# ASSESSMENT OF CLUSTER TEXTILE ENTREPRENEURSHIP EFFICIENCY

**N. SAVCHUK[1]**
[1] *Kyiv National University of Technologies and Design, Ukraine.*

**Introduction.** In modern world not only the certain producer, but also the country in general has to be competitive. Strengthening of competition on the global market causes the necessity in creation of new forms of business which provide survival and prosperity of national producers and the state in general. Rather effective solution of a problem of ensuring competitiveness on the national and global markets is the concept of national economy clustering. Creation of a territorial cluster does not guarantee its high efficiency at all. While implementing each of the cluster project developers face with an issue of efficiency assessment of its functioning.

**Hypothesis.** The research of cluster entrepreneurship effectiveness helps to identify the most influential factors of its realization, directions of cluster initiatives contribution through the changes of the development vector.

**The aim of the research** is to develop methodical justification of efficiency assessment of certain industry sector cluster functioning.

**Methodology of the research** is based on the Michael Porter`s concept of territorial clusters development.

**Results**: The features of cluster development in different regions of Ukraine have been analyzed. The approaches of efficiency assessment of economic clusters activity existing in scientific literature have been studied. The method of efficiency assessment of entrepreneurial activity of textile industry clusters taking into account sectoral features of business has been offered.

**Conclusions**: The necessity of taking into account the industrial sectors of clusters helps to identify priority directions of clustering in many regions of Ukraine, the biggest potential of clustering and inter-industrial cooperative links. Using the results of the research in Ukrainian practice will contribute to the improvement of territorial policy in the sphere of cluster entrepreneurial development of economy. It will give an opportunity to increase the competitiveness of national economy on the global market.

**Keywords**: entrepreneurship; textile and industrial clusters; efficiency assessment; clustering; agglomeration map; cluster initiatives.

# ОЦІНКА ЕФЕКТИВНОСТІ КЛАСТЕРНОГО ТЕКСТИЛЬНОГО ПІДПРИЄМНИЦТВА

**Н. САВЧУК[1]**
[1] *Київський національний університет технологій та дизайну, Україна*

**Вступ.** У сучасному світі конкурентоспроможними повинен бути не тільки окремий виробник, але і країна в цілому. Посилення конкуренції на глобальному ринку викликає необхідність у створенні нових форм ведення бізнесу, які забезпечують виживання і процвітання національних виробників і держави в цілому. Досить ефективним вирішенням проблеми забезпечення конкурентоспроможності на національному і глобальному ринках є концепція кластеризації національної економіки. Створення територіального кластера аж ніяк не гарантує його високу ефективність. При реалізації кожного кластерного проекту перед розробниками постає питання про оцінку ефективності його функціонування.

**Гіпотеза.** Дослідження ефективності кластерного підприємництва дозволяє визначити найвпливовіші чинники його реалізації, напрями сприяння кластерним ініціативам через зміну вектору розвитку.

**Мета дослідження** полягає в розробці методичного обґрунтування оцінки ефективності функціонування кластера певної галузевої приналежності.

**Методологія** дослідження базується на концепції кластерного розвитку територій М. Портера.

**Результати**: Проаналізовано особливості кластероутворення у регіонах України, існуючі в літературі підходи до оцінки ефективності діяльності економічних кластерів. Запропоновано методику для оцінки ефективності підприємницької діяльності текстильно-промислових кластерів, що враховує галузеву специфіку бізнесу.

**Висновки**: Необхідність врахування галузевої приналежності кластерів дозволяє визначити пріоритетні напрями кластеризації у багатьох регіонах України, найбільший потенціалом кластеризації та міжгалузеві кооперативні зв'язки. Застосування результатів дослідження в українській практиці сприятиме вдосконаленню територіальної політики в області кластерного підприємницького розвитку економіки і дозволить підвищити конкурентоспроможність національної економіки на глобальному ринку.

**Ключові слова**: підприємництво; текстильно-промислові кластери; оцінка ефективності; кластероутворення; агломераційна карта; кластерні ініціативи.

**Problem statement.** The analysis of international experience shows that textile and light industries are the most adapted ones for the market conditions. These industries have the highest turnover of capital and production of essential social-oriented goods, the demand for which is never limited. Modern social and economic development of Ukraine is going on in accordance with the intensive influence of global economy, rigid strengthening of competition and the increase of the role of transnational factors of development. Therefore, the use of clusters, which are the elements of territorial structure of economy, allows to develop the group of geographically localized objects of different functions, including objects of innovative infrastructure, multilateral links, which complement each other and, thereby, to increase competitive advantages of separate organizations and the system in general.

**The analysis of recent publications and the unsolved part of the problem.**

In economics the issues, connected with the development, peculiarities of creation and functioning of clusters, are widely covered both in domestic and foreign scientific literature. Among domestic scientists we should mention I. Gryshchenko [1], L. Ganushchak-Yefimenko [2], S. Mochernyi, V. Fedorenko [1], T. Voronkova [1], V. Shcherbak [2] and others. The most famous foreign researches in the sphere of clustering are M. Porter [3], A. Marshal [4], R. Keech [5], M. Munger [5], C. Simon [5], M. Ketels [6], O. Memedovic [6].

The issue of the development of methodological framework for the efficiency assessment of economic clusters is covered in scientific works of M. Buianov, L. Dmytryev [7], H. Volkovska, P. Yanovskyi [8], Ye. Velykaia, A. Papian [9]. Analysis of publications on this issue gives an opportunity to name several basic approaches to the efficiency assessment of industrial clusters: method, based on the measuring of partial effects, caused by clusters (assessment of the synergetic effect; assessment of the effect, caused by the decrease of transactional losses; synergy of infrastructure; effect, caused by the diffusion of innovations); methods of clusters efficiency assessment as the investment projects (NPV; Real option approach); parametric methods of clusters efficiency assessment (key indicators of clusters activity; multiparametric approach); methods based on the assessment of clusters competitiveness (assessment of different aspects of clusters competitiveness: market position, technological leadership and capacity to renewal; assessment of factors of current and strategic competitiveness of clusters). All the given methods have one common advantage – universality of their use, because the authors don't limit the sphere of their usage. But at the same time, such kind of multifunctionality can be considered as a disadvantage, because the correction of indicators and effects according to the sectoral affiliation of clusters is not provided in their works. In real circumstances it may lead to incorrect results of

efficiency assessment. In our opinion, the specificity of industry should be taken into account while forming the economic clusters. Consideration of industrial features will provide the clear understanding, in which directions the competitive advantages should be formed, which aspects should be taken into account while estimating clusters effectiveness, what is the comparative basis according to separate estimating criteria.

**The aim of the research** is to ground the features of clustering in different regions of Ukraine and to define the most reasonable approach on efficiency assessment of textile and industrial cluster functioning.

**The results of the research**. Positive experience of economically developed countries has influenced on the Ukrainian business and resulted in formation of cluster initiatives. Clusters functioning promised the rapid and significant income, market stability, favorable competitive positions and strengthening of its members as a result of synergetic effect. In Ukraine the idea of clustering was developed by the initiative of the economist Wolfgang Preis (USA) by the end of the 1990`s. It was implemented in Khmelnytsky Region in several clusters at once: tailoring, building materials and agricultural. The new governmental public organization 'The Podillya Pershyi Association' (PPA) was formed to develop these clusters [10].

The Concept of the Cabinet of Ministers of Ukraine on the National Program on Small and Medium-sized Enterprises for years 2014-2024 (Order №641-p; August 28, 2013), The Concept of the Cabinet of Ministers of Ukraine on the National Target Economic Program on Industry Development for the period till 2020 (Order №603-p; July 17, 2013), The Concept of the Cabinet of Ministers of Ukraine on Reforming the State Policy in Innovative Area (Order №691-p; September 10, 2012) provide the development and implementation of the programs of small and medium-sized enterprises integration into the national and international innovational and technological clusters; definition of the notion "clustering" on the legislative level and the order of clusters financing; creation of scientific, innovational and industrial clusters in high-technological spheres; simplification of the innovational clusters forming procedures. Several examples of clusters initiatives implementation in Ukraine are given in Table 1.

In our state legal bases of the economic cluster formation have not been created yet, though its essence and purpose are well-known. Actually clusters in Ukraine began to develop as a unification of enterprises on the basis of economic interests and on any contractual form between participants of a cluster. Let's consider peculiar features of clustering in different regions of Ukraine on the basis of short characteristics of cluster initiatives embodied in them for identification of dependence between clustering development and harmonious development of the region.

*Table 1*

## Examples of clusters initiatives implementation in Ukraine

| | 1998 | 2006 | 2008 | 2008 | 2008 |
|---|---|---|---|---|---|
| Events | "PPA" First cluster events (tours with local and international companies, trainings etc.). In clusters: tailoring; building materials; building; food; animal husbandry and farming; tourism. | Industrial park "Solomonovo" Logistics cluster "Bereg-Karpaty" Legislation on local levels on the contribution to the development of clustering (for example, the decision of the regional council from April 24, 2009 "On the creation of cross-border centers of transportation services and logistics"). | Cluster associations in IT sphere and wood industry Inclusion of the cluster concept into the strategy of city development, conducting of research on the creation of local clusters. | Creation of special online portal for the information and contacts sharing among the members of Ukrainian regional clusters The studies of clusters activity are conducted. | Analysis of economy of regions and clusters Development of the strategy of cluster development in separate regions (based on the conclusion of the Monitoring group supported by the "Effective Management" Fund) |
| Results | The establishment of cluster associations "Building cluster", "Tailoring cluster" and tourism cluster "Kamianets" Clusters don't cooperate actively, associations are passive and almost invisible on the national and international levels. | Industrial park doesn't fully corresponds to the cluster approach; implementation of the events on cooperation between logistics clusters is not active, benefits from the cross-border cooperation are not being used. | IT-cluster in Lviv Region is active and provides the companies with real benefits from their cooperation; there exists the certain level of activity of wood industry associations. | Doctor Sokolenko`s team conducted several researches on the issue of clusters in 2005 and 2010; the map of cluster organizations was published. | One of the clusters development strategies resulted in the creation of an active IT-cluster |

Definition of the priority directions of clustering in many regions of Ukraine does not consider features of industrial development, without taking into account industries with the largest clustering potential and formed inter-industrial cooperative bonds (for example, shipbuilding and sea-industry in Mykolaiv Region) (Table 2). In the majority of regional strategies we can observe copying of purposes and strategic priorities of regional development from the strategies of other regions, including the priority directions and sectors for clusters creation and development (first of all, on creation of agricultural clusters and for the development of entrepreneural environment) [11].

*Table 2*

### Use of the cluster model in different regions of Ukraine

| Purpose | Region | Number of regions |
|---|---|---|
| Increase of agricultural production effectiveness and realization of agricultural potential | Vinnytsya Region, Zhytomyr Region, Zakarpattya Region, Ivano-Frankivsk Region, Kirovograd Region, Poltava Region, Ternopil Region, Chernivtsi Region, Chernihiv Region | 9 |
| Implementation of the innovational model of industrial development | Vinnytsya Region, Zhytomyr Region, Zakarpattya Region, Kirovograd Region, Ternopil Region, Chernivtsi Region | 7 |
| Strengthening of the SMEs potential and development of their infrastructure | Volyn Region, Poltava Region, Chernivtsi Region, Donetsk Region, Lviv Region, Kherson Region | 6 |
| Insurance of the recreational potential and tourism sphere development | Ternopil Region, Kherson Region, Chernivtsi Region, Chernihiv Region | 4 |
| Stimulation of cooperation between cross-border and border territories | Vinnytsya Region, Zakarpattya Region, Lviv Region | 3 |
| Decrease of development disproportions in the region | Kyiv Region, Mykolaiv Region | 3 |
| Insurance of the alternative energy sector development | Ivano-Frankivsk Region, Chernihiv Region | 2 |

As the geographical localization of enterprises is considered to be one of the most essential conditions of a cluster creation, we offer to reveal the presence of clusters potential according to this feature in different spheres of economic activity of Ukraine basing on the analysis of the agglomeration map (Figure 1) [11].
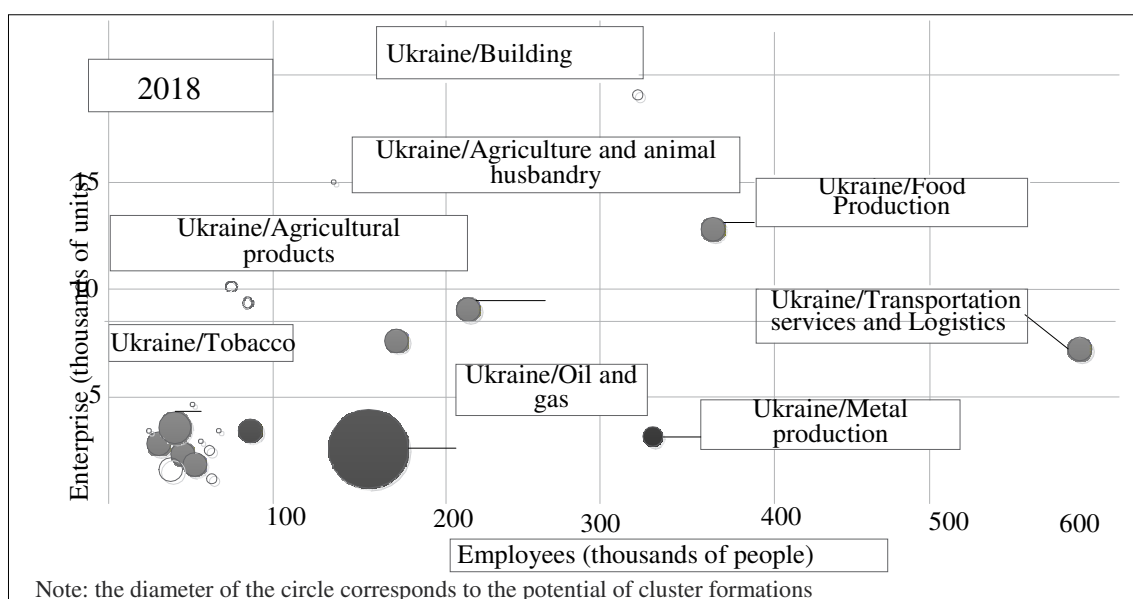


*Resourse: author`s calculations according to the European Cluster Observatory data* [12].
*Figure 1.* **Agglomeration map of cluster potential in Ukraine**

The offered method of efficiency assessment of textile industry clusters proves the prospects of such kind of entrepreneurial integration and gives an opportunity to reveal the problems of this type of clustering [13] (Table 3).

*Table 3*

**Main problems of textile industry development** [13]

| Problem | Essence of the problem |
|---|---|
| 1. Personnel-based. | • lack of infrastructure of personnel training (system of technical training colleges);<br>• increase of working professions prestigiousness in certain spheres by the means of the wages growth;<br>• considerable shortage of personnel;<br>• insufficient qualification of personnel. |
| 2. Market-based. | • weak organization of the market of producers;<br>• low competitiveness of products in comparison with their foreign analogs |
| 3. General economic. | • low investment attractiveness;<br>• high dependence of expenses on the level of prices for major factors;<br>• weak contacts between producers in technological chain. |
| 4. Production-based. | • under-utilization of production capacities as a result of their demolition;<br>• technological gap of the industry;<br>• high resource intensity of applied technologies. |

Multiparametric approach is the basis of our method. The assessment should be carried out in 11 key directions (Table 4). It should be noted that the choice of peculiar indicators was made taking into account specific features of the textile industry. In total these criteria are capable to give a complex assessment of clusters activity.

*Table 4*

**Form for the assessment of the textile cluster efficiency**

| Criterion | Content of the criterion | Weight | Assessment |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| **1. Content assessment of cluster participants** | | | |
| 1.1. Share of cluster participants in total number of industry representatives | Share of the cluster textile enterprises in total number of textile enterprises of the country | *3-1* | *5-1* |
| 1.2. Dynamics of new businesses share | Growth in the number of new companies in the cluster | *3-1* | *5-1* |
| 1.3. Share of non-production organization | Share of non-production companies in total number of participants | *3-1* | *5-1* |
| 1.4. Dynamics of foreign (joint) enterprises share | Growth in the number of foreign companies in the cluster | *3-1* | *5-1* |

*End of Table 4*

| Criterion | Content of the criterion | Weight | Assessment |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1.5. Share of SMEs | Share of SMEs in total number of participants | *3-1* | *5-1* |
| 1.6. Share of research institutes | Share of research institutes in total number of participants | *3-1* | *5-1* |
| 1.7. Regional concentration of participants | In case, when major participants are located in one region (territorially close), we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| 1.8. Sectoral concentration of participants | In case, when all the participants are involved only in textile industry, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| 1.9. Working experience of the participants on the market | In case, when the majority of companies have sufficient working experience, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| **2. Cluster position on the market** | | | |
| 2.1. Cluster share on the inner market | Relation of the amount of cluster production to the total number of propositions on the domestic market | *3-1* | *5-1* |
| 2.2. Dynamics of share in the world-wide textile proposition | Growth in the number of cluster production on the world market | *3-1* | *5-1* |
| 2.3. Dynamics of the outer markets | Growth in the number of outer markets, dealing with the cluster | *3-1* | *5-1* |
| 2.4. Advantages of the cluster`s geographical location | In case, when the cluster`s location is advantageous for the development of its activity, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| **3. Production capacity of a cluster** | | | |
| 3.1. Loading of industrial capacity | Current level of the industrial capacity use | *3-1* | *5-1* |
| 3.2. Consumption of fixed capital | The level of cluster`s fixed capital consumption | *3-1* | *5-1* |
| 3.3. Costs level | Costs on production and distribution of products | *3-1* | *5-1* |
| 3.4. Labor productivity | The level of productivity on the key enterprise of the cluster | *3-1* | *5-1* |
| 3.5. Fixed capital renewal rate | Share of renewed funds in general structure of fixed capital | *3-1* | *5-1* |
| 3.6. Share of the cluster`s fixed capital in total amount of the industry`s fixed capital | Relation of the cluster`s fixed capital to the fixed capital of the country`s textile industry in general | *3-1* | *5-1* |

*End of Table 4*

| Criterion | Content of the criterion | Weight | Assessment |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| **4. Assessment of cluster production** | | | |
| 4.1. Quality of products | Expert assessment based on consumer characteristics, aesthetics and environmental friendliness of products | *3-1* | *5-1* |
| 4.2. Share of synthetic products | Share of products containing synthetic materials in general amount of cluster`s production. | *3-1* | *5-1* |
| 4.3. Competitiveness of products on the world market | Expert assessment of the demand for the cluster`s production on the world market | *3-1* | *5-1* |
| 4.4. Presence of a brand | In case when the cluster uses one common brand while distributing the products, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| **5. Efficiency assessment of cluster management** | | | |
| 5.1. Presence of strategies | In case when there exists a strategy of cluster development, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| 5.2. Presence of a coordinative body | In case when there exists one common body to coordinate the activity of all the participants of the cluster, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| 5.3. Level of collaborative links development | In case when the cluster`s organizational structure contributes to its development, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| **6. Assessment of cluster infrastructural availability** | | | |
| 6.1. Availability of industrial infrastructure of business support | In case when the cluster cooperates with industrial parks and other institutions, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| 6.2. Availability of innovative infrastructure | In case when the cluster cooperates with technological parks, business incubators, engineering centers, venture funds and other institutions, we put 1 point, in the other case, 0 | *3-1* | *1-0* |
| **7. Assessment of financial component** | | | |
| 7.1. Cost-effectiveness of a cluster | Cost-effectiveness of sales | *3-1* | *5-1* |
| 7.2. Returns on investment | Relation of the income to the invested capital | *3-1* | *5-1* |

*End of Table 4*

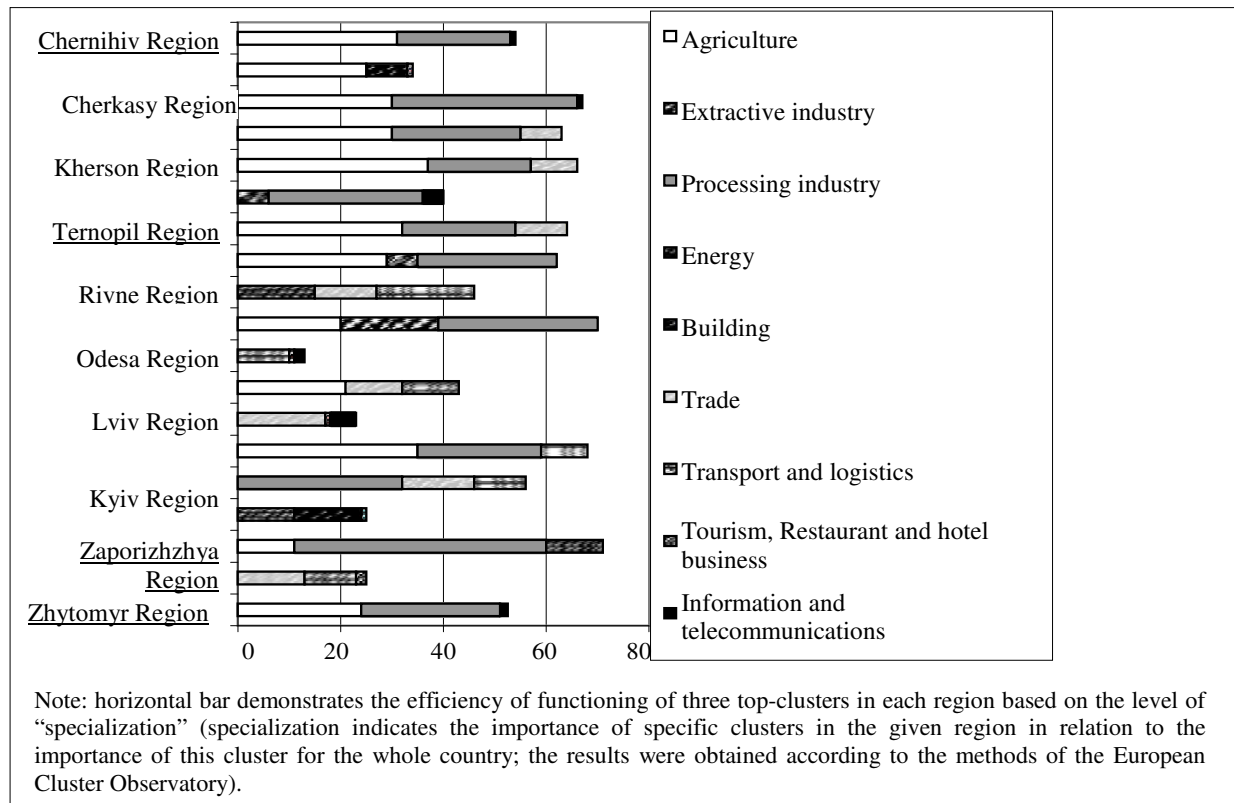| Criterion | Content of the criterion | Weight | Assessment |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 7.3. Dynamics of transactional losses | Characterizes the level of decrease of transactional losses for organizations which are getting involved into the cluster | *3-1* | *5-1* |
| 7.4. Indicators of clusters financial resilience | Is assessed using the example of the key participant of the cluster | *3-1* | *5-1* |
| **8. Assessment of innovative component** | | | |
| 8.1. Dynamics of investments in Research and Development (R&D) | Growth in the number of investments directed at development | *3-1* | *5-1* |
| 8.2. Commercialization of innovations | Number of successfully implemented developments in total amount of R&D per year | *3-1* | *5-1* |
| 8.3. Number of new products of a cluster | Amount of new or improved cluster products | *3-1* | *5-1* |
| 8.4. Share of hi-tech products | Relation of the number of hi-tech products to the total amount of production | *3-1* | *5-1* |
| 8.5. Reward for innovations per one personnel member | Relation of total sum of awards for development to the general number of cluster personnel | *3-1* | *5-1* |
| **9. Assessment of investments** | | | |
| 9.1. NPV | Determining the benefits of investments in the cluster project | *3-1* | *5-1* |
| 9.2. Investments payback period | Calculation of average period of investment payback | *3-1* | *5-1* |
| 9.3. Dynamics of foreign investments | Growth in the number of foreign investments in the cluster | *3-1* | *5-1* |
| **10. Assessment of human resource policy** | | | |
| 10.1. Level of salary | Relation of the average salary to the established minimum subsistence level | *3-1* | *5-1* |
| 10.2. Share of working personnel in the cluster | Part of workforce in the general number of cluster personnel | *3-1* | *5-1* |
| 10.3. Share of personnel with higher education | Number of personnel with higher education | *3-1* | *5-1* |
| 10.4. Share of highly-productive working places | Amount of highly-productive working places in general personnel structure | *3-1* | *5-1* |
| **11. Efficiency assessment from the perspective of the state** | | | |
| 11.1. Cluster budgetary effectiveness | Is defined on the basis of a difference of tax and non-tax budget revenues and expenses of the authorities on cluster support | *3-1* | *5-1* |

*End of Table 4*

| Criterion | Content of the criterion | Weight | Assessment |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1.2. Share on cluster in Gross Regional Product (GRP) | Relation of cluster production to the total amount of GRP in a particular region | *3-1* | *5-1* |
| 11.3. Employment of population in clusters enterprises | Amount of job opportunities for all cluster members | *3-1* | *5-1* |
| 11.4. Regional investments | Share of regional investments obtained by cluster members in total number of regional investments | *3-1* | *5-1* |

Expert assessment of cluster efficiency. Assessment is carried out on a scale of 1 to 5 (Table 2, column 4) concerning the revealed average industrial indicators of the criteria: 5 points (the highest mark) is put in case when the expected (projected) cluster indicator significantly predominates over the characteristic (average) indicators of the textile sphere; 4 points correspond to the insignificant predomination of an indicator over the average industrial indicator; 3 points mean approximate equality of the average industrial and cluster indicators; 2 points mean some deterioration of a cluster criterion in comparison with the average industrial one; 1 point means that the cluster demonstrates significant lags according to this indicator. At the same time, it should be taken into account that for some of the assessment criteria only the scale of 1 to 2 can be used, because such criteria cannot be assessed deeply. But at the same time their use in this method is rather important for getting the correct efficiency assessment of cluster`s activity. The offered method can be considered as universal. It gives an opportunity to identify the efficiency level of functioning of current Ukrainian clusters rather clearly taking into account the specificity of each industrial sector. The results of calculation are given in Figure 2.

According to Figure 2 the potential of clustering effectiveness exists, for example, in agricultural sphere of Cherkasy, Mykolaiv and Kirovograd regions; in biotechnical sphere – in the city of Kyiv and Kharkiv region; production of footwear – in Chernivtsi region; leather goods production – in Zakarpattya region. Taking into account current conditions of agglomeration in Ukraine, the implementation of cluster policy could lead to the growth of clusters, developing local economic benefits [10]. At the same time, it should be mentioned that one of the advantages of cluster policy is the creation of potential conditions for the creation of effective clusters even without the evident industrial agglomeration. As an example we should mention Saskatchewan biotechnological cluster in Canada. It was built with the help of powerful crediting and based on the

University of Saskatchewan. Its effective activity ensured the leadership of the region in the sphere of biotechnological researches in Canada [10].



Note: horizontal bar demonstrates the efficiency of functioning of three top-clusters in each region based on the level of "specialization" (specialization indicates the importance of specific clusters in the given region in relation to the importance of this cluster for the whole country; the results were obtained according to the methods of the European Cluster Observatory).

*Resourse: author`s calculations according to the European Cluster Observatory data* [12].

*Figure 2.* **Potential of clustering effectiveness according to different industries and spheres of activity**

**Conclusions and suggestions.** Thus, economic cluster nowadays continues to obtain popularity in domestic practice of business leading. With each passing year cluster policy of Ukraine will yield new results. Methods of proper assessment of cluster functioning with the consideration of sectoral features have to be improved in order to increase the effectiveness of the events carried out by the state on the support of clusters. In our opinion, the issue of clusters efficiency assessment will not lose its relevance in the nearest future. In modern circumstances, taking into account limited financial resources, there is a problem to choose the most advantageous variant of investment. The offered methods of textile clusters assessment will give an opportunity to solve this problem to a certain extent.

| References | Література |
|---|---|
| 1. Fedorenko, V.H., Gryshchenko, I.M. et al. (2017). Ekonomika Ukrainy v hlobalnomu i vnutrishnomu vymiri [Ukraine's economy in the | 1. Економіка України в глобальному і внутрішньому вимірі: монографія / В. Г. Федоренко, І. М. Грищенко та ін; |

global and internal dimensions: monograph]. Eds. V.H. Fedorenko, I.M. Gryshchenko, T.Ye. Voronkova. Kyiv. 344 p. [in Ukrainian].

2. Ganushchak-Iefimenko, L.M., Shcherbak, V.G. (2016). Rozvytok innovatyvnoho pidpryiemnytstva na zasadakh klasternoi orhanizatsii [Development of innovative entrepreneurship on the basis of a cluster organization]. Aktualni problemy ekonomiky [Actual problems of economics], No. 11 (185), P. 88–96 [in Ukrainian].

3. Porter, M. (2005). Konkurentciia [Competition]. Trans. from English. Moscow: Viliams. 608 p. [in Russian].

4. Marshal, A. (2003). Principles of Economics. Variorum edition overseen be C. Guillebaud. L.: McMillan.

5. Keech, W. R., Munger, M.C., Simon, C. (2012). Market Failure and Government Failure. Paper submitted for presentation to Public Choice World Congress. Miami.

6. Ketels, C.H.M., Memedovic, O. (2008). From clusters to cluster-based economic development. International Journal Technological Learning, Innovation and Development, No. 1 (3), P. 375–392.

7. Buianova, M.E., Dmitrieva, L.V. (2012). Otcenka effektivnosti sozdaniia regionalnykh innovatcionnykh klasterov [Evaluation of the effectiveness of creating regional innovation clusters]. Vestnik Volgogradskogo gosudarstvennogo universiteta. Seriia 3: Ekonomika. Ekologiia [Bulletin of the Volgograd State University. Series 3: Economy. Ecology] [in Russian].

8. Volkovska, H.H., Yanovskyi, P.O. (2013). Teoretychni osnovy klasteroutvorennia: zakordonnyi ta vitchyznianyi dosvid [Theoretical foundations of cluster formation: foreign and domestic experience]. Naukoiemni tekhnolohii [Knowledge-based technologies], No. 3 (19), P. 322–326 [in Ukrainian].

9. Velikaia, E.G., Papian, A.G. (2015). Otcenochnyi podkhod k effektivnosti predprinimatelskogo klastera [Evaluation approach to the effectiveness of an entrepreneurial

за заг. ред. В. Г. Федоренка, І. М. Грищенка, Т. Є. Воронкової. – К.: ТОВ “ДКС центр”, 2017. – 344 с.

2. Ганущак-Єфіменко Л. М. Розвиток інновативного підприємництва на засадах кластерної організації / Л. М. Ганущак-Єфіменко, В. Г. Щербак // Актуальні проблеми економіки. – 2016. – № 11 (185). – С. 88–96.

3. Портер М. Конкуренция / М. Портер; пер. с англ. – М.: Вильямс, 2005. – 608 с.

4. Marshal A. Principles of Economics / A. Marshal; Variorum edition overseen be C. Guillebaud. – L.: McMillan, 2003.

5. Keech W. R. Market Failure and Government Failure / Williamт R. Keech, Michael C. Munger, Carl Simon. Paper submitted for presentation to Public Choice World Congress. Miami, 2012.

6. Ketels C. H. M. From clusters to cluster-based economic development / C. H. M. Ketels, O. Memedovic // International Journal Technological Learning, Innovation and Development. – 2008. – No. 1 (3). – P. 375–392.

7. Буянова М. Э. Оценка эффективности создания региональных инновационных кластеров / М. Э. Буянова, Л. В. Дмитриева // Вестник Волгоградского государственного университета. Серия 3: Экономика. Экология. – 2012.

8. Волковська Г. Г. Теоретичні основи кластероутворення: закордонний та вітчизняний досвід / Г. Г. Волковська, П. О. Яновський // Наукоємні технології. – 2013. – № 3 (19). – С. 322–326.

9. Великая Е. Г. Оценочный подход к эффективности предпринимательского кластера / Е. Г. Великая, А. Г. Папян // Азимут научных исследований:

cluster]. Azimut nauchnykh issledovanii: ekonomika i upravlenie [Research Azimuth: Economics and Management], No. 2 (11), P. 16–20 [in Russian].

10. Sokolenko, S. (2012). Rynkova ekonomika na osnovi vyrobnychykh klasteriv [Market economy based on production clusters]. Retrieved from: http://ucluster.org/blog/2012/04/rinkova-ekonomika-na-osnovi-virobnichikh-klasteriv [in Ukrainian].

11. Bila, S.O., Shevchenko, O.V., Zhuk, V.I., Romanova, V.V. et al. (2013). Priorytety derzhavnoi polityky rozvytku promyslovykh klasteriv v Ukraini. Mekhanizmy formuvannia rehionalnykh priorytetiv rozvytku: analit. dop. [Priorities of the state policy of development of industrial clusters in Ukraine. Mechanisms for the formation of regional development priorities: an analytical report]. Eds. S.O. Biloi. Seriia: Ekonomika, No. 75, P. 1–14 [in Ukrainian].

12. European Observatory for Clusters and Industrial Change. Retrieved from: https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory.

13. Konstantynova, A. (2016). Chy potribni naspravdi Ukraini haluzevi klastery [Do we really need industry clusters in Ukraine]. Retrieved from: https://voxukraine.org/2016/06/08/ukrainian-cluster-policy-whats-wrong-ukr [in Ukrainian].

экономика и управление. – 2015. – № 2 (11). – С. 16–20.

10. Соколенко С. Ринкова економіка на основі виробничих кластерів [Електронний ресурс] / С. Соколенко. – Режим доступу: http://ucluster.org/blog/2012/04/rinkova-ekonomika-na-osnovi-virobnichikh-klasteriv/.

11. Пріоритети державної політики розвитку промислових кластерів в Україні. Механізми формування регіональних пріоритетів розвитку: аналіт. доп. / С. О. Біла, О. В. Шевченко, В. І. Жук, В. В. Романова та ін.; за ред. С. О. Білої. Серія: Економіка. – 2013. – № 75. – С. 1–14.

12. European Observatory for Clusters and Industrial Change [Електронний ресурс]. – Режим доступу: https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory.

13. Константинова А. Чи потрібні насправді Україні галузеві кластери [Електронний ресурс] / А. Константинова. – Режим доступу: https://voxukraine.org/2016/06/08/ukrainian-cluster-policy-whats-wrong-ukr.