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Digital Supply Chain and Its Impact on the Competitiveness of Economy in Countries and Regions

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Abstract—**The study considers the effect of digitalization on the international competitiveness of the global supply chain and individual countries in the future, as well as the material well-being of people. The purpose of the study is to analyze current trends in the development of digital supply chain and its impact on the competitiveness of individual countries. The research is based on the methods of comparative analysis, systematic approach and correlation. Based on the analysis of the research results, it was found that digitalization has a significant impact on the international competitiveness of the economy, as well as the material well-being of people. The influence of the development level of information and communication technologies (ICT) on global competitiveness is studied through the example of 3 economies with different digitalization levels - Russia, Azerbaijan, and Switzerland. The current level of digitalization of supply chain in Russia in comparison with other countries has been analyzed. The research results are of particular scientific and practical value for assessing the global competitiveness of the country; the study also identifies the problems and prospects of supply chain digitalization.**

Keywords─ supply chain digitalization, information and communication technologies, knowledge-based economy, rank, digital services.

1. Introduction

The modern development of the global economy is characterized by the widespread dissemination of information technologies and supply chain digitalization of all spheres of business, which has a significant impact on the development of many countries. At the same time, the contribution of digital economy to the competitiveness of a country differs in accordance with the general state of the information and communication infrastructure, the level of institutional support, education and other factors.

In the years to come, many countries will have to change the institutional and economic basis of their activities to meet the challenges arising in connection with the transition to the digital era. Digital economy is considered as a promising economic development trend for the coming decades, which was reflected in the Declaration of the G20 Ministerial Conference on the Digital Economy [1].

The priority development of digital economy is a strategic objective of the "Digital Economy of the Russian Federation" program until 2024 [2]; it is also institutionalized by the Executive Order On the 2017–2030 Strategy for the Development of an Information Society in the Russian Federation [3]. There are several programs in the EU, namely A Digital Agenda for Europe [4], EU4Digital: supporting digital economy and society in the Eastern Partnership [5], which are aimed at creating a strategy and strengthening the position of Europe as a global digital economy leader. They also extend the benefits of the digital single market to the Eastern Partnership countries encouraging them to develop high-speed broadband Internet access to stimulate the economy, expand digital services and harmonize digital structures in various spheres.

The development of digital technologies allows countries to accelerate the transition to the technologies of the Fourth Industrial Revolution (Industry 4.0) and the formation of an innovative knowledge-based economy. This involves the robotization of production processes, the spread and development of smart management approaches, the introduction of the Internet of things and big data analysis systems (Data Mining, Big Data) in all spheres of the economy, and the widespread use of artificial intelligence. Therefore, it is important to study the impact of the development of digital economy on the competitiveness of countries and

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regions, which will substantiate the advantages of the transition, as well as determine its strengths and weaknesses. Each country has its unique experience and approaches to the development of digital economy, which is relevant for its further dissemination, as well as familiarizing others with it. The generalization of this experience can make a significant contribution to the development of the world science.

2. Literature review

The basic digital economy principles and ideas originated from previously known concepts that were commonly used in literature in the 1960s. Originally, that was a theory by Galbraith [6] that described a new industrial society; later Bell [7] presented his work on the post-industrial society and information economy. It was followed by the concept of the third wave by Toffler and Alvin [8], which was transformed into the concept of network society (or network economy) by Manuel Castells [9].

In recent years, a big number of studies conducted around the world have been devoted to urgent problems and prospects of the development of digital economy. At the same time, most researchers share the opinion that the development of information and communication technologies (ICT) and supply chain digitalization are the most important tool to increase the economic efficiency and competitiveness of the country in global markets. However, it should be noted that a number of studies [9], [10] are based on new approaches to this problem; it is considered through the example of individual countries based on the need for a more in-depth assessment of the possible risks and challenges associated with different levels of supply chain digitalization. When analyzing the data from various expert groups, Betelin [10] draws attention to the fact that the Russian mining, manufacturing and transport industries are the most low-performing sectors compared to the EU countries. This is mainly explained by the lack of modern digitally controlled equipment. Thus, the robot density per 10 000 workers in Russia is 23 times less than the average indicator worldwide. The share of numerically controlled machines is 10%, in Germany and the USA - more than 70%, in China - about 30%. Only 1% of the data generated by sensors is used. In general, the share of machine tool imports exceeds 90%.

The theoretical essence and features of the formation of digital economy from the modern perspective are described by Shvedov [11], who considers it in the context of its impact on the efficiency, competitiveness and development of the national and international economy. In contrast to the position of the previously mentioned authors, Savina [12] substantiates the role of digital economy as a new development paradigm defining its specific goals and target indicators. At the same time, particular attention is drawn to the positive effects and identification of threats to economic development associated with the massive introduction of digital technologies, as well as to the identification of problems in the development of the digital economy in Russia. Lenchuk and Vlaskin [13] emphasize that the technological backwardness of the country seriously impedes supply chain digitalization and increases the risks of increasing technological dependence. According to Katkova and Titova [14], the qualitative changes caused by the rapid development of information and communication technologies and the development of the market for digital services have a decisive influence on the pace of the socio-economic growth, the quality of life, and the competitiveness of the national economy in the global market. On the other hand, Nalivaichenko [15] highlights strengthening the relationship between supply chain digitalization and innovative economic growth in the context of globalization, as well as the study of the methodological approaches to assessing innovation output. In the report prepared by the Institute for Statistical Studies and Economics of Knowledge (ISSEK) of the Higher School of Economics, Abdrakhmanova et al. [16] consider key aspects of the digital economy development: changes in the standard and quality of life, problems related to the supply chain digitalization of management and science, the transformation of the labor market, and increased demand for new staff competencies. The study by Larina and Orehova [17] should also be considered. It discusses the major prospects and directions of the digital economy development and analyzes the problems of restoring the economic growth of the Russian economy taking into account its development practice.

A foreign approach to the issue being discussed is described by Dzhabiev [18], who highlights the importance of the information and communication technology sector in the Azerbaijani economy. At the same time, it is expected that in the next 10-15 years the revenue from ICTs will exceed the oil export revenue. The study by Eminov [19] outlines the major objectives of Azerbaijan in the context of supply chain globalization and digitalization: to prevent the state from lagging behind other countries in terms of the economic development; not to become a raw-material producing appendage and technological "outsider" of the world economy in the medium and long term; to increase the efficiency and competitiveness of the economy, to ensure its progress on an innovative basis. This will allow the country to focus on the adequate development of human capital, which is crucial.

Summarizing the aforementioned studies and other

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publications [20] – [24], [29] we should highlight the insufficiency of the analysis of the impact of digitalization on supply chain competitiveness, and the inadequate use of modern statistical analysis methods for the identification of the dependence and its assessment in terms of the correlation rate and reliability.

2.2   Problem Statement

The issue of assessing the impact of digital economy on the competitiveness of individual regions and countries is being actively discussed and the generally accepted theoretical and methodological approaches are being developed. The methodology for assessing the competitiveness of countries has been sufficiently elaborated; thus, we will not give it special attention in our study. At the same time, certain approaches to the comparative analysis of the impact of specific factors of supply chain digitalization on the competitiveness of countries have been poorly addressed in scientific research. Therefore, there is a need to develop a new methodology for the comparative analysis of the impact of digital economy on the competitiveness of individual countries and regions.

The issue of assessing the impact of ICTs on the Gross Domestic Product (GDP) has not been properly studied.

In this regard, we should make a point of certain issues related to the current ICT development rate as the basis for the operation of digital economy, as well as to assess the degree of its impact on the competitiveness of countries, which is an urgent task of the present paper.

The purpose of the research is to systematically analyze the development of digital economy and assess its impact on the competitiveness of individual regions of the world.

The research objectives are
-        to analyze the development of digital economy through the example of the countries selected for the comparison (Russia, Azerbaijan and Switzerland);
-        to assess the impact of digital economy on the competitiveness of the countries considered.

3.   Methods and materials

The study is based on general scientific methods of cognition of economic phenomena and processes, as well as their systematic analysis through the example of the development of digital economy and assessing its impact on the global competitiveness of countries selected for comparison.

The abstract-logical research method was applied

based on certain scientific techniques: induction and deduction, analysis and synthesis, analogy, comparisons, ascension from the abstract to the concrete, etc. This method was used to analyze and generalize theoretical materials and research results.

The monograph method was used to study certain aspects of the digital economy development commonly found in the world practice through the example of the countries selected. The method was applied due to the need to identify new trends and prospects of the digital economy development.

Special economic and statistical methods of correlation and regression analysis were also used to study the impact of the development of digital economy on the country's competitiveness and well-being of its population.

The study is based on the statistical indicators of the development of digital economy, as well as GDP per capita around the world.

The research is mainly focused on a systematic study of the indicators provided by the countries selected for the comparative analysis: the Russian Federation, Azerbaijan, and Switzerland. They were selected in accordance with the developed research methodology, which involves assessing the level of the digital economy development and choosing countries with different GDP per capita. The selection of countries was based on the research objective to compare different models of economic development - from the economy based on raw materials (the Russian Federation, Azerbaijan) to non-primary post-industrial knowledge-based economy (Switzerland) that includes digital services as the major components of the GDP formation. At the same time, the dynamics of changes in the volume of international trade in digital services in these countries was also studied as an important criterion for assessing the competitiveness of their economic systems.

The research methodology is based on the world-system theory of the development of the global economy and the use of a civilizational approach, which involve a comprehensive study of global shifts and qualitative changes in the views on this problem.

4.   Results

The basis of the modern digital knowledge-based economy is numerous data and information that transform labor, education, management, Internet commerce, finance, entertainment and leisure into independent service businesses that create new added value in GDP; thus, they encourage business activities, which affects the competitiveness of the country.

According to the UNCTAD statistics [25], international trade in digital services over the past 5 years grew from 2.55 trillion US dollars in 2014 to 2.93 trillion US dollars in 2018 and made up 50% in the overall structure of trade in services. At the same time, developed economies account for the largest volume of trade in digital services, which amounts to 2.23 trillion US dollars (almost 76% of their total structure in 2018). The share of countries with economies in transition (the Russian Federation and Azerbaijan) remains insignificant and amounts to less than 1.5%.

Having analyzed the cost dynamics of the development of the digital economy in the Russian Federation based on the comparison of the volume of trade in digital services for this period, we revealed a decrease from 24.1 billion US dollars in 2014 to 21.0 billion US dollars in 2018. In the overall structure of trade in all services, the share of the digital component also decreased from 36.7% to 32.4%. However, it would be a mistake to explain this reduction exclusively by the effect of Western sanctions. This sphere of economic activity was least affected by sanctions as it is still quite difficult to regulate throughout the world. Most likely, there was a combination of factors that had a negative impact on the overall macroeconomic situation in the country; the external environment factors, as well as the slowdown in economic growth in recent years should not be neglected.

In contrast to the Russian Federation, over the same period, the volume of trade in digital services in Azerbaijan increased from 531.4 million US dollars in 2014 to 632.6 million US dollars in 2018. In Switzerland, over the same period, the volume of trade in digital services increased from $ 80.5 billion to $ 84.9 billion.

There may be a natural question related to the effect of the country's competitiveness on the development of digital economy and the impact of the modern knowledge-based economy on the country's position in the world ranking. For a long time, the Global Competitiveness Index (GCI) has been used for the comparative analysis of the competitiveness of different countries; the assessment is based on the digital economy indicators.

According to the Global Competitiveness Report 2019 [26] recently published by the World Economic Forum, the Russian Federation is the 43rd most competitive country, Azerbaijan - 58th, and Switzerland - 5th. Singapore ranks 1st and is the most competitive country (Table 1).

Table 1. Comparative characteristics of individual countries by the position in the Global Competitiveness Index 4.0 2019 (ranking)

Indicator categories and the GCI position	Russia	Azerbaijan	Switzerland	Best indicator	
				rank	region, country
Aggregate ranking	43	58	5	1	Singapore
1. Creation of favorable conditions					
Institutions	74	49	6	1	Finland
Appropriate infrastructure	50	38	4	1	Singapore
Introduction of digital technologies	22	73	17	1	South Korea
Macroeconomic stability framework	43	103	1	1	(33) group of countries
2. Human capital					
Health	97	98	5	1	(4) group of countries
Skills	54	48	1	1	Switzerland
3. Market					
Goods market	87	23	25	1	Hong Kong, China
Labor market	62	21	2	1	Singapore
Financial system	95	96	4	1	Hong Kong, China
Market size	6	67	39	1	China
4. Innovation					
Business activity	53	23	22	1	The USA
Innovative capabilities	32	68	3	1	Germany

Source: own development based on the data analysis [26]

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It should be noted that the Global Competitiveness Index consists of 4 integral categories of indicators that are subdivided into several groups.

1) Creation of favorable conditions:
- institutions;
- infrastructure;
- ICT penetration rate;
- macroeconomic stability.

2) Human capital:
- health;
- skills.

3) Market:
- goods market;
- labor market;
- financial system;
- market size.

4) Innovation:
- business activity;
- innovative capabilities.

The assessment is carried out in accordance with the criteria and the ranking position is assigned on a 0-to-100 scale, where 100 represent the frontier. The lower rank is considered the best.

The comparative analysis of Table 1 has shown that it is important to recognize that several indicators affect the country's competitiveness; in particular, the ICT adoption rate. The indicator is based on the data on the ICT development in each individual country; therefore, it requires special consideration and a systematic approach to its assessment.

In this regard, we have developed our own new methodology for a systematic assessment of the impact of digital economy on the country's competitiveness, which includes the analysis of the advantages of the major indicators and their comparison with the best countries, as well as their correlation and regression analysis to confirm these advantages.

For example, having studied the indicators of the ICT adoption in the Russian Federation, Azerbaijan and Switzerland, we can conclude that there are certain differences in the pace of their development, which, in turn, affects digital economy (Table 2).

Table 2. Comparative characteristics of the development of ICT and digital economy as a whole

Indicator	Russia	Azerbaijan	Switzerland	Top-ranked economy
(per 100 people)				countries
Mobile Internet users (per 100 people)	87.3	59.6	98.2	The United Arab Emirates
Fixed broadband subscriptions (per 100 people)	22.2	18.2	46.3	Switzerland
Fibre-optic Internet subscriptions (per 100 people)	15.8	1.4	8.2	South Korea
Internet users (% of adult population)	80.9	79.8	89.7	Catar
Mobile cellular subscriptions	157.4	103.9	129.6	(63) group of

Source: own development based on the data analysis [26]

Based on the analysis, it can be concluded that the number of mobile cellular subscriptions (per 100 people) in the Russian Federation exceeds the number of mobile subscriptions in Azerbaijan and Switzerland. At the same time, the Russian Federation and Azerbaijan lag behind Switzerland in terms of mobile internet users and fixed broadband subscriptions per 100 people. At the same time, the access to fiber-optic Internet in the Russian Federation is much easier compared to Azerbaijan and Switzerland. The difference in the ratio of Internet users (% of the adult population) in the countries being considered is not significant.

The above indicators reflect the digital economy development level and demonstrate its profound differences in the countries selected; this requires the construction of their relationship graph (Fig. 1).
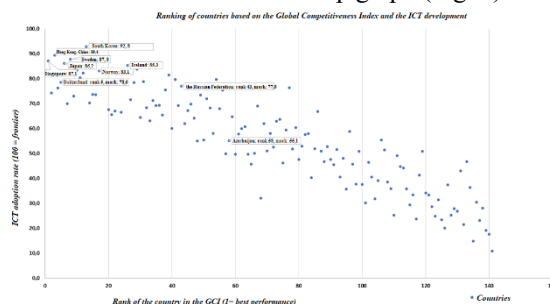
Figure 1. The analysis of the Global Competitiveness Ranking of the countries through the example of the Russian Federation, Azerbaijan and Switzerland based on their ICT development level

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According to the data analysis, the impact of digital economy on the competitiveness of Russia, Azerbaijan and Switzerland is relative. In fact, both Switzerland and the Russian Federation demonstrate almost the same level of digitalization, which is 78.6 and 77.0, respectively at the same time, these countries have different aggregate ranking levels of competitiveness (5 and 43, respectively). Thus, digital economy has a significant impact on the development of competitive advantages of each country. However, it is not dominant and is complemented by other components. For example, developed institutions, appropriate infrastructure, advanced education and other factors.

It is interesting to know whether there is a correlation between the development of digital economy that is reflected through the ICT adoption rate and GDP per capita. According to the IMF and WB 2018 data on the ICT development level and the GDP per capita indicator collected in 141 countries and described in the Global Competitiveness Report, there is a certain direct relationship between the indicators. For example, the ICT adoption rate and GDP per capita amounted to 77 and 11 326.8 US dollars; 55.1 and 4 569.2 US dollars; 78.6 and 82 950.3 US dollars in the Russian Federation, Azerbaijan and Switzerland, respectively. In other countries, there is also a correlation between supply chain digitalization and GDP per capita. In the Republic of South Korea, the ICT adoption rate and GDP per capita were was 92.8 and 31 345.6 US dollars, respectively. In Norway, these figures amounted to 83.1 and 81 694.6 US dollars, respectively. Thus, the comparison of the above indicators does not fully describe if there is a correlation between them. This can be reliably determined by assessing the level of correlation.

The correlation and regression analysis of these indicators confirmed their high correlation at $r = 0.70$ and $R2 = 0.492$. The regression equation $y = 779.5x - 26130$ explains 49.2% of the impact of ICT (digital economy) on GDP per capita in different countries of the world. In other words, a 10-unit increase in the ICT adoption rate in the economy contributes to an increase in GDP per capita by an average of $ 7 795.

Thus, digital technologies not only generate innovative market prospects, but also have serious economic consequences in a wide range of sectors. The rapid spread of wireless networks, mobile devices and technologies has a significant and noticeable impact on the economy, and also contributes to the effective integration of information technology in all spheres of life forming a new model of international relations, which is based on digital economy. At the same time, amid these processes, a number of countries, such as the USA, China, Canada, Japan, Switzerland, Germany, and others are actively promoting digital economy as a strategic development priority for the coming decades. The introduction and dissemination of digital technologies are defined as priorities in the long-term development strategy of the Russian Federation.

This issue is being seriously addressed in the Republic of Azerbaijan, where the major focus is on the supply chain digitalization of the public administration system as an important tool for the transition to the digital economy in the near future.

5.   Discussion

When comparing the results of the present study with other similar research, the difference in the approaches to assessing the development level of digital economy should be considered. The statement that the Russian Federation is lagging behind other developed economies in terms of digital economy can be argued and rejected. In Russia, the "Digital Economy of the Russian Federation" Project up to 2024 [2] is being implemented. The program includes six federal projects: normative regulation of the digital environment, information infrastructure, personnel, information security, digital technologies and digital government. An important point is that over 1.5 trillion rubles have been allocated to finance the project in the next six years. That is, at the state level, the development of digital economy has been recognized as a strategic priority that will determine the future image of the country.

At the same time, low capitalization of digital technologies in the Russian and Azerbaijan economy should also be noted. This is clearly observed when analyzing the countries' volume of trade in digital services compared to Switzerland, where it is much higher. At the same time, the volume of trade in digital services is not only one of the most important indicators of the digital economy development, but it also reflects its global competitiveness. In a number of studies, this fact is not taken into account, which reduces their scientific and practical value.

At the same time, according to the "Digital Russia: a new reality" Report by McKinsey & Company [27], the digital economy of Russia is expected to amount to 9.6 trillion rubles (at the prices of 2015) by 2025 compared to 3.2 trillion rubles in 2015 due to the digital transformation of traditional industries and the

development of an independent high-tech industry.

On the other hand, it becomes obvious that in the near future the international competitiveness of individual countries will largely depend on the speed of digital technology implementation in production processes and other scopes of activity. In turn, this depends on whether the country has the resources required for the transformation, namely intellectual, educational, and infrastructural [28]. It should be noted that these resources largely depend on the economic development level of each individual country and the availability of appropriate institutional conditions for their use. This is typically measured by real GDP per capita. At the moment, the highest GDP per capita indicators matching the digital economy development level are found in western industrialized countries. The reliability of this statement is confirmed by the results of the present study and a high level of correlation r = 0.70.

Similar approaches to assessing the impact of digital economy and the dynamics of ICT development on international competitiveness are described in the studies by Shvedov [11], Larina and Orehova [17]. Our approach differs from the opinion of Nalivaichenko [15] and Ustundag and Cevikcan [21], who consider supply chain digitalization as a precursor of the upcoming 4th Industrial Revolution. In general, we can agree with Katkova and Titova [14] that the degree and speed of using the achievements of the information revolution has a decisive influence on the pace of socio-economic growth, the quality of life of the population, and the global competitiveness of the national economy. At the same time, the results of our research demonstrate that the impact of the level of digitalization on the supply chain competitiveness of the country is not dominant, but is complemented by other components. For example, developed institutions, appropriate infrastructure, advanced education and other factors.

In general, we can clearly conclude that the development of digitalization takes place within the concept of the network economy formation. The results of the study are of strategic importance for understanding the complex processes of transformation of the modern world and society, as well as the formation of a new information civilization, which suggests the need for an in-depth study of the problems of its most important basis - the digital knowledge-based economy and its impact on the global competitiveness of countries.

6.   Conclusions

The analysis of the international competitiveness of the countries considered showed that digital supply chain has a significant impact on the development of their competitive advantages. However, it is not a dominant criterion, but is complemented by other components. The influence of the development level of information and communication technologies (ICT) on global supply chain has been studied through the example of 3 economies with different digitalization levels - Russia, Azerbaijan, and Switzerland. The current level of digitalization of Russia in comparison with other countries has been analyzed.

The assessment of the digital supply chain development level of different countries which is reflected by the ICT adoption rate and GDP per capita confirmed the relationship between these indicators. The correlation and regression analysis of these indicators confirmed their high correlation at r = 0.70 and R2 = 0.492. The regression equation y = 779.5x - 26130 explains 49.2% of the impact of ICT (digital economy) on GDP per capita in different countries of the world. In other words, a 10-unit increase in the ICT adoption rate in the economy contributes to an increase in GDP per capita by an average of $ 7 795.

The research results are of particular scientific and practical value for assessing the global competitiveness of the country; the study also identifies the problems and prospects of supply chain digitalization. The research findings can be used for designing national strategies for the digital development of countries, forecasting the impact of digitalization on the supply chain well-being, as well as compiling comparative rankings.

7.   Acknowledgements

References

[1] G20 Information Centre, G20 Digital Economy Ministerial Declaration, http://www.g20.utoronto.ca/2017/170407-digitalization.html, Last access 2.06.2020.

[2] Peruzzini, Margherita, and Marcello Pellicciari. "Application of early sustainability assessment to

support the design of industrial systems." Industrial Engineering & Management Systems 17, no. 2 (2018): 209-225.

[3] European Commission, A Digital Agenda for Europe. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A Digital Agenda for Europe, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0245&from=en, Last access 3.06.2020.

[4] Granden, Michelle. "Ranch apocalypse: a pataphysical inquiry into the Mount Carmel siege." International journal of criminology and sociology 1 (2012): 81-85.

[5] Galbraith, J. K, *The new industrial state.* Princeton University Press, 2007.

[6] Bell, D, *"The coming of the post-industrial society"*, The Educational Forum, Taylor & Francis Group, Vol. 40, No. 4, pp. 574-579, 1976.

[7] Toffler, A., & Alvin, T. (1980). *The third wave* , New York: Bantam books, 1980.

[8] Castells, M, *The Information Age: Economy, Society, and Culture. Volume III End of Millennium.Wiley-Blackwell*, John Wiley & Sons Ltd, 2010.

[9] Betelin, V. B, *"Digital economy: imposed priorities and real challenges"*, State audit. Law. Economics, Vol 3–4, pp. 22–25, 2017.

[10] Shvedov, V. V, *"The essence of digital economy in Russia and the CIS countries"*, Moscow Economic Journal, Vol 5-2, pp. 17–21, 2018.

[11] Savina, T. N, *"Digital economy as a new development paradigm: challenges, opportunities and prospects"*, Banking and Finance, Vol 24, No 3, pp. 579–590, 2018.

[12] Lenchuk, E. B., & Vlaskin, G. A, *"The formation of digital economy in Russia: problems, risks, prospects"*, Bulletin of the Institute of Economics of the Russian Academy of Science, Vol 5, pp. 9–21, 2018.

[13] Katkova, M. A., & Titova, Yu. S, *"Features of the modern stage of the digital economy development"*, Saratov University Journal: Economics. Management. Law, Vol 1, No 19, pp. 68–77, 2019.

[14] Nalivaichenko, E. V, *The development of digital economy in the context of globalization:* monograph, Simferopol: ARIAL, 2019.

[15] Abdrakhmanova, G. I., Vishnevsky, K. O., & Gokhberg, L. M, *"What is digital economy?"*, the XX April International Academic Conference On Economic and Social Development, Moscow, HSE Publishing House, 2019.

[16] Larina. E. B., & Orehova, E. A, *"Digitalization as a factor for increasing global competitiveness of the national economy"*, Bulletin of the SSESU, Vol 2, No. 76, pp. 29–34, 2019.

[17] Dzhabiev, R, *"Socio-economic development of Azerbaijan over the independence period"*, Economist, Vol 5, pp. 66–69, 2013.

[18] Eminov, A. Hf, *"Reporter Of The Priazovskyi State Technical University"*, Economic sciences, Vol 32, No. 1, pp. 224–232, 2016.

[19] Abolhassan, F, *The drivers of digital transformation*, Springer International Publishing, Cham, 2017.

[20] Ustundag, A., & Cevikcan, E, *Industry 4.0: managing the digital transformation*, Springer, 2017.

[21] Zukerfeld, M, *Knowledge in the age of digital capitalism*, University of Westminster Press, 2017.

[22] Schallmo, D. R., & Williams, C. A, *Digital Transformation Now!: Guiding the Successful Digitalization of Your Business Model.* Springer, 2018.

[23] Chamoux, J. P, *The Digital Era 2: Political Economy Revisited*, John Wiley & Sons, 2019.

[24] Unctadstat, https://unctadstat.unctad.org/EN/, Last access 3.06.2020.

[25] Schwab, K, *"The global competitiveness report 2019"*, World Economic Forum, pp. 9-14, 2019.

[26] Kabanov, Pavel, Liliya Khairutdinova, and Leisan Bulanova. "Criminological Characteristics of Migrant Crimes: Russian and Foreign Practices." International Journal of Criminology and Sociology 9 (2020): 16-25.

[27] Borodin, A., Shash, N., Panaedova, G., Frumina, S., & Mityushina, I, *"The impact of the publication of non-financial statements on the financial performance of companies with the identification of interpectoral features"*, Entrepreneurship and Sustainability Issues, Vol 7, No. 2, pp. 1654-1665, 2019.

[28] Tucci, C., Gautschi, H., & Viscusi, G, *Switzerland's Digital Future: Facts, Challenges, Recommendations,* College of Management of Technology Zürich, 2016.