UDC 338.1:330
JEL Classification: O11, O32, O33, O39
DOI: 10.20535/2307-5651.32.2025.328528

Kravchenko Maryna
Doctor of Economics, Professor
ORCID ID: 0000-0001-5405-0159
(corresponding author)
Poliakov Yevhenii
Postgraduate Student
ORCID ID: 0009-0005-1901-9806
National Technical University of Ukraine
"Igor Sikorsky Kyiv Polytechnic Institute"

Кравченко М. О., Поляков Є. О.
Національний технічний університет України
«Київський політехнічний інститут імені Ігоря Сікорського»

EVALUATION OF UKRAINE'S PREPAREDNESS FOR THE IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE TOOLS

ОЦІНКА РІВНЯ ПІДГОТОВЛЕНОСТІ УКРАЇНИ ДО ВПРОВАДЖЕННЯ ІНСТРУМЕНТАРІЮ ШТУЧНОГО ІНТЕЛЕКТУ

The aim of the paper is to assess the preparedness of Ukraine to implement artificial intelligence tools, analyze the strengths and weaknesses, and develop suggestions for strategic development directions. The methodology includes analysis of international indices, state statistics, legislation, and estimation of expert opinions. As a result, key barriers to AI development in Ukraine were discovered, including, first of all, low intensity of innovation activity, insufficient legal regulation, and reduced investment in research and development. The practical significance of the study lies in identifying ways to create a favorable environment for faster implementation of artificial intelligence technologies in Ukraine. This entails the process of aligning the regulatory system with international standards, strengthening state support for innovation, and investment in strategic industries in times of war.

Keywords: *artificial intelligence, digital infrastructure, innovation, economic integration, human capital, readiness.*

Метою статті є оцінка готовності України до впровадження технологій штучного інтелекту (ШІ). У дослідженні детально розглядаються сильні та слабкі сторони та визначаються стратегічні заходи для прискореного впровадження нових технологій ШІ. Дослідження базується на аналізі глобальних індексів, урядових даних та професійних експертних оцінок. Були використані такі індикатори, як Індекс готовності до впровадження ШІ, що визначається Міжнародним валютним фондом, та Глобальний інноваційний індекс, складений Всесвітньою організацією інтелектуальної власності спільно з Корнелльським університетом та міжнародною бізнес-школою «Insead». Для поглибленого аналізу стану кожної із сфер відповідно до даних глобальних індексів додатково було проведено оцінку цифрової інфраструктури України, людського капіталу та нормативно-правової бази. За результатами аналізу визначено ключові перешкоди для розвитку ШІ в Україні, зокрема низький рівень інноваційної діяльності, відсутність належної законодавчої бази та скорочення інвестицій у дослідження в сфері ШІ. Варто відзначити, що Україна має додатковий виклик, адже цифрова трансформація в країні відбувається в умовах повномасштабної війни, що значно впливає на ситуацію і створює додаткові бар'єри для розвитку ШІ. Водночас технологічні інновації продовжують відігравати критичну роль під час війни, додатково підкреслюючи необхідність пришвидшеного впровадження ШІ. Попри наявні перешкоди, Україна має низку сильних сторін, які створюють потенційні можливості для майбутнього розвитку, зокрема висококваліфіковану ІТ-робочу силу та якісні цифрові технології, зокрема державні. Розроблено низку рекомендацій для стимулювання швидшого впровадження ШІ в Україні. Визначено, що стратегія розвитку має включати впровадження низки політик у сфері ШІ відповідно до міжнародних стандартів, посилення державної підтримки інноваційних технологій та пріоритизацію інвестицій у ШІ у таких галузях, як оборона та кібербезпека. Важливою передумовою є активізація інноваційної діяльності шляхом залучення більшої кількості венчурних інвестицій та стимулювання міжнародної дослідницької співпраці. Додаткове спрощення бюрократичних процедур для стартапів сприятиме більш активному залученню бізнесу до розвитку інновацій у сфері ШІ.

Ключові слова: *штучний інтелект, цифрова інфраструктура, інновації, економічна інтеграція, людський капітал, готовність.*

Problem statement. Artificial intelligence is increasingly affecting economic activities globally, providing new scope to increase the productivity of economic activity. However, opportunities to employ AI technologies in different countries are vastly different on the basis of economic conditions, the degree of technological development, whether or not there exists a regulatory environment, and other factors.

Ukraine has been in a unique situation as our digitalization is taking place against the background of a massive war. The military activities affect all economic factors, including damage to infrastructure, labour migration, changing investment interests, and general uncertainty of the business environment. This creates additional challenges for the development of high-tech

industries, in particular artificial intelligence, which may lead to lagging behind other countries that are developing AI in stable conditions. At the same time, digital solutions and automated systems become especially important during crisis periods when it is necessary to respond quickly to challenges.

Despite difficult circumstances, the development of AI remains a promising direction for Ukraine. Active implementation of AI tools can contribute to the optimization of economic processes. However, to realize this potential, appropriate conditions must be created. From such a point of view, a question arises: to what extent is Ukraine ready for the efficient implementation of AI tools within the realities of full-scale war – and what contributes to this process, and what prevents it. In order to establish this, we will analyze the present level of readiness of the country and articulate the steps for improving it.

Analysis of recent research and publications. Currently, few articles have been published that assess in detail the level of Ukraine's readiness for the launch of artificial intelligence tools. Therefore, the evaluation of Ukraine's readiness for the implementation of AI is based on the analysis of global and national indices, analytical reports of international organizations, and a number of scientific publications by Ukrainian scientists. Among the key sources of information is the Artificial Intelligence Preparedeness Index published by the International Monetary Fund in 2024. In addition, to confirm the trends formulated by the IMF study, the AI Readiness Index calculated by Oxford Insights was analysed.

However, the indices themselves do not contain a detailed analysis of internal factors that affect the development of AI in Ukraine. Additional studies were conducted to analyze each component of the index.

The state of development of digital infrastructure was assessed based on the works of Ukrainian scientists K. Kraus, N. Kraus, H. Pochenchuk, H. Rachynska, as well as a study on cybersecurity made by the DataDriven agency.

To analyze Ukraine's innovation activity, we used data from the Global Innovation Index (GII) of the World Intellectual Property Organization, a study by AI House in 2024, and Cabinet of Ministers' resolutions on the definition of the main directions of state support for innovative development.

Human capital and the level of preparedness of specialists in the field of artificial intelligence were analysed based on World Bank data, and research by Yu. Zaloznova and N. Azmuk, who take into account in their article in detail the level of human capital formation in Ukraine. In addition, the labour law of Ukraine and changes that took place after the start of the full-scale war in 2022 were analysed.

To find out the state of legislation that regulates the development and use of artificial intelligence, the latest news of leading electronic legal resources, Cabinet of Ministers' resolutions, and the White Paper of the Ministry of Digital Transformation of Ukraine were analysed.

Formulating the purposes of the article. The aim of the article is to assess Ukraine's level of readiness for the implementation of artificial intelligence, identify the main factors that determine its position in relation to other countries, analyze strengths and weaknesses, innovative activity, and legal support, and develop and strategic directions for strengthening the level of readiness for the implementation of AI tools in the future.

Presentation of the main research material. In 2024, the International Monetary Fund published for the first time the AI Preparedness Index of countries, based on 2023 data [1]. The index consists of four main components: digital infrastructure, the degree of innovation and economic integration, human capital and labour market policies, regulation and ethics.

Based on the data, Ukraine is among the emerging market economies group and has an overall index of 0,51, which is within the group average. If we split the index by components, we have the following situation, reflected in Table 1.

Ukraine generally demonstrates the middle level of readiness for the implementation of artificial intelligence.

However, the analysis of the components shows uneven development in different spheres. The most problematic for Ukraine are the degree of innovation and economic integration, as well as the component of regulation and ethics. The first indicator corresponds to the level of low-income countries, while the second component, although formally at the level of emerging market economies group, remains one of the lowest among the countries in this group. To better understand Ukraine's position in the global context, we compared the indicators with other countries in Table 2.

As we can see, the low values for the degree of innovation and economic integration, as well as the level of regulation and ethics mostly determine our gap to the leading countries, which include Singapore, Denmark, and the USA. The innovation component in Ukraine is 0,10, which is comparable to the indicators of Colombia, Cameroon, Tajikistan, and is significantly lower than the level of leading economies, where this index is at the level of 0,18.

There is also a gap in the component related to regulation and ethics. Ukraine's indicator here is 0,12, which only slightly exceeds the level of low-income countries such as Cameroon (0,09) and Tajikistan (0,07). This component is significantly higher for the advanced economies. For example, in Singapore, Denmark, and the USA the component is at the level of 0,22.

Table 1

Ukraine's AI Preparedness Index and its components, 2023

Component of AI Preparedness Index	Index	Group
Digital Infrastructure	0,14	Average coefficient level of the group of emerging market economies
Innovation and Economic Integration	0,10	Average coefficient level of the group of low-income countries"
Human Capital and Labour Market Policies	0,15	Average coefficient level of the group of emerging market economies
Regulation and Ethics	0,12	Average coefficient level of the group of emerging market economies
Total Index	0,51	Average coefficient level of the group of emerging market economies

Source: Compiled based on data from the International Monetary Fund [1]

Table 2

Comparison of Ukraine's AI Preparedness Index with other countries, 2023

Component of AI Preparedness Index	Ukraine	Advanced economies			Emerging market economies			Low-income countries	
		Singapore	Denmark	USA	Poland	Romania	Colombia	Tajikistan	Cameroon
Digital Infrastructure	0,14	0,21	0,20	0,19	0,17	0,15	0,12	0,06	0,07
Innovation and Economic Integration	0,10	0,18	0,18	0,18	0,14	0,15	0,10	0,09	0,09
Human Capital and Labour Market Policies	0,15	0,2	0,18	0,18	0,14	0,13	0,13	0,14	0,10
Regulation and Ethics	0,12	0,22	0,22	0,22	0,15	0,15	0,14	0,07	0,09
Total Index	0,51	0,8	0,78	0,77	0,6	0,58	0,49	0,37	0,34

Source: Compiled based on data from the International Monetary Fund [1]

The development of digital infrastructure and human capital in Ukraine is not lagging so critically. The level of this component is 0,14, which is close to the one of other developing countries such as Poland (0,17) and Romania (0,15), although it still falls behind advanced economies. A similar situation is observed in the component of human capital and labour legislation: its value for Ukraine is 0,15, which is typical for countries in this group, but lower than in the leaders of the ranking.

The trends of lagging behind in the innovation component are confirmed by the AI Readiness Index of governments, calculated by Oxford Insights [2]. As of 2024, Ukraine ranks 54th out of 188 countries in the world, with an average index score of 60,57. Among Ukraine's strengths, the study highlights the vision for sector development, data availability, and data effectiveness – while among the weaknesses are market maturity and actual innovation potential.

Let us consider in greater detail each of the given factors of Ukraine's preparedness for the introduction of artificial intelligence in order to better understand our strengths and weaknesses, as well as areas for improvement.

1. Digital Infrastructure. From a categorization perspective, digital infrastructure can be made up of two main components: hard infrastructure (hardware and network technologies) and soft infrastructure (digital services and platforms), which is noted in the works of K. Kraus, N. Kraus, H. Pochenchuk [3], H. Rachynska [4]. Hard infrastructure includes broadband internet (4G, 5G), cloud computing, cybersecurity, and Internet of Things (IoT) technologies. 4G technology is already widespread in Ukraine, and the implementation of 5G technology is planned by 2030, with pilot projects in Kyiv, L'viv, and Odesa. This technology is already widely used in Europe, the USA, and South Asia, which partly explains our gap to the leading countries from these regions in the digital infrastructure component.

Ukraine faces problems in the field of cybersecurity due to the lack of systematic funding. High risks due to war and relatively low level of knowledge in this area create unfavourable conditions for attracting investments [5]. At the same time, mass cyberattacks on critical infrastructure networks, telecommunications, and financial institutions since the beginning of the Russian invasion have increased awareness and led to constant demand generation for products and services in the cybersecurity field.

During the full-scale invasion period, the cloud security market grew to 1,7 million dollars, which is almost three times more compared to 2021. In 2029, the market is expected to grow further, to 5,5 million dollars (if the full-scale aggression continues).

Soft digital infrastructure covers state electronic services, digital identification (Mobile ID, Bank ID), business platforms, and financial technologies. It is developing rapidly in Ukraine. First of all, soft infrastructure is represented by "Diia" and "Diia.Business" services, which appeared relatively recently and allow entrepreneurs to receive government administrative services, submit documents, pay taxes, register businesses, as well as receive consultations and educational materials.

This development is unique and has attracted interest from many countries with developed digital infrastructure, especially Estonia and the USA [6].

The development of digital infrastructure in Ukraine creates conditions for faster implementation of artificial intelligence technologies in public administration and in the field of electronic services for individuals and businesses. One example of this is the expansion of the functionality of the "Diia" portal. The Cabinet of Ministers approved changes to the Regulation on the Unified State Web Portal of Electronic Services, which allow the use of artificial intelligence for automated user support [7]. This opens up the possibility for faster access to informational help and removes the need for manual handling of requests.

2. The level of Innovation and Economic Integration. In 2024, Ukraine dropped to 60th place in the Global Innovation Index (GII) from the World Intellectual Property Organization, losing five positions compared to the previous year [8]. This fall reflects worsening conditions for the development of innovation and technological entrepreneurship, an unfavourable trend in the framework of the nation's readiness for artificial intelligence introduction – and it additionally supports the comparatively low innovation score according to IMF data. The main reasons were a reduction in investment in research and development, a decrease in the number of scientific publications, and lower activity in international patenting. There is also a negative trend in digital development due to the decrease in fixed broadband internet coverage, which may be influenced by the war.

According to the AI House study, Ukraine ranks second among the Central and Eastern European nations in the quantity of AI companies after Poland [9]. Nonetheless,

owing to the war, it ranks last in the region in the size of attracted venture investments.

There are certain positive trends, however, such as the use of robotic technologies, which increased by 11,6%, demonstrating step-by-step automation of production processes. Another significant sphere of innovation development in Ukraine is creating a favorable environment for venture investment and the growth of technology start-ups.

Economic development related to artificial intelligence remains uneven. The lack of consistent funding, insufficient support for tech startups, and a weak venture ecosystem limit the possibilities for business scaling in this area [10].

In 2024, the Cabinet of Ministers approved an updated list of medium-term priority areas of innovation activity [11], which defines strategic sectors that need technological renewal and which should be the focus of innovation. These include the defence-industrial complex, critical infrastructure, healthcare, energy efficiency and energy saving, information and communication technologies, the agro-industrial complex, transport and transport infrastructure, environmental safety, and the space sector. These areas require technological modernization and can become the basis for targeted support of innovation, including the development of artificial intelligence.

3. Human capital and labour market policies. The main challenge for Ukraine regarding human capital is the war that Russia started on our territory. At least 12,654 civilians have died, according to official data from the UN Human Rights Monitoring Mission [12]. According to a report by the Ukrainian Human Rights Commission, 6,3 million refugees are currently living abroad. Most of them left after the start of the full-scale invasion in 2022. At the same time, 2,85 million Ukrainian citizens left or were deported to the aggressor country [13]. This has also caused a significant outflow of valuable specialists who could have helped implement artificial intelligence tools in Ukraine.

However, our country still has strong human capital, which stands out due to a high level of education and creativity, the desire for self-development and improvement of one's skills, including digital ones. This is mentioned, in particular, by Yu. Zaloznova and N. Azmuk in their article [14]. According to the World Bank data, Ukraine ranks relatively high in the Human Capital Index – 50th out of 157 countries [15]. The index measures the future potential of human resources (skills, knowledge, health) that children born today will have by the age of 18.

Ukrainian labour legislation underwent significant changes after the war began. The introduction of martial law led to the adoption of several legal acts that temporarily changed the rules of labour relations regulation [16]. It became easier to conclude employment contracts. In the same time, employers gained more options for transferring workers, also adding flexibility in contract suspension or termination. Working time rules were changed, while salary payment issues were regulated. Also, in 2022, Ukraine adopted the law "On the Reform of the State Employment Service", which introduced new employment support mechanisms, including retraining programs, subsidized hiring, and employment support for veterans and people who lost their jobs due to the war.

Special attention is given to adaption of Ukrainian labour legislation to European standards which is meant to ensure greater flexibility for employers and better social protection for workers. At the same time, the government is working on reforms aimed at retaining highly qualified personnel, including through the already mentioned retraining programs and encouraging taking up a career in the sphere of technology.

4. Regulation and ethics. A. Klyan notes that there is no clear regulatory definition of artificial intelligence in current Ukrainian legislation [17]. N. Pavlikha, S. Naumenko, and O. Korneliuk [10] also mention that the legal framework for regulating artificial intelligence is still not properly formed in Ukraine. For successful application and for optimisation of gains from the use of artificial intelligence technologies, it is necessary to develop relevant legislation. At the same time, such a legal framework should comply with international standards and ethical requirements, specifically the Artificial Intelligence Act and the General Data Protection Regulation (GDPR), adopted by the European Union.

The first moves in this direction have already been made. Thus, in 2020, the Cabinet of Ministers of Ukraine adopted the Concept for the Development of Artificial Intelligence in Ukraine. It envisages the harmonization of legislation based on international standards, the introduction of AI into the economy, public administration, education, medicine, defence, and other spheres, as well as the creation of digital infrastructure and cybersecurity. The concept also includes financing scientific research and startups, creating conditions for the processing of big data, introducing AI to the public sector to improve management efficiency. It also provides for international cooperation and attracting investments to form a competitive technological ecosystem. N. Pavlikha, S. Naumenko, and O. Korneliuk point out two main areas that require the most long-term investment and should stimulate development – education and science. Education is responsible for developing artificial intelligence – namely training qualified specialists for rebuilding Ukraine during the war and in the post-war period.

In 2024, the Ministry of Digital Transformation of Ukraine published a White Paper on AI regulation, which defines the approach to implementing legislation similar to the European Artificial Intelligence Act [18]. Also, a declaration on AI self-regulation was signed, which forms rules for IT companies. The document aims to create basic conditions for using artificial intelligence, especially in matters of responsibility, algorithm transparency, and ethical use of technologies. This mechanism is intended to fill the gap in legal regulation until the corresponding law is adopted, but it requires the participation of more companies from different business sectors [19].

Based on the results of the conducted analysis, we will group the strengths and weaknesses of Ukraine to assess its preparedness for the implementation of artificial intelligence tools and formulate the main strategies to improve conditions.

Strengths:

– strong human capital and IT education, qualified and creative specialists;

– active development of digital public services ("Diia", "Diia.Business");

– growing state support for artificial intelligence development (AI Development Concept, White Paper);

– simplified labour legislation;

– increased use of robotic technologies.

Weaknesses:

– lack of official legal regulation of AI;

– decrease in investment in research and development. Low level of scientific activity and patenting;

– insufficient level of cybersecurity at the moment due to a lack of investment;

– insufficient support for technology startups;

– weak venture ecosystem.

Among the most significant gaps is the lack of legal regulation of artificial intelligence, which to some extent slows down the development of the domestic market of AI solutions. To address this issue, it is necessary to quickly implement a single legal framework in accordance with international standards, primarily the EU AI Act. This will help to create stable conditions for investors, provide international cooperation, and create mechanisms for controlling the ethical application of AI technologies. The development of legal regulation will also help in speeding up the integration of Ukrainian businesses into the global market, making it possible for them to attract additional funding and access high-end development.

Insufficient financing remains the major cause of the postponement of artificial intelligence development in Ukraine. The war undermines the ability of the state to invest in high-technology sectors, and thus getting foreign financing is extremely necessary. One of the focus areas for Ukraine in the coming years could be the export of IT services, given the fairly high degree of qualification of Ukrainian specialists, most notably by selling the Ukrainian companies' products to foreign partners in return for finance and professional expertise (including patents for the utilization of successful state services, i.e., 'Diia'). It is important to attract international partners who can invest in Ukrainian AI startups in exchange for access to their technologies.

Another reasonable approach is the development of a state program for supporting AI technologies in strategic industries — for example, in defence, energy, and healthcare. The main idea of this strategy is that even with limited resources, Ukraine can direct limited investments into areas that simultaneously strengthen defence capabilities and create conditions for the development of innovative business. For example, implementing AI in the military sector (intelligence data analytics, drone control) will allow an increase in the efficiency of military operations and stimulate further development of the technologies themselves. Implementation could be possible through the creation of partnership programs between government structures (Ministry of Defence, Defence Intelligence of Ukraine) and private companies engaged in developing military AI solutions. Also, the use of AI technologies in the energy sector can help increase the energy efficiency of processes.

Ukraine lags behind developed countries in terms of innovation, which is largely the result of insufficient funding for research and weak support for startups. To change this situation, it is necessary to implement comprehensive measures. One possible mechanism is to create a state fund to support AI startups focused on attracting private investors and international technology companies. The state can provide partial funding in the form of grants or tax benefits for companies working in the AI field. It will also be important to simplify startup registration and the mechanisms for attracting venture investments by deregulating the investment market.

Another mechanism involves active integration of Ukraine into global technology chains. This can be achieved by creating national research hubs in partnership with international corporations (for example, Microsoft, Google, NVIDIA). The state can offer tax incentives to companies that involve Ukrainian specialists in international research projects.

Cyberattacks on the critical infrastructure remain one of the most urgent challenges for Ukraine under martial law. At the same, the challenge opens up new possibilities, as it initiates the development of the cybersecurity market and the potential for the creation of competitive Ukrainian goods in this field. The increase in the protection level of digital systems requires active investment in cybersecurity and the establishment of specialized research institutions. Ukrainian companies can use this trend to attract international funding by offering effective cybersecurity tools on both domestic and global markets.

The loss of highly qualified personnel due to war and emigration is a long-term threat that can significantly slow down the development of the tech sector. To preserve human capital, it is necessary to develop short-term retraining programs for specialists (especially for those who lost jobs due to military actions), and also to create favorable conditions for the return of high-skilled professionals from abroad. For this, it is necessary to build a friendly environment for IT specialists in Ukraine. The strategy can be implemented primarily through closer cooperation between the state and businesses, tax incentives for tech companies, and encouraging startups that invest in personnel development.

Conclusions. Ukraine has the middle level of preparedness for the implementation of artificial intelligence tools, which corresponds to the group of emerging market economies. At the same time, a detailed analysis of the index components shows uneven development of particular spheres. The main limitations for our country are the low level of innovation activity, which is comparable to the level of low-income countries, and the absence of proper legal regulation in the field of AI. In order to overcome the above challenges, it is necessary to implement a multifaceted approach. First and foremost, it is important to introduce a unified legal system for AI regulation in accordance with international standards, especially the European Union. This will help ensure a predictable regulatory environment, increase trust among investors, and support the development of Ukrainian AI companies globally.

Another priority should be the stimulation of innovation activity. The insufficient level of funding for research and development, low activity in patenting, and limited access to venture capital are the main factors that cause Ukraine to fall behind leading countries. To overcome these limitations, it is recommended to create a state fund to support AI startups, which will help attract private capital and also expand opportunities for international cooperation in research. It is necessary to encourage foreign venture investments by simplifying bureaucratic investment barriers, which is very important considering the limited state's financial resources during full-scale war. Strategic investment in key sectors that can become drivers of technological growth will play a crucial role in the long-term perspective. Such areas include the

defence industry, energy, and the medical sector. During wartime, investment in defence technologies, especially in unmanned drone systems, automated analytical platforms, and cybersecurity, can both ensure military advantage and create technological potential for the civilian sector.

Ukraine has certain strong sides that create the prerequisites for improving the situation. One of the key advantages is a rather high level of human capital: we have a significant number of highly qualified specialists in the field of information technology, as well as considerable scientific potential. Ukrainian IT specialists have proven themselves strong in the international market thanks to their high competence, adaptability, and ability to work on complex innovative projects. It is also important that the Ukrainian population has a fairly high level of digital skills in general, which creates additional opportunities for faster implementation of artificial intelligence in different areas of the economy. However, attention should be paid to preserving this human capital. The loss of qualified personnel due to war and economic instability is a serious threat to the future technological development of the country.

References:

1. International Monetary Fund (2023), AI Preparedness Index. Available at: https://www.imf.org/external/datamapper/datasets/AIPI.

2. Oxford Insights (2024), The Government AI Readiness Index. Available at: https://oxfordinsights.com/ai-readiness/ai-readiness-index

3. Kraus, K., Kraus, N., Pochenchuk, H. (2021), Tsyfrova infrastruktura v umovakh virtualizatsii ta novoi yakosti upravlinnia ekonomichnymy vidnosynamy [Digital Infrastructure in the Conditions of Virtualization and New Quality of Economic Relations Management], *Efficient Economy*, vol. 9. DOI: https://doi.org/10.32702/2307-2105-2021.9.82

4. Rachynska, H. (2022), Zasady tsyfrovoi ekonomiky v infrastrukturi suchasnoho biznesu [Principles of Digital Economy in Modern Business Infrastructure], *Economy and Society,* vol. 44. DOI: https://doi.org/10.32782/2524-0072/2022-44-107

5. DataDriven (2025), Cybersecurity Market Review. Available at: https://itukraine.org.ua/files/Ukraine-Cybersec-Market-Review.pdf

6. Fedorov, M. Rozvytok anahohiv "Dii" [Development of "Diia" Analogues], Suspilne Media. Available at: https://suspilne.media/375305-ponad-pat-krain-hocut-zaprovaditi-u-sebe-analog-dii-fedorov

7. Cabinet of Ministers of Ukraine (2024), Pro vnesennia zmin do Polozhennia pro Yedynyi derzhavnyi veb-portal elektronnykh posluh [On Amending the Regulation on the Unified State Web Portal of Electronic Services]: Resolution No. 693 of June 13, 2024. Available at: https://zakon.rada.gov.ua/laws/show/693-2024-%D0%BF#Text

8. World Intellectual Property Organization (2024), Global Innovation Index: Ukraine Ranking. Available at: https://www.wipo.int/gii-ranking/en/ukraine

9. AI House (2024), AI Ecosystem in Ukraine. Available at: https://aihouse.org.ua/research/ai-ecosystem-of-ukraine-talent-companies-education

10. Pavlikha, N., Naumenko, N., Korneliuk, O. (2023), Rozvytok ta rehuliuvannia shtuchnoho intelektu v Ukraini u voiennyi ta povojenyi periody: suchasni tendentsii ta perspektyvy [Development and Regulation of Artificial Intelligence in Ukraine during Wartime and Post-war Periods: Current Trends and Prospects]. *Digital Economy and Economic Security,* vol. 8, pp. 105–111. DOI: https://doi.org/10.32782/dees.8-18

11. Cabinet of Ministers of Ukraine (2024), Deiaki pytannia vyznachennia serednostrokovykh priorytetnykh napriamiv innovatsiinoi diialnosti haluzevoho rivnia [Some Issues of Defining the Medium-Term Priority Areas of Innovation Activity at the Sectoral Level]: Resolution No. 787 of April 5, 2024. Available at: https://zakon.rada.gov.ua/laws/show/787-2024-%D0%BF#Text

12. UN Human Rights Monitoring Mission in Ukraine (2025), Three-Year Report on the Full-Scale Invasion of Ukraine. Available at: https://hrmmu-3-year-update.my.canva.site/ukrainian

13. Ukrainian Center for Human Rights Protection (2024), Information on the Humanitarian Situation in Ukraine. Available at: https://uhrc.org.ua/

14. Zaloznova, Yu., Azmuk, N. (2022), Liudskyi kapital Ukrainy v umovakh viiny: vtraty ta zdobutky [Ukraine's Human Capital During War: Losses and Gains], Economy and Society, vol. 38. DOI: https://doi.org/10.32782/2524-0072/2022-38-59

15. Overview of the Human Capital Index Ranking (2018), Radio Svoboda/ Available at: https://www.radiosvoboda.org/a/news-svitovyi-bank-liudskyi-kapital/29537855.html

16. Semeniuk-Prybaten, A., Mashkov, K. (2023), Trudovi vidnosyny v umovakh viiny: novi zminy [The Land Market: Achievements in the Conditions of War], *Juridical scientific and electronic journal,* vol. 6. DOI: https://doi.org/10.32782/2524-0374/2023-6/54

17. Klian, A. (2023), Pravove rehuliuvannia shtuchnoho intelektu v Ukraini ta sviti [Legal Regulation of Artificial Intelligence in Ukraine and the World], GOLAW. Available at: https://golaw.ua/ua/insights/publication/pravove-regulyuvannya-shtuchnogo-intelektu-v-ukrayini-ta-sviti

18. Lexinform (2024), News on Ukrainian Legislation. Available at: https://lexinform.com.ua/v-ukraini/zakon-pro-shtuchnyj-intelekt-analogichnyj-yevropejskomu-ai-act-z-yavytsya-v-ukrayini

19. Ministry of Digital Transformation of Ukraine (2024), Declaration on Self-Regulation in the Field of Artificial Intelligence in Ukraine. Available at: https://thedigital.gov.ua/storage/uploads/files/page/community/docs/Декларація_про_саморегулювання_у_сфері_штучного_інтелекту_в_Україні.pdf

Стаття надійшла до редакції 03.03.2025
Стаття опублікована 15.04.2025