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Article

Impact of digitalization on entrepreneurship development in the context of business innovation management

Reference: Sadigov, Rahim (2022). Impact of digitalization on entrepreneurship development in the context of business innovation management. In: Marketing i menedžment inovacij (1), S. 167 - 175.

https://mmi.fem.sumdu.edu.ua/sites/default/files/580-12_Sadiqov.pdf

doi:10.21272/mmi.2022.1-12.

This Version is available at:

<http://hdl.handle.net/11159/7255>

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<https://doi.org/10.21272/mmi.2022.1-12>

JEL Classification: F50, O33

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IMPACT OF DIGITALIZATION ON ENTREPRENEURSHIP DEVELOPMENT IN THE CONTEXT OF BUSINESS INNOVATION MANAGEMENT

Abstract. The article discusses current digitalization trends from the perspective of business innovation management, the relevance of which has increased significantly during the COVID-19 pandemic. The relationship between the innovative and digital profile indicators and the level of entrepreneurship development is analysed and substantiated based on the world and European experience in general and Azerbaijan in particular. The study's main goal is empirical confirmation, formalization, and evaluation of digitalization's impact on entrepreneurship development in Azerbaijan, some European and Asian countries to improve public policy in the areas under study. For achieving the study goals, scientific methods of statistical, analytical, graphical, correlation and regression analysis, and economic and mathematical modelling using Excel and Stata software products were applied. The information base of the study is formed from scientific papers and publications in the field of innovation management, digital economy, and entrepreneurship, as well as World Bank data for a sample of 14 countries in Europe and Asia (Azerbaijan, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, the Kyrgyz Republic, Latvia, Lithuania, Poland, Romania, Slovenia, Slovak Republic, and Ukraine) for 2006-2020. The author characterized trends in the total number of new firms, the overall density of business and the density of new business in the countries included in the sample, and indicators of the relative cost of procedures and the time to start a business in the studied countries. Particular attention is paid to the export and import of ICT goods, communication and computer services. A panel data regression model with fixed effects has been built to determine the influence of digitalization parameters on the business sector's development parameters. Evaluating the impact of digitalization on entrepreneurship development in Azerbaijan and other European and Asian countries could be useful to scientists, researchers, public authorities and local governments, business structures, and entrepreneurs.

Keywords: business innovation, high technology, ICT, innovation management, new business, entrepreneurship development, digitalization.

Introduction. In the context of intensification and large-scale expansion of globalization and integration processes, business competitiveness is based not so much on classical approaches to management as innovative tools. Innovative business management involves using more productive business technologies, optimization of production processes, personnel management, etc. The main vectors of innovative business management are the adaptation of new equipment to increase the productivity of production processes and the modernization of software, change of corporate culture, logistics, promotion technologies, etc. Successful implementation of innovative business management is aimed at engineering business processes, which will improve the quality of products or services and increase the level of profitability of the business as a whole. Digitalization of business processes as a fundamental element of innovative business management leads to a qualitative transformation of the business paradigm of an individual enterprise and the modernization of entire sectors of the economy or the entire economic system. However, the impact of digitalization on quantitative indicators of business development could vary significantly depending on the specifics of digital technologies, the initial quality parameters of business performance, the specifics of socio-economic and institutional development of the whole country, etc. Considering the mentioned above, the modelling of general prospects and the

Cite as: Sadigov, R. (2022). Impact of Digitalization on Entrepreneurship Development in the Context of Business Innovation Management. *Marketing and Management of Innovations*, 1, 167-175.
<http://doi.org/10.21272/mmi.2022.1-12>

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Received: 12 December 2021

Accepted: 13 March 2022

Published: 30 March 2022



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quantitative formalization of the impact of various parameters of the characteristics of digital development on the performance of entrepreneurship become a strategically important task. These results would justify the necessity to expand the range of digital technologies to stimulate innovation business development and assess the potential economic impact of the use of digital innovations.

Literature Review. Analysis of publications on the role of digital technologies in the context of the development of innovative business management and the economy shows the prospects of this scientific field and, at the same time, its innovative nature. Such a novelty in this research field determines the existence of several gaps in both theoretical and empirical contexts.

Skrynyk (2021b) carried out a bibliometric analysis of the impact of digital technologies on various prospects for the country's socio-economic development. In particular, the author concludes that there are 5 largest content clusters of research in which the impact of digitalization has been studied. Thus, much of this research is aimed at identifying the role of digital technologies in organizational business transformation, socio-energy sphere, organizational culture, organization management, and especially business performance. In further research, Skrynyk (2021a) pointed out corporate investment behavior in digital technologies for organizational development.

Novikov (2021) realized the research aimed at identifying the contextual characteristics that accompany the digitalization processes of the economy and education. The scholar justified their impact on business development and the formation of national security. Besides, Kostetskyi (2021) conducted a bibliometric analysis to identify digitalization's impact on the transparency of economic relations. The author identified six research clusters based on the analysis of 320 articles on relevant issues published from 1999 to 2021. They determine the meaningful relationships of digital technologies in business, logistics, public administration, finance, information management, and privacy.

Niftiyev et al. (2021) studied the parameters of innovation development in Armenia, Azerbaijan, and Georgia. The analysis showed that research and development expenditures as a percentage of GDP were the highest in Azerbaijan from 1995-to 2004. This figure was slightly lower than in Georgia and Armenia from 2005-to 2019. The authors also emphasize that exports of high-tech products are the lowest in Azerbaijan among the three countries studied. The same trend is fair for the index of innovative development of the country from 2011-to 2020. However, patent activity in Azerbaijan is quite high.

Ivanovic-Đukic et al. (2019) examined the relationship between different types of digital innovation and economic growth. The scholar empirically confirmed that the best performance indicators are in regions with higher levels of digitalization. In contrast, areas with low levels of digital development are characterized by average business performance. Soluk et al. (2021) noted that the use of digital technologies (including smartphones) by entrepreneurs positively affects the performance of micro-enterprises in rural areas in India. Pereira et al. (2022) surveyed 8183 companies in Portugal to identify the impact of digital transformation on entrepreneurial activity. According to the study results, digital transformation helps to improve contact between customers and contractors. Bizhanova et al. (2019) focused the research on the influence of digital technologies in marketing on business development efficiency. The results confirmed the positive relationship between them.

Fernando Alonso Ojeda (2021) noted that the development of innovative and digital technologies is accompanied by improved business performance and quality business development, and new challenges and threats. All of this determines the importance of cybersecurity in enterprises in modern conditions. Thus, the researcher determines the role and place of cybersecurity in business development on the example of companies in the United States and the People's Republic of China. In turn, Stavrova (2021) revealed the patterns of digital technology in the banking sector, emphasizing the importance of cybersecurity and personal data protection. Law (2021) realized in-depth research on the role of digital technologies in banking sector development. Specifically, the author identified factors that stimulate and hinder the development of virtual banking in Hong Kong. However, Ouelhadj and Bouchetara (2021)

explored the prospects for the development of digital technologies on the intensity of transfer pricing and tax avoidance. It is also identified potential mechanisms for eliminating these negative processes.

Antonyuk et al. (2021) researched human capital's development and quality assurance in the context of the digital transformation of society and modern economic realities caused by the consequences of the COVID-19 pandemic. Researchers emphasized that today the innovative economy of the world's leading countries creates 70-90% of GDP. Besides, its development depends primarily on the quality of human capital. Phomkamin et al. (2021) attempted to analyze the prospects and effectiveness of e-commerce use as one of the main innovative and digital tools to ensure the effectiveness of business management, which became especially relevant in terms of the COVID-19 pandemic. At the same time, Alam et al. (2021) focused on researching perspectives and challenges of e-banking in Bangladesh. Alessio Faccia et al. (2021) realized familiar research aimed at clarifying online banking development in Italy. Tiutiunyk et al. (2021) devoted their paper to studying the digital perspective of the COVID-19 pandemic's impact on the functioning of the business sector in European countries. In turn, Lazorenko et al. (2021) focused on the competitive analysis of websites of Ukrainian veterinary enterprises as one of the key determinants of marketing management. Moreover, Kotenko and Bohnhardt (2021) also focused on identifying perspectives on the financial support for the development of digital medicine in Ukraine. The research aims to clarify the problems and challenges of this process in Ukraine and look for effective ways to solve them considering world benchmark experience. Despite the large volume of scientific publications aimed at studying the impact of various digital technologies on certain parameters of business development, socio-economic development, financial market development, and even medical system development, there is a significant gap in comprehensive research to quantify the impact of digital technologies on entrepreneurship development, which are based on the use of modern econometric apparatus.

Methodology and research methods. This study aims to determine the impact of certain parameters of digital technology development on the development of entrepreneurship development. The importance of solving this task is especially relevant in the context of stimulating innovation orientation as an essential attribute of business performance. Thus, considering a comprehensive literature review results on the relevant topic and taking into account the availability of sufficient data in open access, it is considered as measures of digitalization such indicators as:

- ICT goods exports (% of total goods exports);
- ICT goods imports (% total goods imports);
- Computer, communications and other services (% of commercial service imports);
- Computer, communications and other services (% of commercial service exports);
- Communications, computer, etc. (% of service exports, BoP);
- Communications, computer, etc. (% of service imports, BoP);
- High-technology exports (% of manufactured exports);
- Medium and high-tech exports (% manufactured exports);
- Medium and high-tech manufacturing value added (% manufacturing value added).

All the above measurements are collected from the «World Development Indicators» of the World Bank DataBank (2022) and are considered as independent variables. However, as dependent variables from the same collection of the World Bank, it is formed a set of 5 indicators that characterize various parameters of development of the business sector, including the following:

- Cost of business start-up procedures (% of GNI per capita);
- New business density (new registrations per 1,000 people ages 15-64);
- New businesses registered (number);
- Start-up procedures to register a business (number);
- Time required to start a business (days).

The country sample consists of 14 Asian and European countries such as Azerbaijan, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Poland, Romania, Slovenia, Slovak Republic, and Ukraine. The choice of this country sample is determined by the historical commonality of trends in socio-economic development in general and entrepreneurship development in particular. The observation period is 2006-2020 (or available last year).

The research task involved the implementation of several interrelated steps, namely:

- 1) general characteristics of data based on generalized descriptive statistics;
- 2) determination of the specification of the regression model using the Hausman test;
- 3) running of panel data regression model for each individual dependent variable;
- 4) generalization of the regression modelling results, formation of conclusions, and recommendations on the role of digitalization in the context of business innovation management.

It should also be noted that all the stages mentioned above of the research are realized using Stata 12/SE software.

Results. It is expedient to carry out the general characteristic of values of the selected dependent and independent variables based on descriptive statistics for the whole country sample (Table 1).

Table 1. Summative statistics

Variable	Observations	Mean value	Standard Deviation	Minimum value	Maximum value
Cost	196	4.245	4.381	0	20.9
Density	201	4.634	4.446	0.063	24.786
New	201	21380.31	19835.03	707	102745
Procedures	196	5.862	2.476	1	13
Time	196	16.783	12.958	1	61.5
ICTex	209	5.967	6.338	0	26
ICTimp	209	7.731	4.492	1.9	21.2
CCSimp	204	40.499	16.327	7.73	71.69
CCSex	204	34.151	15.844	3.75	69.92
Ccex	204	35.272	14.918	5.86	69.99
Ccimp	204	41.646	15.361	11.23	72.15
HTE	187	12.197	8.111	1.02	43.43
MHTex	196	47.773	17.289	10.94	78.56
MHTva	196	30.907	14.958	2.37	59.99

Notes: Cost – Cost of business start-up procedures (% of GNI per capita); Density – New business density (new registrations per 1,000 people ages 15-64); New – New businesses registered (number); Procedures – Start-up procedures to register a business (number); Time – Time required to start a business (days); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); THE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

Thus, Table 1 shows that, in general, the sample is strongly balanced. Some observations are omitted (maximum possible number of observations - 210), but this does not affect the accuracy of the modeling results. In the context of the characteristics of business development parameters, it could be noted that the cost of business start-up procedures (% of GNI per capita) ranges from 0% (Slovenia) to 20.9% (Hungary). Still, the average level of this indicator is within 4.25%. Instead, new business density (new registrations per 1,000 people aged 15-64) ranges from 0.063 to 24.786, with benchmarks for Kazakhstan and Estonia, respectively. The number of newly registered business units varies from 707 (Kazakhstan) to 102,745 (Romania). It is also worth noting that entrepreneurs must overcome from 1 to 13 procedures

when registering a business. The least regulated country is Georgia, and the most hardly regulated was Azerbaijan in 2006 (as of 01.01.2020 – 3 procedures). On average, it would take from 1 (Georgia) to 61.5 days to register a business (Slovenia, 2006).

The next step is to determine the specification of the panel data regression model, which is most consistent with the patterns of change of dependent and independent variables. Thus, applying the Hausman test showed that a model with fixed rather than random effects is more acceptable for certain observations. Tables 2-6 present the modeling results for the whole panel.

Table 2. Modeling results on the identification of digital development measures on entrepreneurial development proxy (cost of business start-up procedures as a percent of GNI per capita) in 2006-2020 (fixed effects panel data regression model)

Cost	Coefficients	Standard Error	t-value	p-value	95% Confidence Interval		Significance
ICTex	0.478	0.128	3.75	0.000	0.226	0.730	***
ICTimp	-0.374	0.186	-2.01	0.047	-0.742	-0.006	**
CCSimp	-0.121	0.226	-0.54	0.593	-0.569	0.326	
CCSex	-1.214	0.290	-4.19	0.000	-1.787	-0.641	***
Ccex	1.118	0.286	3.90	0.000	0.552	1.683	***
Ccimp	0.130	0.238	0.54	0.587	-0.341	0.601	
HTE	-0.131	0.047	-2.77	0.006	-0.224	-0.038	***
MHTex	-0.002	0.032	-0.06	0.954	-0.066	0.062	
MHTva	-0.116	0.040	-2.88	0.005	-0.195	-0.036	***
Constant	10.867	2.192	4.96	0.000	6.536	15.199	***

Notes: *** – significance at 1 % level; ** – significance at 5 % level; * – significance at 10 % level; Cost – Cost of business start-up procedures (% of GNI per capita); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); HTE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

Determining the impact of digitization parameters on the cost of business start-up procedures as a percentage of GNI per capita shows that the model is characterized by satisfactory quality, as evidenced by the value of the determination coefficient and p-value. Factors contributing to increasing the cost of business start-up procedures include the growth of such parameters as ICT goods exports and communications, computers, etc. (% of service exports, BoP). At the same time, the reduction of the cost of business start-up procedures is facilitated by the growth of ICT goods imports (% of total goods imports), computer, communications, and other services (% of commercial service exports), high-technology exports (% of manufactured exports), and medium and high-tech manufacturing value added (% manufacturing value-added).

In turn, new business density is experiencing positive changes under the influence of the growth of computers, communications, and other services as % of commercial service imports (significance at 5% level), computer, communications, and other services as % of commercial service imports (significance at 1% level), and medium and high-tech manufacturing value-added as % manufacturing value added (significance at 10% level). On the other hand, new business density is negatively affected by the growth of exports and imports of communications, computers, etc. as % of service exports, BoP (significance at 5% level).

Table 3. Modeling results on the identification of digital development measures on entrepreneurial development proxy (new business density – new registrations per 1,000 people ages 15-64) in 2006-2020 (fixed effects panel data regression model)

Density	Coefficients	Standard Error	t-value	p-value	95% Confidence Interval		Significance
ICTex	0.233	0.142	1.64	0.103	-0.047	0.513	
ICTimp	-0.186	0.211	-0.88	0.380	-0.604	0.232	
CCSimp	0.479	0.228	2.10	0.038	0.028	0.930	**
CCSex	0.914	0.301	3.03	0.003	0.318	1.510	***
Ccex	-0.772	0.296	-2.61	0.010	-1.358	-0.187	**
Ccimp	-0.629	0.241	-2.61	0.010	-1.105	-0.152	**
HTE	0.043	0.049	0.87	0.386	-0.055	0.140	
MHTex	0.022	0.034	0.65	0.520	-0.045	0.088	
MHTva	0.075	0.041	1.84	0.067	-0.005	0.155	*
Constant	3.219	2.272	1.42	0.159	-1.273	7.711	

Notes: *** – significance at 1 % level; ** – significance at 5 % level; * – significance at 10 % level; Density – New business density (new registrations per 1,000 people ages 15-64); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); HTE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

Table 4. Modeling results on the identification of digital development measures on entrepreneurial development proxy (number of new business registered) in 2006-2020 (fixed effects panel data regression model)

New	Coefficients	Standard Error	t-value	p-value	95% Confidence Interval		Significance
ICTex	-968.291	649.859	-1.49	0.138	-2253.018	316.436	
ICTimp	2381.881	970.374	2.46	0.015	463.518	4300.244	**
CCSimp	892.839	1047.519	0.85	0.395	-1178.034	2963.713	
CCSex	3133.761	1383.523	2.27	0.025	398.631	5868.892	**
Ccex	-2748.044	1358.674	-2.02	0.045	-5434.050	-62.039	**
Ccimp	-1589.153	1106.865	-1.44	0.153	-3777.349	599.044	
HTE	129.775	226.345	0.57	0.567	-317.694	577.244	
MHTex	-161.186	154.762	-1.04	0.299	-467.140	144.769	
MHTva	84.723	186.516	0.45	0.650	-284.007	453.453	
Constant	31599.278	10426.558	3.03	0.003	10986.687	52211.869	***

Notes: *** – significance at 1 % level; ** – significance at 5 % level; * – significance at 10 % level; New – New businesses registered (number); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); HTE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

Panel data regression modeling results presented in Table 4 allow concluding that:

- 1% increase of the share of ICT goods imports in total goods imports might increase the number of new businesses registered in more than 2381 units (significance at 5 % level);

- 1% increase in the share of computer, communications, and other services in commercial service exports will lead to an increase in the number of new businesses registered in more than 3133 units (significance at 5 % level);
- despite a 1% increase in the share of communications, computers, etc., service exports might decrease in new business registered in more than 2748 units (significance at 5 % level).

Table 5. Modeling results on the identification of digital development measures on entrepreneurial development proxy (number of start-up procedures to register a business) in 2006-2020 (fixed effects panel data regression model)

Procedures	Coefficients	Standard Error	t-value	p-value	95% Confidence Interval		Significance
ICTex	-0.034	0.098	-0.34	0.732	-0.228	0.161	
ICTimp	0.024	0.144	0.16	0.870	-0.260	0.308	
CCSimp	0.071	0.175	0.41	0.684	-0.274	0.416	
CCSex	-1.358	0.224	-6.07	0.000	-1.800	-0.916	***
Ccex	1.302	0.221	5.90	0.000	0.866	1.739	***
Ccimp	-0.074	0.184	-0.40	0.688	-0.437	0.289	
HTE	-0.030	0.036	-0.83	0.407	-0.102	0.042	
MHTex	-0.034	0.025	-1.38	0.171	-0.084	0.015	
MHTva	-0.038	0.031	-1.23	0.219	-0.100	0.023	
Constant	9.679	1.691	5.72	0.000	6.337	13.021	***

Notes: *** – significance at 1 % level; ** – significance at 5 % level; * – significance at 10 % level; Procedures – Start-up procedures to register a business (number); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); HTE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

Table 6. Modeling results on the identification of digital development measures on entrepreneurial development proxy (time required to start a business, days) in 2006-2020 (fixed effects panel data regression model)

Time	Coefficients	Standard Error	t-value	p-value	95% Confidence Interval		Significance
ICTex	-0.060	0.512	-0.12	0.906	-1.071	0.951	
ICTimp	-0.349	0.747	-0.47	0.641	-1.826	1.128	
CCSimp	1.628	0.908	1.79	0.075	-0.167	3.423	*
CCSex	-5.842	1.163	-5.02	0.000	-8.140	-3.543	***
Ccex	5.511	1.149	4.80	0.000	3.241	7.781	***
Ccimp	-1.657	0.956	-1.73	0.085	-3.547	0.233	*
HTE	-0.007	0.189	-0.04	0.969	-0.381	0.367	
MHTex	-0.124	0.130	-0.95	0.342	-0.380	0.133	
MHTva	-0.054	0.162	-0.33	0.739	-0.373	0.265	
Constant	35.411	8.794	4.03	0.000	18.031	52.790	***

Notes: *** – significance at 1 % level; ** – significance at 5 % level; * – significance at 10 % level; Time – Time required to start a business (days); ICTex – ICT goods exports (% of total goods exports); ICTimp – ICT goods imports (% total goods imports); CCSimp – Computer, communications and other services (% of commercial service imports); CCSex – Computer, communications and other services (% of commercial service exports); Ccex – Communications, computer, etc. (% of service exports, BoP); Ccimp – Communications, computer, etc. (% of service imports, BoP); HTE – High-technology exports (% of manufactured exports); MHTex – Medium and high-tech exports (% manufactured exports); MHTva – Medium and high-tech manufacturing value added (% manufacturing value-added).

Sources: developed by author.

In turn, regulatory pressure on the entrepreneurs (number of start-up procedures to register a business) is stimulated by the increase of the share of computers, communications, and other services in commercial service exports. At the same time, the decrease in the share of computers, communications, and other services in commercial service exports stimulates processes of weakening the regulatory burden in terms of business registration. However, it is fair to note that the growth of time required to start a business is caused by the increase in the share of computers, communications and other services in commercial service imports and the share of communications, computers, etc., in service exports. On the other hand, the growth of such parameters of digital development as the share of computer, communications, and other services in commercial service exports and communications, computer, etc., in service imports, on the contrary, accelerate registration procedures.

Conclusions. Thus, the results of the econometric analysis show that the development of the business sector largely depends on the expansion of digital technologies. It eloquently demonstrates the strategic importance of ensuring competitiveness and business performance to build a business management system that is not so much on the classical as an innovative approach.

Summarization of the modelling results allows noting that the export activity of enterprises in the field of ICT (both in terms of software and computer equipment) is more important for the business development of the selected 14 countries in Europe and Asia than their import activity. In addition, the cost of business start-up procedures as a percentage of GNI per capita is the most sensitive measure of entrepreneurial development to digital change, while the number of start-up procedures to register a business is the least dependent on digital expansion. Among the parameters of digital development considered in the study, the most important digital driver of entrepreneurial performance is the growth of the share of computers, communications, and other services in commercial service exports. At the same time, the most significant inhibitor is the increase in the share of communications, computers, etc., service exports.

References

- Alam, M. J., Jesmin, J., Faruk, M., & Nur-Al-Ahad, M. (2021). Development of E-banking in Bangladesh: A Survey Study. *Financial Markets, Institutions and Risks*, 5(2), 42-51. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Antonyuk, N., Plikus, I., & Jammal, M. (2021). Human Capital Quality Assurance under the Conditions of Digital Business Transformation and COVID-19 Impact. *Health Economics and Management Review*, 2(3), 39-47. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Bizhanova, K., Mamyrbekov, A., Umarov, I., Orazymbetova, A., & Khairullaeva, A. (2019). Impact of digital marketing development on entrepreneurship. *Innovative Technologies in Environmental Science and Education (ITESE-2019)*, 135, 04023. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Faccia, A., & Cavaliere, L. (2021). Online Banking in Italy. "Widiba Bank" Case Study, PESTLE and DEA Analysis. *Financial Markets, Institutions and Risks*, 5(1), 87-97. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Fernando Alonso Ojeda, C. (2021). Cybersecurity, An Axis On Which Management Innovation Must Turn In The 21st Century. *SocioEconomic Challenges*, 5(4), 98-113. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Ivanovic-Đukic, M., Stevanovic, T., & Radenovic, T. (2019, January). Does digitalization affect the contribution of entrepreneurship to economic growth. In *Proceedings of Rijeka Faculty of Economics: Journal of Economics and Business* (Vol. 36, No. 2, pp. 653-679). [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Kostetskyi, P. (2021). Does Digitalization Lead to Better Transparency: Bibliometric Approach. *Business Ethics and Leadership*, 5(3), 102-107. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Kotenko, N., & Bohnhardt, V. (2021). Digital health projects financing: challenges and opportunities. *Health Economics and Management Review*, 2(1), 100-107. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Law, S. W. (2021). Financial Inclusion and Virtual Bank in the Era of Digitalisation: A Regulatory Case Study in Hong Kong. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Lazorenko, V., Saher, L., & Jasniewski, J. (2021). Web management as a marketing management determinant: case for pharmaceutical enterprises. *Health Economics and Management Review*, 2(2), 105-114. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Niftiyev, I., Yaqublu, N., & Akbarli, N. (2021). Exploring The Innovativeness Of The South Caucasus Economies: Main Trends And Factors. *SocioEconomic Challenges*, 5(4), 122-148. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Novikov, V. V. (2021). Digitalization of Economy and Education: Path to Business Leadership and National Security. *Business Ethics and Leadership*, 5(2), 147-155. [\[Google Scholar\]](#) [\[CrossRef\]](#)

- Ouelhadj, A., & Bouchetara, M. (2021). Contributions of the Base Erosion and Profit Shifting BEPS Project on Transfer Pricing and Tax Avoidance. *Financial Markets, Institutions and Risks*, 5(3), 59-70. [[Google Scholar](#)] [[CrossRef](#)]
- Pereira, C.S.; Durão, N.; Moreira, F.; Veloso, B. (2022). The Importance of Digital Transformation in International Business. *Sustainability*, 14, 834. [[Google Scholar](#)] [[CrossRef](#)]
- Phomkamin, J., Pumpuang, C., Potijak, P., Sangngam, S., Ketprasit, I., & Mujtaba, B. (2021). Engagement Strategies for E-commerce Businesses in the Modern Online World. *SocioEconomic Challenges*, 5(4), 24-34. [[Google Scholar](#)] [[CrossRef](#)]
- Skrynnyk, O. (2021a). Analysis of Corporate Investment Behaviour in Digital Technologies for Organisational Development Purposes. *Financial Markets, Institutions and Risks*, 5(3), 79-86. [[Google Scholar](#)] [[CrossRef](#)]
- Skrynnyk, O. (2021b). Literature Review on Social and Organizational Acceptance of Digital Transformation. *Business Ethics and Leadership*, 5(4), 110-117. [[Google Scholar](#)] [[CrossRef](#)]
- Soluk, J., Kammerlander, N., & Darwin, S. (2021). Digital entrepreneurship in developing countries: The role of institutional voids. *Technological Forecasting and Social Change*, 170, 120876. [[Google Scholar](#)] [[CrossRef](#)]
- Stavrova, E. (2021). Banks' Digital Challenges. *Business Ethics and Leadership*, 5(3), 87-96. [[Google Scholar](#)] [[CrossRef](#)]
- Tiutiunyk, I. V., Humenna, Y. H., & Flaumer, A. (2021). Covid-19 impact on business sector activity in the EU countries: digital issues. *Health Economics and Management Review*, 2(1), 54-66. [[Google Scholar](#)] [[CrossRef](#)]
- World Bank DataBank. (2022) Retrieved from [[Link](#)]

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Вплив цифровізації на розвиток підприємництва у контексті менеджменту бізнес-інновацій

У статті розглядаються сучасні тенденції цифровізації з позиції управління бізнес-інноваціями, актуальність яких істотно зросла під час пандемії COVID-19. Аналізуються та обґрунтовуються взаємозв'язки між показниками інноваційного та цифрового профілю та рівнем розвитку підприємництва на основі світового та європейського досвіду в цілому та Азербайджану зокрема. Основною метою дослідження є емпіричне підтвердження, формалізація та оцінювання впливу цифровізації на розвиток підприємництва в Азербайджані та інших країнах Європи та Азії для вдосконалення державної політики у сферах, що вивчаються. Для досягнення поставленої мети було застосовано наукові методи статистичного, аналітичного, графічного, кореляційного та регресійного аналізу, економіко-математичне моделювання з використанням програмних продуктів Excel та Stata. Інформаційну базу дослідження склали наукові праці та публікації в галузі інноваційного менеджменту, цифрової економіки та підприємництва, а також дані Світового банку для вибірки з 14 країн Європи та Азії (Азербайджан, Чехія, Естонія, Грузія, Угорщина, Казахстан, Киргизька Республіка, Латвія, Литва, Польща, Румунія, Словенія, Словаччина та Україна) за 2006-2020 роки. Автором охарактеризовані динамічні тенденції загальної кількості фірм та, зокрема, нових, загальної щільності бізнесу та щільності нового бізнесу, а також показників порівняльної вартості процедур та часу для відкриття бізнесу у досліджуваних країнах. Особливу увагу приділено питанню експорту та імпорту товарів ІКТ, комунікаційних, комп'ютерних послуг. У ході дослідження побудовано регресійну модель панельних даних із фіксованими ефектами з метою визначення впливу параметрів диджиталізації на параметри розвитку підприємницького сектору. Результати оцінювання впливу цифровізації на розвиток підприємництва в Азербайджані та інших країнах Європи та Азії можуть бути корисними вченим, науковцям, органам державної влади та місцевого самоврядування, бізнес-структурам та підприємцям.

Ключові слова: бізнес-інновації, високі технології, ІКТ, менеджмент інновацій, новий бізнес, розвиток підприємництва, цифровізація.