

WORLD EXPERIENCE OF STIMULATING INNOVATIVE DEVELOPMENT OF ECONOMY

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Abstract: The purpose of the research lies in substantiating the theoretical and applied principles for the study of world experience in stimulating innovative economic development and assessing the impact of innovation and competitiveness on economic development. The following methods have been used: economic analysis and synthesis; analogies and comparisons; systematization and generalization; cluster analysis based on the use of the k-means method. Regarding the results of the study of stimulating innovative economic development and assessing the impact of innovation and competitiveness on economic development, it has been revealed that innovative economic development has a positive effect on ensuring its competitiveness, and innovation can improve national welfare and productivity.

Keywords: Innovations, Economic Development, Innovation Model, Global Innovation Index, Competitiveness

1 Introduction

The effectiveness of innovative economic development to a large extent depends on the ability to respond quickly to the challenges and threats of the external environment, real assessments of the possibilities of the economy and reformatting to an innovative type of development. The introduction of innovations contributes to an increase in competitiveness, the living standard of the population, as well as an effective combination of science and production. It is uncontroversial that the innovative development of the economy can be directed in several routes, in particular: (1) with a focus on gaining leadership in science, the development of large innovation projects with an emphasis on the military-industrial complex; (2) creating a favourable innovation climate in the innovation sphere; (3) stimulating innovative development through the regulation of innovation infrastructure, adaptation of positive international practices and achievements of scientific and technological progress. Therefore, the timely implementation of innovations and state support for innovation activities of economic entities is extremely important, which, in turn, strengthens the competitiveness of the economy.

2 Literature Review

The internationalization of world financial and economic processes, the formation of stable multilateral relations and the strengthening of globalization cause a number of destabilizing factors that slow down the world economy, necessitate redistribution of international spheres of influence and access to resources, and cause instability. Overcoming these negative trends is possible due to the growth of economic development on the basis of innovation, creativity and conceptual leap. Under such conditions, stimulating the innovative development of the economy is perceived as the activation and intensification of innovation of all economic agents.

Audretsch et al. (2006) have considered the provision of the proper level of introducing innovative changes in the national economy, which is constantly under the influence of both internal political and external economic shocks, as a tool for increasing the country's competitiveness. The scholars have proven that the efficiency of economic growth significantly depends on stimulating innovation, intellectualization of production and use of the achievements of the scientific and technological process. Boronos (2020) believes that stimulating the innovative development of the economy is one of the vectors for implementing the country's strategic priorities and to a great extent depends on the level of budgetary and extrabudgetary

funding for innovation and the efficiency of using available resources in order to introduce innovative models.

Complementing the investigation of Audretsch et al. (2006), Klump (2015) associates innovative economic development with the direction of state economic policy; the scholar believes that it should be formed and developed in accordance with the innovative model of the national economy, which is focused on creating a favourable environment for innovation, strengthening the responsibility of stakeholders of innovative development, minimizing the risks of innovation by business entities. Along with this, the researcher emphasizes that those countries that consider innovative development as a strategic basis for economic development, are developing rapidly and are refer to advanced ones in all macroeconomic indicators; however, countries that do not provide adequate levels of innovative economic development are dependent on advanced countries.

Khusainov (2014), as a result of the investigations conducted, has established that in transitional countries, the necessity to stimulate the innovative development of the economy is due to the lack of public funding for research institutes, the priority task of which lies in optimizing financial resources for innovation. For this reason, the author proposes to introduce a mechanism of public-private partnership in the field of innovation in such countries. Along with this, one of the problems of ensuring the innovative development of the economy, according to the viewpoint of Khusainov (2014), is academic and university science, which does not meet market conditions; consequently, the stimulation of innovative research does not have financial support and funds for implementation. On the contrary, Kasyanenko (2017) emphasizes the necessity to stimulate innovative development taking into account the existing structure of the economy, forasmuch as each of the sectors has individual features and properties creating sustainable structural effects. Moreover, the stimulation of innovative development should focus primarily on those sectors of the economy, in which the greatest structural effects are concentrated.

Equally important is the viewpoint of Fedulova (2004) and Fedulova (2018), who argues that four directions of innovative development of the economy have been historically formed, namely: (1) technological pushes; (2) market orientation; (3) social orientation; (4) the impact of innovation on solving social-economic concerns of the country.

Yermakova (2017), based on the study of the Global Innovation Index, attributes the stimulation of the innovative development of the economy to a four-level system for the development of the innovation sphere, in particular: (1) the basic conditions for doing business in the country; (2) effective investment and fiscal environment; (3) key factors of innovative production and (4) special incentives for innovation, taking into account all competitive advantages. At the same time, the scientist places the emphasis on the rather complicated procedure for ensuring levels 1–3, forasmuch as well-established interests in both the public and private sectors are violated, and the institutional environment is not sufficiently developed in order to form and implement an effective innovation policy. Olvinska et al. (2021) consider the innovative development of the economy to be the fundamental of the country's economic power, its prospects in the international market and a factor in ensuring promotion of competitiveness.

Shumilin & Naumovich (2020), studying the problems of innovative development of the Belarusian economy, have come to conclusion that one of the problems is the digitalization of industry, modernization of production facilities and the introduction of innovative technological standards, requiring additional financial resources, which are comprehensive and limited. Along with this, Chekadanova (2018) adheres to the position that the innovative development of the economy should be based on scientific, technical and research clustering.

forasmuch as the formation of state cluster policy is a tool applied towards stimulating innovative development of the country. Caviggioli et al. (2020) argue that empirical investigation on the innovative development of the economy should be carried out taking into account the improprieties of using digital technologies and considering the consequences of their action on the innovative efficiency of economic entities. Ibragimova (2020) believes that the innovative development of the economy is significantly influenced by globalization; consequently, it includes the formation of an innovative society, and the country's economy should meet the criterion of innovation, creativity and conceptual leap. Povna (2021) links the innovative development of the economy to the achievements of the national economy, sufficient to ensure the level of well-being and high labour productivity.

Complementing the scientific studies of previous scientists, Bilan Yu. et al. (2020) assess the impact of intellectual potential in the context of ensuring innovative development on the country's competitiveness, which is considered the most important indicator of economic growth and welfare. The viewpoint of the authors is considered to be absolutely justified and appropriate, forasmuch as the calculation of the Global Competitiveness Index is based on calculations of indicators characterizing the state of the national economy, including the level of innovation potential.

3 Materials and Methods

The following methods have been used in the research, namely: the method of economic analysis and synthesis in order to study the theoretical and methodological fundamentals of clarifying the essence of innovative economic development; the method of analogy and comparison in order to determine the features of stimulating innovative development in different countries and in the analysis of the Global Innovation Index and the Global Competitiveness Index; the method of systematization and generalization in the process of formation of research results and conclusions; cluster analysis based on the use of the k-means method when grouping the studied countries according to the Global Innovation Index and the Global Competitiveness Index.

The countries of Central and Eastern Europe (13 countries: Belarus, Bulgaria, the Czech Republic, Hungary, Latvia, Lithuania, Estonia, Moldova, Poland, Romania, Serbia, Slovakia, Ukraine) have been selected for the research.

The information base of the research is based on the reports for 2018–2021 as follows: the Global Innovation Report according to the Global Innovation Index; the Global Competitiveness Report according to the Global Competitiveness Index.

4 Results

The process of transition of countries to an innovative type of economic development is based on the use of scientific, scientific and technological, intellectual and innovative potential, an effective combination of which has a positive effect on strengthening the country's competitiveness. The experience of advanced countries shows that the innovative development of the economy is the key to the sustainable development of the country, its achievement of high macroeconomic indicators and the growth of its image in the international arena. The effectiveness of innovative economic development to a great extent depends on geopolitical, inflationary and economic risks, significantly affecting the choice of instruments for state stimulation of innovative development. Stimulating the innovative development of the economy involves the modernization of production capacity, management system and the ability to quickly adapt to changing environmental conditions.

The intensification of innovation activities in each of the countries of Central and Eastern Europe is characterized by the effectiveness degree of the state strategy for economic development and reflects the balance between the real needs of

the economy and the possibilities of scientific and technological progress in these countries. In this context, state coordination and support for the development and implementation of innovations is of great importance, as well as the perception by economic entities of innovations as a factor in ensuring efficient use of resources, stimulating capacity building, sustainable development and possible ways to improve their performance and profitability. Due to the fact that innovation activity is high-risk, business entities take a precautionary position when choosing the possibilities of its implementation and take a thoughtful approach to making appropriate decisions on the acquisition and implementation of innovations.

Nevertheless, the innovative development of the economy in the countries of Central and Eastern Europe takes place in the direction of its stimulation by the state and according to the model of analogies and using the innovative experience of the leading advanced countries. Along with this, such countries are characterized by an "outflow" of innovative potential outside the country, as a rule, to advanced countries offering the best opportunities for its implementation and high wages.

It should be noted that the so-termed innovation migration makes significant adjustments to the value of the Global Innovation Index, decreasing it in developing countries and increasing it in those countries that are classified as advanced ones. Therefore, it has been substantiated that the assessment of innovative development of the country's economy is based on the calculation of international indices and allows conducting a comparative analysis of the situation of a particular country in relation to others. We consider it expedient to trace the main tendencies in the Global Innovation Index during 2018–2021 in the countries of Central and Eastern Europe (see Table 1).

At the same time, it should be noted that the Global Innovation Index is calculated by the World Intellectual Property Organization, Cornell University and the International Business School "Insead" based on 82 variables. These variables detailize the innovative development of countries at different levels of economic development, identify gaps in innovation performance, and take into account expenditures on research and development and experimental-design works, access to innovation funding, and the impact of COVID-19 on global innovation performance indicators.

Table 1: Dynamics of the Global Innovation Index in the countries of Central and Eastern Europe in 2018–2021

Countries	2018	2019	2020	2021
Belarus	29,35	32,07	31,27	32,6
Bulgaria	42,65	40,35	39,98	42,4
The Czech Republic	48,75	49,43	48,34	49
Hungary	44,94	44,51	41,53	42,7
Latvia	43,18	43,23	41,11	40
Lithuania	41,19	41,46	39,18	39,9
Estonia	50,51	49,97	48,28	49,9
Moldova	37,63	35,52	32,98	32,3
Poland	41,67	41,31	39,95	39,9
Romania	37,59	36,76	35,95	35,6
Serbia	35,46	35,71	34,33	35
Slovakia	42,88	42,05	39,7	40,2
Ukraine	38,52	37,4	36,32	35,6

Source: The Global Innovation Report, 2018–2021.

The results of the conducted studies of the Global Innovation Index in the countries of Central and Eastern Europe in 2018–2021 show that the highest value among the countries of the analysed group is observed in Estonia (GII: 48,28–50,51) and the Czech Republic (GII: 48,34–49,43); however the lowest values are observed in Belarus (GII: 29,35–32,60), Moldova (GII: 32,30–37,63) and Serbia (GII: 34,33–35,71).

According to calculations, the countries of Central and Eastern Europe are characterized by strong differences in innovative

development, indicating unstable trends in the Global Innovation Index. It should be emphasized that the highest level of innovative development of the economy in all indicators is observed in the countries of Central Europe; however, the countries of Eastern Europe are more dynamic, and they are at the stage of market transformation and social-economic development. Another significant factor confirming the highest values of the indicator under consideration is the accession of certain countries to the European Union, in particular, Bulgaria, Estonia, Latvia, Lithuania, Poland, Romania, Slovakia, the Czech Republic and Hungary, the tangible support of which allows such countries to occupy significantly higher positions in international rankings and contributes to obtaining additional opportunities for the fulfilment of innovative potential. Moreover, such countries as the Czech Republic and Slovakia have a significant production potential and are able to compete in the industrial sector, occupying a dominant position at the international level.

At the same time, the countries of Eastern Europe are characterized by a high level of technological backwardness. In particular, when examining the features of the innovative development of Ukraine and Moldova, it is worth noting their low level of innovation, which is due to the outdated material and technical base, the low level of funding for scientific, research institutes, raw material export specialization and the dominance of high-tech imports.

The lowest values of the Global Innovation Index among the countries of Central and Eastern Europe have been observed in Belarus (GII: 29,35–32,60); it is characterized as a country with a fairly high level of innovative development of the defense industry, and specializes in such sectors of the economy as heavy, chemical, woodworking, fuel and energy and food industries. However, the introduction of innovation and stimulation of innovation activity is implemented to a limited extent and only in certain sectors, which requires strengthening incentives for management in order to develop innovation activity in all other sectors of the economy.

It is appropriate to establish common features and determine regional features of stimulating the innovative development of the countries of Central and Eastern Europe, which will be carried out by grouping them using the technology of cluster analysis by k-means (Table 2).

Table 2. Grouping of Central and Eastern European countries according to the Global Innovation Index in 2018–2021

Country	The value of the Global Innovation Index				Cluster number
	2018	2019	2020	2021	
The Czech Republic	48,75	49,43	48,34	49	1
Estonia	50,51	49,97	48,28	49,9	
Bulgaria	42,65	40,35	39,98	42,4	2
Hungary	44,94	44,51	41,53	42,7	
Latvia	43,18	43,23	41,11	40	
Lithuania	41,19	41,46	39,18	39,9	
Poland	41,67	41,31	39,95	39,9	
Slovakia	42,88	42,05	39,7	40,2	
Belarus	29,35	32,07	31,27	32,6	
Moldova	37,63	35,52	32,98	32,3	
Romania	37,59	36,76	35,95	35,6	
Serbia	35,46	35,71	34,33	35	
Ukraine	38,52	37,4	36,32	35,6	

Source: The Global Innovation Report, 2018–2021.

According to the obtained results of empirical research on the Global Innovation Index among Central and Eastern European countries in the period from 2018 to 2021, three stable and unchanging groups of countries have been formed. The first group includes such countries as: the Czech Republic and Estonia, which have the highest values of the analyzed indicator and are characterized as countries with a relatively high level of

innovative development. The second group comprises such countries as: Bulgaria, Hungary, Latvia, Lithuania, Poland and Slovakia; the innovative development of these countries is not high, however, they receive tangible assistance and support from the European Union and thanks to this they implement innovative projects.

It should be noted that the approach to stimulating innovative development and financing innovative development by such a state as Poland is of particular importance. This country survived the post-communist challenges; it was able to achieve high rates of innovative development of the economy due to the effective reform of all sectors of the economy through the prism of introducing a free market model and stimulating the development of the national financial market. At the same time, Poland's close cooperation with the European Union and the deepening of its relations with the Eurozone countries have had a positive effect on attracting investments to the country aimed at carrying out innovative activities.

The third group of countries includes Belarus, Moldova, Romania, Serbia and Ukraine, which are characterized as countries with a transitional type of economy; their innovative development is low; a chronic underfunding of the innovation sector is observed, and innovative potential is used inefficiently.

Another indicator that helps to determine the level of innovative development of the economy is the Global Competitiveness Index, which makes it possible to identify trends in the efficiency of using innovative potential and financial resources to stimulate it. The study of the dynamics of the Global Competitiveness Index in the countries of Central and Eastern Europe during 2018–2021 (Table 3) makes it possible to state that the highest values of the analyzed indicator were recorded again in the Czech Republic (GCI: 52,9–71,2) and Estonia (GCI: 56,1–70,9), and the lowest values are observed in Belarus (GCI: 48,5–48,6), Moldova (GCI: 46,0–56,7) and Ukraine (GCI: 46,7–57,0). Along with this, an important point is that during 2018–2019, the calculation of the Global Competitiveness Index was not conducted in Belarus.

Table 3: Dynamics of the Global Competitiveness Index in the countries of Central and Eastern Europe in 2018–2021

Country	2018	2019	2020	2021
Belarus			48,6	48,5
Bulgaria	63,6	64,9	51,6	49,6
The Czech Republic	71,2	70,9	55,2	52,9
Hungary	64,3	65,1	52,9	50,8
Latvia	66,2	67	58,2	53,5
Lithuania	67,1	68,4	55,9	53
Estonia	70,8	70,9	59,4	56,1
Moldova	55,5	56,7	49,8	46
Poland	68,2	68,9	52,8	51,2
Romania	63,5	64,4	54,5	52,3
Serbia	60,9	60,9	50,7	49,7
Slovakia	66,8	66,8	54,9	53,1
Ukraine	57	57	46,7	47,3

Source: The Global Competitiveness Report, 2018–2021.

The outlined tendencies in the Global Competitiveness Index in the group of countries under consideration make it possible to form a pattern that those countries positioning themselves in the international global innovation rating in higher positions are marked by a higher level of competitiveness of the economy; however, those countries, the innovative development of which is significantly lower, are ranked too low in terms of ensuring competitiveness. Taking into account such trends, the hypothesis is proved that the growth of the country's welfare is interconnected and interdependent with the growth of the level of innovative development of its economy, forasmuch as

innovations contribute to an increase in the surplus value of goods and services produced.

The use of cluster analysis tools by k-means method makes it possible to form groups of countries in Central and Eastern Europe in terms of the Global Competitiveness Index in 2018–2021 (Table 4).

Table 4. Grouping of Central and Eastern European countries according to the Global Competitiveness Index in 2018–2021

2018		2019		2020		2021	
Country	Cluster	Country	Cluster	Country	Cluster	Country	Cluster
The Czech Republic	1	The Czech Republic	1	Latvia	1	The Czech Republic	1
Estonia		Lithuania		Estonia		Latvia	
Poland		Estonia		The Czech Republic		Lithuania	
Bulgaria	2	Poland	2	Hungary	2	Estonia	2
Hungary		Bulgaria		Lithuania		Romania	
Latvia		Hungary		Poland		Slovakia	
Lithuania		Latvia		Romania		Bulgaria	
Romania		Romania		Slovakia		Hungary	
Slovakia		Slovakia		Bulgaria		Poland	
Moldova	3	Moldova	3	Belarus	3	Serbia	3
Serbia		Serbia		Moldova		Belarus	
Ukraine		Ukraine		Serbia		Moldova	
Belarus	n/a	Belarus	n/a	Ukraine		Ukraine	

Source: The Global Competitiveness Report, 2018–2021

As the results of studies conducted among the countries of Eastern Europe in terms of the Global Competitiveness Index prove, three groups have also been formed. However, in this case, a steady trend of countries belonging to a particular cluster could not be recorded. The value of the analysed indicator varied depending on changes in phenomena and processes in the countries of the group under consideration, and it was characterized by instability. During 2018–2019, the Czech Republic, Estonia and Poland occupied a stable position in the first group; however, in 2020, the Czech Republic moved to the second cluster, and it regained its position in the first cluster in 2021. Similar trends with the Czech Republic were observed in Poland, which in 2018–2019 was in the first cluster, and in 2020–2021, the country took positions in the second cluster. In regard to Estonia, during 2018–2021, it was consistently in the first cluster. The position of Lithuania is of particular interest, which is placed periodically in the first and second clusters.

The second group consistently included Hungary, Bulgaria (despite a slight shift in 2020 to the third cluster), Romania and Slovakia, which in 2018–2019 were in the second cluster, and in 2021 managed to increase their positions and moved to the first cluster.

Such countries as Moldova, Ukraine, Belarus and Serbia took their places in the third group. However, the latter in 2021 moved to the second cluster. Characteristic features of this group of countries are their significant lag in such key indicators of the Global Competitiveness Index as the introduction of innovation, quality education, training and business development. It should be noted that these elements are considered to be the key ones in the formation of a conclusion about the level of economic development.

5 Discussion

The results of the investigations conducted on the experience of stimulating the innovative development of the economy among the countries of Central and Eastern Europe make it possible to single out several groups of countries characterized by common features and characteristics of the innovative development of the economy.

Group 1. Countries with a relatively high level of innovative development (the Czech Republic and Estonia), in which

innovation is carried out effectively; the existing innovation potential is rationally used and significant amounts of funding for innovation are observed.

Group 2. Countries with an insufficient level of innovative development and a high level of competitiveness (Bulgaria, Hungary, Latvia, Lithuania, Poland and Slovakia), where innovative economic development is coordinated and supported by the European Union, and innovative activities are stimulated by the state.

Group 3. Countries with a low level of innovative development (Belarus, Moldova, Serbia, Romania and Ukraine), where a high level of technological backwardness is observed, as well as a low level of funding for innovation, and innovation potential is used inefficiently.

Taking into consideration the research results, it is possible to single out the main factors destabilizing the innovative development of the economies of the countries of Central and Eastern Europe, in particular:

- lack of skills for conducting innovative activities;
- limited funding for science and innovation, especially business structures;
- increase in the number of cases of patent infringement;
- stringent lending conditions and limited access of business entities to credit resources;
- reducing the level of investment in intangible assets and innovation projects.

Along with this, a significant increase in stimulating the innovative development of the economy can be achieved through the formation and development of cross-border clusters; in particular, the formation of such clusters in the field of information technology, automotive, and biotechnology is being updated.

6 Conclusion

The conducted studies of the world experience in stimulating the innovative development of the economy give grounds to conclude that in the context of globalization and the instability of the functioning of the international economy, the innovative development of the economy is one of the ways to ensure a high level of competitiveness of the country, a tool to improve its welfare and living standards of the population. Innovative development of the economy based on efficiency and effectiveness requires high-quality methodological, technical, technological, financial and economic support. The results of the investigations conducted have revealed that the countries of Central and Eastern Europe possess an adequate base of innovation, industrial and scientific-technological potential, but it is used inefficiently. By the way, innovative activities are insufficiently financed and not supported by the state. The countries of Central and Eastern Europe are divided into certain groups in terms of ensuring the innovative development of the economy. In particular, there are those that have a sufficiently high level of innovative development; those that have an insufficient level of innovative development, but are supported by Eurozone countries, and, finally, countries with a low level of innovative development, which include countries of transition type. Taking this into consideration, the successful combination of scientific excellence with the development of innovative technologies will increase the indicators of innovative development of the economy of the analysed countries and promote the growth of their competitiveness.

Literature:

1. Audretsch, D.B., Keilbach, M.C. & Lehmann, E.E. (2006). *Entrepreneurship and Economic Growth*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780195183511.001.0001>.
2. Bilan, Yu., Mishchuk, H., Roshchuk, I. & Kmecova, I. (2020) *A nalysis of Intellectual Potential and its Impact on the Social and Economic Development of European Countries*.

- Journal of Competitiveness, 1, 22–38. DOI: <https://doi.org/10.7441/joc.2020.01.02>.
3. Bilan, Yu., Mishchuk, H., Samoliuk, N. & Yurchuk, N. (2020). *Impact of Income Distribution on Social and Economic Well-Being of the State*. Sustainability, 12(1), 429. DOI: <https://doi.org/10.3390/su12010429>.
4. Boronos, V.G. & Shkarupa O.V. (2020). *Strategic orientation of innovative activity regulation: Ukraine and EU integration process*. Financial and credit activities: problems of theory and practice, 1, 32, 307–318. DOI: <https://doi.org/10.18371/fcap.tp.v1i32.200526>.
5. Caviggioli, F., Buttice, V., Franzoni, C., Scellato, G., Stryszowski, P. & Thumm, N. (2020). *Counterfeiting in digital technologies: An empirical analysis of the economic performance and innovative activities of affected companies*. Research Policy, 49(5). DOI: <http://dx.doi.org/10.1016/j.respol.2020.103959>
6. Chekadanova, M.V. (2018). World experience in stimulating the development of clusters in the electronic industry. Modernization. *Innovation. Development*, 9, 1, 98–107. DOI: <https://doi.org/10.18184/2079-4665.2018.9.1.98-107>.
7. Fedulova, L.I. (2004). *Innovative economic development: model, system, management, public policy*. Institute of Economic Forecasting, 234.
8. Fedulova, L.I. (2018). Trends in innovative development of Ukraine's economy as a result of public policy. *Innovative economy*, 1–2, 11–19.
9. Ibragimova G.T. (2020). *Innovative Development of Economy: factors, opportunities and experience*. *International Journal of Scientific & Engineering Research*, 11(2), 1224–1229.
10. Kasyanenko, V.O. (2017). Stimulating innovative development in the context of structural policy implementation. *Economy and society*, 8, 142–146.
11. Khusainov, R.V. (2014). Developing strategy of public-private partnership in Ukraine innovative development. *Economics and management: problems of science and practice*: Collection of scientific articles, 1. Verlag SWG imex GmbH, Nurnberg, 158–162. DOI: <https://doi.org/10.13140/2.1.1626.8329>.
12. Klump, R. (2015). *Economic Policy. Instruments, aims and Institutions: third revised edition*. Tbilisi: Publishing house of TSU.
13. Olvinska, Yu.O., Samotoenkova, O.V. & Vitkovska, K.V. (2021). Current state and trends in the development of innovation in Ukraine. *Economy and state*, 4, 64–71. DOI: <https://doi.org/10.32702/2306-6806.2021.4.64>.
14. Osadcha, O.O., Lyashenko, O.M., Pavelko, O.V., Markov, R.V. & Yurkiv, N.Ya. (2020). Methods of financial and economic analysis of innovation activities of enterprises in the digital economy. *Financial and credit activities: problems of theory and practice*, 4, 35, 202–211.
15. Povna, S. (2021). The influence of the level of security of the country on the features of its innovative development. *Problems and prospects of economics and management*, 1 (25), 33–44. DOI: [https://doi.org/10.25140/2411-5215-2021-1\(25\)-33-44](https://doi.org/10.25140/2411-5215-2021-1(25)-33-44).
16. Shumilin, A.G. & Naumovich, O.A. (2020). Trends in the digital transformation of the economy of the Republic of Belarus as a tool for innovative development. *Economics, management and innovation development*, 4(94), 45–48. DOI: [https://doi.org/10.26642/jen-2020-4\(94\)-45-48](https://doi.org/10.26642/jen-2020-4(94)-45-48).
17. *The Global Competitiveness Report*, 2018. Available at: <https://www.weforum.org/reports/the-global-competitiveness-report-2018>.
18. *The Global Competitiveness Report*, 2019. Available at: <https://www.weforum.org/reports/the-global-competitiveness-report-2019>.
19. *The Global Competitiveness Report*, 2020. Available at: <https://www.weforum.org/reports/the-global-competitiveness-report-2020>.
20. *The Global Competitiveness Report*, 2021. Available at: <https://www.8-international.com/competitiveness-report-2021/>.
21. *The Global Innovation Report*, 2018. Available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2018.pdf.
22. *The Global Innovation Report*, 2019. Available at: https://www.wipo.int/global_innovation_index/en/2019/.
23. *The Global Innovation Report*, 2020. Available at: https://www.wipo.int/global_innovation_index/en/2020/.
24. *The Global Innovation Report*, 2021. Available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf.
25. Yermakova, O.A. (2017). World experience of innovative development in the interests of innovation security of Ukraine. *Priazovsky Economic Bulletin*, 5 (05), 16–21.

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