbss.org/wp-content/uploads/2020/04/CBSS_AnnualReport_2013—14.pdf (accessed 05.05.2020).

¹⁴ Realizing the Vision. The Baltic 2030 Action Plan, 2017, *CBSS*, June, available at: <http://www.cbss.org/wp-content/uploads/2018/03/Baltic-2030-Action-Plan-leafleteng.pdf> (accessed 05.05.2020).

aptation into all planning and sectoral development processes to strengthen the resilience of infrastructures and society and to support the implementation of the UN Sendai Framework for Disaster Risk Reduction in the region. Russian support for climate change mitigation strategies was in striking contrast with Donald Trump's stand on this issue and consonant with other BSR countries' positions.

- Equality and social well-being for all. The BSR includes countries that are rated amongst the world's most equal — but also some of the world's most rapidly changing societies, moving in the direction of rising inequality. Gender equality and the rights of children are given special priority in this focus area. It also supports cooperation in the shared demographic challenges: ageing population, migration, economic and social inequalities, health-related challenges, social inclusion; and addressing crime and violence and acts of discrimination, which people face in the BSR.

- Creating sustainable and resilient cities and communities. Populations, economic activities, social and cultural interactions, as well as environmental and humanitarian impacts, are increasingly concentrated in cities, and this poses massive sustainability challenges in terms of housing, infrastructure, basic services, food security, health, education, decent jobs, safety and natural resources, among others. At the same time, supporting positive economic, social and environmental links between urban, peri-urban and rural areas — by strengthening national, macro-regional, and sub-regional development planning — is crucial. Since 2013, Russia has been trying to introduce strategic planning principles to the urban sustainable development programs. In 2014, Moscow adopted a special law on strategic planning which obliged all three levels of power — federal, regional and municipal — to introduce development strategies that should be based on the sustainable development concept.¹⁵ The Russian north-western municipalities draw heavily on the BSR countries' experiences in this area by implementing the concepts of 'smart' or 'green' cities [32].

- Quality education and lifelong learning for all. Rapid social and technological changes bring the need to develop an approach to quality education and lifelong learning throughout the BSR. This focus area includes a special emphasis on scientific literacy and research, STEM (science, technology, engineering and mathematics) education and innovation, which can support sustainable development from an economic, social, and cultural perspective. Professional associations such as, for example, the Baltic Sea Region University Network, where Russia closely cooperates with other BSR countries, are particularly useful in this regard.

The Baltic Agenda 2030 Action Plan provided an opportunity for harmonizing the CBSS policies and the EU Strategy for the BSR (EUSBSR) [33]. Moreover,

¹⁵ Putin, V. 2014, The Federal Law, 28 June 2014, no. 172-FL "On Strategic Planning in the Russian Federation", *Rossiyskaya Gazeta*, 28 June, available at: <https://rg.ru/2014/07/03/strategia-dok.html> (accessed 05.05.2020) (in Russ.).

this Action Plan represents not only a regional sustainable development strategy but also provides a useful and firm link between a regional organization and a global institution (UN). In other words, with the help of this Action Plan the CBSS is able to translate the UN global sustainability strategy to the regional one, which takes into account the local particularities, and better serves the BSR specific needs.

At their CBSS 25th anniversary meeting (Reykjavik, June 2017) the foreign ministers and high-level representatives highlighted further priorities for the Council's sustainability/societal security strategy.¹⁶ They encouraged the CBSS to continue working actively to achieve tangible results within its above-mentioned three long-term priorities: regional identity; sustainable and prosperous region; and, safe and secure region. More specifically, they invited the CBSS to identify and launch new project activities, with a view to achieving concrete results within each of the following subject areas:

Sustainable development. The adoption of the 2030 Agenda for Sustainable Development and the 2015 Paris Agreement on Climate Change marked the beginning of a new era in global cooperation for sustainable development. The CBSS plays an important role in delivering regional responses to the global challenges outlined in the 2030 Agenda, including through increased cooperation on mitigation and adaptation to climate change. As mentioned above, the CBSS responded to this UN initiative by adopting the Baltic 2030 Action Plan to meet the global SDGs at the regional level.

Youth. The BSR countries believe their young people are the future of the region. Learning about, and from, each other contributes to strengthening regional identity. In this context, the Baltic Sea Youth Dialogue is an instrument for building transnational trust and mutual understanding, in particular in challenging times, and should provide the basis for sustainable BSR youth cooperation in media, education, science and the labour market.

Human trafficking. The CBSS task force against trafficking in human beings has been operating successfully with Russia's active participation since 2006 and has earned international acclaim. The current global migration reality has led to a significant rise in the number of refugees and displaced persons in Europe who are at risk of being exploited by traffickers. Against this background, it is important that the task force continues its endeavours to prevent trafficking in human beings. Referring to the successful CBSS conference of 2017 on societal security and migration, the CBSS was encouraged by the foreign ministers to further promote cooperation on this topical issue among the BSR countries. Although for Russia migration currently is not a serious challenge, Moscow, being in solidarity with its Baltic neighbours, actively supports their efforts in this area.

¹⁶ Declaration on the Occasion of the 25th Anniversary of the Council of the Baltic Sea States, 2017, CBSS, 20 June, available at: <http://www.cbss.org/wp-content/uploads/2017/06/The-Reykjavik-Declaration.pdf> (accessed 05.05.2020).

Child protection. Russia participates in the CBSS expert group on children at risk, which has been highlighting issues of regional concern since 2002, such as children in alternative care, promoting child-friendly justice, preventing trafficking and exploitation of children, as well as promoting the best interests of children in migration. Child protection issues are highlighted in the 2030 Agenda as an important priority of the societal security strategy. The CBSS expert group has extensive experience from its work on child protection and is in a strong position to follow up on the 2030 Agenda.

Civil protection. Since 2002, the CBSS Civil Protection Network has been developing activities to strengthen resilience to major emergencies and disasters in the region. Increases in the intensity and frequency of extreme weather conditions make it important to accelerate these efforts through enhanced cooperation at all levels of government and in line with the objectives of the UN Sendai Framework for Disaster Risk Reduction. Some experts believe that this dimension of the CBSS activities is the most important one and tend to equate the societal security concept with the ability to resist natural and technogenic catastrophes in the BSR [34, p. 109–115; 35]. Moscow believes that it can significantly contribute to civil protection in the region because Russia has both a solid material-technical base and practical experience in this sphere.

At the same 2017 anniversary meeting, the ministers invited the CBSS to appoint an independent group of advisors, including civil society representatives. The task of the independent group was to prepare a report with recommendations for a vision for the BSR beyond 2020, and on the future role of the CBSS and the means to expand its impact as a forum for political dialogue and practical cooperation in the region. The independent group (where the Russian participant played a prominent role) presented its report and recommendations to the CBSS for consideration in June 2018. The group recommended to further use and strengthen the CBSS as a key platform for regional cooperation and communication as well as confirming three current long-term priorities as strategic goals for the foreseeable future.¹⁷

Moscow actively partook in the discussion on the CBSS Reform Roadmap which was approved during the Latvian chairmanship in 2018–2019.¹⁸ Russia also supported the Danish presidency in its efforts to adopt revised Terms of Reference of the CBSS and of the CBSS Secretariat. Moscow was also helpful in preparing a number of other important documents: Orientations for the CBSS role and engagement within the EUSBSR and the Northern Dimension, Operational Guidelines for CBSS Practical Cooperation, Guidelines for CBSS Fundraising,

¹⁷ Vision for the Baltic Sea Region beyond 2020. Report by the Council of the Baltic Sea States Vision Group, 2018, CBSS, June, available at: <https://cbss.org/wp-content/uploads/2020/03/Vision-Group-Report.pdf> (accessed 05.05.2020).

¹⁸ Annual Report for the Latvian Presidency 2018–2019, 2019, CBSS, available at, <https://cbss.org/wp-content/uploads/2020/03/Annual-Report-Latvia-2018–2019.pdf> (accessed 05.05.2020).

renewed mandate and new regional strategy for the Expert Group on Children at Risk 2020—2025, and new terms of reference and strategy for the Task Force against Trafficking in Human Beings 2020—2025.¹⁹

Even the COVID-19 pandemic was not a serious obstacle to the BSR countries' cooperation in the CBSS framework. Some important events at the end of the Danish chairmanship, including the final ministerial meeting, were held on-line but this did not prevent the ministers from evaluating the Danish presidency as one of the most effective. In addition to the adoption of the above-mentioned documents, under the Danish chairmanship, a new CBSS Director General for the Secretariat was appointed and the Council's Secretariat got new premises in Stockholm.

While continuing to work in the context of the pandemic, Russia supported the main priorities of the Lithuanian Presidency programme (2020—2021):

- sustainable development, especially in the field of developing green industry;
- green and maritime tourism as an important sector in reviving regional economy, increasing region's visibility, giving employment opportunities to young people;
- civil protection in the region, strengthening resilience in the region against major emergencies and disasters;
- fight against human trafficking for labour exploitation in the region, as well as prevention of violence against children.²⁰

During the existence of the CBSS, Russia has always actively participated in various projects within the Council — environmental, infrastructural, educational (Eurofaculties in Kaliningrad and Pskov), youth, etc. Over the past three years, Russia has participated in 19 of the 46 projects initiated by the CBSS. Only three countries were ahead of Russia: Finland (23 projects), Sweden (23 projects) and Latvia (22 projects) (fig.).

Currently, Russia participates in four of the six ongoing projects:

- Baltic Sea Region Mobilities for Young Researchers;
- Young People Network for Balticness (YoPeNET);
- Youth Networking for Sustainable Tourism Development in the Baltic Sea Region;
- THALIA — Towards thoughtful, informed, and compassionate journalism in covering human trafficking.²¹

¹⁹ Annual Report for the Danish Presidency 2019—2020, 2020, CBSS, available at: <https://cbss.org/wp-content/uploads/2020/10/Annual-Report-Denmark-2019—2020.pdf> (accessed 05.05.2020).

²⁰ Lithuanian Presidency Program 2020—2021, 2020, CBSS, available at: <https://cbss.org/wp-content/uploads/2020/06/Lithuanian-Presidency-Programme-2020—2021.pdf> (accessed 05.05.2020).

²¹ Ongoing Projects — CBSS, 2021, CBSS, available at: <https://cbss.org/psf/ongoing-projects/> (accessed 05.05.2020).

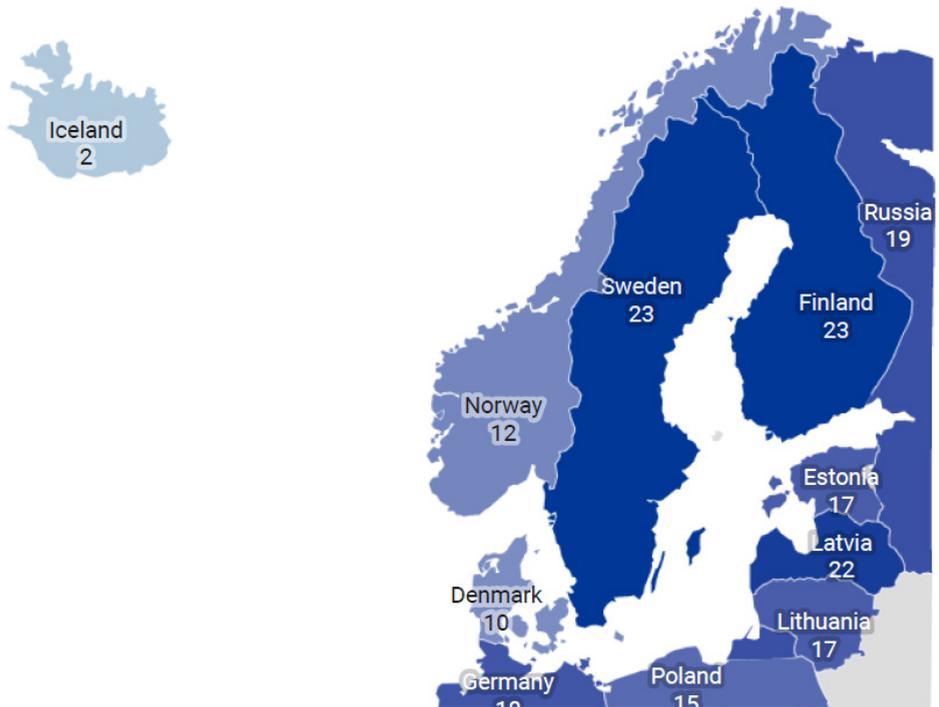


Fig. Member-state participation in the CBSS projects funded by the Project Support Facility

Source: Project Support Facility, 2021, *CBSS*, available at: <https://cbss.org/psf> (accessed 05.05.2020).

Conclusions

Although societal security concept is virtually absent in Russian official documents and academic/expert discourse, the societal security problems — in various forms — are gradually gaining momentum, both at the level of practical policies and among scholars. The interpretation of the concept by different Russian schools ranges from the narrowest (communal security) to the broadest understanding (human security, sustainable development). This is natural for a polity in transition, where civil society is not mature enough, where a state-centric approach to national security still prevails and where the individual and society still cannot be referent objects for security.

Although the Russian discourse on societal security is mostly inward-looking and related to national security format, the (Baltic) regional dimension is slowly unfolding in the Russian academic and policy-making community.

Despite the ongoing tensions between Moscow and the West, which reached a critical stage in the aftermath of the Ukrainian crisis, the BSR countries, including Russia, identified an almost identical set of soft security threats and challenges,

both to the individual countries and to the region at large. These societal security threats include uneven regional development, social and gender inequalities, unemployment (especially among the youth), poverty, manifestations of intolerance, religious and political extremism, separatism, largescale migration, inconsistencies in education systems, climate change, natural and man-made catastrophes, transnational organized crime and cybercrime, international terrorism, the so-called hybrid threats, etc.

With Russia's participation, the BSR community has been able to develop common approaches for coping with societal security threats. They rely on the same arsenal of methods and tools for problem-solving, improving the situation domestically and regionally, as well as producing a forward-looking, long-term sustainable development strategy. The CBSS has been identified as the regional institution to implement a common societal security strategy as exemplified by the Baltic 2030 Agenda Action Plan. Although geopolitical tensions in the region remain strong and various countries differ in their interpretation of the societal security concept and sustainable development strategy, the general dynamic in the BSR is relatively positive and gives some grounds for cautious optimism.

References

1. Buzan, B., Wæver, O., de Wilde, J. H. 1998, *Security: A New Framework for Analysis*, Lynne Rienner, London/Boulder.
2. Aaltola, M., Kuznetsov, B., Sprüds, A., Vizgunova, E. (eds.) 2018, *Societal Security in the Baltic Sea region: Expertise Mapping and Raising Policy Relevance*, Latvian Institute of International Affairs/Zinātne, Riga.
3. Ozoliņa, Ž. (ed.) 2016, *Societal Security. Inclusion-Exclusion Dilemma. A Portrait of the Russian-Speaking Community in Latvia*, Zinātne, Riga.
4. Smith, D.J. (ed.) 2005, *The Baltic States and Their Region: New Europe or Old?* Rodopi, New York.
5. Keller, R. 2013. *Doing Discourse Research: An Introduction for Social Scientists*, SAGE, Los Angeles.
6. Moravcsik, A., Schimmelfennig, F. 2009, Liberal Intergovernmentalism. In: Wiener, A., Diez, T. (eds.) *European Integration Theory*, Oxford University Press, Oxford, p. 67—87.
7. Baluev, D. 2002, *Sovremennaya Mirovaya Politika i Problemy Lichnostnoi Bezopasnosti* [Contemporary World Policy and Problems of Human Security], Nizhny Novgorod State University Press, Nizhny Novgorod (in Russ.).
8. Chugayev, S. 1997, State of the Economy and Society Is the Main Threat for Russia, Says the Russian National Security Concept, *Izvestiya*, 19 December (in Russ.).
9. Tsygankov, P.A. 2010, Human Security Theory: Political Implications and Lessons for Russia, *Moscow University Bulletin. Series no. 12. Political Science*, no. 4, p. 80—83 (in Russ.).

10. Kozyreva, A. 2003, Human Security Concept in the Contemporary World, *Obozrevatel'-Observer*, no. 9 (in Russ.).
11. Kulagin, V.M. 2006, *Mezhdunarodnaya Bezopasnost* [International Security], Moscow, Aspect Press (in Russ.).
12. Lebedeva, M. 2006, *Mirovaya Politika* [World Politics], Moscow, Aspect Press (in Russ.).
13. Vasilchenko, O. 2016, Human Security: on a Concept. In: Akhmetov, I.G. (ed.) *Novye Idei v Filosofii* [New Ideas in Philosophy], Moscow, Buk, p. 13—19 (in Russ.).
14. Bakuntsev, A.V. 2009, The Russians in the Baltic Sea Region: the Problem of Self-Identification, *Vestnik Tsentra Mezhdunarodnogo Obrazovaniya Moskovskogo Gosudarstvennogo Universiteta. Filologiya. Pedagogika. Metodika* [The Bulletin of the International Education Center, Moscow State University. Philology. Pedagogy. Methods], no. 1, p. 67—69 (in Russ.).
15. Belobrovtsseva, I. (ed.) 2010, *Russkie v Pribaltike* [Russians in the Baltic Sea Region], Moscow, Flinta/Nauka (in Russ.).
16. Bugay, N. 2017, *Finny-Ingermanlandtsy. Transformatsii Etnicheskoi Obshnosti: Zabvenie, Vozrozhdenie, Perspektiva* [The Ingrian Finns. Transformations of Ethnic Community: Oblivion, Revival, Perspectives], Moscow, Akvarius (in Russ.).
17. Alekseev, Y.V., Manakov, A.G. 2005, *Narod Setu: Mezhdru Rossiei i Estoniei* [The People of Setu: Between Russia and Estonia], Moscow, Europe (in Russ.).
18. Polovina, E.V. 2015, The Problem of Definition of the Human Security Concept in the UN Documents, *Politika, Gosudarstvo i Pravo* [Politics, State and Law], no. 4 (in Russ.).
19. Baranovsky, V. (ed.) 1997, *Russia and Europe: The Emerging Security Agenda*, New York, Oxford University Press.
20. Gorny, M. (ed.) 2004, *Publichnaya Politika: Voprosy Myagkoi Bezopasnosti v Baltiyskom Regione* [Public Policy: Soft Security Issues in the Baltic Sea Region], St. Petersburg, Norma (in Russ.).
21. Selin, V.S., Vasiliev, V.V. 2010, *Vzaimodeistvie Global'nykh, Natsional'nykh i Regional'nykh Ekonomicheskikh Interesov v Osvoenii Severa i Arktiki* [Interaction of Global, National and Regional Economic Interests in the Development of the North and Arctic], The Kola Science Center of the Russian Academy of Sciences, Apatity (in Russ.).
22. Vvedenskiy, A. 2014, Innovation Infrastructure as the Key Element of Sustainable Venture Ecosystem in Russia, *Baltic Rim Economies*, 29 April, p. 44.
23. Makarychev, A., Sergunin, A. 2017, Russia's Role in Regional Cooperation and the EU Strategy for the Baltic Sea Region (EUSBSR), *Journal of Baltic Studies*, vol. 48, no. 2, p. 34—50.
24. Kapustin, B. 1996, National Interest as a Conservative Utopia, *Svobodnaya Mysl* [Liberal Thought], no. 6, p. 13—28 (in Russ.).
25. Wæver, O. 1993, Societal Security: The Concept. In: Wæver, O., Buzan, B., Kelstrup, M., Lemaitre, P. (eds.) *Identity, Migration, and the New Security Agenda in Europe*, New York, St. Martin's Press, p. 17—40.

26. Vasilieva, N.A., Chensin, V. 2011, Modernization as a Search for Russia's New Identity: the Arctic Model, *Vestnik Mezhdunarodnykh Organizatsiy* [International Organizations Research Journal], no. 3, p. 20–26 (in Russ.).

27. Makarychev, A. 2003, Contours of Regional Identity: Testing Constructivism on Kaliningrad's Ground, *Journal of Eurasian Research*, vol. 2, no. 1, p. 18–25.

28. Morozov, V. 2004, Russia in the Baltic Sea Region: Desecuritization or Dereionization? *Cooperation and Conflict*, vol. 39, no. 3, p. 317–331.

29. Morozov, V. 2005, On the West's Cunning and Its Unmaskers: Russia's Foreign Policy Thought and Self-Isolation, *Neprikosnovenny Zapas* [Emergency Store], no. 5, p. 14–22.

30. Sergunin, A. 2019, The Baltic Sea region after the Ukrainian crisis and Trump: a Russian perspective, *DIIS Report*, no. 4, The Danish Institute for International Studies, Copenhagen.

31. Zhuravel, V., Ivanov, S. 2018, Cooperation of the Baltic Sea states in the sphere of regional security, *Geopoliticheskiy zhurnal* [Geopolitical Journal], no. 1, p. 40–46 (in Russ.).

32. Sergunin, A. 2019, Applying EU standards to planning Russian Arctic cities' sustainable development strategies: challenges and opportunities. In: Varaksin, A.N. (eds.) *Environmental Knowledge and Policy Innovation between East and West. Lessons Learned and Not?* Open Science Conference Proceedings, Minsk, 28–30 May 2019, Minsk, p. 108–109.

33. Palmowski, T. 2021, The European Union Strategy for the Baltic Sea Region and accomplishments, *Baltic Region*, vol.13, no. 1, p. 138–152. doi: <https://doi.org/10.5922/2079-8555-2021-1-8>.

34. Nikers, O., Tabuns, O. 2019, *Baltic Security Strategy Report. What the Baltics Can Offer for a Stronger Alliance*, The Jamestown Foundation, Washington.

35. Wolanin, J. 2017, *Common societal security culture in the Baltic Sea Region: basics and the way forward*, 13 December, Council of the Baltic Sea States Secretariat, Stockholm, available at: <https://cbss.org/publications/common-societal-security-culture-in-the-baltic-sea-region-basics-and-the-way-forward/> (accessed 15.05.2021).

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THE VISEGRAD GROUP AND THE BALTIC ASSEMBLY: COALITIONS WITHIN THE EU AS SEEN THROUGH RUSSIAN FOREIGN POLICY

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Today Russia has difficulty doing business-as-usual with EU states. It seems that the countries of the Visegrad Group (V4) and the Baltic Assembly/Baltic Council of Ministers (BA/BCM) have contributed substantially to this state of affairs. Overall, the tensions between Russia and the EU are building up – another tendency that did not arise on the Russian initiative. This article aims to address the question of whether Russia should establish direct relations with the V4 and the BA/BCM as tools to overcome the mentioned difficulties. On the one hand, these associations date back to before the countries acceded to the Union. On the other, they are products of regionalisation in the EU. In answering this question, we achieve three objectives. Firstly, we look for an appropriate theoretical and methodological framework for the study. Secondly, we produce a comparative description of the V4 and the BA/BCM. Thirdly, we examine the capacity of these associations to pursue an independent foreign and domestic policy. This study uses a comparison method to analyse the activities of the two organisations and identify their significance for the EU.

Keywords:

Visegrad Group (V4), Baltic Assembly / Baltic Council of Ministers (BA/BCM), relations with Russia, regionalism, transregionalism, multilevel management theory, regional approach in Russian foreign policy

Introductory remarks

Eastern European states (Hungary, Poland, Slovakia, the Czech Republic) and the Baltic states (Latvia, Lithuania, Estonia) are amongst the closest geographical neighbours of Russia. The history of Russia's bilateral relations with them is rich in significant events from the countries' common past and reflects all the vicissitudes of European development. In the 21st century, Russia is having

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difficulty in maintaining harmonious bilateral relations with these countries, Hungary being the only exception. Problems stem from the fact that these countries are constantly provoking conflicts involving Russia.

Apart from their membership in the European Union and NATO, the Baltic and Eastern European states have sub-associations of their own. Hungary, Poland, Slovakia, the Czech Republic are members of the Visegrad group (V4),¹ and Latvia, Lithuania, Estonia are represented in the Baltic Assembly and the Baltic Council of Ministers (BA/BCM).² Both sub-associations differ in the degree and potential of integration and, as a rule, operate independently of each other, despite their geographical proximity.

The article aims to explore the following questions. Does the activity of these sub-alliances open up opportunities for Russia to normalise bilateral relations with their member countries? Is membership in sub-alliances a neutral factor or will it further complicate bilateral relations? Does a possible dialogue with the V4 and BA/BCM have the potential of becoming a backup channel of Russia-EU communication?

Previous research on the topic

International cooperation is developing more and more often through integration associations. Within associations, there is a tendency towards fragmentation, which the EU has also displayed. The most illustrative example of it is the recent Polish-Hungarian ultimatum on the long-term budget of the European Union for the period 2021 — 2027.³ Integration is both a goal and a development mechanism that faces external and internal challenges. The EU countries implement their policies following a common European approach. However, this approach assumes a certain degree of autonomy for each country. In addition, the scale and diversity of the countries of the united Europe make the specifics

¹ The Visegrad group was established on January 15, 1991 during a meeting of the leaders of Hungary, Poland, Czechoslovakia in the Hungarian city of Visegrad. Czechoslovakia on 01/01/1993 split into the Czech Republic and Slovakia — both retained their adherence to the Visegrad accords. The group got its name from the meeting place — Visegrad. In English — Visegrad. Therefore, the group designation V4 is also used.

² The Baltic Assembly (BA) was created on 08.11.1991 during the meeting of the leaders of Latvia, Lithuania, Estonia in Tallinn (Estonia) and is intended to coordinate the activities of the three countries at the parliamentary level. In 1994, an additional body was formed — the Baltic Council of Ministers (BCM), expanding trilateral cooperation through coordination at the government level. The BA and BCM meetings are held synchronously. Accepted abbreviation BA/ BCM

³ On November 16, 2020 Hungary and Poland announced the blocking of the long-term budget for 2021 — 2027, although the budget was conceptually adopted by the EU summit on July 21, 2020. Hungary and Poland did not agree with the development of the budget using the rule of law, that is, the allocation of subsidies depending on how the participating countries follow the EU legislation.

of their foreign and domestic policies natural. The interests of groups of countries that are ‘embedded’ in common interests are *de facto* the norm in European and global policy. Busygina and Klimovich, well-known Russian Europeanists, proposed an interesting formula, “a coalition within a coalition”, which perfectly describes this situation [1, p. 7–26].

There are objective geographical, economic and political prerequisites for the existence of European sub-regions. The traditional division of Europe into sub-regions includes western, eastern Europe and northern Europe among many others. Political factors, taken in their historical dynamics, led to the emergence of two relatively new groupings, which are the object of this study — the Visegrad group (the V4) and the Baltic Assembly (BA) /the Baltic Council of Ministers (BCM). The Visegrad group is a sub-regional association within the EU. It includes Hungary, Poland, Slovakia and the Czech Republic and claims to be a factor influencing the general policy of the EU. The Baltic Assembly (BA) /Baltic Council of Ministers (BCM) is a sub-regional association, which includes, together with other countries of the region, Latvia, Lithuania, and Estonia.⁴

This research is methodologically based on several theories. The post-functional version of regionalism stipulates that regional construction in Europe is based on three pillars: firstly, the functional requirements of regionalism, stemming mainly from interdependence in the field of security and the desire for stability; secondly, ensuring regional integration through the efforts of elites aimed at building the regional identity that resonates with public opinion; and, last but not least, the expansion of institutional structures across regions [2]. Integration associations within the EU can also be analysed from the standpoint of interregionalism (interregional theory), which presupposes the presence of overlapping regional spaces [3]. This is not an abstract geographic or economic space, but a space of political decisions.

Transregionalism provides an opportunity for the formation of a more effective management mechanism compared with those created at the global and regional levels since decision-making at the global level is fraught with difficulty in seeking consensus among the most influential actors in international relations and decision-making at the regional level is usually limited by the boundaries of a particular region [4]. The transregional approach provides a good opportunity to understand the two strategic objectives of the countries joining coalitions. Matthew Doidge, a British researcher, distinguishes between inward-oriented, self-strengthening and outwardly-oriented tasks for lobbying

⁴ The Baltic Assembly (BA) was created on 08.11.1991 during the meeting of the leaders of Latvia, Lithuania, Estonia in Tallinn (Estonia) and is intended to coordinate the activities of the three countries at the parliamentary level. In 1994, an additional body was formed — the Baltic Council of Ministers (BCM), expanding trilateral cooperation through coordination at the government level. BA and BCM meetings are held synchronously. Accepted abbreviation BA/BCM.

one's interests regionally and globally [5]. The latter is very important and suggests the possibility of employing the theory of multilevel governance in this research [6–8].

In this article, the theory of multilevel governance is used for the analysis of European coalitions and associations. The theory has been relevant for more than ten years, and there is a lot of literature discussing it. In the classical sense, multilevel governance is based on coordinated actions of the EU, member states and regional and local authorities and in accordance with the principles of subsidiarity and proportionality and partnership, taking the form of operational and institutional cooperation in the development and implementation of European Union policy [9]. Within the framework of the theory of multilevel governance there is an opportunity "...to emphasize the spatial dimension of political governance, as well as the special significance of ties, coalitions and interactions..." [10, p. 14].

The theory of multilevel governance has been used in governance and administration practice for a long time. The Charter of Multilevel Governance of the European Union states that "...on the basis of coordinated actions of the European Union, Member States and regional and local authorities act in accordance with the principles of subsidiarity, proportionality and partnership, taking the form of operational and institutional cooperation in the development and implementation of European Union policy".⁵

The structural policy of the European Union has already resulted in the formation of three relatively independent levels of governance — supranational, national and subnational, within which and between which there is a continuous dialogue and interaction [11]. But are the governance levels limited to those enumerated above? If we consider only the EU as a supranational body, then it is necessary to identify another level, higher than the national state, but lower than the EU. Accordingly, each level presupposes "a system of constant negotiations between governments connected with each other at different territorial levels — supranational, national, regional and local" [12].

Recognizing the *acquis communautaire* (Fr., generally recognized property)⁶ as a set of legal principles, rules and norms developed within the European Union and are subject to mandatory implementation, it is worth noting that there is no direct prohibition on the conduct of domestic and foreign policy by the EU member states in the form of coalitions, quasi-unions, and sub-regional unions. The most active integration processes take place within the European Union, a supranational association that has prerequisites for the transition to the final stage of integration — the formation of a political union. The desire of the Europe-

⁵ Charter for Multilevel governance in Europe, 2020, *CEPLI*, available at: <https://cepli.eu/charter-for-multilevel-governance-in-europe-12026599> (accessed 16.01.2020).

⁶ The designation adopted in the EU for the general concept of legal norms of the European Union.

an Union to preserve and protect the achieved level of integration is quite understandable and logical. Integration associations that exist within the European Union are given much less attention compared with the EU, the most influential economic and political union of today.

The classical understanding of the term *integration* presupposes a process and a solution focused on obtaining a single whole from any parts. Integration in international relations presupposes a process rather than a solution. Accordingly, the ultimate goal of European integration is a vital question. There is no exact answer. At the same time, with small integration unions or consulting associations, the situation looks somewhat clearer. In this case, the goals are specific and pragmatic. There may be some ideological rhetoric, but it is nothing more than an attempt to divert attention from performing systemic economic and political tasks. Hence, another hypothesis discussed in the article — small integration unions and consulting associations have a future since they perform specific tasks, have minimal staff and ample opportunities for multi-level consultations. Moreover, it is the theory and practice of multilevel governance that creates additional opportunities for the study of sub-regional unions.

This issue has been poorly researched in the Russian Federation in the context of the goals of its foreign policy [13—15]. It should also be borne in mind that the topic of the international positioning of the EU, including its sub-unions, has a relatively short history. It goes back to the mid-1990s when a common foreign and security policy of the EU began to be discussed. The decision was consolidated by the introduction of the position of the High Representative of the Union for Foreign Affairs and Security Policy (1999). The European Union External Action Service (EEAS) headed by the High Representative was formed on January 1, 2011 [16, p. 32].

When assessing the activity of sub-regional unions and associations, one should point out their different legal status. For example, Benelux⁷ is an integral part of the EU and a full-fledged economic, political and customs union, which has been developing in parallel with the EU and is included in the EU structure by Article 223 of the Agreement on the creation of the EEC. The institutions of cooperation mentioned in this article do not have such a status. Brussels initially viewed these bodies as advisory and, most likely, temporary. The former stance has been fully confirmed whereas the latter is probably erroneous. The theory of multilevel governance explains why soft integration aimed at the elaboration of a single economic and foreign policy of the European Union is not a short-term but a long-term one.

Another and more important thesis is that the associations under consideration have gradually acquired new characteristics over the past decades. Having a low formal status, minimum regulations and financial costs, these associations

⁷ Benelux is a union of three states: Belgium, Luxembourg, the Netherlands, which entered into a tripartite agreement on 03.02.1958 on political, economic and customs union.

can provide effective and informal consultations. Gardini and Malamud describe this situation as ‘invisible’ interregionalism (stealth interregionalism), which is characterized by the absence of formal institutionalisation of stable interregional ties [17].

Summing up, the Visegrad Group and the Baltic states are of interest for our analysis because their countries are members of both sub-unions. They have inherited most of the European problems after joining the EU (January 1, 2004) and they have been actively participating in the process of fragmentation of the European Union. Each country has its own reasons, therefore, requires individual studies for each case.

The choice of the Visegrad group and the BA/BCM as the objects of study is not accidental since these associations are, in a way, the consequences of the demise of the Soviet Union and the socialist system in Europe. In this regard, it is necessary to understand how Russia should build its relations with the sub-associations of the countries that until recently, used to be politically and economically united with Russia, though to a varying degree. The study of Russia’s approaches to the V4 and BA/BCM may also be of interest as an essential prerequisite for the development of a conception of the countries’ relations with these associations and their member countries. Recent publications of the authors have contributed to this work [18–20].

Let us consider some of the circumstances of the creation of the V4 and BA/BCM. The Visegrad group, as a regional subunit, was established on January 15, 1991. The founding documents set the task of jointly overcoming the communist past, mistrust and hostility, promoting integration into leading European organisations and bringing national elites closer together. In 1993–1998, the association was not active (3–4 events per year) since the prevailing point of view was that countries of the region developing independently could achieve their goals much faster. Since 1998, the V4 has significantly increased the number of activities organised. For example, in 2000, there were more than 25 events, that is, two events per month. The reference to the 2000s was not accidental and made to show that the potential of the V4 has not been exhausted and the group is operating in the same mode and the same scale as 20 years ago. Russian experts give credit to the political activity of the Visegrad group [21].

An additional impetus to the activities of the Visegrad Group was given on May 12, 2004, at the Kromeriz V4 Summit. The declaration of the summit stated that the goals of the accession to the EU and NATO set in 1991 had been achieved. The countries agreed to continue cooperation. In their new capacity, the V4 countries took on a collective commitment to strengthen the identity of Central Eu-

rope and promote EU policies in Eastern and Southeastern Europe.⁸ However, the question arises about the geographical positioning of the Visegrad countries. For Russia, they have always been countries of Eastern Europe. Apparently, this topic and its ideological implications introduced by the V4 deserve a separate study. The former Minister of Foreign Affairs of Hungary stated the significance of the Visegrad Group and its main key objectives of strengthening the V4 ties with the United States and implementing the Eastern Partnership programme [22]. This document cannot be considered a private opinion since it was included in the package of official documents of the Visegrad group [22]. In the following document, the Bratislava Declaration dated February 15, 2011, this vision of the V4 policy became the key one, which meant in practice the promotion of the expansion of the EU and NATO, mainly to the East.⁹

The Eastern Partnership programme deserves special attention. The programme is aimed at preventing the post-Soviet countries from becoming the CIS members and pushing them towards accession to the EU. The Bratislava Declaration is imbued with a spirit of self-admiration, to the extent that the V4 members call themselves the new successful political brand and the best example for other countries.¹⁰

In the recent Krakow Declaration of February 17, 2021, adopted on the occasion of the 30th anniversary of the Visegrad Group, the participating countries call themselves “a reliable partner on a European and global scale and a symbol of successful transformation ...”¹¹ They reiterate the main goals of the EU development, commit themselves to achieve them, and stress their willingness to achieve Euro-Atlantic goals and readiness to strengthen NATO, positioning it as a significant factor of stability.¹²

At about the same time, on August 11, 1991 the Baltic Assembly (BA) was established. It crowned the trilateral cooperation between Latvia, Lithuania and

⁸ Visegrad Declaration 2004 (assembled on 12 May 2004 in Kroměříž), 2004, *The Visegrad Group: the Czech Republic, Hungary, Poland and Slovakia | Visegrad Declaration 2004*, available at: <https://www.visegradgroup.eu/documents/visegrad-declarations/visegrad-declaration-110412—1> (accessed 28.02.2021).

⁹ The Bratislava Declaration of the Prime Ministers of the Czech Republic, the Republic of Hungary, the Republic of Poland and the Slovak Republic on the occasion of the 20th anniversary of the Visegrad Group Bratislava, 15 February 2011, *The Visegrad Group: the Czech Republic, Hungary, Poland and Slovakia*, available at: <https://www.visegradgroup.eu/2011/the-bratislava> (accessed 03.03.2021).

¹⁰ Ibid.

¹¹ Declaration of the Prime Ministers of the Czech Republic, Hungary, the Republic of Poland and the Slovak Republic on the Occasion of the 30th Anniversary of the Visegrad Group Cracow, February 17, 2021, *The Visegrad Group: the Czech Republic, Hungary, Poland and Slovakia*, available at: <https://www.visegradgroup.eu/calendar/2021/declaration-of-the-prime-ministers> (accessed 17.02.2021).

¹² Ibid.

Estonia in the period 1988–1991, which was aimed at ensuring their secession from the USSR and gaining state independence. To achieve this goal, the Baltic republics organised numerous joint social and political events in a trilateral format and acted as a single bloc in the Soviet state bodies and organisations, in particular, in the Baltic Council. On May 12, 1990 the Declaration on the Unity and Cooperation of Latvia, Lithuania, Estonia¹³ was signed by the leaders of the Supreme Councils of the republics.

The apotheosis of the trilateral cooperation of that period was the establishment of an advisory parliamentary body of the three countries — the Baltic Assembly (BA), which is formed from the deputies of the Baltic parliaments in proportion to the party representation. Each of the parliaments of the three States appoints 12–16¹⁴ members. Both the status and the number of representations limit the role of the BA.

Three years later, in addition to the BA (or expanding the scale of interstate Baltic relations), the Baltic Council of Ministers (BCM) was created in 1994. The Council holds tripartite meetings at the level of prime ministers and relevant ministers. They are usually organised once a year within the framework of the autumn session of the BA held in the capital of the country presiding in the BCM.

The Visegrad Four (V4). The conception of the Visegrad Four has become a part of European political life. This association is reasonably perceived as an important factor in the formation of the political and economic situation in Central and Eastern Europe. The Visegrad Four is increasingly acquiring the status of a separate pole of influence both in the European Union and in Eastern and Central Europe. The importance of the association has increased in recent years, particularly, in connection with the Ukrainian crisis and the migration cataclysm in Europe. The Visegrad Four took a special position on both events and demonstrated the will to defend it. Overall, the countries of the Group seem to strive and will pursue a more or less independent line, arising from their national rather than from the common interests of the EU. The tradition of their consolidation has deep historical roots, which were described more than 100 years ago by Lyubavsky [23]. International and not only European recognition of the V4 may be proven by the fact that during the Russian chairmanship in the UN Security Council in September 2015, the Russian Foreign Minister Sergey Lavrov, discussing the problems of illegal migration, considered the Visegrad Four as important as the European Union.

The status of the Baltic Assembly. In the international information space, both in its domestic part and in other segments, it is customary to consider the Baltic countries as an integral conglomerate. This approach gives rise to the

¹³ Formation of the Baltic States' regional organisations, 1988–1991, *Baltic Assembly – Pre-History*, available at: <https://www.baltasam.org/en/history/pre-history> (accessed 15.02.2021).

¹⁴ Baltic Assembly Statutes, 2021, *Baltic Assembly*, available at: <https://baltasam.org/en/structure/statutes> (accessed 15.03.2021).

feeling that Latvia, Lithuania, Estonia are allegedly united by numerous coordination mechanisms that allow them to react to any event quickly and smoothly and have a unified front on any matter. In this regard, those who are far from the Baltic issues are naturally perplexed when they learn that in the foreign policy, Latvia, Lithuania, Estonia are connected only by an advisory parliamentary body — the Baltic Assembly (BA) and the Baltic Council of Ministers (BCM), meeting in accordance with their regulations once a year. It could be assumed that by their overactive integration activities the BA and the BCM attempt to compensate for the underdevelopment of the organisational structure. However, BA and BCM, in contrast to the Visegrad group, are known mainly to experts in the Baltic States and do not attract much attention by their activities. As the Baltic authorities admit, both organisations, especially the BCM, after Latvia, Lithuania, and Estonia joined NATO and after joining the European Union, were brought in line with the new requirements. In this regard, it is of interest to study why one of two geographically neighbouring regional associations progresses and becomes a noticeable factor of influence, while the other is hardly noticeable and does not show prospects for self-development.

The reasons for the differences between V4 and BA. In addition to the influence of internal political nuances and the peculiarities of relations between countries on the status of both associations, objective indicators of the Visegrad group and BA/BCM countries should also be taken into account, in particular, such as the population size, the volume of national GDP (table 1).

Table 1

**Population of the Visegrad countries and the countries
of the Baltic Assembly in millions of people as of 01.01.2020¹⁵**

Countries	Population, million people	Percentage in the total population of the European Union
EU -282	512.3	100
Visegrad group - V4	63.6	12.4
Hungary	9.7	1.8
Poland	37.9	7.3
Slovakia	5.4	1.05
Czech Republic	10.6	2.06
Countries - BA / BCM	6.0	1.17
Latvia	1.9	0.37
Lithuania	2.8	0.54
Estonia	1.3	0.25

Source: the table has been prepared by the authors based on the Eurostat data

¹⁵ Population change — Demographic balance and crude rates at national level, 2021, *Eurostat*, available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo_gind&lang=en (accessed 12.01.2021).

The data presented in the Table 1 show that the population of the Visegrad countries is ten times as high as the population of the Baltic Assembly countries. The population size is important because it is a primary source of labour resources, on which, among other things, the economic potential of countries and their investment attractiveness depends. The size of the population is an important indicator for calculating the volume of the consumer market. In this sense, the percentage of the population of the V4—12% of the EU — allows us to consider the V4 as a factor in the EU internal market since we are talking about 1/10 of the entire EU market. Compared with that, the percentage of the population of the BA of just 1% of the EU is too low to be taken into account. It would be an exaggeration to say that the Visegrad countries are much more attractive than the Baltic Assembly countries. However, in combination with other socio-economic factors, the Visegrad countries have an advantage; they are more economically attractive than the BA/BCM countries. The Fig.s of national GDP presented in table 2 are no less obvious.

Table 2

The volume of GDP of the Visegrad and the BA/BCM countries in million euros and percentage in 2019¹⁶ (the results of 2020 have not yet been presented by Eurostat)

Country	GDP volume, million euros, current prices	Share of national GDP in total GDP of the European Union, percentage
EU 28	16,486.2	100
Visegrad Group countries	996.0	6.0
Hungary	146.0	0.9
Poland	532.3	3,2
Slovakia	93.8	0.5
Czech Republic	223.9	1.4
Countries of the Baltic Assembly	107.2	0.65
Latvia	30.4	0.18
Lithuania	48.7	0.30
Estonia	28.0	0.17

Source: the table has been compiled based the Eurostat data, which in the December 2020 update are compared with the data for 2019. The data for 2020 have not been released yet. When calculating, reference was given to the absolute rather than relative data. The share of countries is calculated based on the volume of EU GDP before the UK left the EU on January 30, 2020.

¹⁶ GDP and main components (output, expenditure and income), 2021, *Eurostat*, available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_gdp&lang=en (accessed 14.01.2021).

The data in the table show that the ratio of the GDP indicators of the Visegrad countries and the Baltic Assembly is similar to the ratio of the population of these associations. In both cases, the Visegrad indicators are almost ten times as high as those of the Baltic Assembly.

The GDP Fig.s — the total value of goods and services produced over a given period of time — can also serve as indicators of the current economic state of the two associations. The tenfold difference in the economic potential manifests itself in the share of these associations in the European Union and affects the formation of their authority. The GDP of the Visegrad Group is 6% of the total GDP of the European Union. This fact cannot be ignored when assessing the economic opportunities of the EU, both in the current and long-term economic perspectives. At the same time, the GDP of the Baltic Assembly is only 0.65% of the total GDP of the EU, which is a very small share that can be neglected if necessary. In a consolidated form, the share of the Visegrad Group and the Baltic Assembly/ BCM in the EU population and GDP is given below (table 3).

Table 3

**The share of the Visegrad Group and the Baltic Assembly
in the EU GDP and Population ¹⁷**

Association	Population as a percentage of the total EU population	GDP as a percentage of total EU GDP
European Union 28	100	100
Visegrad group	12.4	6.0
Baltic Assembly/BCM	1.17	0.65

Source: the table was compiled by the authors.

It is obvious that the Visegrad group is a significant part of the European Union both in terms of GDP and the capacity of the consumer market, which is linearly correlated with the population size. The BA/BCM constitute only one per cent of both indicators and, consequently, are of minimal economic interest. The activities of the BA/BCM are mostly of a protocol nature in the sense that they are organised in a measured manner; an annual session is usually held back-to-back with a BCM meeting. To date, 38 BA sessions and 35 BCM sessions have been held. The bigger number of the BA sessions can be explained by the fact that in 1994—2002 they were held twice a year.¹⁸ During that time, the Baltic countries were preparing for their accession to the European Union. Later, the BA adhered and still adheres to the schedule of having one session per

¹⁷ Data calculated by the authors based on Eurostat data. References are indicated in tables No. 1, 2.

¹⁸ The Baltic countries applied for EU membership in 1992—93, and in 1994 they were accepted for consideration. The EU decision on the possibility of expanding to the East was made in 2000 at the EU summit in Nice (France). The Baltic States became EU members on 01.05.2004.

year.¹⁹ The intensity in BA/BCM activity at that time reflected nervousness in the Baltic countries caused by a multi-stage, albeit standard, assessment of their application by the EU. The BA agenda of the events organized was not diverse and was dominated by such topics as the regional security strategy, the common regional gas and electricity market, the implementation of the Rail Baltica project (a project for a railway connection of the Baltic countries with Northern Europe and Germany).

Let us now go back to 2019 and have a closer look at the BA/BCM action plan for 2019, which was implemented and its performance can be assessed. The plan was prepared by Latvia, which chaired the association in 2019. The action plan was quite detailed and included 14 events, that is, more than two events per month.²⁰ However, there are no materials on the results of the implementation of this plan.²¹ It can be assumed that the events were merely a formality and their results were not significant enough to be reflected in the form of separate documents.

Funding. The activities of the Visegrad Group are funded by its member countries in the form of annual contributions. In addition, the group has a separate fund, the Visegrad Fund, created in 2000 and used for the implementation of projects initiated by the association. The projects are mainly aimed at working with youth, preserving the history of the region and Europe and identifying new promising areas of cooperation.²² In addition to the member countries, there are other donors of the fund: from the EU — Germany, Sweden, Switzerland, and the Netherlands; from external donor countries — South Korea, Canada and the United States. The fund provides grants to both individuals and organisations.²³

The importance of the Visegrad fund is highlighted in the Krakow Declaration of February 17, 2021, noting that more than 600 projects for the development of civil society have been financed within the framework of the Eastern Partnership in the Western Balkans and Central Europe. In the Declaration, the fund is already referred to as the International Visegrad Fund.

The activities of the BA/BCM are funded by allocations from the budgets of the parliaments of the Baltic republics. Consequently, the amount of funding depends on the state budgets and may change accordingly whereas the annual contribution to the Visegrad Group is a fixed sum.

The V4 and BA/BCM foreign policy. Although they were established at the same time and pursued similar goals — membership and complete integration into the EU — the V4 and BA/BCM associations are now noticeably and sig-

¹⁹ Sessions of the Baltic Assembly, 201, *Baltic Assembly — Sessions and Documents*, available at: <https://www.baltasam.org/en/sessions-and-documents> (accessed 14.01.2021).

²⁰ Ibid.

²¹ Working Plan of the Baltic Assembly under Latvian Presidency in 2019, 2019, *Baltic Assembly*. available at: <https://www.baltasam.org/images/2019/Working-Plan—2019.pdf> (accessed 24.01.2021).

²² *Visegrad Fund*, 2021, available at: <https://www.visegradfund.org/> (accessed 23.02.2021).

²³ About us, 2021, *Visegrad Fund*, available at: <https://www.visegradfund.org/about-us/the-fund/> (accessed 25.02.2021).

nificantly different from each other, and not only in terms of their economic and demographic indicators. The main difference is that the BA/BCM is a publicly inactive organisation, whose activities are reduced to a narrow range of tasks that are of interest, in most cases, only to the members of the association and do not fall under the definition of a multi-vector policy. The activities of the BA/BCM are mainly dominated by the regional dimension agenda, aimed at Northern Europe and reflect the interests of their northern neighbours.

The Visegrad group and the BA/BCM often compete with each other, which is particularly obvious in the Eastern Partnership programme. As Shishelina [24] notes, the Visegrad countries consider the programme partly their creation and would like to monopolize its implementation.²⁴ At the same time, the BA/BCM countries consider the post-Soviet space an indispensable part of their foreign policy priorities, which is reflected in the Eastern Partnership program. In general, it can be stated that the V4 and the BA tend to distance from each other. In April 2016, Latvia hosted a meeting of the Foreign Ministries of the Baltic States, Northern Europe and the Visegrad Group to discuss security, energy, the Eastern Partnership and the problems of European integration. However, this meeting required the participation of the Nordic countries, acting as an informal moderator.

The focus of attention of the two associations is the Eastern Partnership programme, aimed at the reorientation of post-Soviet states from membership in the CIS and making them join the EU.²⁵ The rest of the V4 and BA/BCM activities are different. The geographic vector of the V4 activity is directed to the Balkans, Central Europe, and the post-Soviet space. There is also interest in the Northern European sub-unions. At the same time, only one V4 member country (Poland) demonstrates its close ties with Lithuania [25]. Objectively, only Hungary and Poland possess resources and willingness to play a more independent role in the European Union, but not Estonia, Latvia, Lithuania. As practice shows, they can defend their point of view and would like to have a certain degree of independence, if not for complete withdrawal from the EU. They strive for broader autonomy, although the current EU regulatory documents do not envisage it. This conclusion is confirmed by the joint moratorium of Hungary and Poland under the terms of the EU budget for 2021 – 2027 put forward on November 16, 2020.

The results of the study showed that the associations analysed differ in the degree of their activity; in most cases, they simply respond to current events and have no clearly formulated strategic goals of their foreign and domestic policy. The V4 – Russia dialogue is mainly based on individual initiatives of the countries. The BA/BCM made the coordination of tactical and strategic anti-Russian actions a cross-cutting theme of their regular meetings. Therefore, Russia cannot have one general pattern of behaviour for developing its relations with these associations.

²⁴ The Eastern Partnership programme was co-authored by Sweden and Poland.

²⁵ The Eastern Partnership programme was adopted on 09.05.2009 in Prague (Czech Republic). Azerbaijan, Armenia, Belarus, Georgia, Moldova, Ukraine are invited to participate in the programme.

The Russian government notes the accumulation of various contradictions in the EU. Russia admits that some Eastern European countries may follow the example of Great Britain and raise the question of terminating their EU membership. According to some assessments, this may happen by 2028.²⁶

The single-vector foreign policy of the Baltic countries, their reliance on the confrontation with Russia and ensuring the dominance of Northern European interests, narrow the political and economic attractiveness of the Baltic. The Visegrad Group seeks to act in unison with EU priorities when they are in line with the V4 regional interests. On the other hand, the V4 is steadily pursuing a course aimed at protecting their national interests and ensuring that they are not devalued by the requirements of the EU.

A comparison of the agendas of the chairmanship in the V4 and the BA/BCM associations does not speak in favour of the Baltic countries. The chairmanship of a particular country in the BA/BCM association, in contrast to the chairmanship in the Visegrad Group, is not often characterized by originality and reflect not so much national interests but rather the priorities of Euro-Atlanticism, mainly its American interpretation.

In general, we can confidently state that the Visegrad Group is a more effective regional organisation compared with the BA/BCM both in terms of defending the national interests of the member states and in terms of its status in the EU.

Conclusion

The analysis shows that “the rise of the subnational level and the recognition of the importance of political networks combined, leading to the emergence of the concept of multilevel governance in the study of the European Union” [26]. This theory appeared following the EU foreign policy and economic decision-making practices. At the turn of the century, it was understood that “... leaders entering a supranational association will fear the expansion of the centre they are creating. Accordingly, not wishing to be his hostages, they will only go to the creation of an alliance with weak supranational institutions, leaving the key decisions for themselves” [27].

At the same time, it makes sense to keep both sub-alliances in the focus of attention, periodically comparing Russian foreign policy requests with the dynamics of their development.

Given the current content, tasks and practical activities of the BA/BCM associations, there are no prerequisites for Russia’s initiatives to establish business ties with the BA/BCM, including those aiming at the normalisation of Russian-Baltic relations. At the same time, one should not ignore the dynamics of the BA/BCM activity. Further study of the feasibility of establishing relations with these associations may be required provided there are positive changes in the agenda of the association.

²⁶ President of Russia V. Putin. Speech at the plenary session “Bridges over the Waves of De-globalization” at the XI VTB Capital Investment Forum “Russia Calls!”, Held on November 20, 2019, Investment Forum “Russia is Calling!” *President of Russia*, available at: <http://www.kremlin.ru/events/president/news/62073> (accessed 21.01.2020).

The prospects for possible ties between Russia and the Visegrad group look comparatively more attractive. Two aspects could be of practical interest. Given the annual rotating presidency of the member countries in the V4, the presiding country could include the normalization of relations with Russia in its agenda. For example, Hungary could put forward this idea. The reaction of other member countries and the discussion between them could highlight the advisability of Russia's turning to the V4. The second aspect is the possible participation of Russia in certain events of the Visegrad Group providing there is an invitation from the V4.

Based on our analysis of the economic and political dynamics, our research shows that currently the BA/BCM association is not of particular interest for Russia either in terms of the development of bilateral relations with the Baltic countries or deepening ties with the EU. For Russia, the Visegrad group has a certain potential for the development of bilateral relations. However, this requires the fulfillment of a number of conditions on the part of the V4, including those indicated above.

To sum up, the current relations between Russia and the Visegrad group and BA/BCM as associations do not guarantee tangible positive developments in Russia's bilateral relations with each of the participating countries. It is preferable to continue developing bilateral relations with each country separately. At the same time, it is necessary to follow the activities of both associations — the Visegrad group and BA/BCM.

References

1. Busygina, I.M., Klimovich, S.A. 2017, A coalition within a coalition: the baltics in the European Union, *Balt. Reg.*, vol. 9, no. 1, p. 4—17. doi: <https://doi.org/10.5922/2079-8555-2017-1-1>.
2. Borzel, T.A., Risse, T. 2019, Grand Theories of Integration and the Challenges of Comparative Regionalism, *Journal of European Public Policy*, vol. 26, no. 8, p. 1231—1252. doi: <https://doi.org/10.1080/13501763.2019.1622589>.
3. Efremova, K.A. 2017, From Regionalism to Transregionalism: Some Theoretical Conceptualisation of a New Reality, *Comparative Politics* vol. 8, no. 2, p. 58—72. doi: <https://doi.org/10.18611/2221-3279-2017-8-2-58-72>.
4. Kuznetsov, D.A. 2017, Transregionalism: Problems of Terminology and Conceptualization, *Comparative Politics*, vol. 8, no. 2, p. 22. doi: [https://doi.org/10.18611/2221-3279-2016-7-2\(23\)-14-25](https://doi.org/10.18611/2221-3279-2016-7-2(23)-14-25).
5. Doidge, M. 2007, Joined at the Hip: Regionalism and Interregionalism, *Journal of European Integration*, vol. 29, no. 2, p. 242. doi: <https://doi.org/10.1080/07036330701252474>.
6. Bache, I., Flinders, M. 2004, *Multi-Level Governance in Theory and Practice* Oxford, p. 3. doi: <https://doi.org/10.1093/0199259259.001.0001>.
7. Chikharev, I., Romanova, M. 2011, The notion and the basic concepts of multilevel governance in world political discourse, *Vestnik Moskovskogo universiteta. Seriya 12. Politicheskie nauki* [Moscow University Bulletin. Series 12. Political sciences], no. 5, p. 3—16 (in Russ.).

8. Strezhneva, M. 2009, Theories of European Integration, *Vestnik Moskovskogo universiteta. Seriya 12. Politicheskie nauki* [Moscow University Bulletin. Series 12. Political sciences], vol. 25, no. 1, p. 28—45 (in Russ.).

9. *Multilevel Governance and Partnership*, 2014, The Van den Brande Report Prepared at the request of the Commissioner for Regional and Urban Policy Johannes Hahn, p. 10, available at: https://ec.europa.eu/regional_policy/sources/informing/dialog/2014/5_vandenbrande_report.pdf (accessed 15.04.2021).

10. Strezhneva, M. (ed.) 2017, *Evropeiskii soyuz v global'nom ekonomicheskom upravlenii* [European Union in Global Economic Governance], Moscow, IMEMO RAN, 255 p. doi: <https://doi.org/10.20542/978-5-9535-0491-1>.

11. Busygina, I., Filippov, M. 2020, Changing incentives and strategies of national governments in the context of multi-level governance in the European Union, *Polis (Russian Federation)*, no. 5, p. 148—163. doi: <https://doi.org/10.17976/jpps/2020.05.11> (in Russ.)

12. Hooghe, L., Marks, G. 2003, Unraveling the Central State, But How? Types of Multi-Level Governance, *American Political Science Review*, vol. 97, no. 2, p. 233—243. doi: <https://doi.org/10.1017/S0003055403000649>

13. Olenchenko, V. 2019, Northern Europe — Baltic — Eastern Europe: Coexistence or Interaction? *Istoriya* [History], vol. 10, no. 7 (81). Doi: <https://doi.org/10.18254/S207987840006635-7> (in Russ.).

14. Shishelina, L.N. (ed.) 2010, *Vishegradskaya Evropa: otkuda i kuda? Dva desyatiletia po puti reform v Vengrii, Pol'she, Slovakii i Chexii Visegrad* [Europe: from where and to where? Two decades on the path of reform in Hungary, Poland, Slovakia and the Czech Republic], Moscow, 563 p. (in Russ.).

15. Mozel, T.N. 2001, *Baltiia, Rossiya i Zapad v poiskax modeli bezopasnosti v Evrope* [The Baltic States, Russia and the West in search of a security model in Europe], Moscow, 303 p. (in Russ.).

16. Strezhneva, M., Rudenkova, D. 2016, *Evropeiskii soyuz: arkhitektura vneshnei politiki* [European Union: the Architecture of Foreign Policy], Moscow, p. 135. doi: <https://doi.org/10.20542/978-5-9535-0480-5> (in Russ.).

17. Gardini, G.L., Malamud, A. 2015, Debunking Interregionalism: Concepts, Types and Critique — With a Transatlantic Focus, *Atlantic Future Working Paper*, no. 38, p. 3—7. doi: https://doi.org/10.1007/978-3-319-62908-7_2.

18. Maksimtsev, I.A., Mezhevich, N.M., Koroleva A. V. 2017, Economic Development of the Baltic and Nordic Countries: Characteristics of Economic Models, *Balt. Reg.*, vol. 9, no. 1, p. 41—54. doi: <https://doi.org/10.5922/2079-8555-2017-1-4>.

19. Mezhevich, N. 2016, Eastern Europe. On the centenary of the political project, *Balt. Reg.*, vol. 8, no.1, p.17—32. doi: <https://doi.org/10.5922/2079-8555-2016-1-2>.

20. Olenchenko, V.A. 2016, Russia and the Baltic States: outlines of the concept of bilateral relations, *International affairs*, no. 9, p. 58—76.

21. *Shishelina, L.N. 2014, Visegrad group: stages of formation and development // Perspektivy* [Perspectives], available at: www.perspektivy.info/book/vishegradskaja_gruppa_etapy_stanovlenija_i_razvitija_2014-08-20.html (accessed 02.03.2021).

22. Esenskiy, G. 2016, 25 years of the Visegrad group, *Sovremennaya Evropa*, no. 6. p. 13–19 (in Russ.).
23. Lyubavsky, M. 2004, *Istoriya zapadnih slavyan* [History of the Western Slavs], Moscow, Parade, 608p. (in Russ.).
24. Shishelina, L. 2013, Visegrad Group and Eastern Partnership, Visegrad Yearbook, Supplement to the journal, *Sovremennaya Evropa*, vol. 4, no. 2, p. 5–20. (in Russ.)
25. Ofitserov-Belskii, D. 2015, Visegrad cooperation: the search for new forms against the background of the Ukrainian crisis, *World Economy and International Relations*, vol. 65, no. 3, p. 76–85. doi: <https://doi.org/10.20542/0131-2227-2015-3-76-85> (in Russ.)
26. Bache, I., Bartle, I., Flinders, M. 2016, Multi-Level Governance. In: Ansell, C., Torfing, J. (eds.) *Handbook on Theories of Governance*, Cheltenham, United Kingdom, Edward Elgar Publishing, p. 486–498.
27. Busygina, I., Filippov, M. 2010, European Union from specific to general. The limits and prospects of EU geopolitics, *Rossiya v global'noj politike* [Russia in global affairs], vol. 8, no. 1, p. 124 (in Russ.).

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THE REMAKING OF GEOPOLITICAL SPACE AND INSTITUTIONAL TRANSFORMATIONS: THE CASE OF THE BALTIC REGION

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This article adopts the historical neo-institutional approach to analyse the dissolution of the Livonian Confederation and the ensuing reshaping of the Baltic region in the 16th-19th centuries. These historical events are employed to describe the post-bifurcation incorporation of a society in a different social system. Several inclusion models are identified. The centralised model suggests that the incorporated society reproduces the institutions of the incorporating society. Modified institutions are transplanted to the incorporated society within the quasi-centralised model, whilst only selected modified institutions are transferred within the autonomist one. The author analyses mechanisms playing a part in state mergers and emphasises their dependence on the institutional environment of the incorporating society. For instance, a part of Livonia was incorporated in the Polish–Lithuanian Commonwealth (PLC) through transplanting PLC institutions, primarily political ones, to the newly acquired territories. To this end, a mechanism was developed to encourage cooperation from the nobility without further stratification. Sweden, however, acted on the autonomist model when incorporating Estland and Livland. Economic, political, and sociocultural institutions, many of which were of hybrid type, were transplanted, whilst socialisation mechanisms and incentives applied to a wider section of the population. The Russian approach, which had at its core security considerations, combined autonomist elements (establishment of hybrid institutions in the new territories) and centralised components (propagation of Russian imperial institutions). The merger mechanisms included the creation of an Ostsee estate system and incentives for the higher estates coupled with repressions against commoners. Overall, the nature of state mergers and institutional transplantations depends on whether the incorporated territories have had a history of statehood, another significant factor is the degree of similarity between the institutions of the acquired territories and the metropole.

Keywords:

institutions, institutional transformations, social structure, empire, autonomy

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Introduction

The complexity and political turbulence of the modern world, concurrent integration and disintegration, ethnic conflicts and attempts to redraw post-WWII borders lend particular relevance to the study of institutional transformations in social systems following geopolitical space remaking.

Despite the diversity of approaches to defining this concept [1], institutions are usually viewed as sustainable models of interaction in society or ways of acting and thinking that exist in society independently from individuals [2, p. 20]. Douglass North defines institutions as *the rules of the game* structuring social action [3]. They are often borrowed (transplanted) from another institutional environment. A range of technologies facilitates this process: the modification of the transplant [4], local transplantation within a single region [5], borrowing an institution from the past of the incorporating society [6], and ‘building a sequence of intermediate institutions linking the initial structure with the final one corresponding to the transplanted institution’ [7]. Of much importance is the role of agents through which these transplantations are carried out [8].

Extensive empirical data on institutional transplantations have been accumulated through studying the history of nations. Although the literature offers a thorough analysis of the historical experience of the Anglo-Saxon world [9–11], the Baltic region remains underresearched. Still, there are studies into the law and court system of Swedish-ruled Livonia [12; 13]. The Polish rule of these territories, particularly administration, religious policies, and social transformations in Livonia in the 16th–18th centuries, has also been investigated [14–18]. Authors tend to focus on individual aspects of institutional changes, such as the evolution of economic or political institutions. Society, however, comprises three interconnected and interdependent subsystems: economic, political, and sociocultural [19], which form a whole. Therefore, institutional transplantations should be examined as a complex process encompassing all these areas. Historical institutionalism sheds little light on the *post-bifurcation*¹ inclusion of society into another social system. This case is of great interest as it is usually linked with imperial statehood. In the time of empires, social systems merged through institutional transplantations onto newly acquired lands, whilst preserving the megastate required aligning interests of many subjects. A thorough investigation

¹ The bifurcation point is a historical moment when several trajectories are possible. Near bifurcation points, crises occur. After passing the bifurcation point, society retains its structure or disintegrates.

of transplantation mechanisms and instruments is vital for designing optimal public administration systems in multinational and multiconfessional societies. Moreover, a comprehensive study will indicate possible ways to develop and integrate megastructures and civilisations.

This paper looks at the geopolitical remaking of the Baltic region in the 16th-19th centuries to detect and analyse models for social system mergers and the typical mechanisms and instruments of institutional transformation.

The case under investigation is of interest because it demonstrates the experience of institutional transformations in empires with different public administration models. It also provides an insight into how pre-existing institutions influence the economic *modus vivendi* and determine national mindset and political culture [20]. Both successful and failed institutional transplantations of the past left indelible traces seen to this day. In other words, a detailed analysis of institutional transformations in previous centuries is needed to understand the Baltic region and forecast its development in the 21st century.

Methodology

This study draws on historical neo-institutionalism and focuses on the institutional system as a whole rather than on the behaviour of individuals. Systemic and historical methods are employed to describe the evolution of society; comparative analysis is carried out to classify social integration models.

This paper derives data from the Complete Collection of Laws of the Russian Empire (CCLRE)² and other materials from the Russian State Historical Archive (RSHA).³

Livonia, the first German colony

Let us look at what Livonia was like at the time. At the end of the 12th century, the tribes inhabiting present-day Latvia and Estonia remained pagan [21]. Christianity came to them with the Crusaders, the Danes, and the Swedes. In the middle of the 14th century, the Teutonic Order, a then leading power in the

² Complete collection of laws of the Russian Empire, 2020, available at: http://nlr.ru/e-res/law_r/content.html (accessed 03.07.2020) (in Russ).

³ Russian State Historical Archives, 2020, available at: <https://rgia.su/> (accessed 03.07.2020) (in Russ).

region, incorporated territories sparsely populated by local tribes (Livs, Semi-gallians, Curonians, Latgalian, and Estonians) into the *Ordensstaat* as *Terra Mariana* — the Land of the Virgin Mary. Also known as Livonia, *Terra Mariana* became, as Theodor Schiemann put it, ‘the first German colony’ [22]: during the ensuing 700 years, Germans dominated the local elite, as well as the political, economic, and social life of the region.

In controlling most of Livonia, the Order relied on centralism, which engendered basic institutions of redistributive type: state-organised redistribution of wealth, leased property in exchange for service, complaints as the principal channel for commoners to communicate with elites, the unitary political organisation, and communitarianism. Other centres of power were the bishoprics of Curland, Derpt, Oesel-Wiek and the archbishopric of Riga. Cities of the Hanseatic League (primarily Riga) also performed a significant role as they had close trade ties with and supplied grain, wax, fur, and timber to more than 100 economic centres of Europe [23]. The Hanseatic League fostered the spread of German town law and the Law of Lubeck to the region, making the towns independent of feudal lords. The Hanseatic way of trading was peculiar: two or more partners ran the operations; they invested proportionally and shared incomes and losses. Partnerships usually lasted for a year or two, and a merchant would enter numerous collaborations handling various goods. Four offices in Novgorod, Bergen, London, and Bruges made up the top of the League’s hierarchy. They all had their own heads, laws, jurisdiction, and treasury. These offices secured the common interests of their members, dealt with monarchs, and were indispensable hubs in the Hanseatic network [24–26]. The League and its German origin expedited the emergence of basic market institutions: commercial relations, private property, wage labour, profit as a measure of success, federalism, and a subsidiary ideology.

Conflicts between the Teutonic Order, bishops, and the mighty Hanseatic towns were an everyday scene in Livonia. In 1419, the Livonian parliament (*Landtag*) convened to settle the unending disputes. The legislature, which included Teutonic brethren, the clergy, and representatives of the towns, proved unable to ease the internal tension. The flourishing Livonia transformed over time into a religious-political confederation with weak authorities and colonial social stratification (the elite was German, and the lower estates were indigenous). This social arrangement recurrently sparked unrest among peasants. The

Reformation speeded up disintegration. Lutheranism became the leading religion in the Livonian lands [27], provoking religious strife. The Livonian War of 1558—1583 paved the way for the expansion of Muscovy in the Baltic region [28] and cemented the division of the Livonian confederation into several parts, each pursuing a separate historical path (table 1) [21; 23]. This way, the heterogeneity of the south-eastern part of the Baltic region emerged.

Table 1

Rule in different parts of the Livonian Confederation after its collapse

Territory	Polish-Lithuanian Rule	Swedish Rule	Russian Rule
Estland	—	1561—1721 (the Swedish Duchy of Estonia, or Estland)	1721—1918 (the Reval governorate, from 1796 the Governorate of Estonia, one of the three Baltic (or Ostsee) governorates)
Livland	1561—1629 (part of the Duchy of Livonia [or Livland], or Polish Livonia, or Inflanty)	1629—1721 (Swedish Livonia)	1721—1918 (the Riga governorate, since 1796 the Governorate of Livonia [or Livland], one of the three Baltic (or Ostsee) governorates)
Latgale	1561—1772 (part of the Duchy of Livland, or Polish Livonia, or Inflanty, from 1629 the Inflanty [or Livonia] voivodeship)	—	1772—1918 (part of the Vitebsk governorate)
Curland	1562—1795 (a vassal of the Grand Duchy of Lithuania and from 1569 of the Polish-Lithuanian Commonwealth)	—	1795—1918 (the Governorate of Curland, one of the three Baltic [or Ostsee] governorates)

Polish-Lithuanian dominance

After the collapse of the Livonian Confederation, its considerable part fell under the influence of the Grand Duchy of Lithuania (from 1569, the Polish-Lithuanian Commonwealth), where this territory became the Duchy of Livonia (or Livland), also known as Polish Livonia or *Inflanty*. At first, it was seen only as a military outpost in the continuing struggle with Muscovy. For security reasons, all Livonian castles not engaged in border defence had to be demolished, and the depopulated areas were to be handed over to colonists. The Grand Duchy of Lithuania followed the *centralised* model of social merger, preserving a sole centre and transferring its institutions to acquired lands.

Yet, a U-turn in the policy had to be made soon as the initial merger did not take regional specifics into account. The new approach to Livonia was inaugurated in *Privilegium Sigismundi Augusti*, which granted local estates religious freedom, the right to self-administration, and a certain degree of autonomy. The document was the royal confirmation that the privileges and liberties enjoyed by Livonians under German rule and the existing property relations would remain intact.⁴ The higher estates were naturalised by *Indygenat*. Now cadet branches could inherit estates if the senior line went extinct. The nobles were exempt from the obligation to seek the King's permit to sell property. If a landlord lost his land patent, it was sufficient to furnish two or three witnesses able to testify to his rights for the document to be re-issued. Peasants were left to the will of their landlords allowed to try, punish, and even execute them. Feudal lords also had the right to take over peasant lands to straighten the borders of their fiefs. At the first stage, institutional transplantations in Polish Livonia were nothing other than the externally controlled expansion of Wierland (Virumaa in modern Estonia) law to the entire province [36].

The next stage began in 1582 with the adoption of *Constitutiones Livoniae*⁵ regulating the new law and administrative organisation. The division of the province into districts and the powers granted to their heads reminded those of Royal Prussia. The core institution of self-governance was the regional diet, *Landtag*, whose consent was required for the regional authorities appointed in Warsaw to

⁴ Documents on the History of Accession of Livonia to Poland, 2020, *Vostochnaja literatura. Srednevekovye istoricheskie istochniki Vostoka i Zapada* [Eastern Literature. Medieval Historical Sources of the East and West], available at: http://www.vostlit.info/Texts/Dokumenty/Livonia/XVI/1560-1570/Dok_prisoed_liv_k_polse/text.phtml?id=11871 (accessed 04.07.2020) (in Russ).

⁵ In legal documents of the Polish-Lithuanian Commonwealth, the term *Livonia* designates the territories of the Livonian Confederation occupied after the Livonian war.

take office, similar to the procedures followed in the Polish-Lithuanian Commonwealth. *Constitutiones Livoniae* were not devoid of social novelties: for one, the aristocracy obtained the right to buy the real estate of the urban propertied classes and they, in turn, were let to purchase land, which meant that the division between the estates began to blur. *Constitutiones Livoniae* transplanted modified political and economic institutions of the Polish-Lithuanian Commonwealth to the Duchy of Livonia.

The next stage in the incorporation of the new territories started with *Ordinatio Livonica II* in 1598. This document renamed Livonian districts (*Präsidiatē*) voivodeships, and their heads were admitted into the Senate of the Commonwealth. All official posts in Livonia were now available to Livonians, with the reservation that each post had to be successively occupied by natives of Poland, the Grand Duchy of Lithuania, and Livonia. Livonians were allowed to submit complaints to the Parliament (*Sejm*) and the King. Thereby, the province was already sufficiently integrated into the Commonwealth.

The complete integration ensued in 1697, when the Basic Law of Livonia came into being significantly increasing the privileges of the local aristocracy. Now they could be promoted to administrative positions in any part of the Commonwealth. The legal status of Livonia was equalled to that of Poland and the Duchy of Lithuania, and the inhabitants of the three parts of the country came to enjoy equal rights. The Livonian diet continued to exist separately from the *Sejm*, but its role was limited to spreading information on government policies.

The Polish-Lithuanian Commonwealth, a federative state, employed the *quasi-centralised* model when incorporating Livonia. New lands were integrated without a change in the number of centres of power. The following technologies were used to that end: extension of local institutions to the entire province and the gradual modification of the institutional environment towards its homogenisation with the incorporating society. The Polish-Lithuanian Commonwealth used incentives, giving privileges to social groups in exchange for loyalty. In the case of Livonia, that social group was the nobility.

Religious homogenisation was also a hugely important instrument of incorporation. Despite having endowed their new subjects with religious freedom, the Polish authorities soon switched to the socialisation, or Polonisation, of Livonia, which consisted in encouraging conversion to Catholicism and spreading the Polish language, particularly in official paperwork [25–27].

The autonomist model was used in Curland (a vassal of the Grand Duchy of Lithuania and, after 1569, the Polish-Lithuanian Commonwealth), with some

transplantation of modified institutions. In 1561, Sigismund Augustus gave the territory extensive privileges, which remained in force until the partition of Poland. The King consented to the inviolability of the self-governance of the German aristocracy, the right to practice Protestantism (a modification of the institution of religious freedom), and the rights of the nobility (*Indigenatsrecht*) [21]. Curland was allowed to have a military and commercial fleet. It even purchased two colonies: in Africa (Gambia) and the Caribbean (Tobago) [21; 31]. Curland's vassalage did not lead to political or economic success. On the contrary, it resulted in a crisis and the incorporation of the country into the Russian Empire [27; 32].

The policy of the Polish-Lithuanian Commonwealth towards the collapsed Livonian Confederation defines the former as a *composite state*. Helmut Koenigsberger coined this term in his analysis of the early modern state and the interaction of the monarchical and parliament forms of government. Koenigsberger argued that monarchs of the early modern era could not enjoy absolute power throughout their realms, and their authority coexisted with that of popular assemblies [33, p. 202]. The composite state represented a union where each part or its elite had its own relationship with the sovereign, privileges, laws, and administration system [34]. The monarch had to negotiate tax or military service matters with each territory separately [35, p. 194]. A composite state applied a wide range of instruments and mechanisms of institutional influence in incorporated or vassal lands.

Swedish dominance

Sweden ruled over two parts of the Livonian Confederation — Estland (from 1561) and Livland (from 1629). The former was absorbed into the Swedish Empire in the wake of the Livonian War, whilst the latter remained for half a century under the institutional influence of the Polish-Lithuanian Commonwealth.

The model of Swedish rule in Estland was *autonomist*, with the German structure of power distribution restored and preserved. In 1561, King Eric XIV let the lands keep their old privileges and laws and confirmed the property rights, leaving the feudal possessions in the hands of the local German nobles.

The model employed in Livland was *autonomist* too. Yet, the impact of the Swedish political, economic, and sociocultural institutions was more pronounced there. Swedish kings never approved *Privilegium Sigismundi Augusti*. The lands of the bishoprics and the Teutonic Order became state property, and

soon the Crown started to allot them to the Swedish aristocracy, who often emancipated serfs [36, p. 264]. Considerable Swedish immigration changed the ethnic landscape in Livland and was the reason why Swedish traditions got ingrained there.

Different approaches to Estland and Livland prove that Sweden was a composite state. A substantial rebuilding of the acquired territories was necessary to ensure economic progress, into which Sweden put much effort from the outset. In Estland and Livland, the authorities prioritised the production of grain (rye and barley), most of which was exported to Sweden and Holland. Agriculture was extensive, i.e. the sown area was increased by expropriating peasant lands to the detriment of other spheres.

A composite state tends to decimate centres of power by diluting the influence of independent towns and the aristocracy [37, p. 87]. In the last decades of the 17th century, the Swedes accomplished this task via the so-called *Reduktion* (the return of illegally seized state lands to the Crown). If the former owners agreed to pay rent, they kept their manors as royal tenants; otherwise, the manors were redistributed. Over 80 per cent of the land was taken over by the Crown [38, p. 18]. In Livland, such areas accounted for 5/6 of private agricultural lands.

The pragmatic intention to increase incomes from state lands pushed the Swedish government to improve the life of the lower estates. In 1632, the nobles were deprived of the right to sentence peasants; the assessment and tax systems introduced in 1680 precluded any arbitrariness on the part of the aristocracy. The imperial lands were revalued and carefully charted. Peasant tributes were determined as a function of the property size and the land quality detailed in the *Wackenbuecher*.

Peasants were allowed to enter universities and obtained the right to own property and submit complaints against their landlords to government officials and courts. Landlords, in turn, were severely fined for any violation of the law governing peasant tributes and could no longer use peasants for work in someone else's manors or cut their lands.

The *Reduktion* and the reforms drastically changed the social fabric, especially in Livland. For the aristocracy, the loss of property rights on land was tantamount to the loss of rights overall. The nobility grew dependent on the Crown: aristocrats had to do military or administrative service to continue their usual way of life. The need to pursue a career accelerated the assimilation of the Baltic elite into the Swedish aristocracy. Peasants, for their part, obtained freedom and became proprietors.

The economic and social change went hand-in-hand with political reform. The acquired lands had their local Landtags but had no representation in the Swedish Parliament. (The only exception was Riga due to its extraordinary importance for regional trade.) The unicameral bodies could propose local taxes and submit initiatives to the King or his plenipotentiary in the province — the Governor (later, Governor-General).

The *Landtag*, the main instrument of autonomy, was presided from 1634 by *Landmarschall*. Elected for three years, he was an intermediary between the nobles and the Crown. In 1643, Sweden introduced *Landratskollegium*. This institution, comprised of local noble *Landraete* (counsellors), was considered deliberative under the General-Governor. In reality, its functions were even more restricted (generally, because of the internal problems of the nobility).

Sweden attempted to alter the church administration system. In Estland, the Crown appointed the bishop and helped him in his work with the ecclesiastical consistory, whose jurisdiction did not extend to secular matters. In Livland, there emerged the so-called ‘church of preachers’ where the issues of the parish were addressed directly by its minister, making the latter dependent not on the local feudal lord but the Crown. This way, Livonian priests assimilated with the Swedish clergy.

German remained the state language under Swedish rule. Yet, the need to spread Protestantism among the indigenous population forced the government to support the Estonian and Latvian languages and fund education: primary schools, a teacher’s seminary, and a university (in Derpt) were established [21; 27].

The reforms encountered substantial resistance from the German aristocracy (in 1693, King Charles XI dissolved the Livonian *Landtag* because it opposed the *Reduktion*). The Great Famine of 1695–1697 and the Great Northern War of 1700–1721 also impeded change. Some state manors returned to the nobles on bail, and the regulation of peasant tributes was largely ignored.

Overall, Sweden’s political and economic development determined the mechanisms of institutional transplantation — incentives, applied to both the nobility and the peasantry, and socialisation. In contrast to the Polish-Lithuanian Commonwealth, the focus was on the transplantation of economic and sociocultural institutions.

The Baltic Governorates in the Russian Empire

The integration of Estland and Livland into the Russian institutional system began when the territories were ceded to the Russian Empire following the Great

Northern War. The process broke down into several stages. The first one, which coincided with Peter the Great's reign, was the creation of *status in statu*, as it usually happened within the *autonomist* model. The new lands retained their laws and administration systems, including the rights and privileges of the nobility, estate self-government, Lutheranism, German as the official language, and inequalities in taxation (state taxes were levied only on the peasantry). In Estland and Livland, governors were in charge, subordinate only to the General-Governor controlling both provinces. They represented the Tsar and were responsible for public order, security, and infrastructure maintenance. Governors' deputies and most officials were of German origin. Responsibility for all issues touching on the life of the provinces, self-governance, courts, and the police were vested in *Landtags* gathering once in three years. Their ordinances had the force of law for the population. Only the aristocrats whose families had owned land in the provinces under Teutonic, Polish, and Swedish rule could be Landtag members of full status. Between the conventions of *Landtags*, the provinces were self-governed by *Landraete* elected from the most influential families. Towns were ruled by magistrates representing the urban higher classes and led by German *Buerger* comprising closed corporations (guilds). Taxes due to the Russian Crown equalled those payable under Swedish rule, whilst varying local taxes went to provincial authorities.

Estland and Livland had permission to trade in foreign goods — even those that were not allowed into interior governorates.⁶ Thus, the Baltic provinces were economically distinct from the rest of the empire.

Although most German-Swedish institutions had been preserved, Russia eliminated those at odds with its agricultural policies. The Swedish regulation of peasant tributes was abandoned for good. Peasants were no longer allowed at town markets: they could sell their produce only to the landlord, who set prices as he willed.

Peter the Great's policy in the Baltic governorates looked like an attempt to test a slightly altered German-Swedish order on Russian soil (some Russian institutions, such as the exclusion of peasants from trade, were transplanted to the provinces).

Catherine the Great initiated the second stage — the gradual alignment of the Baltic governorates with the rest of the empire. Her approach was *mainly autonomist* with *quasi-centralised* elements. The transfer of Russian institutions to the new provinces accelerated. In 1782, the Baltic governorates became part of the imperial customs system. In 1783, the Riga and Reval regencies were established, their organisational model mimicking the rest of the empire.

⁶ *CCLRE* -1, vol. 5, no. 3271 (in Russ).

In 1785, Catherine the Great's *Charter to the Nobility* was issued. It allowed the higher estates to sell, gift, and bequeath their property. The property of nobles sentenced for a crime was no longer confiscated by the state but inherited by their relatives. Landlords were allowed to open factories in their villages and sell the produce. Property rights were extended to minerals in the land.⁷ Local self-governance also underwent change: now, the empress inaugurated governorate and county-level noble assemblies that elected officials for local governing bodies and courts. The post of Head of the Nobility was created to manage estate affairs. Simultaneously, the stratification of the Baltic knighthood came to an end, and all layers of the nobility became equal in the *Landtags*.

In the same year, the tsarina issued *The Charter to Towns* regulating the status of urban dwellers and increasing their right to public representation.

Catherine the Great limited the autonomy of the Baltic governorates in the Russian Empire and eradicated the inflated dominance of the local aristocracy. From then on, the main centre of power was the executive and judicial bodies of the metropole.

After the Third Partition of Poland, the Russian Empire gained two more parts of the former Livonian Confederation: Curland and Latgale. The latter became part of the Vitebsk governorate. Thus, the *centralised* model of incorporation was applied. The tsarina granted the population of Curland the freedom of religion, the right to retain their property, and all the rights of Russian subjects. The Governorate Reform of 1795 divided the province into counties and established imperial governorate and estate bodies. The model applied in Curland was *quasi-centralised*.

At the third stage, Paul I switched to the *autonomist* model because of the growing military threat and the need to ensure loyalty in the Western territories. The system of administration returned to pre-Catherine ways (with some exceptions such as the treasury).⁸ Conscription, mandatory for the interior governorates, was replaced by an additional tax.⁹ These changes underscored the privileged position of the Baltic provinces and pointed to a modified institutional transfer.

The 19th-century agrarian and urban reforms marked a new stage in the development of the region. The government took interest in the peasant question

⁷ The Charter to the Nobility of April 17, 1785, *Nacional'nyj pravovoj Internet-portal Respubliki Belarus'* [National Legal Internet Portal of the Republic of Belarus], available at: <https://pravo.by/pravovaya-informatsiya/pomniki-gistoryi-prava-belarusi/kanstytutsyinae-prava-belarusi/akty-rasiyskay-imperryi/zhalovannaya-gramota-dvoryanstvu/> (accessed 04.07.2020) (in Russ).

⁸ *CCLRE* –1, vol. 24, no. 17584 (in Russ).

⁹ *RSHA*, F. 908, Op. 1, Storage Un. 215, L. 17 (in Russ).

primarily because of security concerns: possible peasant revolts near the Western boundaries of the empire were a dangerous threat. In 1816 in Estland and 1819 in Livland, peasants were liberated from serfdom but given no land. The landlord-peasant relations rested now on mutual consent. Peasants, however, could do only farming jobs. Their freedom of movement was also restricted: they were issued passports by the landlord.

Peasant self-governance — *volost* communities — emerged. The landlord tightly controlled the appointment, activities, and decisions of *elders* presiding over these bodies. Banishment from the governorate was prohibited. The peasantry was rapidly becoming stratified into large tenants and landless farmhands.

The reforms took into consideration regional specifics. The Code of Laws confirmed the *Ostsee* estate structure as based on property rights: manors in Estland could be bought only by local aristocrats, namely the so-called immatriculated nobility who had owned land under Teutonic rule. Landlords from interior governorates and local urban propertied classes could not purchase land in the provinces.

The urban reform of 1877 caused a transition from magistrates rooted in the medieval guild division to municipal dumas, whose members had to meet a property qualification. The reform undermined the power of the German *Buerger*.

The German aristocracy opposed these changes. It took decades for the 1864 Code of Laws to come into force (the 1864 law establishing local self-government [*zemstvo*] never actually did).

Two principles underpinned the Russian approach to integrating the Baltic region into its institutional system: the degree of autonomy depended on security concerns; the *Ostsee* estate structure remained intact and determined the features of institutional transplants. Despite many attempts to withdraw some of the region's privileges, the Baltic governorates retained certain autonomy. The institutions from the times of the Teutonic Order and later transplantations from two markedly different institutional systems (the Polish-Lithuanian Commonwealth and Sweden) helped the region retain its heterogeneity, which was never fully overcome by the Russian Empire, its centralism notwithstanding. As a consequence, the Baltic region became a source of westernisation.

Conclusion

The Baltic lands encountered different models of incorporation into another social system. Within the *centralised* model, the Baltic reproduced the institutions of the incorporating society. Modified institutions were transplanted to

the territory within the *quasi-centralised* model, whilst only selected modified institutions were transferred within the *autonomist* one. The principles, mechanisms, and instruments used for institutional transplantations depended on the institutional system of the incorporating state. For instance, the Polish-Lithuanian Commonwealth focused on the nobility when transferring political institutions. Sweden used incentives and socialisation to transplant economic, political, and sociocultural institutions. Particularly, much effort was expended in limiting the omnipotence of the *Ostsee* aristocracy. At the core of the Russian policy was making the incorporation model dependent on the security factor and preserving the *Ostsee* estate structure.

The nature of state mergers and institutional transplantations depended on whether the incorporated territories had had a history of statehood. Another significant factor was the degree of similarity between the institutions of the acquired territories and the metropole.

References

1. Hendriks, F. 1996, *Beleid, Cultuur en Instituties, Het Verhaal van Twee Steden*, Leiden, available at: <https://openaccess.leidenuniv.nl/handle/1887/4972> (accessed 14.06.2020).
2. Durkheim, E. 1982, *The Rules of Sociological Method*.
3. North, D. C. 1990, *Institutions, Institutional Change and Economic Performance*, Cambridge. doi: <https://doi.org/10.1017/CBO9780511808678>.
4. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. W. 1998, Law and Finance, *Journal of Political Economy*, vol. 106, no.6, p. 1113—1154. doi: <https://doi.org/10.1086/250042>.
5. Roland, G. 2000, *Transition and Economics. Politics, Markets and Firms*, Cambridge, Massachusetts.
6. Stiglitz, J. 1998, Distinguished Lecture on Economics in Government. The Private Uses of Public Interests: Incentives and Institutions, *Journal of Economic Perspectives*, vol. 12, no. 2, p. 3—22. doi: <https://doi.org/10.1257/jep.12.2.3>.
7. Polterovich, V. M. 2001, Transplantation of economic institutions, *Ekonomicheskaya nauka sovremennoi Rossii* [Economic science of modern Russia], no. 3, p. 24—50 (in Russ.).
8. Dowd, A. C., Pak, J. H., Bensimon, E. M. 2013, The role of institutional agents in promoting transfer access, *Education Policy Analysis Archives*, vol. 21, no. 15, available at: <http://epaa.asu.edu/ojs/article/view/1187> (accessed 05.07.2020).
9. Mamadouh, V., De Jong, M., Lalenis, K. (eds). 2002, *The Theory and Practice of Institutional Transplantation. Experiences with Transfer of Policy Institutions*, Springer. doi: <https://doi.org/10.1007/978-94-011-0001-4>.
10. Judson, P. M. 1996, *Exclusive Revolutionaries: Liberal Politics, Social Experience, and National Identity in the Austrian Empire, 1848—1914 (Social History, Popular Culture, And Politics In Germany)*, University of Michigan Press, Michigan, doi: <https://doi.org/10.1080/03612759.1997.10525297>.

11. Marshall, P. J. 1998, *Oxford History of British Empire. VII. The Eighteenth Century*, Oxford Univ. Press, Oxford.
12. Roberts, M. 1979, *The Swedish imperial experience (1560–1718)*, Cambridge Univ. Press, Cambridge. doi: <https://doi.org/10.1017/CBO9780511622274>.
13. Pihlajamäki, H. 2013, Claiming Authority: Criminal Procedure in Seventeenth Century Swedish Livonia, *Bergen Journal of Criminal Law and Criminal Justice*, vol. 1, no. 2, p. 80–97.
14. Ciesielski, T. 2014, The Polish-Lithuanian Commonwealth and Russia's expansion in the Baltic region in the 18th century, *Studia Slavica et Balcanica Petropolitana*, no. 15, p. 118–134.
15. Gibson, C. 2015, Absent Culture: The Case of Polish Livonia, *Central Europe*, vol. 13, no. 1–2, p. 132–134.
16. Heide, Y. 2014, Livonia under the rule of the Commonwealth. Power Struggle and Social Transformation, *Quaestio Rossica*, no. 2, p. 112–143 (in Russ.).
17. Szabaciuk, A. 2008, Organizacja samorządu ziemskiego szlachty bałtyckiej na terytorium Inflant w latach 1561–1920, *Annales Universitatis Mariae Curie-Skłodowska Lublin-Polonia*, vol. LXIII, Sectio F, p. 67–78.
18. Tyszkowski, K. 1939, Polska polityka kościelna w Inflantach (1581–1621), *Wy dawnictwa Instytutu Bałtyckiego*, available at: <https://pbc.gda.pl/dlibra/publication/352/edition/4713/content> (accessed 02.07.2020).
19. Parsons, T. 1971, *The System of Modern Societies*, Paperback.
20. Matveev, A. A. 2019, Application of the Theory of «Path dependence» In the Study of Institutional Transformations in Russia, *Administrative consulting*, no. 4, p. 107–113. doi: <https://doi.org/10.22394/1726-1139-2019-4-107-113> (in Russ.).
21. Kasekamp, A. 2010, *A History of the Baltic States*, Houndmills, Basingstoke, Hampshire. doi: <https://doi.org/10.30965/25386565-01701020>.
22. Wezel, K. 2017, Transcending boundaries: Riga's Baltic German entrepreneurs in an era of nationalism, revolution, and war, *Journal of Baltic Studies*, vol. 48, no. 1, p. 39–54. doi: <https://doi.org/10.1080/01629778.2016.1269434>.
23. O'Connor, K. 2003, *The History of the Baltic States*, Westport.
24. North, M. 2007, *Europa expandiert 1250–1500*, Stuttgart.
25. Ewert, U. C., Selzer, S. 2016, *Institutions of Hanseatic Trade Studies on the Political Economy of a Medieval Network Organisation*, Frankfurt am Main, NY. doi: <https://doi.org/10.3726/978-3-653-06851-2>.
26. Wubs-Mrozewicz, J. 2017, The Late Medieval and Early Modern Hanse as an Institution of Conflict Management, *Continuity and Change*, vol.32, Special issue 1 (Merchants and Commercial Conflicts in Europe, 1250–1600), p. 59–84. doi: <https://doi.org/10.1017/S0268416017000066>.
27. Oberlender, E. 2012, Concept of the Early Modern Era and the History of Estonia, Vidzeme and Kurzeme (1561–1795), *Latvijas Vēstures Institūta Žurnāls*, vol. 85, p. 1–49.
28. Jacobson, S., Andersen, A., Bešlin, B., Göederle, W., Györe, Z, Muigg, M. 2011, What is a Region? Regions in European History. In: Ellis, S. G., Michailidis, I. (eds.) *Regional and Transnational History in Europe*, Pisa, p. 1–66.
29. Ivanovs, A., Soms, H. 2007, Origins of Regional Identity of Eastern Latvia (Latgale) and Approaches to its Investigation, *Reģionālais ziņojums. Pētījumu materiāli*, no. 3, p. 41–50.

30. Plakans, A. 2011, *A Concise History of the Baltic States*, Cambridge, doi: <https://doi.org/10.1017/CBO9780511975370>.
31. Jekabsons, E. 2012, The Rule of the Polish-Lithuanian Commonwealth in the Territory of the Present Day Latvia (1561—1795): the State of Latvian Historiography, *Latvijas Vēstures Institūta Žurnāls*, no. 85, p. 32—56.
32. Kamusella, T. 2013, Germanization, Polonization, and Russification in the partitioned lands of Poland-Lithuania, *Nationalities Papers*, vol. 41, no. 5, p. 815—838. doi: <https://doi.org/10.1080/00905992.2013.767793>.
33. Koenigsberger, H. G. 1978, Monarchies and Parliaments in Early Modern Europe. “Dominium Regale” or “Dominium Politicum et Regale”, *Theory and Society*, vol. 5, no. 2, p. 191—217.
34. Elliott, J. H. 1992, A Europe of Composite Monarchies, *Past & Present*, no. 137, p. 48—71, available at: <https://www.jstor.org/stable/650851> (accessed 20.07.2020).
35. Gustafsson, H. 1998, The Conglomerate State: A Perspective on State Formation in Early Modern Europe, *Scandinavian Journal of History*, vol. 23, no. 3—4, p. 189—213.
36. Kirby, D. 1998, Northern Europe in the Early Modern Period: The Baltic World, 1492—1772, NY.
37. Pihlajamäki, H. 2017, Conquest and the Law in Swedish Livonia (ca. 1630—1710). A Case of Legal Pluralism in Early Modern Europe. Leiden, Boston, p. 85—150, available at: <https://brill.com/downloadpdf/title/33908.pdf> (accessed 3.07.2010).
38. Drost, A. 2010, Historical Borderlands in the Baltic Sea Area Layers of Cultural Diffusion and New Borderland Theories: The Case of Livonia, *Journal of History for the Public*, no. 7, p. 10—24.

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EVALUATING THE IMPACT OF INTEGRATION PROCESSES ON THE ETHNOPOLITICAL COMPETITION OF LANGUAGES IN THE BALTIC REGION

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In the literature, the impact of integration processes on language learning and usage is traditionally evaluated either through the prism of sociolinguistics or soft power. This article proposes a new conceptual approach based on measuring various aspects of competition between languages by the language integration and monopolization indices, on the one hand, and the polylingualism coefficient, on the other. The approach is applied to the situation in the Baltic Sea region of the EU. The article uses data from Eurostat, Eurobarometer, and the Baltic statistical offices to analyze the performance of Baltic language markets by assessing the impact of the EU integration on the use of languages in the region. The findings show a growing tendency towards polylingualism in countries participating in integration associations. Integration bodies, however, do not give one language precedence over others but encourage convergence of the languages of their leading economies. The main factor behind a language's popularity is the strength of commodity and labor markets in the country where it is spoken.

The authors conclude that close economic and political integration stimulates heterochronous processes in supranational associations. The first is increasing monopolization in the language market of the association and the language markets of its sub-regions. The second is the decrease in monopolization in national language markets.

Keywords:

Baltic region, language market, language integration, language monopolization, polylingualism, competition between languages

Introduction

Competition and convergence of languages are areas that have been extensively studied in the fields of international relations and anthropology. Researchers are traditionally interested in exploring specific topics, like the distribution areas of various linguistic cultures, their scope of application and dynamics. Specialists in international relations, geo-economics, and geopolitics evaluate these issues using such terms as *soft power*, *smart power*, *assimilation*, *linguistic sovereignty*, etc.

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[1–3]. Russian and Soviet philologists and psychologists emphasize the special role of language skills and polylingualism in the formation and development of human thinking and mental state [4–7].

The implementation of language policy by states, integration groupings (such as the European Union), and partly by transnational corporations is one of the key issues in linguistics and sociolinguistics. “Linguistic situation”, which refers to the combination of linguistic features (number of languages, dialects, argot etc.) in a given area (state, state region, city, settlement etc.) for a given period of time [8–10], is one of the most significant theoretical topics to date. Polylingualism, in its turn, can be an element of a particular linguistic situation and simultaneously a criterion of personal development.

In this regard, the Baltic region is especially fit for analysis of the influence of political and economic integration or disintegration on language development, language competition, and interaction [11].

Between the 1980s and 2020, socio-economic and geo-economic development parameters of Germany, Poland, Estonia, Latvia, Lithuania, and Russia experienced several dramatic turns. There were also significant cultural and historical changes. Other countries of the region (Sweden, Denmark, and Finland) largely preserved the main parameters of their own socio-economic development over the same period. Now, all countries of the region share the area of geo-economic activity, and transformations in some countries significantly impact the development of the others. The countries’ environmental, logistical, cultural, historical and economic features also intersect quite significantly.

This article is devoted to the analysis of the dynamics of the Baltic region’s language markets. For the purposes of this study, Germany, Poland, Estonia, Latvia, Lithuania, Russia, Sweden, Denmark, and Finland are considered part of the region thanks to their access to the Baltic Sea. The states listed above, except Russia, are current members of the European Union. However, their integration processes were different in terms of timeframe and the countries’ background (table 1).

Table 1

**The dynamics of integration and disintegration of the countries
of the Baltic region (excluding Russia)**

State	Date of accession to the EEC/EU	Notes
Germany	March 25, 1957	Part of the country accessed to the European Community after October 3, 1990, in the process of completing the unification of East and West Germany
Denmark	January 1, 1973	In 1985 Greenland, as part of Denmark, left the EEC
Finland	January 1, 1995	
Sweden		
Latvia	May 1, 2004	Was a part of the USSR until 1991
Lithuania		Was a part of the USSR until 1991
Poland		Was a member of the CMEA until 1991
Estonia		Was a part of the USSR until 1991

As table 1 shows, the Baltic Region has a rather heterogeneous history of integration within the EEC/EU. Therefore, we used its example to analyse how economic and political interaction of the states affect the level and quality of their language use.

Based on the above, we chose the period of analysis from 2000 to 2016, i.e., the period in which 50% of the countries of the Baltic Region joined the EU. The Russian Federation was excluded from the analysis, as it is not a member of the European Union.

Materials and Methods

Estimation and forecasting of the impact of globalization and integration on the functioning of languages is in the spotlight of contemporary sociolinguistic studies and international relations research. A variety of articles and reviews [12], as well as monographs [13] has been published on the topic. Several Russian and international authors believe globalization processes to be characterized by the interaction of various languages; through its widespread use English, in particular, has had a strong impact on other languages. For example, N. Troshina defines this impact of English on the German language as a change in the language environment of the latter [14, p. 104]. This author also shares the wide-spread belief in the inevitability of transformation of Americanized English into the *lingua franca* in Europe due to its popularity among the youth [15, p. 10]. A. Kirilina speaks of another trend of globalization processes: such communicatively powerful European languages as German, Russian, French, and Italian are subject to a major pressure of globalization exerted by English [16, p. 128]. According to U. Ammon, the situation is also facilitated by the position of the native speakers of minority languages since they have little desire or need to learn any other languages in addition to their mother tongue and English [17; 18]. A number of recent studies have revealed that the use of national languages in everyday interaction may be connected with migration and the level of assimilation of migrants [19].

Despite the fact that most linguists agree that the dominance of English in the global society is inevitable, those within the field of sociolinguistics have pointed out the need to master multiple languages as an important prerequisite for professional success in the future, since the global communication community will not be able to do with only one language, even if it is an English-based argot [20, p. 252].

Moreover, the German expert Steincke states that polylingualism is the most preferable option for the development of further globalization processes not only for large linguistic communities, but even for national minorities [20, p. 256]. According to E. Solntsev, global monolingualism based on the English argot will decrease the cultural level of international communication, impede mutual understanding, lead to additional costs, and contribute to the standardization of thinking, which is unacceptable in the rapidly changing conditions of modern international realities that require a comprehensive approach to solving both existing and emerging problems [21, p. 141].

Therefore, current research on polylingualism carried out within the humanities captures its impact on globalization integration processes [22]. Meanwhile, the vast majority of theoretical and applied studies are characterized by an emphasis on researching the dissemination of language as the agent of influence of a culture or civilization [23—30]. In practice, this frequently leads to a conflicting narrative in the analysis of the interaction and use of languages [31; 32]. One of the most popular approaches to language analysis considers the relationship between one's mother-tongues and learnt languages through the prism of assimilation and/or cultural preservation.

A similar conceptual framework, for instance, was implemented in the studies of a Sovietologist and American demographer Brian Silver [33; 34] and involved calculating the bilingualism rate (BR) and language assimilation index (LAI). Silver suggested picking a random ethnic group (people or nation), for which BR and LAI estimates were calculated according to a formula. It is noteworthy that these indices were originally developed specifically to evaluate inter-ethnic politics and to measure bilingualism levels in the USSR, and they implicitly regard language correlation as processes of displacement or absorption of native (indigenous) languages by a national language.

Globalization and anti-globalization, the opposing trends that have been the global community for the past few decades, require the development of alternative methodological and conceptual approaches that would not rely, in their basic assumptions, on extreme forms of cultural confrontation [35—36]. We believe that one such approach is analysis of the interaction of languages from the perspective of their rivalry and/or convergence.

To implement this approach, we propose three interrelated indicators [37; 38]. The first is aimed at assessing the extent of language convergence, or simultaneous use; in other words, language integration. The second, polylingualism coefficient, helps assess the level of polylingualism. The third indicator, language monopolization level, is aimed at analysing and estimating the freedom of language competition.

We proceed from the assumption that in the situation of total freedom of language rivalry people have the right to choose and learn the language that ensures the best conditions for personal and professional development. At the same time, it is important to have an indicator that can objectively show an upward or downward trend in the number of languages people tend to have a good command of in a given region. This indicator will help evaluate the impact of globalization or deglobalization on the level of people's personal and intellectual development through the prism of polylingualism.

It is a well-known fact that in the late 19th — early 20th century, educated people were proficient in more than two languages, and all Western universities taught several languages: the national language, languages of international communication and Latin as the language of science. However, it would be an exaggeration to call that period 'globalization'. On the other hand, the second half of the 20th century, and especially the beginning of the 21st century, have been almost universally described as the formative period of global human civilization and a period of globalization of socio-economic relations [41—43].

In this regard, it would be interesting to see how language proficiency and competition of languages in certain regions of the world has changed over time. The analysis of these processes in the Baltic Region is especially important, since there one finds all the global trends of migration and globalization, on the one hand, and traditionally high standards of life coupled with a variety of approaches to multiculturalism, on the other.

Research tools

To measure the language integration level, we developed a modification of the factor proposed by Silver. In this modification, at the conceptual level, we abandoned the use of the assimilation level factor as aimed at assessing the level of assimilation of one cultural environment by another culture in favor of measuring proportions of the population speaking different combinations of languages. This will allow us to assess the spread of polylingualism in a particular society or, as in this article, in a region of the world. Following previous studies on the subject, we identified four main population groups based on the type of their linguistic proficiency: monolinguals (ML) — people who speak only one language; bilinguals (BL) — people who speak two languages; trilinguals (TL) — people who speak three languages; polylinguals (PL) — people who speak four or more languages.

Linguistic and psychological research has demonstrated that, starting from four mastered languages, a person forms a special competence, due to which the time to learn a new language sufficiently decreases, and thinking becomes multicultural. This conceptual change allows us to construct the following language integration index:

$$LII = -1/3 + \{(PL \times 4) + (TL \times 3) + (BL \times 2) + (ML \times 1)\} : 300.$$

The ML, BL, TL, and PL factors are calculated as percentages of the studied population. Each of the groups is assigned a coefficient: monolinguals — 1, bilinguals — 2, trilinguals — 3, and polylinguals — 4. The more languages a region's population has command of, the higher the coefficient. Through the calculations carried out using the given formula, we obtain a value between 1 and 0. The value closer to 1 means that the language integration index of the studied population is higher, so the linguistic variability of the studied population is also higher, and this population has more language opportunities for communication.

Apart from the language integration index, the polylingualism index, defined as the polylingualism coefficient, will be used in this study. This indicator is calculated as the total of the of BL, TL, and PL, expressed as percentage points:

$$PC = BL + TL + PL$$

To estimate the freedom of language rivalry, the Centre for Psychological and Economic Research has developed an indicator measuring the use of languages

by the population and its separate groups in various spheres of communication, based on the Herfindahl-Hirschman Market Monopoly Index formula [44]. Developed by American researchers, the index is traditionally used in economics to estimate the competition and degree of monopolization in different sectors of economy. The specific feature of our modification lies in transporting the HHI to the language use sphere. Spheres of communication and spheres of language use are here defined as 'language markets.' This way, it is not the share of goods sold that should be considered, but the share of languages used. In this regard, we suggest the term 'Index of Language Monopolization (ILM)', to define the new coefficient calculated from sum of the squares of the shares of languages used in the studied group (language market) during a certain period of time (time budget):

$$ILM = L_1^2 + L_2^2 + \dots + L_n^2,$$

where L is the share of languages used and n is the total number of languages. The total value varies from 0 to 1 or 1,000 to 10,000 (where the shares are given as a %).

The closer the value to 1 (10,000), the weaker the competition between the languages, and therefore the more monopoly is given to one of the languages. The closer the value to 0, the stronger the rivalry between them, i.e., the bigger the number of languages used in a language market (in a population studied, a communication sphere, etc.). The following threshold values of these indices are defined for the analysis of commodity markets in economic research:

- 1) Highly-concentrated markets: $1801 < ILM < 10000$;
- 2) Moderately concentrated markets: $1001 < ILM < 1800$;
- 3) Low-concentrated markets (highly competitive) markets: $ILM < 1000$;

We used the data from Eurostat,¹ Eurobarometer² and official statistical bodies

¹ Number of foreign languages known (self-reported) by sex (Last update: 07.03.2019) // Eurostat, available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_aes_121 (accessed 21.09.2019).

² Report "Europeans and their languages". Eurobarometer 54 special produced by INRA (EUROPE) European Coordination Office S.A. for The Education and Culture Directorate-General managed and organised by The Education And Culture Directorate-General Unit "Centre for the citizen — Analysis of public opinion", 2001; Europeans and their Languages. Special Eurobarometer 243 / Wave 64.3 — TNS Opinion & Social. European Commission, 2006; Special note on Europeans and Languages. Special Eurobarometer 237 — Wave 63.4 — TNS Opinion & Social. European Commission, 2006; Report "Europeans and their Languages". Special Eurobarometer 386 / Wave EB77.1. Conducted by TNS Opinion & Social at the request of Directorate-General Education and Culture, Directorate-General for Translation and Directorate-General for Interpretation. Survey coordinated by the European Commission, Directorate-General for Communication (DG COMM "Research and Speechwriting" Unit), 2012; Annexes to the Report "Europeans and their Languages". Technical specifications. Special Eurobarometer 386 / Wave EB77.1. Conducted by TNS Opinion & Social at the request of Directorate-General Education and Culture, Directorate-General for Translation and Directorate-General for Interpretation. Survey coordinated by the European Commission, Directorate-General for Communication (DG COMM "Research and Speechwriting" Unit), 2012.

of the Baltic Region⁵ to calculate the indices. The data of the Russian Federation was not analyzed for the reasons mentioned above.

The index calculation method was fully consistent with the methodology published in our previous works [47; 48].

Results

The index of language integration shows the ratio of those inhabitants of the region who use in their daily communication — and have a good command of — one (monolinguals) or several languages (bilinguals, trilinguals, and polylinguals). Here, reference values under 0.330 indicate the dominance of monolinguals, and values above 0.5 indicate the prevalence of people speaking more than two languages in a country or a region.

The data presented in table 2 show that, generally, in 2000–2016, the EU was teetering on the brink of monolingual dominance in the general structure of its population (peak values exceeded 0.332 only in 2011 and 2016), indicating a bilingual space of communication in which a national (official) language coexists with the language of international communication, with the explicit dominance of the former in each of the countries from the group studied.

At the same time, unlike the EU as a whole, the Baltic states were firmly placed in the range of 0.39–0.54 by their level of language integration, i.e., in the area where polylingualism is a norm for their population.

Table 2

The dynamics of the language integration index from 2000 to 2016

State	2000	2005	2007	2011	2012	2016
The EU	0.246	0.317	0.317	0.352	0.297	0.342
The Baltic Region (excluding the Russian Federation)	0.394	0.485	0.508	0.546	0.477	0.541
Including:						
Sweden	—	0.517	0.550	0.609	0.500	0.555
Finland	—	0.463	0.633	0.733	0.497	0.712
Denmark	—	0.613	0.512	0.622	0.567	0.620
Latvia	0.380	0.533	0.540	0.558	0.573	0.568
Lithuania	0.346*	0.530	0.614	0.553	0.540	0.541
Estonia	0.457	0.570	0.543	0.578	0.537	0.606
Germany	—	0.340	0.369	0.418	0.340	0.421
Poland	—	0.310	0.302	0.297	0.263	0.306

Note: * for Lithuania, the data are for 2001.

⁵ Results of the 2000 Population and Housing census in Latvia. Collection of statistical data. — Riga: Central Statistical Bureau of Latvia, 2002.— 293 p. ISBN 9984-06-143-4; The Report of 2001 Total Population and Housing Census in Lithuania. — Vilnius: Department of Statistics to the Government of the Republic of Lithuania, 2004.— 62 p. ISBN 9955-588-20-9; 2000 Population and Housing Census. II. Citizenship, Nationality, Mother Tongue and Command of Foreign Languages. — Tallinn: Statistical Office of Estonia, 2001.— 350 p. ISBN 9985-74-167-6; ISBN 9985-74-202-8.

The LII values presented in table 2 make it clear that, of all the Baltic states, Poland and Germany show the least degree of language integration; these countries have the largest populations and are situated on the southern shore of the Baltic Sea. By contrast, countries along the western and northern shores of the Baltic Sea are characterized by at least a bilingual structure with a trend towards trilingualism. A change in trends is notable for Estonia, Latvia and Lithuania (provisionally — the eastern shore of the Baltic Sea). Closer to ascending to the EU, these states made a leap from a bilingual (national language and Russian, or national language and English) to trilingual structure (national language, Russian, English). This obviously happened due to the increased use of the national language and English, accordingly.

We can see that the Baltic Region is not only ahead of the overall EU level in the number of languages used and users' proficiency, but also demonstrates a trend towards a more rapid growth of polylingualism (fig. 1).

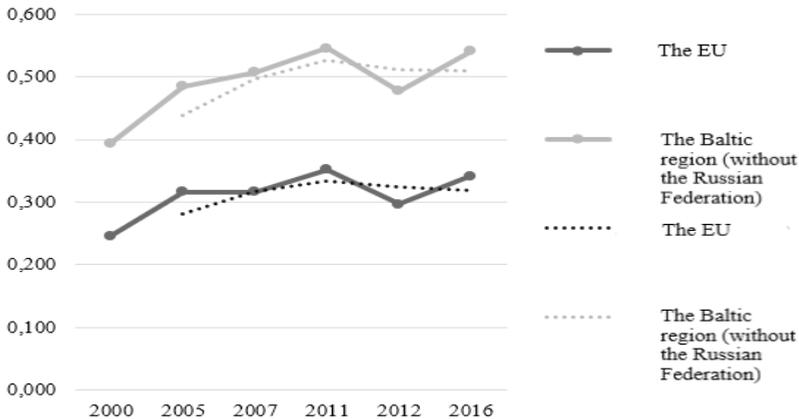


Fig. 1. The dynamics of language integration in the Baltic Region and the EU during the period from 2000 to 2016 (by LII)

By this, it can be argued that the dynamics of language integration shown in figure 1 demonstrates the fact that, in the EU, the Baltic Region serves as a driver of polylingualism. We can assume that there are other drivers of polylingualism in Europe, for instance, the Balkan Region; however, this assumption needs to be confirmed by a separate research project.

Within the Baltic Region itself, there are also differences in the structure of the index of language integration values (fig. 2).

Whereas the Baltic countries (Latvia, Lithuania, Estonia), having made a great leap in language integration during the period of preparation to ascend the EU (2000—2005), stabilized their index values at the 0.55—0.57 level, Scandinavia demonstrated cyclical fluctuations in the 0.53—0.65 range over the period studied.

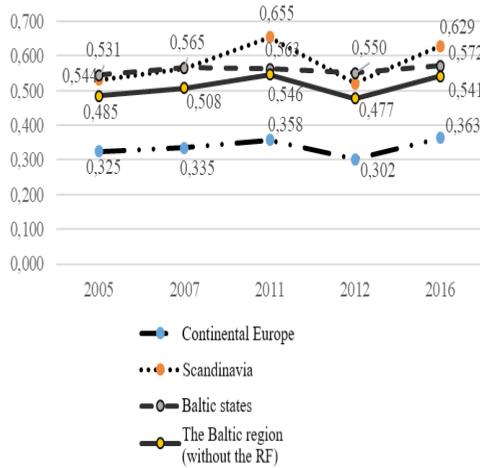


Fig. 2. The dynamics of language integration in the Baltic Region by groups of countries from 2005 to 2016 (by LII)

The cyclical fluctuations in Sweden, Finland, and Denmark can be explained by migration. Intensification of migration flows decreased the overall level of polylingualism, while their stabilization reversed the trend and even increased the index values. Poland and Germany, conversely, held a stable bilingual position, reflecting rather serious views of the majority of citizens on the issue of linguistic assimilation of migrants.

To verify the assumptions made above, we analyzed polylingualism coefficient dynamics from 2000 to 2016 (fig. 2). As we have already mentioned before, this factor reflects the share of the population of a country or a region that speaks more than one language.

As with the data for LII, the values of PC for the Baltic Region are higher than for the EU in general (table 3). Thus, for instance, in 2000, the coefficient for the Baltic Region read 0.793, which was more than 1.6 times higher than the corresponding coefficient for the EU (0.486). By the end of the studied period, the difference in PC had decreased to a factor of 1.4. It is interesting that the decrease in the gap between the PC values occurred against its growth of the indicator values for both the EU and the Baltic Region. Consequently, despite the fact that the share of those in the Baltic Region who were proficient in more than one language was still higher than that in the EU, it should be pointed out that the level of polylingualism in the EU as a whole in the period of 2000—2016 grew faster than in the Baltic Region.

Sweden demonstrated the highest PC value, and Poland the lowest (0.966 and 0.670, respectively) among the countries of the region in 2016. Thus, the following argument can be made about the presence of two stable trends during the period under study: the Baltic states and Scandinavian countries displayed cyclical fluctuations of initially high levels of PC, while Poland and Germany had smaller

percentage of people speaking more than one language among their populations, so the latter would typically display a smaller amplitude of fluctuations in the coefficient values.

Table 3

The dynamics of the coefficient of polylingualism from 2000 to 2016

State	2000	2005	2007	2011	2012	2016
The EU	0.486	0.560	0.631	0.658	0.540	0.646
The Baltic Region (excluding the Russian Federation)	0.793	0.809	0.850	0.870	0.806	0.891
Including:						
Sweden	—	0.900	0.950	0.918	0.910	0.966
Finland	—	0.690	0.839	0.918	0.750	0.921
Denmark	—	0.880	0.879	0.941	0.890	0.957
Latvia	0.908	0.950	0.949	0.949	0.950	0.957
Lithuania	0.706	0.920	0.976	0.973	0.920	0.956
Estonia	0.764	0.890	0.863	0.855	0.870	0.912
Germany	—	0.670	0.715	0.785	0.660	0.787
Poland	—	0.570	0.627	0.619	0.500	0.670

Figure 3 shows interdependence between the values of LII and PC indices within the European Union as a whole and for the Baltic Region. We propose that there is a direct correlation between the total share of individuals speaking more than one language and the general values of language integration. Given this, Fig. 3 clearly shows the following dependence: the higher the PC, the higher the final LII factor, and vice versa.

This dependence is generally obvious even on instrumental level. However, as figure 3 demonstrates, despite the similarity of the calculation method for the two factors, their dynamics, while generally similar, are not identical.

Thus, the PC value curve for the Baltic Region is flatter than the LII value curve. The situation is reversed for the EU. These opposing trends point to the fact that while the share of individuals speaking and generally using more than one language in the Baltic Region remained generally high, in the EU, the transition from monolinguals to bilinguals and vice versa was the main factor of changes in the language market. This means that fluctuations of language integration in the Baltic Region were brought about, firstly, by changes in the percentage of the population proficient in three or four languages, and, secondly, by migration. Furthermore, the latter obviously took place through the addition of a national language of a destination country to the linguistic ‘baggage’ of a migrant to his or her previously formed bilingualism (native language and English, or native language and German).

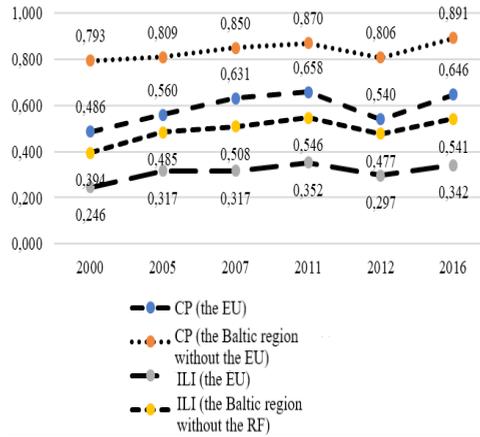


Fig. 3. The dynamics of the polylingualism coefficient and the language integration index in the EU and the Baltic Region from 2000 to 2016

Unlike in the Baltic Region, in the EU as a whole the main changes were related to the fluctuations in polylingualism rather than language integration values. This reaffirms the proposition, according to which intercultural communication was growing more rapidly in the southern part of the European Union, starting from a lower base point than in the Baltic Sea region.

The data on the dynamics of the LII index in various subgroups of the Baltic states presented in Fig. 4 show that it was fair to assume the trilingualism of the Estonian, Latvian, and Lithuanian populations.

In the studied period, the Baltic states demonstrated near maximum values of polylingualism, while practically 50% of the population of the countries of the southern shore of the Baltic Sea, Germany and Poland, were monolingual and bilingual.

Interestingly, former Soviet Baltic republics were relatively unaffected by the sharp decrease in the polylingualism coefficient that occurred in 2012, while Germany and Poland reached their lowest polylingualism coefficient that year, even lower than in 2005.

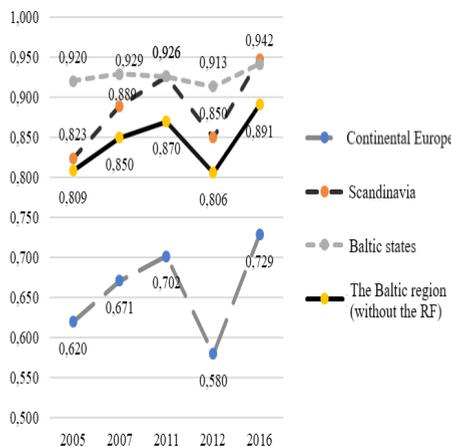


Fig. 4. The dynamics of the polylingualism coefficient in different groups of countries in the Baltic Region from 2005 to 2016

The general trend of language markets in the Baltic Region is that of consistent growth for both polylingualism and language integration. The question arises whether this growth is stimulated by an increase in the use of one language (e.g., English), or due to the increased contact between the residents of different countries using each other's languages. In other words, does economic and political integration lead to an increase in the monopoly of one particular language, or, on the contrary, to the development of a highly competitive linguistic environment?

Due to the lack of raw data for other periods, it was only possible to calculate the monopolization factor for 2005 and 2012 only.

Figure 5 shows the level of language monopolization in the EU as a whole and in the Baltic Region. It is easy to notice that in both cases we can speak of a highly concentrated language market, as well as of a trend towards further concentration.

While language monopolization grew more rapidly in the Baltic Region (by 8.5% in seven years), in the EU it did not change very much in the same period of time (2.7% growth). At the same time, the general level of concentration was higher for the EU rather than for the Baltic Region.

When comparing all three factors examined in the article, an interesting picture emerges. On the one hand, the Baltic Region acted as a driver of language integration and a sector of highly developed polylingualism, and, on the other hand, the growing value of the indices used in the study were stipulated by language concentration rather than diversification.

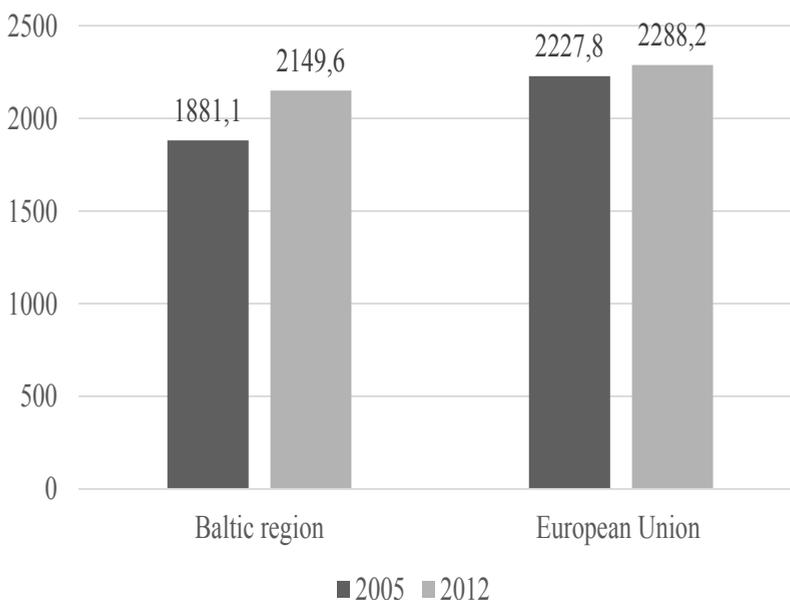


Fig. 5. Correlation of language monopolization levels of the Baltic Region and the European Union in 2005 and 2012

The European Union as a whole showed a relatively low level of language integration and polylingualism. At the same time, the upward trend demonstrated by both factors studied means that there was an increase in the concentration of languages. For the individual countries of the Baltic Region the picture was even more interesting (figure 6).

Whereas the level of monopolization within the region as a whole had only increased to 2150, which definitely attested to highly concentrated language markets (the threshold of the highly concentrated market being 1801 points), or 350 points up from medium-concentrated state; taken separately, all the countries of the region, showed monopolization factors in the range of 2800 to 4060, or more than 1000 points higher than a medium-concentrated state of language market.

Thus, we can conclude that, in general, the region is considerably less monopolized in the field of language than each individual country. This result did not come as a surprise. After all, we are talking about economic and political integration, which implies a decrease in the dominance of national languages in favor of strengthening those acting as a means of cross-cultural communication.

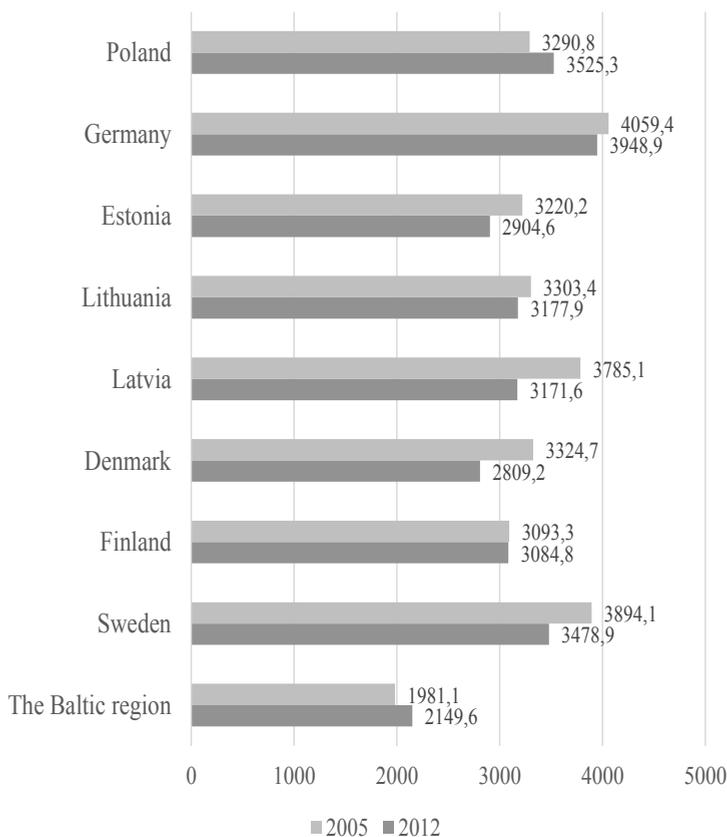


Fig. 6. Correlation of language monopolization in the countries of the Baltic Region in 2005 and 2012

Thus, the pattern observed in figure 6 reveals that, generally, integration processes lead to a consistent alignment of language monopolization level within individual countries with that of the region of integration. On the level of individual countries, however, we see that things differ. For instance, in Poland, just like in the region as a whole, monopolization was growing, while other countries of the region were experiencing a decrease in this factor.

The situation in Poland, atypical for the region, was apparently determined — to a large extent — by the actual language policy aimed at reducing the use of all languages other than Polish, German, and English, whereas other countries in the region were gravitating towards polylingualism. Despite this, the general trend is obvious. The upward trend of language monopolization in the region is accompanied by a decrease in concentration in domestic language markets.

For a more detailed analysis of the processes occurring therein, we created two analytical tables (tables 4, 5). There, we only included languages with the usage level of 10% or higher.

Table 4

Leaders of the language market in the countries of the Baltic Region in 2005, %

State	L1	L2	L3	L4	Total
The Baltic Region	German (31.36)	English (23.48)	Polish (14.08)	—	68.92
Sweden	Swedish (47.31)	English (39.70)	—	—	87.01
Finland	Finnish (44.79)	English (24.41)	Swedish (21.02)	—	90.22
Denmark	Danish (44.61)	English (34.25)	—	—	78.86
Latvia	Russian (43.03)	Latvian (42.79)	—	—	85.82
Lithuania	Lithuanian (41.11)	Russian (36.46)	—	—	77.57
Estonia	Estonian (41.11)	Russian (36.46)	English (12.15)	—	89.72
Germany	German (55.35)	English (27.68)	—	—	83.03
Poland	Polish (51.66)	Russian (13.86)	English (12.46)	—	77.98

The data presented in table 4 demonstrates a high concentration of ‘market power’ in the language market of the Baltic states. Similar to economic analysis of commodity markets among all countries of the region, one can speak about

language duopoly or monopoly. Duopoly is observed in Estonia, Latvia, Sweden, Denmark, and Lithuania. While in the former Baltic republics of the USSR it is explained by the role of Russian as the national language in the recent past, in Sweden and Denmark, the explanation is apparently the high integration of the Swedish and Danish economies with the economies of Great Britain, Canada, and the USA. The monopoly of official national language was observed in the rest of the countries of the Baltic Region in 2005.

By 2012, the situation had generally changed (table 5). All the region's countries had shifted to the model of a language market with three dominant languages (in 2005, only 40% of the countries had such a model). Even Poland, which, as we discussed earlier, demonstrated a counter-trend in terms of monopolization level in relation to the other Baltic states, had shifted completely to the model with four dominant languages.

Table 5

Leaders of the language market in the countries of the Baltic Region in 2012, %

State	L1	L2	L3	L4	Total
The Baltic Region	German (32.84)	English (27.84)	Polish (13.67)	—	74.35
Sweden	Swedish (42.27)	English (39.09)	German (11.82)	—	93.18
Finland	Finnish (40.69)	English (30.30)	Swedish (21.21)	—	92.20
Denmark	Danish (36.50)	English (32.70)	German (17.87)	—	87.07
Latvia	Latvian (37.55)	Russian (37.15)	English (18.18)	—	92.88
Lithuania	Lithuanian (40.35)	Russian (35.09)	English (16.67)	—	92.11
Estonia	Estonian (35.24)	Russian (33.04)	English (22.03)	—	90.31
Germany	German (53.59)	English (30.94)	—	—	84.53
Poland	Polish (53.98)	English (18.75)	German (10.80)	Russian (10.22)	93.75

Just like in 2005, duopoly was observed in Sweden, Denmark, and Lithuania, and language monopoly remained unchallenged in Germany and Poland. Estonia and Latvia switched from duopoly to a model with three dominant languages, the transition occurring due to the decrease in the share of the Russian language and an increase in the share of English. In Poland, despite the lingering monopoly, English and German had sufficiently enhanced their competitive positions.

Thus, we can preliminarily state that the development of economic and political integration processes does not directly lead to the monopoly of the language of cross-cultural communication, although it sufficiently increases the demand for it. Rather, we can conclude that integration processes increase the demand for those languages that are linked to the most developed commodity markets, especially the labor market.

Conclusions

The analysis of the Baltic Region by calculating three interrelated indices of language integration, polylingualism, and language monopolization, allowed us to evaluate the impact of globalization and political and economic integration on the state of the 'market of markets. To this end, we compared the dynamics of the language market measurements of the Baltic Region and the European Union.

During the period studied, the language structure of the European Union was generally characterized by the prevalence of monolinguals and bilinguals, while the Baltic Region had higher polylingualism and the prevalence of bilinguals and trilinguals. The correlation between these social groups changed in cyclic fluctuations, which was apparently determined by migration processes and the quality of the migration policy carried out in the region. Some exceptions were Lithuania, Latvia, and Estonia, where the dynamics of language integration and polylingualism was stable and not characterized by sharp changes. On the whole, it can be preliminarily concluded that state participation in integration processes is a factor contributing to the growth of polylingualism in a society. In the studied period, this held true for the Baltic Region and for each of its member states. As for the Baltic Region, in the studied period linguistic integration processes were characterized by communicative variability and expansion of opportunities to choose a preferred language of communication.

We propose that the development of integration groupings does not lead to the formation of a hegemonic language, but to the strengthening and convergence of languages of the leading economic states within these groupings. Specifically, development of commodity markets of the states and the attractiveness of their labor markets function as the main factors determining the dynamics of language demand.

It can thus be stated that there are two heterochronous processes in the development of highly integrated supranational groupings: a) an upward trend towards monopolization of the language market of an integration grouping and language markets of subregions within this grouping; b) a downward trend towards monopolization in the domestic language markets of the member states within that association. Moreover, it can be assumed that there is a tendency to equalize the level of concentration of domestic language markets and language markets of subregions and of the integration grouping as a whole. At the very least, the development of processes in the Baltic Region from 2000 to 2016 demonstrates this trend. To estimate whether the trend is general or only applicable to the studied region, it is essential to conduct similar studies for other subregions of the European Union, and ideally within the framework of the evaluation of other

integration groupings (first of all, NAFTA). Another important task would be to study the Baltic Regions of the Russian Federation (the Kaliningrad region, the Leningrad region and Saint-Petersburg) using the proposed methodology. Only after such study is completed will it be possible to carry out a comprehensive analysis of development trends in the Baltic macro-region. Unfortunately, due to the lack of raw data a study of this scale with scientifically relevant results is not possible at the moment.

We can conclude that the dynamics of competition in language markets is to a large extent determined by the objective level of socio-economic development of the countries, and, to a lesser degree, by the national language policy. Specifically, the difference in the effectiveness of the first and second factors is evident where the language policy is based on counteraction, assimilation, or 'soft power', rather than on the real demand for particular languages.

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References

1. Nye, J. S. 2004, *Soft Power: The Means to Success in World Politics*, Public Affairs, 191 p.
2. Naumov, A. O. 2016, "Soft power" and "Smart power". Foreign policy experience of USA, *Strategiya Rossii* [Russia's strategy], no. 1, p.57—64 (in Russ.).
3. Naumov, A. O. 2016, "Soft power" and "Smart power". Foreign policy experience of USA, *Strategiya Rossii* [Russia's strategy], no. 2, p. 65—76 (in Russ.).
4. Potebnya, A. A. 1993, *Mysl' i yazyk* [Think and language], Kiev, SINTO, 192 p. (in Russ.).
5. Vygotskij, L. V. 2007, *Myshlenie i rech'* [Thought and oration], Moscow, Labirint, 350 p. (in Russ.).
6. Leont'ev, A. N. 1981, *Problemy razvitiya psihiki* [The problems of psychic progress].— 4-e izdanie, Moscow, 584 p. (in Russ.).
7. Leont'ev, A. A. 1990, *Puteshestvie po karte yazykov mira* [The trip on World language map], Moscow, Prosveshchenie, 144 p. (in Russ.).
8. Ayupova, L. L., Ibragimova, V. L. 2010, *Soderzhanie ponyatiya «yazykovaya situatsiya» v otechestvennoi izarubezhnoi literature* [The content of the concept of "language situation" in domestic and foreign literature], The decision of the national language issues in the modern world. CIS and Baltic Countries, Azbukovnik, p. 81—90 (in Russ.).
9. Kryuchkova, T. B. 2010, *O ponyatiino-terminologicheskom apparate opisaniya yazykovogo sostoyaniya* [On the conceptual and terminological apparatus for describing the language state], The decision of the national language issues in the modern world. CIS and Baltic Countries, Azbukovnik, p. 63—80 (in Russ.).

10. Khashimov, R. I. 2010, *Yazykovaya politika i etnosotsiolingvisticheskie terminy i ponyatiya* [Language policy and ethnosociolinguistic terms and concepts], The decision of the national language issues in the modern world. CIS and Baltic Countries, Azbukovnik, p. 91 — 101. (in Russ.)

11. Tarasov, I. N. 2019, Instruments of ethnic policy in Latvia, *Yuzhno-rossiiskii zhurnal sotsial'nykh nauk* [South Russian Journal of Social Sciences], vol. 20, no. 2, p. 34—44 (in Russ.).

12. Kazak, E. A., Klimenko, O. K. 2013, *Yazyk v global'nom kontekste: Severnaya Amerika segodnya kak kul'turno-yazykovoi fenomen* [Language in a global context: North America today as a cultural and linguistic phenomenon], Collection of reviews, 166 p. (in Russ.)

13. Marusenko, M. A. 2014, *Yazykovaya politika Evropeiskogo Soyuza: institutsional'nyi, obrazovatel'nyi ekonomicheskii aspekty* [Language policy of the European Union: institutional, educational and economic aspects], Publishing house of the St. Petersburg University, 288 p. (in Russ.).

14. Troshina, N. N. 2015, The German language in modern Europe (scientific and analytical review). In: Troshina, N. N. (ed.) *Yazykovaya situatsiya v Evrope nachala XXI veka* [The linguistic situation in Europe at the beginning of the XXI century], scientific and analytical review, Moscow, p. 102 — 121 (in Russ.).

15. Troshina, N. N. 2015, *Yazykovaya situatsiya v Evrope v epokhu globalizatsii* [The language situation in Europe in the era of globalization]. In: Troshina, N.N. (ed.) *Yazykovaya situatsiya v Evrope nachala XXI veka* [The linguistic situation in Europe at the beginning of the XXI century], scientific and analytical review, Moscow, p. 5—13 (in Russ.).

16. Kirilina, A. V. 2015, The linguophilosophical reflexion in the age of globalization. In: Troshina, N.N. (ed.) *Yazykovaya situatsiya v Evrope nachala XXI veka* [The linguistic situation in Europe at the beginning of the XXI century], scientific and analytical review, Moscow, p. 122 — 135. (in Russ.).

17. Ammon, U. 2014, *Die Stellung der deutschen Sprache in der Welt*, B.; N.Y. XVIII, 1296 s.

18. Ammon, U. 2009, Thesen zur Abträglichkeit der EU-Sprachenpolitik für Deutsch als Fremdsprache, *Der Sprachdienst*, H. 1, s. 16 — 19.

19. Devlin, K. 2020, Speaking the national language at home is less common in some European countries: update 2020, *Pew Research Centre*, available at: <https://www.pewresearch.org/fact-tank/2020/01/06/speaking-the-national-language-at-home-is-less-common-in-some-european-countries/> (accessed 06.08.2020).

20. Shteinke, K. 2006, Globalization — regionalization and linguistics. In: *Globalizatsiya — etnizatsiya: Etnokul'turnye i yazykovye protsessy* [Globalization — Ethnization: Ethnocultural and Linguistic Processes], p. 249 — 258 (in Russ.).

21. Solntsev, E. M. 2015, French in the modern world (scientific and analytical review). In: Troshina, N. N. (ed.) *Yazykovaya situatsiya v Evrope nachala XXI veka* [The linguistic situation in Europe at the beginning of the XXI century], scientific and analytical review, Moscow, p. 136 — 145 (in Russ.).

22. Akova, S. Kantar, G. 2020, Globalization in the context of multiculturalism and ethnicity in the Western Balkans and intercultural communication, *Journal of Public Affairs*. doi: <https://doi.org/10.1002/pa.2218>.

23. Xiong, T., Li, Q. N., Hu, G. W. 2020, Teaching English in the shadow: identity construction of private English language tutors in China, *Discourse-Studies in the cultural politics of education*, doi: <https://doi.org/10.1080/01596306.2020.1805728>.

24. He, J. 2020, A language-political and comparative Examination of the German Language in Japan, Korea and China Historical Overview, Present Situation and Future Perspectives, *Muttersprache*, vol. 130, no 3—4, p. 216—234.

25. Emmorey, K., Mott, M., Meade, G., Holcomb, P.J., Midgley, K.J. 2020, Lexical selection in bimodal bilinguals: ERP evidence from picture-word interference, *Language Cognition and Neuroscience*. doi: <https://doi.org/10.1080/23273798.2020.1821905>.

26. Sarkis, J. T., Montag, J. L. 2020, The effect of lexical accessibility on Spanish-English intra-sentential codeswitching, *Memory & Cognition*. doi: <https://doi.org/10.3758/s13421-020-01069-7>.

27. Wong, S. W. L., Cheung, H., Zheng, M., Yang, X. J., McBride, C., Ho, C. S. H., Leung, S. M., Chow, B. W. Y., Waye, M. M. Y. 2020, Effect of Twinning on Chinese and English Vocabulary Knowledge, *Child Development*. doi: <https://doi.org/10.1111/cdev.13400>.

28. Mandal, S., Best, C. T., Shaw, J., Cutler, A. 2020, Bilingual phonology in dichotic perception: A case study of Malayalam and English voicing, *Glossa—A Journal of General Linguistics*, vol. 5, no 1. doi: <https://doi.org/10.5334/gjgl.853>.

29. Saha, S., Chakraborty, N., Kundu, S., Paul, S., Mollah, A. F., Basu, S., Sarkar, R. 2020, Multi-lingual scene text detection and language identification, *Pattern Recognition Letters*, no. 138, p. 16—22. doi: <https://doi.org/10.1016/j.patrec.2020.06.024>.

30. Sanjaume-Calvet, M., Riera-Gil, E. 2020, Languages, secessionism and party competition in Catalonia: A case of de-ethnicising outbidding? *Party Politics*. doi: <https://doi.org/10.1177/1354068820960382>.

31. McDonald, M., Kaushanskaya, M. 2020, Factors modulating cross-linguistic co-activation in bilinguals, *Journal of Phonetics*, no. 81. doi: <https://doi.org/10.1016/j.wocn.2020.100981>.

32. Malins, J. G., Landi, N., Ryherd, K., Frijters, J.C., Magnuson, J.S., Rueckl, J.G., Pugh, K.R., Sevcik, R., Morris, R. 2020, Is that apibuorapibo? Children with reading and language deficits show difficulties in learning and overnight consolidation of phonologically similar pseudowords, *Developmental Science*. doi: <https://doi.org/10.1111/desc.13023>.

33. Silver, B. 1975, Methods of Deriving Data on Bilingualism from the 1970 Soviet Census, *Soviet Studies*, vol. 27, no. 4, p. 574—597.

34. Xo Hur, S. C. 2000, The language situation in Russia and other newly independent states of the former USSR: analysis of data from the 1989 All-Union Population Census. In: *Yazyki Rossiiskoi Federatsii i novogo zarubezh'ya. Status i funktsii* [Languages of the Russian Federation and the New Abroad. Status and functions], Moscow, p. 381—391 (in Russ.).

35. Dauth, W., Findeisen, S., Suedekum, J. 2021, Adjusting to Globalization in Germany, *Journal of Labor Economics*. doi: <https://doi.org/10.1086/707356>.

36. Carbonell, J. M. 2018, Cross-Cultural Communication, Public Diplomacy and Soft Regulation in Global Society, *TRIPODOS*, no. 42, p. 11—20.

37. Airapetian, A. S. 2019, The mathematical instruments of measures the polylingual dynamic in modern world, *Psikhologo-ekonomicheskie issledovaniya* [Journal of psycho-economics], no. 3, p. 20—28 (in Russ.).

38. Neverov, A.N., Airapetian, A.S. 2019, Markets of language and the tools of its analysis, *Psikhologo-ekonomicheskie issledovaniya* [Journal of psycho-economics], no. 2, p. 11—22 (in Russ.).

39. de Stefano, C. 2017, Reforming the Governance of International Financial Law in the Era of Post-Globalization, *Journal of International Economic Law*, vol. 20, no 3, p. 509—533. doi: <https://doi.org/10.1093/jiel/jgx029>.

40. Benocci, B. 2018, A twenty-five year transition. The forms of power and the alleged crisis of the nation-state in the contemporary age, *OASIS-OBSERVATORIO DE ANALISIS DE LOS SISTEMAS INTERNACIONALES*, no. 28, p. 7—24. doi: <https://doi.org/10.18601/16577558.n28.02>.

41. Badie, B. 2019, Exploring the New World. In: *New Perspectives on the International Order: No Longer Alone in This World*, p. 53—74. doi: https://doi.org/10.1007/978-3-319-94286-5_4.

42. Beloshitzkaya, V. 2019, Democracy and Redistribution: The Role of Regime Revisited, *East European Politics and Societies*, vol. 34, no. 3, p. 571—590. doi: <https://doi.org/10.1177/0888325419892063>.

43. Ballor, G. A., Yildirim, A. B. 2020, Multinational Corporations and the Politics of International Trade in Multidisciplinary Perspective, *Business and Politics*, vol. 22, no 4, p. 573—586. doi: <https://doi.org/10.1017/bap.2020.14>.

44. Hirschman, A. 1945, *National Power and the Structure of Foreign Trade*, Berkely and Los Angeles, University of California Press, 1945, 170 p.

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GLOBAL VALUE CHAINS IN THE AGE OF UNCERTAINTY: ADVANTAGES, VULNERABILITIES, AND WAYS FOR ENHANCING RESILIENCE

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In this paper, we seek to explain the fundamental vulnerability of global value chains (GVCs) to sudden shocks, as revealed by the COVID-19 pandemic crisis, and outline ways for enhancing their adaptability to the increased uncertainty at both conceptual and policy levels. We consider the concept and a typical multi-structural model of GVCs, highlighting the network complexity of the system of distributed production and trade in value added. Not only does this system bring competitive advantages to GVC partner countries, but also it entails risks of cascading production disruptions. We examine these risks by analysing the ripple effect of supply disruptions in GVCs when a sudden local shock can propagate globally through inter-firm supplier links, generating growing output losses across industries and economies. From this perspective, we describe the pandemic-induced breakdown in the global just-in-time supply system in spring 2020 and its role in the escalating global recession. In analysing the mechanisms of post-pandemic GVC adaptation to uncertainty, we look at the concept of economic resilience and properties of resilient systems (robustness, flexibility, redundancy, and dynamic sustainability). We scrutinise the supply chain resilience model used by leading MNEs (GVC organisers) in their disruption risk management at pre-disruption and post-disruption stages. We classify resilience strategies devised by MNEs after 2020 into three interrelated categories: namely, multi-structural GVC optimisation (diversification and relocation of suppliers), operational optimisation (building redundancy and production flexibility), and GVC digitalisation. We conclude by outlining windows of opportunity to improve international specialisation and growth patterns, which may open in the 2020s for developing economies, including Russia, due to the ongoing restructuring of GVCs and their global supplier networks.

Keywords:

global value chains, COVID-19 pandemic crisis, uncertainty, ripple effect, economic resilience, multinational enterprises, disruption risk management

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The rapid proliferation of global value chains (GVCs) since the early 1990s has formed a highly interconnected globalized world.¹ By the end of the 2010s, scholars had accumulated solid theoretical and empirical evidence that integration into GVCs was becoming a basic way of the participation of countries in the international division of labour. This benefits national economies in terms of strengthening competitiveness and achieving sustainable growth.² Meanwhile, the COVID-induced economic crisis of 2020 has exposed the underside of GVCs, their fundamental vulnerability to sudden shocks, which imposes risks of cascading disruptions upon the increasingly interconnected economies worldwide [1].

In the pre-pandemic times, despite the available knowledge on cascading disruptions in supply chains, as well as the scholarly insights into the associated business-risk management [2; 3], the ability of GVCs to rapidly transmit the crisis shocks from country to country was not sufficiently considered in global economic studies. As a result, in the spring of 2020, the reaction of countries to this challenge revealed major discrepancies in existing priorities concerning further participation in GVCs, thus divorcing importing economies from predominantly exporting ones, developed countries from developing ones, home countries of leading MNEs that organise GVCs from their host countries [4]. Academic and official circles alike began discussing dubious ideas of the inevitability of deglobalization [5; 6], dangers of sustaining further economic openness, the need to withdraw from GVCs, and bringing back most of production facilities, especially from China, inside national boundaries for the sake of technological, product and the rest types of national security [7; 8].

Most of these fears and ideas have had no further development or practical implementation due to their inconsistency with the objective logic of the economic advance of systems under the modern complexity of production and technological shifts. Instead, global business started to seek ways for eliminating weaknesses in the current GVCs' architecture, striving to adapt GVCs and the global supply system to the increased uncertainty.

Against this backdrop, we explore one of the pressing issues in the post-pandemic economic agenda — what is the nature of GVCs' vulnerability, and what might make them more resilient to sudden shocks? We look at both the conceptual and the practical aspects of this topic, touching upon the new area of risk management alongside with new economic strategies. We purposely omit reviewing the patterns of countries' involvement in GVCs, because this range of issues has been widely explored from different perspectives by modern economists, including Russian scholars [9–12].

¹ Interconnected economies: Benefiting from global value chains, 2013, *OECD*, Paris, OECD Publishing.

² *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

We first examine the concept and organizational model of GVCs, describing typical features of the distributed production and value-added trade system as well as benefits that this system brings to countries and territories (*section 1*). We then illustrate the network complexity of distributed production and inquire into factors of its intrinsic vulnerability to idiosyncratic shocks, thus explaining the nature of disruption risks and their ripple effect in GVCs, also under the systemic pandemic shock of 2020 (*section 2*). Then we discuss the concept of economic resilience with regard to GVCs and examine the resilience-enhancing scheme of activities, applied by leading MNEs (organisers and coordinators of GVCs) for managing disruption risks and constraining ripple effects (*section 3*). Thereupon, we classify into three areas and closely examine the emerging resilient strategies of leading MNEs, aimed at adapting GVCs to the age of unpredictable shocks (*Section 4*). Finally, we outline windows of opportunity in improving international specialisation and growth patterns, which may objectively open in the 2020s for developing economies, including Russia, due to the ongoing restructuring of GVCs and their global supplier networks (*section 5*).

1. The concept of GVCs and the advantages of distributed production

The term ‘GVC’, adopted and conceptualized in economic literature by a group of international scholars in the early 2000s, denotes the full range of activities that firms carry out to bring a product or service from its conception to its end use, recycling or reuse [13].³ In its modern meaning, the idea of GVCs reflects fundamental transformations in the production and international trade patterns, which happened over the last three decades under the proliferation of information and communication technologies (ICT).

The concept of GVCs

Firstly, the GVC concept reflects the world’s transition since the late 1980s — early 1990s, to ***a distributed model of production***, tailored to the growing complexity of products and the production cycle itself [11].

In geographic terms, production of final products (goods, services, technologies) has gone beyond the boundaries of a single major company and a single country, getting spatially dispersed among activities of numerous supplier and sub-supplier firms worldwide, networked as autonomous partners

³ This term had supplanted a variety of previously used overlapping terms (like global commodity chains, international production chains, etc.) and emphasized the uneven nature of adding value at different stages of production [14]. Typically, in industrial GVCs, the largest value is added in knowledge-intensive service links, both at initial stages (elaboration of the product idea and design) and at end ones (distribution, marketing or after-sales activities).

within a GVC [15]. This process, equated in literature to *globalization of production* [16], has generated, in turn, the global competition that changed the context for defining competitiveness of national products: now it is increasingly determined by network spatial contours of GVCs, and less so by frames of national markets [17].

In functional terms, the three classical stages of production (extraction-processing-services) have got fragmented into increasingly narrow, knowledge-intensive and specialized operations (business tasks), each of which is performed by a particular GVC partner and corresponds to a particular GVC link [18]. Instead of traditional specialisation in producing final goods, countries are increasingly focusing on the production and export of innovative intermediates, which they can create more efficiently than their peers in the rest of the world. The production of highly profitable intermediates with unique qualities or specifications determines a *smart specialisation of economies in world markets*, which offers them fundamentally new growth opportunities as compared to the industrial age. As a result, distributed production provides a *continual deepening of the international division of labour*, which meets the ever-changing demands of technological progress, while making the world economy ever more diversified.

Secondly, the GVC concept reflects the world's transition to a ***network design of the industrial and economic landscape***. The proliferation of GVCs implies that the modern production process is organised by leading MNEs of different specialisation in the form of complex, multi-level networks of autonomous but functionally interconnected firms and their cross-border supplies [19]. GVCs are built by MNEs as *joint international projects* that have their particular time frame and operational sequence. Each supplier firm performs its business task that corresponds to a particular GVC node, with such individual specialisation usually shaped within a country's regional cluster, where the given firm is located [20]. The MNE itself participates in the common project through its branch office located in one of regional clusters, while not just delivering some intermediary inputs but also playing a *specific role of the lead firm* that coordinates the network. A successful coordination increases the cumulative project income so that the lead firm seeks to locate and regroup GVC nodes in optimal configurations, which ensure cost reduction and the highest value added of final products [21].

While highlighting the network and globalized nature of the world economy, the GVC idea unites its three levels — macro-level (global flows of goods, investment and finance), meso-level (national and regional flows) and micro-level, where firms directly operate and interact [4]. This motivates to view the modern world economy as a holistic ecosystem of numerous collaborating firms, where the production process gets decentralised (non-hierarchic), interactive and project-based. The ecosystem design is typical for the knowledge-based, or innovation-driven economy [22].

Thirdly, the GVC concept reflects the world's transition to a ***new pattern of international trade, concerned with value-added flows***. Within a GVC, intermediary exports from a certain country are purchased by another country as inputs for further processing and re-export to a third country, which generates an enlarging flow of value added [23]. Exports of each participating country contain both an external value added, imported from upstream partners, and an internal value added produced by the country itself for further sales of more complex and hence, more profitable intermediaries to downstream partners. This trade is conducted not by countries or industries (at which level empirical data are usually aggregated), but by individual supplier firms.⁴

In other words, under the distributed production, the system of bilateral export-import interactions between countries trading end products of industries is converted to a system of multilateral network interactions at the level of firms that trade exclusively intermediary products within GVCs. This shapes a complex system of value-added flows with numerous direct, backward and loop connections to permeate the global economy in a nonlinear way [24]. As known, a typical GVC contains both snakelike links, embracing first-tier suppliers involved in all production stages up to end markets, and many spiderlike links, embracing second-, third- and other-tier suppliers (fig. 1).

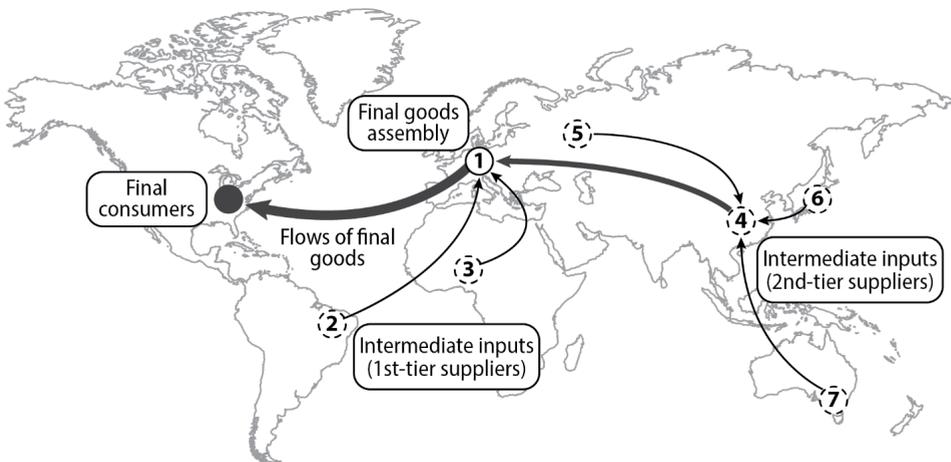


Fig. 1. Simplified scheme of value-added trade flows in a GVC

Note: Nodes 2, 3 and 4 (first-tier suppliers) create intermediate inputs that are assembled at the node 1 location to create a final product. Node 4 itself creates an intermediate product composed of inputs from nodes 5, 6 and 7 (second-tier suppliers).

Source: *Interconnected economies: Benefiting from global value chains*, Paris, 2013, OECD Publishing.

⁴ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

The value chain organisational model

The concept of GVCs relies on the value chain organisational model used for mapping particular firms, activities, and geographic locations involved in the co-creation of a particular final product, be it a physical good, a service or an enabling technology [25]. This model is multi-structural, containing four key elements (fig. 2). They are:

1) *six main value-adding activities* representing basic operational functions that GVC firms are engaged in to bring a product from an idea to the end use.

2) *four main supply chain stages* (often termed in literature as ‘supply chains’ or ‘global supply chains’) illustrating the input-output structure of a product or the downstream flow of inter-firm interactions for its creation. Each stage represents supplier firms from a certain sector that can be further disaggregated into subsectors or intermediates delivered by second- or third-tier suppliers.

3) *end markets for final goods* (basically, an extension of the supply chain), classified into several categories within a given industry, such as producer-specific markets (e.g., for consumer electronics or automotive electronics in the electronics chains), buyer-specific markets (e.g., for retail consumers or industrial buyers in the apparel industry chains), and geographic markets [25].

4) *supporting environment* uniting multiple local or global actors who do not directly produce and trade products but provide various supporting and regulative facilities enabling the chain’s smooth functioning (from utility providers and financial institutions to governments and international organisations) [26].

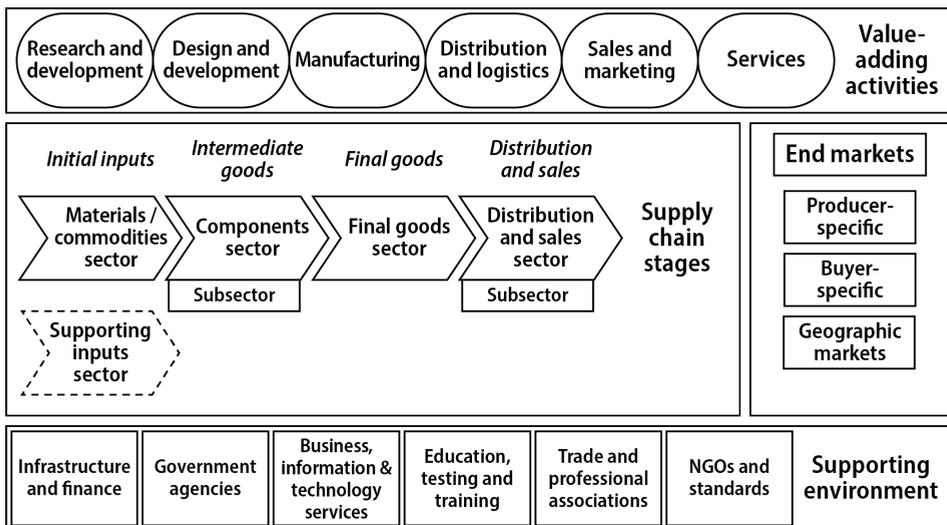


Fig. 2. A typical GVC organisational model (industry-neutral)

Source: adapted from [25].

Expansion of GVCs and their advantages for involved economies

Before the 2020 pandemic shock, the proliferation of GVCs had had two different periods, often referred to in literature as modern stages of globalization. The period from the early 1990s to the global recession of 2007–2009 was distinguished by intensive and turbulent geographical expansion of GVCs, with their links dispersed around the globe in lengthened configurations. During this period, marked by the liberalisation of markets (the foundation of WTO, the formation of NAFTA, etc.) and dissemination of cost-reducing ICT, the total world trade was growing more than twice as fast as the world GDP,⁵ while value-added trade through GVCs had increased the world GDP by more than 10%, according to estimations.⁶ After the Great Recession, due to a combination of factors,⁷ the world trade growth relative to that of world GDP had slowed down, which is considered a natural sequel to the previous upsurge in globalization [5]. During the period from 2009 to 2019, the expansion of GVCs was less dynamic, while value-added trade had reached a plateau (fig. 3) with annual fluctuations of around 50% of total world trade.⁸

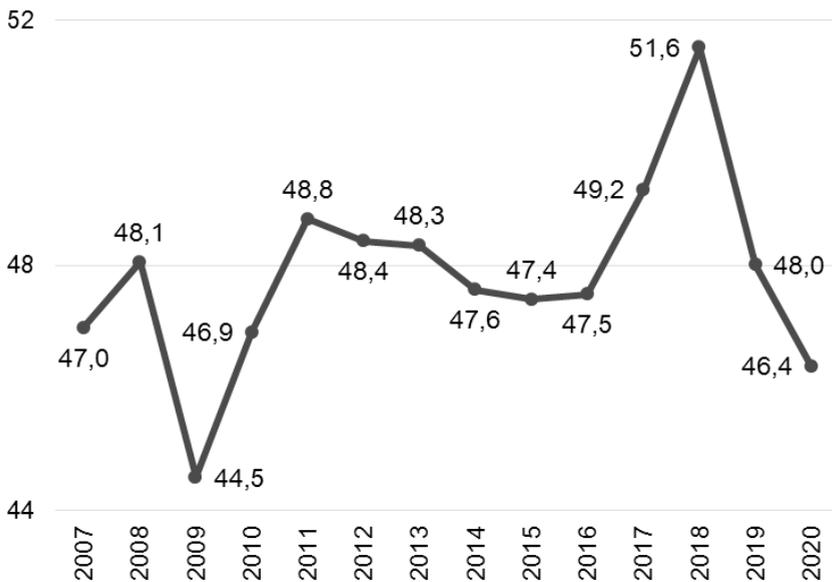


Fig. 3. The dynamics of GVC-related trade as a share of total international trade, 2007–2020, %

Source: authors' calculations based on the data from ADB MRIO database.

⁵ *Global economic prospects: June 2020*, 2020, Washington, DC, World Bank.

⁶ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

⁷ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

⁸ *World investment report 2020: International production beyond the pandemic*, 2020, New York, NY, United Nations.

Nevertheless, the increased complexity of products has formed a sustainable global trend of producing a growing share of each new final good within GVCs [27]. As a result, over the last 20 years (2000–2020), the value of intermediate goods traded via GVCs has tripled, amounting to more than USD 10 trillion per year.⁹ By the 2020s, practically all countries around the world have been integrated into GVCs to this or that extent. For many of them, such integration has become a basic way to improve economic performance and accelerate growth, while for various middle- and low-income economies, a key development path that could provide access to global markets and the global circulation of technologies.¹⁰

Firstly, *trade through GVCs supports the growth of national economies better than traditional trade*. According to World Bank,¹¹ a one per cent increase of a country's participation in value-added trade can boost its per capita income by more than one per cent, which is about twice as much as the participation in trade in final goods. Besides, value-added trade reallocates global resource flows to their most productive uses not only at the country or industry (sectoral) levels but also within industries at the level of more narrow types of activities, which contributes to productivity growth in national economies.

Secondly, *deep division of labour under distributed production allows countries to extract mutual benefits from each other's individual comparative advantages*. In particular, catching-up economies no longer need to build the full-cycle national chains in various industries or to launch duplicative, import-substituting facilities, as was the case in the industrial age. Instead, countries can focus on shaping and deepening a narrow unique specialisation, while importing all the rest from their highly specialized GVC partners, both for final domestic consumption and as inputs for further processing of their own goods and exports [11; 28]. So, international collaboration and export-import trade in intermediates within GVCs helps national firms and entire economies *to reduce the level of costs and to develop increasingly profitable products*, thus enhancing productivity and sustainability of growth.¹²

⁹ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

¹⁰ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

¹¹ *Ibid.*

¹² In the age of distributed production, the very diversification of a national economy is associated with its growing functional complexity, i.e., with an increase in the GDP structure of the share of complex, highly specialized types of activities bringing greater added value and hence higher incomes [29]

2. Vulnerability of distributed production to risks of cascading disruptions

For 30 years of evolution, the distributed production system has fundamentally enhanced functional interdependences among supplier firms, their industry domains and their countries of origin, thus making the world economy much more interconnected through transnational flows of trade, FDI and labour force.¹³ This interconnectedness brings GVC partners not only mutual benefits but also risks of mutual losses under the rising global uncertainty.

In economic and business literature, *uncertainty* is viewed as the probability of risk occurrence, when unexpected events cause certain kinds of damage to systems' economic performance, with the scale of this damage being neither predicted nor insured against [30]. Indeed, participation in GVCs allows companies and economies to co-create increasingly complex products that they would never manufacture on their own. But at the same time, the involvement in value-added production and trade puts interdependent GVC partners at risk of rolling disruptions in their performance in case of a sudden idiosyncratic shock happening at the level of a certain supplier firm.

Vulnerability of GVCs to idiosyncratic shocks

Idiosyncratic shocks are the ones altering a particular firm's behaviour and performance as a result of any internal or external event happening in this firm's environment [31]. These are sudden shocks occurring at the level of a firm either due to its local event (for example, a working strike, a delay in shipment, a fire at a factory, a cyber-attack) or as this firm's reaction to a common systemic shock which all other firms in the given environment also face (for example, natural disasters, political conflicts, terrorism, transport infrastructure failures, etc.).

Risks of sudden idiosyncratic shocks are viewed as ***impacts of uncertainty***. Such shocks directly affect the supply chain component of GVCs, or just the process of inter-firm supplies. Quantitative analysis in this field [32] reveals that globally dispersed and decentralized value chains with lengthened configurations are much more exposed to impacts of uncertainty than value chains with less dispersed links and shorter configurations. High vulnerability of GVCs to rolling supply disruptions can be explained, in our view, by several types of ***multiple supply interdependences*** characterizing the complexity of distributed production.

Firstly, as shown in figure 2, the distributed production of complex products (like, say, Airbus or Boeing planes) is multi-stage. It relies on *consequent input-output relationships* between hundreds of intermediary producers in the

¹³ *Interconnected economies: Benefiting from global value chains*, 2013, Paris, OECD Publishing.

given industry, embracing also numerous suppliers from other fields (logistics firms, business service companies, etc.). Due to such consequent and multiple interdependencies within a GVC, a sudden idiosyncratic shock to any individual supplier can cause massively amplified economic damage. The missing production capacities or inventory at the shocked facility may lead to a shortage of inputs and the resulting fall in production at the next supply stage while amplifying from a stage to a stage in terms of delivery delays and output losses. As a result, *value-added production and trade provide a channel for translation of an initial firm-level shock into cascading disruptions across the entire GVC and beyond*, affecting also other supply chains in the global economy [3].

Secondly, since the production of complex products is dispersed among narrowly specialized producers implementing their unique business tasks, each producer at each stage of production in the GVC critically depends on one or a few specific suppliers able to deliver very specific intermediates that meet the customer's requirements. Due to such input specificity in GVCs, their firms are exposed not just to traditional and predictable risks in the market availability of needed components but rather to risks of unpredictable individual disruptions in the functioning of these few particular suppliers [33]. This implies that *vulnerability of GVCs to sudden shocks is largely determined by the level of their functional complexity*, that is, by the number of specific suppliers and specific input items required for the creation of a given final product [34]. The higher the complexity of the GVC, the greater the risks of supply disruptions can be and hence, the risks of cascading production downfalls in the chain, as well as spillover effects of firms' output losses in related industries and economies.

Thirdly, the complexity of distributed production concerns not only the complexity of GVCs themselves and input-output interdependencies of their companies but also the *interconnectedness of firms involved in global supplier networks* (fig. 4). Such networks, having evolved around leading MNEs during three decades of GVCs' building, represent powerful production ecosystems that embrace an enormous number of supply connections and overlapping inter-firm linkages worldwide. They function as global business communities, from where lead firms are picking up new specialised project partners for the next GVCs. Configurations of these communities vary greatly even within the same industry, depending not just on the specialisation of a particular MNE but also on long-standing transnational partnerships among thousands of suppliers that work in parallel for customers from the ecosystems of other MNEs. For instance, in the case of integrated electronics, Dell's ecosystem encompasses over 4.7 thousand direct suppliers, while Lenovo's ecosystem, about 4 thousand, and above this, there are another 2.3 thousand suppliers that simultaneously belong to both ecosystems and participate in GVCs of both lead firms.

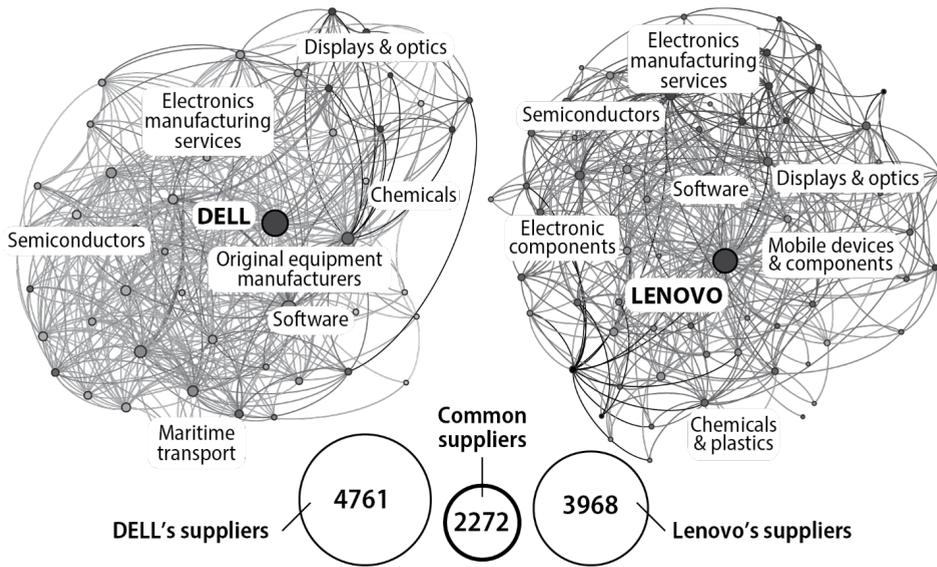


Fig. 4. Global supplier networks of lead firms: an example from integrated electronics

Source: *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

Due to interdependences in-between global supplier ecosystems, the risks of cascading disruptions within a GVC can emerge not just from its own supplier firms but also from these firms' partners and customers in other GVCs. Simply put, GVCs are exposed to *disruptions stemming from counterparty risks*, when a firm in the given network is also a supplier to a partner from an entirely different network, including value chains of other industries. Such multiple interdependences also lead to serious *hidden disruptions*: the GVC companies often have limited or no visibility of inter-firm connections existing beyond their direct first-tier suppliers, both in upstream and downstream links [35]. The same interdependences facilitate diffusion of disruptions across various GVCs, industries and economies, far beyond the shock-affected GVC.

Disruption risks and ripple effects in GVCs

The propagation of supply disruptions along the value chain is described in literature using several interchangeable terms, such as the contagious disruption effect [1], domino effect, snowball effect or ripple effect [3].¹⁴ According to the risk management literature on supply chains, *the ripple effect* occurs when a disruption in inter-firm trade cannot be localized or contained within one supply stage of the chain, and instead, propagates in the downstream direction, causing shifts in the chain's multi-structural design and producing a negative impact on

¹⁴ The term 'ripple effect' in relation to value chains derives from an analogy to computer science, where the ripple effect determines the disruption-based scope of changes in the system [3].

its aggregate performance [2; 35]. A severe supply disruption can temporarily switch off some nodes and links in the chain, thus undermining its network architecture and value-added production process [3].

In other words, the ripple effect of supply disruptions can generate disruptions in all GVC structural components presented in figure 2. *The longer this effect lasts, the larger is the scale of structural disruptions*, up to a complete breakdown of the whole GVC system. According to econometrical estimations, the chain's key performance indicators (sales, output, total profit, market share, stock returns, etc.) are adversely affected if it remains under the ripple effect, i.e., in the supply disruption mode, longer than some critical period of time, known as the 'time-to-survive' [3]. Similar estimations suggest that a drop in the strength of interfirm relationships below a certain critical level leads to a complete stop of production in the entire chain [32]. Relevant agent-based modelling and network analysis [36] provide evidence that in tightly coupled chains, having higher levels of dependencies among partners, the rate at which disruptions ripple through the network is higher.

However, the vulnerability of GVCs to devastating ripple effects *should not be taken as their inherent structural fragility or as a fixed feature of their network architecture*. Rather it is damage to the chain's productivity, caused by a disruption in certain input supplies, that makes robust value chains structurally fragile and exposed to cascading output losses [32].

So, the ripple effect in GVCs is a relatively new phenomenon typical of the digital age. It is usually associated with fundamental global uncertainty, non-predictable shocks, and a special type of economic risks known as **disruption risks**. In literature and management practice, this effect is distinct from the traditional and well-explored 'bullwhip effect' in value chains, associated, on the contrary, with random uncertainty and casual operational risks (fluctuations in daily or weekly demand and supply), which can be shortly eliminated without affecting the chain's structure and output [37].

Noticeably, due to non-linearity of GVCs and a high dependence of one partner on another, the rippling of downstream disruptions can emerge not just in the case of sudden, low-probability systemic shock but also in the case of everyday high probability occurrences. This implies that GVCs are exposed to **systemic risk** — the possibility of breakdowns in the entire system, evidenced by correlation among most or all of its components [35]. Moreover, econometric modelling suggests that *ripple effects in value-added trade can spread along GVCs and across economies in a similar fashion as information diffusion, or bank failures, or biological epidemics* [38].

GVCs under the pandemic shock

Since the start of the digital age, GVCs and their supplier ecosystems have been facing increasingly frequent and severe systemic shocks of various origins, causing rippling supply disruptions and imposing damage on international

business and national economies.¹⁵ So, the propagation of shocks through supply chains and its macroeconomic implications have been widely studied even before the COVID-19 pandemic, both in economic and management literature, both theoretically and empirically [2; 40–42]. According to McKinsey Global Institute, over the past decade, at least one-month-long disruptions in supplier networks occurred on average every 3.7 years, with one major disruption capable to stop production in a GVC for 100 days, thus depriving firms in a number of industries of annual revenues.¹⁶ In the year of 2019 alone, the supply disruptions caused only by natural disasters had imposed damage on the world economy up to USD 40 billion [43].

However, the 2020 pandemic crisis has brought *the worst shock to the distributed production system for its entire 30-years evolvement*. The crisis has demonstrated that increased interconnectedness of economies as GVCs' partners can put them at enormous destabilizing risks in case of a sudden fall in deliveries from just a single country, particularly from China.¹⁷ It has become clear that with all its advantages the modern system of production and trade is yet not tailored to safely meet powerful unpredictable shocks and should be seen *fundamentally vulnerable* to impacts of rising uncertainty. Among the biggest disruption risks that had fully realized at the start of the crisis was a combination of two factors — the involvement of GVCs' country partners in the just-in-time delivery practices that had critically increased their interdependences and the revealed dependence of a significant share of these countries on intermediary imports from China, that had been steadily growing through over the past decade.

For 18 years of its participation in WTO before the COVID-19 pandemic (2001 — 2019), China has significantly increased its share in imports of the fifteen largest economies across all groups of traded goods, except for raw materials. Geographically this expansion encompassed Asian-Pacific, European and North American regions. Such trend is fully in line with stylized facts that indicate the concentration of GVCs in these macro regions, in particular, around China, Germany and USA as the three largest global hubs where export-import flows intersect [18]. According to our estimates, during this period Asian-Pacific countries have mostly increased imports of capital and intermediate goods from China, while European countries and North American ones have mainly raised imports of capital and consumer goods (table 1).

¹⁵ For example, in 1998, two strikes at General Motors plants caused shutdowns of 126 other plants, thus reducing the company's earnings by nearly USD 3 billion. In March 2000, a fire at Philips Semiconductor plant in New Mexico halted its production, thus depriving Ericsson from sourcing critical components, which turned for Ericsson in such huge sales losses that it had to exit the mobile phone business [39]. In March 2011, after the earthquake in Japan, Toyota lost its market leader position and had to fully redesign its GVCs [3].

¹⁶ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

¹⁷ *Global economic prospects: June 2020*, 2020, Washington, DC, World Bank.

Table 1

**Rising dependence of largest economies on imports from China
(China's import share in each product group, %)**

Country	Capital goods			Consumer goods			Intermediate goods			Raw materials		
	2000	2019	δ p.p.	2000	2019	δ p.p.	2000	2019	δ p.p.	2000	2019	δ p.p.
USA	6.1	24.4	18.2	14.6	22.3	7.7	3.9	8.1	4.2	1.3	1.7	0.5
Canada	1.5	15.2	13.7	7.2	15.4	8.2	1.9	7.2	5.3	0.8	1.9	1.1
Mexico	1.2	25.8	24.6	2.5	15.0	12.5	1.7	11.0	9.4	0.7	1.0	0.3
Germany	3.6	16.7	13.1	6.2	10.7	4.5	1.6	4.2	2.6	1.1	1.5	0.4
UK	3.1	14.8	11.7	8.4	12.0	3.6	1.8	3.0	1.2	0.9	1.5	0.5
France	2.9	14.2	11.3	5.6	10.6	5.0	1.2	3.3	2.1	0.6	1.0	0.4
Italy	2.0	13.1	11.1	5.6	8.3	2.7	1.7	5.4	3.7	1.1	1.1	-0.1
Spain	1.5	12.7	11.2	5.7	11.8	6.1	1.9	6.0	4.1	0.8	1.1	0.3
Japan	10.5	40.6	30.1	28.4	26.9	-1.5	9.5	19.8	10.3	5.6	2.6	-3.0
Korea	5.8	33.7	27.9	11.7	20.4	8.7	10.8	27.3	16.5	6.6	2.5	-4.0
Australia	3.7	32.1	28.4	15.2	26.7	11.5	4.1	20.7	16.6	1.8	2.8	1.0
Indonesia	3.6	38.0	34.4	6.1	22.0	15.9	5.6	24.5	18.9	10.4	9.6	-0.8
Brazil	2.3	30.5	28.1	2.6	15.6	13.0	2.3	16.9	14.6	0.6	2.3	1.7
Russia	1.2	28.4	27.2	5.3	21.2	15.9	3.3	17.4	14.0	2.4	6.8	4.3
India	4.0	31.2	27.2	2.6	17.4	14.9	5.0	15.5	10.6	1.2	0.4	-0.8

Note: δ denotes growth/decline of China's share for the given period (percentage points)

Source: authors' calculations based on data from WITS database.

In 2020, trade through GVCs has become a key channel¹⁸ both for the global dissemination of supply disruptions at the level of companies and for the resulting global transmission of production downfalls from a country to country.¹⁹ Rippling disruptions in the just-in-time supply system began to propagate around the world as early as in February 2020, when quarantines and lockdowns in the Chinese city of Wuhan, the domain of branch-offices of different MNEs, were introduced. It was the breakdown of this system that had sharply plunged the world economy into the deepest and the most synchronous recession, embracing simultaneously 90% of countries in the spring of 2020.²⁰ Along with China, where numerous GVCs intersect, the largest contribution in amplification of the ripple effect and in escalation of the recession was made by lockdowns of businesses in two

¹⁸ Other major channels for the global dissemination of downfalls were the labour market (a massive drop in employment due to factory closures), as well as abrupt drops in demand in two sectors requiring close personal interactions — international tourism and services.

¹⁹ *Global economic prospects: June 2020*, 2020, Washington, DC, World Bank.

²⁰ *Ibid.*

other *major world hubs of GVCs' intersection* — Germany and the USA [18]. What is also noticeable, due to complexity of distributed production, involving thousands of multi-tier suppliers and interconnected global supplier ecosystems, the pandemic shock and associated lockdowns have caused *the record high surge of uncertainty* in global markets, with its level having risen two times higher than during the Great Recession of 2007–09 [44] (fig. 5).

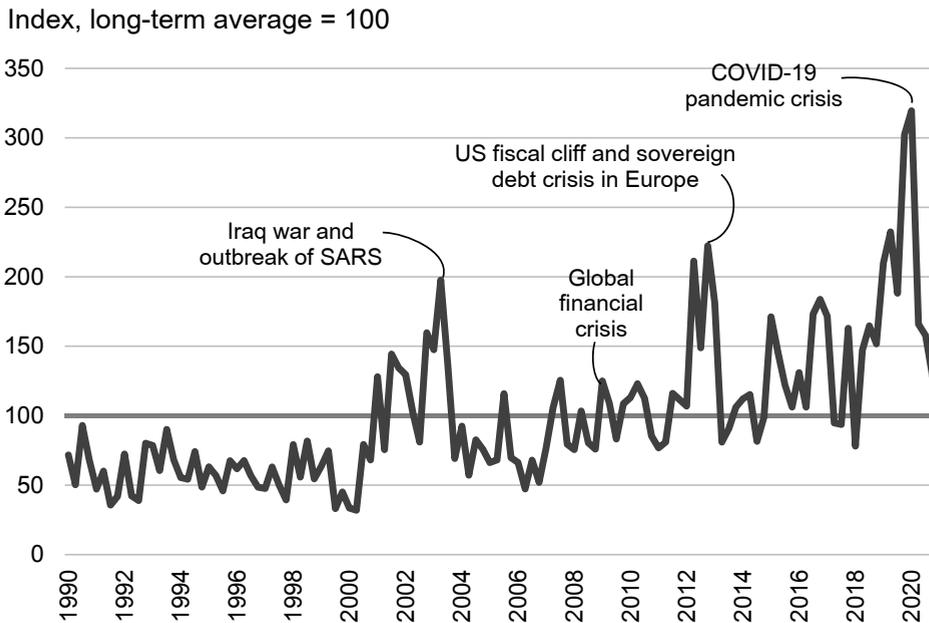


Fig. 5. The dynamics of the World Uncertainty Index, 1990–2020

Source: World Uncertainty Index data, 2021.

In 2020, many leading MNEs faced huge financial losses. However, this damage did not force them to turn away from benefits of distributed production. Rather they intend to mobilize all existing policy measures for ensuring a sound after-shock recovery and a better protection of their GVCs against possible future disruptions. To this end, they are turning to strategies for enhancing GVCs' resilience, aiming to adapt them to the new, post-pandemic realities.

3. The concept of economic resilience and its model for GVCs

The concept of resilience derives from systems sciences and the complexity theory, dealing with complex non-linear (or complex adaptive) systems to ensure their sustainable functioning. Since early-mid 2010s, this concept has been increasingly applied by scholars and practitioners to various fields of activity, including ecology, political science and management [45]. In relation to national

economies, the idea of building resilience has been raised under the OECD global research initiative of 2015 ‘New Approaches to Economic Challenges’ (NAEC Initiative), calling scholars, governments and all other interested parties to renew traditional economic thinking and jointly respond to the challenge of unpredictable changes.²¹

According to the OECD descriptions,²² **‘resilience’** denotes the ability of a complex system to flexibly recombine its elements and resources for achieving *dynamic sustainability under high uncertainty*, which means keeping on at an equilibrium either at the previous or at a new development level in response to sudden external or internal disturbances.²³ A system is considered resilient if it is able to absorb unpredictable shocks and quickly recover after them, with this resilient state being an opposite to the state of its fragility.²⁴

With respect to GVCs, the idea of resilience concerns *building resilience to disruption risks*. In the pre-pandemic times, conceptual approaches and policy-oriented modelling in this field could be found primarily in the risk management literature [45] and in the management literature on supply chains [36; 2], with both research streams having incorporated valuable insights from the complexity theory and network analysis.

According to these literature streams, the resilient state of a system, particularly of a GVC, results from achieving by it an optimal dynamic balance between two structural properties — **robustness and flexibility**. While robustness concerns maintaining structural stability and functionality under a sudden shock (that is, ‘being safe’), flexibility implies restoring effective performance after a shock by adapting the system to shock-induced changes in the environment (that is, ‘performing safely’) [3]. Differently put, *a resilient system is typically robust enough to safely absorb shocks, and simultaneously, flexible enough to self-adapt to the shock-induced changes through recombination of its structural elements and key resources*.

To obtain greater robustness and flexibility, and ultimately, adaptability to sudden shocks, the system needs some surplus (additional) resources, production facilities or functional capabilities. This variety of surplus assets is placed in resilience-related research under an overarching term **‘redundancy’** [47]. Redundancy is not about the traditional increase in material stocks or the creation of additional production facilities to address operational risks. In relation to disruption risks and resilience in GVCs, building redundancy implies a wide

²¹ *Final NAEC synthesis: New approaches to economic challenges*, 2015, Paris, OECD Publishing.

²² *Resilience systems analysis: Learning and recommendations report*, 2017, Paris, OECD Publishing.

²³ As follows from complexity economics, the equilibrium of complex systems concerns their dynamic sustainability under constantly changing environment [46].

²⁴ *Resilience systems analysis: Learning and recommendations report*, 2017, Paris, OECD Publishing.

variety of measures that extend from multiple input sourcing and diversification of suppliers to improving the chain's network configuration and introduction of new digital technologies [3].

Creating redundancy in complex systems is opposed to the process of deepening leanness, usually associated with traditional systems that benefit from 'frugal' behaviour and cost-saving priorities [3]. Indeed, through decades, firms and economies have been improving their production efficiency through such cost-saving policies as minimizing current inventory, maximizing capacity utilization or, lately, involving themselves in the just-in-time supplies. However, in the age of uncertainty, *a system's economic efficiency depends not so much on increasing its current profitability but rather on achieving its long-lasting resilience*. This goal requires availability of surplus assets and free capacities to be activated in the event of a shock, thus enabling the system to flexibly recombine all existing resources and facilities.

After the pandemic shock, the leading MNEs are looking for a better adherence to these new conceptual approaches. They associate enhancement of their GVCs' resilience with a new kind of risk management — *the disruption risk management*, aimed at controlling the ripple effect in case of a shock. Such control typically encompasses both pre-disruption and post-disruption stages in the GVC functioning (fig. 6).

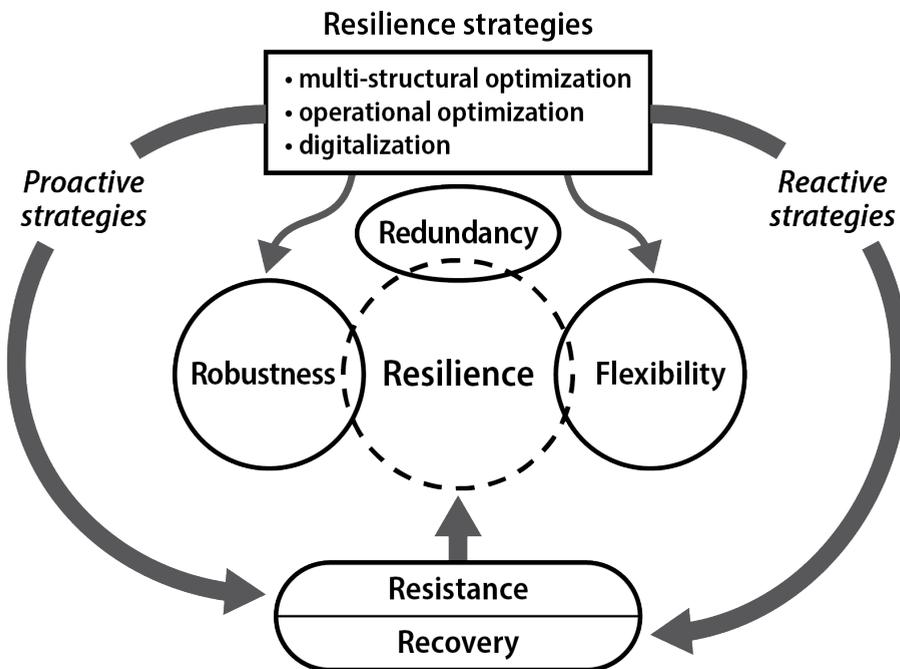


Fig. 6. Disruption risk management in GVCs: model for building resilience

Source: authors' design based on [2; 3].

Pre-disruption stage concerns implementation of **proactive planning strategies**, or the GVC development plan accounting for probability of shocks and supply disruptions (conditionally, the plan A). Such strategies are meant to improve *the GVC resistance to possible shocks*, that is, to ensure its ability either to prevent ripple effects or to curb them. Curbing of ripple effects implies containment of spatial propagation and duration of supply disruptions along the chain, as well as mitigating their adverse impact on both the GVC performance (output, sales, profits, etc.) and on its multi-structural design (composition of supplier firms, production structure, structure of input sourcing, transportation routes, end markets, etc.).

At this stage, the lead firm deploys a wide variety of complementary measures, aiming to proactively boost both robustness and flexibility of the GVC. *Strengthening of GVC robustness* is achieved by optimizing the chain's multi-structural design and by building some operational redundancy in the production process (the disruption risk mitigation inventory, buffer production facilities, etc.). *Enhancement of GVC flexibility* also concerns both structural and operational chain's parameters, implying similar and overlapping measures for building redundancy assets that can render the chain a room for maneuver in adaptation to possible post-shock changes.

Post-disruption stage appears if in case of a shock the lead firm has still failed to prevent ripple effect by proactive measures. It concerns implementation of **reactive control strategies**, or a certain reactive contingency plan that is used instead of an original plan to account for the actual scale of disruptions happened in various chain's components (conditionally, the plan B). Reactive measures are meant to ensure *a quick after-shock recovery of the GVC*. To this end, the lead firm activates the early built redundancies and flexibilities, aiming to lessen financial losses of GVC's firms from disruptions and to restore the chain's efficient performance. Simply put, it bridges proactive resistance strategies with reactive recovery policies [2].

In sum, as shown in figure 5, GVCs can self-adapt to non-predicable shocks and demonstrate the best possible performance under high uncertainty in the state of an optimal dynamic balance between robustness and flexibility. Resistance to sudden shocks and a safe after-shock recovery are two crucial properties of resilient GVCs and, at the same time, two critical elements of the ripple effect control [3]. This control requires building redundancies, as well as *coordination of pre-disruption and post-disruption resilience measures over time and space*, which leads to the GVC restructuring and replanning its performance on a new development level [48].

4. Post-pandemic resilience strategies of global companies

The task of remaining resilient under upsurged uncertainty urged leading MNEs to improve ways of enhancing robustness and flexibility of GVCs, with putting a stronger emphasis on sustaining the GVC efficient performance in the state under and after a shock.

Upon reviewing recent economic and business literature on GVCs,^{25,26,27,28} we classify possible resilience strategies of leading MNEs into **three parallel and overlapping complementing areas of action** that may pass through both proactive and reactive stages of the ripple effect control. As shown in figure 5, they are the GVC multi-structural optimization, the GVC operational optimization, and the GVC digitalization. In all three areas, different resilience tools can be applied either separately or in various complementary combinations.

Multi-structural optimization in GVCs

The first area of activities concerns optimization of GVC structural parameters by means of the following policy tools:

(1) **Diversification and geographic relocation of suppliers** — the basic line, containing a diversified package of measures:

- *Expansion of geography and number of suppliers, up to dual and multiple input sourcing*, aimed at providing redundancy (substitutable) sourcing options for each essential input at each stage of production. This measure is meant to reduce the risky dependence of GVC firms on one or two partners and locations, especially their overdependence on supplies of Chinese intermediates. According to UNCTAD forecasts, the post-pandemic diversification of suppliers will be essential for service GVCs, as well as GVCs in medium- and low-technology manufacturing;²⁹

- *Nearshoring*, or switching from long-distance offshoring to choosing suppliers from geographically closer locations (or to relocating there MNE's own branches), aimed at shortening length of GVCs and hence, at reducing scope of ripple effects;

- *Partial reshoring*, or a return of certain offshore GVC links (especially middle manufacturing links located in China) back to the country of origin, usually a developed one. This will concern 'strategically important' sectors (like

²⁵ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

²⁶ *Global economic prospects: June 2020*, 2020, Washington, DC, World Bank.

²⁷ *World investment report 2020: International production beyond the pandemic*, 2020, New York, NY, United Nations.

²⁸ *Shocks, risks and global value chains: Insights from the OECD METRO model*, 2020, Paris, OECD Publishing.

²⁹ *World investment report 2020: International production beyond the pandemic*, 2020, New York, NY, United Nations.

pharmaceuticals) and some labour-intensive industries (like clothing production) [4]. Contrary to the immediate assumptions after the pandemic shock, *no large-scale re-shoring involving many industries is expected*: according to the OECD estimations,³⁰ the over-localization of production brings neither greater security nor greater efficiency to national economies, but just undermines GVC's resilience through lowered structural flexibility and decreased diversity of suppliers.

(2) **Regionalization of GVCs** — switching from their globally dispersed configurations to more geographically concentrated, macro-regional ones, without reducing the number of their functional links. Before the pandemic shock, macro-regional GVCs have already dominated in the highly integrated EU and in the East Asia, whereas in North America and in the rest parts of the world, on the contrary, a distinctly global configuration of GVCs has prevailed, with their firms relatively more dependent on distant partners than on supplier from their macro-regions.³¹ But in the coming years, the task of reducing disruption risks will lead to a wider spreading of macro-regional GVCs, especially in the extraction and manufacturing sectors.³² In other words, the number of suppliers and nodes in GVCs will continue to grow, yet within more concentrated spaces.

(3) **Smart-sourcing strategies** — building such GVC configurations that ensure a continual innovation process along the entire chain to sustain its competitive advantages. Many leading MNEs began to cultivate smart-sourcing since the 2010s: in order to develop advanced manufacturing, they were increasingly allocating the manufacturing GVC nodes among territories with highly skilled labour, world class universities or clusters with a unique specialisation [49]. In the 2020s, such innovation-driven considerations will only expand to ensure GVCs' robustness and effective functioning under sudden shocks. Moreover, global companies will increase their own investments in formation of innovation clusters in different locations worldwide, including partnerships in related industries. Finally, they will continue to wider allocate R&D nodes of GVCs beyond developed countries, switching to developing and transition economies (R&D offshoring), which is a relatively recent trend, untypical for previous stages of globalization [50].

³⁰ *Shocks, risks and global value chains: Insights from the OECD METRO model*, 2020, Paris, OECD Publishing.

³¹ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

³² *World investment report 2020: International production beyond the pandemic*, 2020, New York, NY, United Nations.

Operational optimization in GVCs

The second area concerns optimization of the GVC product development process (the cycle of value-adding operations and related supply stages, as shown in Fig. 2), embracing the following policy tools:

(1) **Building redundancy along the GVC links** — usually implies building such reserve assets, as the risk mitigating material inventory, reserve production capacities or backup supply sources. The pandemic shock has put leading MNEs before a management dilemma: should they sacrifice the obvious cost-saving benefits of just-in-time supplies for the benefits of counteracting future shocks through additional investment in redundancy? While proactively made before a possible shock, such investments turn out quite expensive both for the lead firm and for other chain's partners in case of no shock event [3]. Many MNEs still decided to create redundancies either at the level of certain GVC nodes producing critical inputs or even along the entire chain.³³ To avoid risks of stockpiling too much reserve assets (which may result in decreasing rather than increasing resilience), lead firms will apply digital technologies helping to find out where exactly, in what form and how much redundancy should be built.

(2) **Reducing current production costs and increasing operational flexibility** — through applying advanced technologies (digital platforms, modular solutions, 3d printing, etc.). To ensure a quick after-shock recovery of GVCs, lead firms must combine the proactive investment in operational redundancy, aimed at preventing rippling supply disruptions, with sustaining the flow of production process in case such disruptions did occur. To this end, they will increasingly apply various applications of traditional ICT, which can help to reduce different current costs (in communication, manufacturing, logistics, customs procedures, etc.) and simultaneously, to enhance flexibility of value-adding operations throughout the production cycle (by recombination or better coordination of business tasks, etc.).³⁴ Cost reduction is especially important for GVCs in manufacturing, considering their high transaction costs in cross-border shipments.³⁵

The survey of 60 leading MNEs, conducted by McKinsey Global Institute in May 2020,³⁶ confirmed that almost all global companies (93%) intend to take

³³ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

³⁴ For example, additive manufacturing, which complements traditional manufacturing and thus expands trade through GVCs [51], allows not just to save time on prototyping but also to reduce disruption risks due to 3D-printing of missing components. It can also reduce the number of GVC links, and hence, the scope of ripple effect, thus enhancing the GVC resilience on pre- and post-disruption stages [52].

³⁵ *World trade report 2018: The future of world trade. How digital technologies are transforming global commerce*, 2018, Geneva, World Trade Organization.

³⁶ *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

action for improving their GVCs' resilience through either multi-structural or operational optimization, or through both. On average, 44% of surveyed lead firms are ready to sacrifice short-term profitability of GVCs, based on 'just-in-time' supply model, for their long-lasting sustainability to be achieved by building different redundancies, dual sourcing and diversification of suppliers. At the same time, the survey also confirmed research findings on institutional and technological limitations of relocation of GVC nodes, especially in high-tech industries [4]. In particular, relocation can undermine long-lasting inter-firm partnerships within global supplier networks, where thousands of firms have built up over years a certain level of mutual trust, tacit knowledge, and a wide access to highly specialized producers in various regional clusters around the world.

Digitalization of GVCs

The third area concerns deriving the potential benefits from the in-depth digitalization of GVCs. Digitalization is considered a fundamental way to simultaneously reduce disruption risks, production costs and large additional costs imposed by investments in redundancy.³⁷

New ICT and ICT-based production technologies, such as *big data analytics*, *advanced trace and tracking systems*, *Blockchain*, *decentralized agent-driven control systems*, *advanced robotics*, and *Industry 4.0 applications* (like cyber-physical production systems or additive manufacturing) [53], provide real time data sharing and the real time coordination of firms' activities along the GVC. They fundamentally raise the transparency of cross-border supply flows and visibility of available resources in the chain, making it possible *to track sources of disruptions in good time and quickly cut short the ripple effect of their propagation*.

Different combinations of digital technologies can *fully upgrade the quality of both production management and ripple effect control in GVCs*, creating the possibility of simulation modelling regarding the negative impact of disruptions, scenarios of GVCs' after-shock recovery and variants of their restructuring [48; 52]. Although at present some latest digital technologies are still immature or not properly tested [53], literature predicts that the advance in digitalization may push the emergence of ***a new generation of GVCs with low sensitivity to uncertainty***. This will be achieved due to GVCs' reliance on digital analytics algorithms and their increasing focus on data trading (product design, software, etc.) [52].

³⁷ An example is a joint 3D printing technology of American logistics service provider United Parcel Service and German SAP, allowing to save time and lessen supply risks through manufacturing items directly at UPS distribution centres worldwide. Another example is a joint development by Maersk shipping network and IBM of Blockchain-based platform for smart collaboration among GVCs' partners, which makes container shipping between Africa and Europe cheaper, faster and more reliable [3].

In sum, the post-pandemic digitalization of GVCs will seemingly become a general trend allowing to radically reduce the current vulnerability of distributed production. Meanwhile, a recent pre-pandemic survey of global companies on strengthening the GVC resilience through digitalization [53] has identified ***the need for enhancing trust*** among GVC firms to ensure their efficient collaboration and transparent information exchange. An important contribution in this area can be made by the introduction of *digital platforms for interactive dialogue among GVC partners* [3]. Moreover, building resilience requires not just material investments in redundancy and new assets but also intangible investments *in strengthening each interfirm relationship throughout the GVC* [45; 54], considering that trust allows to bring down firms' negative expectations of ripples effects, similar to expectations during a financial panic.

5. The windows of opportunity for national economies

Although the COVID-19 pandemic shock caused a sharp temporary decline in international trade, including GVC-related trade (Fig. 3), it did not result in disintegration or large-scale deglobalisation of the world economy, as many politicians feared in the spring of 2020. The latest research on GVCs^{38,39} offers numerous quantitative proofs that advantages of distributed production and value-added trade outweigh the risks of rippling supply disruptions in case of sudden shocks [55].⁴⁰ In other words, ***globalisation as such is not increasing the fragility of economic systems***. Rather, the growing complexity of products and rising global uncertainty are urging decision-makers of all levels to revise their traditional perceptions of systems' sustainability, with refocusing strategic priorities from maximizing current profits to ensuring long-lasting resilience.

Indeed, in the coming decades, the world will be increasingly network-based, getting both more interconnected globally and more diversified locally. Such a world is likely to face ever more intense and cascading global shocks (epidemics, disasters as a result of climate change, failures deriving from new disruptive technologies, financial crises, etc.) that will repeatedly test resilience and adapt-

³⁸ *World development report 2020: Trading for development in the age of global value chains*, Washington, 2020, DC, World Bank.

³⁹ *Global value chains: Efficiency and risks in the context of COVID-19*, 2020, OECD Policy Responses to Coronavirus (COVID-19). doi: <https://doi.org/10.1787/67c75fdc-en>

⁴⁰ For example, simulations based on the OECD's global trade model show that if at the start of the pandemic governments had insisted on mass reshoring policies of global firms and on "re-localization" of GVC links to their country domains, national economies would be less exposed to foreign shocks, but they would be also less efficient in terms of productivity and less able to cushion sudden domestic shocks through international trade (see *Shocks, risks and global value chains: Insights from the OECD METRO model*, 2020, Paris, OECD Publishing.).

ability of existing systems. This implies that since 2020s, efforts for enhancing resilience will be *both the strategic imperative and the key source of competitive advantages* for all types of businesses and economies.

At the moment, GVCs are one of the first segments of the world economy, where the appliance of resilient strategies is vividly pronounced. Partly deployed by leading MNEs even before the pandemic crisis, such strategies will only gain momentum in the years ahead, generating increasingly perfect management of disruption risks. What growth opportunities and policy implications can this trend bring for national economies?

In our view, resilience strategies of global companies are redirecting globalisation towards a new historical stage — less turbulent and better arranged as compared with its previous phases. In its turn, globalisation of the 2020s, termed in literature as ‘re-globalisation’ [4], may offer ***new development prospects for a good part of catching-up economies*** through improving their connectivity with world markets. The recent World Bank’s study on GVCs⁴¹ assumes that in the 2020s, an increasing range of countries and territories will benefit from their enlarged engagement in distributed production.

Firstly, in the next five years, the ongoing reconfiguration of GVCs and relocation of their links from present domains to other jurisdictions may involve up to a quarter of the world manufacturing facilities for traded goods.⁴² Such *tremendous shifts in the global industrial landscape*. can open a chance for certain developing territories to quickly upgrade their specialisation and find a new niche in various GVCs. Upon entering the world export markets, these economies may well squeeze out the previously dominant positions of China, while China itself is expected to drift from the largest world supplier of relatively cheap intermediates to the largest end market for final consumption and sales.⁴³

Secondly, the expected switching of GVCs from globally dispersed design to more compact configurations (through regionalization, nearshoring, partial reshoring, etc.) may *amplify economic integration within the world macro-regions* (Europe as a whole, Baltic Sea Region, South-East Asia, Latin American regions, etc.), which can refine their specialisation and the specialisation of their member-countries. Basically, new interconnected sub-regions and networked economic communities will increasingly appear across the world. This will make the globalized economy increasingly diversified and multipolar, thus working for closing the gap between the so-called centre and periphery in Wallerstein’s terms.

⁴¹ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

⁴² *Risk, resilience, and rebalancing in global value chains*, 2020, Washington, DC, McKinsey & Company.

⁴³ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

Thirdly, the prospective advance in digitalization of GVCs will be accompanied by *further servicification of the manufacturing sector*, that is, when innovative goods are increasingly exported together with supply of innovative services [56]. Moreover, the service-based globalisation is expected to increasingly outpace the emergence of new manufacturing-based GVCs.⁴⁴ This trend may allow such transition economies as Russia, who are combining their resource-based specialisation with a rapid domestic development of the ICT sector, to improve their position in world markets through integration in high-profitable service links of GVCs, rather than through shifting from present raw materials' exports to exports of higher processed manufacturing items.

Finally, what also looks promising for such countries as Russia in post-pandemic times, the R&D and other knowledge-intensive GVC nodes, earlier concentrated in developed countries, will be increasingly located in developing and emerging market economies.

However, the *realization of these development opportunities cannot be automatic*. According to World Bank,⁴⁵ in the 2020s, GVCs can continue to be a force for sustainable growth of many developing and transition economies but provided they speed up reforms to improve business climate, liberalize trade and foreign direct investment. In parallel, advanced economies are required to pursue more predictable policies to avoid trade conflicts (such as the pre-pandemic US-China conflict) and keep their markets open. All nations should take care of the ecological environment, as well as avoid the introduction of any additional trade barriers to ensure that the benefits of GVC participation are shared and sustained.

To conclude, studies on the resilience of systems go beyond the framework of traditional mainstream economics. In this sense, they refer to perspective research that incorporates insights from complexity economics [46]. Our paper touches upon some ideas of complexity but their deeper consideration in relation to GVCs and the post-pandemic world as a whole remains a subject of future investigation.

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⁴⁴ *World trade report 2019: The future of services trade*, 2019, Geneva, World Trade Organization.

⁴⁵ *World development report 2020: Trading for development in the age of global value chains*, 2020, Washington, DC, World Bank.

References

1. Baldwin, R. E., Tomiura, E. 2020, Thinking ahead about the trade impact of COVID-19. In: Baldwin, R. E., Weder di Mauro, B. (eds.) *Economics in the time of COVID-19*, London, CEPR Press, p. 59—71.
2. Dolgui, A., Ivanov, D., Sokolov, B. 2018, Ripple effect in the supply chain: An analysis and recent literature, *International Journal of Production Research*, vol. 56, no. 1—2, p. 414—430. doi: <https://doi.org/10.1080/00207543.2017.1387680>.
3. Ivanov, D., Dolgui, A., Sokolov, B. 2019, Ripple effect in the supply chain: Definitions, frameworks and future research perspectives. In: Ivanov, D., Dolgui, A., Sokolov, B. (eds.) *Handbook of ripple effects in the supply chain*, Cham, Springer, p. 1—33.
4. Gereffi, G. 2020, What does the COVID-19 pandemic teach us about global value chains? The case of medical supplies, *Journal of International Business Policy*, vol. 3, no. 3, p. 287—301. doi: <https://doi.org/10.1057/s42214-020-00062-w>.
5. Antràs, P. 2020, De-globalisation? Global value chains in the post-COVID-19 age, *NBER Working Papers*, no. 28115. doi: <https://doi.org/10.3386/w28115>.
6. Miroudot, S., Nordström, H. 2020, Made in the world?: Global value chains in the midst of rising protectionism, *Review of Industrial Organization*, vol. 57, no. 2, p. 195—222. doi: <https://doi.org/10.1007/s11151-020-09781-z>.
7. Felbermayr, G., Görg, H. 2020, Implications of COVID-19 for globalization. In: Felbermayr, G. (ed.) *The world economy after the coronavirus shock: Restarting globalization*, Kiel, Kiel Institute for the World Economy, p. 3—14.
8. Javorcik, B. 2020, Global supply chains will not be the same in the post-COVID-19 world. In: Baldwin, R., Evenett, S. (eds.) *COVID-19 and trade policy: Why turning inward won't work*, London, CEPR Press, p. 111—116.
9. Kondratiev, V. B. 2015, World economy as global value chain's network, *World economy and international relations*, no. 3, p. 5—17 (in Russ.).
10. Kadochnikov, P. A., Knobel, A. Y., Sinelnikov-Murylev, S. G. 2016, Openness of the Russian economy as a source of economic growth, *Voprosy ekonomiki*, no. 12, p. 26—42. doi: <https://doi.org/10.32609/0042-8736-2016-12-26-42> (in Russ.).
11. Smorodinskaya, N. V., Katukov, D. D. 2017, Dispersed model of production and smart agenda of national economic strategies, *Ekonomicheskaya politika*, vol. 12, no. 6, p. 72—101. doi: <https://doi.org/10.18288/1994-5124-2017-6-04> (in Russ.).
12. Simachev, Yu. V., Fedyunina, A. A., Kuzyk, M. G. et al. 2020, *Rossiia v global'nom proizvodstve* [Russia in global production], National Research University Higher School of Economics report, Moscow (in Russ.).
13. Gereffi, G., Humphrey, J., Kaplinsky, R., Sturgeon, T. J. 2001, Introduction: Globalisation, value chains and development, *IDS Bulletin*, vol. 32, no. 3, p. 1—8. doi: <https://doi.org/10.1111/j.1759-5436.2001.mp32003001.x>.
14. Sturgeon, T. J. 2008, From commodity chains to value chains: Interdisciplinary theory building in an age of globalization. In: Bair, J. (ed.) *Frontiers of commodity chain research*, Stanford, CA, Stanford University Press, p. 110—135.

15. Coe, N. M., Yeung, H. W. 2015, *Global production networks: Theorizing economic development in an interconnected world*, Oxford, Oxford University Press.

16. Baldwin, R. E. 2013, Trade and industrialization after globalization's second unbundling: How building and joining a supply chain are different and why it matters. In: Feenstra, R. C., Taylor, A. M. (eds.) *Globalization in an age of crisis: Multilateral economic cooperation in the twenty-first century*, Chicago, IL, University of Chicago Press, p. 165—212.

17. Baldwin, R.E. 2016, *The great convergence: Information technology and the new globalization*, Cambridge, MA, Harvard University Press.

18. Taglioni, D., Winkler, D. 2016, *Making global value chains work for development*, Washington, DC, World Bank.

19. de Marchi, V., Di Maria, E., Golini, R., Perri, A. 2020, Nurturing International Business research through Global Value Chains literature: A review and discussion of future research opportunities, *International Business Review*, vol. 29, no. 5, p. 101708. doi: <https://doi.org/10.1016/j.ibusrev.2020.101708>.

20. Smorodinskaya, N. V., Katukov, D. D. 2019, When and why regional clusters become basic building blocks of modern economy, *Balt. Reg.*, vol. 11, no. 3, p. 61—91. doi: <https://doi.org/10.5922/2079-8555-2019-3-4>.

21. Ponte, S., Sturgeon, T. 2014, Explaining governance in global value chains: A modular theory-building effort, *Review of International Political Economy*, vol. 21, no. 1, p. 195—223. doi: <https://doi.org/10.1080/09692290.2013.809596>.

22. Russell, M. G., Smorodinskaya, N. V. 2018, Leveraging complexity for ecosystemic innovation, *Technological Forecasting and Social Change*, no. 136, p. 114—131. doi: <https://doi.org/10.1016/j.techfore.2017.11.024>.

23. Baldwin, R. E., Lopez-Gonzalez, J. 2015, Supply-chain trade: A portrait of global patterns and several testable hypotheses, *The World Economy*, vol. 38, no. 11, p. 1682—1721. doi: <https://doi.org/10.1111/twec.12189>.

24. Cattaneo, O., Gereffi, G., Staritz, C. 2010, Global value chains in a postcrisis world: Resilience, consolidation, and shifting end markets. In: Cattaneo, O., Gereffi, G., Staritz, C. (eds.) *Global value chains in a postcrisis world: A development perspective*, Washington, DC, World Bank, p. 3—20.

25. Frederick, S. 2019, Global value chain mapping. In: Ponte, S., Gereffi, G., Raj-Reichert, G. (eds.) *Handbook on global value chains*, Cheltenham, Edward Elgar, p. 29—53.

26. Mayer, F. W., Phillips, N. 2017, Outsourcing governance: States and the politics of a 'global value chain world', *New Political Economy*, vol. 22, no. 2, p. 134—152. doi: <https://doi.org/10.1080/13563467.2016.1273341>.

27. Los, B., Timmer, M. P., de Vries, G. J. 2015, How global are global value chains?: A new approach to measure international fragmentation, *Journal of Regional Science*, vol. 55, no. 1, p. 66—92. doi: <https://doi.org/10.1111/jors.12121>.

28. Grossman, G. M., Rossi-Hansberg, E. 2008, Trading tasks: A simple theory of offshoring, *American Economic Review*, vol. 98, no. 5, p. 1978—1997. doi: <https://doi.org/10.1257/aer.98.5.1978>.

29. Hausmann, R., Hwang, J., Rodrik, D. 2007, What you export matters, *Journal of Economic Growth*, vol. 12, no. 1, p. 1—25. doi: <https://doi.org/10.1007/s10887-006-9009-4>.
30. Sreedevi, R., Saranga, H. 2017, Uncertainty and supply chain risk: The moderating role of supply chain flexibility in risk mitigation, *International Journal of Production Economics*, no. 193, p. 332—342. doi: <https://doi.org/10.1016/j.ijpe.2017.07.024>.
31. Owens, E. L., Wu, J. S., Zimmerman, J. 2016, Idiosyncratic shocks to firm underlying economics and abnormal accruals, *The Accounting Review*, vol. 92, no. 2, p. 183—219. doi: <https://doi.org/10.2308/accr-51523>.
32. Elliott, M., Golub, B., Leduc, M. V. 2020, Supply network formation and fragility, *SSRN Working Papers*. doi: <https://doi.org/10.2139/ssrn.3525459>.
33. Taschereau-Dumouchel, M. 2020, Cascades and fluctuations in an economy with an endogenous production network, *SSRN Working Papers*. doi: <https://doi.org/10.2139/ssrn.3115854>.
34. Datta, P. 2017, Supply network resilience: A systematic literature review and future research, *The International Journal of Logistics Management*, vol. 28, no. 4, p. 1387—1424. doi: <https://doi.org/10.1108/IJLM-03-2016-0064>.
35. Scheibe, K. P., Blackhurst, J. 2018, Supply chain disruption propagation: A systemic risk and normal accident theory perspective, *International Journal of Production Research*, vol. 56, no. 1—2, p. 43—59. doi: <https://doi.org/10.1080/00207543.2017.1355123>.
36. Basole, R. C., Bellamy, M. A. 2014, Supply network structure, visibility, and risk diffusion: A computational approach, *Decision Sciences*, vol. 45, no. 4, p. 753—789. doi: <https://doi.org/10.1111/dec.12099>.
37. Chopra, S., Sodhi, M. S. 2014, Reducing the risk of supply chain disruptions, *MIT Sloan Management Review*, vol. 55, no. 3, p. 73—80.
38. Minas, J. P., Simpson, N. C., Kao, T.-W. 2019, New measures of vulnerability within supply networks: A comparison of industries. In: Ivanov, D., Dolgui, A., Sokolov, B. (eds.) *Handbook of ripple effects in the supply chain*, Cham, Springer, p. 209—227.
39. Snyder, L. V., Atan, Z., Peng, P., Rong, Y., Schmitt, A. J., Sinoysal, B. 2015, OR/MS models for supply chain disruptions: A review, *IIE Transactions*, vol. 48, no. 2, p. 89—109. doi: <https://doi.org/10.1080/0740817X.2015.1067735>.
40. Acemoglu, D., Carvalho, V. M., Ozdaglar, A., Tahbaz-Salehi, A. 2012, The network origins of aggregate fluctuations, *Econometrica*, vol. 80, no. 5, p. 1977—2016. doi: <https://doi.org/10.3982/ECTA9623>.
41. Barrot, J.-N., Sauvagnat, J. 2016, Input specificity and the propagation of idiosyncratic shocks in production networks, *The Quarterly Journal of Economics*, vol. 131, no. 3, p. 1543—1592. doi: <https://doi.org/10.1093/qje/qjw018>.
42. Carvalho, V. M., Tahbaz-Salehi, A. 2019, Production networks: A primer, *Annual Review of Economics*, vol. 11, no. 1, p. 635—663. doi: <https://doi.org/10.1146/annurev-economics-080218-030212>.

43. Coronese, M., Lamperti, F., Keller, K., Chiaromonte, F., Roventini, A. 2019, Evidence for sharp increase in the economic damages of extreme natural disasters, *Proceedings of the National Academy of Sciences*, vol. 116, no. 43, p. 21450–21455. doi: <https://doi.org/10.1073/pnas.1907826116>.
44. Baker, S. R., Bloom, N., Davis, S. J., Terry, S. J. 2020, COVID-induced economic uncertainty, *NBER Working Papers*, no. 26983. doi: <https://doi.org/10.3386/w26983>.
45. Linkov, I., Trump, B. D. 2019, *The science and practice of resilience*, Cham, Springer.
46. Arthur, W. B. 2021, Foundations of complexity economics, *Nature reviews. Physics*, no. 3, p. 136–145. doi: <https://doi.org/10.1038/s42254-020-00273-3>.
47. Martin, R., Sunley, P. 2015, On the notion of regional economic resilience: Conceptualization and explanation, *Journal of Economic Geography*, vol. 15, no. 1, p. 1–42. doi: <https://doi.org/10.1093/jeg/lbu015>.
48. Ivanov, D. 2020, Viable supply chain model: Integrating agility, resilience and sustainability perspectives-lessons from and thinking beyond the COVID-19 pandemic, *Annals of operations research*, p. 1–21. doi: <https://doi.org/10.1007/s10479-020-03640-6>.
49. Berger, S. 2013, *Making in America: From innovation to market*, Cambridge, MA, MIT Press.
50. Belderbos, R., Sleuwaegen, L., Somers, D., De Backer, K. 2016, Where to locate innovative activities in global value chains: Does co-location matter? OECD Science, *Technology and Industry Policy Papers*, no. 30. doi: <https://doi.org/10.1787/5jlv8zmp-86jg-en>.
51. Freund, C., Mulabdic, A., Ruta, M. 2019, Is 3D printing a threat to global trade? The trade effects you didn't hear about, *World Bank Policy Research Working Papers*, no. 9024.
52. Ivanov, D., Dolgui, A., Sokolov, B. 2019, The impact of digital technology and Industry 4.0 on the ripple effect and supply chain risk analytics, *International Journal of Production Research*, vol. 57, no. 3, p. 829–846. doi: <https://doi.org/10.1080/00207543.2018.1488086>.
53. Das, A., Gottlieb, S., Ivanov, D. 2019, Managing disruptions and the ripple effect in digital supply chains: Empirical case studies. In: Ivanov, D., Dolgui, A., Sokolov, B. (eds.) *Handbook of ripple effects in the supply chain*, Cham, Springer, p. 261–285.
54. Roscoe, S., Skipworth, H., Aktas, E., Habib, F. 2020, Managing supply chain uncertainty arising from geopolitical disruptions: Evidence from the pharmaceutical industry and Brexit, *International Journal of Operations & Production Management*, vol. 40, no. 9, p. 1499–1529. doi: <https://doi.org/10.1108/IJOPM-10-2019-0668>.
55. Eppinger, P., Felbermayr, G., Krebs, O., Kukharsky, B. 2020, COVID-19 shocking global value chains, *Kiel Working Papers*, no. 2167.
56. Lanz, R., Maurer, A. 2015, Services and global value chains: Servicification of manufacturing and services networks, *Journal of International Commerce, Economics and Policy*, vol. 6, no. 3, 1–18. doi: <https://doi.org/10.1142/S1793993315500143>.

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THE SPATIAL STRUCTURE OF BALTIC SEA FERRY SERVICES

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Ferry service is a transport system of regular routes which links areas separated by water bodies. Sometimes ferries are the only connection of an island and the mainland which is not rare in the Baltic Sea. A typical example of this is the island of Saaremaa. Ferry service is the backbone of cargo and passenger traffic in the Baltic Sea region.

This article aims to describe the spatial structure of the ferry service in the Baltic Sea. To this end, a statistical database on 101 ferry routes has been built with passenger and car traffic on each being calculated with an original methodology, which in its turn can be applied in analysing the spatial structure and traffic of ferry services in other regions. Baltic ferries account for over half of all European ferry-borne car and passenger traffic. The Baltic stands out as a region with exceptionally long ferry routes which sustain timber exports. The main cargo shipping country in the region is Sweden.

Keywords:

ferries, ferry service, passenger traffic, car traffic, concentration areas, water area

Introduction

The physical geography of the Baltic Sea shores is propitious for the development of ferry service. Jutting out into the sea, many islands and peninsulas are formed by the water basin, which create an irregular coastline. The construction of airports, bridges, and tunnels connecting all the islands and the shores of the gulfs and straits is expensive and not always feasible. That is why ferries provide principal transport links in such areas. A cheap and convenient means of transport, ferries can carry large cargoes and many passengers — up to 3,000 people and over 700 heavy vehicles.

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Ferry service is provided by vessels transporting cargoes, passengers, and motor vehicles — lorries, cars, trailers, buses, railway carriages, and locomotives. Train ferries carry railway carriages, cars, and passengers; car ferries — cars and passengers; passenger ferries — only passengers.

In case of busy traffic lines are usually operated by up to 6—7 decked vessels with bow and stern ramps (double-ended ferries). Lower decks are for railway carriages and trailers, middle for cars and buses, upper for passengers.

This study aims to describe the spatial territorial structure of the ferry service system in the Baltic Sea.

The aim of this research sets the following **objectives**:

- to design a database on car-and-passenger ferry traffic in the Baltic Sea;
- to calculate car and passenger traffic for each ferry route by means of an authorial methodology;
- to map the busiest passenger and car traffic flows;
- to identify the busiest ferry routes in the Baltic Sea and in separate countries applying these maps;
- to identify the areas of ferry service concentration and areas with the largest passenger and car traffic flows;
- to describe the current spatial structure of ferry services in the Baltic Sea.

The necessity of this research is conditioned by the growing demand for maritime ferry services, particularly cargo operators on the one hand, and a very small number of researches on the functioning of the services and almost total lack of statistical data on the traffic on individual routes on the other.

The Baltic Sea is one of the busiest sea basins in the system of global maritime traffic, which is a key factor for the development of regional economies and trade. The high density of ferry routes in the Baltic Sea is a result of the economic strength of countries skirting the sea. In a compact region, ferries are a convenient and inexpensive way to carry passengers and cargoes. The Baltic region is an independent economic centre with a widely ramified transport network coalescing the economic potential, cultures, and human resources of several countries. Ferry services appeared in Baltic Sea states at different times to compensate for the lack of impossible land connections.

Most ferry routes connect two economic centres or production and distribution hubs specialising in a selected type of cargo, for example timber. A ferry network mostly develops in case the operating company considers such services cost-effective. Many ferry operators work on the same routes, thus straining the regional maritime transport system. The lack of research into the connection between traffic and its spatial distribution as well as into its dependence on the institutional factor precludes traffic optimisation despite the enormous potential of ferry services in the region. Our findings may facilitate the spatial planning of maritime ferry routes and support feasibility studies into ferry services in the Baltic Sea.

Below we will consider the ferry services of several Baltic countries to explore the role of ferry routes as modern maritime thoroughfares.

Literature review

The literature on the topic is scarce. That is why we analysed a wide range of sources on ferry transport, many of which are historical overviews of the emergence of ferry services in Europe [1; 2].

The collection of papers *Ferry Services in Europe* edited by Funda Yercan at Dokuz Eylul University in Izmir, Turkey, is the only work focusing entirely on maritime ferry services linking the European continent. The book comprises several articles on ferry services in different seas and analyses traffic between selected countries. Special attention is paid to the institutional framework for ferry services: competition from other operators, the transport infrastructure, and the technical configuration of the fleet. Yet, this publication does not contain passenger and car traffic data.

Researchers from different, not only European, countries have emphasised the significance of ferry service for the transport system of the Baltic region. The literature abounds with publications on the topic by specialists in economics, administration, marketing, and statistical modelling.

In their article, Odeck and Høyem [4] explore the impact of competitive tendering on the operational costs of ferry services. The authors conclude that competitive tendering might preclude free competition and produce monopolistic tendencies.

This approach can reduce demand since the main priority for the customer when choosing an operator is the fare. Passengers are growing concerned about the quality of services on board the ferry [5], wait time, and speed [6]. These new demands are a challenge for both operators and shipbuilders [7–10].

Seaport and ferry terminal operators have to modernise port complexes for serving modern ferries most effectively, particularly to unload ferries quickly and safely. Innovation is needed at the busiest ports and small distant harbours where the ferry is the only connection to the mainland.

The proper functioning of ferry services requires regular monitoring of the route network for unlocking new destinations and redistributing current traffic.

The spatial structure of ferry services has been analysed in a number of articles [18]. For example, Baird [11] compares the configuration of ferry networks in Japan and the UK, the makeup of ferry fleets, and the features of domestic and international traffic.

The spatial distribution of ferry services was carried out by Christopherson as early as 1973, along with an assessment of passenger and car traffic [12]. He links the concentration of ferry traffic in the south of the Baltic to a greater demand for recreation and a denser network of international roads.

A research group led by Škurić [13] has proposed methods to identify the optimal location of ferry terminals and the right fleet size [13]. Maiorov and Fetisov have devised formulas for forecasting traffic handled by ports to improve the quality of services provided by maritime passenger terminals [14].

The deficiencies of the current instrumental and methodological framework for maritime planning are investigated by Myakinenkov [15]. He believes that marine spatial planning is absent in Russia, whilst many European countries are active in this field. Effective usage of water areas for ferry services will require zoning by economic activities and thus localisation feasibility studies.

Implementing such plans demands knowledge from across different areas of the European marine economy. This approach will strengthen transboundary ties and contribute to a common transport system in Europe with roads and railways connected by ferry routes. Gumenyuk and Melnik emphasise that although road railway transport has a connecting function in the Baltic, maritime transport is essential for a regional transboundary transport system [16]. They also stress the need for an evidence-based transport system for all countries on the shores of the Baltic Sea.

The literature review shows that few publications analyse the spatial structure of ferry services or its role in the transport industry. Yet, researchers do not deny the cost-effectiveness of this means of transporting cargoes. Some of them consider ferries to be a propulsive development factor. Most publications, however, do not provide an exhaustive overview of ferry services. There is usually a lack of car and passenger traffic data or information on existing and prospective ferry routes. Research on ferry services does not explore their correlation with other means of transport or economic and geographical conditions necessary for a successful ferry terminal.

This article aims to fill this gap in research. Geographers have not analysed the spatial structure of Baltic ferry services for a long time. The findings of this study have practical implications since the proposed method for estimating ferry-borne passenger and car traffic facilitates planning shipping routes and zoning the Baltic Sea for ferry service improvement.

Methods

Statistics on selected ferry routes in Europe are almost absent. Most national statistical yearbooks contain general data on marine traffic and annual numbers for the whole country. Sometimes think tanks publish information on individual routes, but, in most cases, they merely report an increase or decrease in traffic compared to previous years. There are no statistics on the spatial distribution of traffic — data necessary for planning, control, and efficiency calculation. Another deficiency is the lack of open access to this information.

The absence of detailed geographical information on each ferry route has encouraged us to develop a methodology for calculating the indirect indicator of ferry traffic on individual routes. The indicator is computed based on the passenger and vehicle capacity of ferries, the number of vessels per route, and the number of crossings per vessel per week.

The capacity utilisation rate (0.7)¹ and the average number of weeks per year were also taken into account, along with capacity specifics. For instance, the lane meter measure, i.e. the total length of the space for heavy vehicles, was used for Ro-Ro cargoes. Sometimes this measure also included the length of the space for cars. In the latter case, the capacity was calculated at the rate of 6 m per car and 18 m per heavy vehicle, according to the regulation of the European Parliament Transport Department. It was assumed that a ferry carries 70 per cent of cars and 30 per cent of heavy vehicles. The three following formulas were worked out.

Passenger traffic

$$\text{Passengers} = A \times B \times C_1 \times 0.7^* \times 52.1;$$

Car traffic

$$\text{Cars} = A \times B \times C_2 \times 0.7 \times 52.1 = A \times B \times (L/6) \times 0.7 \times 52.1;$$

Heavy vehicles

$$\text{HVs} = A \times B \times (L/18) \times 0.7 \times 52.1;$$

where A is the number of crossings per week; B is the number of ferries on a route; C1 is the average passenger capacity; C2 is the average car capacity; L is the total length of the car space (lane meters); 0.7 is the capacity utilization rate; 52.1 is the average number of weeks per year.

Data necessary for the calculations were collated in two stages. Ferry booking websites and online newspapers were searched for information on regional ferry operators. Then ferry timetables for 2017, routes, and their descriptions were found on the official websites of the companies. The websites of ferry ports and terminals provided detailed information. This way, data on the destinations served by each company and weekly crossings were obtained. Then, the search focused on the number and models of vessels on each route. Identifying the type of vessel made it possible to determine the technical detail necessary for calculating passenger and vehicle capacity. The data were substituted into the formula.

To illustrate, let us perform the calculation for the Oslo-Copenhagen ferry route, which is served by only one company — DFDS. Three vessel with a capacity of 378 passengers and 263 cars make a crossing once a day or seven times a week. By substituting these data into the formula we obtain the following: the passenger traffic on the route in 2017 was 578,998 people \approx 579,000 people; the car traffic was 402,848 \approx 403,000 cars. If several companies operated the route, the traffic handled by each would have been summed.

Results

Using the above methodology, we computed passenger and vehicle traffic for all 101 ferry routes.

¹ 0.7 is the standard capacity utilization rate for maritime transport. It is used when planning transport flows and designing vessels (to calculate optimum sizes) [17].

According to the European Parliament, the Baltic, North, and Mediterranean Seas accounted for most ferry operations in Europe (Fig. 1 a, b). About each second car was carried by ferry in the Baltic. In 2017, the proportion of the Baltic Sea in passenger traffic was 57 per cent; in car traffic, 62 per cent (Fig. 2 a, b).

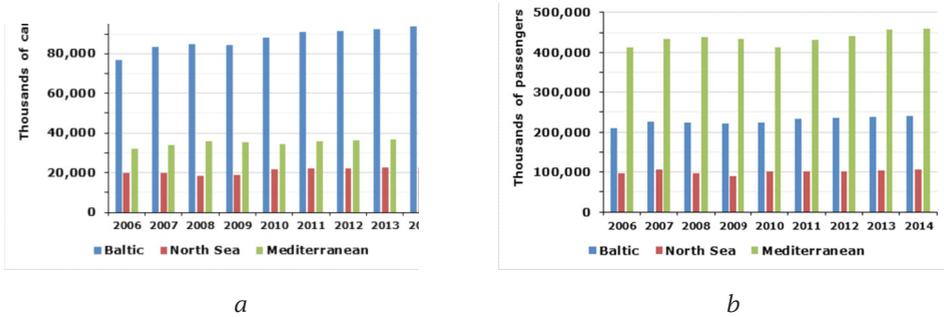


Fig. 1. Ferry-borne traffic: a — cars; b — passengers

Source: *The Harbours Review*, 2018, available at: <http://harboursreview.com/ro-ro-i-ferry-atlas-europe-2016/17.pdf> (accessed 23.11.2018).

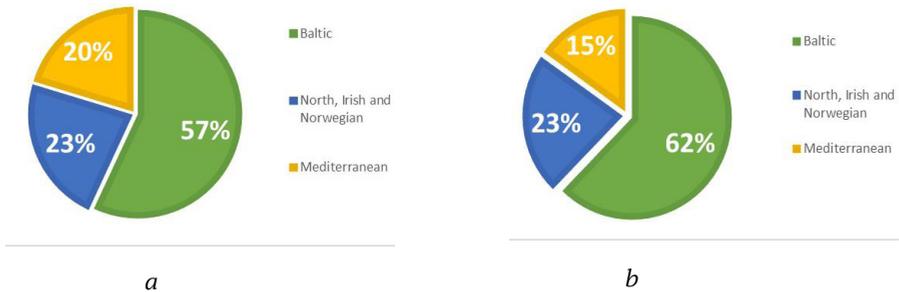


Fig. 2. The distribution of passenger (a) and car (b) traffic by European seas, 2017

Source: prepared by the authors based on the calculated data.

When collating information on maritime ferry operations and performing its primary analysis, we established that there is no regular service on many ferry routes, and some destinations are available only in selected seasons.

We focused on routes that have at least one regular crossing a week. Several seasonal routes, the total number of yearly crossings on which was 52 or higher, were also included in the sample to make it adequate and representative. Since ferries from Russian ports sail less often than once a week, none of such roots is analysed. Nor does the article consider ferry cruises.

After calculating the traffic flows meeting all the above conditions, we created a database on car and passenger ferry traffic by sea. All traffic flows were categorised into major, large, medium, and minor ones (according to their role in the European transport system). Table 1 demonstrates the characteristics of the four categories.

Table 1

Passenger and car ferry traffic in the Baltic Sea, 2017
(prepared by the authors based on the calculations)

Route category	Passenger traffic		Car traffic	
	from	to	From	to
Major	40,000,001	110,000,000	20,000,001	40,000,000
Large	20,000,001	40,000,000	5,000,001	20,000,000
Medium	1,500,001	20,000,000	500,001	5,000,000
Minor	1,000	1,500,000	100	500,000

Below we will look at the spatial structure of ferry services in the Baltic Sea at the level of countries accounting for most of the ferry traffic in the region — Denmark, Sweden, Germany, Poland, Estonia, and Finland.

Denmark

The physical geography of Denmark is conducive to the development of maritime transport, including ferry services. The country lies at the junction of the Baltic and North Seas, and its ferry operations have two distinct divisions — the Western European in the North Sea and the Eastern European in the Baltic Sea.

Two out of Europe's three busiest ferry routes run across the territorial sea of Denmark (the North Sea operations not considered). These are Puttgarden-Rødby and Helsingør-Helsingborg (fig. 3). Both routes are international: the former connects Denmark and Germany; the latter, Denmark and Sweden. Each carries more than 105 m people (2017) and 35 m cars a year. According to our calculations, the traffic is identical in both directions. Several factors explain this balance.

Firstly, the frequency of ferry services is the same in both directions (up to 10 crossings a day). Vessels on these routes have similar technical specifications and carry almost the same number of passengers and cars. The capacity of such ferries reaches 3,000 people and 800 vehicles.

Secondly, both routes link Copenhagen, situated on the island of Zealand, with the transport system of neighbouring countries and ensure the uninterrupted movement of people and goods to and from the city.

Thirdly, the fixed link between the islands of Lolland, Falster, and Zealand and the Øresund Bridge creates a high-performance intermodal transport corridor between the Nordic countries and continental Europe. Via Denmark, it connects the largest industrial clusters of Sweden (Helsingborg and Malmö in the south, Stockholm in the east, and the mining cluster in the north) with Hamburg — one of the busiest ports in Europe.

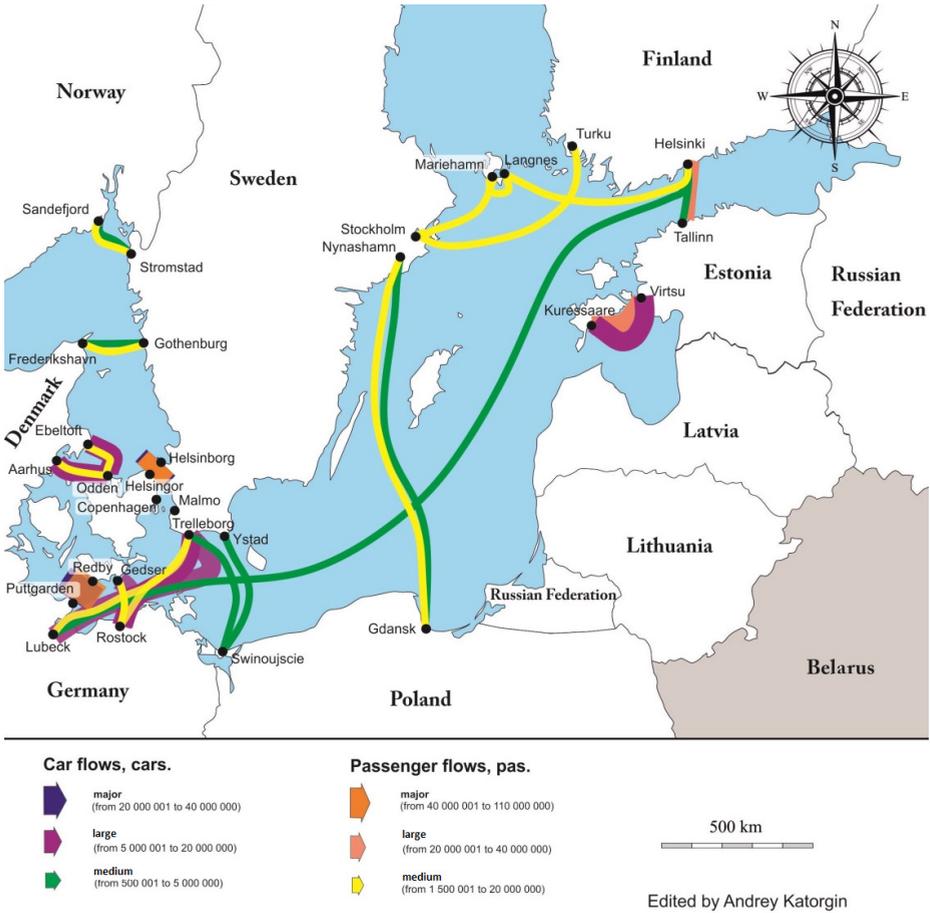


Fig. 3. The largest car and passenger flows in the Baltic Sea, 2017 (prepared by the authors)

Several medium traffic flows link Denmark to Germany (Rostok-Gedser) and Sweden (Frederikshavn-Gothenburg and Grenaa-Varberg). There are also important domestic ferry routes connecting the Jutland Peninsula and the island of Zealand. The car and passenger traffic between Odde (Zealand) to Aarhus and Ebeltoft (Jutland) is of medium intensity.

The location at the junction between the North and Baltic Sea and intermodal transport ferry services make Denmark a connecting country for multi-leg ferry routes in the Baltic Sea. Yet, only one of these routes, Fredericia-Klaipeda, is regular, i.e. there is more than one crossing a week. Ferries depart from Lithuania, stop at Copenhagen, and then reach Fredericia, from where the cargo (cars) moves to the North Sea port of Esbjerg. At Esbjerg, the cargo is forwarded to other ports, including British and Spanish maritime facilities.

This way, cargoes from Eastern Europe reach Western countries at a low cost and without much paperwork. Such multi-leg routes are not common in Denmark due to the inefficiency of interim loadings for operators instead of a one-time loading or unloading at the destination port using sea ferries. The situation is similar in neighbouring Sweden.

Sweden

Sweden is the destination of many Baltic ferry services (fig. 4). Twenty-six passenger and 47 freight routes connect Sweden with other countries of the region. The link between Helsingør and Helsingborg accounts for the heaviest passenger and car traffic. The second and third busiest routes run from Trelleborg to Germany's Rostock and Lübeck. Ferries link the East of Germany to Nordic Europe, and since the port of Rostock gravitates to both Berlin and Hamburg, the whole northern part of Germany is covered by this transport connection.

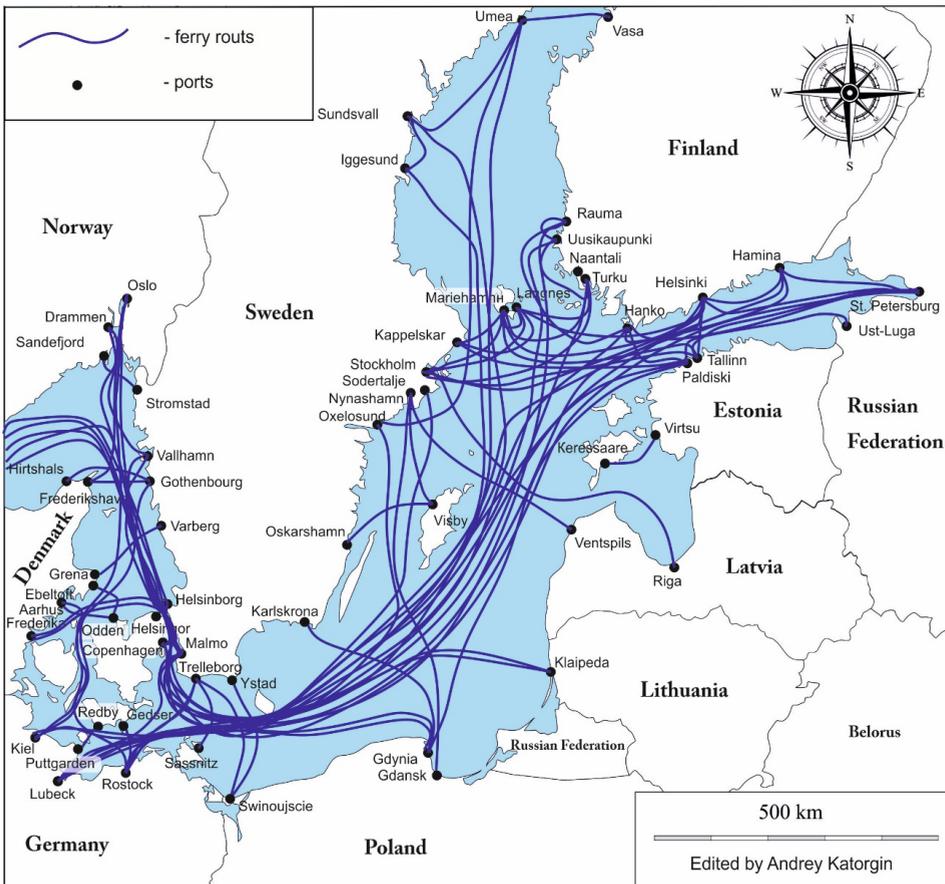


Fig. 4. Ferry routes in the Baltic Sea, 2017 (prepared by the authors)

Most passenger routes run to the Åland Islands — an archipelago in the north of the Baltic Sea. It is an autonomous region of Finland populated by Swedes and having a special multi-language status. Although the islands are part of Finland, they have more ferry links to Sweden than their metropole because of their primarily Swedish population. The passenger traffic between

Stockholm and Mariehamn, the autonomy's capital, is Sweden's second busiest passenger connection. Ferries run from Stockholm and its outport of Kapellskär to Mariehamn and Långnäs, a port on the eastern mainland of Åland. The large passenger flows are produced by both locals Finns and Swedes willing to economise. Since 1994, tax-free shopping is forbidden to EU residents on board vessels. However, the special status of the Åland islands allows operators to provide tax-free shopping services on the routes to Långnäs and Mariehamn.

Most freight ferries connecting Sweden and Finland carry Finnish timber and pulp.

The ferry services between Sweden and Poland have an important role for many Eastern European countries. Poland receives Swedish produce and forwards it to other states, including Russia. Goods are transported from the southern industrial cluster along the Trelleborg - Świnoujście and Ystad - Świnoujście routes; from the Stockholm cluster, along the Nynäshamn - Gdansk. These ferry lines are multi-leg routes, which are becoming commonplace in the Baltic. Cargos from the north-western part of the country reach the port of Malmö, where they are forwarded to both ports of neighbouring countries and the shores of the North Sea.

A specific feature of the Swedish transport system is coastwise traffic between the northern iron ore mines on the coast of the Bothnian Bay and the industrial clusters in the south and west of the country. There are also direct ferry routes to German ports and industrial centres.

Germany

German ferry services in the Baltic Sea are supported by large seaports attracting cargoes from around the world. When a container ship arrives, for example, at the port of Hamburg, it is unloaded, and containers are sorted to be transported by lorries, and vice versa, lorries carry containers that are loaded on container vessels bound to other countries. Germany has become the principal recipient of multi-leg ferry routes in the Baltic Sea. Rostock and Lubeck receive ferries from Sweden, Finland, Estonia, and Poland.

Conveniently situated between the large port of Hamburg and the country's capital, Berlin, these ports forward hi-tech equipment and chemicals for domestic needs, as well as iron ore from Sweden and timber from Finland, which are re-exported to the UK and Ireland. Other large traffic flows come to Lubeck from Trelleborg, Malmö, and Helsinki. The latter connection, classified as medium, is one of the 20 busiest in the Baltic.

Passenger traffic is less important for Germany as cargo transport. There are thrice less passenger routes as freight ones (nine against 30; fig. 5). All Germany's passenger routes connect it with Sweden, except for the Helsinki-Lubeck connection, most of whose passengers are crew members accompanying cargoes.

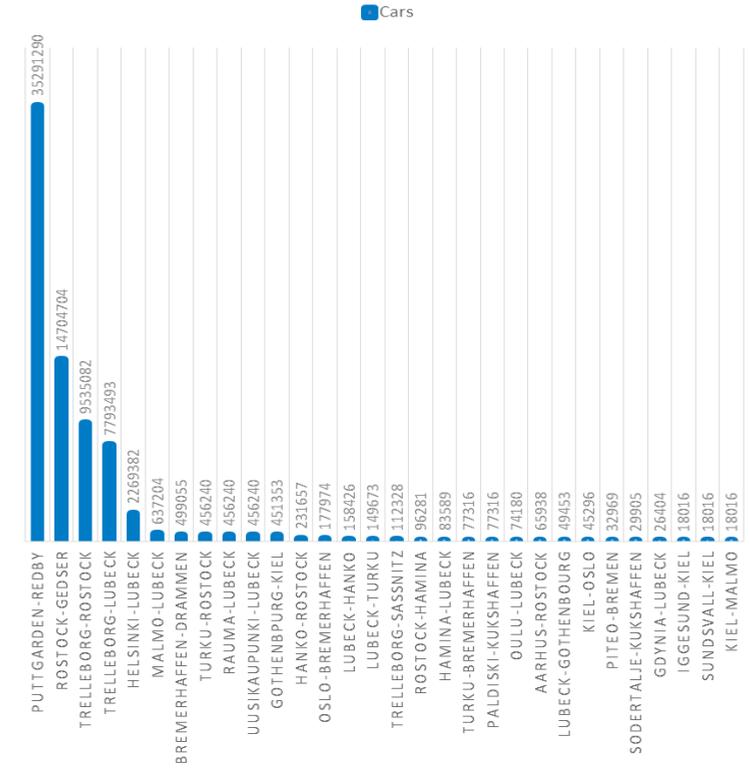


Fig. 5. Car traffic on German ferry routes (number of cars), 2017
(prepared by the authors based on the calculations)

Poland

Most of the country's ferry routes are multi-leg connections to Swedish industrial centres. Freight traffic is the largest between Poland's Świnoujście and Sweden's Trelleborg (about 4 m cars a year) and Ystad (1.5 m cars). The port of Gdynia has a ferry link to Wallhamn, which is connected in its turn to Norway's Drammen (the outport of Oslo) and Oslo proper. There is substantial car traffic between Estonia's Paldiski (a port near Tallinn) and Gdynia. The busiest ferry route is Gdansk- Nynäshamn.

These connections make Poland a transit country on the way of Nordic industrial goods to Eastern Europe. The country's developed road and railway network carries cargoes from its ports to Belarus and further to Russia. Poland also forwards cargoes to Slovakia, Ukraine, and the Czech Republic.

Passenger ferry services are not popular in Poland. Only three routes carry passengers: Trelleborg-Świnoujście, Karlskrona-Gdynia, and Ystad-Świnoujście. The total national passenger traffic is about 12 m people a year (2017).

Finland and Estonia

In 2017, Finland's ferry routes carried over 110 m passengers and 17 m cars. The busiest connection is between Helsinki and Tallinn. Classified as major by passenger traffic and medium by car traffic, it is one of the 20 busiest routes in the Baltic Sea and 50 in Europe (the fourth largest in Europe by passenger traffic and 12th by car traffic). There are several factors behind the popularity of this route. Firstly, it is sought after by tourists because of inexpensive fares and the short time of travel. Secondly, the Finns prefer doing shopping in Estonia, where taxes and thus retail prices are lower than in Finland.

A special tax regime explains the popularity of the Åland Islands as a destination. The substantial passenger traffic is also explained by the need for a connection to the mainland.

The irregular coastline necessitates coastwise traffic between the south-eastern and south-western coasts of the country (Rauma, Uusikaupunki, Naantali, Turku, Hanko, Helsinki, and Hamina). Some of these routes are part of connections between Finland and Russia (via St Petersburg), which account for substantial car (and much more modest passenger) traffic. St Petersburg receives vehicles from the ports of Hanko and Helsinki. Passengers come to the city only from Helsinki, and this traffic flow is classified as minor.

Multi-leg routes to Germany carry timber, pulp, and frozen food. The latest is transported from Finland to Estonia as well.

Tallinn has ferry connections to not only Helsinki but also the Åland Islands and Stockholm. These routes, however, carry less traffic than the domestic ferry service, which transported about 40 m people and 5 m cars in 2017 between the town of Virtsu in continental Estonia and Kuressaare, the administrative centre of Saare County in the West Estonian archipelago. Kuressaare lies on the island of Saaremaa, which could be reached until 2016 only by motorway 10. Still, the journey required taking a ferry between Virtsu and Kuivastu, where the distance to the island is the shortest. The route operator went bankrupt in 2016, and the service was discontinued to be replaced by the Virtsu-Kuressaare connection. This replacement proved effective. This new link reduced the time of travel to the administrative centre, which was the destination of most passengers, by several hours. The longer journey by sea was balanced out by travel by land made unnecessary. In 2017, this route became Estonia's second-busiest by passenger traffic and the largest by car traffic.

Conclusions

The ferry traffic in the Baltic Sea is among the busiest in the world. Two out of Europe's three principal ferry routes run across the region (Puttgarden-Rødby and Helsingør-Helsingborg). Many other routes are classified as large or medium by passenger and car traffic (fig. 6).

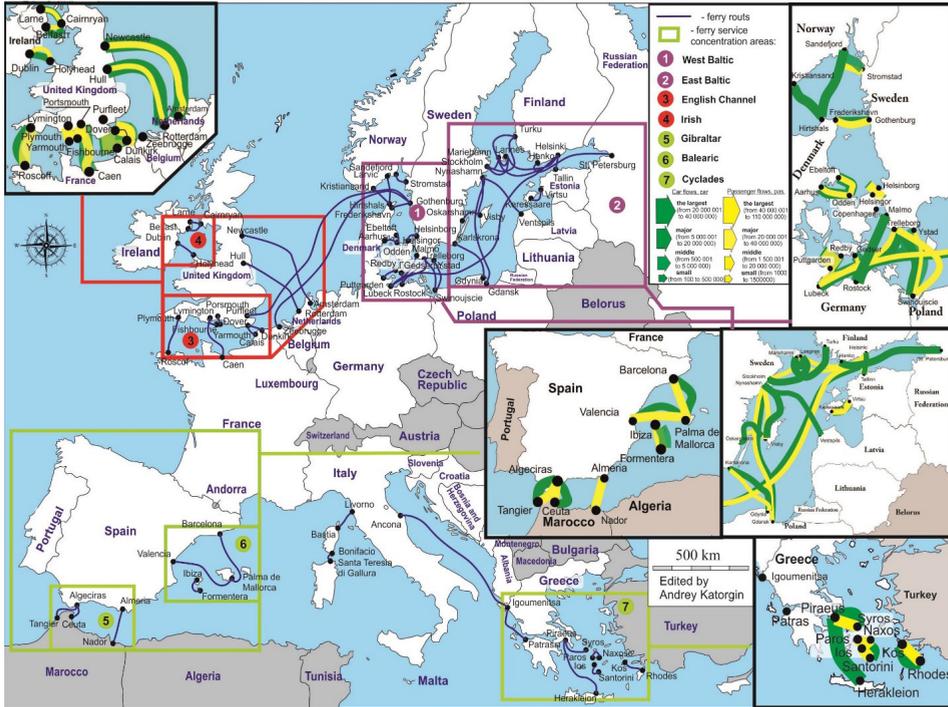


Fig. 6. Maritime ferry traffic in Europe, 2017
(prepared by the authors)

The ferry services between Germany, Denmark, and Sweden create a single transport corridor for delivering Nordic goods to other European countries. Moreover, these corridor makes possible the free movement of EU residents between neighbouring countries.

Denmark accounts for most of ferry-borne passenger and car traffic. The physical geography of the country, which makes it a likely transit hub, allows it to attract traffic flows from the North and Baltic Sea. Denmark is responsible for one-fourth of the passenger and car traffic carried by ferries (fig. 7, table 2).

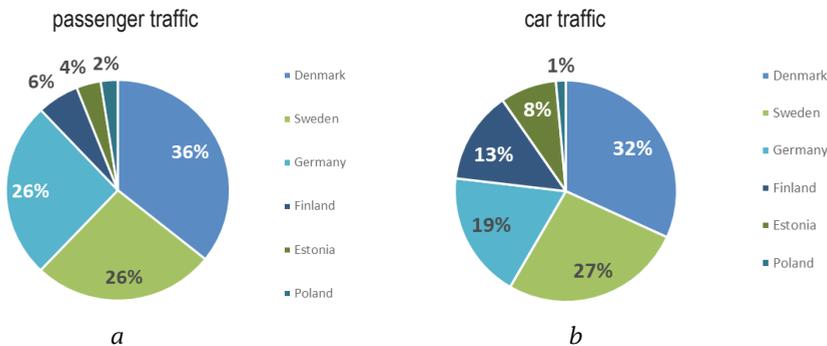


Fig. 7. The distribution of passenger (a) and car (b) traffic between Baltic ferry routes, 2017 (prepared by the authors based on the calculations)

Sweden is the principal source of cargo transported by ferries to the Baltic region states and Western European countries (the UK, Belgium, and Spain).

The total passenger (about 461 m people) and car (about 161 m units) traffic in the Baltic comprises 60 per cent of the total ferry traffic in Europe (fig. 2). Furthermore, regular ferry connections to Poland support the transit of Swedish and Norwegian goods to Eastern European countries, including Russia.

Table 2

A comparison of passenger and car traffic by country, 2017
(prepared by the authors based on the calculations)

Country	Passenger traffic		Vehicle traffic	
	1,000 people	% of the Baltic Sea total	Units	% of the Baltic Sea total
Denmark	260,000	32	103,000	36
Sweden	217,000	27	76,000	26
Germany	151,000	19	74,100	26
Finland	110,000	13	17,000	6
Estonia	67,100	8	10,130	4
Poland	11,804	1	7,056	2

Multi-leg routes are the hallmark of the Baltic. Most of them link German and Finnish ports and carry timber.

Another specific feature of Baltic ferry routes is casual travel to the Åland Islands for the sake of tax-free shopping. Lower prices are also the reason why Finns cross the Gulf of Finland to stock up in Estonia.

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References

1. Dunlop, G. 2002, The European ferry industry-challenges and changes, *International Journal of Transport Management*, vol. 10, no. 1, p. 115—116.
2. Uriasz, J. 2010, Baltic ferry transport, *Communications in Computer and Information Science*, no. 104, p. 160—167.
3. Yercan, F. 2018, *Ferry Services in Europe*, New York, Routledge.

4. Odeck, J., Høyem, H. 2020, The impact of competitive tendering on operational costs and market concentration in public transport: The Norwegian car ferry services, *Research in Transportation Economics*, no. 7, art. 100883. doi: <https://doi.org/10.1016/j.retrec.2020.100883>.
5. Laird, J. J. 2012, Valuing the quality of strategic ferry services to remote communities, *Research in Transportation Business and Management*, no. 10., p. 97—13.
6. Tørset, T. 2019, Waiting time for ferry services: Empirical evidence from Norway, *Case Studies on Transport Policy*, vol. 7, no. 3, p. 667—676.
7. Wang David, Z. W., Lo Hong, K. 2008, Multi-fleet ferry service network design with passenger preferences for differential services, *Transportation Research Part B: Methodological*, vol. 9, no. 42, p. 798—822.
8. Rehmatulla, N., Smitha, T., Tibbles, L. 2017, The relationship between EU's public procurement policies and energy efficiency of ferries in the EU, *Marine Policy*, vol. 75, no. 1, p. 278—289.
9. Gagatsia, E., Estrup, T., Halatsisa, A. 2016, Exploring the Potentials of Electrical Waterborne Transport in Europe: The E-ferry Concept, *Transportation Research Procedia*, no. 14, p. 1571—1580. doi: <https://doi.org/10.1016/j.trpro.2016.05.122>.
10. Lo, H. K., An, K. 2013, Ferry service network design under demand uncertainty, *Transportation Research. Part E: Logistics and Transportation Review*, no. 59, p. 48—70. doi: <https://doi.org/10.1016/j.tre.2013.08.004>.
11. Baird, A. J. 1999, A comparative study of the ferry industry in Japan and the UK, *Transport Reviews*, vol. 19, no. 1, p. 33—55.
12. Christopherson, S-S. 1973, Internationell färjetrafic på Östersjön, *Sven. geogr. årsb. Årg. Lund.*, no. 49, p. 78—94.
13. Škurića, M., Maraš, V., Davidović, T., Radonjić, A. 2020, Optimal allocating and sizing of passenger ferry fleet in maritime transport, *Research in Transportation Economics*, no. 8, art. 100868. doi: <https://doi.org/10.1016/j.retrec.2020.100868>.
14. Maiorov, N., Fetisov, V., Krile, S., Miskovic, D. 2019, Forecasting of the route network of ferry and cruise lines based on simulation and intelligent transport systems, *Transport Problems*, vol. 14, no. 2, p. 111—121. doi: <https://doi.org/10.20858/tp.2019.14.2.10>
15. Myakinenkov, V.M. 2013, Key Strategies of Development of Research Tools and Methods for Marine Spatial Planning, *Balt. Reg.*, no. 1, p. 71—81. doi: <https://doi.org/10.5922/2079-8555-2013-1-7>.
16. Gumenyuk, I. S., Melnik, D. A. 2012, The transnational territorial transport system of the Baltic Region, *Balt. Reg.*, no. 1, p. 66—71. doi: <https://doi.org/10.5922/2079-8555-2012-1-8>.
17. Pustoshny, A. V., Moe, V. 2016, Prospects for the development of high-speed water transport in Myanmar, *Morskoi vestnik [Marine Bulletin]*, vol. 9, no. 3, p. 92—94 (in Russ.).

18. Baird, A. J. 1997, A Scottish east coast European ferry service: review of the issues, *Journal of Transport Geography*, vol. 41, no. 5, p. 291—302.
19. Backer, H., Frias, M. 2012, Planning the Bothnian sea. In: *Plan Bothnia*, Helsinki.
20. Corlay, G-P. 1982, Les ports de pêche danois, *Pêche mar*, vol. 61, no. 1253, p. 433—442.
21. Flieger, W. 1990, Mit dem Auto über die Ostsee, *George, heute*, vol. 11, no. 80, p. 23—24, p. 29—31.
22. Baturova, G. V. 2011, Regional maritime clusters as the basis for the socio-economic development of coastal territories, *Strategicheskoe planirovanie v regionakh i gorodakh Rossii* [Strategic planning in regions and cities of Russia] reports of the participants of the IX All-Russian Forum Strategic planning in regions and cities of Russia, St. Petersburg, p. 115—119 (in Russ.).
23. Gorkin, A. P. 2013, *Sotsial'no-ekonomicheskaya geografiya: ponyatiya i terminy* [Socio-economic geography: concepts and terms], Smolensk, Oikumena (in Russ.).
24. Gumenyuk, I. S., Orlov, S.V. 2014, The Kaliningrad Region as a Potential Coastal Transport Cluster, *Balt. Reg.*, no. 3, p.121—131. doi: <https://doi.org/10.5922/2079-8555-2014-3-9>.
25. Pustoshny, A. V. 2013, Prospects for High-Speed Water Transport in Russia, *Herald of the Russian Academy of Sciences*, vol. 83, no. 6, p. 506—512. doi: [10.1134/s10193316/4010043](https://doi.org/10.1134/s10193316/4010043) (in Russ.).
26. Gee, K., Kannen, A., Heinrichs, B. 2011, Towards a common spatial vision: Implications of the international and national policy context for Baltic Sea space and MSP, *BaltSeaPlan*, Report 8. Geesthacht.
27. Geuckler, M. 1991, Die Verkehrsinfrastruktur in der Region Südliche Ostsee, *Bundesbahn*, vol. 67, no. 3, p. 302.
28. Jahrb, A. 1968, Die feste Verbindung über den Øresund, *Wirtsch. Ostseeraum*, p. 72—76.
29. Knudsen, A. 1961, Hirtshals havn — nyt vestbassin, *Beton-teknik*, vol. 27, no. 4, p. 139—148.
30. Koch, M. 1980, Der Fährverkehr Skandinavien-BDR, DDR und Polen, *HANSA*, vol. 117, no. 10, p. 705—708.
31. Rasmussen, H. 1979, Prospects for 1979 by the Mayor of Esbjerg, *Ports and Harbors*, vol. 24, no. 3, p. 36.
32. Syafruddin, C. 2016, Assessing Service Quality of Passenger Ferry Services in Sabang Zone, *European Journal of Business and Management*, vol. 9, no. 5, p. 22—34.
33. Westerholm, J. 1986, The development of a national port system — Denmark, *Fennia*, vol. 164, no. 2, p. 211—290.

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PORTS OF EASTERN BALTIC AND RUSSIAN TRANSIT POLICY: COMPETITION AND COOPERATION

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The ports of the Baltic states have been handling Russian cargoes for many years. Thus, there is no apparent need for Russia to reroute all freight flows to domestic ports. It was not long ago that Eastern Baltic ports were regarded as ordinary competitors, however, the current geopolitical situation has drastically reshaped the framework for transport cooperation in the region. Competition and cooperation strategies are often equally viable for the ports in the Eastern Baltic Sea. Yet volatility in global markets, the unstable positions of leading exporters and importers, and changes in the economic and political environment call for new strategies and forms of interaction. This study aims to understand to what extent port authorities in the Eastern Baltic can combine competition and cooperation policies when formulating their vision and handling transit cargoes. The article draws on official statistics and Russian and international publications on the theory and practice of transport routing and the functioning of hub infrastructure. The study applies the methods of case study and statistical and comparative analysis to outline the current situation in the Eastern Baltic ports and their potential to attract more freight flows from Russia. The article tests the hypothesis that Eastern Baltic port authorities should pursue a co-opetition strategy. The study concludes that, in the immediate future, this strategy can be employed only in cases of extraordinary circumstances, for example, at peak loads.

Keywords:

co-opetition, competition, cooperation, seaports, Baltic Sea region

Introduction

Being a key link in the transport system, port activities are strategically important for the state. With the world's longest sea coastline, Russia has clear advantages in facilitating foreign trade transportation and ensuring its transit policy. At the same time, the openness of the economy, active cooperation with other countries, as well as independent logistics strategies of business structures contribute to the formation of shipping routes going through the ports of neighbouring countries.

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In such a situation, the seaports of the Eastern Baltic openly compete for freight from both domestic and international shippers. The academic literature widely discusses the prospects for Asian transit (see, for example, [1]). Kholopov and Rarovskiy [2, p. 63] study the competitive routes for Asia-Europe transit container shipping through the territory of Russia. In the media, there are also proposals for establishing cooperation between the ports. For instance, the governor of the Krasnodar Territory proposes to join the efforts of the three ports located in the region (Novorossiysk, Tuapse and Taman). In his opinion, this cooperation will result in a 30% increase in the ports' capacity [3].

However, sometimes, for various reasons, ports cease the handling of all or some cargo type, which gives other ports the opportunity to receive these flows. The port business found itself in such a situation in December 2019, when the Office of Foreign Assets Control of the US Treasury (OFAC) based on the Magnitsky Act imposed sanctions against the Mayor of Ventspils Lembergs and four related industry associations on December 9, 2019.¹ The Latvian Parliament amended the laws to transfer the ports of Ventspils and Riga to the jurisdiction of the state. Based on this, the government of the country established the Ventas osta company. On December 18, 2019, after Lembergs resigned from the board of the port, the OFAC announced the lifting of the sanctions [4]. Despite the period of sanctions being brief, shippers suffered losses. The other major ports of Latvia, Liepaja and Riga, due to their specialization, were not able to redistribute the flows and fulfil the obligations of the port of Ventspils.

This shows that the market situation may require constructive cooperation from usual rivals. The restrictions imposed on the port of Ventspils did not last long. However, under other circumstances, in particular, in favourable market conditions, the leading ports of the region may be interested in redistributing the increased flow of cargo.

The syncretism of competition and cooperation in the relationship among the ports of the Eastern Baltic finds quite logical explanations in the academic literature. The ideas of a possible combination of conflicting relations, or a strategy of co-opetition, which emerged half a century ago and found reflection in interdisciplinary studies, explain the behaviour of economic entities in a difficult economic and geopolitical environment subject to a series of global and regional crises.

This study aims to assess the viability of a co-opetition strategy adoption by the management of the main ports of the Eastern Baltic region in the context of the Russian Federation' new transit policy development. The article tests the following hypothesis: the cooperation of ports for some freights with simultaneous competition for others is far more beneficial for the Eastern Baltic ports than a purely cooperative or competitive strategy. To achieve this goal, the article defines the current status and possible prospects for the development of the ports in this region.

The article contains five sections. The Introduction shows the relevance of the research, defines the goal and formulates the hypothesis. The Literature review

¹ Ventspils Free Port Authority, Ventspils Development Agency, Business Development Association and Latvian Transit Business Association.

aims at revealing the essence and basic postulates of the theory of co-opetition. The Data and Methods section contains a description of the data used, a general description of the major ports in the region and the rationale for the research methods used. The Empirical analysis part is devoted to the statistical analysis of port activities in the region in 2010–2019. The final section contains the main conclusions of the article.

Literature review

Russian and international academic and industry publications on the activities of ports as economic entities mainly focus on technical and operational issues. For instance, articles indicate that the loading of seaports is determined in most cases by the choice of shippers or specialized operators in the case of multi-modal or inter-modal transport. Modern researchers show that a combination of factors influences the choice of the scheme of delivery of foreign trade cargo in mixed traffic. These include the volume of traffic, distance, the cost of transportation, the throughput of main routes and port facilities, navigation time, depth of fairways at the approaches to ports, forms of payment of freight charges, amount of customs and other fees in seaports. The customs and certification procedures and their duration, the way local tax authorities interpret the provisions and instructions of public services are often taken into account [5]. Optimization of the interaction processes between the subjects of the transport system creates additional prospects for reducing costs in the formation of material freight flows [6]. Zhang and Lam's idea is of certain interest. They applied the Lotka-Volterra model to study the evolution of marine clusters [7]. Jung et al. and Lee et al. recognized the essential role of ports in cargo routing [8; 9]. The Chinese scientific school provides detailed studies on the issues around the competition between ports and their capabilities to attract and handle cargo [10; 13]. The studies of the ports of the eastern part of the Baltic Sea mostly concern political and geographical aspects of their operation. A few publications cover economic issues and their commercial solutions, these include the issues of competitiveness of ports, their investment mechanisms [14], the correlation between ports' performance indicators and national macroeconomic indicators, prospects for the development of ports [15].

The analysis of the competitive advantages of a port, the characteristics of its cargo terminals in dynamics are also important when a consignor chooses the shipping route [16]. When assessing the characteristics of ports located not only in one basin but also in close proximity to each other, it is necessary to take into account their ability to substitute and complement each other. In this regard, the authors consider it important to choose a general operation strategy for ports. The traditional approach, which implies either strengthening ports' competitive advantages or developing partnerships, can be complemented by a certain intermediate position presupposing the achievement of sustainable competitive advantages through cooperation in some areas. This approach is known as the theory of co-opetition.

Research on cooperation and competition has been going on for eight decades in a variety of theoretical fields. Traditionally, the relationship between

competing companies has been studied in economic theory with a focus on industrial or market structure [17]. In recent years, special attention has been paid to intrafirm competition, including within conglomerates [18]. The modern literature on strategic alliances [19–22] analyzes relations within inter-firm associations rather than their structure. Paradoxical dualistic relations emerge when firms cooperate in some activities in the framework of a strategic alliance and at the same time compete with each other in other activities [23, p. 40]. This phenomenon is called co-opetition.² Co-opetition involves two different ways of interaction, based, on the one hand, on hostility due to conflicting interests and on trust and mutual commitment to achieving common goals, on the other. The development of a syncretic model of competition and cooperation is based on transaction cost theory, a resource-based approach, and game theory.

The theory of transaction costs is used to underpin inter-firm cooperation. This approach justifies the existence of cooperation to favour the transfer of “tacit knowledge”³ among firms. Traditional market mechanisms are not applicable here, because when a potential buyer is uncertain about the true value of this knowledge, its disclosure paradoxically reduces its value as then they will have it without paying for it [24, p. 182]. Transaction cost theory predicts a higher probability of failure when partners are direct competitors. In this case, competitors seek to maximize their market share. Conflicting goals lead to a decrease in the commercial performance of actors and, ultimately, to their elimination.

The resource-based approach presupposes the achievement of a competitive advantage through unique capabilities that allow a company to offer its customers better goods and services than its competitors do [25; 26]. This approach was initially based on two fundamental assumptions: firms are heterogeneous in their resource profile, and resources are not perfectly mobile across firms. Thus, persistent differences in firms’ profits can be explained by differences in resources. Teece et al. propose a dynamic process and focus on how resources are accumulated and used to create sustainable competitive advantage [27]. According to this approach, the strategy of accumulating valuable technology assets is often insufficient to maintain a significant competitive advantage. Companies need to continually update their competencies to keep pace with the changing business environment. Dynamic analysis underlies the study of resources accumulation as a result of both competition and cooperation [28, p. 115]. An organization’s competitive advantage can be based on informal collaborative relationships with its supplier partners, customers, and partners with whom it must cooperate and compete. Companies often look for co-opetitors to attract important difficult-to-acquire resources (spillovers, business skills, funding, etc.).

Game theory is formally suited to the analysis of relationships between nearby ports. It allows analyzing market situations with a small number of players, limited information, hidden actions, opportunities for adverse selection or incomplete contracts. Nowak et al. [29] applied this theory to study situations in which cooperative equilibrium appears (or fails to appear) as a result of reciprocal

² Co-opetition — from cooperation and competition

³ Tacit knowledge — knowledge that is difficult to express, and difficult to transfer to other actors.

interactions among participants. Brandenburger and Nalebuff [30] showed that this theory provides the framework for examining the possibilities of obtaining benefits through the strategy of co-opetition. At the heart of their argument is the prisoner's dilemma based on the avoidance of costs and the pursuit of benefits. In the struggle for market share, a firm may choose to partner with, compete with, or ignore another firm. The combination of choice leads to different types of behaviour: unilateral cooperation, mutual cooperation, unilateral defection, mutual defection. Brandenburger and Neilbuff [30] showed how a firm can use game theory to make positive-sum gains as well as zero-sum gains, which is especially important for port industry actors. Establishing win-win relationships with competitors encourages managers to use competitive imitation to gain an advantage and to focus on the strategic moves of other players rather than their own strategic positions. Petraite and Dlugoborskyte [31] argued the possibilities and advantages of using the co-opetition strategy by agents from small countries included in global networks.

Cooperation and competition as alternative strategic behaviours are widely covered in the scientific literature. Most strategic management professionals tend to see them as opposite development concepts. This view is unfortunate in that it forces researchers and managers to rank strategic alternatives and choose one over the other. As a result of the combination of cooperative and competitive behaviour, several options can be identified within the framework of a strategic alliance [28, p. 120–124]: cooperation-dominated relationships, equal relationships (coopetition) and competition-dominated relationships.

Bengtsson and Kock [24] showed that cooperative behaviour is a situation where partners seek mutual benefit by combining complementary resources, skills and capabilities. In this case, common goals are more important than maximizing profits or opposing the other actor. Partners contribute to the total value created in the relationship, and they settle for a lower share of the profits to maintain this relationship. Arslan [32] emphasizes that the total benefits of an individual organisation make up a certain share of the value, the amount of which depends on its bargaining power.

Chai et al. explored the relationships between cooperation, conflict, trust, and the effectiveness of B2B innovation. Their econometric analysis shows that cooperation is positively associated with the effectiveness of technological innovation, and the consequences of conflicts depend on the level of trust in cooperative relations [33]. Trust generates economic rent in several ways [28, p. 121]: it reduces uncertainty, serves as a mechanism for social control and reduces transaction costs. Williamson notes that the achievement of one's goals, including by fraudulent means, ignoring the interests of partners, ultimately leads to an increase in transaction costs [34].

Competitive behaviour, or a competition-dominated relationship, reflects the firm's focus on achieving superior performance and creating a competitive advantage over other firms either by manipulating the structural parameters of the industry to its advantage [35] or by developing distinctive competencies that are difficult to imitate [25]. The strategy of competitive behaviour, therefore, can help companies achieve greater production efficiency, as well as foster creativity

and innovation. Lado et al. [28, p. 119] has criticized this point of view. In their opinion, rivals tend to structure their relationships according to the rules of the zero-sum game. Competition can encourage firms to create barriers around their competencies making future collaboration more difficult. This behaviour helps the organisation gain temporary value, but makes it difficult to maintain a competitive advantage over the long term.

According to research, the structural interdependence of competitors may explain why they cooperate and compete at the same time. The literature on strategic alliances argues that, despite conflicting and adversarial relationships, cooperation between competitors can have many advantages. In addition, the syncretism of competition and cooperation contributes to a greater increase in knowledge, economic development, technological progress and commercial success than competition or cooperation carried out separately [28, p. 118].

North [36] shows that intra-firm innovation stimulated by competition contributes to the increase in knowledge, economic, technical and market growth provided that property rights are well-protected. Jorde and Teece [37] believe that inter-firm cooperation can also stimulate socio-economic progress by enhancing knowledge development and utilisation, increasing the volume and quality of goods and services, and expanding markets. Cooperation with competitors is known to provide an opportunity to study rivals closely enough to predict how they will behave when the alliance falls apart. Cozzolino and Rothaermel draw attention to the fact that the discreteness of complementary assets (resources) actualizes the need to build a theoretical model explaining the competition and cooperation of market agents. For instance, the management of companies is inclined to closer cooperation in economically and politically unstable periods. Such “rifts” also provide an opportunity for existing firms to rethink their competitive and cooperative strategies within certain industries. Research into strategic alliances between old market participants and new innovative enterprises has shown the possibility of resorting to such cooperation to adapt to radical changes as well as to gain a competitive advantage [38, p. 3054].

Through this type of ties, it is possible to obtain other general advantages of a strategic alliance: complementing and strengthening the positions of the parties in such areas as production, new product introduction, entry into new markets; cost and risk reduction; creation and transfer of technologies and capabilities [23, p. 43–44]. Researchers acknowledge that knowing the key constraints to implementing a co-opetition strategy does not always improve a firm’s competitive position. This occurs when the costs associated with maintaining the balance in the new environment, routine activities and organizational resources to develop co-opetition relationships are higher than the expected benefits. Problems can also arise due to different absorptive capacities and errors in innovation management leading to the loss or inaccessibility of resources, including information, and the creation of strong competitors [39; 40].

The aforementioned theoretical approaches make it possible to test the hypothesis we put forward in the Introduction: the co-opetition strategy has a greater positive effect on the activities of the Eastern Baltic ports than purely cooperative or competitive strategies.

Research methodology and data

1. Data

In the statistical analysis, we use data published by the port authorities, the official statistical services of the Russian Federation, the Republic of Estonia, the Republic of Latvia, the Republic of Lithuania, as well as data provided by national port associations, government organizations regulating port activities, and the ministries of transport of the relevant countries. The ports' performance is assessed using the indicator of port freight traffic. The choice of the period (2010—2019) is explained by the availability of comparable official statistics and the recommended duration (5—10 years) for visual statistical research. The availability of statistical data for 10 years makes it possible to use correlation analysis to identify the dependences in the ports' traffic. The official government statistics and by-country data published by individual ports and port associations slightly differ. Therefore, in some cases, the authors carried out additional calculations or were forced to narrow (expand) the compared indicators. Data for 2020 are not analysed due to the sharp decline in the value of international trade and transport indicators. The duration and consequences of the force majeure event (the COVID-19 coronavirus pandemic) can be assessed no sooner than five years after it has been overcome.

2. Research methodology

To identify the nature of the relationships between international seaports in the eastern part of the Baltic Sea, the case study method is used. It provides the framework for exploring the specialization and capacities of ports, as well as their competitive advantages. The freight handled at a port (both total and by cargo type) is used as the main indicator of its performance determining its financial results.

There are seven major⁴ Russian ports in the Baltic Sea basin: the Big Port of St. Petersburg, Primorsk, Vysotsk, Vyborg, Ust-Luga, Kaliningrad and the Passenger Port of St. Petersburg. The listed ports are the final points of the Russian sections of international transport corridors. Investigating their transit potential is of academic and commercial interest. This article does not consider the potential for attracting international freight flows to the port of Kaliningrad and the Passenger Port of St. Petersburg.⁵ There are no available separate statistics on the freight traffic of the Passenger Port: cargo transported by ferries is accounted for in the throughput of the Big Port of St. Petersburg. The peculiarities of the geographic location of the Kaliningrad region do not allow considering the port of Kaliningrad a transit hub for foreign trade cargo of the mainland regions of the

⁴ With a turnover of over 1 million tons per year.

⁵ Ferries arriving at the Passenger Port of St. Petersburg carry both passengers and rolling cargo. By order of the *Chairman of the Government of the Russian Federation No. 413-r of March 13, 2015*, the electronic resource, available at: <https://www.garant.ru/products/ipo/prime/doc/70792024/> (accessed 30. 05.2020) the classification of the checkpoint across the RF state border has been changed in this port from international passenger traffic to cargo-passenger traffic.

Russian Federation, as well as of the Eurasian countries that do not have access to the sea. In addition, in terms of freight traffic handled, this port ranks fifth among Russian ports in the Baltic Sea basin followed only by the port of Vyborg. Its share in the total freight traffic ranges from 6.34% in 2013 to 4.31% in 2019.⁶

At the end of 2019, the Russian seaports of the Baltic basin ranked second in the country in terms of handled tonnage. It amounted to 256.44 million tons (+4.1%), including dry bulk (110.19 million tons (+0.4%)) and liquid bulk (146.24 million tons (+7.1%)). The seaports of the Azov-Black Sea basin with the handled freight of 258.08 million tons, despite showing negative dynamics (-5.2%), took first place. The southern ports specialize more in handling liquid bulk (162.02 million tons (+5.8%)). Dry bulk in the southern ports showed a negative trend (-9.4%).⁷ In January 2020, the Russian seaports of the Baltic basin took the leading positions. The tonnage handled amounted to 22.17 million tons (+5.4%), including 8.71 million tons of dry bulk (-0.1%) and 13.47 million tons of liquid bulk (+9.3%).⁸

Their leadership in freight traffic among all the Russian ports as well as their geographical proximity to European countries and national industrial regions suggest that the ports of the Baltic basin will retain their leading position in the future. The fact that they handle different types of cargo enhances their competitive advantages.

Over the last years, the freight traffic in the ports of the Baltic states (Latvia, Lithuania, Estonia) has been decreasing. The situation in the Russian ports of the Baltic Sea basin in the study period looked multidirectional. Both in Russian and foreign ports, the situation was the worst in 2015–2016. According to the ports' press offices, in 2016 the traffic decreased by 4.5% (compared to the previous year) to 138.94 million tons. However, although the share of ports of neighbouring countries in the total Russian cargo traffic is relatively low (17.1% in 2011), it is still quite high for some cargoes. For instance, in 2017, the port of Klaipeda handled about 56% of Russian coal and 54% of mineral fertilizers gravitating to the ports of the Baltic basin, while in 2016 its total throughput was a little less than 20% of that of all Russian Baltic ports.⁹ Ten years ago, these ports were considered ordinary competitors in the transport services market, now, the geopolitical situation in the region has changed dramatically. As a result, in January 2020, Russian foreign trade cargo put through the seaports of the Baltic states, Ukraine, Finland decreased by 30.8% (compared to the same period in 2019) to 2.95 million tons.¹⁰

⁶ The authors' calculations based on the data of the *Federal State Budgetary Institution "Rosmorport"*, 2020, available at: http://www.rosmorport.ru/filials/spb_seaports/ (accessed 10.11.2020).

⁷ JSC "Morcenter-TEK", 2020, available at: <http://morcenter.ru/news/gruzooborot-morskih-portov-rossii-za-yanvar-dekabr-2019-goda> (accessed 10.05.2020).

⁸ JSC "Morcenter-TEK", 2020, available at: <http://morcenter.ru/news/gruzooborot-morskih-portov-rossii-za-yanvar-2020-g> (accessed 10.05.2020).

⁹ *Exporters of Russia*, 2020, Unified information portal, available at: <http://www.rusexporter.ru/research/country/detail/2142/> (accessed 10.05.2020).

¹⁰ JSC "Morcenter-TEK", 2020, available at: <http://morcenter.ru/news/gruzooborot-morskih-portov-rossii-za-yanvar-2020-g> (accessed 10.05.2020).

A significant amount of Russian oil products and breakbulk is handled in the ports of the neighbouring countries. The need to redirect all Russian freight flows to national ports is not so obvious. Strategically, this reorientation should primarily concern container cargo as it has higher added value. Cargoes that are “problematic” from an environmental point of view are not commercially attractive, hence there is no urgency in transferring them to the Russian ports of the Baltic Sea. However, the statistical analysis performed gave different results.

Correlation analysis was applied to study the dependences in the ports’ freight traffic dynamics. The Pearson and Spearman correlation coefficients were calculated using the SPSS statistical data processing software package. We investigated the annual data, which allows us to neglect the seasonal peaks and troughs in the shipping of some groups of cargo. Calculations are accompanied by visual statistical analysis, comparison of the dynamics of the ports’ freight traffic in general and by cargo groups.

When formulating our conclusions, we proceeded from the fact that the reorientation of foreign trade cargo is possible only if alternative ports of the Baltic basin have spare capacities. This is not always the case, as the record shows. For instance, the traffic of potash fertilizers in the Russian ports of the Baltic Sea is limited by the terminal capacities. The currently implemented Luga port, Ultramar, Eurochem and Primorskiy UPK projects only in 2025 will allow expanding opportunities for cooperation and, at the same time, facilitate competition between Russian and Baltic ports.

Empirical analysis

To test our hypothesis of the viability of co-opetition strategy adoption by the major ports of the Eastern Baltic region, we use the case study method, as well as quantitative estimates of the dependences of the port freight traffic based on correlation analysis.

1. Case studies

As noted, this research is limited to the study of freight traffic handled by the ports of the Baltic states, St. Petersburg and the Leningrad region. Table 1 shows the Russian ports’ technical freight handling capacities.

Table 1

The capacity of cargo terminals of the Russian Baltic ports, thousand tons per year

Cargo type	Big Port of St. Petersburg	Ust-Luga	Primorsk	Vyborg	Vysotsk	Total	Port traffic in 2019
Total	110,180	120,880	89,500	1,970	21,200	343,735	245,374
Liquid bulk	19,084	78,837	89,500	300	12,500	200,221	143,768
Dry bulk	26,619	32,683	—	1,670	8,700	69,672	58,403
Containers, thousand TEU	5,173	780	—	—	—	5,953	2,283

Source: Rosmorport. Federal State Budgetary Institution http://www.rosmorport.ru/filials/spb_seaports/ (date accessed: 05.10.2020).

In the context of ongoing sanctions and the consequences of the economic crisis, it is important to understand the main trends in the development of the port economy. Let us take a look at the dynamics of throughput of the ports of the Baltic Sea. Table 2 shows the performance indicators of the Russian ports of the Baltic basin (excluding the port of Kaliningrad).

Table 2

**Freight handled by Russian ports of the Baltic Sea basin,
excluding the port of Kaliningrad, thousand tons**

Cargo type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All cargo	154.8	172.3	194.5	202.1	209.6	218.0	224.9	233.7	232.3	245.4
Liquid bulk	81.7	92.0	112.1	128.8	130.2	139.9	144.5	139.3	133.5	143.8
Oil	71.8	70.1	82.5	77.8	65.6	72.0	80.8	76.8	66.4	74.0
Oil products	26.0	37.4	43.4	50.9	63.4	66.4	61.7	60.3	64.6	67.3
Dry bulk	22.1	24.8	26.7	32.9	37.2	40.8	42.7	53.5	54.4	58.1
Ores	0.6	0.7	0.8	0.9	0.8	1.0	1.1	0.7	0.8	0.7
Coal, coke	13.5	16.1	19.4	23.4	25.3	27.8	29.1	38.5	38.3	40.9
Mineral fertilizers	6.6	6.5	5.4	7.1	8.7	10.2	10.3	11.8	11.4	12.4
Bulks	0.1	0.0	0.0	0.4	0.4	0.4	0.2	0.3	0.3	0.3
Grain	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.3
Timber	0.5	0.5	0.5	0.5	0.6	0.7	0.6	0.5	0.9	1.0
Breakbulk cargo	1.5	1.7	2.5	1.9	1.5	1.6	1.6	1.8	14.2	12.3
Containers, million tons	19.0	22.0	23.1	23.6	24.7	20.7	21.6	23.7	26.6	28.0
Containers, million TEU	1.9	2.4	2.5	2.6	2.5	1.8	1.8	2.0	2.2	2.3

Source: Authors' calculations based on the data of the *Federal State Budgetary Institution "Administration of the Baltic Sea Seaports"*, 2020, available at: http://www.pasp.ru/morskije_porty_baltiyskogo_morya (accessed 10.05.2020).

Although the general dynamic is positive, the value of indicators for bulk, breakbulk cargo, oil, containers (in TEU) are volatile. In 2018, for the first time, the basin's largest port of Ust-Luga handled tonnage decreased by 4% compared to 2017 to 98.73 million tons. The drop was caused, first of all, by a decrease in handled oil (by 15%) and coal (by 4%) [41]. The latter was due to the replacement and commissioning of new loading equipment at the Mixed Cargo Handling Facility and JSC Rosterminalugol. The reason for the technical re-equipment was the lack of specialized capacities for growing exports of Russian coal. The ports of Vysotsk and Vyborg showed a significant increase in coal throughput in 2018, therefore, there was no significant decrease in the basin. For oil and containers, a geographic reorientation of freight flows is taking place. The decrease in container throughput in 2015 was due to the introduction of sanctions and counter-sanctions in the second half of 2014. Note that the tonnage of handled containers changed only slightly (-12.5% in 2013–2015) compared to TEU (-30.0% over

the same period), which indicates an average increase in container weight. Due to the volatility of global commodity prices and the ruble, as well as the use of cost indicators for accounting for foreign trade, in this study, we do not consider the impact of the volume of Russian exports and imports on the domestic ports' traffic. Given the circumstances, it is difficult to talk about attracting container cargo, previously handled in the ports of the Baltic states, to Russian ports.

Table 3 shows the dynamics of freight traffic in the largest ports of Estonia.

Table 3

Freight handled by the major ports of Estonia, million tons

Cargo type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All cargo	43.6	45.7	40.6	39.5	40.2	32.7	31.7	32.6	33.8	35.8
Liquid bulk	29.1	31.4	26.6	25.7	26.0	17.0	14.4	13.9	14.8	15.2
Dry bulk	6.5	5.1	5.3	4.5	4.8	5.1	5.8	6.4	6.6	8.1
Containers	1.3	1.5	1.6	1.8	2.0	1.7	1.8	2.0	2.0	2.0
Ro-Ro	3.5	3.7	3.8	3.7	4.0	5.6	5.9	6.4	6.7	6.7
Other cargo	3.2	4.0	3.3	3.7	3.3	3.4	3.8	3.8	3.8	3.7

Source: authors' calculations based on *Statistics Estonia*, 2020, available at: http://pub.stat.ee/px-web.2001/1_Databas/Economy/34Transport/16Water_transport/16Water_transport.asp (accessed 10.05.2020).

The 22.5% decrease in the freight handled by the ports of Estonia in 2013-2017 was mainly due to a decline in liquid bulk (46.8%). For containerized and Ro-Ro cargo, there was a positive trend: 12.6% and 35.4% increase, respectively. The analysis of the product composition of cargo handled through Estonian ports, including transit, made it possible to identify the following structural changes (Table 4). In terms of product groups, the general dynamics corresponds to Russian trends.

The most dangerous is the situation in the Coke and Oil Products Group: a 49.54% drop in the total freight handled, including a 61.69% decrease in outgoing transit cargo volume. In 2017, to overcome the extremely negative trend the Estonian joint-stock company Alexela Terminal extended the contract with PJSC NK Rosneft for the provision of transportation, unloading, storage and loading services for oil products, 3.4 million tons of fuel oil and vacuum gas oil [42]. The total freight traffic (31.11%) has considerably increased, while the outgoing transit (40.19%) of timber products has decreased. There have been substantial changes in the total traffic and outgoing transit of crude oil, coal and natural gas.

At the same time, the official statistics show a positive trend in the total traffic and outgoing sea transit of chemical products (+ 93.87% and + 97.43%, respectively), as well as metals (+131.79% and +902.86). Note the volatility of outgoing transit of metals.

Table 4

Product composition of freight handled by the ports of Estonia, thousand tons

Cargo type	2013	2014	2015	2016	2017	2018	2019
	Throughput, total						
Total, including	42,908	43,579	34,962	33,623	34,797	35,924	37,690
Agricultural products, fish	2,975	2,988	3,249	3271	3214	3,173	3,351
Coal, crude oil and natural gas, shale	118	310	39	16	104	47.8	220
Timber industry products	1,263	1,119	1,039	1,133	1,656	1,880	1,882
Coke and oil products	24,238	24,046	15,687	12,733	12,294	12,301	12,229
Chemical products	3,724	4,481	4,374	5,099	5,159	6,191	7,224
Metals and metal products	97	158	110	123	109	123	225
Outgoing transit							
Total, including	22,889	20,800	15,556	12,662	12,733	13,965	14,591
Agricultural products, fish	3	17	22	12	65	125	76
Coal, crude oil and natural gas, shale	68	133	39	5	67	0	50
Timber industry products	117	91	46	22	70	0	8
Coke and oil products	18,793	16,022	10,958	7,466	7,134	7,653	7,200
Chemical products	3,500	4,221	4,176	4,883	4,972	5,814	6,910
Metals and metal products	7	71	11	23	11	5	70

Source: authors' calculations based on *Statistics Estonia*, 2020, available at: http://pub.stat.ee/px-web.2001/1_Databas/Economy/34Transport/16Water_transport/16Water_transport.asp (accessed 10.05.2020).

The tonnage of agricultural and fish products was stable (+ 8.04%) while there was a major 20.7-fold increase in their outgoing transit. 2016 saw the emergence of large volumes of inbound transit of food, beverages and tobacco. Experts explain this by the changes in alcohol market regulations in Russia, its new labelling requirements. The labelling is done at Estonian port facilities [41].

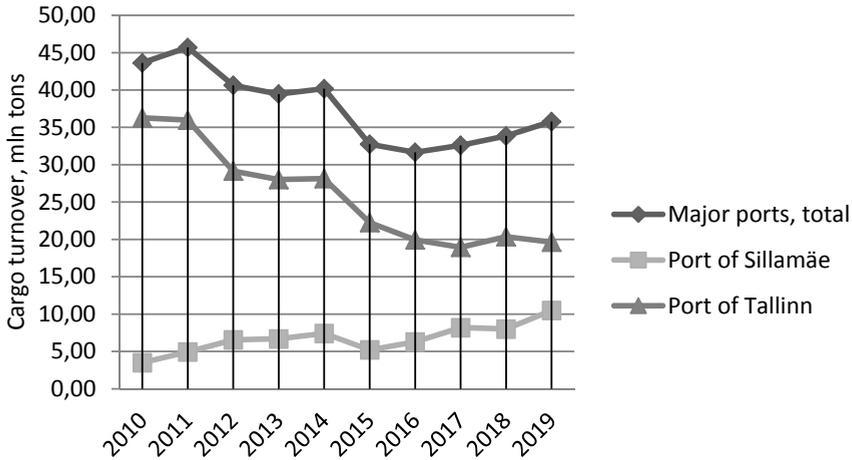


Fig. 1. Freight handled by the major ports of Estonia, million tons

Source: Statistics Estonia, 2020, available at: http://pub.stat.ee/px-web.2001/1_Databas/Economy/34Transport/16Water_transport/16Water_transport.asp (accessed 10.05.2020).

Figure 1 showing the dynamics of freight traffic in the ports of Tallinn and Sillamäe demonstrates multidirectional trends in their development. The strong performance of the second largest port in terms of freight traffic in Estonia can be explained by the fact that it is a private port owned in equal shares by Russian and Estonian businessmen.¹¹ Table 5 shows the dynamics of freight traffic in the ports of Latvia.

Table 5

Freight handled by the major ports of Latvia (million tons)

Cargo type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All cargo	61.2	68.8	75.2	70.5	74.2	69.6	63.1	61.9	66.2	62.4
Liquid bulk	21.2	23.1	24.9	23.6	26.5	25.6	19.5	16.9	15.0	14.6
Dry bulk	28.1	33.3	36.8	34.7	35.3	32.8	32.1	32.6	36.6	34.2
Breakbulk	10.4	10.9	12.1	10.8	10.8	9.7	10.0	10.8	12.7	11.8
Containers	2.6	3.1	3.5	3.8	4.0	3.7	3.9	4.4	4.7	4.6
Containers, thousand TEU	209	247	284	309	321	281	294	316	356	353
Ro-Ro	2.2	2.8	3.1	3.2	3.1	2.6	2.8	3.2	3.5	3.4

Source: authors' calculations based on the Central Statistical Bureau of Latvia, 2020, available at: http://www.csb.gov.lv/en/stats_table_metadata/35/TARGET=_blank; Detailed information http://data1.csb.gov.lv/pxweb/en/transp_tur/transp_tur__transp__kravas_ikgad/TRG260.px/ (accessed 05/10/2020).

¹¹ Port of Sillamäe, 2021, p. 5, available at: https://www.silport.ee/SILPORT-booklet_rus.pdf?rand=208 (accessed 30.06.2021).

The largest drop in throughput was in the liquid bulk cargo. Enterprises from the Republic of Belarus filled the niche of Russian companies. In November 2017, the Belarusian Oil Company (BNK) and the Latvian WT OIL Terminal agreed on joint activities of handling Belarusian oil products in the Freeport of Riga. In 2016, the oil company also concluded a sale and purchase agreement with the Novopolotsk Refinery under which dark oil products were to be shipped to the Woodison Terminal in 2018—2022 [40].

The decrease in Latvian ports' traffic in 2019 compared to 2013 (-12.33%) was due to the deterioration in the performance of the ports of Ventspils (-28.88%) and Riga (-7.63%). At the same time, the freight traffic in the port of Liepaja increased by 51.61% (fig. 2).

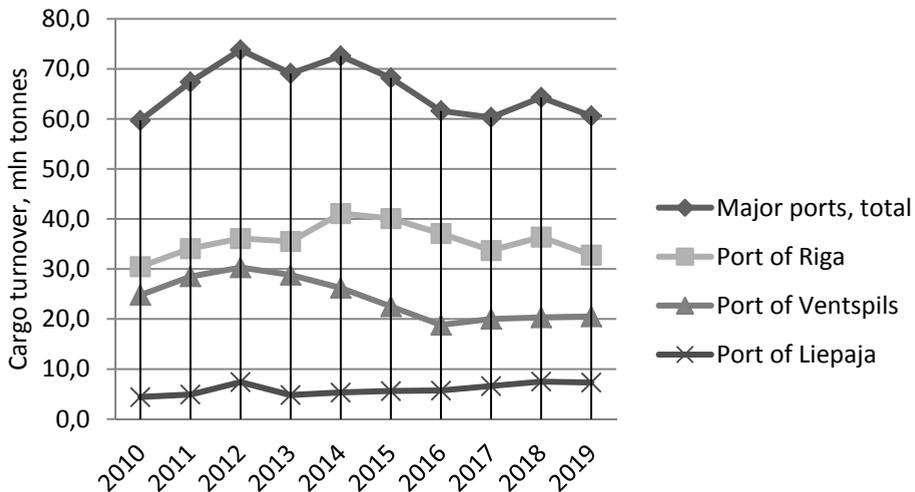


Fig. 2. Freight handled by the major ports of Latvia, million tons

Source: authors' calculations based on the *Central Statistical Bureau of Latvia*, 2020, available at: http://www.csb.gov.lv/en/stats_table_metadata/35/ TARGET = _blank> Detailed information ; http://data1.csb.gov.lv/pxweb/en/transp_tur/transp_tur__transp__kravas__ikgad/TRG250.px/table/tableViewLayout1/ (accessed 05.10.2020)

The drop in the traffic handled by the two largest ports of Latvia was primarily due to the decline in the tonnage of oil and oil products, as well as coal (fig. 3, a, b). At the same time, all ports have increased the handling of grain (3, c).

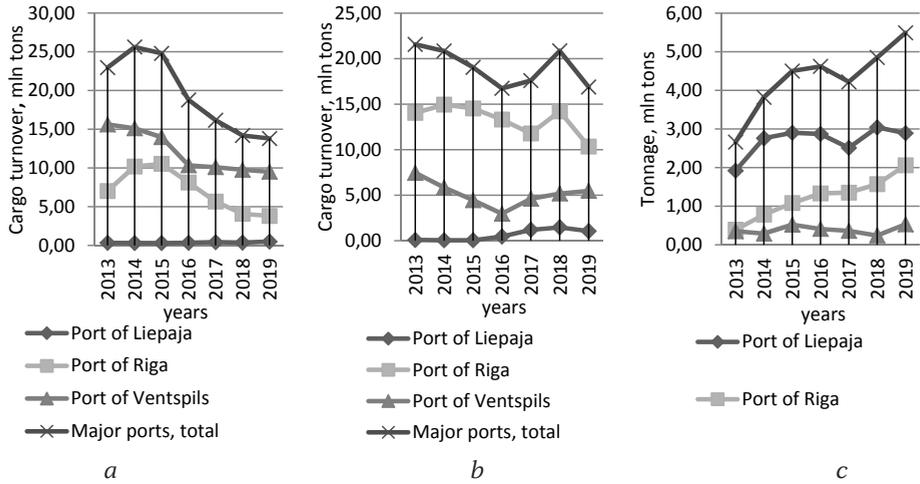


Fig. 3. Tonnage of selected goods handled by the ports of Latvia

a — Oil and oil products tonnage; *b* — Coal throughput; *c* — Grain throughput

Source: authors' calculations based on the *Central Statistical Bureau of Latvia, 2020*, available at: http://www.csb.gov.lv/en/stats_table_metadata/35/TARGET=_blank> Detailed information ; http://data1.csb.gov.lv/pxweb/en/transp_tur/transp_tur__transp__kravas_ikgad/TRG250.px/table/tableViewLayout1/, URL: http://data1.csb.gov.lv/pxweb/en/transp_tur/transp_tur__transp__transp__kravas260.gad (accessed 10.05.2020).

In contrast to the ports of Estonia and Latvia, the port terminals of Lithuania show an overall positive trend (table 6). The exception is the liquid bulk. During the reported period, its handled tonnage increased by 12.48%. Nevertheless, there were some annual variations: in 2014, there was a 34.19% decline, in 2015 — a 18.83% increase. Such volatility can be explained by multidirectional trends within this cargo category (fig. 4)

Table 6

Freight handled by Lithuanian port terminals, million tons

Cargo type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All cargo	40.3	45.5	43.8	42.4	43.7	45.7	49.3	52.9	56.2	46.3
Liquid bulk	18.8	20.0	18.7	17.7	15.2	18.1	20.3	21.3	20.0	19.9
Dry bulk	11.8	14.5	14.1	14.0	17.0	16.7	16.7	19.1	19.9	20.7
Breakbulk	9.7	11.0	10.9	10.6	11.5	11.0	12.3	12.5	16.4	15.3
Containers	1.9	2.5	2.5	2.6	2.9	2.3	2.9	3.0	4.8	4.5
Containers, thousand TEU	295.2	382.2	381.4	402.7	450.2	350.4	441.7	474.2	749.1	705.2
Ro-Ro	2.3	2.6	2.6	2.6	2.5	2.5	2.8	2.9	3.1	3.3

Source: *Port of Klaipeda, 2020*, available at: <http://www.portofklaipeda.lt/statistika-porta-klaipeda>; *Statistics Lithuania. Official Statistics Portal, 2020*, available at: <https://osp.stat.gov.lt/statistiniu-rodikliu-analize?#/> (accessed 10.05.2020).

Dry bulk, breakbulk and containers ensure the steady positive dynamics of the port's indicators. The container throughput of the port started to grow (from 16.22 tons / TEU in 2014 to 17.52 tons / TEU in 2015) but later it decreased to 13.43 tons / TEU in 2018. This is explained by an increase in the share of LCL (less than container load) containers, as well as by a change in the range of products transported. During the study period, the share of empty containers varied from 19.98% (2014) to 29.52% (2018). There was no relationship found between containers' load and the share of empty containers. Figure 4 shows the dynamics of the throughput of the main non-container cargo types in the state port of Klaipeda.

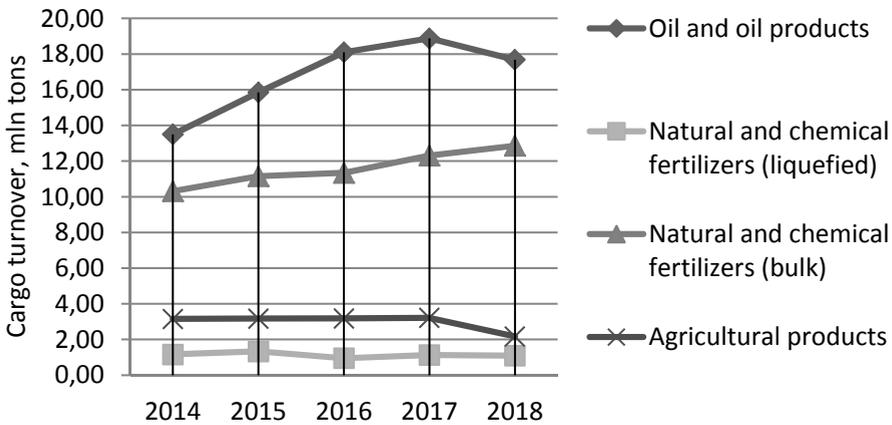


Fig. 4. Non-containerized cargo handled by the ports of Lithuania

Source: Statistics Lithuania. Official Statistics Portal, 2020, available at: [https://osp.stat.gov.lt/statistiniu-rodikliu-analize? # /](https://osp.stat.gov.lt/statistiniu-rodikliu-analize?#/) (accessed 10.05.2020).

The performance of the port of Klaipeda is determined by the handling of Belarusian cargo. Despite political disagreements (in particular, regarding the BelNPP and the 2020 elections), Belarus continues to cooperate with the Lithuanian port [40]. However, regardless of their participation in the assets of the Lithuanian terminals, it is likely that in the coming years, Belarusian companies will abandon the shipping routes going through that country.

The Lithuanian port industry is represented by two cargo handling facilities: the State Port of Klaipeda and the Butinge oil terminal, which is the Lithuanian division of the Polish oil company ORLEN (fig. 5). The terminal's narrow specialization, different ownership and management structures, and the technical capabilities of the terminals made it possible to develop a specialization in the port economy. This strategy has resulted in some commercial success in attracting and retaining customers.

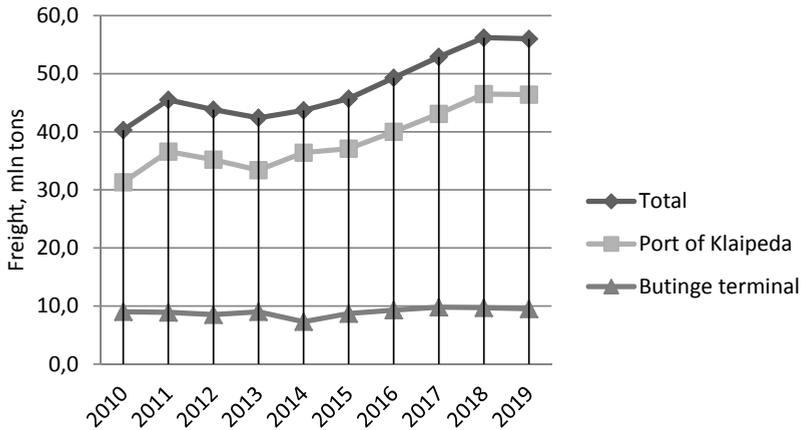


Fig. 5. Freight handled by Lithuanian ports

Source: Authors' calculations based on *Statistics Lithuania. Official Statistics Portal*, 2020, available at: <https://osp.stat.gov.lt/statistiniu-rodikliu-analize?/> (accessed 10.05.2020)

In general, the Lithuanian port industry is in a favourable position compared to other Baltic states, where, in addition to the international competition between the ports, there is also an internal rivalry for cargo. However, the choice of the strategy by the Eastern Baltic ports largely depends on the type of goods with which the port operates. For liquid, as well as dry bulk cargo, primarily coal and fertilizers, the competition strategy turns out to be more relevant. For breakbulk cargo and containers, the strategy of cooperation is statistically justified, although even a cursory review of the port business cases shows multidirectional factors that do not allow the selection of a single international interaction strategy for this industry. Therefore, a cooperation strategy seems appropriate for doing business in an unstable external environment.

2. Correlation analysis

The correlation calculations of the freight handled by the Baltic ports of Russia and Baltic states, both general and by cargo type, revealed signs of both cooperation and competition. Table 7 shows the identified freight dependences of the ports.

Table 7

**Revealed linear and rank correlations of the total freight traffic handled
by the ports of the Baltic states and Russia (2010–2019)**

Dependence of the total port traffic	Correlation		R ²	F-statistics
	By Pearson	By Spearman		
Russia — Baltic states	0.975**	0.952**	0.951	156.916
Russia — Estonia	-0.846**	-0.770**	0.716	20.124
Russia — Lithuania	0.821**	0.855**	0.674	16.561

* — the correlation is significant at the level of 0.05.

** — the correlation is significant at the level of 0.01.

In 2010–2019, the studied Russian ports and ports of the Baltic states generally showed similar dynamics. The reason is the successful operation of the Lithuanian port of Klaipeda and Russian ports. The policy of attracting Belarusian freight in 2010–2019 and the Russian government's actions on the reorientation of Russian freight to national ports turned out to be effective. The decrease in the traffic in the ports of Estonia and Latvia was offset by its increase in Lithuania. Note the obvious loss of freight by the Estonian ports with a simultaneous increase in the freight handled by the Russian ports of the Baltic basin. The dependence of the total freight traffic handled by the individual ports of the Eastern Baltic was not revealed.

Table 8 shows the major results of calculating the linear and rank correlation for selected product groups handled in ports.

Table 8

**Revealed correlations of selected cargo groups handled by the ports
of the Baltic states and Russia (2010–2019)**

Cargo group	Port's country	Correlation		R ²	F-statistics
		By Pearson	By Spearman		
Oil and oil products	Russia — Estonia	-0.829**	-0.855**	0.687	17.537
Oil	Russia — Lithuania	-0.740*	-0.600	0.548	9.681
Coal	Russia — Estonia	-0.685*	-0.710*	0.505	8.146
Fertilizers (all)	Russia — Lithuania	0.880**	0.842**	0.775	27.556
	Russia — the Baltic States	0.871**	0.782**	0.729	25.240
Timber products	Latvia — Lithuania	0.918**	0.891**	0.842	42.689
Metals	Russia — Lithuania	0.760*	0.782**	0.577	10.921
	Russia — the Baltic States	0.818**	0.855**	0.669	16.192

The end of table 8

Containers thousand of tons	Russia — Estonia	0.790**	0.758*	0.624	13.301
	Russia — Latvia	0.842**	0.842**	0.709	19.528
	Russia — Lithuania	0.884**	0.903**	0.781	28.529
	Russia — the Baltic States	0.900**	0.842**	0.809	33.927
	Estonia — Latvia	0.962**	0.939**	0.926	99.806
	Estonia — Lithuania	0.724*	0.903**	0.524	8.812
	Latvia — Lithuania	0.854**	0.964**	0.730	21.581
Containers, TEU	Estonia — Latvia	0.858**	0.818**	0.736	22.338
	Latvia — Lithuania	0.848**	0.939**	0.720	20.524

* — the correlation is significant at the level of 0.05.

** — the correlation is significant at the level of 0.01.

There is a clear tendency to shifting the handling of oil products and coal from Estonia and Latvia to Russia. Russia's transit policy led to the sale of distressed assets of the Estonian oil terminal VEOS to Liwathon by Global Ports and Royal Vopak in 2019. The lack of capacities for handling mineral fertilizers in Russian ports has resulted in active cooperation with specialized terminals in the Baltic states. However, we note that the revealed dependence is also explained by the successful cooperation between Belarusian companies and Lithuanian stevedores. The situation in the world metal markets is a determining factor in the traffic of this cargo group, therefore, unidirectional trends are observed in the Russian and Baltic ports, primarily in Klaipeda, which has its own cargo base.

The situation is different in the container sector. Cooperation between Russia and the Baltic states is seeming. It is observed only in terms of tonnage. A comparison of the average weight of a container during the study period shows that different Eastern Baltic ports handle containers with different products. The authors' calculations showed that the average weight of containers handled through the Lithuanian port in 2010–2019 ranges from 6.32 tons to 6.62 tons, Estonian ports — from 7.00 tons to 8.68 tons, Russian Baltic ports — from 9.15 tons to 12.25 tons, Latvian ports — from 12.20 to 14.01. At the same time, the weight of Russian and Latvian containers is increasing. The findings confirm that containers transport different types of cargo. The port of Klaipeda handles mainly highly processed goods, while the ports of Latvia and Russia handle raw materials and work-in-process. In this case, the container can be viewed as a more competitive package for goods, which confirms the competition between ports. In general, in terms of the speed of execution and the quality of logistics operations, Russian ports are inferior to those of the Baltic states.

Table 9 shows the revealed dependence of the freight traffic of the ports of the Baltic states and Russia on the composition of the cargo handled. The traffic of the ports of Estonia, Latvia and Russia depends on the handling of raw materials and primary processing products: oil, oil products, coal. Therefore, the ports compete to attract these cargoes. Russian ports are interested in increasing the

handling of mineral fertilizers and timber. And this tendency is manifested in the strategies and investment policies formed by the ports. The Lithuanian port of Klaipeda tends to handle fertilizers and containers. This explains its commercial interest in further cooperation with Belarusian producers and Russian transit. The traffic of the port of Klaipeda depends on the highly processed goods transported in containers.

Table 9

Goods affecting the total freight traffic of the Eastern Baltic ports (2010–2019)

Country	Cargo	Correlation		R ²	F-statistics
		By Pearson	By Spearman		
Estonia	Oil and oil products	0.962**	0.782**	0.926	99.960
	Coal	0.717*	0.927**	0.514	8.456
	Metals	0.716*	0.673*	0.513	8.431
Latvia	Oil and oil products	0.765*	0.758*	0.585	11.258
	Coal	0.891**	0.842**	0.794	30.905
Lithuania	Fertilizers	0.877**	0.939**	0.770	26.767
	Containers, thousand of tons	0.889**	0.721*	0.791	30.251
	Containers, TEUs	0.889**	0.733*	0.889	30.244
Russia	Oil and oil products	0.936**	0.869**	0.876	56.327
	Timber	0.726*	0.745*	0.527	8.921
	Fertilizers	0.874**	0.952**	0.765	26.006
	Coal	0.953**	1.000**	0.909	79.446

* — the correlation is significant at the level of 0.05.

** — the correlation is significant at the level of 0.01.

Cooperation is possible in cargo not included in the list since they do not have a significant impact on the port's traffic and, thus, usually are not commercially attractive.

The results of the correlation analysis and the study of the Eastern Baltic ports' operation reveal both competition and cooperation in different cargo groups. No effective combination of these strategies when ports interact with each other for mutual benefits has been found. The behaviour of the ports is largely determined by the state policy, interstate relations, their technical capabilities, as well as the situation in the global markets. Therefore, possible future port strategies depend on external factors.

Conclusions

The seaports of the Baltic states continue to play a significant transit role in the shipping of Russian foreign trade cargo. This study showed that the calls of Russian politicians to handle highly processed cargo (primarily containers) in domestic ports are still declarative. The reason is the economic sanctions determining the product composition of handled cargo and negatively affecting the relations between the countries in the region, as well as the strict norms of Russian legislation. At the same time, there is clearly a drive to reorient the cargo transit of oil and coal enterprises from the Baltic ports to Russian. In the future, the Baltic basin may become the main sea gateway for the export of Russian raw materials, including hydrocarbons, as well as the largest Russian sea basin in terms of container throughput.

The ports of the Eastern Baltic region are rather competitors than partners in handling both domestic and transit cargo. The ports of Estonia, Latvia and Russia have similar commercial interests in attracting cargo. The Lithuanian port of Klaipeda has a cargo base that is different from its neighbours, however, not bordering on “mainland” Russia, as well as political differences, hampers cooperation. There are two possible reasons for the ports’ cooperation: common affiliation of stevedore companies and terminal owners, and the state policy regulating the routing of Russian cargo.

Russian shippers can consider the foreign ports of the Baltic Sea as reserve capacities for most of the cargo types. Using them allows optimizing investments in the domestic port business and developing the recreational potential of the seacoast. Russian companies seeking to diversify risks or redistribute the load of their transport and logistics terminals cooperate with stevedores of the Baltic states. Cooperation in the field of transport and logistics allows to maintain and strengthen business ties with neighbouring states.

Thus, our hypothesis on the viability of the co-opetition strategy in the ports of the Eastern Baltic in the 2010s has not been confirmed. The choice of a co-opetition strategy by port authorities and national port organizations of the region under study is advisable in the event of force majeure circumstances or during periods of “peak” load generated, in particular, by the favourable situation in global markets. The seaports of the Baltic states are not considered priority participants in the Russian transit policy.

References

1. Efimova, E., Vroblevskaya, S. 2019, Are Eastern Baltic Ports the drivers of Eurasian trade? *International Journal of Management and Economics*, vol. 55, no. 3, p. 1 – 14. doi: doi.org/10.2478/ijme-2019-0014.
2. Kholopov, K. V., Rarovskiy, P. E. 2019, Russian market of international container transit in 2019 and its prospects, *Rossiiskii vneshneekonomicheskii vestnik* [Russian Foreign Economic Journal], no 9, p. 61 – 68. (in Russ.).
3. Governor of Kuban’: as part of the creation of the southern hub, the capacity of ports in the region will increase by 30%, 2020, *Morskie vesti Rossii* [Marine News of Russia], no 1, available at: <http://www.morvesti.ru/news/1679/83085/> (accessed 20.04.2020) (in Russ.).

4. Antonenko, O. 2019, Latvian oligarch Aivar Lembergs came under US sanction. Port of Ventspils activities threatened, *BBC: Russian Service, Riga*, 10.12.2019, available at: <https://www.bbc.com/russian/features-50729930> (accessed 20.04.2020) (in Russ.).
5. Kurenkov, P., Safronova, A., Kakhrimanova, D. 2018, Logistics of international intermodal freight traffics, *Logistica [Logistics]*, no 3, p. 24–27 (in Russ.).
6. Demin, V., Karelina, M., Terentyev, A. 2018, Technique to achieve a dynamic balance between the values of capacities of transport-warehouse complexes and cargo flows in logistics systems, *Logistica [Logistics]*, no 2. p. 32–36 (in Russ.).
7. Zhang, W., Lam, J. S. L. 2013, Maritime cluster evolution based on symbiosis theory and Lotka-Volterra model, *Maritime Policy & Management*, vol. 40, no. 2, p. 161–176. doi: <https://doi.org/10.1080/03088839.2012.757375>.
8. Jung, H., Kim, J., Shin, K. S. 2019, Importance Analysis of Decision Making Factors for Selecting International Freight Transportation Mode, *The Asian Journal of Shipping and Logistics*, vol. 35, no. 1, p. 55–62. doi: <https://doi.org/10.1016/j.ajsl.2019.03.008>
9. Lee, T.-C., Wu, C.-H., Lee, P. T. W. 2011, Developing the fifth generation ports model. Impacts of the ECFA on seaborne trade volume and policy development for shipping and port industry in Taiwan maritime policy & management, *Maritime Policy & Management*, vol. 38, no. 2, p. 1–21. doi: <https://doi.org/10.1080/03088839.2011.556674>.
10. Chen, T., Lee, P. T. W., Notteboom, T. 2013, Shipping line dominance and freight rate practices on trade routes: the case of the far east-south Africa Trade, *International Journal of Shipping and Transport Logistics*, vol. 5. no. 2. p. 155–173. doi: <https://doi.org/10.1504/IJSTL.2013.053233>.
11. Chang, Y. T., Lee, P. T. W. 2007, Overview of interport competition: issues and methods, *Journal of International Logistics and Trade*, vol. 5, no. 1, p. 99–121. doi: <https://doi.org/10.24006/jilt.2007.5.1.006>.
12. Lee, P. T. W., Lam, J.S.L. 2015, Developing the fifth generation ports model. In: Lee, P. T. W., Cullinane, K. (eds) *Dynamic shipping and port developments in the globalized economy*, Vol. 2: Emerging Trends in Ports, London, UK, Palgrave MacMillan, p. 186–210. doi: <https://doi.org/10.1057/9781137514295>.
13. Lee, P.T.W., Lam, J.S.L. 2017, A review of port devolution and governance models with compound eyes approach, *Transport Reviews*, vol. 37, no. 4, p. 507–520. doi: <https://doi.org/10.1080/01441647.2016.1254690>.
14. Popodko, G., Nagaeva, O. 2015, Opportunities and Challenges of Large Investment Projects in the New Economy: the Port of Ust-Luga, *Balt. Reg.*, no 3, p. 69–82. doi: 10.5922/2079-8555-2015-3-6.
15. Pavuk, O. 2017, Comparison of port activities of the East coast of the Baltic Sea: 1996–2016, *Technology audit and production reserves*, vol. 36, no. 4/5, p.5–19. doi: <https://doi.org/10.15587/2312-8372.2017.108826>.
16. Prokhorov, V., Adukonis, N. 2018, The value of the cargo terminals complex in the port of Ust-Luga for the Russian economy, *Logistica [Logistics]*, no 3, p. 32–38 (in Russ.).
17. Tirole, J. 1988, *Rynki i rynochnaya vlast: teoriya organizatsii promyshlennosti* [The Theory of Industrial Organization], in two vol., St. Petersburg, Economic School, 2000, XLII+745 p. (in Russ.).
18. Baumann, O., Eggers, J.P., Stieglitz, N. 2019, Colleagues and Competitors: How Internal Social Comparisons Shape Organizational Search and Adaptation, *Administrative Science Quarterly*, vol. 64, no. 2, p. 275–309. doi: <https://doi.org/10.1177/0001839218766310>.
19. Greve, H., Rowley, T., Shipilov, A. 2014, *Network advantage: How to unlock value from your alliances and partnerships*, New York, NY, John Wiley & Sons, 320 p.

20. Das, T. K. (ed.) 2015, *Managing Multipartner Strategic Alliances*, Charlotte, NC, Information Age Publishing, 278 p.
21. Reuer, J. J., Lahiri, N. 2014, Searching for alliance partners: Effects of geographic distance on the formation of R&D collaborations, *Organization Science*, vol. 25, no. 1, p. 283–298. doi: <https://doi.org/10.1287/orsc.1120.0805>.
22. Chatterjee, S., Matzler, K. 2019, Simple Rules for a Network Efficiency Business Model: the case of Vizio, *California Management Review*, vol. 61 (2), p. 84–103. doi: <https://doi.org/10.1177/0008125618825139>.
23. Strese, S., Meuer, M. W., Flatten, T. C., Brettel, M. 2016, Examining cross-functional cooptation as a driver of organizational ambidexterity, *Industrial Marketing Management*, no. 57, p. 4–11. doi: doi.org/10.1016/j.indmarman.2016.05.008.
24. Bengtsson, M., Kock, S. 2014, Coopetition — Quo vadis? Past accomplishments and future challenges, *Industrial Marketing Management*, no. 43, p.180–188. doi: doi.org/10.1016/j.indmarman.2014.02.015.
25. Barney, J. B. 1991, Firms resources and sustained competitive advantage, *Journal of Management*, vol.17, no.1, p.99–120. doi: <https://doi.org/10.1177/014920639101700108>.
26. Leiblein, M. J., Chen, J. S., Posen, H. E. 2017, Resource Allocation in Strategic Factor Markets: A Realistic Real Options Approach to Generating Competitive Advantage, *Journal of Management*, vol. 43, no. 8, p. 2588–2608. doi: <https://doi.org/10.1177/0149206316683778>.
27. Teece, D. J., Pisano, G., Shuen, A. 1997, Dynamic Capabilities and Strategic Management, *Strategic Management Journal*, vol. 18, no. 7, p. 509–533. doi: https://doi.org/10.1142/9789812796929_0003.
28. Lado, A. A., Boyd, N. G., Hanlon, S. C. 1997, Competition, cooperation, and the search for economic rents: A syncretic model, *Academy of Management Review*, vol. 22, no. 1, p.110–141. doi: <https://doi.org/10.2307/259226>.
29. Nowak, M. A., Sigmund, K., Leibowitz, M. L. 2000, Cooperation versus Competition, *Financial Analysts Journal*, vol. 56, no. 4, p. 13–22. doi: <https://doi.org/10.2469/faj.v.56.n4.2370>.
30. Brandenburger, A. M., Nalebuff, B. J. 2012, *Co-opetition. Konkurentnoye sotrudnichestvo v biznese* [Co-opetition. Competitive business cooperation], Moscow, Omega-L, 352 p. (in Russ.).
31. Petraite, M., Dlugoborskyte, V. 2018, Hidden champions from small catching-up country: leveraging entrepreneurial orientation, organizational capabilities and Global networks In: Sindakis, S., Theodorou, P. (eds) *Global Opportunities for Entrepreneurial Growth: Coopetition and Knowledge Dynamics within and Across Firms*, UK. Emerald Publishing, p. 91–123. doi: doi.org/10.1108/978-1-78714-501-620171008.
32. Arslan, B. 2018, The interplay of competitive and cooperative behavior and differential benefits in alliances, *Strategic Management Journal*, no. 39, p. 3222–3246. doi: <https://doi.org/10.1002/smj.2731>.
33. Chai, L., Li, J., Tangpong, Ch., Clauss, Th. 2020, The interplays of cooptation, conflicts, trust, and efficiency process innovation in vertical B2B relationships, *Industrial Marketing Management*, no. 85, p. 269–280. doi: doi.org/10.1016/j.indmarman.2019.11.004.
34. Williamson, O. E. 1985, Behavioral Assumptions. In: Williamson, O.E. (ed) *The Economic Institutions of Capitalism. Firms, Markets, Relational Contracting*, N.Y., The Free Press, p. 44–52.
35. Porter, M. E. 1985, *The Competitive Advantage: Creating and Sustaining Superior Performance*, NY, Free Press.
36. North, D. C. 1990, *Institutions, institutional change and economic performance*, New York, Cambridge University Press, 164 p.

37. Jorde, J.M., Teece, D.J. 1989, Competition and cooperation: Striking the right balance, *California Management Review*, vol. 31, no. 3, p. 25–37. doi: doi.org/110.2307/41166568.

38. Cozzolino, A., Rothaermel, F.T. 2018, Discontinuities, competition, and cooperation: Coopetitive dynamics between incumbents and entrants, *Strategic Management Journal*, no. 39, p. 3053–3085. doi: doi.org/110.1002/smj.2776.

39. Estrada, I., Faems, D., de Faria, P. 2016, Coopetition and product innovation performance: The role of internal knowledge sharing mechanisms and formal knowledge protection mechanisms, *Industrial Marketing Management*, vol. 53, no. 2, p. 56–65. doi: doi.org/10.1016/j.INDMARMAN.2015.11.013.

40. Bouncken, R.B., Clauß, T., Fredrich, V. 2016, Product innovation through competition in alliances: Singular or plural governance? *Industrial Marketing Management*, no. 53, p. 77–90. doi: doi.org/10.1016/j.indmarman.2015.11.011.

41. Chernov, V. 2019, Baltic results, *PortNews*, 21 January 2019, available at: <https://portnews.ru/comments/2619/> (accessed 20.04.2020) (in Russ.).

42. Meizer, A. 2018, Ports — 2017: transit games and the search for a bypass of Russia, *REGNUM*, 07.01.2018, available at: <https://regnum.ru/news/2364954.html> (accessed 20.04.2020) (in Russ.).

43. Goloviznin, A. 2018, Russian ports do not have enough capacity to take everything from the Baltic. Interview with Business Petersburg, Director of Analytics and Logistics, LLC Morstroytekhologiiya Alexander Goloviznin, *Delovoi Peterburg* [Business Petersburg], 09.03.2018, available at: https://www.dp.ru/a/2018/09/02/Nam_samim_nikak (accessed 20.04.2020) (in Russ.).

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DIGITALIZATION

THE POPULATION OF THE KALININGRAD REGION AND THE DIGITAL ECONOMY: A SOCIOLOGICAL ANALYSIS

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Since 2019, the Kaliningrad region has been running a regional digital transformation programme as part of the national initiative The Digital Economy of the Russian Federation. The programme seeks to improve the quality of life by creating information infrastructure and streamlining public administration. The regional Ministry of Digital Development has already presented an interim report on its implementation focused, however, mainly on the economic performance.

The study aims at conducting a sociological analysis of the region's population as a participant in digital transformation. It employs the questionnaire survey method with 384 respondents selected by quota sampling. The results show that slightly over a half of the population has a positive attitude to digitalisation, while about 20% believe that the digital economy leads to the degradation of society. The respondents named the development of the high-tech economy the major advantage of digitalisation and the proliferation of digital surveillance its major disadvantage. Kaliningraders reported extensive use of various digital technologies. Yet, the low indices of digital literacy and personal data protection are alarming. The findings, which supplement the regional digitalisation report with sociological data, can be useful in planning and implementing measures within the regional digital transformation programme.

Keywords:

digital economy, population, digital literacy index, digital literacy self-assessment index, personal data protection index

Relevance of research

In 1995, the American computer scientist Negroponte [1] introduced a new concept called “digital economy”. The digital economy has been in the centre of global attention since 2015 when there was a statement made at the World Economic Forum in Davos on a new trend in economic development in a wide range of areas, “including artificial intelligence (AI), robotics, the Internet of Things (IoT), robot cars, three-dimensional printing, nanotechnology, biotechnology,

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materials science, energy accumulation and storage, quantum computing” [2, p. 9]. Another topic discussed at the forum was the shift of paradigms in the social sphere under the influence of the digital economy.

In Russia, it was the address of the President to the Federal Assembly of the Russian Federation on December 1, 2016, that first expressed the need to develop the digital economy. In 2017, the programme “Digital Economy of the Russian Federation”¹ was adopted. It is being implemented both at the federal and regional levels.

Given the overriding importance of the country’s transition to the digital way of life, we believe that the successful implementation of the “Digital Economy of the Russian Federation” programme, which affects virtually the entire population of the country and even changes the existing socio-economic structure, is possible only if the population understands the need for such a change, actively supports and strives to achieve the goals set by the programme. Successful digitalization of the country is impossible without taking into account the sociological component which involves its positive public perception, the population’s readiness for various changes brought by the programme. One of the key factors in digitalization is the level of the population’s digital literacy.

In 2019, within the framework of the federal programme, the Kaliningrad region launched its regional programme called “Digital Transformation in the Kaliningrad Region”. The programme aims “to improve the quality of life, create a stable and secure information infrastructure, provide training of qualified personnel and improve the efficiency of public administration through the digital transformation of public administration and priority sectors of the economy”.² The official website of the Ministry of Digital Development of the Kaliningrad region has already presented its first results.³ We supplement the report that contains mainly economic data with the selected findings of the sociological study of the Kaliningrad region’s population carried out within the framework of the project “Russian Digital Economy as a social field” (RFBR).

The research subject: the population of the Kaliningrad region.

The research purpose: the sociological analysis of the region’s population as a participant in digital transformation.

¹ Programme “Digital Economy of the Russian Federation”, 2017, approved by the Government Order of the Russian Federation No. 1632-r of July 28, 2017, available at: <http://static.government.ru/media/files/9gfm4fhj4psb79i5v7ylvupgu4bvr7m0.pdf> (accessed 07.05.2020) (in Russ.).

² State programme of the Kaliningrad region “Digital Transformation in the Kaliningrad region”, 2019, decree of the Kaliningrad Region Government No. 555 of August 28, 2019, available at: <https://gov39.ru/vlast/npa/p> (accessed 05.08.2020) (in Russ.).

³ Annual report “On the implementation and evaluation of the state programme of the Kaliningrad region “Digital transformation in the Kaliningrad region, 2020, available at: <https://digital.gov39.ru/documents/?doctype=37> (accessed 07.09.2020) (in Russ.).

Literature review

Analysing the papers on the digital economy, we have singled out some research areas that deal with various social aspects of the digitalization process directly related to the population. First of all, one of the major works is that by Afanasenko and Borisova who propose to consider the digital economy as “a set of new social relations that arise when using electronic technologies, electronic infrastructure and services” [3]. They note that in the Russian socio-economic model, in contrast to the American one, the person is traditionally in the foreground, and any system needs to be adjusted to the person, including the digitalization of a country.

One of the areas in which the academic community is interested is *the ethical problems and social risks of digitalization*. Researchers are concerned about the considerable pressure that digitalization puts on public values, primarily privacy, autonomy, security, human dignity, justice, the balance of power [4] and even the health of citizens [5]. There are scientifically based assumptions that digitalization along with the development of artificial intelligence can lead to the aggravation of socio-anthropological risks [6; 7], the growth of fake news, the polarization of society [8], and sometimes hatred [9]. Researchers are negative about the inevitable increase in digital surveillance associated with the introduction of new digital technologies [10] focusing on privacy issues brought by the digital economy development [11].

Another area of interest is *the transformation of culture*. The paper considers the socio-cultural basis of the digital economy [12], identifies the main trends in the innovative development of modern cultural institutions in the context of the digital economy [13], relationships between online and offline cultural environments [14], changes in cultural policy caused by digital communications and digital media [15]. One of the challenges our society faces today is the selection and interpretation of cultural heritage intended for digitization. For instance, Manzhuch notes that the attempts to fit the knowledge and spirituality of indigenous peoples into the “western” worldview are destructive. Disregard for the needs and values of a community results in a more discriminatory approach to the community that has created this heritage [16].

As for *education transformation*, the scientific community agrees that technologies and tools of the digital economy are becoming unique factors that generate the accelerating effect of educational capital and ensure the use of various network effects to form intellectual capital [17]. However, there are also discussions around the problems of global digitalization requiring innovative approaches and qualitatively different competencies in both business and education [18]. The global education reform has not only increased the technologisation of education systems but also gave rise to new forms of ethical

dilemmas [19]. Scientists emphasize that even in the digital environment, teaching methods should aim at stimulating critical thinking to develop problem-solving abilities [20].

The study of the *human capital's role* in the digital economy is one of the main directions in the research of the social aspect of digitalization. Publications argue that in the digital era human capital is becoming increasingly important [21], they suggest specific models in which it plays a major role in the digitalization of socio-economic life [22]. They also provide the results of applied research including identified practices, relationships [23] and major factors in the formation of human capital in the digital economy [24].

Digital literacy research. In April 2017, within the framework of the G20 summit, a unified indicator-based approach [25] to assessing the level of digital literacy was proposed to enable cross-country comparison. The indicators are widely used to identify the digital literacy levels in different countries. For instance, Berenyi and Sasvari have applied them to study the digital literacy of higher educational institutions' students in Hungary [26] concluding that they have a high-level IT culture. An international group of scientists from Norway, France, Germany, India and Australia published the results of the analysis of the digital literacy of the population of sub-Saharan Africa and India [27]. Cote and Milliner presented an interesting work on the self-assessment of the digital literacy level [28] indicating that Japanese students show the self-assessment level significantly lower than the actual one.

One of the major Russian publications on digital literacy is that by Soldatova introducing the four types of digital competence [29]: "information and media competence, communication competence, technical competence, consumer competence" [29, p. 30]. Today this classification is the methodological basis for applied research aimed at creating the indices or measuring digital literacy levels.

In Russia, digital literacy indices were developed by ROCIT (Regional Public Centre for Internet Technology),⁴ NAFI Research Centre,⁵ Rosatom Corporation [30], and IIS (Institute of the Information Society) [31]. Zadorin led a study to construct and calculate the media literacy index for 10 Russian regions [32], the Kaliningrad region was not in the study sample. The author of the article led the project on developing the index and measuring the digital literacy level of the Kursk region's population⁶ taking into account regional specifics [33].

⁴ Digital literacy index, 2020, *Regional Public Centre for Internet Technology (Rocit)*, available at: <https://rocit.ru/news/index-digital-literacy-2018> (accessed 03.09.2020) (in Russ.).

⁵ Every fourth Russian has a high level of digital literacy, 2020, *Analytic centre of NAFI*, available at: <https://nafi.ru/analytics/tsifrovaya-gramotnost> (accessed 03.04. 2020).

Studies of the digitalization processes at both federal and regional levels conducted by Kaliningrad researchers provide some important insights. For instance, Sergeev shows the essence of the economic content of social development digitalization [34]. Klachek, Polupan, and Liberman identify a range of problems finding a solution to which will contribute to the development of modern digital technologies [35]. Serova identifies the main directions of legislation development and doctrinal research in the field of digital economy [36]. Kostrikova, Maitakov and Yafasov draw attention to the emergence of social marginalization risks as digital technologies develop [37]. Kaliningrad researchers also study educational digital technologies and the peculiarities of their application in educational institutions [38; 39].

The publications on regional problems include that by Belaya presenting the results of the analysis of the state programme “Digital Transformation in the Kaliningrad Region”. It concludes that it is necessary to conduct campaigns promoting digital literacy [40]. Vetrov suggests specific steps for training personnel to protect information under the auspices of the Kaliningrad State Research Centre for Information and Technical Security [41]. Pekhova and Gararova, having studied the practice of the Kaliningrad region’s municipalities, conclude that it is necessary to introduce digital technologies to increase citizen engagement in solving local issues. [42]. Krishtal and Shchekoturov note the need to consider the role of the region’s population in the ongoing processes related to risks [43].

Methodology

In November 2020, within the framework of the “Russian Digital Economy as a social field” project, the author led a comprehensive sociological study of the Kaliningrad region’s population. Other areas studied (or planned to be studied) within the project are the Kursk, Tambov and Yaroslavl regions. The criterion for selecting the regions is the share of the population employed in the ICT. The Kaliningrad region is in the second subgroup with 2—2.5%. Within the year it grew by 0.5% making the region the leader in the subgroup.

The study used a questionnaire survey. The general totality, the residents of the Kaliningrad region aged 18 years and older, is 812 thousand people; the sampled population is 384 respondents. The sampling method’s criteria are gender and place of residence (urban/rural).

The research objectives include conducting a sociological analysis of the region’s population as a participant in the digital transformation process and identifying the characteristics of the population as an actor in the social field. The paper does not discuss the characteristics of the Kaliningrad region’s population as an actor in the social field [44], the methodology of the study and its results will be published in a separate paper.

In the course of the study, the following indicators characterizing the quality of life of the population in terms of the digital economy have been identified:

- the attitude of the population to the development and introduction of digital technologies;
- positives and negatives of the digital economy, according to the population of the Kaliningrad region;
- digital activities of the Kaliningrad region's population (the use of digital devices, the purchase of goods or services via the Internet, the use of digital technologies when making payments for goods and services, receiving public services through digital technologies).
- index of self-protection of personal data in the digital environment;
- digital literacy index;
- additionally, the digital literacy self-assessment index has been constructed and calculated.

The study also identifies the possible dependence of the above indicators on the following factors: age, gender, education, marital status, place of residence, employment, and monthly income per family member.

Russian researchers apply different approaches and methods to determine the level of digital literacy of the population. This paper uses a digital literacy index based on the competencies proposed by Soldatova and taking into account regional characteristics [45]. The index is calculated based on responses to 40 questions most of which relate to several specified competencies. The index is the total score for the competencies transformed into percentages (from 0 to 100). For ease of reference and comparison, the index was divided into five levels — from very low to very high. Each level corresponds to the total score, calculated in increments of 20%.

The index of personal data self-protection in the digital environment [46] ranges from 0 to 100% depending on whether or not respondents use anti-virus programs, publish personal data in social networks, use complex passwords and change them frequently, send important information, clean cache, browsing and download histories regularly, post personal information on forums or in social networks, use the *incognito mode*, use public Wi-Fi, use two-factor authentication, etc. The answer to each question is assessed individually taking into account the expert community's opinion expressed when discussing the levels of digital literacy. For ease of reference, the levels of the personal data protection index have been converted into a five-point system in increments of 20% (1 — very low, 2 — low, 3 — satisfactory, 4 — high, 5-very high).

The digital literacy self-assessment index ranges from 0 to 100% depending on the respondents' self-assessment of the following on the scale from 0 to 10: difficulties in searching and exchanging information on the Internet, their ability

to assess how modern a computer and software are, competence in choosing a digital device according to various parameters and functionality, competence in using common digital technologies, skills in using social networks, the ability to use them for self-promotion, competence in using various payment methods through mobile and online applications, ability to create digital multimedia content, programming skills. For ease of use, the self-assessment index has been also converted to a five-point system in increments of 20% (1 – very low, 2 – low, 3 – satisfactory, 4 – high, 5 – very high).

The results were processed, analyzed, and compared using the SPSS program (statistical tables and contingency tables). Since the main variables are nominal, the chi-square indicator (at the level of statistical significance $p = 0.05$) and Cramer's V were used to determine the probable dependencies. The theoretical chi-square was calculated taking into account the specified level of statistical significance.

Results

1. The attitude of the population to the development and introduction of digital technologies.

The study shows that half of the respondents have a positive attitude to the digital economy and believe that it contributes to social advancement. However, some of them (about 20%) believe that it causes social degradation. About 30% cannot clearly define their attitude to the digital economy as a driver of the development of society.

The analysis results suggest that the following characteristics can influence the population's attitude to the development of the digital economy:

– *education* ($p = 0,006$, chi-square = 27,8, degrees of freedom = 12, Cramer's $V = 0,26$). Among the respondents with a higher level of education, a larger number have a positive attitude to digitalization. For instance, among those with a first or higher degree, about 60% support the digitalization process. Between 40 and 60% of the respondents with primary, secondary and incomplete secondary education, believe that the digital economy contributes to social degradation. A significant part of those with secondary education is students of secondary or higher educational institutions, which confirms the results obtained by age indicators;

– *employment* ($p = 0,05$, chi-square = 32, degrees of freedom = 20, Cramer's $V = 0,23$). Figure 1 presents the results of the analysis by the category of employment. The diagram shows a higher than average negative attitude to the digitalization process in pensioners, public workers and students. This list also includes individual entrepreneurs and heads of state-owned companies.

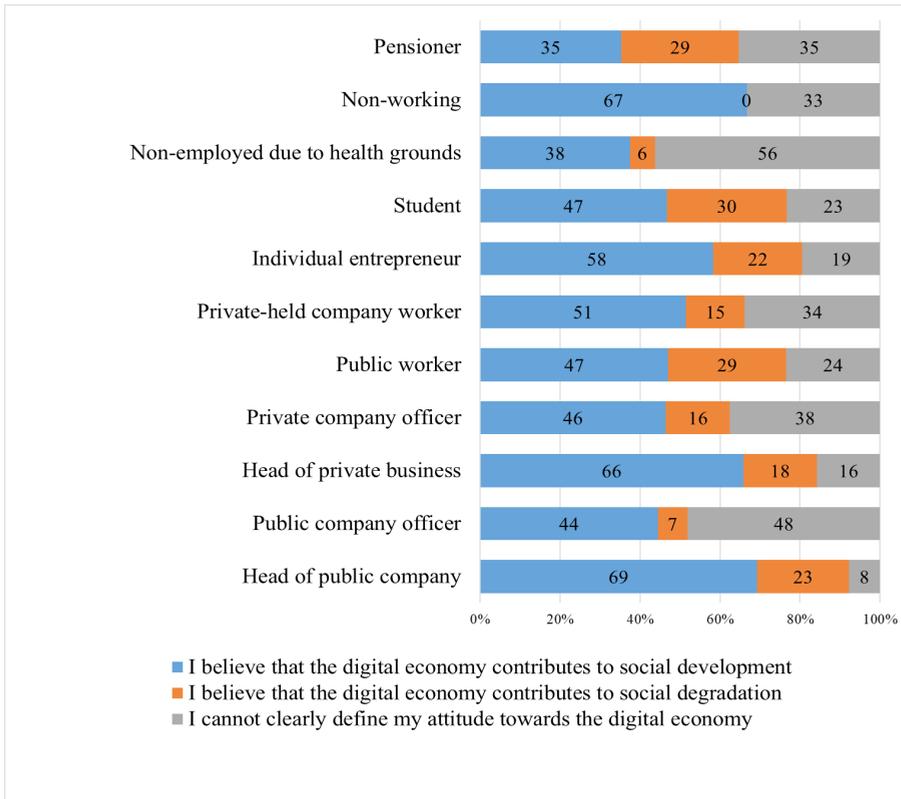


Fig. 1. Attitude to the development and introduction of digital technologies by the category of employment

The results by age are of particular interest although the age dependence of the attitude towards the development and introduction of digital technologies has not been confirmed ($p > 0.05$). For instance, in the age group 18–24 years, a quarter of the respondents (both men and women) also believe that the digital economy leads to social degradation, 23% of the respondents in the age group 35–44 years express a negative attitude towards digitalization. Interestingly, in the over-60 age group, less than 17% express a negative attitude to digitalization, which is lower than the general indicator although its value varies from 10% for people aged 60–65 to 30% for people over 65.

2. Positives and negatives of the digital economy, according to the population of the Kaliningrad region.

The respondents were asked to express their opinion about the positive and negative aspects of digitalization choosing an option from the suggested list or providing their answer. As figure 2 shows, the greatest concern is the growing control over all areas of life and activities. The respondents name the development of high-tech industries as the biggest advantage of the digital economy.

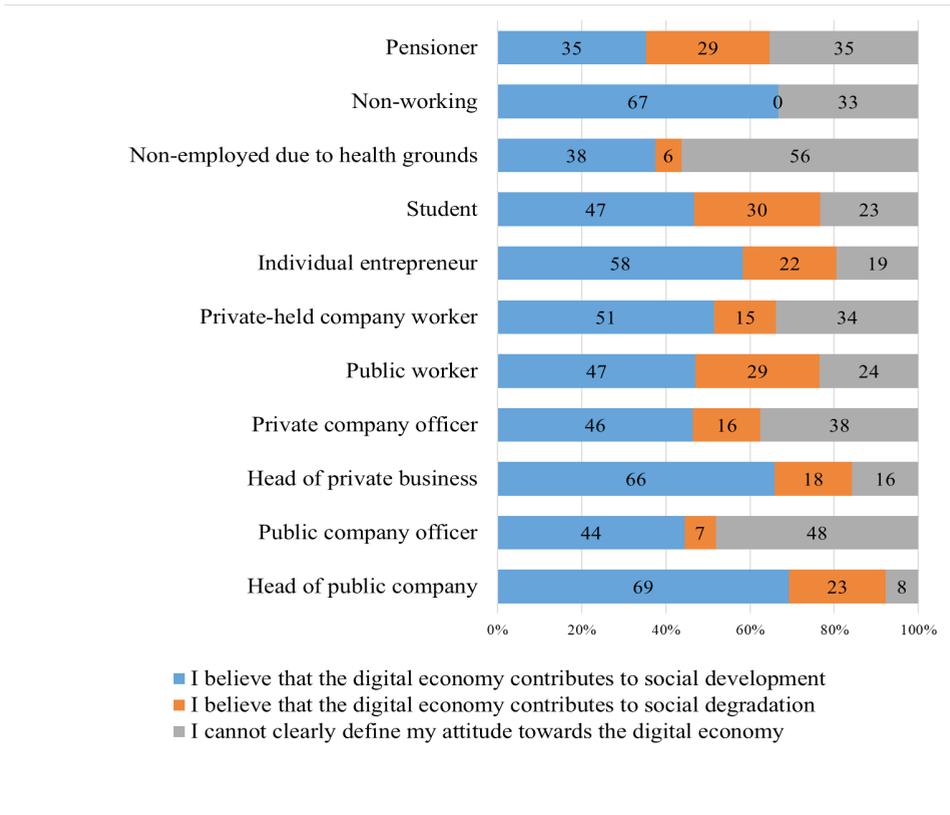


Fig. 2. Positives and negatives of digitalization

3. Assessment of the Kaliningrad region population's digital activities.

3.1. Daily use of digital devices. To measure this indicator, the respondents had to select devices that they use daily from the list or add their own in the 'others'.

About one-third of the respondents use only one electronic device every day, mainly a smartphone or a mobile phone, about 50% use two or three devices, 13% use four-five devices, and about 3% of the respondents use more than five devices.

We have calculated the percentage of the number of users from the sampled population for each device offered in the list. Since the respondents, answering this question, could choose several options or add their options, the ratio of the number of responses to the sampled population was calculated for each option. Therefore, the overall result exceeds 100%. The majority of answers in the "others" was "a robot vacuum cleaner". Figure 3 shows the results.

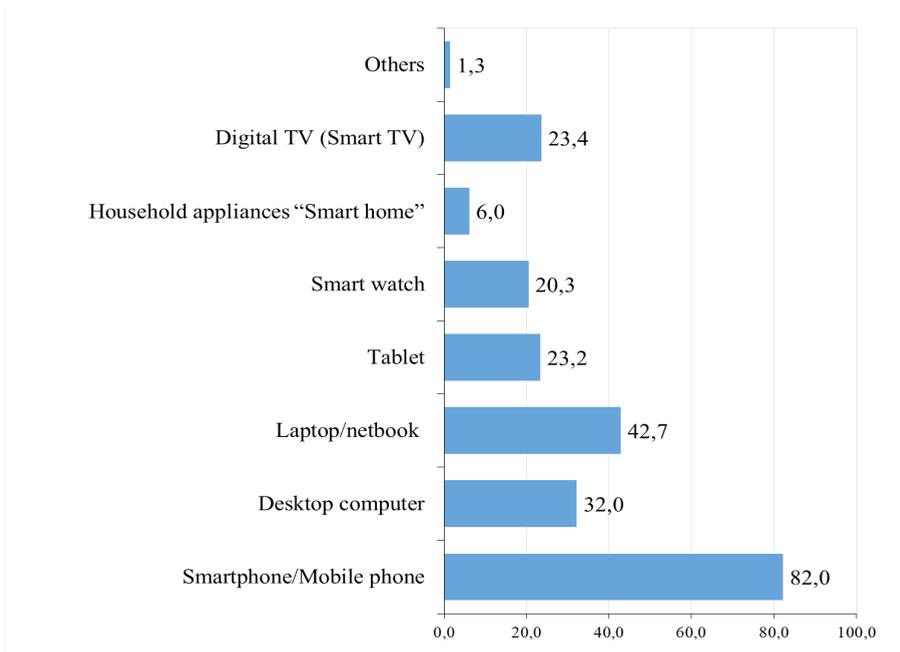


Fig. 3. Daily use of major digital devices, %

With a high probability, the indicator under study is affected by the following factors: age ($p = 0$, chi-square = 104.8, degrees of freedom = 35, Cramer's $V = 0.25$); gender ($p = 0$, chi-square = 61.7, degrees of freedom = 7, Cramer's $V = 0.4$); type of employment, gender ($p = 0$, chi-square = 158.9, degrees of freedom = 70, Cramer's $V = 0.25$). Table 1 presents the data by age.

Table 1

The dependence of the number of digital devices used on the age

Number of digital devices used	Age				
	18–24	25–34	35–44	45–60	over 60
1,00	3	5	28	35	63
2,00	41	36	27	29	14
3,00	38	34	23	19	12
4,00	3	14	14	9	5
5,00	6	7	5	3	4
6,00	9	3	1	5	1
7,00	0	1	1	0	1
8,00	0	0	0	0	0

The employment of respondents has the following impact on the use of digital devices: the sampled students and the non-working (not for health reasons) use six-seven digital devices; the unemployed for health reasons and the pensioners mainly use one or two devices; the remaining categories use three-four devices daily.

The gender of the respondents also impacts the use of digital devices. More than 40% of the sampled men are in the group that uses three to four devices. Half of the women use one device, about 40% of them make up a group that uses two to three devices. The maximum number of devices, seven, is used by 2% of the men. Devices in the “others” category were indicated by the women.

3.2. *Purchasing goods or services via the Internet.* About 60% of the respondents use the Internet to purchase goods or services. The employment has a probable influence on this indicator ($p = 0$, chi-square=78.14, degrees of freedom = 30, Cramer’s $V = 0.27$), as well as education ($p = 0$, chi-square = 45.66, degrees of freedom = 18, Cramer’s $V = 0.2$) and age ($p = 0.007$, chi-square = 31.95, degrees of freedom = 15, Cramer’s $V = 0.17$);

More than 70% of the unemployed, public company officers, private company workers and from 60 to 70% of the private-held company workers and individual entrepreneurs make purchases via the Internet, as well as half of the students and heads of companies, while only 16% of the pensioners shop online.

The highest percentage of online shoppers are those with higher education (more than 70%), they are followed by those with secondary education and primary vocational education (about 50%). Among the respondents with secondary education, about 45% make purchases and services via the Internet.

The age group of 35–44 years is in the first place in terms of online shopping, 45–60 years and 25–34 years are in the second place. At the same time, only about 50% of the 18–24-year-olds and less than 20% of the over-60-year-olds use the Internet to purchase goods or services.

3.3. *Preferred form of payment for goods and services.* About 53% of the respondents prefer to make payments by bank card, 17% choose to use smartphone applications, about 30% still prefer cash payments.

Age has the biggest influence on this indicator ($p = 0$, chi-square = 71.62, degrees of freedom = 30, Cramer’s $V = 0.2$), as well as the form of employment ($p = 0$, chi-square = 144.05, degrees of freedom = 60, Cramer’s $V = 0.25$). Table 2 provides the detailed information on age.

Table 2

The preferred form of payment for goods and services, depending on age

Preferred form of payment	Age				
	18–24	25–34	35–44	45–60	> 60
Cash	21	30	24	37	68
Card	59	34	57	51	25
Smartphone apps	21	37	19	12	7

About a third of the private companies’ officers and individual entrepreneurs and more than 20% of the students use smartphone apps. More than 60% of the pensioners prefer to pay in cash. Interestingly, about 45% of the heads of both public and private companies also choose to use cash.

3.4. Applying for public or municipal services if necessary. Since the respondents could choose several options or provide their own answers, we calculated the ratio of the number of responses for each option to the sampled population. Therefore, the overall result exceeds 100%. The calculations have shown that 55% of the respondents prefer to use the portal of public services to receive state or municipal services, 30% prefer personal visits to institutions and organizations, 35% would rather make a phone call, 15–16% choose social networks or search engines.

Education and the type of employment impact the respondents' actions when there is a need to apply for public services ($p = 0.001$, chi-square = 32.14, degrees of freedom = 12, Cramer's $V = 0.2$) ($p = 0.016$, chi-square = 35.8, degrees of freedom = 20, Cramer's $V = 0.216$). Other characteristics do not affect this indicator.

4. Personal data self-protection index.

The calculation has shown that the overall level of personal data self-protection is 24.3 on a 100-point scale or 1.8 on a 5-point scale. At the same time, more than half of the respondents belong to the group with a very low level of personal data self-protection, 25% show its low level, and 17% demonstrate a satisfactory level. Only 6.5% of the respondents have a high and very high level of personal data self-protection.

The level of personal data self-protection can be influenced by the following indicators:

— *age* ($p = 0$, chi-square = 103.26, degrees of freedom = 20, Cramer's $V = 0.26$). The group with a very high level of personal data self-protection consists of the respondents aged 18–24, in the group with a high level there are respondents aged 18–24 and 25–34. Most people over 60 are in the group with a very low level of personal data self-protection.

— *gender* ($p = 0$, chi-square = 29.4, degrees of freedom = 4, Cramer's $V = 0.28$). Gender dependence is very evident in the group with a very low level of personal data self-protection. It includes more than 65% of all the women, which is almost twice as much as the share of men in this group of their total number. At the same time, the opposite ratio is observed in the groups with low and satisfactory levels: among the individuals with high and very high levels of personal data self-protection, the share of men and women to their total is the same.

5. Digital literacy index.

The average level of digital literacy of the Kaliningrad region's adult population is about 32 points on a 100-point scale or 2.1 on a 5-point scale, which is low. Figure 4 provides detailed results.

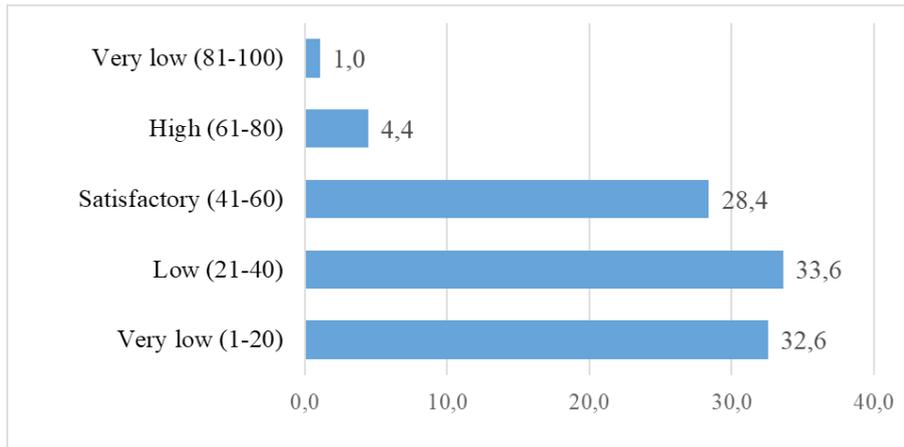


Fig. 4. Digital literacy index of the Kaliningrad region's population

The value of the digital literacy index is most affected by age and employment.

The age dependence ($p = 0$, chi-square = 177.11, degrees of freedom = 20, Cramer's $V = 0.35$) is clear in very high, high and very low levels of digital literacy. The group with a very high level of digital literacy includes only people between 18 and 34 years old, while the same age category largely comprises the group with a high level of digital literacy. The composition of the group with a very low level of digital literacy is as follows: 1% of the age group of 18–34, 16% of the age group of 35–44, 31% of the age group of 45–60, 77% of the age group of 60 years and older. The group with a satisfactory level of digital literacy includes 40–50% of the respondents belonging to the age category of 18–44, about 20% of the representatives of the age group of 45–60 years, and about 6% of the representatives of the older generation. The low digital literacy group includes approximately 40% of all age groups, except for the older generation, whose share in this group is about 16%.

As for the form of employment ($p = 0$, chi-square = 156.26, degrees of freedom = 40, Cramer's $V = 0.32$), the group with a high level of digital literacy includes the students, individual entrepreneurs and heads of private-held companies. The group with a high level has the largest share of the students, heads of public companies and non-working people. About 45% of the public companies' officers are in the group with a low level of digital literacy. About 80% of the pensioners are in the group with a very low level of digital literacy. The other characteristics have a limited impact on the level of digital literacy.

6. Digital literacy self-assessment level.

The self-assessed level of digital literacy differs from the actual one. It is 49 against 32 points respectively on a 100-point scale. Figure 5 presents data comparing the actual level of digital literacy and the self-assessed one.

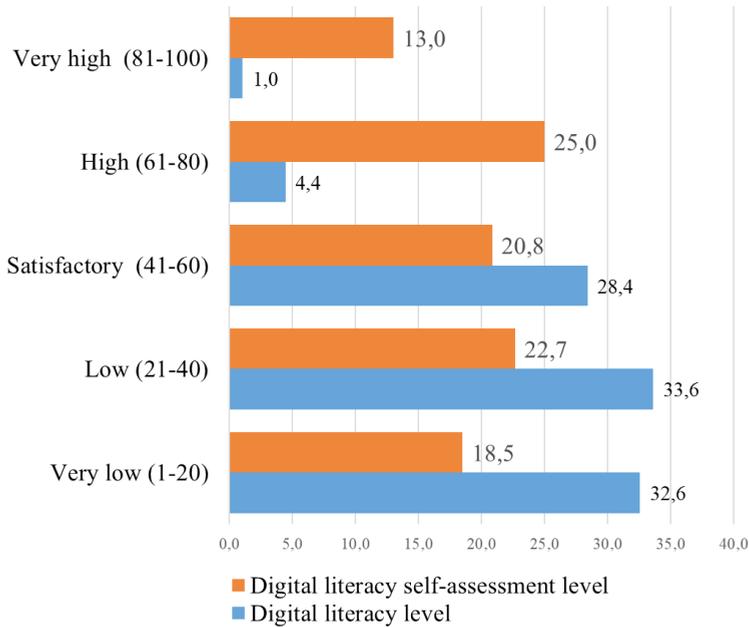


Fig. 5. Comparison of digital literacy level and self-assessment level

The formation of digital literacy self-assessment level is most affected by age ($p = 0$, chi-square = 189.58, degrees of freedom = 20, Cramer's $V = 0.35$) and the form of employment ($p = 0$, chi-square = 217.92, degrees of freedom = 40, Cramer's $V = 0.37$).

Conclusion

The paper presents the results of the sociological study of the most important group involved in this process, the population of the Kaliningrad region supplementing the official Fig.s presented in the annual report of the Ministry of Digital Technologies and Communications of the Kaliningrad region on the implementation of the digital transformation programme in 2019.

The analysis shows that a little over half of the population aged 18 and older has a positive attitude towards the process of digitalization and about 20% believe that the digital economy contributes to social degradation. However, the greatest concern is the number of people who have not formed their opinion about the digital economy yet. It is approximately 30% of the population, or about 250 thousand people. This group might not have made up their mind because they still do not understand the processes that are taking place and do not see how they impact their lives.

Examining the opinions on the positives and negatives of the digital economy, the research reveals which components of digital transformation are of the greatest concern and which of them are supported.

The results of studying the digital activities of the Kaliningrad region's population show that it uses a variety of digital technologies, however, the index of the personal data self-protection in the digital environment is very low, only 24 points on a 100-point scale, which is alarming.

The digital literacy index of the region's population is several points higher than the digital literacy indices in other regions studied. Nevertheless, it is still low.

The index of the population's digital literacy self-assessment, which is 49 points on a 100-point scale, indirectly confirms that a significant part of the population considers itself an active participant in the digitalization process.

The results made it possible to identify the key areas requiring attention in further implementation of digital transformation programme in the Kaliningrad region, including:

- enhancing awareness-raising activities emphasizing the need for the introduction and use of digital technologies. An efficient way to reach the older generation is to use clear examples referring to the past, when, for instance, a conventional wired telephone was considered a luxury. It is important to explain to the younger generation that digitalization aims not only at creating databases for the digitalization programme. It is essential to provide regional, national and global examples of digitalization, including artificial intelligence, robotics, the Internet of things, biotechnologies, as well as basic digital technologies that improve the lives of the region's population. We believe that a well-organized explanatory work will make most of the 30% who has not formed a clear opinion the supporters of digitalization.

- increasing awareness-building work on personal data self-protection in the digital environment, primarily among the seniors. The research results show that a significant part of the older population simply does not use antivirus programs when accessing the Internet from personal computers. It is advisable to create volunteer groups (based on higher educational institutions) whose activities will be aimed at solving problems associated with data protection in the digital environment.

- increasing the digital literacy index of the region's population. It is also necessary to develop and implement educational programs among different age groups. For school children, this can be done through digital literacy classes, which along with financial literacy programmes is within the competence of the regional education authorities. As for the rest of the population, higher education institutions can provide similar programmes through volunteering or within the frame of work placement, which additionally will give practical skills to their graduates.

We believe that the development and implementation of the proposed measures will promote the interests of the population as the main participant in digitalization and provide greater results in the digital transformation of the Kaliningrad region.

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References

1. Negroponte, N. 1995, *Being Digital*, NY, Knopf, 256 p.
2. Schwab, K. 2016, *Chetvertaya promyshlennaya revolyutsiya* [The Fourth Industrial Revolution], Moscow, Eksmo Publishing House, 208 p. (in Russ.).
3. Afanasenko, I. D., Borisova, V. V. 2018, Digital economy and social and ethical values, *Izvestiya Sankt-Peterburgskogo gosudarstvennogo ekonomicheskogo universiteta* [News of the St. Petersburg State University of Economics], no. 5 (113), p. 7–11 (in Russ.).
4. Royakkers, L., Timmer, J., Kool, L., Est, R. 2018, Societal and ethical issues of digitization, *Ethics and Information Technology*, no. 20, p. 127–142.
5. Solomonides, A., Mackey, T. 2015, Emerging Ethical Issues in Digital Health Information, *Cambridge Quarterly of Healthcare Ethics*, 2015, vol. 24, no 2, p. 311–322. doi: <https://doi.org/10.1017/S0963180114000632>.
6. Budanov, V., Aseeva, I. 2019, Manipulative marketing technologies in new digital reality, *Economic Annals-XXI*, vol. 180, no. 11–12, p. 58–68. doi: <https://doi.org/10.21003/ea.V180-07>.
7. Zemtsov, S., Barinova, V., Semenova, R. 2019, The Risks of Digitalization and the Adaptation of Regional Labor Markets in Russia, *Foresight and STI Governance*, vol. 13, no. 2, p. 84–96. doi: <https://doi.org/10.17323/2500-2597.2019.2.84.96>
8. Fuchs, C. 2015, *Culture and economy in the age of social media*, New York, Routledge, 424 p.
9. Ghosh, D., Scott, B. 2018, *The technologies behind precision propaganda on the Internet*, available at: <https://www.newamerica.org/public-interest-technology/policy-papers/digitaldeceit/> (accessed 15.05.2021).
10. Andrejevic, M. 2019, Automating surveillance, *Surveillance & Society*, vol. 17, no. 1–2, p. 7–13. doi: <https://doi.org/10.24908/ss.v17i1/2.12930>.
11. Ketscher, L. 2018, Powering the Digital Economy: Regulatory Approaches to Securing Consumer Privacy, Trust and Security, *International Telecommunication Union*, available at: https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-BB.POW_ECO-2018-PDF-E.pdf (accessed 15.05.2021).
12. Volokhova, N. V. 2020, Socio-cultural basis of the digital economy, *Izvestiya Yugo-Zapadnogo gosudarstvennogo universiteta. Seriya: Ekonomika. Sotsiologiya. Menedzhment* [Proceedings of Southwestern State University. Series: Economics. Sociology. Management], vol. 10, no. 3, p. 217–226 (in Russ.).
13. Arkhipova, O. V. 2018, Digital trends in culture: the experience of transforming cultural practices, *Peterburgskii ekonomicheskii zhurnal* [St. Petersburg Economic Journal], no.1, p. 70–76 (in Russ.).
14. Fabris, A. 2020, Digital culture, the anthropological dimension and the educational problem, *Revista Signos*, vol. 41, no. 1. p. 9–17. doi: <https://doi.org/10.22410/issn.1983-0378.v41i1a2020.2593>.
15. Valtysson, B. 2020, *Digital Cultural Politics. From Policy to Practice*, Palgrave Macmillan, 226 p.

16. Manzuch, Z. D. 2017, Ethical Issues in Digitization of Cultural Heritage, *Journal of Contemporary Archival Studies*, vol. 4, no. 4, available at: <https://elischolar.library.yale.edu/jcas/vol4/iss2/4/> (accessed 15.05.2021).
17. Egina, N. A., Zemskova, E. S. 2020, Transformation of education as a metatrend of the digital economy, *Natsional'nye interesy: priority i bezopasnost'* [National interests: priorities and security], no. 10, p. 1960—1979 (in Russ.).
18. Sheremetyeva, E. N., Barinova, E. P., Zolotova, L. V. 2020, Innovative Formats of Education in the Transformation of the Digital Economy. In: Ashmarina, S. I., Mantulenko, V. V. (eds) *Digital Economy and the New Labor Market: Jobs, Competences and Innovative HR Technologies*, Springer, Cham, p. 249—254. doi: https://doi.org/10.1007/978-3-030-60926-9_32.
19. Buchanan, R. 2019, Digital Ethical Dilemmas in Teaching. In: Peters, M. (eds) *Encyclopedia of Teacher Education*, Singapore, Springer, doi: https://doi.org/10.1007/978-981-13-1179-6_150-1.
20. Yao, Y., Qi, P., Zhu, Y. 2019, Research on Interdisciplinary Education in Digital Economy, *Proceedings of the 5th Annual International Conference on Social Science and Contemporary Humanity Development (SSCHD 2019)*, p. 76—80. doi: <https://doi.org/10.2991/sschd-19.2019.32>.
21. Karthikeyan, C., Pious, T. 2019, A meta analytical descriptive study on evolving concepts of human capital and its application in the age of artificial intelligence (AI), *International Journal of Research and Analytical Reviews (IJRAR)*, vol. 6, no. 2, p. 361—373.
22. Ukolova, N. V., Novikova, N. A. 2019, The place of human potential in the digital economy, *Vestnik Altaiskoi akademii ekonomiki i prava* [Bulletin of the Altai Academy of Economics and Law], no. 1—2, p. 166—173 (in Russ.).
23. Kalmus, V., Opermann, S. 2020, Personal time capital in the digital society: an alternative look at social stratification among three generations of highly skilled professionals in Estonia, *TRAMES*, vol. 24, no. 1, p. 3—25.
24. Kuznetsova, I. G., Goloshchapova, L. V., Ivashina, N. S., Shichiyakh, R. A., Petrova, L. I., Tkachev, B.P. 2020, The Paradigm of Human Capital Development Capable of Adapting Innovations in the Transition to a Digital Economy, *International Journal of Civil Engineering and Technology*, vol. 10, no. 2, p. 1408—1417.
25. Chetty, K., Qigui, L., Gcora, N., Josie, J., Wenwei, L., Fang, Ch. Bridging the digital divide: measuring digital literacy, *Economics: The Open-Access, Open-Assessment E-Journal*, no. 12, p. 1—20.
26. Berenyi, L., Sasvari, P. 2018, State of Digital Literacy: Preparedness of Higher Education Students for E-Administration in Hungary, *Central and Eastern European e|Dem and e|Gov Days 2018*, Budapest, p. 347—357.
27. Radovanovic, D., Holst, Ch., Belur, S., Srivastava, R., Hounghonon, G., Noll, J. 2020, Digital Literacy Key Performance Indicators for Sustainable Development, *Social Inclusion*, vol. 8, no. 2, p. 151—167. doi: <https://doi.org/10.17645/si.v8i2.2587>.
28. Cote, T., Milliner, B. 2016, Japanese university students' self-assessment and digital literacy test results. In: Papadima-Sophocleous, S., Bradley, L., Thouëсны. S. (eds) *CALL communities and culture — short papers from EUROCALL 2016*, Research: publishing.net, p. 125—131. doi: <https://doi.org/10.14705/rpnet.2016.eurocall2016.549>.

29. Soldatova, G. U., Rasskazova, E. I. 2014, Psychological models of digital competence of Russian adolescents and parents, *Natsional'nyi psikhologicheskii zhurnal* [National psychological journal], no. 2 (14), p. 27–35 (in Russ.). doi: <https://doi.org/10.11621/npj.2014.0204>.
30. *Natsional'nyi indeks razvitiya tsifrovoi ekonomiki: Pilotnaya realizatsiya* [National Index of Digital Economy Development: Pilot Implementation], 2018, Moscow, State Corporation “Rosatom” (in Russ.).
31. *Digital Economy Country Assessment for Russia*, 2018, Moscow, Institute of the Information Society, 158 p.
32. Zadorin, I. V., Maltseva, D. V., Shubina, L. V. 2017, The level of media literacy of the population in the regions of Russia: a comparative analysis, *Kommunikatsii. Media. Dizain* [Communications. Media. Design], no. 4, p. 123–141 (in Russ.).
33. Podgornyy, B. B., Volokhova, N. V. 2020, The digital literacy level of the Kursk region population: reality and prospects, *Izvestiya Yugo-Zapadnogo gosudarstvennogo universiteta. Seriya: Ekonomika. Sotsiologiya. Menedzhment* [Proceedings of Southwestern State University. Series: Economics. Sociology. Management], no.6 (in Russ.).
34. Sergeev, L. I. 2019, The essence of the economic content of the nature of digitalization of social development, *Baltiiskii ekonomicheskii zhurnal* [Baltic Economic Journal], no. 1 (25), p. 71–82 (in Russ.).
35. Klachek, P. M., Polupan, K. L., Lieberman, I. V. 2019, Digitalization of the economy on the basis of system-targeted knowledge management technology, *Nauchno-tekhnicheskie vedomosti Sankt-Peterburgskogo gosudarstvennogo politekhnicheskogo universiteta. Ekonomicheskie nauki* [Scientific and technical bulletins of the St. Petersburg State Polytechnic University. Economic sciences], vol. 12, no. 3, p. 9–19 (in Russ.).
36. Serova, O. A. Problems of the development of the methodology of civil law research in the digital era, *Metodologicheskie problemy tsivilisticheskikh issledovaniy* [Methodological problems of civil law research], no. 1, p. 352–361 (in Russ.).
37. Kostrikova, N. A., Maitakov, F. G., Yafasov, A. Ya. 2019, Risks of marginalization of society during the transition to a digital economy, *Razvitie teorii i praktiki upravleniya sotsial'nymi i ekonomicheskimi sistemami* [Development of theory and practice of management of social and economic systems], no. 8, p. 190–194 (in Russ.).
38. Polupan, K. L. 2019, Quality management of higher education in the context of digitalization, *Samarskii nauchnyi vestnik* [Samara Scientific Bulletin], vol. 8, no. 4 (29), p. 273–278 (in Russ.).
39. Chunina, A. E., Sinitina, D. G., Konopleva, V. S. 2020, Digitalization in the management system of an educational institution, *Kaliningradskii vestnik obrazovaniya* [Kaliningrad Education Bulletin], no. 1, p. 78–83 (in Russ.).
40. Belaya, O. V. 2020, Implementation of the national project “National Program” Digital Economy of the Russian Federation “: the experience of the Kaliningrad region, *Sbornik statei po itogam mezhdunarodnoi nauchno-prakticheskoi konferentsii «Etiko-pravovye osnovaniya regulirovaniya vysokikh tekhnologii v sovremennom mire»* [Collection of articles based on the results of the international scientific and practical conference “Ethical and legal foundations of regulation of high technologies in the modern world”], p. 52–65 (in Russ.).

41. Vetrov, I. A., Kotenkov, S. M. 2018, Some issues of the implementation of the program “Digital Economy of the Russian Federation” in the Kaliningrad region on the basis of the Kaliningrad State Research Center for Information and Technical Security (KG NIC), *Vestnik UrFO. Informatsionnaya bezopasnost'* [UrFR Newsletter. Information Security], no. 3 (29), p. 55—61 (in Russ.).

42. Pekhova, L. S., Gafarova, D. A. 2020, On the development of citizens' activity in solving local issues in the municipalities of the Kaliningrad region, *Administrative Consulting*, no. 4, p. 108—114 (in Russ.).

43. Krishtal, M. I., Shchekoturov, A. V. 2020, Effective risk communication as a factor in managing protests attitudes in a local community, *Balt. Reg.*, vol. 12, no 2, p. 70—83. doi: <https://doi.org/10.5922/2078-8555-2020-2-5>.

44. Podgorny, B. B. 2020, Habits of the Russian population: methodology and classification, *Sovremennye issledovaniya sotsial'nykh problem* [Modern Studies of Social Issues], no. 2. p. 279—301. doi: <https://doi.org/10.12731/2077-1770-2020-2-279-301> (in Russ.).

45. Podgorny, B. B., Volokhova, N. V. 2020, Digital literacy of the population: regional features, *Sbornik annotatsii dokladov IV Mezhdunarodnoi nauchnoi konferentsii pamyati akademika A. I. Tatarkina* [Collection of reports' abstracts of the IV International Scientific Conference in memory of Academician A. I. Tatarkin], p. 238—239 (in Russ.).

46. Podgorny, B. B., Volokhova, N. V. 2020, The population of the Kursk region in the digital economy mirror: a sociological analysis, *Izvestiya Yugo-Zapadnogo gosudarstvennogo universiteta. Seriya: Ekonomika. Sotsiologiya. Menedzhment* [Proceedings of Southwestern State University. Series: Economics. Sociology. Management], no. 5, p. 189—199 (in Russ.).

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VALUATING THE APPROPRIATION OF DIGITAL TECHNOLOGIES ACROSS RUSSIAN REGIONS

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The COVID-19 pandemic has proved a powerful catalyst for the integration of digital technologies in everyday life. Many digital routines have replaced the traditional ones relating to purchasing goods and services, information exchange, movement, document issuance, or scheduling medical appointments. Despite technology proliferating through society, the digital divide is widening. The place of residence is a factor affecting the involvement in digitalisation, along with age, education, income, and the availability of ICT infrastructure. This study evaluates the readiness of the population of various Russian regions to embrace digital technologies. Based on a comparative analysis of traffic to the most popular websites on the Russian Internet, grouped into five categories (e-commerce, e-government, information exchange, spatial mobility, scholarly communication), an index method for assessing readiness for digitalisation is developed. The study uses Yandex search data from February 2019 to January 2021. The findings suggest that Russian regions may be divided into digitally advanced areas, runner-ups, average performers, and the digital periphery. Recommendations are given on how to increase readiness for digital transformation in territories of different types without running the risks of forced digitalisation.

Keywords:

society digitalisation, digital divide, digital routine, internet appropriation, digital inclusion, digital transformation, typology of Russian regions, digitalisation threats, e-commerce, digital footprint, information society

Introduction and problem setting

The digital divide is part of the new socio-economic reality of global space development, and the COVID-19 pandemic spotlighted its negative effects. Pandemic-induced instant changes in everyday life and socialisation made state participation in developing basic information and communication infrastructure and making digital technology available to all a major national security factor. The year 2020 demonstrated that a rapid digital transformation was impossible in emergency conditions when it was impossible to meet basic digitalisation criteria. The population lacked digital skills, and the infrastructure was not widely available. All this caused the fall of economic activity, limited access to government services, and heightened social tensions.

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A summary analysis of earlier findings suggests that the digital divide may be looked at as a new type of social inequality, which arises not so much from poor Internet access but from the capacity of users to embrace the Internet as a tool to improve their lives [1]. The most important aspects of digital inequality are the socio-demographic profile of users, the coverage area, the cost of services, and average speed; variations in the goals and results of using digital technology. It has been shown [2] that motivational, cognitive, and economic barriers to utilising digital resources are more formidable than infrastructural ones. Rural residents, workers with basic vocational education, and poor and vulnerable families confirm this pattern. Young people, city residents, entrepreneurs, and professionals with a higher education stand out for their positive motivation and considerable digital activity and literacy, which influence effective adaptive practices. The growing popularity of self-employment and freelance work is creating a new digital generation, for which Internet access from any part of the world is an absolute necessity [3]. Digital integration, a new social lift in an information society, is emerging as a counterweight to digital isolation [1].

Of particular interest is exploring the spatial patterns of the digital divide. For instance, it has been demonstrated [4] that the way a person embraces the 'urban digital lifestyle' is affected by both their socio-economic standing and the place of residence. Having studied the digital practices of people living in four districts of Tel Aviv, the authors concluded that location remains the key socio-spatial determinant of human life in the digital era. A similar study conducted in Nánjīng, the capital of Jiangsu province in East China [5], shows that the online activity of different socio-economic groups varies despite similar ICT opportunities. The most significant influences on the model of digital technology usage were the socio-economic standing and the characteristics of the location and place of residence.

The connection between ICT development and urbanisation has been demonstrated for Chinese cities in [6]. A time-series analysis of data for district administrative centres proved a positive effect of digital technology on urbanisation. However, the digital divide between the cities is considerable. The technological inferiority of less developed cities and towns is aggravated by the poor digital skills of the population. Another study [7] confirms these findings. Megalopolises and major administrative centres have a high digital development index, whilst cities located in less advantaged central and western regions and the rural south-west of the country score lower. China, the largest ICT market for mobile devices and Internet users, has a sharp digital divide between regions and cities. The situation is similar in Australia, where, despite growing digitalisation, digital integration shows distinct geographical, social, and socio-economic patterns [8].

The problem of digital space inhomogeneity becomes particularly acute when the contrast is drawn between urban and rural areas. An investigation of Scottish villages [9] has shown that the population and small enterprises are not particularly receptive to digital technology. The authors of the study propose the expansion of the coverage area and the involvement of local communities and public and private actors in popularising digital solutions and adapting them to the local context. This problem also arose in the U.S., where the prosperity

of agricultural states, such as South Carolina [10], is becoming increasingly dependent on ICT accessibility. The findings of the study, which agree with those of other investigations, suggest that seniors and low-income and rural households in all demographic groups have limited broadband access.

All EU countries have gross digitalisation disproportions [11]. The imbalance is stable and pronounced in Sweden, Denmark, and the U.K. There are marked differences in the intensity of Internet usage by households and businesses in Finland, Germany, Spain, and some regions of France. It has been demonstrated that a state policy on ICT proliferation has to consider synergistic relationships and the regional context of digitalisation. The connection between regional policies and the narrowing of the digital divide have been explored in Lithuanian regions [12]. The most digitally developed territories are major cities — Vilnius, Klaipeda, and Kaunas, and the least developed area is the Tauragė County bordering Russia. Covid-19 socialisation restrictions emphasised the need for data on EU territories cut off from the Internet. A study carried out in Poland, using GIS technology [13], identifies regions likely to underperform in digital integration. Terrain raster data and vector data on population density, building types, and communication stations show that 10 per cent of the Poles have no access to the Internet.

Spatial aspects of digitalisation have been studied in Russian regions as well. A series of works explores the digital divide between federal districts [14; 15]. It has been shown that significant factors in socio-economic development disparities, including unequal income distribution, are urbanisation, the quality of ICT infrastructure, and good ICT skills. A study of uneven development of digital economy in Russian regions [16] distinguishes 15 leaders in terms of ICT accessibility for the population (including Tatarstan, the Kaliningrad and Tyumen regions, Moscow, and St Petersburg). Among the underperformers are the Republics of Ingushetia and Chechnya, which have poor ICT infrastructure.

Another study [17] presents the results of a spatial-temporal analysis of the development of the Internet in Russia. Most of the country's sparsely populated territory has only satellite Internet access, whilst most national users live in Moscow, St Petersburg, and cities with a population of one million or more. There is a sharp difference between regions and their administrative centres in user activity. An evaluation of secondary digitalisation in more than 90 Russian cities, carried out by the Skolkovo Institute for Emerging Market Studies based on 2019 data, shows that the need for digital services is a more significant factor in the digital divide between cities than the availability of the services [18]. Uneven digitalisation of cities and towns is accompanied in Russia by the digital discrimination of rural areas [19]. All this calls for measures to smooth the transition to an information society [20].

Earlier research into the situation at the level of federal districts and regions highlights stark differences in the availability of ICT infrastructure. It emphasises the dependence of Internet usage on socio-economic factors. However, several questions remain about the openness of people living in different regions to the expansion of digital technology into everyday life. This study aims to measure the digital divide between Russian city residents as digital routines establish themselves.

Methods

The digital receptiveness of regional residents is their ability to pick up ICT skills and apply them in everyday life in performing routine operations. Spatial analysis of the invisible digital footprint or digital shadow of a search query was carried out to evaluate the openness of a region to digital routines. At the first stage of the study, a list of websites frequently visited by the Russians was drawn up. These websites were divided into five categories covering some essential areas of life (table 1).

Table 1

Methodology for creating a database to evaluate digital receptiveness

Query category	Digital routine	Website sample	Query*
E-commerce	Purchasing goods and services online	Wildberries online retailer (www.wildberries.ru), Ozon online retailer (www.ozon.ru), Aliexpress.ru online retailer (www.aliexpress.ru)	Wildberries (8.5m), Ozon (8.4m), Aliexpress (6.8m)
E-government	Getting government services	Gosuslugi public and municipal services portal (www.gosuslugi.ru), the official website of the Federal Tax Service (www.nalog.ru), Mojdokumenty information portal for public and municipal services (mojdokumenty.pf)	Gosuslugi (15.9m), Federal Tax Service (1.2m), Mojdokumenty (4.6m)
Obtaining information	Keeping up-to-date with the situation in Russia and the world	RIA Nvovsti (ria.ru) and RBC (www.rbc.ru) news portals, Mail.ru news aggregator (news.mail.ru)	RIA (0.5m), RBC (0.7m), Mail.ru news (0.1m)
Spatial mobility	Travel planning	the online accommodation reservation service (www.booking.com), Yandex Maps web mapping platform (yandex.ru/maps), Avisales flight search engine (aviasales.ru)	booking.com (1.2m), Yandex Maps (2.1m), aviasales.ru (0.6m)
Scholarly communication	Dissemination of academic research	CyberLeninka open-access scientific electronic library (cyberleninka.ru), Russian Academy of Sciences (www.ras.ru), Scientific Russia information portal (scientificrussia.ru)	CyberLeninka (0.1m), RAN (1.4m), Scientific Russia (0.06m)

Comment: * most searched queries in Russian in February 2021 according to Yandex Wordstat (the keyword tool). For translation, see the Website sample column.

- the obtained values were normalised using the rank method; the region with the best query to population ratio was ranked first, and that with the worst ratio 85th (ranking was performed for all five categories);
- the final index was calculated as the arithmetic mean of ranks for five categories; its value varies from 1 to 85;
- a typology of Russian regions was produced based on the obtained digital receptiveness index.

Results

Transiting to digital consumption is a sine qua non of e-government, along with digital infrastructure improvement, retail transformation, online payment systems, and better transport and logistics services. The proportion of Russians purchasing goods and services online is growing every year. This increase is confirmed by search query statistics of the major marketplaces, whose websites were chosen for analysis. The Google Trends analytics tool shows that user interest in the Wildberries and Ozon stores almost doubled in 2019—2020. My analysis of fluctuations in monthly search queries for e-commerce websites across Russian regions from February 2019 to January 2021 showed seasonal changes in demand, with the most rapid growth in the last months of the year — October, November, and December. However, April 2020 witnessed an unusual surge in demand for e-commerce, which was explained by many Russians observing the lockdown rules. Figure 2 demonstrates the digital gap between Russian regions based on aggregate 2019—2021 data.

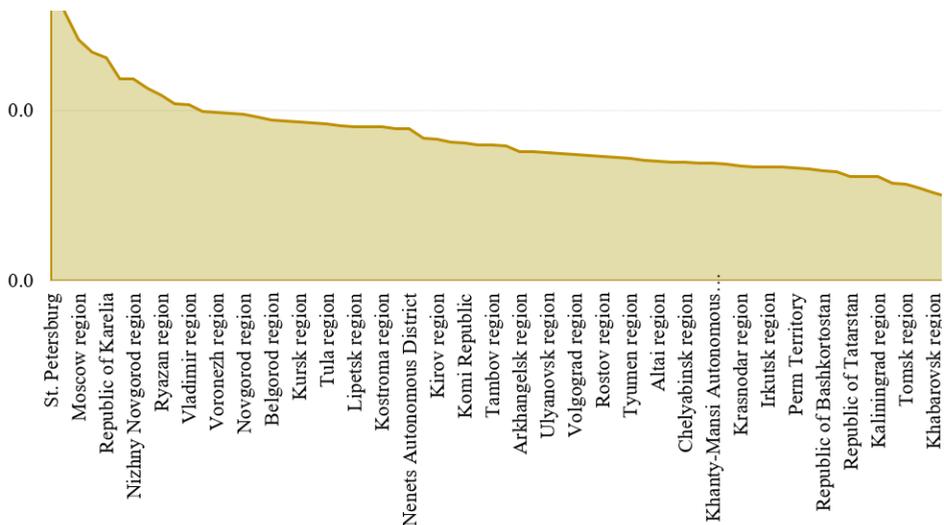


Fig. 2. Distribution of Russian regions by maximum average annual views of e-commerce websites per capita

Source: prepared by the author.

Comment: the graph covers 85 Russian regions, but only selected ones are titled.

Online consumption is most popular in Moscow and St Petersburg and the neighbouring near-capital Moscow, Tver, Nizhny Novgorod, Leningrad, Ryazan, Yaroslavl, and Vladimir regions, and the Republic of Karelia. Sevastopol and the Republic of Crimea also scored well. The least open to a digital economy are regions in the North Caucasus Federal district (the Republics of Karachay-Cherkessia, Kabardino-Balkaria, Dagestan, Ingushetia, Chechnya, North Ossetia-Alania), Far Eastern federal district (the Republic of Sakha, the Jewish autonomous region, the Perm and Amur regions), and the Siberian federal district (the Republic of Tyva). There is a vast, 31.6-fold, difference between the leaders and the underperformers.

Important factors in this spatial distribution are transport costs and time of delivery. Since most online orders are shipped from Moscow, delivery to distant regions takes more time and costs more. Another factor behind the territorial digital gap is regional inequalities in socio-economic development. The correlation coefficient between e-commerce website views per capita and the difference between the average monthly nominal salary across all organisations in a region and Moscow in 2019–2020 is negative (–0.13). In other words, the lower the income, the more reluctant a person is to shop online.

Another category of digital routines is reading Russian and international news online. ICT development created the conditions for rapid information dissemination. News websites are updated several times an hour, and the user has to refresh the page constantly to stay abreast of things. Voluntary or involuntary isolation from the information field results in digital marginalisation. Figure 3 demonstrates the geography of traffic to news websites.

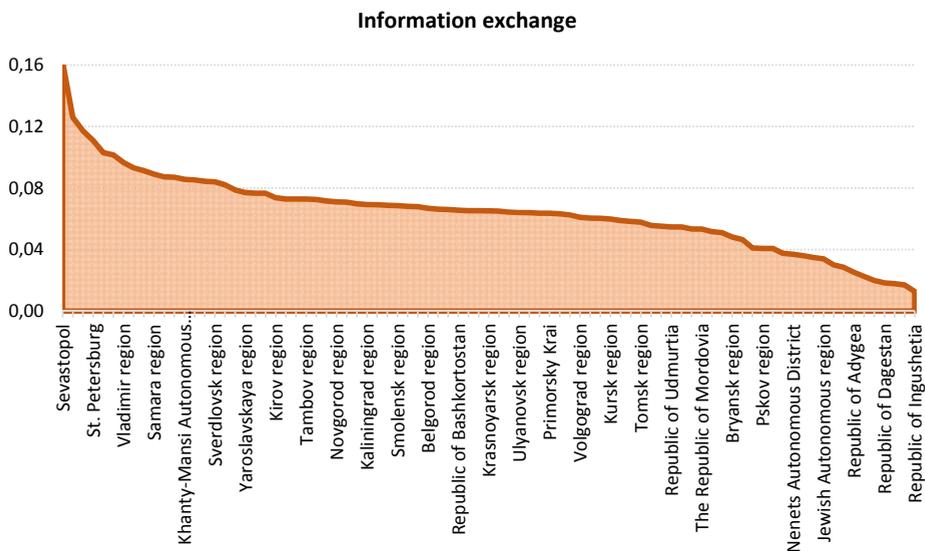


Fig. 3. The distribution of Russian regions by maximum average annual views of news websites per capita

Source: prepared by the author.

Comment: the graph covers 85 Russian regions, but only selected ones are titled.

Regions most involved in the national information space are Russia's two capitals — Moscow and Sant Petersburg; the newly acquired territories keenly interested in recent developments in the country (the Republic of Crimea and Sevastopol); major centres of research and industrial production (the Nizhny Novgorod and Novosibirsk regions). Digital peripheries in terms of news consumption are the Chukotka, Nenets, and Jewish autonomous regions and territories of the North Caucasus federal district. The digital gap between the regions ranked 1st and 85th was 12.8-fold. I calculated bivariate correlation coefficients for the maximum average annual views of news websites per capita, the proportion of the urban population (0.53), and the number of broadband users per 100 people in 2019. The coefficients demonstrate that urbanisation is a more significant factor in digitalisation than infrastructure. Regions with a greater proportion of the urban population were more actively involved in the virtual information environment.

The most developed of the five digital routine categories are digital relations between the government and the population (fig. 4). The virtualisation of document issuance is essential to the digital transformation of the state. Initiatives such as the national public service portal or taxpayer's home page increase the efficiency and transparency of interaction between the state and the citizen.

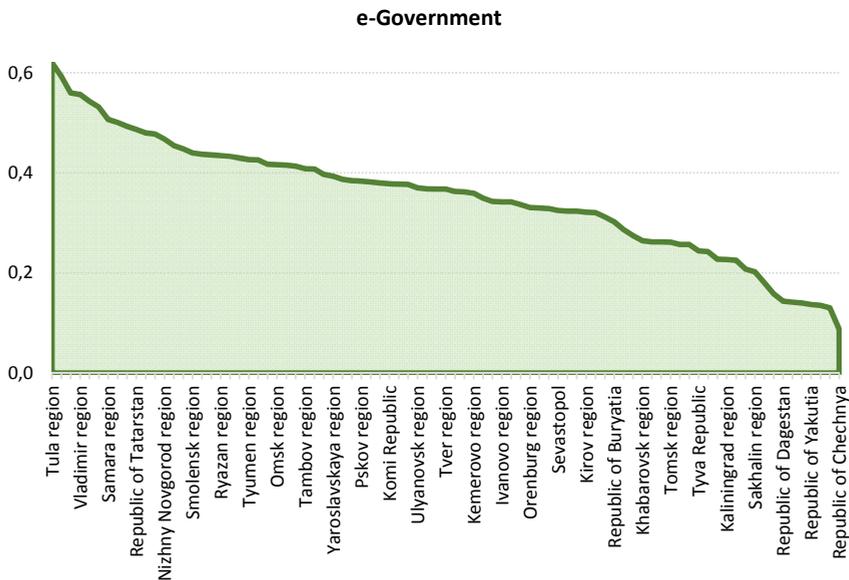


Fig. 4. The distribution of Russian regions by views of e-government websites per capita

Source: prepared by the author.

Comment: the graph covers 85 Russian regions, but only selected ones are titled.

Territories most open to e-government services are Moscow, the Republic of Tatarstan, and the Moscow, Tula, Vladimir, Sverdlovsk, Oryol, Samara, Novosibirsk, and Kostroma regions. They considerably outperform North Caucasus and Far Eastern regions. The difference between the leader and the outsider in this respect is sevenfold. An evaluation of the influence of urban population concentration and Internet usage by organisations, performed by computing correlations, suggests that both factors are equally significant for promoting e-government.

The other two categories, spatial mobility (fig. 5) and scholarly communication (fig. 6), are less popular among the population of Russia. The gap in openness to digitalisation in research is 27.9-fold; in travel, 34.3-fold.

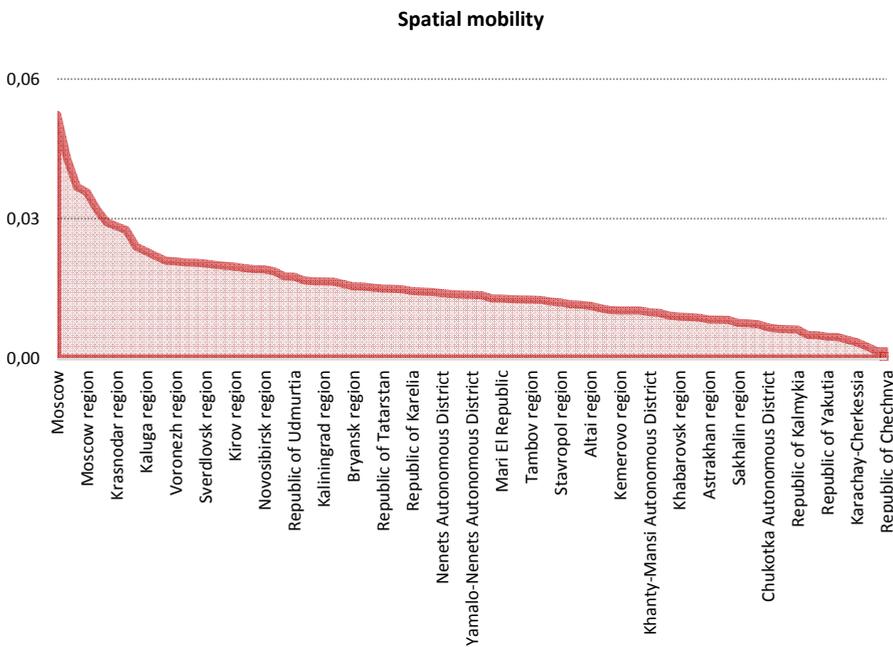


Fig. 5. The distribution of Russian regions by maximum average annual views of websites focusing on spatial mobility, per capita

Source: prepared by the author.

Comment: the graph covers 85 Russian regions, but only selected ones are titled.

Leaders in the use of digital services in travel planning are popular tourist destinations — Moscow, St Petersburg, Sevastopol, the Republic of Crimea, and the Moscow, Nizhny Novgorod, Krasnodar, Yaroslavl, and Vladimir regions. As to scholarly communication, the Novosibirsk region ranks first.

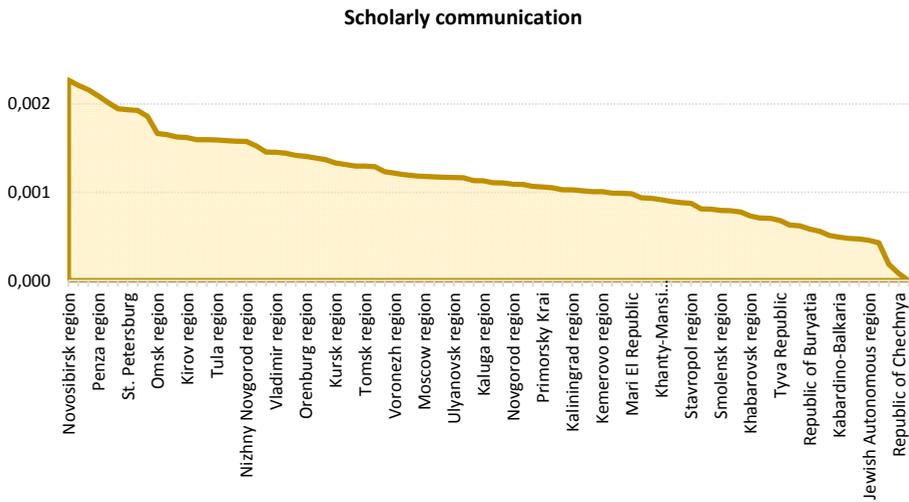


Fig. 6. The distribution of Russian regions by the maximum average annual views of scholarly communication websites per capita

Source: prepared by the author.

Comment: the graph covers 85 Russian regions, but only selected ones are titled.

Discussion

Figure 7 shows a typology of Russian regions according to the openness of their populations to digitalisation. The typology is based on a comprehensive evaluation of the five categories of digital routines. Regions are divided into advanced areas, runner-ups, average performers, and the digital periphery.

The advanced areas are 16 regions with the best final digital receptiveness index. They are located in six federal districts: Central (Moscow and the Vladimir, Moscow, Ryazan, Yaroslavl, Tula, Voronezh, Kaluga, and Oryol regions); North-Western (St Petersburg); Volga (the Nizhny Novgorod and Samara regions); Southern (the Republic of Crimea and Sevastopol). These regions are leaders in the use of digital technology by the population in everyday life (fig. 8). They are highly receptive to digital technology across most of the studied categories, particularly spatial mobility, information exchange, and e-governance. In regions with a robust research environment (Moscow, St Petersburg, the Novosibirsk region, and others), scholarly communication rapidly develops.

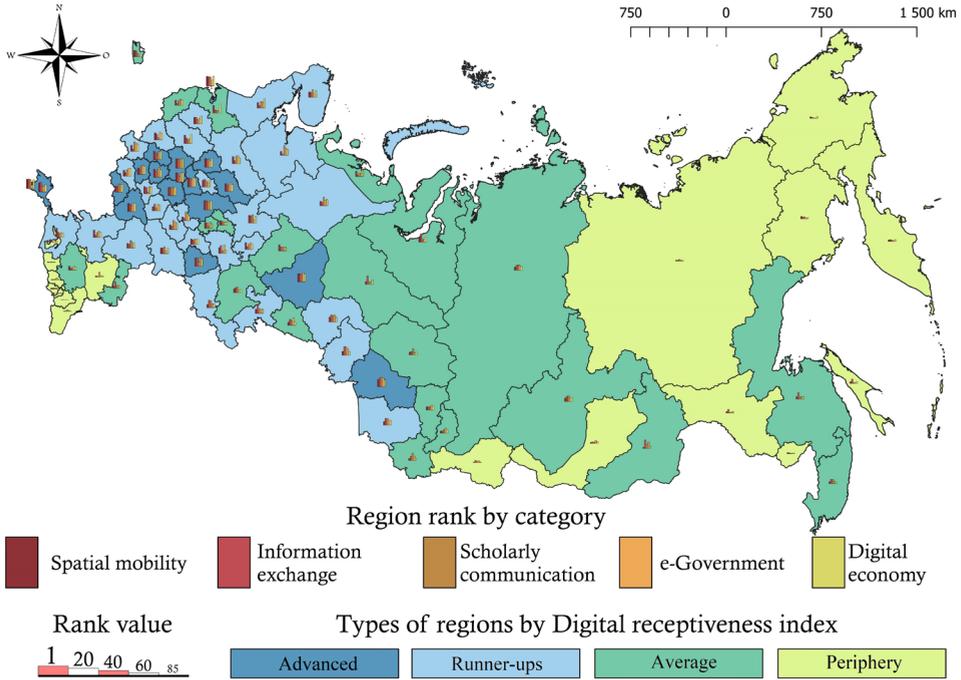


Fig. 7. A typology of Russian regions according to digitalisation receptiveness

Source: prepared by the author.

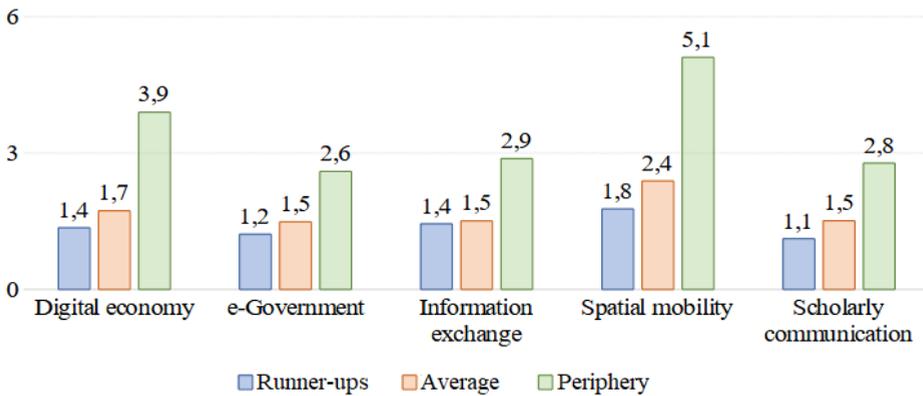


Fig. 8. The digital gap between the advanced areas and all other regions, times

Source: calculated by the author.

Runner-ups are 30 Russian regions, most of them located in three federal districts: 30 per cent in the Central federal district; 26.7 per cent, the Volga; 20 per cent, North-Western.

Among these territories, the Kostroma region performs the best and the Orenburg region the worst. Runner-ups are open to digital technology, outstripped

only by advanced areas (fig. 8). As a rule, digital receptiveness is the highest in three or four of the studied categories, with the dominance of one. This prevailing category is spatial mobility in the Krasnodar region, information exchange in the Omsk and Chelyabinsk regions, e-government in the Kostroma and Bryansk region, digital economy in the Tver region and the Republic of Karelia.

The average performers are 22 Russian regions. Seven are in the Volga federal district; six are in the Siberian; four are in the North-Western; three are in the Ural; one is in the Southern; one is in the North Caucasus. The population of these territories is receptive to digitalisation. However, it lags behind advanced areas and runner-ups in the digitalisation of spatial mobility and scholarly communication, whilst the gap in information exchange is the narrowest (fig. 8).

The digital periphery comprises 17 Russian regions, most of which are in the Far Eastern (47 per cent) and North Caucasus (35 per cent) federal districts. The indices of digital receptiveness range from 67.8 in the Sakhalin region to 84.8 in the Republic of Chechnya. Residents of peripheries are disinclined to use digital technology in everyday life. These regions perform much worse than others in Russia (fig. 8). Moreover, they do not have a leading category of digital services that could increase the digital receptiveness of the population (fig. 9).

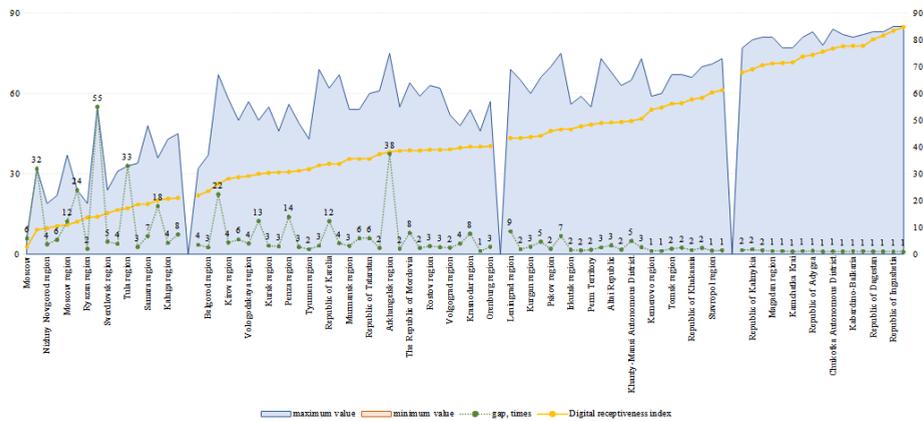


Fig. 9. The gap between the maximum and minimum rank values across Russian regions, by digital receptiveness categories

Source: prepared by the author.

Comment: Russian regions are grouped into four types (from left to right): advanced areas, runner-ups, average performers, digital peripheries.

The geography of regions makes it possible to identify digital belts running radially from Moscow. The coefficient of correlation between the final index value and the distance from the centre of a region to Moscow (0.6) confirms a significant dependence between these two factors.

The results obtained for the digital receptiveness of residents of Russian regions were analysed more thoroughly by comparing them with data on Digital Dictation — a nationwide annual educational event aimed to measure digital literacy among different groups of population.¹ In 2020, over 330,000 people aged 7 to 60 and older took part in the digital literacy survey. The average level of digital literacy across all regions was 7.25 points out of 10. In 33 regions, the values were above the national average. Data are lacking for six regions of the Southern federal district (Sevastopol, the Rostov, Astrakhan, and Krasnodar regions, and the Republics of Crimea and Kalmykia), where few residents participated in the event. The digital consumption category, which represents skills in using digital resources, software, and applications as part of digital literacy, is associated with the lowest values (6.86) in Russian regions compared to the two other categories — digital competencies (7.41) and digital security (7.47). These results indicate that the Russians lack the practical knowledge and skills needed for the further digitalisation of routines.

Figure 10 shows the dependence between digital receptiveness and digital literacy.

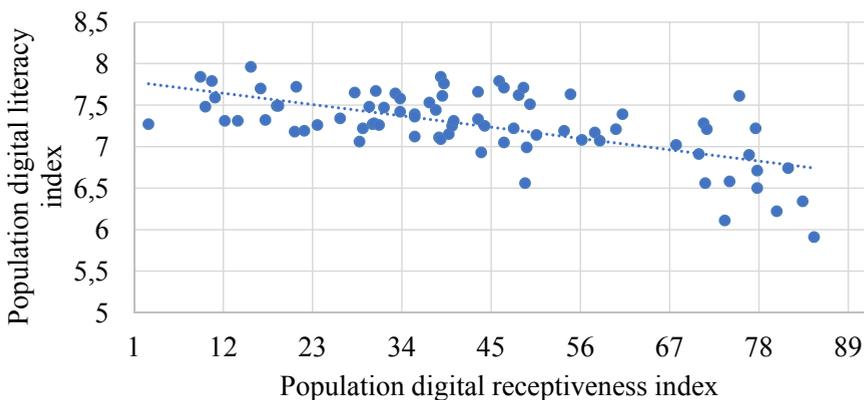


Fig. 10. The distribution of Russian regions by digital receptiveness and digital literacy, 2020

Comment: the intervals of digital literacy values (from 1 to 10, where 10 is the best result) and digital receptiveness (from 1 to 85, where 1 means the best performance).

Source: prepared by the author based on data from [21].

The correlation between these indicators (0.64) points to the importance of the educational factor in embracing digital technology as part of everyday routines. The average digital literacy values for the four types of regions (7.53 in advanced areas, 7.38 in runner-ups, 7.29 in average performers, and 6.74 in

¹ The Digital Dictation 2020 nationwide event, 2021, *Digital Dictation 2020*, available at: <https://digitaldictation.ru/site/2020> (accessed 19.06.2021).

the digital periphery) reveal a positive correlation between user awareness of safe and effective ways to benefit from digital technology and the pace at which users embrace digital routines. An analysis of the bivariate correlation coefficient between the digital literacy index and the digital responsiveness subindex showed a stronger association with the categories of digital economy (0.64) and spatial mobility (0.59). Information exchange (0.49), scholarly communication (0.47), public services online (0.48) are less dependent on individual digital competencies.

Conclusions

This study has shown that the examination of digital receptiveness to the integration of ICT in everyday life is an object of not only social science, economics, or psychology but also human geography. The investigation of digitalisation revealed interesting spatial patterns. Firstly, the national digital space has a centre-periphery structure with the radial weakening of demand for digital routines from Moscow towards remote regions. Secondly, there is pronounced interregional and inter-sectoral disparity in the receptiveness of the population of Russian regions to selected categories of digital routines. Online public services have gained the most popularity, narrowing the gap between the advanced areas and the digital periphery. The difference is the sharpest in the use of spatial mobility services. Popular tourist destinations are absolute leaders in this respect. Thirdly, socio-economic factors affect not only ICT availability, as previous research suggests (see [14; 15]), but also the acceptance of digital routines. The best performers, particularly in e-commerce, are Russian regions with higher incomes and a more substantial proportion of the urban population. The infrastructural factor proved to be less important. Fourthly, there is a positive but not exhaustive correlation between digital literacy and digital receptiveness. The more aware the population is of digital technology, the more complex digital routines are establishing themselves. This principle chiefly applies to digital economy and spatial mobility.

There is a considerable interregional disparity in Russia in the degree of digitalisation. Regions in the country fall into four categories: advanced territories, runner-ups, average performers, and the digital periphery. Accelerated digitalisation will have different consequences for regions of each type. Whilst residents of advanced areas will rapidly adapt to digital routines, the population of the digital periphery is likely to resist and resent the change. Therefore, a national policy towards e-governance and an information society should accompany socio-economic measures rather than precede them. The findings of this and previous studies into secondary digitalisation suggest that growing living standards are a sine qua non of reducing digital inequality. Special attention should be paid to raising living standards in Russian regions, particularly average performers and the digital periphery. Digitalisation will positively affect a region and the digital transformation of its socio-economic system only if there are

basic prerequisites for these processes, such as a favourable socio-economic environment, developed ICT infrastructure, and a stable Internet connection. Another important factor is the improvement of digital literacy. Experience, knowledge, and skills in using different digital services advance the integration of more complex digital technology in social processes. Growth in the digital literacy of the population in the digital periphery may be facilitated naturally by a wider rollout of e-government services, which are currently the most popular online routine.

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References

1. Plotichkina, N. V., Morozova, E. V., Miroshnichenko, I. V. 2020, Digital technologies: Policy for improving accessibility and usage skills development in Europe and Russia, *World Economy and International Relations*, vol. 64, no. 4, p. 70–83. doi: <https://doi.org/10.20542/0131-2227-2020-64-4-70-83>.
2. Shinyaeva, O. V., Poletaeva, O. V., Slepova, O. M. 2019, Information and digital inequality: Searching for effective population adaptation practices, *Monitoring Obshchestvennogo Mneniya: Ekonomicheskie i Sotsial'nye Peremeny* [Opinion Monitoring: Economic and Social Change], vol. 152, no. 4, p. 68–85. doi: <https://doi.org/10.14515/monitoring.2019.4.04>.
3. Reuschke, D., Mason, C., Syrett, S. 2021, Digital futures of small businesses and entrepreneurial opportunity, *Futures*, vol. 128, no. 102714. doi: <https://doi.org/10.1016/j.futures.2021.102714>.
4. Hatuka, T., Zur, H., Mendoza, J. A. 2021, The urban digital lifestyle: An analytical framework for placing digital practices in a spatial context and for developing applicable policy, *Cities*, vol. 111, no. 102978. doi: <https://doi.org/10.1016/j.cities.2020.102978>.
5. Chang, E., Zhen, F., Cao, Y. 2016, Empirical analysis of the digital divide from the perspective of internet usage patterns: A case study of Nanjing, *International Review for Spatial Planning and Sustainable Development*, vol. 4, no. 1, p. 49–63. doi: https://doi.org/10.14246/irspsd.4.1_49.
6. Wang, D., Zhou, T., Wang, M. 2021, Information and communication technology (ICT), digital divide and urbanization: Evidence from Chinese cities, *Technology in Society*, vol. 64, no. 101516. doi: <https://doi.org/10.1016/j.techsoc.2020.101516>.
7. Song, Z., Wang, C., Bergmann, L. 2020, China's prefectural digital divide: Spatial analysis and multivariate determinants of ICT diffusion, *International Journal of Information Management*, vol. 52, no. 102072. doi: <https://doi.org/10.1016/j.ijinfomgt.2020.102072>.

8. Wilson, C. K., Thomas, J., Barraket, J. 2019, Measuring digital inequality in Australia: The Australian digital inclusion index, *Journal of Telecommunications and the Digital Economy*, vol. 7, no. 2, p. 102—120. doi: <https://doi.org/10.18080/ajtde.v7n2.187>.
9. Palmer-Abbs, M., Cottrill, C., Farrington, J. 2021, The digital lottery: The impact of next generation broadband on rural small and micro businesses in the North East of Scotland, *Journal of Rural Studies*, no. 81, p. 99—115. doi: <https://doi.org/10.1016/j.jrurstud.2020.08.049>.
10. Dicks, L., Crouch, E., Walker, T. 2019, Socioeconomic determinants of broadband non-adoption among consumer households in South Carolina, USA, *Ager*, no. 26, p. 103—127. doi: <https://doi.org/10.4422/ager.2018.17>.
11. Billon, M., Lera-Lopez, F., Marco, R. 2016, ICT use by households and firms in the EU: links and determinants from a multivariate perspective, *Review of World Economics*, vol. 152, no. 4, p. 629—654. doi: <https://doi.org/10.1007/s10290-016-0259-8>.
12. Žilinskas, G. 2012, Analysis of digital divide in regions of the Republic of Lithuania, *Public Policy and Administration*, vol. 11, no. 3, p. 502—513. doi: <https://doi.org/10.5755/j01.ppa.11.3.2506>.
13. Kuc-Czarnecka, M. 2020, COVID-19 and digital deprivation in Poland, *Oeconomia Copernicana*, vol. 11, no. 3, p. 415—431. doi: <https://doi.org/10.24136/OC.2020.017>.
14. Bychkova, S. G., Parshintseva, L. S., Gerasimova, E. B. 2020, The Assessment of Territorial Differences in Access and Use of Information and Communication Technologies in the Russian Federation. In: Bogoviz, A. (eds) *Complex Systems: Innovation and Sustainability in the Digital Age. Studies in Systems, Decision and Control*, vol 282, Springer, Cham, p. 197—206. doi: https://doi.org/10.1007/978-3-030-44703-8_22.
15. Gladkova, A., Ragnedda, M. 2020, Exploring digital inequalities in Russia: an interregional comparative analysis, *Online Information Review*, vol. 44, no. 4, p. 767—786. doi: <https://doi.org/10.1108/OIR-04-2019-0121>.
16. Arkhipova, M. Yu., Sirotnin, V. P. 2019, Development of digital technologies in Russia: Regional aspects, *Economy of Region*, vol. 15, no. 3, p. 670—683. doi: <https://doi.org/10.17059/2019-3-4>.
17. Nagirnaya, A. V. 2015, Development of the internet in Russian regions, *Regional Research of Russia*, vol. 5, no. 2, p. 128—136. doi: <https://doi.org/10.1134/S2079970515020082>.
18. Korovkin, V. 2020, *Tsifrovaya zhizn' rossiiskikh regionov. Chto opredelyaet tsifrovoi razryv?* [The Digital Life of Russian Regions 2020: What Defines the Digital Divide?], Institute for Emerging Markets Research, SKOLKOVO Business School (IEMS), SSRN. 62 p. doi: <https://doi.org/10.13140/RG.2.2.17835.26400> (in Russ.).
19. Kupriyanova, M., Dronov, V., Gordova, T. 2019, Digital divide of rural territories in Russia, *Agris On-line Papers in Economics and Informatics*, vol. 11, no. 3, p. 85—90. doi: <https://doi.org/10.7160/aol.2019.110308>.
20. Popova, A. L., Nuttunen, P. A., Kanavtsev, M. V., Serditov, V. A. 2020, The impact of the digital divide on the development of socio-economic systems, *IOP Conference Series: Earth and Environmental Science*, vol. 433, no. 1, art. 012022. doi: <https://doi.org/10.1088/1755-1315/433/1/012022>.

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