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**DEVELOPMENT OF CLUSTER PARTNERSHIP SYSTEMS  
AS AN OBJECT OF STATE REGULATION**

*The article provides a thorough analysis of evolutionary research on the development of cluster formations and their global connections as an object of state administration. In the course of the study, the growing interconnection of cluster partnership systems is reflected, where resources and competences are combined, access to target markets and know-how becomes open, information and experience are exchanged between clusters, network systems are created using special technology, it becomes possible to use sources of knowledge with of the whole world and the development of a new field of knowledge. The existing approaches of scientists in terms of interregional and intercluster partnership are emphasized, it is highlighted that a significant number of authors describe systems of interaction in partnership, but do not explain the purpose of this process. However, eliminating the fact that researchers do not have a single opinion about the quintessence of cluster partnership systems both at the level of regions, industries, and clusters, it is justified that the researched ideas of scientists can be used in the development of the author's interpretation of the category of "cluster partnership systems". It is emphasized that all the considered approaches are complementary to the studied category. Each approach brings its own understanding of this concept. Accordingly, the author emphasized that the consideration of cluster partnership systems from the standpoint of only one approach does not give a complete idea of their essence and, when developing state programs for the development of cluster partnership systems, it is necessary to use these scientific concepts in various combinations, which will allow to objectively evaluate the activities of all economic partnership entities that provide innovative development of the national economy and will create a synergistic effect of the interaction of participants from the standpoint of strategic and transactional approaches.*

**Keywords:** *intercluster partnership; intercluster alliances; transregional network of cluster initiatives; interregional cooperation.*

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**РОЗВИТОК СИСТЕМ КЛАСТЕРНОГО ПАРТНЕРСТВА ЯК ОБ'ЄКТА  
ДЕРЖАВНОГО РЕГУЛЮВАННЯ**

*У статті проведений ґрунтовний аналіз еволюційного дослідження щодо розвитку кластерних утворень та їх глобальних зв'язків як об'єкту державного управління. В ході дослідження відображено зростаючий взаємозв'язок систем кластерного партнерства, де поєднуються ресурси та компетентності, стає відкритим доступ до цільових ринків та ноу-хау, відбувається обмін інформацією та досвідом між кластерами, створюються мережеві системи за спеціальною технологією, стає можливим використання джерел знань зі всього світу та розвиток нової галузі знань. Підкреслено існуючі підходи науковців в частині міжрегіонального та міжкластерного партнерства, виділено що значна кількість авторів описує системи взаємодії в партнерстві, проте не пояснює мету цього процесу. Однак, нівелюючи той факт, що у дослідників відсутня єдина думка до квінтесенції систем кластерного партнерства як на рівні регіонів, галузей, так і кластерів, обґрунтовано, що досліджені ідеї вчених можуть бути використані при розробленні авторського трактування категорії «систем кластерного партнерства». Акцентовано, що всі розглянуті підходи є взаємодоповнюючими щодо досліджуваної категорії. Кожен підхід*

привносить своє розуміння цього поняття. Відповідно, автором наголошено, що розгляд систем кластерного партнерства з позиції лише одного підходу не дає повного уявлення про їхню суть та, при розробленні державних програм розвитку систем кластерного партнерства потребує використання даних наукових концептів у різних комбінаціях, що дозволить об'єктивно оцінити діяльність усіх економічних суб'єктів партнерства, які забезпечують інноваційний розвиток національної економіки та створить синергетичний ефект взаємодії учасників із позиції стратегічного та транзакційного підходів.

**Ключові слова:** міжкластерне партнерство; міжкластерні альянси; транзакційна мережа кластерних ініціатив; міжрегіональне співробітництво.

**Statement of the problem.** Scientific approaches to the study of the development of cluster formations and their global connections in terms of the formation of technological structures indicate a growing relationship between clusters, where resources and competences of clusters are combined, access to target markets and know-how becomes open, information and experience are exchanged between clusters, networks are created using special technology, it becomes possible to use sources of knowledge from around the world, as well as the development of a new field of knowledge. Among the treatises of modern scientists, due to the intensification of global integration and quasi-integration processes, the use of similar categories of cluster-territorial formations, such as "metaclusters", "intercluster partnership", "intercluster alliances", "intercluster alliance", "transnational cluster partnership", etc., is observed.

It is worth noting that none of these scientific categories has become generally accepted, both in foreign scientific literature and among domestic scientists, which actualizes the need for this research.

**Analysis of recent publications on the problem.** In order to present an economic projection, the definition of "cluster partnership systems" as an object of state regulation, let us critically analyze the essential content of similar economic categories.

Among the scientists who proposed the statement that clusters should develop global connections or global partnerships, one should single out professors of business economics H. Batelt, P. Maskel and A. Malmberg (2004), scientific works of scientists from Cornell University (USA). M. Gertler and J. Levitt (2005) [1, 2], professors of economic geography R. Martin and P. Sanli (2006). In these studies, scientists note that these partnerships can provide significant benefits to clusters, however, they are not without problems, especially in the formation, development and management. Clusters, building global networks, must choose the right partners, determine what information should be disclosed or remain confidential, and make decisions about joint activities and monitoring [24].

The Danish economist M. Lorenzen and the Temple University of Philadelphia scientist R. Mudambi (2013) in their scientific work: "Clusters, Connectivity and Catch-up" argue that the configuration of global connections constitutes "inter-cluster partnership". They suggest that in addition to global ties, which can be seen as organizational ties, inter-cluster ties can be personal. Personal ties are based on social proximity, kinship or friendship [32].

In their study, M. Voynarenko, A. Bereza define "inter-cluster partnerships" as business processes, formal and informal relations between participants who are competent in different areas of technology, grouped into different technology clusters [40].

Ukrainian scientist V. Omelianenko notes that economic inter-cluster communication is the development of inter-cluster relations, which are expressed through the conclusion of new contracts and economic agreements [42].

V.M. Yokhna and V.V. Stadnik [41] argue that the relationship between clusters should be expanded and defined as a three-level phenomenon: at the level of a person, at the level of an

organization (firm) and a cluster level. Partnerships at the cluster level usually take the form of agreements or alliances to attract local knowledge funds [43].

The joint implementation of value chains stimulates the formation of metaclusters. The concept of a meta-cluster is defined as "a trans-regional network of cluster initiatives focused on one or complementary technological areas or industries" [15]. It is believed that meta-clusters are formed through the cooperation of at least three regional clusters that combine the development of ideas and projects, products and services based on the use of participants' competencies to meet market needs. However, it should be noted that such a definition does not take into account the strategic synergy between clusters, and also that metaclusters do not focus on interdisciplinary or cross-cutting cooperation in the field of technology.

Under these conditions, clusters as an object of state regulation become important as a form of interorganizational network that promotes regional development and the competitiveness of the national economy [25]. For Italian scientists [3, 13], from this position, interclustering is synonymous with partnership.

Unlike corporate inter-cluster ties, links at the cluster level do not concern an individual enterprise [35]. Their goal is several different types of partner participants (business structures, research institutes, institutions of higher education, the state, etc.) in each cluster for joint involvement there are science-intensive, as a rule, large-scale projects that could not be implemented individual enterprises. However, although the development of links at the micro and nano levels is not the main goal of developing cluster partnership systems, the latter create a favorable environment for the development of such links.

In foreign and domestic scientific literature [42, 43], in terms of the development of cluster partnership systems, there is also a definition of the category "union". At the same time, it is noted that a single alliance is rarely enough to achieve strategic goals, especially when knowledge is distributed in different places. Strategic capacity building goals based on partnerships are more often achieved through alliances:

- cluster alliances [3–7];
- intercluster alliances as a "new area of research" [20, 24, 40, 43].

The new perspective on inter-clustering reflects the implicit postulate of cluster literature that such relationships create value for cluster structures as networked organizations [44].

Communication between clusters and inter-cluster alliance represents a configuration in knowledge-intensive industries when the rate of environmental change is high, which is typical for a knowledge-intensive industry. It follows that clusters working in such an area usually create a number of alliances or a portfolio of alliances instead of focusing on single alliances.

Of great interest are the interpretations of the types of inter-cluster partnerships by types of resources (economic, financial, administrative; personnel; information; technological; material and technical). The English scientist Maria Marston in her dissertation research "Inter-firm alliances as predictors of partnership success" considers the concept of transnational cluster partnership as a relationship characterized by a high level of customer orientation, common technologies. Business structures minimize risk and uncertainty using the cluster model through the use of a common communication infrastructure and gradual entry into world markets, which confirms the main provisions of the theory of creating international corporations and strategic alliances [24].

Consequently, the study of scientific works of foreign and domestic scientists on the concept of the category of "cluster partnership systems" as an object of state regulation allows us to conclude that researchers do not have a unified view of the essence of this definition, which determined the need for a deep and comprehensive study of the essence of cluster partnership systems from the perspective of interregional, inter-regional-industry and inter-cluster partnerships, which will clarify the specifics of the category under study in the context of this study.

**Statement of the main results and justification.** Analyzing the above approaches in terms of inter-regional and inter-cluster partnership, among the formulations of Ukrainian and foreign scientists, we can conclude that a significant number of authors describe systems of interaction in partnership, but do not explain the purpose of this process. However, leveling the fact that researchers do not have a common opinion on the quintessence of cluster partnership systems both at the level of regions, industries, and clusters (Table 1), this does not contradict the essence of this term, and therefore, the studied ideas of scientists can be used in development of an interpretation by the author of this category.

Table 1

**Systematization of views on the essence of the category of "cluster partnership systems" as an object of state regulation**

Scholars-followers	The essential aspect of the category
<i>Approach from the standpoint of interregional partnership and internationalization of cluster structures</i>	
O. Babinova [36]	Interregional economic cooperation is the interaction of territorial entities as subsystems in the structure of the national economy, legally fixed within certain territorial boundaries, having the basic unity of the power-administrative system and characterized by a certain commonality of natural, socio-economic, cultural and other conditions.
S. Bila, I. Babets, I. Valyushko, Ya. Zsalilo [38]	Interregional cooperation is one of the mechanisms for activating innovation processes and attracting investments for the implementation of highly effective innovative projects that can form new centers of economic development, around which areas of economic growth will be created due to the opportunities for consolidating the resources of interested regions in the implementation of projects of common interest.
T. Renkas [43]	Interregional cooperation is one of the mechanisms for enhancing cooperation between regions of countries or regions in a country, between public authorities and other structures, aimed at implementing innovative processes and attracting investments aimed at creating new centers of economic growth, by optimizing the use of regional resources as the main sources of social -economic development of the country.
<i>Approach from the standpoint of interregional-industry partnership</i>	
O. Bakumenko [37]	Interregional industry partnership is the interaction of business structures of the regions to solve common problems, create production and technological chains, clusters, associations.
<i>Inter-cluster partnership approach</i>	
N. Vernydub, V. Omelianenko [42]	Inter-cluster partnership involves the formation of networks of clusters, the participants of which are both "neighboring" clusters and distant clusters, between which strong ties are established.

Source: Systematized by the author based on [36–38, 42, 43].

In view of the foregoing, the author's definition of cluster partnership systems is proposed as a voluntary partnership-network formation based on objectively determined principles, organizational and managerial algorithms, methods, and tools, as well as financial and economic support for the formation of strategic and tactical actions within the framework of policy. innovative development of the national economy

It should be noted that the process of integrating independent economic entities, which are clusters, on the basis of partnership rights, is quite difficult. Solving the problems that arise during the formation and development of cluster partnership systems is possible only in the conditions of a

well-organized cluster partnership management system, which makes it possible to take into account the interests of all participants in the development of a common development strategy.

Consequently, the tasks of effective management of the cluster partnership system are, firstly, to form a motivated interaction between all participants in the integrated structure, and secondly, to develop sub-mechanisms taking into account the characteristics of each of the parties, ensuring its improvement.

Let us analyze approaches to managing the cluster partnership system as an object of state regulation, based on the approaches of inter-cluster partnership presented in foreign and domestic scientific literature (Table 2).

Table 2

**Basic approaches to managing the cluster partnership system**

Approach	Feature	Attribute
Systemic	Compliance with the requirements of general systems theory: each object must be considered as a complex system, being, in turn, an element of a more general system.	CP is considered as a system of interrelated elements; emphasis on defining the goals and sub-mechanisms of the system, their consistency with each other.
Strategic	The ability of the subjects of the KP to identify and evaluate the strengths and competitive advantages that make it possible to withstand the threats of the external environment, as well as the ability, based on planning, to take advantage of favorable opportunities for their development.	The indicators of production and marketing activities are determined, which determine the long-term successful prospects of the subjects of the KP in the conditions of fierce competition.
Cluster	Interaction of legally independent entities of the KP, operating in the same territory and operating in interconnected industries. The development of the base industry provokes the growth of related industries.	A synergy effect is achieved; higher rates of commercialization of manufactured products (services) are ensured; favorable conditions are created for attracting foreign investment.
Transactional	Goal setting by the subject of the CP through maximum savings on transaction costs.	Minimization of transaction costs as a result of the development of a system of interaction between participants.
Informational	Identification and analysis of the most characteristic informational aspects that determine the functioning and development of the subjects of the KP.	Interrelation between different research methods is provided; interpretation of the experience of research activities of the subjects of the KP is provided.
Process	Study of the functions of strategic management in terms of interrelated actions.	The maximum concentration of KP resources aimed at the implementation of key processes is achieved.
Project	Emphasizing the importance of projects as the best way to solve the most important tasks for the subjects of the KP.	Requires the creation of additional structural units or the use of project and matrix structures that are more complex management; forms a link between strategic and operational management; ensures more efficient use of resources, directing them to the implementation of the project goals and controlling this process; improves the efficiency of business processes.

Source: systematized by the author based on [1–8, 24, 40–43].

**Conclusions and prospects for further research.** The above analysis of the scientific works of foreign and domestic scientists allows us to draw the following conclusions:

- a significant number of scientists consider the process of managing inter-cluster partnerships in the context of cluster, system and strategic approaches, which indicates a certain commonality of their views on the essence of the category;
- consider the project approach as an opportunity to solve the common most important tasks of the participants in inter-cluster interaction;
- scientists who consider the category of "management of intercluster partnerships" from the position of the information approach, focus on minimizing transaction costs;
- despite the considerable number of approaches in general, there is a shortage of cluster partnerships that are adaptive to the management of the cluster partnership system, as an object of state regulation, which could be based.

In our opinion, all considered approaches complement each other with respect to the category under study. Each approach brings its own understanding of this concept. Accordingly, we can conclude that consideration of cluster partnership systems from the standpoint of only one approach does not give a complete picture of their essence and, in our opinion, when developing state programs for the development of cluster partnership systems, it requires the use of these scientific concepts in various combinations, which will allow us to evaluate the activity all economic entities of the partnership that ensure the innovative development of the national economy and will create a synergistic effect of interaction between the participants from the standpoint of strategic and transactional approaches.

It is appropriate to note that at the moment Ukraine lacks certain institutional support, which hinders the further development of cluster partnership systems as an object of state regulation.

#### References

1. Andréseu, A., Laaksonen, E., Mäkinen, H. (2012). The Finnish maritime cluster, Maritime cluster analysis on the Central Baltic region, Smart Comp Research Report, no. 1, December 2012.
2. Bathelt, H., Malmberg, A., Maskell, P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography*, 28(1), 31–56. <https://doi.org/10.1191/0309132504ph469oa>.
3. Bertolini, P., Giovannetti, E. (2006). Industrial districts and internationalization: The case of the agri-food industry in Modena, Italy. *Entrepreneurship and Regional Development*.
4. Contractor, F. J., Kundu, S. K., Hsu, C. (2003). A three-stage theory of international expansion: The link between multinationality and performance in the service sector. *Journal of International Business Studies*, 34, 5–18.

#### Література

1. Andréseu A., Laaksonen E., Mäkinen H. The Finnish maritime cluster, Maritime cluster analysis on the Central Baltic region, Smart Comp Research Report, no. 1, December 2012.
2. Bathelt H., Malmberg A., Maskell P. Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography*. 2004. 28(1). 31–56. <https://doi.org/10.1191/0309132504ph469oa>.
3. Bertolini P., Giovannetti E. Industrial districts and internationalization: The case of the agri-food industry in Modena, Italy. *Entrepreneurship and Regional Development*, 2006.
4. Contractor F. J., Kundu S. K., Hsu C. A three-stage theory of international expansion: The link between multinationality and performance in the service sector. *Journal of International Business Studies*. 2003. 34.P. 5–18.

5. Cooke, P. (2002). Knowledge Economies: Clusters, Learning and Cooperative Advantage. London: Routledge.
6. Czamanski, S., de Ablas, L. (2011). Identification of industrial clusters and complexes: a comparison of methods and findings. *Urban Studies*, Vol. 22, P. 61–80.
7. Enright, M. J. (1992). Why Clusters are the Way to Win the Game? *Word Link*, July/August, No. 5, P. 24–25.
8. Falck, O., Heblich, S., Kipar, S. (2010). Industrial innovation: Direct evidence from a cluster-oriented policy. *Regional Science and Urban Economics*.
9. Feser, E., Bergman, E. (2000). National industry cluster templates: A framework for applied regional cluster analysis. *Region. Stud.*, Vol. 34, No 1, P. 4–6.
10. Freeman, C. (2008). Systems of Innovation: Selected Essays in Evolutionary Economics. SPRU, University of Sussex, UK. 288 p.
11. Ganushchak-Efimenko, L. M., Shkoda, M. S., Nifatova, O. M. (2018). Strategic approach to managing the risk of the company's business portfolio. *Management*, Vol. 27. No. 1, P. 111–118. DOI: <https://doi.org/10.30857/2415-3206.2018.1.10>.
12. Gertler, M. S., Levitte, Y. M. (2005). Local Nodes in Global Networks: The Geography of Knowledge Flows in Biotechnology Innovation. *Industry and Innovation*, 12(4), 487–507. <http://dx.doi.org/10.1080/13662710500361981>.
13. Giuliani, E., Pietrobelli, C., Rabellotti, R. (2005). Upgrading in global value chains: Lessons from Latin American clusters. *World Development*.
14. He, Z., Rayman-Bacchus, L., Wu, Y. (2011). Self-organization of industrial clustering in a transition economy: A proposed framework and case study evidence from China. *Research Policy*.
15. Keller, M., Reingruber, I., Dermastia, M., Bersier, J., Meierzu Koecker, G. (2018). Smart Specialization Strategies (S3) and Clusters—An Innovation Model for Transformative Activities., Working Paper, University for Applied Physics Lausanne.
5. Cooke P. Knowledge Economies: Clusters, Learning and Cooperative Advantage. London: Routledge, 2002.
6. Czamanski S., de Ablas L. Identification of industrial clusters and complexes: a comparison of methods and findings. *Urban Studies*. 2011. Vol. 22. P. 61–80.
7. Enright M. J. Why Clusters are the Way to Win the Game? *Word Link*. July/August, 1992. No. 5. P. 24–25.
8. Falck O., Heblich S., Kipar S. Industrial innovation: Direct evidence from a cluster-oriented policy. *Regional Science and Urban Economics*, 2010.
9. Feser E., Bergman E. National industry cluster templates: A framework for applied regional cluster analysis. *Region. Stud.* 2000. Vol. 34, No 1. P. 4–6.
10. Freeman C. Systems of Innovation: Selected Essays in Evolutionary Economics. SPRU, University of Sussex, UK, 2008. 288 p.
11. Ganushchak-Efimenko L. M., Shkoda M. S., Nifatova O. M. Strategic approach to managing the risk of the company's business portfolio. *Management*. 2018. Vol. 27, No. 1. P. 111–118. <https://doi.org/10.30857/2415-3206.2018.1.10>.
12. Gertler M. S., Levitte Y. M. Local Nodes in Global Networks: The Geography of Knowledge Flows in Biotechnology Innovation. *Industry and Innovation*. 2005. 12(4). P. 487–507. <http://dx.doi.org/10.1080/13662710500361981>.
13. Giuliani E., Pietrobelli C., Rabellotti R. Upgrading in global value chains: Lessons from Latin American clusters. *World Development*, 2005.
14. He Z., Rayman-Bacchus L., Wu Y. Self-organization of industrial clustering in a transition economy: A proposed framework and case study evidence from China. *Research Policy*, 2011.
15. Keller M., Reingruber I., Dermastia M., Bersier J. & Meierzu Koecker G. Smart Specialization Strategies (S3) and Clusters—An Innovation Model for Transformative Activities., Working Paper, University for Applied Physics Lausanne.

16. Ketels, C., Lindqvist, G., Solvell, O. (2012). Strengthening clusters and competitiveness in Europe. The role of cluster organizations. The Cluster Observatory. October 2012. 50 p.
17. Laaksonen, E., Mäkinen, H. (2013). The Competitiveness of the Maritime Clusters in the Baltic Sea Region: Key Challenges from the Finnish Perspective. *Journal of East-West Business*, Vol. 19, No. 1–2, P. 91–104.
18. Lai, Y. L., Hsu, M. S., Lin, F. J., Chen, Y. M., Lin, Y. H. (2014). The effects of industry cluster knowledge management on innovation performance. *Journal of Business Research*, 2014.
19. Lewis, A. (1963). Is economic growth desirable? The Theory of economic growth. London.
20. Lindqvist, G., Ketels, C., Solvell, O. (2013). The Cluster Initiative Greenbook 2.0. Stockholm: Ivory Tower Publishers. P. 55.
21. Marston, M. R. Beyond words: Testing alignment among inter-organizational performance measures. URL: [https://www.researchgate.net/publication/243460025\\_Beyond\\_words\\_Testing\\_alignment\\_among\\_inter-organizational\\_performance\\_measures](https://www.researchgate.net/publication/243460025_Beyond_words_Testing_alignment_among_inter-organizational_performance_measures).
22. Margasova, V. (2021). Insights into international best practices in integrated cluster management. *Visnyk Kyivskoho natsionalnoho universytetu tekhnologii ta dizainu*. Seria: Ekonomichni nauky – Bulletin of the Kyiv National University of Technologies and Design, № 1 (155), P. 37–44.
23. Marshall, A. 1920. Principles of Economics. 8th Edition. London: Macmillian and Co Ltd. 71 p.
24. Martin, R., Sunley, P. (2006). Path dependence and regional economic evolution. *Journal of Economic Geography*, 6(4), 395–437. <https://doi.org/10.1093/jeg/lbl012>.
25. Maskell, P., Kebir, L. (2006). What qualifies as a cluster theory? In: Asheim, B., Cooke, P., Martin, R. (eds.). *Clusters and regional development: Critical reflections and explorations*. New York: Routledge. P. 30–49.
- Applied Physics Lausanne, 2018.
16. Ketels C., Lindqvist G., Solvell O. Strengthening clusters and competitiveness in Europe. The role of cluster organizations. The Cluster Observatory. October 2012. 50 p.
17. Laaksonen E. Mäkinen H. The Competitiveness of the Maritime Clusters in the Baltic Sea Region: Key Challenges from the Finnish Perspective. *Journal of East-West Business*. 2013. Vol. 19, No. 1–2. P. 91–104.
18. Lai Y. L., Hsu M. S., Lin F. J., Chen Y. M., Lin Y. H. The effects of industry cluster knowledge management on innovation performance. *Journal of Business Research*. 2014.
19. Lewis A. Is economic growth desirable? The Theory of economic growth. London, 1963.
20. Lindqvist G., Ketels C., Solvell O. The Cluster Initiative Greenbook 2.0. Stockholm: Ivory Tower Publishers, 2013. P. 55.
21. Marston M. R. Beyond words: Testing alignment among inter-organizational performance measures. URL: [https://www.researchgate.net/publication/243460025\\_Beyond\\_words\\_Testing\\_alignment\\_among\\_inter-organizational\\_performance\\_measures](https://www.researchgate.net/publication/243460025_Beyond_words_Testing_alignment_among_inter-organizational_performance_measures).
22. Margasova V. Insights into international best practices in integrated cluster management. *Вісник Київського національного університету технологій та дизайну*. Серія Економічні науки. 2021. № 1 (155). С. 37–44.
23. Marshall A. Principles of Economics. 8th Edition. London: Macmillian and Co Ltd., 1920. 71 p.
24. Martin R., Sunley P. Path dependence and regional economic evolution. *Journal of Economic Geography*. 2006. 6(4). 395–437. <https://doi.org/10.1093/jeg/lbl012>.
25. Maskell P., Kebir L. What qualifies as a cluster theory? In: Asheim B., Cooke P., Martin R. (eds.). *Clusters and regional development: Critical reflections and explorations*. New York: Routledge, 2006.



26. Miahkykh, I. M., Shkoda, M. S., Radchenko, A. O. (2019). Factors ensuring enterprise financial stability in times of crisis. *Bulletin of the Kyiv National University of Technologies and Design. Series: Economic sciences*, № 5 (139), P. 121–129.
27. Nifatova, O. M., Shkoda, M. S. (2017). Aktyvizatsiia polityky innovatsiinoho rozvytku cherez utvorennia innovatsiinykh klasteriv yak formy derzhavnopryvatnoho partnerstva [Enhancing the innovative development policy through building innovation clusters in the framework of public-private partnership]. *Visnyk Kyivskoho natsionalnoho universytetu tekhnologii ta dizainu. Seriya: Ekonomichni nauky – Bulletin of the Kyiv National University of Technologies and Design*, No 6 (117), P. 110–120 [in Ukrainian].
28. Niu, K. H., Miles, G., Bach, S., Chinen, K. (2012). Trust, learning and a firm's involvement in industrial clusters: A conceptual framework. *Competitiveness Review*.
29. Parasuraman, A., Berry, L. L., Zeithaml, V. A. (1985). Conceptual Model of Service Quality and its Implications for Future Research. *Journal of Marketing*, Vol. 49.
30. Penrose, E. (1959). *The theory of the growth of the firm*. Oxford University Press. 304 p.
31. Porter, M. E. (2005). *Clusters of Innovation Initiative: Regional Foundations of U.S. Competitiveness*. Washington, DC: Council on Competitiveness.
32. Frangsmir, T. (ed.) (1989). *Science in Sweden*. USA, 1989.
33. Shapira, P. (2012). *US National Innovation System: Science, technology and Innovation Policy development*. Global Limited. 63 p.
34. Shkoda, M., Miahkykh, I., Leshanych, L. (2018). Models of financing of higher education institutions in the foreign countries. *Baltic Journal of Economic Studies*, Vol. 4, No. 5, P. 111–119.
35. Zhao, W., Watanabe, C., Griffy-Brown, C. (2009). Competitive advantage in an industry cluster: The case of Dalian Software Park in China. *Technology in*
- P. 30–49.
26. Miahkykh I. M., Shkoda M. S., Radchenko A. O. Factors ensuring enterprise financial stability in times of crisis. *Bulletin of the Kyiv National University of Technologies and Design. Series: Economic sciences*. 2019. № 5 (139). P. 121–129.
27. Ніфатова О. М., Шкода М. С. Активізація політики інноваційного розвитку через утворення інноваційних кластерів як форми державно-приватного партнерства. *Вісник Київського національного університету технологій та дизайну. Серія Економічні науки*. 2017. № 6 (117). С. 110–120.
28. Niu K. H., Miles G., Bach S., Chinen K. Trust, learning and a firm's involvement in industrial clusters: A conceptual framework. *Competitiveness Review*, 2012.
29. Parasuraman A., Berry L. L., Zeithaml V. A. Conceptual Model of Service Quality and its Implications for Future Research. *Journal of Marketing*. 1985. Vol. 49.
30. Penrose E. *The theory of the growth of the firm*. Oxford University Press, 1959. 304 p.
31. Porter M. E. *Clusters of Innovation Initiative: Regional Foundations of U.S. Competitiveness*. Washington, DC: Council on Competitiveness, 2005.
32. *Science in Sweden*. Ed. T. Frangsmir. USA, 1989.
33. Shapira P. *US National Innovation System: Science, technology and Innovation Policy development*. Global Limited, 2012. 63 p.
34. Shkoda M., Miahkykh I., Leshanych L. Models of financing of higher education institutions in the foreign countries. *Baltic Journal of Economic Studies*. 2018. Vol. 4. No. 5. P. 111–119.
35. Zhao W., Watanabe C., Griffy-Brown C. Competitive advantage in an industry cluster: The case of Dalian Software Park in

- Society.
36. Babinova, O. (2011). Mizhrehionalne spivrobitnytstvo: zmist, formy, rol ta problemy realizatsii v Ukraini [Interregional cooperation: content, forms, role and implementation problems in Ukraine]. *Derzhavne upravlinnia ta mistseve samovriaduvannia = State administration and local self-government*, Vol. 4 (11), P. 45–49
37. Bakumenko, V. D. (2000). Formuvannia derzhavno-upravlinskykh rishen: problemy teorii, metodolohii, praktyky: monohr [Formation of state-management decisions: problems of theory, methodology, practice: monograph]. Kyiv: UADU. 328 p. [in Ukrainian].
38. Bila, S. O., Zhalilo, Ya. A., Shevchenko, O. V., Zhuk, V. I. et al. (2011). Innovatsiini pidkhody do rehionalnoho rozvytku v Ukraini: analit. dop. [Innovative approaches to regional development in Ukraine: analytical report]. Bila S. O. (ed.). Kyiv: NISD. 80 p. [in Ukrainian].
39. Bila, S. O., Babets, I. H., Valiushko, I. V., Zhalilo, Ya. A. (2011). Mizhrehionalne spivrobitnytstvo u systemi novoi rehionalnoi polityky Ukrainy [Interregional cooperation in the system of the new regional policy of Ukraine]. Kyiv. 32 p. [in Ukrainian].
40. Voinarenko, M., Bereza, A. (2013). Klasterni obiednannia: mizhnarodnyi dosvid ta ukraïnski realii [Cluster associations: international experience and Ukrainian realities]. *Ekonomist*, № 10, P. 27–30 [in Ukrainian].
41. Yokhna, M. A., Stadnyk, V. V. (2005). *Ekonomika i orhanizatsiia innovatsiinoi diialnosti: navch. Posibnyk* [Economy and organization of innovative activity: educational manual]. Kyiv: VTs "Akademiia". 400 p. [in Ukrainian].
42. Omelianenko, V. A., Vernydub, N. O. (2013). Teoretychni osnovy ta analiz svitovoho dosvitu mizhnarodnoho rozvytku vysokotekhnolohichnykh klasteriv [Theoretical foundations and analysis of the world education of the international development of high-tech clusters]. *Mezhdystsyplynarnye yssledovanyia v nauke y obrazovanyu = Interdisciplinary research in science and education*, № 2. URL: [https://essuir.sumdu.edu.ua/bitstream-download/123456789/30161/3/Omelyanenko\\_Vernidub.pdf;jsessionid=AB1E64A8EBD84AAEACC126ACB38A9B45](https://essuir.sumdu.edu.ua/bitstream-download/123456789/30161/3/Omelyanenko_Vernidub.pdf;jsessionid=AB1E64A8EBD84AAEACC126ACB38A9B45) [in Ukrainian].
- China. Technology in Society, 2009.
36. Бабінова О. Міжрегіональне співробітництво: зміст, форми, роль та проблеми реалізації в Україні. *Державне управління та місцеве самоврядування*. 2011. Вип. 4 (11). С. 45–49.
37. Бакуменко В. Д. Формування державно-управлінських рішень: проблеми теорії, методології, практики: моногр. К.: УАДУ, 2000. 328 с.
38. Біла С. О., Жаліло Я. А., Шевченко О. В., Жук В. І. та ін. Інноваційні підходи до регіонального розвитку в Україні: аналіт. доп. Біла С. О. (ред.). К.: НІСД, 2011. 80 с.
39. Біла С. О., Бабець І. Г., Валюшко І. В., Жаліло Я. А. Міжрегіональне співробітництво у системі нової регіональної політики України. Київ, 2011. 32 с.
40. Войнаренко М., Береза А. Кластерні об'єднання: міжнародний досвід та українські реалії. *Економіст*. 2013. № 10. С. 27–30.
41. Йохна М. А., Стадник В. В. Економіка і організація інноваційної діяльності: навч. посібник. Київ: ВЦ "Академія", 2005. 400 с.
42. Омеляненко В. А., Вернидуб Н. О. Теоретичні основи та аналіз світового досвіту міжнародного розвитку високотехнологічних кластерів. *Междисциплинарные исследования в науке и образовании*. 2013. № 2. URL: [https://essuir.sumdu.edu.ua/bitstream-download/123456789/30161/3/Omelyanenko\\_Vernidub.pdf;jsessionid=AB1E64A8EBD84AAEACC126ACB38A9B45](https://essuir.sumdu.edu.ua/bitstream-download/123456789/30161/3/Omelyanenko_Vernidub.pdf;jsessionid=AB1E64A8EBD84AAEACC126ACB38A9B45).

43. Renkas, T. I. (2014). Analiz realizatsii prohram z pidtrymky transkordonnoho spivrobotnytstva zakhidnykh oblastei Ukrainy Yevropeiskym Soiuzom [Analysis of the implementation of programs to support cross-border cooperation of the western regions of Ukraine by the European Union]. *Investytsii: praktyka ta dosvid = Investments: practice and experience*, № 8, P. 130–133. URL: [http://nbuv.gov.ua/UJRN/ipd\\_2014\\_8\\_29](http://nbuv.gov.ua/UJRN/ipd_2014_8_29) [in Ukrainian].
43. Ренькас Т. І. Аналіз реалізації програм з підтримки транскордонного співробітництва західних областей України Європейським Союзом. *Інвестиції: практика та досвід*. 2014. № 8. С. 130–133. URL: [http://nbuv.gov.ua/UJRN/ipd\\_2014\\_8\\_29](http://nbuv.gov.ua/UJRN/ipd_2014_8_29).