African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

INNOVATION PARK AND ITS ROLE IN STIMULATING ECONOMIC GROWTH

Krysovatyy, I.[1], Rozumnyi, O.[2], Ivashkiv, Y.[3], Aliiev, E.[4], and Furyk, Y.[5]
[1,2,3,4,5] *Department of Entrepreneurship and Trade, West Ukrainian National University, Ternopil, Ukraine.*
[1]*i.krysovatyy@wunu.edu.ua*
[2]*razumnyy.a@ukr.net*
[3]*ivashkiv2023@ukr.net*
[4]*Aliev_88@ukr.net*
[5]*furyk2024@ukr.net*

ABSTRACT

Purpose: The study aims to analyse the functionality of innovation parks as part of economic development.

Design/Methodology/Approach: The research utilised a purposive sampling technique to select countries that demonstrate successful innovation strategies, ensuring various economic contexts and approaches. Data were collected through secondary research, which included government reports, academic articles, statistical data from international organisations, and case studies of innovation parks and high-tech enterprises. Initially, a descriptive analysis summarised the data by critical themes such as innovation policy and government support. Thematic analysis was used to explore patterns related to the commercialisation of innovations and legislative regulation.

Findings: The rapid development of new technologies, globalisation of economic cooperation, and limited national budgets facilitate an intensification of the role of innovative solutions and strategies. These factors also lead to actualising regional and subregional scientific, technical, and creative cooperation.

Research Limitation/Implications: The authors have analysed the prospects for developing and functioning innovation parks in Ukraine and worldwide and identified the specifics of their industrial, technological, and scientific formations.

Social Implication: Innovation parks play a critical role in this process, driving the development and commercialisation of new products and stimulating economic growth and social progress.

Practical Implication: This model promotes benefits for the industry, such as technological integration, investment in human capital, and innovation systems, thereby increasing competitiveness in the global market. Innovation parks are integral to this model, intensifying the development and commercialisation of innovative products and optimising production processes.

Originality/ Value: The study's novel aspects lie in its exploration of innovation parks' functionality, its analysis of their role in economic growth, its examination of legal and financial support for innovation, and its proposal of practical strategies for Ukraine's economic development.

Keywords: *Digital economy. ecosystem. entrepreneurship. innovation park. market*

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

INTRODUCTION

The high socio-economic progress of developed countries is driven by intensive innovation activity and the concentration of integrated efforts to improve the innovation sector. For Ukraine, the effective development of innovation activities, intensified by martial law, is yet to be typical. At the same time, the trajectory of Europe compels the adoption of the growth principles in the implementation of the principles of leading European countries' growth in the national economic field, adaptation of the legal framework to international requirements, and integration into the global scientific environment.

Many scholars see innovation as the main direction of scientific research (Krysovatyy, 2024; Chernova & Doroshenko, 2023; Kublikova & Kuznetsova, 2022). Some studies (Mazur & Korol, 2023) highlight the basic principles of effective innovation development in developed countries and ways to adapt them to Ukraine's realities. These studies also outline the directions of international cooperation to stimulate the development of innovation and related infrastructure.

Kovalenko (2022), Hryshchenko, and Shpak (2023) have studied the issue of innovation parks. The authors are focused on building a contemporary economic development model by implementing a multifactorial complex to improve the regulatory framework, form an innovative infrastructure, and introduce the latest forms of innovative formations. According to the scholars, this approach will ensure the effectiveness of presenting creative ideas in the industrial sphere.

Many scholars are focused on analyzing the practice of functioning of various forms of innovative companies in developed countries and also in Ukraine, including research parks and incubators (Karpenko et al., 2022). The authors also identify their functionality (Reznikova et al., 2022) and analyze the relevant regulatory and educational support (Sorochan, 2022). Ukrainian scholars are generally convinced that there is no other way for Ukraine but innovative development. This is reflected in the introduction of innovations, the development of innovative infrastructure, and the creation of technology parks. In this way, Ukraine will be able to build a prosperous state and ensure its economic security.

Although the significance of scientists' achievements is not undermined, we should note that the overall innovative transformation of the national economic field requires in-depth scientific analysis and practical developments. They can stimulate the growth of the state's overall investment potential and create additional incentives for innovative progress (Boiko, 2021). Therefore, despite the indisputable importance of the work of scientists in Ukraine, the issues of developing the functionality of innovation parks will be set up after the post-war recovery period and identifying their role in the system of national economic growth remain open. Particular attention should be paid to the need to use the practical achievements of developed countries as part of innovative development concepts. This study aims to substantiate the functionality of innovation parks when it comes to stimulating economic growth. Within the framework of this goal, it is necessary to identify the essence of the innovation parks phenomenon and analyze modern approaches to their definition at the stage of building

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

innovation infrastructure in current realities based on the study of successful foreign strategies for innovative development.

LITERATURE REVIEW

The analysis of the latest scientific research and specialised publications leads to the opinion that the intensification of the development of innovative business structures is a natural stage of the effective development of economic systems. Many modern scientists are studying the issue of innovation parks. There are numerous publications on this topic in specialised scientific journals.

Recent works focus on developing and optimising innovation infrastructure for targeted parks. Among the overall volume of scientific research results, it is worth highlighting the studies that investigate the following aspects:

- the role of innovation parks in optimising the functioning of socio-economic systems (Volosheniuk et al., 2020);
- the relevance of the issue in the globally integrated environment (Postryhan, 2020);
- the fundamental sectoral legislative decisions and regulations that guide the socio-economic sphere within the innovation concept (Sandoval Hamón et al., 2022);
- the efficiency problems in ensuring the national economy's innovative development (Fioravanti et al., 2023; Phongthiya et al., 2022).

Particular researchers (Mineiro et al., 2021) identify and analyse the most appropriate innovative business forms, particularly technology and industrial parks, business incubators, clusters, and technopolises. Some scholars (Lam et al., 2021) see the primary goal of innovation structures' activity in promoting economic development by stimulating practical cooperation between science and business in the context of globalisation and economic integration. Some authors (Akkaya & Tabak, 2020) discuss the content and essence of innovation parks. Other authors (Yun et al., 2020) highlight the issues of the investment and innovation model of Ukrainian economic development.

This article does not undermine the significance of researchers' scientific and practical achievements in the studied area. However, it identifies the need to expand the research framework on the issues of the creation and operation of innovation actors in general and innovation parks in particular. The theoretical framework and practical experience of research and technology park operations in Ukraine and abroad require modern approaches to generalisation and helpful improvement. At the current level of economic development and during the post-war recovery period, innovative activity should be seen as one of the most effective tools for intensifying entrepreneurship development and strengthening the competitiveness of market players.

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

MATERIALS AND METHODS

This study's theoretical and methodological background includes the paradigm of economic growth theory and strategic innovation development concepts. During the study, we used the following general scientific methods, including:

- Methods of analysis and synthesis. These methods were used to study current theoretical concepts and scientific developments regarding the functionality of innovation parks and their role in stimulating economic progress, clarifying the terminology);
- A comparison method was employed to systematise conceptual approaches to the definition of basic concepts and criteria for choosing an effective direction of innovation transformation, identifying related risks and challenges);
- The structural and logical method was applied to formulate proposals for improving the development of innovation parks as a strategic basis for intensive economic growth in Ukraine during the post-war recovery phase).

RESULTS

Currently, the global trend in the economic development of many developed countries involves:

- the implementation of an innovation strategy marked by the realisation of a consistent state innovation policy;
- stimulation of the growth of the national innovation potential;
- a partnership model of relations between the authorities, the research community, and the educational and private sectors.

An approach that provides incentives for commercialising the innovation sector and effective legislative regulation of intellectual property can significantly improve output quality and increase companies' competitiveness.

The European integration course of Ukraine’s development creates the need for closer convergence of the national economy with the European financial and investment one, implementation of the innovative model of the circular economy, adaptation of the legislative framework in the innovation sphere to international standards in terms of stimulating and regulating international scientific and technological cooperation (Krysovatyy et al, 2024; Chernova & Doroshenko, 2023; Kublikova & Kuznetsova, 2022).

The implementation of the innovation transformation strategy involves the introduction of an open innovation system, as well as the formation of a network model of innovative solutions. This model involves the interaction of various network communities that participate in the cooperation. Adapting the economic space to the requirements of the innovative development path is seen as a prerequisite for intensifying economic growth and strengthening competitiveness in the global market environment. The basis of the innovative vector of economic progress is the formation, implementation, and commercialisation of the latest solutions and opportunities. In this case, it guarantees the transformation of an idea into an innovative phenomenon.

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

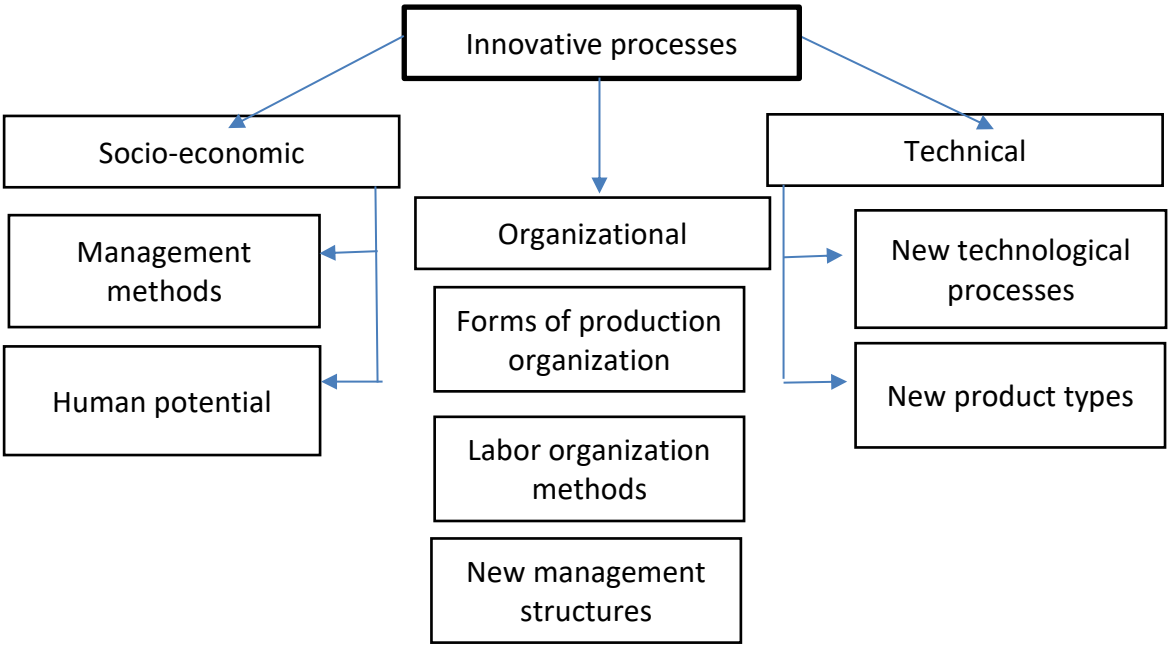

Figure 1: Classification and interconnections of innovative processes within projects of innovation parks
Source: author's elaboration

Globalisation and integration trends determine the dynamics of the market competitive environment. They identify the development of companies' innovation activities as the driving force of global progress. At the same time, there is an increase in demand for high-tech products, internationalisation of research and development activities, acceleration of technological renewal in various areas of the socio-economic environment, and reduction of the product life cycle. In synergy, these factors lead to a forced increase in the share of investments targeted at developing innovations.

During the second half of the XX century, developed countries began to direct the vector of economic development towards innovative progress. As the new century unfolded, the number of specialists involved in the innovative sphere of activity in the Western European region and the United States has increased by more than two times. In the Southeast Asian location, it has increased by four times. Nowadays, innovation-active enterprises in the European Union represent more than 50% of their total number (Fioravanti et al., 2023; Phongthiya et al., 2022). Developed countries recognise that their position in the global market environment of high-tech products depends on the direct level of innovation activity within their national space.

Executing innovative initiatives within the context of globalisation ensures proximity to integrated markets, adaptability in resource differentiation, and support for innovative sources. Specially targeted support programs for enterprises that take the initiative to pursue an innovative development path are being developed and implemented at the national level to stimulate and intensify innovation activities. The functionality of innovation parks includes:

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

- The development of innovative entrepreneurship.
- Support for knowledge-intensive production.
- Stimulation of interaction between the scientific and industrial spheres.
- Involvement of financial and investment resources in the specified area.

Some of the priorities offered in developed countries to enterprises that integrate into innovation structures include exemption from certain types of taxes, financial motivation, and administrative incentives.

So far, the industrialised economies of foreign countries have accumulated substantial practical experience. These countries have made significant progress in technological and innovative development in a short timeframe, primarily through strong targeted support from the state. First of all, these countries include China, Korea, Taiwan, and Singapore (Sandoval Hamón et al., 2022). Innovation parks are seen as a source of innovative development in these countries' vector and regional concepts, thanks to the concentration of centres of science, education, and technical development in their locations.

Overall, the term "innovative" includes three categories of parks: industrial, technological, and research. Industrial prototypes are considered a territory for the location of industrial enterprises. Technoparks are identified as being closer to the phenomenon of innovation. These parks potentially try to localise progressive entrepreneurs in an integrated environment. The definition of research parks has identical functionality. They are created to converge different areas of activity actualised in the socio-economic national field. However, their formation occurs only at the initiative of research institutions or higher education institutions.

All three types of parks are pretty common within the global environment. In particular, there are more than 15 thousand industrial parks worldwide. One of the largest is the Tahoe-Reno Industrial Center in the United States, covering an area of 43 thousand hectares. World-famous companies such as Tesla and Panasonic have built the largest lithium-ion battery plant (Gigafactory 1), with about $5 billion in investments. Other well-known park residents include Google, Walmart, Blockchains, and Switch. Tahoe-Reno Industrial Center operates as a public-private partnership (Fioravanti et al., 2023; Phongthiya et al., 2022).

The German format of a technological park involves the creation of small innovative locations to support scientific startup firms. The priority areas of their activities focus on electronics, digitalisation, biotechnology, and computer technologies. The government defined regional specialisation in France in 1982 (Lam et al., 2021). Therefore, decentralising innovation parks' funding system, which is localised in municipalities, is typical for the country's innovation sector. In Poland, entrepreneurs implementing their projects in innovation parks can refund part of their previously paid taxes. The compensation can reach up to 70% (Fioravanti et al., 2023; Phongthiya et al., 2022).

Some of the immediate neighbours of Ukraine have also been quite successful in creating innovation parks. The Turkish experience of creating synergies between industrial and

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

technology parks should be very interesting for our country. More than 80% of foreign direct investments are allocated to industrial parks in Turkey. More than 45 thousand resident companies operate in Turkish industrial parks, creating about 900 thousand workplaces (Yun et al., 2020). At the same time, Turkey is also actively developing technological parks with the help of tax incentives. The activities are focused mainly on the scientific development of innovative solutions, which are transferred through business incubators to mass production. This, in turn, can be organised directly on the territory of industrial parks. It is worth noting that by utilising the potential of industrial and technological parks, Turkey could triple its GDP and fully repay its long-term debts to the International Monetary Fund.

Almost all Eastern European countries have a similar experience. For example, Hungary has over 160 industrial parks that produce 25% of total industrial output and 40% of industrial products for export (Mineiro, 2021). The Czech Republic, Romania, Poland, and Slovakia also have proactive economic policies to encourage their investors. In addition to tax incentives, these countries effectively use the tools of compensation for initial investments by the state and special grants for creating new workplaces and co-financing research programs.

Ukraine must still catch up with its close neighbours and global trends in developing innovation parks. The definition of "technopark" was reflected in the national legal framework 1996 (Kovalenko, 2022; Hryshchenko & Shpak, 2023). Initially, technoparks were created to support technological research and development that could be financed and marketed. These parks were created as centres that would lead Ukrainian science and production to a new knowledge-based economy. Ukraine's most widespread industrial parks focus on information, telecommunications, manufacturing, and targeted research. Such parks concentrate projects on the high-tech development of production solutions and high-tech projects to improve competitive products. Since 2012, Ukraine has adopted a law regulating the operation of technology parks (Karpenko et al., 2022).

Long-term underfunding of research and development efforts has resulted in an outflow of numerous qualified personnel from Ukraine, the decline of many prominent scientific schools, and the degradation of the material and technical facilities for scientific and technological research. The lack of state support via subsidised financing, cheaper bank loans, and tax incentives hampers the development of a vibrant, innovative sector. Due to the current situation, the Ukrainian entrepreneurs' community is concentrated within business clusters and innovation parks. These are similar to traditional technology parks but created with the participation of private investors. The most famous large-scale project of this type is UNIT. City in Kyiv, UNIT.City Kharkiv in Kharkiv, and LvivTech.City in Lviv. Among the residents of these parks are the Swiss company Syngenta, as well as Ukrainian startups that have managed to go beyond the incubator, including Solar Gaps, Cardiomo, and Delfast (Volosheniuk et al., 2020).

The first innovation park in Ukraine, UNIT.City in Kyiv was opened in 2017. It is a private platform that synergises infrastructure and the innovation ecosystem for the high-tech space in Central and Eastern Europe. The park covers an area of 25 hectares. The location has business

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

campuses, innovative educational institutions, laboratories, and production facilities for 3D printing and additive manufacturing (Reznikova et al., 2022).

In the same year, another innovation park in Ivano-Frankivsk, Promprylad.Renovation was also launched. It is located on the premises of a local plant and has a total area of more than 36,000 square meters. Currently, 16 business, educational, and cultural projects are operating in the park. In the future, laboratories, offices, an exhibition and entertainment centre, and a farmers' market will be located there (Kovalenko, 2022; Hryshchenko & Shpak, 2023). As in the case of the LvivTech, all construction processes should be noted. City innovation parks operating in Lviv are carried out according to "green" standards.

Further development of the innovation infrastructure during Ukraine's post-war reconstruction requires substantial legislative support. Such support would include intensifying the state's role, reducing bureaucratic procedures and approvals, and stimulating investment flows into innovation.

Discussion

Many Ukrainian and foreign researchers are studying the issues of functioning and optimising the development of innovation parks as a basis for the strategy of effective development of an integrated society.

Scientists believe that the functionality of innovation parks is the basis for increasing the economic potential that shapes the direction of the country's development. Some researchers (Costa & Matias, 2020) note that open innovations of the Industry 4.0 era are seen as a stimulant for developing sustainable innovation ecosystems. Other researchers (Usman & Hammar, 2021) prove the existence of a dynamic interconnection between technological advancements, financial progress, sustainable power options, and environmental impacts. They see the innovative optimisation of economic activity as the basis for effectively promoting sustainable development. Scholars believe that the active influence of innovative formations on technological advancement is a prerequisite for increasing the quality and speed of optimisation of the economic sphere of activity.

In the context of integration processes in the global socio-economic space, the scientific community is actively exploring the dynamics of organisational aspects of innovation parks. The outlined set of issues is being actively studied by various scholars (Ramírez-Montoya, 2022). They believe the main positive effects of applying innovative technologies supported by artificial intelligence include high speed, mitigating data loss or unauthorised use risks, and potential resource savings.

Some scholars (Carayannis, 2020; Wang et al., 2021) believe that the newest direction of synergising creativity, invention, innovation, and entrepreneurship is promising. According to them, given the globalisation of digitalisation technologies in all spheres of public life, including innovation, specialists cannot adapt and acquire corresponding skills.

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

Bradley et al. (2021), while studying innovation parks as a direction of effective development of economic processes, argue that the problem of innovation parks' efficiency is mainly determined by the complexity of public adaptation to innovations and their unpreparedness for the adaptive dynamics of the socio-economic environment. At the same time, the authors emphasise that the policy of intensifying innovative entrepreneurship should be based on relevant institutions and measures, considering social challenges.

According to representatives of contemporary research directions (Kraus et al., 2021), developing the Industry 4.0 ecosystem is a complex and multi-stage process. This process requires significant efforts to digitalise enterprises' business processes. This goal can be achieved by using various practical algorithms. The authors emphasise that the outlined process, if potential tangential challenges like financial constraints, the level of intellectual resources, and imperfect regulatory and legal support are levelled, can endow the essence of the innovation parks phenomenon with fundamentally new practical qualities.

Some modern scholars (Krysovatyy et al., 2024; Dziubanovska et al., 2023) emphasise that today, only some aspects of the economic system consume innovative technologies and automated solutions. Some scholars (Desyatnyuk et al., 2024) have delved into the impact of digitalisation on global financial security within the framework of sustainable development. They argue that the demand for different variations of business digitalisation will snowball in the future since they create variations to eliminate some business restrictions effectively. According to scientists, the development of the innovation field, together with digitalisation, can significantly affect the efficiency of economic growth.

Despite scholars' outstanding scientific achievements in studying innovation parks, there is no in-depth research on the practical creation and expansion of the functionality of such structures in Ukraine. For this reason, it is vital to conduct forward-looking research in this area.

CONCLUSION

The innovative economic development model based on structural innovation transformations is currently seen as an effective means of increasing the country's overall investment attractiveness. At the same time, it creates additional incentives for investment at the international, national, and local levels. Ukraine must find a balance between technological integration, investments in human capital, and its innovation system. Only the synergy of a stable modern legislative framework, an extensive innovation infrastructure, and the harmonious development of all spheres of economic activity can increase the country's competitiveness in the global integrated market environment.

This study focuses on disclosing the essence of the functionality of the innovation parks' phenomenon and identifying their role in stimulating economic growth. The authors have found that innovation parks intensify the development of new types of innovative products, their commercialisation, and the organisation of the manufacturing process.

ISSN: 2408-7920

African Journal of Applied Research
Vol. 10, No. 1 (2024), pp. 442-453
http://www.ajaronline.com
http://doi.org/10.26437/ajar.30.06.2024.27

The research analysed the prospects for developing and functioning innovation parks both nationally and globally. The article also highlighted the specifics of their industrial, technological, and scientific formations, the definition of the role of innovation parks in modern infrastructure, and the main aspects of legal and financial support for innovation. Based on the study of innovation parks' development models in developed countries, the authors have outlined promising ways to attract practical international experience to grow Ukraine's economic development towards innovations.

The substantiation of innovation parks' functionality as one of the most important components of progressive infrastructure proves that such parks play an essential role in synergising scientific and technological innovations and production activities. They stimulate an intensive path of economic development, identifying target vectors of progress and the limits of regulatory influence. We see the prospects for further research in forming a strategic model for developing and improving innovation parks during the post-war recovery phase of Ukraine.

REFERENCES

Akkaya, B., & Tabak, A. (2020). The link between organizational agility and leadership: A research in science parks. *Academy of Strategic Management Journal, 19(1)*, 1-17.

Alekseieva, K., Maletych, M., Ptashchenko, O., Baranova, O., & Buryk, Z. (2023). State business support programs in wartime conditions. *Economic Affairs* (New Delhi), 68(1), 231-242. https://doi.org/10.46852/0424-2513.1s.2023.26

Artyushok, K., Verstiak, A., Kravchuk, P., Dorofyeyev, O., Polova, O., & Kapelista, I. (2023). Institutional security relations of ownership of natural resources: state environmental and economic policy and decentralization. *Financial and Credit Activity: Problems of Theory and Practice*, 6(53), 376-391.

Boiko, O., Levaieva, L., Horodnichenko, Y., Kucherenko, S. 2021. "World experience of innovation and investment development of enterprises in overcoming the phenomenon of divergence." *Journal of Hygienic Engineering and Design,* 36:159-169.

Bradley, S. W., Kim, P. H., Klein, P. G., McMullen, J. S., & Wennberg, K. (2021). Policy for innovative entrepreneurship: Institutions, interventions, and societal challenges. *Strategic Entrepreneurship Journal, 15(2),* 167-184. https://doi.org/10.1002/sej.1395

Carayannis, E. G. (2020). *Encyclopedia of creativity, invention, innovation and entrepreneurship.* Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-15347-6_300373

Chernova, Yu. S., & Doroshenko, H. O. (2023). Industrial parks: their essence and place within innovative infrastructure. *Modernization of economy: current realities, forecast scenarios, and development prospects: V International scientific-practical conference,* 27-28 April 2023, Kherson – Khmelnytskyi, pp. 158-160.

Costa, J., & Matias, J. C. (2020). Open innovation 4.0 as an enhancer of sustainable innovation ecosystems. *Sustainability, 12(19)*. https://doi.org/10.3390/su12198112

Desyatnyuk, O., Naumenko, M., Lytovchenko, I., & Beketov, O. (2024). Impact of Digitalization on International Financial Security in Conditions of Sustainable Development. *Problems of Sustainable Development, 1,* 104-114. https://ph.pollub.pl/index.php/preko/article/view/5325/4341

Dziubanovska, N., Maslii, V., Krysovatyy, A., Desyatnyuk, O., & Drelich-Skulska, B. (2023). The Effects of Digital Economy on International Trade: An Empirical Analysis of EU Countries Panel Data Proceedings. *International Conference on Advanced Computer Information Technologies*. *ACIT*, pp. 216–219.

Fioravanti, V. L. S., Stocker, F., & Macau, F. (2023). Knowledge transfer in technological innovation clusters. *Innovation & Management Review, 20(1),* 43-59. https://www.emerald.com/insight/content/doi/10.1108/INMR-12-2020-0176/full/html

Hryshchenko, K., & Shpak, O. (2023). Industrial parks in Ukraine: their types, status, and prospects. *Univeersum, 3,* 8-16. https://archive.liga.science/index.php/universum/article/view/598

Karpenko, A. V., Karpenko, N. M., & Soliana, T. M. (2022). Industrial parks: their status and development during the war. *Proceedings of the 5th International Scientific and Practical Conference "Competitiveness Model of Innovative Development of Ukraine's Economy,"* (pp. 21-24), December 8, 2022, Kropyvnytskyi. https://dspace.kntu.kr.ua/server/api/core/bitstreams/3677114d-0e2d-4567-a06b-dea57e9702fe/content

Kovalenko, O. (2022). Technology parks: essence, classification. *Economy and Society, 38*. https://doi.org/10.32782/2524-0072/2022-38-18

Kraus, N., & Kraus, K. (2021). Digitalization of business processes of enterprises of the ecosystem of Industry 4.0: virtual-real aspect of economic growth reserves. *WSEAS Transactions on Business and Economics, 18*, 569-580. https://wseas.org/cms.action?id=4016

Krysovatyy, A. I. (2024). The development of innovation parks in the digital economy. *6th International Scientific and Practical Conference "Global Science: prospects and Innovations,"* (pp. 498-501), February 1-3, 2024, Cognum Publishing House, Liverpool, United Kingdom.

Krysovatyy, A., Ptashchenko, O., Kurtsev, O., & Arutyunyan, O. (2024). The Concept of Inclusive Economy as a Component of Sustainable Development. *Problems of Sustainable Development, 1*, 164-172. https://ph.pollub.pl/index.php/preko/article/view/5755/4346

Kublikova, T., & Kuznetsova, I. (2022). Development of innovative infrastructure as a basis of diversification processes of Ukraine's economy. *Economic Analysis, 32(1),* 58-70. https://doi.org/10.35774/econa2022.01.058

Lam, L., Nguyen, P., Le, N., & Tran, K. (2021). The relation among organizational culture, knowledge management, and innovation capability: Its implication for open innovation. *Journal of Open Innovation: Technology, Market, and Complexity, 7(1)*. https://doi.org/10.3390/joitmc7010066

Mazur, T., & Korol, E. (2023). Eco-industrial parks as a direction of innovative development of production territories. *Spatial Development, 6*, 71-90. https://doi.org/10.32347/2786-7269.2023.6.71-90

Mineiro, A. A. D. C., Assis de Souza, T., & Carvalho de Castro, C. (2021). The quadruple and quintuple helix in innovation environments (incubators and science and technology parks). *Innovation & Management Review, 18(3),* 292-307. https://www.emerald.com/insight/content/doi/10.1108/INMR-08-2019-0098/full/html

Niziaieva, V., Liganenko, M., Muntyan, I., Ohiienko, M., Goncharenko, M., & Nazarenko, O. (2022). Balancing interests in the field of tourism based on digital marketing tools. *Journal of Information Technology Management*, 14, 59-77. https://doi.org/10.22059/jitm.2022.88875

Phongthiya, T., Malik, K., Niesten, E., & Anantana, T. (2022). Innovation intermediaries for university-industry R&D collaboration: Evidence from science parks in Thailand. *The Journal of Technology Transfer, 47(6),* 1885-1920. https://doi.org/10.1007/s10961-021-09902-0

Postryhan, T. (2020). The history of legislative regulation of the Swiss innovation park. *Theory and Practice of Intellectual Property, 4,* 93-98.

Ramírez-Montoya, M. S., Castillo-Martínez, I. M., Sanabria-Z, J., & Miranda, J. (2022). Complex thinking in the framework of Education 4.0 and Open Innovation–A systematic literature review. *Journal of Open Innovation: Technology, Market, and Complexity, 8(1)*. https://doi.org/10.3390/joitmc8010004

Reznikova, N. V., Panchenko, V. H., Rusak, D. M., & Ivashchenko, O. A. (2022). Industrial ecosystems in global value and supply chains: clusters, innovation and eco-industrial parks as a factor of sustainable development. *Bulletin of Mariupol State University. Series: Economics, 23,* 5–16. http://repository.mu.edu.ua/jspui/handle/123456789/4870

Sandoval Hamón, L. A., Ruiz Peñalver, S. M., Thomas, E., & Fitjar, R. D. (2022). From high-tech clusters to open innovation ecosystems: a systematic literature review of the relationship between science and technology parks and universities. *The Journal of Technology Transfer*, 1-26. https://doi.org/10.1007/s10961-022-09990-6

Sorochan, T. M. (2022). Educational research park: innovations for education quality. *Herald of the National Academy of Educational Sciences of Ukraine, 4(1).* https://doi.org/10.37472/v.naes.2022.4148

Sytnyk, H. P., Zubchyk, O. A., & Orel, M. H. (2022). Conceptual understanding of the peculiarities of managing innovation-driven development of the state in the current conditions. *Science and* Innovation, 18(2), 3-15. https://doi.org/10.15407/scine18.02.003

Usman, M., & Hammar, N. (2021). Dynamic relationship between technological innovations, financial development, renewable energy, and ecological footprint: fresh insights based on the STIRPAT model for Asia Pacific Economic Cooperation countries. *Environmental Science and Pollution Research, 28(12),* 15519-15536. https://doi.org/10.1007/s11356-020-11640-z

Volosheniuk L. V., Hornostai N. I., & Mykhalchenkova O. Ye. (2020). Innovation ecosystem: concepts, functions, levels of innovation development, examples. *Science, technologies, innovations, 1,* 3-9. http://jnas.nbuv.gov.ua/article/UJRN-0001112957

Wang, M., Li, Y., Li, J., & Wang, Z. (2021). Green process innovation, green product innovation and its economic performance improvement paths: A survey and structural model. *Journal of Environmental Management, 297*. https://doi.org/10.1016/j.jenvman.2021.113282

Yun, J. J., Zhao, X., Jung, K., & Yigitcanlar, T. (2020). The culture for open innovation dynamics. *Sustainability, 12(12)*. https://doi.org/10.3390/su12125076

ISSN: 2408-7920