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CLUSTER COMPETITIVE ADVANTAGES AS A DRIVING FACTOR IN INCREASING THE INVESTMENT ACTIVITY OF INNOVATIVE ENTREPRENEURSHIP

In the context of globalization and international competition, the stability of the national economy is determined by the ability of the country's enterprises to compete in the world market. At the same time world experience demonstrates the ability to achieve and maintain high competitiveness of the country, region, enterprise based on the cluster approach. In this connection, the purpose of the article is to systematize the competitive advantages of the cluster as a factor in increasing the investment activity of innovative enterprises-members of the cluster. In the course of the research, general scientific theoretical methods were used: system analysis – to clarify the main categories of research; abstract-logical method – for the implementation of theoretical generalizations and conclusions about the essence of the innovation cluster and its competitive advantages, graphical method – for visual presentation of theoretical and analytical material on the reflection of the competitive advantages of innovation clusters and their importance for the investment activity of enterprises-members of the cluster. The article defines the role of the innovation cluster in the formation of competitive advantages for the government, enterprises-members of the cluster and the society of the country. The authors describe the external and internal competitive advantages for innovative enterprises within a cluster association. The proposed characteristic of competitive advantages of an innovation cluster can be used by its participants in the process of regulating the activity of the cluster and enhancing their investment activity.

Keywords: investment activity; innovative enterprise; integration; cluster; competitive advantages.

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КОНКУРЕНТНІ ПЕРЕВАГИ КЛАСТЕРА ЯК ФАКТОР ПІДВИЩЕННЯ ІНВЕСТИЦІЙНОЇ АКТИВНОСТІ ІННОВАЦІЙНОГО ПІДПРИЄМНИЦТВА

В умовах глобалізації та міжнародної конкуренції стійкість національної економіки визначається здатністю підприємств країни конкурувати на світовому ринку. При цьому світовий досвід демонструє можливість досягнення і збереження високої конкурентоспроможності країни, регіону, підприємства на основі кластерного підходу. У зв'язку з цим, метою статті є систематизація конкурентних переваг кластеру як фактору

підвищення інвестиційної активності інноваційних підприємств – учасників кластеру. У процесі виконання дослідження використано загальнонаукові теоретичні методи: системний аналіз – для з'ясування основних категорій дослідження; абстрактно-логічний метод – для здійснення теоретичних узагальнень та висновків про сутність інноваційного кластеру та його конкурентних переваг, графічний метод – для наочного представлення теоретичного й аналітичного матеріалу щодо відображення конкурентних переваг інноваційних кластерів та їх значення для інвестиційної активності підприємств – учасників кластеру. У статті визначено роль інноваційного кластеру у формуванні конкурентних переваг для влади, підприємств-учасників кластеру та суспільства країни. Авторами охарактеризовано зовнішні та внутрішні конкурентні переваги для інноваційних підприємств у складі кластерного об'єднання. Запропонована характеристика конкурентних переваг інноваційного кластеру може бути використана його учасниками в процесі регулювання діяльністю кластера і підвищення їх інвестиційної активності.

Ключові слова: інвестиційна активність; інноваційне підприємство; інтеграція; кластер; конкурентні переваги.

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КОНКУРЕНТНЫЕ ПРЕИМУЩЕСТВА КЛАСТЕРА КАК ФАКТОР ПОВЫШЕНИЯ ИНВЕСТИЦИОННОЙ АКТИВНОСТИ ИННОВАЦИОННОГО ПРЕДПРИНИМАТЕЛЬСТВА

В условиях глобализации и международной конкуренции устойчивость национальной экономики определяется способностью предприятий страны конкурировать на мировом рынке. При этом мировой опыт демонстрирует возможность достижения и сохранения высокой конкурентоспособности страны, региона, предприятия на основе кластерного подхода. В связи с этим, целью статьи является систематизация конкурентных преимуществ кластера как фактора повышения инвестиционной активности инновационных предприятий-участников кластера. В процессе выполнения исследования использованы общенаучные теоретические методы: системный анализ – для определения основных категорий исследования; абстрактно-логический метод – для осуществления теоретических обобщений и выводов о сущности инновационного кластера и его конкурентных преимуществ, графический метод – для наглядного представления теоретического и аналитического материала, отражающего конкурентные преимущества инновационных кластеров и их значение для инвестиционной активности предприятий-участников кластера. В статье определены роль инновационного кластера в формировании конкурентных преимуществ для власти, предприятий-участников кластера и общества страны. Авторами охарактеризованы внешние и внутренние конкурентные преимущества для инновационных предприятий в составе кластерного объединения. Предложенная характеристика конкурентных преимуществ инновационного кластера может быть использована его участниками в процессе регулирования деятельностью кластера и повышение их инвестиционной активности.

Ключевые слова: инвестиционная активность; инновационное предприятие; интеграция; кластер; конкурентные преимущества.

Problem statement. The stability of the national economy in the context of globalization and international competition is determined by the ability of national enterprises to compete in the world market. Competitive tension is constantly increasing, as a result of which competitive methods are becoming more rigid, and the current global economic dynamics leave less chance of maintaining lost competitive positions. However, it can be stated that rich experience in the world demonstrates the ability to achieve and maintain high competitiveness of a country, region, enterprise based on a cluster approach.

There are quite a few examples in different countries of creating clusters in many different segments of the economy. A key factor in the success of all competitive clusters is the synergistic effect that arises when merging and interacting with legally independent organizations and enhancing investment and innovation within the cluster. Therefore, clustering is one of the most promising areas for economic development of the territory, and the creation of an effective cluster increases the overall economic performance and improves the interaction of different sectors of the economy within the cluster.

Analysis of recent research and publications. Research of formation and functioning of innovation clusters, as well as features of interaction of enterprises-participants of the cluster are devoted to scientific works of many scientists, among them: S. Rosenfeld, A. Rauch, R. Doorn, W. Hulsink, M. Porter, E. Feser, H. Renski, H. Goldstein, L. Lisovska, N. Gruniv, J. Nishimura, H. Okamuro, A. Polyanska, S. Afonkin [1–7].

In paying tribute to the aforementioned scientific works, it is necessary to mention the need to systematize the competitive advantages of the cluster as a factor in increasing the investment activity of innovative enterprises-members of the cluster.

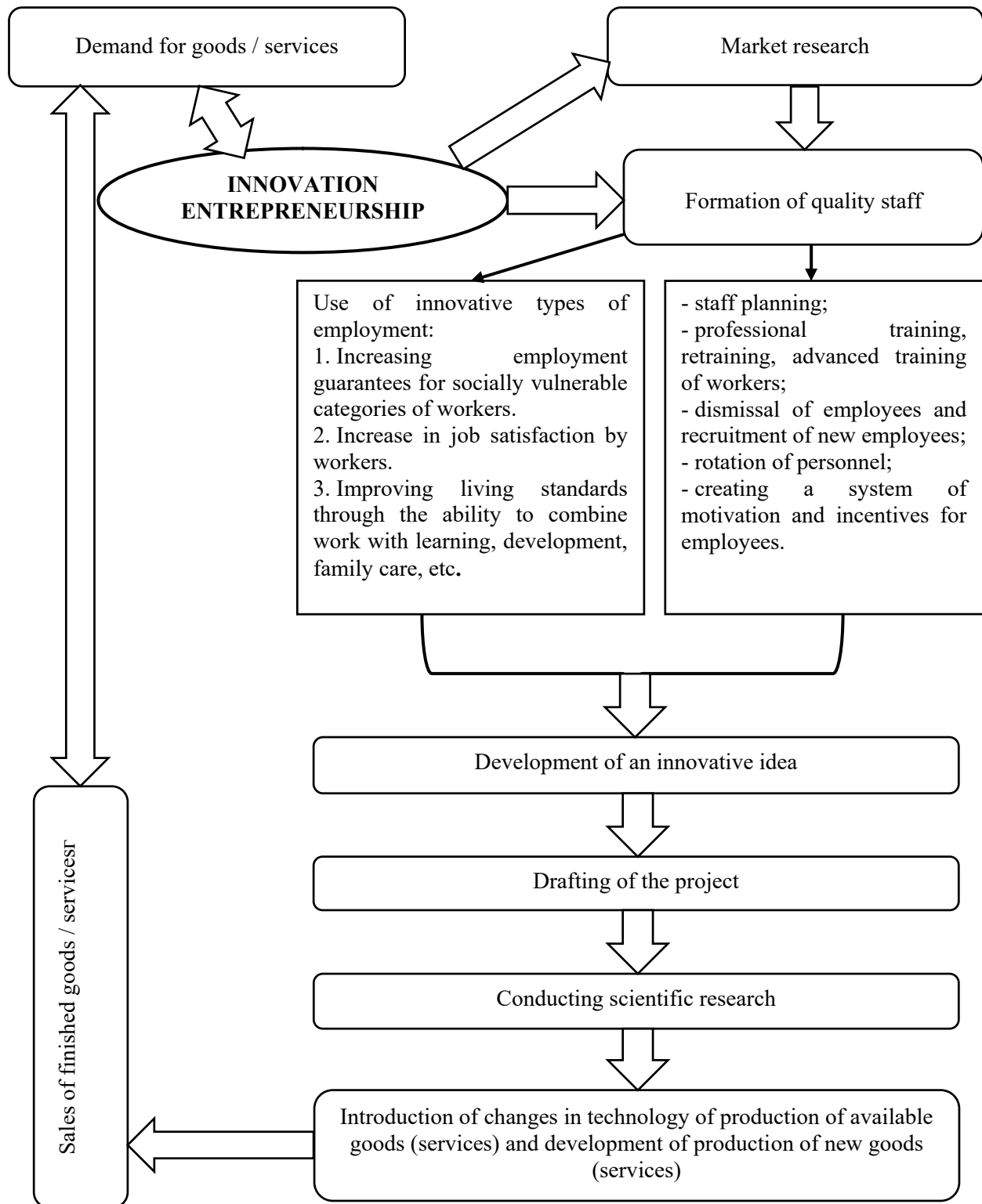
Research methods. In the course of the research, general scientific theoretical methods were used: system analysis – to clarify the main categories of research; abstract-logical method – for the implementation of theoretical generalizations and conclusions about the essence of the innovation cluster and its competitive advantages, graphical method – for visual presentation of theoretical and analytical material on the reflection of the competitive advantages of innovation clusters and their importance for the investment activity of enterprises-members of the cluster.

Formulation of the article goals. The purpose of the article is to systematize the competitive advantages of the cluster as a factor in increasing the investment activity of innovative enterprises-members of the cluster.

Summary of the main results of the study. The specific innovation orientation of development, which characterizes modern economic processes, puts forward new requirements for the content, organization, forms and methods of economic activity [8]. With the innovation orientation of economic growth, models of the research process of creation of new scientific knowledge and procedures of new intellectual products emergence occupy the main place. The world experience of innovation development shows that innovation is the optimal way of scientific and technological re-equipment and gradual diversification of production. Therefore, the implementation of innovation play a major role in entrepreneurship and in ensuring a high level of competitiveness of the national economy as a whole [9] (Figure 1).

The efficiency of the economy is determined by the level of its competitiveness, a well-grounded approach to the identification of which is issued on the basis of the presence of creation factors and preservation of competitive advantages. Competitiveness can be represented as a function of competitive advantage, so ensuring competitiveness is limited to considering the issues of creating and especially maintaining competitive advantage. Thus, the competitiveness of an

entity should be understood as the effectiveness of the entity's management of its competitive advantages in order to achieve the best results in the fight for scarce resources and consumer benefits over its competitors.



Source: created by the authors.

Figure 1. The process of functioning of an innovation enterprise

Aggregate and coordinated work of all available competitive advantages, as well as the presence of fierce competition are the components that can guarantee a cluster approach, which leads to the creation of additional competitive advantages.

The worldwide cluster approach is recognized as a policy of enhancing the competitiveness of national and regional economies and is considered an effective direction for investment and innovative entrepreneurial activity [10].

A country or region that uses cluster policy is increasing its global competitiveness by adding new competitive advantages to its existing competitive advantages, such as synergy effects, in the form of feedback for the areas that are actively involved in cluster formation. Therefore, clusters play the role of internal market growth points and foreign expansion bases. It is believed that when several firms reach a high level of competitiveness in the market, they spread their influence in the form of new competitive advantages to the immediate environment: suppliers, consumers and competitors. In turn, the success of the environment has a positive effect on strengthening and further increasing the competitiveness of these companies.

The emergence of competitive advantages, in our view, is a very important aspect in the formation of a cluster. New competitive advantages are significant both for the cluster as a whole and for each participant individually. Moreover, by cooperating and joining forces in the cluster, enterprises activate investment activity, concentrate capital investments and achieve additional synergistic effect, which cannot be obtained by individual producers. The financial stability of the cluster enterprises is increasing, their position in the market is strengthening, the market share is increasing, the atmosphere of trust among all the cluster participants is created. Cooperation in the cluster optimally combines private, collective and public interests, since it is related to the types of property that operate in the current environment.

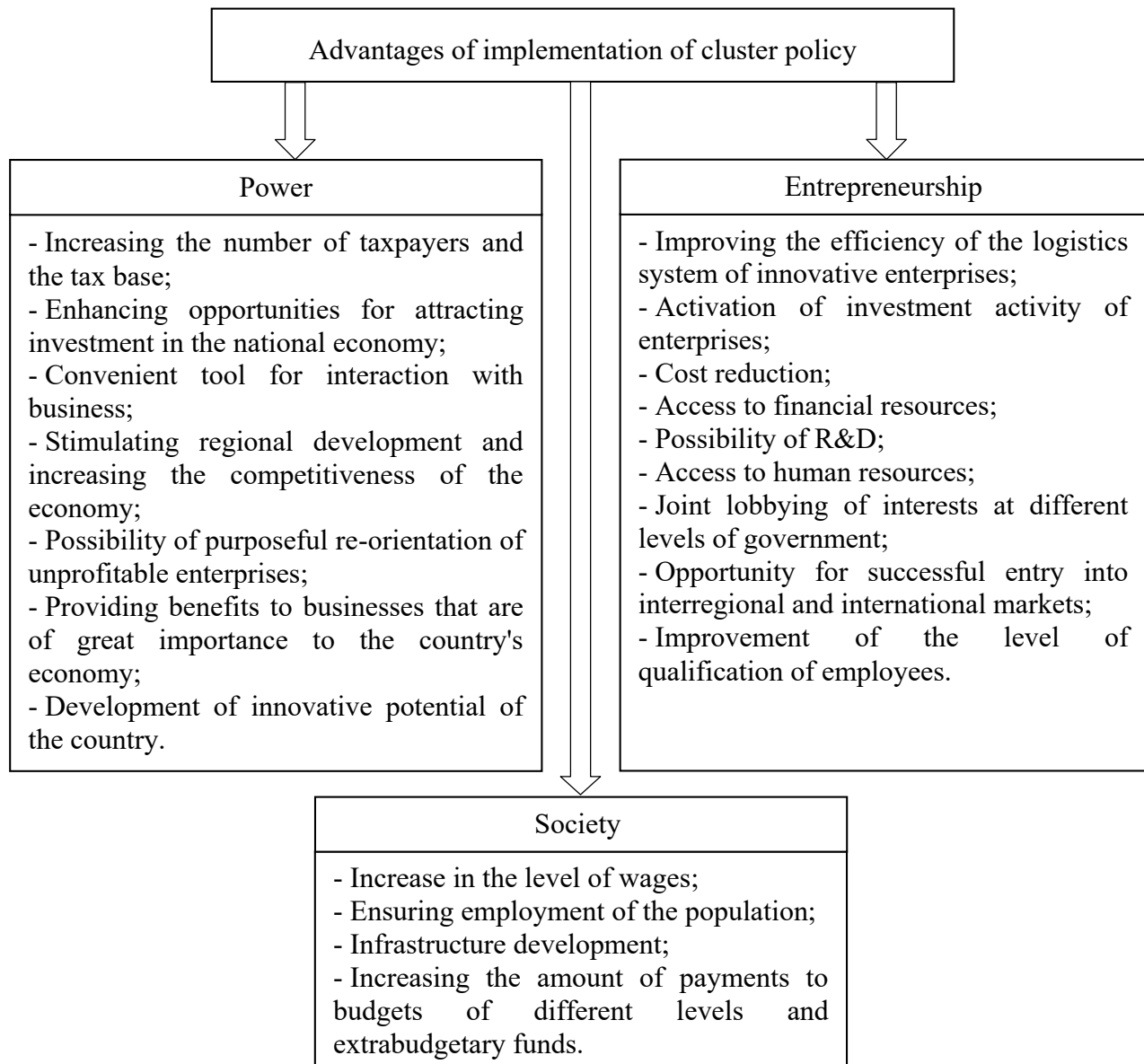
Thus, the main benefits of creating a cluster are directed into three spheres – power, business and the public – they are directly involved in the formation and functioning of the cluster (Figure 2).

For example, the authorities achieve two important goals in the implementation of cluster policy – to increase tax revenues and solve the problem of employment. And obtaining cluster status is of great political importance because it attracts the attention of the public, financial institutions, helps to build international reputation, "promoting" the brand, attracts additional resources to the national economy. The cluster stimulates economic growth and accelerates the solution of social problems, creating the conditions for successful development of more backward territories.

Considering cluster affiliation from the point of view of an entrepreneur whose business is part of a cluster, first of all, the benefits are to consolidate efforts to do business together and increase competitiveness. Secondly, together it is much easier to lobby the interests of the cluster on different branches of government in solving a common problem. Very important issues are the proximity of suppliers, cluster confidence in them, as well as fierce competition between cluster enterprises, which leads to lower costs [11].

One of the most important goals of the cluster approach is to strengthen the competitiveness of national and regional economies, which increases the investment attractiveness of the regions. This is due to the fact that the cluster approach allows state structures to regulate the socio-economic development of the region, reduce barriers to entry to foreign markets for cluster members, as well as barriers to entry from foreign markets for investment and new innovations.

Continuous interaction between cluster members facilitates formal and informal knowledge sharing, collaboration between organizations with complementary assets and professional skills. The formation of an effective cluster serves as an impetus to further attract new companies, investments, services and suppliers to the cluster, and to pay close attention to the government, as well as to develop processes of forming its own professional staff, so the cluster becomes something more than a mere sum of its individual parts.



Source: created by the authors.

Figure 2. Advantages of implementation of cluster policy

Thus, the competitive advantages of participating in the cluster can be divided into external, which allows to increase investment activity in entrepreneurship in the country (region), and internal, which increase the competitiveness of companies – members of the cluster (Table 1).

Productivity gains and, as a consequence, enterprise efficiency gains are precisely the reasons why cluster policies need to be pursued in the country's regions. Businesses are more profitable being located near each other, even if they are competitors. This is necessary for the use of general infrastructure, proximity to the labor market and knowledge, which results in external savings due to the scale of use of shared resources.

The benefits for productivity growth as well as innovation in the cluster are stronger than in isolated, innovative enterprises. Due to the competitive pressure both outside and inside the cluster, due to the ease of constant comparison of results, incentives for productivity increase emerge. The ambition and desire to look good in the local community support the firms in their quest to get around each other.

Table 1

Competitive advantages of enterprises participating in the innovation cluster

| External competitive advantages | Internal competitive advantages |
|--|--|
| - productivity growth; - complementarity - stimulating the emergence of new innovative enterprises; - activation of investment activity of enterprises; - striving for innovation. | - growth in profits from innovation; - use of experience and information from other cluster members; - reducing costs; - increasing the level of education of the personnel of enterprises; - access to specialized factors of production; - the appearance of new investors. |

Source: systematized by the authors.

The cluster develops complementarity between individual activities of the cluster members. Poor performance of part of the cluster can hinder the success of other participants. The presence of a group of related companies and industries in any locality ensures the effectiveness of joint marketing. Proximity to one another, supply and technology links, and the availability of ongoing personal contacts and public relations facilitate the flow of information within clusters.

Using the experience and information of other companies in the cluster determines the ability to respond quickly to consumer preferences. Participation in the cluster gives advantages in access to innovations and ways of organizing production. It is difficult for some firms to keep leadership for a long time, but the set of firms participating in the cluster develops faster than firms outside the cluster.

Specific location within the cluster may provide privileged or less expensive access to specialized factors of production.

Obtaining factors of production from the cluster participants leads to:

- to reduce the cost of transactions compared to the use of remote sources;
- to minimize inventories;
- to facilitate communication, reduce adaptation costs;
- to ancillary or support services.

Clusters also provide benefits when receiving production factors from remote sources. A presence of a cluster can reduce the cost of importing factors of production, as suppliers are more likely to set prices. The price reduction will reflect both the attractiveness of the supplier for its penetration into the large concentrated market and the cost-effectiveness of its service.

The presence of a cluster not only increases the demand for specialized factors of production, but also increases their total number. Where there is a cluster, the availability of skilled staff, services and components, as well as the number of structures that create them, usually exceed the capabilities available elsewhere.

It should be noted that access to public goods contained in clusters is costly. Clusters provide many examples of investing in these benefits – investment in training programs, infrastructure, quality centers, etc. Public investment that works for the benefit of the cluster is stimulated by the number and authority of participants and firms seeking to benefit from such investment.

Cluster associations have a stimulating effect on foreign direct investment flows directly to cluster members and the national economy as a whole:

- indirectly, due to cluster characteristics such as closer interaction, low communication costs and other benefits arising from the closeness of innovative enterprises in the cluster;
- directly because well-functioning clusters can be a driving force for regional growth, which is often seen as a major incentive for foreign investors to place investments on a particular investment site.

At the same time, one of the most important sources of increasing investment activity of cluster participants is the presence of a knowledge environment, which is an ecosystem that creates favorable conditions for knowledge production, dissemination, development and accumulation. The knowledge environment in clusters, considered as a scientific category, is characterized by the presence of two main components:

- knowledge bases (statistical approach) – clusters have a certain stock of knowledge, which is the sum of knowledge of the cluster participants (universities, scientific and research institutes, innovative enterprises, highly skilled workforce;

- knowledge mechanisms (dynamic approach) – clusters, by establishing interconnections between different units and intensifying interaction between them, provide the necessary elements, creating favorable conditions for the dissemination, accumulation and development of knowledge.

Clusters help to increase the investment attractiveness of its members to Foreign Direct Investments flow through a positive impact on the innovativeness of enterprises by locating the branches of different industries in which new technologies are being formed in close proximity to each other.

Clusters are capable of attracting Foreign Direct Investment through the development of relationship capital, which can be defined as a complex of all relationships between institutions, enterprises and individuals, based on their awareness of belonging to a particular community and significant potential for developing cooperation between them. Relationship capital in a particular region is transformed into the creation of a stable framework for cooperation in many dimensions between businesses, partners, subcontractors and customers.

Public goods are needed by businesses, but they have to be paid for, and returns are difficult to estimate, so firms do not want to spend money. But these benefits are needed to create competitive products. In the cluster, the cost of public goods is reduced, so the benefits of participating in clusters will be high.

Many of the competitive advantages that are achieved in the cluster (for example, productivity growth, pursuit of innovation and investment, profit growth, cost reduction, etc.) can be achieved in other types of integrated pools. But in our opinion, the main difference between the cluster and other associations is healthy and fierce competition, which is not possible in the formation of monopolistic and oligopolistic corporations. And benefits such as price reductions, sharing of information and experience, complementarity, improved product quality, educational attainment and many more can only occur when clustered. Therefore, the cluster approach is the most advantageous compared to others.

Thus, it is possible to summarize the competitive advantages that innovative enterprises get from participating in the cluster:

- expanding the possibilities of attracting investments by combining the financial capabilities of all participants of the cluster, attracting investments from the outside, joint participation in the contests of projects financed in the form of grants, pooling of financial capabilities to provide guarantees for obtaining credit resources;

- reducing the cost of products and services by improving the efficiency of the process of providing innovative production of raw materials, parts, structures, based on the establishment of long-term partnerships;

- the ability to effectively defend their interests at the level of local authorities and local self-government;

- implementation of common strategic programs with local authorities ensures constant workload, creation of new jobs, additional volumes for existing ones, revival of inactive ones and formation of new enterprises;

- formation of a fundamentally new level of relationships based on honesty and trust between the cluster participants, increasing the reliability of network partners in investment and financial cooperation, effective use of the combined potential of partners;
- reduction of costs for the modernization of innovative products by transferring part of the work to partners specializing in specific activities;
- increase of efficiency of performance of separate managerial functions due to division of labor, involvement of specialized organizations of the relevant profile;
- increase of efficiency of works in the sphere of sales and service, acquisition of necessary resources;
- development of small business within the cluster, which is a side effect of a set of activities and actions of cluster members, authorities and other institutions aimed at ensuring effective interaction of all cluster participants.

Conclusions. As a result of the research, it can be noted that the formation of the cluster creates competitive advantages for innovative enterprises that are not present in other integration structures, since the efficiency of the cluster structure is achieved due to the synergistic effect. As a result, the investment activity of entrepreneurship in the country is activated, which causes an increase in investments in innovative development of production, formation of new companies, increase of employment and quality of products, increase of competitiveness and productivity of cluster participants, development of close links between science and production, development of infrastructure raising the educational level of employees.

References

Література

- | | |
|---|---|
| <p>1. Rosenfeld, S. (2005). Industry Clusters: Business Choice, Policy Outcome, or Branding Strategy? <i>Journal of New Business Ideas and Trends</i>, Vol. 3, No. 2, P. 4–13.</p> <p>2. Rauch, A., Doorn, R., Hulsink, W. (2014). A Qualitative Approach to Evidence-Based Entrepreneurship: Theoretical Considerations and an Example Involving Business Clusters. <i>Entrepreneurship Theory and Practice</i>, Vol. 38 (2), P. 333–368.</p> <p>3. Feser, E., Renski, H., Goldstein, H. (2008). Clusters and Economic Development Outcomes An Analysis of the Link Between Clustering and Industry Growth. <i>Economic Development Quarterly</i>, Issue 22 (4), P. 324–344.</p> <p>4. Porter, M. (2005). Konkurentnoe preimushhestvo: kak dostich vysokogo rezultata i obespechit ego ustojchivost [Competitive advantage: how to achieve high results and ensure its sustainability]. Moscow, Alpina Biznes Buks. 341 p. [in Russian].</p> <p>5. Lisovska, L., Gruniv, N. (2016). Providing synergy of the innovation process in the enterprise [Ensuring synergism of innovative processes at the enterprise]. <i>Bulletin of the National University "Lviv</i></p> | <p>1. Rosenfeld S. Industry Clusters: Business Choice, Policy Outcome, or Branding Strategy? / S. Rosenfeld // <i>Journal of New Business Ideas and Trends</i>. – 2005. – Vol. 3, No. 2. – P. 4–13.</p> <p>2. Rauch A. A Qualitative Approach to Evidence-Based Entrepreneurship: Theoretical Considerations and an Example Involving Business Clusters / A. Rauch, R. Doorn, W. Hulsink // <i>Entrepreneurship Theory and Practice</i>. – 2014. – Vol. 38 (2). – P. 333–368.</p> <p>3. Feser E. Clusters and Economic Development Outcomes An Analysis of the Link Between Clustering and Industry Growth / E. Feser, H. Renski, H. Goldstein // <i>Economic Development Quarterly</i>. – 2008. – Issue 22 (4). – P. 324–344.</p> <p>4. Портер М. Конкурентное преимущество: как достичь высокого результата и обеспечить его устойчивость / М. Портер. – М.: Альпина Бизнес Букс, 2005. – 341 с.</p> <p>5. Лісовська Л. С. Забезпечення синергізму інноваційних процесів на підприємстві / Л. С. Лісовська, Н. Т. Гринів // <i>Вісник Національного</i></p> |
|---|---|

- Polytechnic", Logistics, No. 846, P. 103–109 [in Ukrainian].
6. Nishimura, J., Okamuro, H. (2011). R&D productivity and the organization of cluster policy: An empirical evaluation of the Industrial Cluster Project in Japan. The Journal of Technology Transfer, Issue 36 (2), P. 117–144.
7. Polyanska, A., Afonkin, S. (2013). Vyznachennya efektu synergiyi v procesi pryjnyattya upravlinskyx rishen [Synergy effect determination in the process of management decision making]. Economy, Vol. 5 (125), P. 87–89 [in Ukrainian].
8. Hnatenko, I., Rubezhanska, V. (2017). Logika vprovadzhennya innovacijnyx zahodiv na regionalnyj rynek prac v umovax jogo cyklichnogo rozvytku [The logic of introducing innovation activities into the regional labor market in the context of its cyclical development]. Business Inform, No. 8, P. 110–115 [in Ukrainian].
9. Hnatenko, I., Kuksa, I., Naumenko, I., Baldyk, D., Rubezhanska, V. (2020). Infrastructure of innovation enterprise: features of formation and regulation in modern market conditions. Management Theory and Studies for Rural Business and Infrastructure Development, Issue 42 (1), P. 97–104.
10. Kuksa, I., Shtuler, I., Orlova-Kurilova, O., Hnatenko, I., Rubezhanska, V. (2019). Innovation cluster as a mechanism for ensuring the enterprises interaction in the innovation sphere. Management Theory and Studies for Rural Business and Infrastructure Development, Vol. 41 (4), P. 487–500.
11. Orlova-Kurilova, O., Kuksa, I., Hnatenko, I., Rubezhanska, V. (2020). Specific signs of a synergistic effect in an innovation cluster. Wielokierunkowosc Jako Gwarancja Postępu Naukowego: kolekcja prac naukowych «ΛΟΓΟΣ» z materiałami Międzynarodowej naukowo-praktycznej konferencji (21 lutego 2020 r.). Warszawa (Polska): Europejska platforma naukowa, P. 10–12.
- університету "Львівська політехніка". Логістика. – 2016. – № 846. – С. 103–109.
6. Nishimura J. R&D productivity and the organization of cluster policy: An empirical evaluation of the Industrial Cluster Project in Japan / J. Nishimura, H. Okamuro // The Journal of Technology Transfer. – 2011. – Issue 36 (2). – P. 117–144.
7. Полянська А. С. Визначення ефекту синергії в процесі прийняття управлінських рішень / А. С. Полянська, С. Афонькін // Економіка. – 2013. – № 5 (125). – С. 87–89.
8. Гнатенко І. А. Логіка впровадження інноваційних заходів на регіональний ринок праці в умовах його циклічного розвитку / І. А. Гнатенко, В. О. Рубежанська // Бізнес Інформ. – 2017. – № 8. – С. 110–115.
9. Hnatenko I. Infrastructure of innovation enterprise: features of formation and regulation in modern market conditions / I. Hnatenko, I. Kuksa, I. Naumenko, D. Baldyk, V. Rubezhanska // Management Theory and Studies for Rural Business and Infrastructure Development. – 2020. – Issue 42 (1). – P. 97–104.
10. Kuksa I. Innovation cluster as a mechanism for ensuring the enterprises interaction in the innovation sphere / I. Kuksa, I. Shtuler, O. Orlova-Kurilova, I. Hnatenko and V. Rubezhanska // Management Theory and Studies for Rural Business and Infrastructure Development. – 2019. – Vol. 41 (4). – P. 487–500.
11. Orlova-Kurilova O. Specific signs of a synergistic effect in an innovation cluster / O. Orlova-Kurilova, I. Kuksa, I. Hnatenko, V. Rubezhanska // Wielokierunkowosc Jako Gwarancja Postępu Naukowego: kolekcja prac naukowych «ΛΟΓΟΣ» z materiałami Międzynarodowej naukowo-praktycznej konferencji (21 lutego 2020 r.). – Warszawa (Polska): Europejska platforma naukowa, 2020. – P. 10–12.