

Cluster Approach in Enhancing Entrepreneurship in the Context of Digitalization of the Economies of Belarus and Russia

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ABSTRACT

The aim of the work is to study the results of clustering and the state of entrepreneurship in Russia and Belarus and substantiate digital clustering methods for the development of entrepreneurship in the countries of the Union State. The article analyzes small and medium-sized businesses in the Republic of Belarus and the Russian Federation. The analysis of clustering in the countries of the Union State is carried out. The directions for activating cluster initiatives in the context of the digitalization of the economies of Russia and Belarus have been developed, a number of directions and methods have been developed that can expand the processes of neoclustering in order to increase the competitiveness and efficiency of the economies of the Union State of Russia and Belarus as a whole.

Keywords: *small and medium-sized businesses, cluster, neoclusterization, neocluster concept, digitalization of the economy, the Union State of the Republic of Belarus and the Russian Federation.*

1. INTRODUCTION

The development of small and medium-sized enterprises (hereinafter referred to as SMEs) should serve as a driver for the revival of the economies of the countries of the Union State of Russia and Belarus in the context of the crisis caused by the COVID-19 pandemic. An analysis of the current situation shows that the possibility of creating a favorable business environment in the country, as well as a quick exit from the crisis, will largely depend on how successfully entrepreneurship is able to unite efforts with the state and public organizations in the formation of an active anti-crisis strategy. The strategy for the development of innovative entrepreneurship should be part of national and regional strategies for the development of entrepreneurship and be consistent with the measures taken by the governments of the Union State countries to overcome the crisis. This will serve as a driver of innovative growth in the economies of the Russian Federation and the Republic of Belarus after the crisis.

One of the tools for the development of innovative entrepreneurship is a cluster, which is a network organization of enterprises localized on the same territory that interact and compete with each other, but unite to solve joint problems: marketing, scientific research, logistics, education. This allows them to obtain an economic effect through cost savings, the diffusion of innovations, and savings on transaction costs.

In the Republic of Belarus, cluster policy is becoming an important tool for stimulating innovative development of the economy, defined in a number of State programs and concepts. At the same time, clustering processes are not active enough in comparison with foreign countries. Clusters of foreign countries employ about a third of the total number of employees, and labor productivity is 40% higher.

The role of clusters in economic development and activation of innovation activity was noted by many researchers - foreign researchers M. Best, Roland and Den Herthog, De Bresson, Hagendum and Shakenrad, Sakari Luukenen, M. Porter, M. Enright, H. Schmitz, |

S. Rosenfeld, Russian – S. Lozinsky, A. A. Migranyan, L. S. Markov, A. Prazdnichnykh, T. V. Tsikhan, M. A. Yagolnitser, Ukrainian – T. V. Dzyaduk, M. P. Voinarenko, S. I. Sokolenko, V. I. Zakharchenko, L. L. Kovalskaya, E.V. Krikavsky, O. Kuzmin, Belarusian – D. M. Krupsky, I. V. Novikova, N.I. Bogdan, P.G. Nikitenko, A.V. Markov, V.V. Valetko, N.G. Sinyak, S.F. Pyatinkin. The study of the problems of the effectiveness of relationships based on scientific and industrial cooperation, the involvement of business, the state is presented in a number of scientific works of Belarusian and foreign scientists Anistsyna N.N., Grigorudis E., Itskovitsa G., Kallas M.S., Karayanis E., Klimuk V. V.V., Kuznetsova E.B., Campbell D., Leidesdorf L., Matveeva L.G., Neborskiy E.V., Chernovoj O.A., Engovatova A.A. and others. The research of problems and directions of development of entrepreneurship is devoted to the works of scientists: E. Auster, W. Baumola, J. Hamilton, A. Cooper, D. Storey, S.B. Avdasheva, A.V. Vilensky, V.E. Dementyeva, D.A. Zhdanova, A.I. Luchenka, A.N. Senko, A. Yu. Chepurensky, A. Yu. Yudanov and others.

The external environment creates new prerequisites for the formation of clusters in the digital economy of the Republic of Belarus and the Russian Federation, such as: the development of ICT and the digitalization of society, the development of network forms of relationships between subjects, the "democratization" of knowledge thanks to the Internet. In the context of the digital transformation caused by the fourth industrial revolution (Industry 4.0), it becomes necessary to develop directions for clustering on a digital basis for the development of innovative entrepreneurship.

While recognizing the theoretical and practical significance of research in the field of clusters and innovations, as well as the concepts and methodological documents adopted in Russia and Belarus, we nevertheless believe that the methods of digital clustering in the development of innovative entrepreneurship are not sufficiently traced in previous studies.

Unsolved scientific tasks, as well as tasks requiring development, are:

- analysis of cluster ties and cooperation of small and medium-sized businesses with key enterprises of the cluster;
- analysis of clustering in the Republic of Belarus and the Russian Federation;
- development of directions for activating cluster initiatives in the context of digitalization.

2. METHODS

The study of the results of clustering and the state of entrepreneurship in Russia and Belarus and the substantiation of digital clustering methods for the development of entrepreneurship in the countries of the Union State is carried out in accordance with the following algorithm:

- to analyze the indicators of the development of small and medium-sized businesses in the Republic of Belarus and the Russian Federation;
- to analyze the degree of clustering in the Republic of Belarus and the Russian Federation;
- to develop directions for activating cluster initiatives in the context of digitalization.

3. RESULTS

The role of entrepreneurship in the economies of the countries of the world is assessed by its contribution to the formation of gross domestic product (GDP). In most countries of the world, this share is above 50%, in Russia - 20.2% in 2018, in Belarus - 24.5% in 2018, and in 2019 - 26.1% [5]. This situation testifies to the low activity of small and medium-sized businesses in the economies of the Union State of Russia and Belarus. An analysis of entrepreneurship in the Eurasian Economic Union (EAEU) is presented in Table 1.

Table 1. Analysis of the activities of small and medium-sized enterprises in the EAEU countries for 2018

Country	Share of SMEs in the total number of enterprises, %	Share of SMEs in total employment, %	Share of SMEs in GDP, %
Belarus	22,7	29,0	24,5
Russia	26,4	38,7	20,2
Kazakhstan	79,1	55,9	28,3
Armenia	97,3	42,4	42,5
Kyrgyzstan	40,1	13,8	42,8

Among the EAEU members, Russia and Belarus have the lowest indicators of SME activity, which makes the task of developing entrepreneurship in our countries urgent.

The share of SMEs implementing product or process innovations in the total number of SMEs in Belarus is shown in Figure 1.

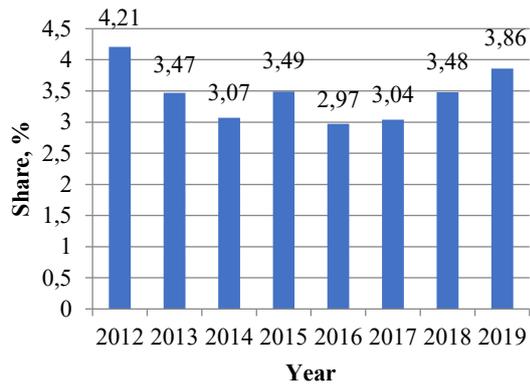


Figure 1 Share of SMEs implementing product or process innovations in the total number of SMEs in the Republic of Belarus, %

Analysis of Figure 2 indicates a low share of innovative enterprises in Belarus for the period 2012-2019 and the negative trend of its decrease. At the same time, international comparisons indicate greater activity in countries such as Sweden - 40.4%, Denmark - 34.7%, Finland - 44.1% [4]. There is a negative trend towards a decrease in the share of shipped innovative products (works, services) in the total volume of shipped products (works, services) in Belarus for the analyzed period. Thus, as a result of the analysis, problems were identified: a low share of SMEs in the GDP of the countries of Russia and Belarus, a low level of innovation, low activity of SMEs. As directions for the development of innovative and creative entrepreneurship in the Republic of Belarus, it is proposed to use the cluster approach in enhancing innovative entrepreneurship in Russia and Belarus.

Cluster statistics are presented in Table 2.

Table 2. Cluster statistics by countries of the world [1, 2, 3].

Country	Number of clusters	Country	Number of clusters
United Kingdom	168	Netherlands	20
Germany	32	USA	380
Denmark	34	France	96
Italy	206	Finland	9
India	106	Poland	161
Russia	117	Republic of Belarus	4

The analysis of cluster statistics indicates a low level of clustering of the economies of Belarus and Russia.

There are 4 operating clusters in the Republic of Belarus: the Union of Legal Entities "Medicine and Pharmaceuticals - Innovative Projects", the Association "Innovative Instrument Engineering", the Association "Infopark", the Hi-Tech Park, Polesie State University, Technopark Polesie LLC [6].

So, for example, the pharmaceutical cluster in the Vitebsk region (operating) includes participants:

Scientific and educational block: VSMU, VSU named after P.M. Masherova

Production block: Nativita, Aconitfarma, Akademfarm, Sivital, Technopark "Vitebsk Silicon Valley"

Service companies: Vitebsk Regional Marketing Center, Vitvar, Union of Pharmaceutical and Biomedical Clusters of Russia [6].

In the Republic of Belarus there are 4 emerging clusters of the NGO "Minsk Capital Union of Entrepreneurs and Employers"; OJSC Polymir, OJSC Naftan; JSC "Polotsk-Steklovolokno"; LLC Technopark Gorki, Belarusian State Agricultural Academy [1].

The share of SMEs in operating clusters in Belarus was 1%, while in successful European clusters their share averages 80%, Table 3.

Table 3. Examples of SMEs' participation in cluster projects in the textile industry

Cluster name	Number of participants	Number of SMEs
Cluster of fashionable clothes and accessories (Tuscany, Italy)	480	450 (93,8%)
Textile Entrepreneurs Association (Valencia, Spain)	368	363 (98,6%)
European Research Cluster for Advanced Textile Materials (France)	180	92 (51,1%)
Portuguese textile cluster	56	33 (58,9%)

To identify the potential of clustering among SMEs, a study was carried out within the framework of the international project "Kastrychnitski Economic Forum, 2019 (KEF-2019)" [7]. 421 business entities of the Republic of Belarus took part in the survey.

According to the survey results, on average, about half of the respondents believe that they need cooperation with partners, and it is important to develop various forms of cooperation. About 20% of the respondents do not consider it useful to use any types of cooperation with other enterprises to develop their own business. About 30% of respondents find it difficult to answer about the usefulness of projects for the development of interaction between entrepreneurs. The respondents were asked to rate the degree of usefulness for their business of certain forms of cooperation and network interaction. The most significant areas of cooperation turned out to be: logistics, information system, training (Figure 2).

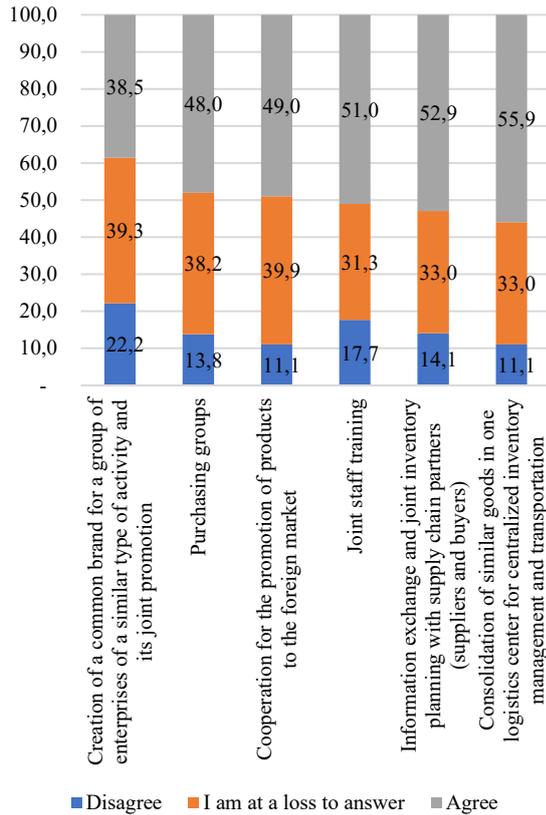


Figure 2 Assessment by respondents of the degree of usefulness for their business of certain forms of cooperation and network entrepreneurial interaction [7].

The main reasons restraining partnership and cooperation of business in the Republic of Belarus, according to entrepreneurs, Figure 3: lack of information about potential partners, low level of trust between entrepreneurs and lack of infrastructure and services for organizing cooperation and business networking.

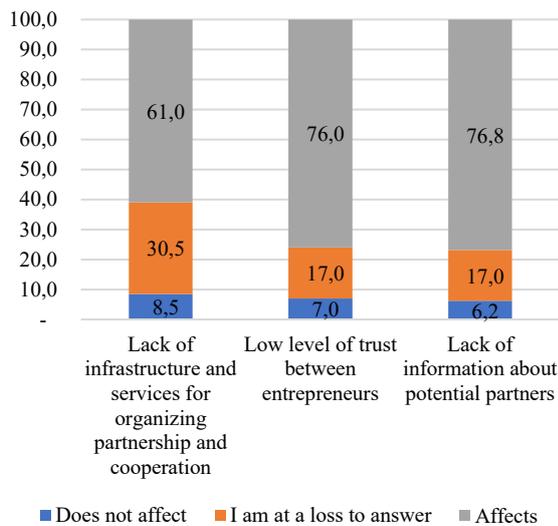


Figure 3 Reasons constraining cooperation and business networking in the Republic of Belarus [7].

Thus, the problem of a low level of trust between entrepreneurs can be solved directly in the process of interaction and gaining experience of cooperation. For this, it is important to use the capabilities of modern information and communication technologies within clusters.

The advantages of clusters for small and medium-sized businesses make it possible to realize the following opportunities for network interaction and various cooperation:

1. The ability to integrate into value chains, open a new business;
2. Interaction with key enterprises of the cluster guarantees the receipt of orders;
3. Interaction with research centers stimulates the growth of innovation;
4. Reduction of costs for logistics, certification as a result of joint programs of cluster members;
5. Joint market segmentation helps to reduce competition and competitive costs;
6. Joint marketing research will save the marketing budget, expand old markets, form and develop new sales markets;
7. Joint sales and service programs will improve service quality and reduce costs [9].

Neoclustering appears to be a new vector for the development of cluster structures in the context of the digitalization of the Belarusian economy. Neoclustering is the process of organizing and operating clusters based on digital information and communication technologies influenced by Industry 4.0. Unlike conventional clustering processes, neoclustering is based on digital platforms. In innovative clusters, the interaction of stakeholders is transferred to the online environment, which provides insurance against possible risks (epidemics, border closures, etc.).

Based on the theoretical foundations of the cluster, and taking into account the concept of neoclustering, the following objects of neoclustering were identified: communications between the subjects of the cluster; training of cluster members; the production process in the subjects of the cluster.

The objects of neoclustering are:

1. communication between the subjects of the cluster;
2. business processes in the cluster;
3. training of cluster members;
4. technology transfer.

Taking into account the neocluster concept developed by the authors, the following directions and methods of neoclustering are proposed.

1. Education and training for public sector and business representatives:
 - 1) conducting seminars and trainings;
 - 2) development of teaching materials for entrepreneurs and public administrators;
 - 3) selection and training of specialists who are called upon to spread the ideas of clusters.
2. Creation of a cluster infrastructure to manage the clustering process:
 - 1) Virtual centers of cluster development;
 - 2) Non-profit partnerships;
 - 3) Business incubators;
 - 4) Cluster development institutes;
 - 5) Agencies for Cluster Policy Issues under the Government;
 - 6) Regional Development Agency;
 - 7) Special institutes for development, building network structures and their internationalization;
 - 8) Grant funds.
3. Providing cluster initiatives and cooperation through organizational and economic methods.
4. Digitalization of training for cluster members:
 - 1) creation of Knowledge Centers in the form of virtual organizations on the basis of industry research and / or educational organizations of the cluster;
 - 2) the opening of a distance learning business school for the subjects of the cluster at the center for the support of entrepreneurs.
5. Communication support of cooperation.
6. Digitalization of communications between the subjects of the cluster.
7. Digitalization of production in the subjects of the cluster.

4. CONCLUSIONS

Thus, in the context of digitalization, clusters can play a significant role in the country's economy. In the Republic of Belarus and the Russian Federation, cluster processes are slow in comparison with foreign countries. To accelerate them and use the resource of digitalization of the economy, the following areas are proposed: education and training of representatives of the public

sector and business circles; creation of a cluster infrastructure to manage the clustering process; provision of cluster initiatives and cooperation through organizational and economic methods; digitalization of training for cluster members; digitalization of communications between the subjects of the cluster; digitalization of production in the subjects of the cluster. The proposed clustering measures will improve the competitiveness and efficiency of the economies of the Union State of Russia and Belarus.

REFERENCES

- [1] Map of clusters of the Republic of Belarus, Ministry of Economy of the Republic of Belarus, <http://www.economy.gov.by/uploads/files/Karta-Klasterov/karta-klasterov.pdf>.
- [2] Map of clusters of Russia, <https://map.cluster.hse.ru/list>.
- [3] Cluster Observatory in the EU, www.clusterobservatory.eu.
- [4] O. V. Kmit, V. V. Lebedeva, Innovative activity of small and medium-sized businesses in the Republic of Belarus, http://edoc.bseu.by:8080/bitstream/edoc/78742/1/Kmit_O.V._243_246.pdf.
- [5] Official site of the National Statistical Committee of the Republic of Belarus, <https://www.belstat.gov.by/ofitsialnaya-statistika/realny-sector-ekonomiki/nauka-i-innovatsii/godovye-dannye/>.
- [6] The first medico-pharmaceutical cluster of the Republic of Belarus, <https://pharm-cluster.by>.
- [7] M. A. Slonimskaya, G. A. Yasheva, Entrepreneurship of the Vitebsk Region: Problems and Prospects of Development, Vitebsk: Public Association "Association of Employers and Entrepreneurs", 2019, pp. 44.
- [8] Financing of small and medium-sized businesses in 2019 and in the 1st half of 2020, https://raex-a.ru/files/attachment/FRB-2020_Analytica_Block_Web.pdf.
- [9] G. A. Yasheva, Yu. G. Vailunova, Clusters as a tool for the development of innovative entrepreneurship. Economic Bulletin of the University. Collection of scientific works of scientists and graduate students, 44/2 (2020) pp. 53–61.