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FORMATION OF BUSINESS ENTITIES' COMPETITIVE ADVANTAGES THROUGH THE DEVELOPMENT OF ENTREPRENEURIAL ECOSYSTEMS IN THE MODERN ECONOMY

Abstract

Introduction. *The formation of competitive advantages of business entities under modern conditions takes place in an environment of high economic uncertainty caused by global instability, the transformation of the world economic order, intensified globalization, digitalization, and digital transformation. The erosion of traditional market mechanisms and business models necessitates the search for new tools to ensure enterprise competitiveness. In this context, the development of entrepreneurial ecosystems is considered one of the key components of a contemporary economic model and an effective response to current challenges.*

Methods. *The study applies a combination of general scientific and special research methods, including analysis and synthesis, induction and deduction, systemic and structural-logical approaches, as well as comparison, grouping, and generalization methods. The information base of the research consists of scientific works of domestic and foreign scholars, analytical reports of international organizations, statistical data, global innovation and entrepreneurial ecosystem rankings, and open-source materials.*

Results. *The article examines the role of entrepreneurial ecosystems in the formation of competitive advantages of business entities. Key mechanisms through which ecosystems enhance enterprise competitiveness are identified, including the consolidation of financial, technological, and informational resources, knowledge exchange, integration of digital technologies, reduction of innovation risks, and acceleration of innovation implementation processes. The positions of national enterprises and the state in international ecosystem development rankings are analyzed, which makes it possible to objectively assess the current state of their functioning and identify major development constraints.*

Discussion. *The obtained results have practical significance for developing enterprise strategies aimed at ensuring*

sustainable competitive advantages through participation in entrepreneurial ecosystems and serve as a theoretical basis for further research in the field of digital and innovation-driven economics.

Keywords: *competitive advantages, competitiveness, entrepreneurial ecosystems, economic entity, contemporary economic model, digitalization, globalization.*

Introduction.

In the context of modern uncertainty, when the old-world order is collapsing and the new one has not yet been established, one of the paths for modern enterprises, both foreign and domestic, is the formation of entrepreneurial ecosystems. Such a structure allows enterprises to distribute among themselves the risks and losses from innovative activity, as well as facilitates the implementation and application of new technologies.

The formation of ecosystems is also stimulated by globalization processes, as they contribute to the dissemination of effective solutions and technologies at a more global level, expanding competition and increasing access to innovative practices. For national Ukrainian enterprises, the situation is complicated by the war, which stimulates unification into entrepreneurial ecosystems in order to maintain market positions and avoid bankruptcy.

In addition, there is the necessity to implement new digital technologies and to raise the technological level of national enterprises to global standards, which requires significant resources and efforts. The development of entrepreneurial ecosystems for national enterprises is not only a convenient tool for maintaining a high level of competitiveness, but also critically necessary for the implementation of innovations, the latest technologies, and the support of sustainable enterprise development.

Thus, the study of the issue of enterprise consolidation to obtain mutual benefits and the joint implementation of innovative projects that ensure an increase in the level of competitiveness of all participants is relevant. Additional justification for the study is provided by the fact that such ecosystems are one of the few tools that allow enterprises to continue development and build potential even under unstable conditions for developing countries that are limited in financial and resource capabilities, such as Ukraine.

At the same time, within the context of the studied topic, an important task is the development of recommendations and ways to create a favorable environment for such ecosystems, which would support their development rather than hinder it.

Analysis of recent sources and publications.

The study of how a modern enterprise can form sustainable competitive advantages through entrepreneurial ecosystems has been conducted by both national and foreign scholars. Among those who have studied this and related topics, such domestic authors as Dubnytskyi V. and Pavlova V. [1] can be highlighted; in their works, they analyzed the relationship between the level of competitiveness of a modern enterprise and its participation in entrepreneurial ecosystems. The authors note that it is precisely the ecosystem approach under modern conditions that has a significant impact on the competitiveness of national enterprises.

Other scholars who have researched this topic are Boichenko K. S. and Serhieiev M. M. [2]. They studied the structure and elements of digital entrepreneurial ecosystems, their impact on the level of enterprise innovativeness, economic growth, and the ability to maintain a high level of competitiveness. The authors show that modern ecosystems open new opportunities for participants in terms of digital and innovative development.

Alongside them, Chernii I. and Panukhnyk O. [3] made a contribution to the study of the formation of competitive advantages through entrepreneurial ecosystems. They examined digital entrepreneurial ecosystems, identified key determinants of their functioning, and showed how participation in such ecosystems allows business entities to be more adaptive, reduce costs, and strengthen their market positions, thus forming competitive advantages.

This topic was also studied by Stroiko T. V. and Konstantynov V. A. [4], who analyzed the startup

ecosystem of Ukraine, the role of startups as a driver of economic growth, and the use of global indices to assess ecosystem effectiveness.

In addition, this topic was researched by such domestic scholars and scientists as Sokhan I. V., Popovskyi V. H. [5], as well as Sarai N. I., Hryhoruk A. A., Lytvyn L. M. [6], who in their works supplemented and expanded the study of the formation of enterprise competitive advantages through entrepreneurial ecosystems, in particular in the context of digitalization and the integration of innovative technologies.

Purpose.

The main purpose of the article is a deeper and more systematized study of the issue of forming competitive advantages in modern entrepreneurial ecosystems. At the same time, the paper aims to identify the main factors that help a modern enterprise, by participating in such ecosystems, to increase its level of competitiveness. Based on the conducted research, an additional objective is to determine the ways by which enterprises, using modern technologies, can counteract current challenges, build a sustainable foundation for further development, and restore their own and national potential under conditions of uncertainty and post-war instability.

Research methodology.

The methodological basis of the research consists of a set of general scientific and special methods for understanding economic processes. To determine the essence of entrepreneurial ecosystems and competitive advantages, methods of analysis and synthesis were applied, which made it possible to systematize scientific approaches to the studied issues. The methods of induction and deduction were used to form theoretical generalizations and conclusions regarding the impact of the ecosystem approach on enterprise competitiveness.

Systemic and structural-logical approaches made it possible to consider entrepreneurial ecosystems as complex multilevel formations that include various participants and the relationships between them. Methods of comparison and generalization were applied to analyze international experience in the development of entrepreneurial ecosystems and to assess the positions of national enterprises in global rankings of innovative and ecosystem development. The information base of the study consisted of scientific publications, statistical data, analytical materials of international organizations, and specialized reports.

Results.

In the 21st century, under conditions of rapid development of digital technologies, innovative inventions, and globalization processes – when science and technology are advancing at an intense pace and technological solutions spread around the world almost instantly – modern enterprises are forced to constantly seek effective mechanisms to maintain and enhance their competitiveness. One of the most effective paths in this direction is enterprise participation in the system of modern entrepreneurial ecosystems. Such ecosystems unite various enterprises, startups, research institutions, and financial institutions, which makes it possible to create interconnected networks of cooperation for the exchange of knowledge, technologies, and resources.

Participation of an enterprise in such an ecosystem allows not only easier adaptation to external challenges and risks of the modern market, but also significantly facilitates the process of implementing new technologies and the digitalization of business processes, which directly increases the overall competitiveness of the enterprise and its capacity for sustainable development.

It is especially important to note that participation in entrepreneurial ecosystems is extremely beneficial for startups and small enterprises, which are the most vulnerable at the initial stages of their activities. These enterprises often face significant risks when entering the market, a lack of resources and experience, as well as a shortage of necessary technologies. Therefore, participation in an ecosystem

allows such business entities to gain access to financial support, expert consultations, technological solutions, and infrastructural support, which significantly reduces the probability of failure and increases the chance of successful implementation of innovative projects.

To assess the performance results of enterprises within entrepreneurial ecosystems and the effectiveness of startup projects under modern conditions, comparative index evaluation is mostly used. This method makes it possible to objectively compare an enterprise's performance with other market participants and competitors in order to determine whether the management system is properly structured, as well as to identify factors that hinder development and the achievement of required indicators.

Comparative evaluation involves analyzing an enterprise's activities in comparison with similar market participants, as well as with significant relevant enterprises in the national and international context, which makes it possible to identify key determinants of success and to formulate universal recommendations for improving managerial decisions.

To ensure the objectivity and reliability of such comparisons, enterprises should adhere to a number of principles and approaches:

– Comparison of relevant enterprises using an ordinal approach, that is, ranking and comparing key performance indicators. This makes it possible to build a system of indices and rankings that takes into account not only economic, but also social and technological aspects of enterprise functioning.

– Observance of comparability in evaluation, that is, the use of unified assessment methodologies to compare enterprise performance results with national and international competitors. This makes it possible to identify key success factors that are universal and applicable under different conditions.

– Multivector and in-depth analysis, which involves comprehensive assessment of both statistical indicators (objective data on actual performance results) and expert evaluations (subjective but substantiated on the basis of experience and forecasts). This approach allows an enterprise not only to analyze current results, but also to forecast future conditions and potential risks.

– Focus on official and verified sources, which ensures greater reliability of the analysis, minimizes the risk of bias and data distortion, and makes the enterprise strategy more relevant and reliable.

– Scientific, economic, and financial substantiation of measures, meaning that strategy development should be carried out with the involvement of specialists from relevant fields – economists, financiers, startup managers, or crisis managers. This helps reduce risks, increase predictability of events, prevent undesirable consequences, and contributes to more accurate forecasting of enterprise development.

Adherence to these principles allows an enterprise to build an effective, flexible, and efficient strategy, evaluate the results of its activities, and form a unique management approach for a specific business entity, taking into account its specifics and market characteristics [3; 4].

In addition to the methodology for evaluating results, it is important to consider the characteristics of modern entrepreneurial ecosystems that determine their effectiveness and influence on the competitive advantages of participants:

– Planning and management of activities based on in-depth analysis and forecasting. Modern technologies make it possible to take into account a larger number of factors, use analytical models, and optimize managerial decisions to form competitive advantages.

– Dynamism and the ability to adapt quickly. The modern market is characterized by high volatility, rapid technological changes, and unpredictable fluctuations in demand. Dynamism provides enterprises with offensive potential and the ability to occupy new positions, while adaptability allows them to maintain existing positions and reduce the negative impact of external factors.

– Automation, robotization, and digitalization of processes. These technological solutions provide significant competitive advantages but require high capital investment, technical competencies, and a systemic approach to implementation.

– Formation of shared competitive advantages with a customer-oriented focus. Enterprises unite to counteract stronger market players, supporting each other and creating a stable environment for

development and innovation.

– Shared information space. Information interconnectedness allows ecosystem participants to quickly exchange data, identify potential threats, and make joint decisions before they turn into critical problems.

– Flexibility of the system. Flexibility, together with the diversity of participants, makes it possible to efficiently allocate resources, reduce risks, and obtain mutual benefits from participation in the ecosystem, supporting business stability and resilience.

Thus, entrepreneurial ecosystems provide a comprehensive toolkit for forming and maintaining the competitive advantages of enterprises, enable the integration of innovations, optimize managerial processes, and create conditions for sustainable development in an unstable and dynamic market environment.

At the same time, it should be noted that although modern ecosystems provide their participants with significant advantages, they also have certain drawbacks inherent in any system. The main difficulties of such associations are the complexity of coordination and interaction among participants, since each of them is an equal entity, and the modern world is characterized by high dynamism and rapid changes. As a result, situations periodically arise in which it is impossible to reach a unanimous decision, and consequently, the necessary action or decision may be delayed or even remain unadopted due to the presence of different viewpoints among participants.

It should also be noted that large ecosystems have a limited nature: the greater the number of participants and the wider the range of interactions, the more cumbersome and inflexible the system becomes. Under modern conditions, this can negate all other advantages provided by participation in an ecosystem. For the effective functioning of an entrepreneurial ecosystem, each of its participants must be proactive, capable of making compromises, interested in a common result, flexible in the face of change, and adaptive to new conditions. Such an approach makes it possible to compensate for the complexity of the system itself and the absence of a single regulator, while simultaneously maintaining stability and efficiency of activities [1].

In addition, an important trigger that has changed the ways enterprises are managed and their competitiveness has been digital technologies and artificial intelligence technologies. These technologies provide enterprises with significant advantages but require substantial resources and investments. This is precisely what stimulates smaller national enterprises and businesses to join economic and entrepreneurial ecosystems. Large transnational corporations have sufficient resources to independently implement advanced technologies, whereas smaller enterprises are forced to seek collective solutions to maintain competitiveness and market stability.

Thus, entrepreneurial ecosystems, which have gained popularity during the first quarter of the 21st century, act as a natural response and a means of survival for smaller market participants, allowing them to preserve their level of competitiveness and gain access to new technologies.

An entrepreneurial ecosystem functions similarly to a social structure: it unites legally independent players into a common environment, where each participant makes their own contribution while receiving both individual and collective benefits. Participants in such ecosystems have different needs and interests related to participation in the system. An ecosystem may include manufacturing enterprises, developers of digital solutions, scientific institutions, government bodies, foreign partners, and other entities [7].

One of the most widespread types of entrepreneurial ecosystems is digital ecosystems, which are focused on the development of digital technologies and the implementation of innovative solutions, including artificial intelligence technologies, which began to be actively applied starting in 2018. The popularity of such ecosystems is due to the fact that digital technologies and artificial intelligence significantly increase labor productivity, automate business processes, and save time. Enterprises that use digital technologies gain substantial competitive advantages compared to those that do not apply them.

For a deeper understanding of the research topic, it is important to identify and classify modern

ecosystems. The relevant classification is presented in Fig. 1, which makes it possible to systematize different types of ecosystems according to their technological orientation, the level of participant integration, and the degree of use of digital solutions.

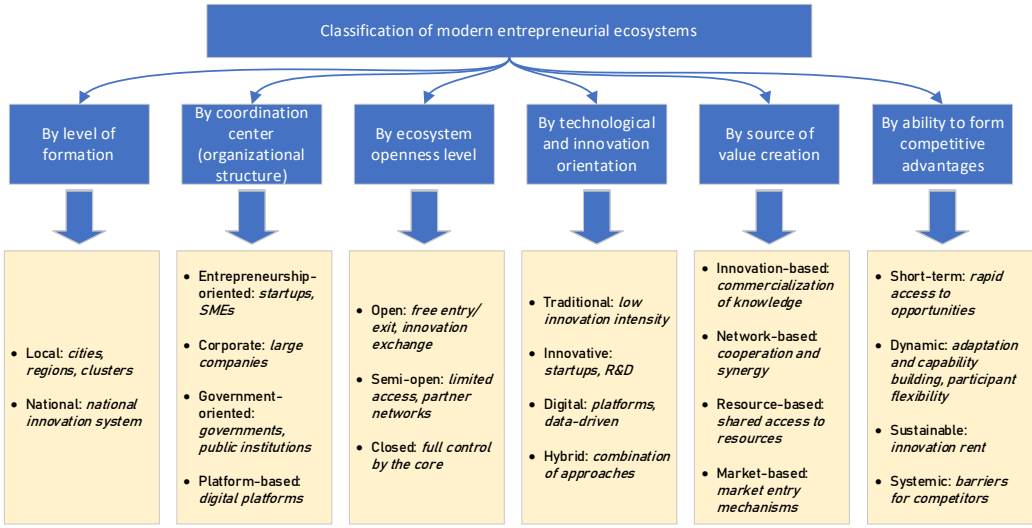


Figure 1. Classification of Modern Entrepreneurial Ecosystems*

**Source: compiled by the author.*

Such a classification is necessary to determine specific mechanisms for forming competitive advantages in each particular case and for further planning of enterprise development strategies under conditions of participation in the relevant ecosystem.

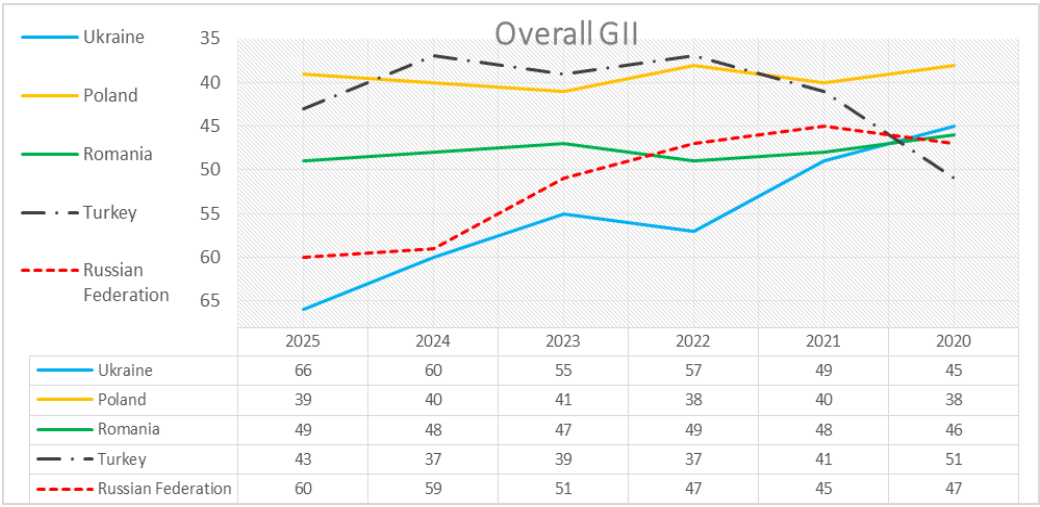
Thus, based on the visualization presented in Figure 1, it can be noted that modern entrepreneurial ecosystems are quite branched and multivector in nature. This makes it possible to unite enterprises and other participants depending on their needs and demands. The effectiveness of such associations is due to the fact that participants with identical or related needs form common goals, and each of them is interested in achieving the maximum result both for themselves and for the entire ecosystem [8].

It should also be noted that the modern world is a world of computing technology, digital technologies, and cloud solutions. This creates conditions in which competition shifts from the traditional dimension of «enterprise versus enterprise» where success was determined mainly by organizational structure and product quality, to a new reality – competition between strong market players and weaker ones that have united into relevant ecosystems for survival and strengthening competitiveness. At the same time, ecosystems are also capable of competing with each other, which reflects the cyclical and dynamic nature of market processes, modified by temporal trends and technological innovations [9].

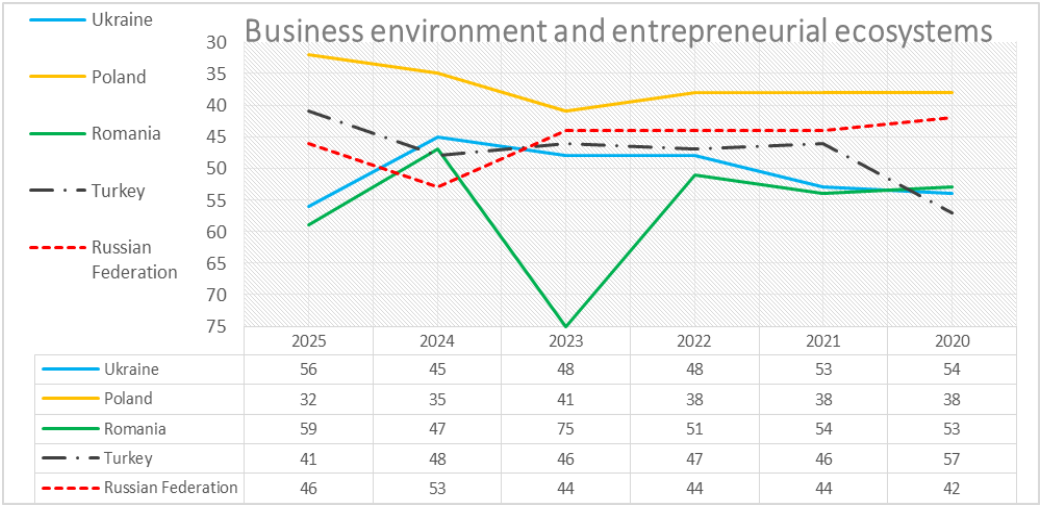
An important aspect of the topic is also the analysis of ecosystem development in Ukraine. Data for various countries of the world are presented in the report of the World Intellectual Property Organization, and the results for Ukraine are shown in Figure 2.

Figure 2 shows that the overall situation with the innovative development of enterprises in the national economy deteriorated due to unfavorable conditions for the development of «high technologies» and the ongoing aggression of the russian federation against Ukraine. However, the business environment and the level of development of entrepreneurial ecosystems remained quite stable and even demonstrated some improvement during the first three years. The main decline in the GII indicator

occurred in 2022 after the start of the full-scale invasion by the russian federation and has continued to worsen since then.



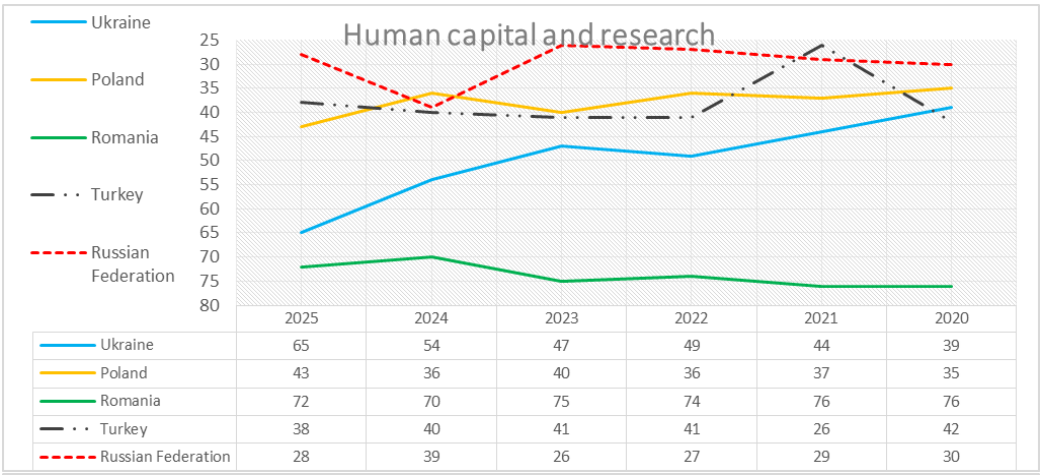
	2025	2024	2023	2022	2021	2020
Ukraine	66	60	55	57	49	45
Poland	39	40	41	38	40	38
Romania	49	48	47	49	48	46
Turkey	43	37	39	37	41	51
Russian Federation	60	59	51	47	45	47



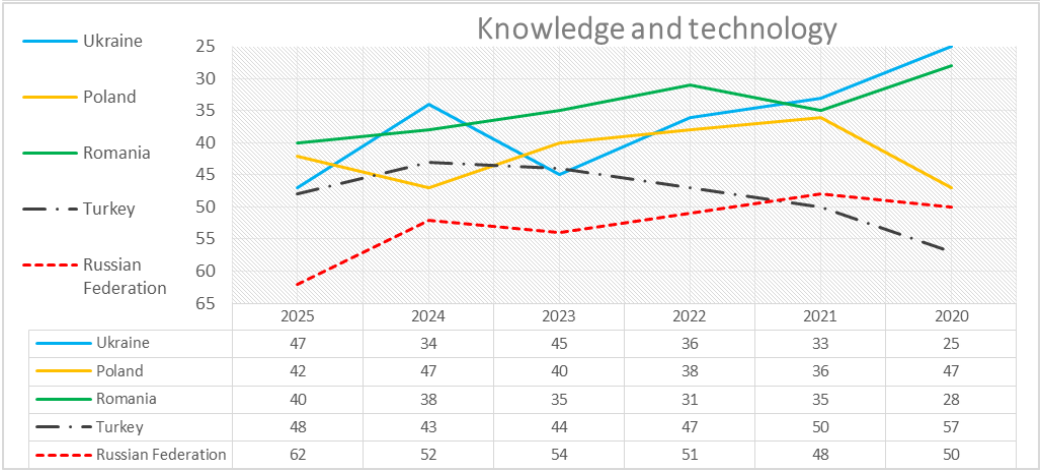
	2025	2024	2023	2022	2021	2020
Ukraine	56	45	48	48	53	54
Poland	32	35	41	38	38	38
Romania	59	47	75	51	54	53
Turkey	41	48	46	47	46	57
Russian Federation	46	53	44	44	44	42

Figure 2. Business Environment and the Overall Indicator of Environmental Innovativeness*
**Source: compiled by the author based on data from the Global Innovation Index [10-15].*

For a more precise understanding of the reasons for this decline, it is also important to analyze such indicators as human capital and the level of knowledge and technologies, which directly affect innovativeness. These data are presented in Figure 3.



	2025	2024	2023	2022	2021	2020
Ukraine	65	54	47	49	44	39
Poland	43	36	40	36	37	35
Romania	72	70	75	74	76	76
Turkey	38	40	41	41	26	42
Russian Federation	28	39	26	27	29	30



	2025	2024	2023	2022	2021	2020
Ukraine	47	34	45	36	33	25
Poland	42	47	40	38	36	47
Romania	40	38	35	31	35	28
Turkey	48	43	44	47	50	57
Russian Federation	62	52	54	51	48	50

Figure 3. Human Capital, Knowledge, and Technologies of the National Environments of Ukraine and Its Nearest Neighbors*

**Source: compiled by the author based on data from the Global Innovation Index (World Intellectual Property Organization, 2020–2025).*

As can be seen from Figure 3, human capital, and along with it the overall level of knowledge, skills, and competencies in the national space, began to deteriorate as early as 2020. The ongoing aggression of the Russian Federation only worsened this indicator and accelerated the decline. However, although Ukraine has lost part of its specialists and, accordingly, part of its potential, it still remains competitive among its neighbors in terms of the level of knowledge and skills of the population.

Conclusions and prospects.

The formation of competitive advantages for modern enterprises under conditions of instability, globalization, digitalization, and digitization remains a critically important task. The conducted research has shown that modern entrepreneurial ecosystems are an effective tool that allows enterprises to counteract stronger players and maintain competitiveness even under difficult conditions.

Ecosystems integrate various participants – manufacturers, developers of digital solutions, researchers, government bodies, and foreign partners – which facilitates the exchange of knowledge,

resources, and technologies. This enables enterprises to quickly adapt to changes, implement innovations, increase the digitalization of production processes, and effectively distribute risks.

Digital technologies and artificial intelligence within such ecosystems provide significant advantages in automation and productivity growth; however, their implementation requires substantial resources. That is why smaller enterprises unite within business ecosystems to preserve competitive positions and remain viable in the market.

An analysis of the situation in Ukraine indicates that despite military aggression and limited resources, entrepreneurial ecosystems remain an important resource for the development of the national economy. They contribute to supporting the business environment, stimulate innovative activity, and make it possible to partially compensate for losses of human capital.

Thus, modern entrepreneurial ecosystems are not only a platform for interaction among market participants but also a mechanism for ensuring resilience, adaptability, and long-term competitiveness of enterprises. They make it possible to form shared competitive advantages, increase technological intensity of activities, and create conditions for the rapid implementation of innovations. For Ukrainian enterprises, the ecosystem approach remains a key tool for modernizing production and supporting economic stability, forming the foundation for innovative and competitive development.

In the long term, it is advisable to deepen the theoretical and methodological foundations for the formation of competitive advantages of economic entities within the entrepreneurial ecosystems of the latest economic model. Given the growing instability of the global environment, digitalization, and intensifying technological competition, it is important to develop applied mechanisms for assessing the effectiveness of ecosystem interaction and its impact on the competitiveness of enterprises. Particular attention should be paid to studying the institutional prerequisites for the formation of sustainable ecosystems capable of ensuring the transfer of knowledge, technology, and human capital, as well as developing models for the adaptation of Ukrainian enterprises to global value chains.

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