International Journal of Engineering and Advanced Technology (IJEAT)
ISSN: 2249-8958 (Online), Volume-9 Issue-1, October, 2019

Human Capital in the Digital Economy Format

Roman Aleshko, Lyudmila Petrova, Elena Ivanova, Alexandra Plotnikova, Mikhail Melnikov, Vitaliy Antonov

Abstract*: *Purpose: Consideration of the main directions of development of information and communication technologies, as well as the impact of digital competencies on economic growth in the new conditions. Design / Methodology / Approach: This study uses statistical and monographic methods, as well as a survey method. Findings. The study showed that in agricultural production in the current conditions, digital technologies are actively used. This is evidenced by the use of unmanned aerial vehicles, the use of digital platforms and much more. Along with this, the labor market was not ready to offer specialists with knowledge and skills in the field of agricultural production and digital technologies. Practical implications: The problems discussed in the article indicate an urgent need to develop a mechanism for training specialists for the agricultural industry with digital skills. Originality / value: The authors define the concept of the digital economy, and also reveal the essence of the factors affecting its development.

Keywords: digital economy, agriculture, human capital, competencies, skills, hard skills, soft skills.

I. INTRODUCTION

The article analyzes the digitalization level of agriculture in Russia. The authors identify the main problems impeding the development of digital agriculture in our country, one of which is human capital. A survey of students from different faculties of a sectoral university allowed defining the main competencies, which they consider to be in demand in farms using digital technologies. The authors suggest a list of skills and competencies that will become fundamental for production in digital agriculture.

Revised Manuscript Received on October 30, 2019.

* Correspondence Author

R.A. Aleshko*, Northern (Arctic) Federal University, Arkhangelsk, Russia

L.I. Petrova, Altai State University, Barnaul, Barnaul, Russian Federation

E.A. Ivanova, Don State Technical University, Rostov-on-don, Russian Federation

A.V. Plotnikova, South-West State University, Kursk, Russian Federation

M.S. Melnikov, Plekhanov Russian University of Economics, Moscow, Russian Federation

V.S. Antonov, Kazan Innovative University Named after V.G. Timiryasov, Kazan, Russian Federation

II. LITERATURE REVIEW

The increase in the competitiveness of the agricultural industry depends on the employees' degree of professional and non-professional competencies. In modern conditions, the totality of knowledge, skills, as well as the degree of development of professional and non-professional competencies is called "human capital" (Olaniyi et al., 2019; Mamedova et al., 2019; Táncošová, 2019;).

This definition has undergone significant evolution and became a scientific concept only in the middle of the 20th century. The development of this theory is associated with such well-known scientists as G. Becker and T. Schulz.

According to G. Becker, human capital is understood as a set of innate abilities and skills acquired throughout life, the effective use of which will lead to an increase in the income of the owner of human capital (Becker, 1964).

Semyon Kuznets, who received the Nobel Prize in 1971, made a special contribution to the development of the human capital concept. This economist was the first to associate the accumulation degree of the national human capital with the transition of the economy to a new technological structure (Kuznets, 1965).

III. METHODS

The object of study is the process of agriculture digitalization. The subject of study is the methods and directions for increasing the level of agriculture digitalization. Data from statistical compilations of the Federal State Statistics Service, orders of the Government of the Russian Federation, legislative acts and resolutions of the federal and municipal levels, as well as the results of empire studies and observations served as the information base for the research. The study used abstract-logical, computational-constructive, empirical, monographic, and other methods of economic research.

IV. RESULTS

The advent of computers was a significant technological breakthrough in the development of mankind. Today, the use of the Internet implies not only the possibility of accessing a computer to the global network but also the use of digital devices that affect all spheres of human life. In the current circumstances, the Internet is supplemented by the Internet of things. The Internet of things means digital gadgets endowed with technologies interacting with each other and the external environment, as well as making independent decisions based on information received from the external environment.

For several years, the Russian Federation at the national level has attempted to diversify the economy by moving to an innovative development path. This process is facilitated by world prerequisites, namely the formation of a new structure – the knowledge economy (Korableva et al., 2019a,b).

Summarizing the foreign experience, it can be confidently stated that states that have switched to a knowledge economy have a similar labor market, in which the leading role is given to human potential, able to work in conditions of uncertainty, as well as perform non-trivial tasks and show some kind of improvisation.

In June 2016, at the XXI St. Petersburg International Forum, when delivering a keynote speech at a session on innovation in agriculture the Minister of Agriculture Alexander Tkachev noted: "We face challenges of increasing labor productivity and productivity. To solve all these problems, it is necessary to use innovative technologies and incorporate robotization" (Buraeva, 2014; Yemelyanov et al., 2019; Prodanova et al., 2019a,b,c).

According to A.N. Tkachev, agriculture is currently going through a transformation phase. First, this happens because the world's population is growing every year and the agricultural production should increase by 60-70% over the next few years (Buraeva, 2014; Dworzecki, and Nowicka, 2019; Vasilev, 2019; Vasilev and Tung, 2019;Miloradov and Eidlina, 2016).

It is worth noting that the level of intensification of the agricultural sector lags far behind the global average. In 5 years, countries with a more developed agricultural sector incorporate on average about 55% of their innovative potential, compared to no more than 5% in the Russian. Over the past 20 years, more than 1000 varieties and hybrids of crops have been created. According to scientists, their development would make it possible to increase the efficiency of the agricultural industry by more than 3 times.

One of today's realities is that innovative technologies are used in all sectors of the economy, including the agro-industrial complex (Kuznetsova et al., 2019a,b,c; Bahzar, 2019; Baidi, 2019; Ahtarieva et al., 2018, 2019; Bentahar and O'Brien, 2019; Ivygina et al., 2018; Trofimova et al., 2019). It is worth noting that the agricultural industry is very time-consuming, depending on climatic conditions and the "vagaries" of nature. Therefore, humanity has always tried to resort to various technologies to increase the yield and productivity of farmland.

However, the above list is not complete, since digital technologies in agricultural production are developing with considerable speed (table 1).

Table- I: The volume of innovative goods, works, services by type of economic activity

Indicators	The volume of innovative products, billion rubles.			As a percentage of total goods		
	Years			Years		
	2015	2016	2017	2015	2016	2017
Mining, manufacturing, production, and distribution of electricity, gas and water	3037.4	3258.3	3723.7	8.2	7.9	8.4
Activities related to the use of computer technology and information technology	542.5	584.6	616.1	12.8	13.2	11.9
Agriculture incl.	-	-	22.2	-	-	1.4
plant growing	-	-	6.5	-	-	1.1
animal husbandry	-	-	14.9	-	-	1.6
mixed farming	-	-	0.6	-	-	1.2
provision of services in the field of crop production, ornamental horticulture and animal husbandry, except for veterinary services	-	-	0.1	-	-	0.7

In 2017, as a result of technological innovation, the export of innovative goods amounted to 43.7 billion rubles, 87.2% of which accounted to industrial enterprises.

Considering the definition of digital agriculture, it is worth clarifying that digital agriculture is based on integrated automation and robotization of production, the use of automated decision-making systems, modern technologies for modeling and designing ecosystems. Digital technologies in agriculture are used to collect, store and process data on yield, soil condition, feed composition, etc. At the same time, it is essential to process the data obtained correctly, to draw reliable conclusions for making managerial decisions (Paptsov and Nechaev, 2019; Lysytsia et al., 2019; Dhungel et al., 2019; Movchan et al., 2019).

Digitalization allows expanding the capabilities of the agricultural sector, including agricultural production, and increasing the efficiency of resource use. It helps to increase the efficiency of agricultural production due to the optimal planning of the crop structure, automation of irrigation and extra feeding of plants, digital modeling of crop yields, optimization of the feed ration for farm animals. However, domestic agriculture, which is in dire need of new sources of growth in labor productivity, hardly use these opportunities. The main reasons for this are the high cost of incorporating digital technologies into production and the lack of skills and competencies of employees for working with digital technologies.

The scope of digital technology in agriculture is unlimited: from financial management to monitoring the conditions of keeping farm animals.

Russia ranks 15th in the world for digitalization of agriculture, since only 10% of arable land is cultivated using digital technology; 3% of farms use precision farming technology. According to the Ministry of Agriculture of the Russian Federation, the ICT market in agriculture accounts to 360 billion rubles.

An examination of the situation in agriculture shows that only 1.4% of production results from innovative achievements.

Table 2 – Innovation by type of activity, 2017

Indicator	Amount, billion rubles	Specific weight, %
Agricultural sector	22.2	1.4
Mining, manufacturing, production, and distribution of electricity, gas and water	3723.7	8.4
Installation of buildings and structures from prefabricated structures; device coatings of buildings and structures; manufacture of other construction works	2.3	1.7
Communication, activities related to the use of computer technology and information technology, research and development, the provision of other types of services	616.1	11.9

According to Goldman Sachs Group analysts, digital technologies can increase global agricultural productivity by 70% by 2050. At the same time, costs will be reduced by 20-25% due to their targeted optimization and increased distribution efficiency. Digitalization of the industry will turn it into a high-tech business (Kireev et al., 2019; Fedulova et al., 2019; Laužikas and Miliūtė, 2019; Banerjee and Mistri, 2019; Mandal and Sanyal, 2019; Goloshchapova et al., 2018; Puryaev et al., 2019). This is one of the driving forces for economic growth and competitiveness of enterprises.

The development of digital agriculture depends on the amount of costs allocated from the federal and local budgets. Thus, the internal costs of technological research in the field of agricultural work in the Novosibirsk region in absolute value are distributed as follows: own funds – 151.4 million rubles, funds from the budgets of all levels – 334.8 million rubles (table 3).

Table 3 – Internal costs of research and development by sources of funding for agricultural sciences

Indicators	Years		
	2015	2016	2017
Internal costs – total, including	309.8	360.0	548.3
own funds	1.0	25.5	151.4
budgetary funds of all levels	199.7	260.0	334.8
of which the federal budget	191.8	250.0	334.8
budgets of constituent entities of the Russian Federation and local budgets	7.9	-	-
extrabudgetary funds	-	-	
public sector funds	104.1	-	-
funds of organizations of the business sector	-	74.0	-
funds of private non-profit organizations	2.6	-	-
funds from foreign sources	309.8	-	-

The introduction of digital technologies in the agricultural sector allows significantly increasing agricultural productivity and attracting young specialists to the industry. At the same time, the Ministry of Agriculture plans to launch the Digitalization of Agriculture program by 2019.

Major areas of support for industry digitalization:

- creation of a unified accounting system for agricultural lands (which will allow tracking the number of plots involved in agricultural crops)
- indication of the areas on which crops are grown;
- tracking all products produced in the agricultural sector (the movement of products from the field to the counter);
- partial reimbursement of the cost of purchasing software and hardware;
- introducing robots that will collect soil samples (to define the amount of fertilizer required on particular land plots, to reduce the costs of agricultural producers, and to increase crop yields).

Digital technologies will solve the following industry challenges:

1. Increasing the gross harvest of crops and their quality.
2. Optimizing capital investments.
3. Decreasing labor input and an increase in labor productivity.
4. Greening production.
5. Reducing the influence of the human factor on the productivity of production.

However, despite the huge positive impact of digitalization on the efficiency of agricultural production, some barriers impede its development.

The main ones include significant dependence on imported machinery and technologies, high cost of acquiring and introducing digital technology into production; insufficient development of digital infrastructure, including lack of mobile communications in some villages; lack of "digital competencies" among management and farm employees, and lack of highly qualified personnel (Titova et al., 2019; Moore, 2018; Raba' et al., 2018; Havierniková and Kordoš, 2019; Leonteva et al., 2018; Gradoboev and Tesleva, 2017). If the first three problems can be solved through state support mechanisms aimed at subsidizing the acquisition of technology, import substitution, etc., the last two are systemic problems, which solution will lead to a radical transformation of the agricultural education system. Human capital is one of the main factors affecting the level of agriculture digitalization. Its quality determines how quickly agriculture can switch to a new technological structure.

The formation of human capital for the future agricultural production occurs mainly in industrial secondary and higher educational institutions, where students must already have the skills and competencies necessary for working in companies using digital technologies (Polyakova,et al., 2019; Bozhkova et al., 2019; Sycheva et al., 2019a,b; Kaźmierczyk, 2019; Jarrah, 2019; Magsumov, 2018, 2019; Sabitova et al., 2018; Shaitura et al., 2018).

To assess the level of students' preparedness for digital agriculture, the authors surveyed various faculties of the Novosibirsk State Agrarian University, which included the following questions:

1. What skills do you think will be in demand in the context of digitalization in 5 years?
2. What "flexible" competencies (soft skills) are required when working with digital technologies?
3. How often do you use information and computer technology?

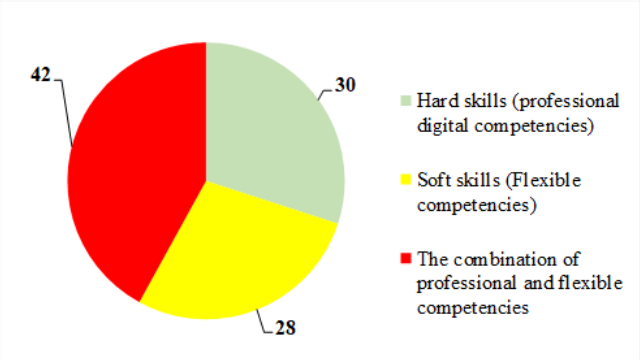

Figure 1 – Distribution of answers to the question: "Which skills, in your opinion, will be in demand in the context of digitalization in 5 years?", %

According to students, employees with both professional (hard skills) and "flexible" competencies (soft skills) will be equally popular in digital agriculture. This convinced 42% of respondents (Fig. 1). It should be noted that hard skills include a set of professional skills related to the technical side of activity, while soft skills include skills that are not associated with a specific type of activity, but with communications for effective interaction with colleagues, clients, and partners.

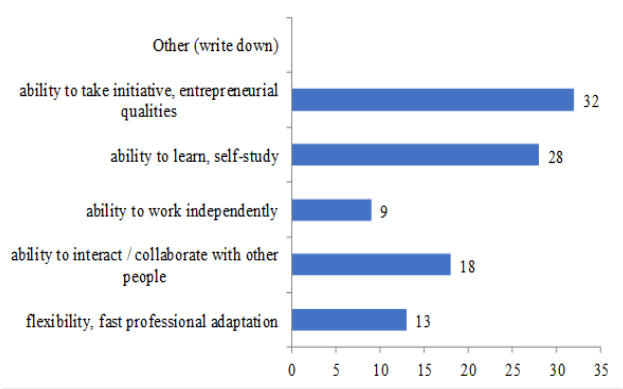

Figure 2 – Distribution of answers to the question: "Which "flexible" competencies (soft skills) are required when working with digital technologies?", %

The answers to the following question showed that the most popular soft skills involve the ability to take initiatives, entrepreneurial skills (32%) and the ability to learn and self-study (28%) (Fig. 2). These competencies, indeed, are essential when working in companies using digital technologies, since their constant updating and improvement requires regular training from employees. Whereas, the initiative allows using new methods to solve complex problems.

When asked about the frequency of using information and computer technologies, 59% of respondents answered that it was constant, and 33% – around the clock (Fig. 3).

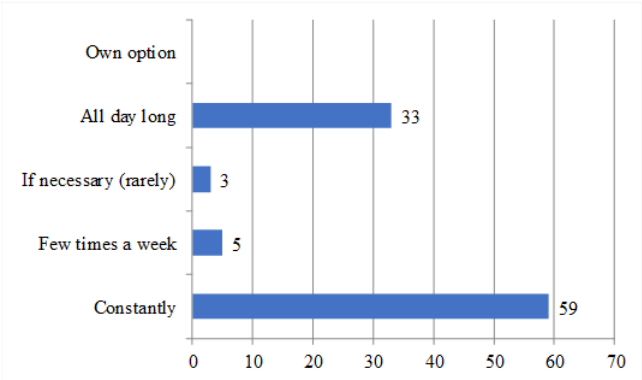

Figure 3 – Distribution of answers to the question: "How often do you use information and computer technologies?", %

Even though most students constantly use ICTs, the level of use of various specialized programs and applications to ensure agricultural production remains low. This is because little time is devoted to studying these programs in higher and secondary educational institutions. However, the advantage of the constant use of ICT allows graduates coming to work on a farm to quickly learn modern technologies.

Thus, the results of the survey showed that the skills necessary for digital agriculture, the opinion of the students surveyed coincided with the opinion of specialists who believe that in the near future workers with both professional and "flexible" competencies will be most effective. The latter include ongoing training and initiative (Dautov et al., 2018; Zhundibayeva et al., 2013; Saenko et al., 2019; Sagdieva et al., 2019; Voronkova et al., 2019 a,b,c). The good news for the development of agriculture digitalization is that most students of a sectoral university are well acquainted with information and communication technologies and constantly use them. This would significantly facilitate the training process with specialized software when hiring new personnel (Kashirskaya et al., 2019; Plaskova et al., 2019; Akhtarieva et al., 2019; Frolova et al., 2019; Shatunova et al., 2019).

The authors believe that agriculture digitalization requires the following skills and competencies from employees:

1. The ability to manage projects and processes.
2. Systemic thinking.
3. The ability to define complex systems and work with them, including engineering systems.
4. Knowledge of the basics of agricultural- and biotechnology.
5. Programming IT solutions. Management of automated complexes.
6. Ecological thinking.
7. Work with artificial intelligence.

Thus, before concluding, it is worth noting that digitalization of world agriculture will lead to an increase in agricultural production in 1.5 times by 2025, improve its quality, reduce labor intensity and increase productivity, reduce unit costs, increase crop yields and farm animal productivity (Yehya et al., 2018; Ivanova et al., 2019; Areiqat et al., 2019; Movchan et al., 2019; Turen et al., 2019; Ghosh and Ghosal, 2019).

The key problems of agriculture digitalization include: the dependence of production on foreign machinery and technologies; high cost of acquiring and introducing digital technologies into production; insufficient level of digital infrastructure development, including the lack of mobile communications in some villages; the lack of "digital competencies" among management and farm employees, and the lack of highly qualified personnel.

V. CONCLUSION

In modern conditions, agriculture digitalization becomes one of the necessary conditions for solving the problem of food security in our country. Russia has a significant reserve of agricultural production and the growth potential of the industry's turnover through the introduction of digital processes and technologies in crop production and animal husbandry. However, the use of this reserve based on digital technologies requires, first, the acquisition of expensive machinery, technologies and equipment, secondly, changes in the management system in the economy, and third, the training of employees in new knowledge, competencies, and skills.

In our opinion, the agriculture digitalization requires the following skills and competencies from employees: the ability to manage projects and processes; systemic thinking; the ability to define complex systems and work with them, including engineering systems; knowledge of the basics of agricultural- and biotechnology; programming IT solutions; management of automated complexes; environmental thinking; work with artificial intelligence. It is worth noting that the development of human capital lies at the heart of successful digitalization of agricultural production, the formation of which occurs mainly in industrial secondary and higher educational institutions, where students should already have the skills and competencies necessary for working in companies using digital technologies.

REFERENCES

1. Areiqat, A.Y.; Al-Ali, A.H.: Al-Yaseen, H.M. 2019. Entrepreneurship in palm fronds recycling: a Jordanian case, Entrepreneurship and Sustainability Issues 6(4): 1694-1703. http://doi.org/10.9770/jesi.2019.6.4(10)
2. Akhtarieva, R., Ibragimova, E., & Tarasova, A. (2019). Dynamics of acculturation processes among foreign students in the multi-ethnic educational environment of the higher educational establishment. *Journal of Social Studies Education Research, 10*(3), 82-102
3. Ahtarieva, R., Ibragimova, E., Sattarova, G., Turzhanova, G. (2018) Integration as a form of acculturation of foreign student – future teacher in the polyethnic educational environment of university. Journal of Social Studies Education Research, 9(3), pp. 317-331
4. Banerjee, R., & Mistri, B. (2019). Impact of coal mining in diversification of rural livelihoods: A case study in the barjora colliery area of bankura district, west bengal. *Space and Culture, India, 6*(5), 228-240. doi:10.20896/SACI.V6I5.335
5. Buraeva, E.V. Innovation in agriculture as a factor in the growth of the efficiency of agricultural production. Scientific and methodical electronic journal "Concept". - 2014.- T. 20. - C 2161-2165.
6. Becker G.S. Human Capital: A. Theoretiical and Em¬pirical Analysis. - 1964. - P 25-28.
7. Bahzar, M. (2019). Authentic leadership in madrassas: Asserting islamic values in teacher performance. Journal of Social Studies Education Research, 10(1), 259-284.
8. Baidi. (2019). The role of parents' interests and attitudes in motivating them to homeschool their children. Journal of Social Studies Education Research, 10(1), 156-177.
9. Bentahar, A., & O'Brien, J. L. (2019). Raising students' awareness of social justice through civic literacy. Journal of Social Studies Education Research, 10(1), 193-218.
10. Bozhkova, G. N., Shastina, E. M., Kalimullina, O. V., & Shatunova, O. V. (2019). Study of literary images of gifted characters in optional activities as a means to develop capable and talented youth. *Space and Culture, India, 7*(1), 264-273. doi:10.20896/saci.v7i1.463
11. Dautov, G. F., Mingazova, L., Sayfulina, F. S., & Kayumova, G. F. (2018). Written heritage of the golden horde. [Patrimonio escrito de la horda de oro] *Opcion, 34*(Special Issue 14), 895-911.
12. Dworzecki, J.; Nowicka, I. 2019. Organized crime in the production and distribution of falsified medicines in Poland: Outline of the problem, Entrepreneurship and Sustainability Issues 6(4): 1762-1770. http://doi.org/10.9770/jesi.2019.6.4(15)
13. Dhungel, R., Lama, S., Khadka, A., Sharda, K. C., Sherpa, M., Limbu, P., . . . Shrestha, S. (2019). Hearing our voices: Pathways from oppression to liberation through community-based participatory research. *Space and Culture, India, 6*(5), 39-55. doi:10.20896/SACI.V6I5.439
14. Fedulova, I., Ivanova, V., Atyukova, O., & Nosov, V. (2019). Inclusive education as a basis for sustainable development of society. *Journal of Social Studies Education Research, 10*(3), 118-135
15. Frolova, I., Voronkova, O., Alekhina, N., Kovaleva, I., Prodanova, N., & Kashirskaya, L. (2019). Corruption as an obstacle to sustainable development: A regional example. Entrepreneurship and Sustainability Issues, 7(1), 674-689. doi:10.9770/jesi.2019.7.1(48)
16. Frolova, I., Voronkova, O., Islamutdinova, D., Gordeyeva, O., Fedulova, I., & Zhminko, A. (2019). Ecologization of agroindustrial production: Organizational and economic transformations. Journal of Environmental Management and Tourism, 10(3), 622-630. doi:10.14505/jemt.v10.3(35).16

17. Ghosh, M., & Ghosal, S. (2019). Historical geography of forestry and forest culture in sub-himalayan west bengal, 1757-2015. Space and Culture, India, 6(5), 215-227. doi:10.20896/SACI.V6I5.393
18. Goloshchapova, L. V., Plaskova, N. S., Prodanova, N. A., Yusupova, S. Y., & Pozdeeva, S. N. (2018). Analytical review of risks of loss of profits in cargo transportation. International Journal of Mechanical Engineering and Technology, 9(11), 1897-1902.
19. Gradoboev, A. V., & Tesleva, E. P. (2017). Local mechanical stress relaxation of gunn diodes irradiated by protons. Paper presented at the Journal of Physics: Conference Series, 830(1) doi:10.1088/1742-6596/830/1/012133
20. Havierniková, K.; Kordoš, M. 2019. Selected risks perceived by SMEs related to sustainable entrepreneurship in case of engagement into cluster cooperation, Entrepreneurship and Sustainability Issues 6(4): 1680-1693. http://doi.org/10.9770/jesi.2019.6.4(9)
21. Ivanova, V., Poltarykhin, A., Szromnik, A., & Anichkina, O. (2019). Economic policy for country's digitalization: A case study. Entrepreneurship and Sustainability Issues, 7(1), 649-661. doi:10.9770/jesi.2019.7.1(46)
22. Ivygina, A., Pupysheva, E., Mukhametshina, D. (2018) The role of local history texts in implementing the culturological approach to teaching the Russian language: The basic general education level. Journal of Social Studies Education Research, 9(2), pp. 160-171Jarrah, H. Y. (2019). Six thinking hats: An analysis of the skill level of jordanian vocational education teachers and the extent of skill application. *Space and Culture, India, 7*(1), 170-185. doi:10.20896/saci.v7i1.470
23. Kaźmierczyk, J. 2019. Workforce segmentation model: banks' example, Entrepreneurship and Sustainability Issues 6(4): 1938-1954. http://doi.org/10.9770/jesi.2019.6.4(28)
24. Kashirskaya, L., Voronkova, O., Sitnov, A., Shichiyakh, R., Kudinova, M., & Sycheva, I. (2019). Rural development through the formation of zonal agro-ecological clusters. Journal of Environmental Management and Tourism, 10(3), 651-659. doi:10.14505/jemt.v10.3(35).19
25. Korableva, O., Durand, T., Kalimullina, O., & Stepanova, I. (2019a). Studying user satisfaction with the MOOC platform interfaces using the example of coursera and open education platforms. Paper presented at the *ACM International Conference Proceeding Series*, 26-30. doi:10.1145/3322134.3322139
26. Korableva, O., Durand, T., Kalimullina, O., & Stepanova, I. (2019b). Usability testing of MOOC: Identifying user interface problems. Paper presented at the *ICEIS 2019 - Proceedings of the 21st International Conference on Enterprise Information Systems, 2* 468-475.
27. Kireev, B., Zhundibayeva, A., & Aktanova, A. (2019). Distance learning at higher education institutions: Results of an experiment. *Journal of Social Studies Education Research, 10*(3), 387-403.
28. Kuznets S. Economic Growth and Structure: Selected Essays, N.Y., 1965.
29. Kuznetsova, I. G., Goloshchapova, L. V., Ivashina, N. S., Shichiyakh, R. A., Petrova, L. I., & Tkachev, B. P. (2019a). The paradigm of human capital development capable of adapting innovations in the transition to a digital economy. International Journal of Civil Engineering and Technology, 10(2), 1408-1417.
30. Kuznetsova, I. G., Voronkova, O. Y., Nimatulaev, M. M., Ruiga, I. R., Zhuruli, G. N., & Levichev, V. E. (2019b). Ensuring the national security of agriculture in the digital era through the formation of human capital. International Journal of Economics and Business Administration, 7, 558-569.
31. Kuznetsova, I. G., Surikov, Y. N., Votchel, L. M., Aleynikova, M. Y., Voronkova, O. Y., & Shichiyakh, R. A. (2019c). The methodological aspect of human capital formation in the digital economy. International Journal of Mechanical Engineering and Technology, 10(2), 1020-1030.
32. Laužikas, M.; Miliūtė, A. 2019. Transformational Communication via Evolving Ethical and Moral Norms of Lithuanian Civil Service Organizations, Entrepreneurship and Sustainability 6(4): 1750-1761. http://doi.org/10.9770/jesi.2019.6.4(14)
33. Leonteva, L. S., Maximov, D. A., Kurbanov, S. A., Afanasyev, I. V., Melnikova, T. E., & Rezakov, R. G. (2018). Information services and development of effective urban management. International Journal of Civil Engineering and Technology, 9(11), 2518-2525.
34. Lysytsia, N.; Martynenko, M.; Prytychenko, T.; Gron O.; Us M. 2019. Prospects for innovations in marketing of economic educational services in Ukraine, Entrepreneurship and Sustainability Issues 6(4): 1771- 1783. http://doi.org/10.9770/jesi.2019.6.4(16)
35. Magsumov, T.A. (2019). Apprenticeship in secondary vocational schools during the economic modernization in late imperial Russia. Part 2. European Journal of Contemporary Education, 8(1), 215-221. doi: 10.13187/ejced.2019.1.215
36. Magsumov, T.A. (2018). Vocational school and studying youth in the Russian revolution of 1905. Terra Sebus, 10, 289-313.
37. Mamedova N.M., Bezveselnaya Z.V., Malakhova E.V., Kozmin V.S., Kornilova I.M., Savinchenko T.I. 2019. The Modern Paradigm of Advertising in the Light of Sustainable Business Development, Entrepreneurship and Sustainability Issues 6(4): 2110-2126. http://doi.org/10.9770/jesi.2019.6.4(39)
38. Mandal, J., & Sanyal, S. (2019). Geospatial analysis of fluoride concentration in groundwater in puruliya district, west bengal. Space and Culture, India, 6(5), 71-86. doi:10.20896/SACI.V6I5.369
39. Moore, J. (2018). Don't Shut Up: Why Teachers Must Defend the First Amendment in Secondary Schools. Journal of Culture and Values in Education, 1(2), 23-41. Retrieved from http://cultureandvalues.org/index.php/JCV/article/view/10
40. Miloradov, K. A., & Eidlina, G. M. (2016). Tourism market of the russian federation: Analysis of interactions between outbound and domestic tourism using neural networks. Indian Journal of Science and Technology, 9(27), 1-8. doi:10.17485/ijst/2016/v9i27/97698
41. Movchan, I. B., Yakovleva, A. A., & Daniliev, S. M. (2019). Parametric decoding and approximated estimations in engineering geophysics with the localization of seismic risk zones on the example of northern part of kola peninsula. Paper presented at the 15th Conference and Exhibition Engineering and Mining Geophysics 2019, Gelendzhik 2019, 188-198.
42. Olaniyi, O.E.; Prause, G.; Bakkar, Y. 2019. Entrepreneurial compliance opportunities for maritime fuel producers, Entrepreneurship and Sustainability Issues 6(4): 1550-1565. https://doi.org/10.9770/jesi.2019.6.4(1)
43. Paptsov, A., & Nechaev, V. (2019). Towards to a single innovation space in the agrarian sector of the member states of the eurasian economic union: A case study. Entrepreneurship and Sustainability Issues, 7(1), 637-648. doi:10.9770/jesi.2019.7.1(45)
44. Polyakova, A.G., Loginov, M.P., Strelnikov, E.V., Usova, N.V. 2019. Managerial decision support algorithm based on network analysis and big data. International Journal of Civil Engineering and Technology, 10 (2), 291-300.
45. Prodanova, N., Trofimova, L., Pozdeeva, S., Melekhina, T., Rustanov, A., & Guryanova, I. (2019a). Perspective of developing software for financial reporting under IFRS in the system of national governance. Journal of Advanced Research in Dynamical and Control Systems, 11(8 Special Issue), 406-410.
46. Prodanova, N. A., Plaskova, N. S., Bochkareva, N. G., Babalykova, I. A., Gazizyanova, Y. Y., & Zherelina, O. N. (2019b). Integrated corporate reporting as an innovative business reporting model. International Journal of Engineering and Advanced Technology, 8(5), 2075-2078.
47. Prodanova, N. A., Trofimova, L. B., Korshunova, L. N., Kamolov, S. G., Trapaidze, K. Z., & Pavlyuk, A. V. (2019c). The methods and evaluation of RIC integrated business indicators. International Journal of Innovative Technology and Exploring Engineering, 8(10), 1889-1894. doi:10.35940/ijitee.J9242.0881019
48. Plaskova, N.S., Prodanova, N.A., Zatsarinnaya, E.I., Korshunova, L.N. & Chumakova, N.V. 2017. Methodological support of organizations implementing innovative activities investment attractiveness assessment. Journal of Advanced Research in Law and Economics, 8 (8), 2533-2539
49. Puryaev, A. S., Puryaeva, Z. A., Kharisova, A. R., & Puryaev, A. A. (2019). Investigation and explanation of mathematical tooling for accounting non-economic characteristics during the investment project effectiveness' assessing process. IOP Conference Series: Materials Science and Engineering, 570, 012074. https://doi.org/10.1088/1757-899X/570/1/012074
50. Raba', A., & Harzallah, H. (2018). Palestinian Teachers' Views on the Factors That Limit Students' Creativity and Some Possible Strategies to Overcome Them. Research in Social Sciences and Technology, 3(2), 40-57. Retrieved from http://ressat.org/index.php/ressat/article/view/330
51. Saenko, N., Voronkova, O., Volk, M., & Voroshilova, O. (2019). The social responsibility of a scientist: Philosophical aspect of contemporary discussions. *Journal of Social Studies Education Research, 10*(3), 332-345.
52. Sabitova, A., Salimova, D., Ibragimova, E. (2018) Motivated and unmotivated violations from the norm in children's books in organizing extracurricular reading. Journal of Social Studies Education Research, 9(2), p. 306-316
53. Sagdieva, R., Husnutdinov, D., Mirzagitov, R., & Galiullin, R. (2019). Kinship terms as proof of genetic relationship. Journal of Social Studies Education Research, 10(3), 103-117.

54. Shatunova O., Anisimova T., Sabirova F., Kalimullina O. (2019) STEAM as an Innovative Educational Technology. Journal of Social Studies Education Research. Vol. 10 (2), 131-144.
55. Shaitura, S. V., Ordov, K. V., Lesnichaya, I. G., Romanova, Y. D., & Khachaturova, S. S. (2018). Services and mechanisms of competitive intelligence on the internet. [Servicios y mecanismos de inteligencia competitiva en internet] Espacios, 39(45)
56. Sycheva, I., Voronkova, O., Vorozheykina, T., Yusupova, G., Semenova, A., & Ilyin, A. (2019a). The main directions of improving the environmental and economic efficiency of regional production. Journal of Environmental Management and Tourism, 10(3), 631-639. doi:10.14505/jemt.v10.3(35).17
57. Sycheva, I. N., Voronkova, O. Y., Kovaleva, I. V., Kuzina, A. F., Bannikov, S. A., & Titova, S. V. (2019b). Motivation in personnel management of a trading enterprise. International Journal of Economics and Business Administration, 7, 570-582.
58. Táncošová, J. 2019. The role of foreign direct investment in the economy of Slovakia, Entrepreneurship and Sustainability Issues 6(4): 2127-2135. http://doi.org/10.9770/jesi.2019.6.4(40)
59. Titova, S. V., Surikov, Y. N., Voronkova, O. Y., Skoblikova, T. V., Safonova, I. V., & Shichiyakh, R. A. (2019). Formation, accumulation and development of human capital in the modern conditions. International Journal of Economics and Business Administration, 7(2), 223-230.
60. Trofimova, L., Prodanova, N., Korshunova, L., Savina, N., Ulianova, N., Karpova, T., & Shilova, L. (2019). Public sector entities' reporting and accounting information system. Journal of Advanced Research in Dynamical and Control Systems, 11(8 Special Issue), 416-424.
61. Turen, S.; Abdulla, M.; Farooq, M.O.; Elsoud, M.S.A. 2019. Causes of Non-Performing Loans: The Experience of Gulf Cooperation Council Countries, Entrepreneurship and Sustainability Issues 6(4): 1955-1974. http://doi.org/10.9770/jesi.2019.6.4(29)
62. Vasilev, B. (2019). Analysis and improvement of the efficiency of frequency converters with pulse width modulation. International Journal of Electrical and Computer Engineering, 9(4), 2314-2320. http://doi:10.11591/ijece.v9i4.pp2314-2320
63. Vasilev, B., & Tung, L. V. (2019). Research methods of V/F control for matrix converter use direct space vector modulation. International Journal of Electrical and Computer Engineering, 9(6), 5115-5124. http://doi:10.11591/ijece.v9i6.pp5115-5124
64. Voronkova, O., Sycheva, I., Kovaleva, I., Khasanova, A., Gorovoy, S., & Vorozheykina, T. (2019a). Assessing the environmental impact of the intensification of agricultural production. Journal of Environmental Management and Tourism, 10(3), 697-705. doi:10.14505/jemt.v10.3(35).24
65. Voronkova, O., Yankovskaya, V., Kovaleva, I., Epishkin, I., Iusupova, I., & Berdova, Y. (2019b). Sustainable territorial development based on the effective use of resource potential. Entrepreneurship and Sustainability Issues, 7(1), 662-673. doi:10.9770/jesi.2019.7.1(47)
66. Voronkova, O. Y., Iakimova, L. A., Frolova, I. I., Shafranskaya, C. I., Kamolov, S. G., & Prodanova, N. A. (2019c). Sustainable development of territories based on the integrated use of industry, resource and environmental potential. International Journal of Economics and Business Administration, 7(2), 151-163.
67. Yehya, F. Y., Barbar, A., & Abou Rjeily, S. (2018). Diagnosing the barriers for integrating Educational Technology in Physics courses in Lebanese secondary schools. *Research in Social Sciences and Technology*, *3*(2), 14-39. Retrieved from http://ressat.org/index.php/ressat/article/view/337
68. Yemelyanov, V. A., Fatkulin, A. R., Nedelkin, A. A., Titov, V. A., & Degtyarev, A. V. (2019). Software for weight estimation of the transported liquid iron. Paper presented at the Proceedings of the 2019 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering, ElConRus 2019, 381-384. doi:10.1109/EIConRus.2019.8657011
69. Zhundibayeva, A. K., Ergobekov, K. S., & Espenbetov, A. S. (2013). The lyrical hero in the works of kazakh's poet shakarim kudaiberdiev. *Life Science Journal*, *10*(SPL.ISSUE11), 113-117.