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## CLUSTER POLICIES IMPLEMENTATION IN SLOVAKIA \*

*EU cluster policy appears to be one of the most important current programs on the EU agenda supporting innovations in emerging industries. The authors' analysis of European cluster policy and Slovak clustering interactions attempts to assess the impact of the EU cluster policy on Slovak way of clustering regarding competitiveness enhancement within the international economic framework. Evidence is provided that technological advance, knowledge-based production, innovation implemented in new technologies are the outputs of effective synergy from EU cluster policy which can be involved in social and economic enhancement of Slovakia.*

*Keyword: clustering; cluster policy; Slovak Republic.*

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## ВПРОВАДЖЕННЯ КЛАСТЕРНОЇ ПОЛІТИКИ В СЛОВАЧЧИНІ

*У статті описано кластерну політику в ЄС як одну з ключових програм на порядку денному Євросоюзу в контексті підтримки інновацій у галузях, що розвиваються. Авторський аналіз загальноєвропейської кластерної політики та кластерних взаємодій на місцях на прикладі Словаччини дозволив оцінити вплив кластерної політики ЄС на підвищення національної конкурентоспроможності за допомогою кластерів. Доведено, що ефект синергії від кластерів інтенсифікував технологічний розвиток, виробництво, що спирається на знання, та впровадження інновацій у нові технології, що в подальшому позитивно вплине на соціально-економічний розвиток Республіки Словаччина.*

*Ключові слова: кластеризація; кластерна політика; Республіка Словаччина.*

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## ВНЕДРЕНИЕ КЛАСТЕРНОЙ ПОЛИТИКИ В СЛОВАКИИ

*В статье описана кластерная политика ЕС как одна из ключевых программ на повестке Евросоюза в контексте поддержки инноваций в развивающихся отраслях. Авторский анализ общеевропейской кластерной политики и кластерных взаимодействий на местах на примере Словакии позволил оценить влияние кластерной политики ЕС на повышение национальной конкурентоспособности при помощи кластеров. Доказано, что эффект синергии от кластеров интенсифицировал технологическое развитие, производство, основанное на знаниях, и внедрение инноваций в новые технологии, что в дальнейшем позитивно скажется на социально-экономическом развитии Республики Словакия.*

*Ключевые слова: кластеризация; кластерная политика; Республика Словакия.*

**Introduction.** Clusters are dense networks of interrelated firms that arise in a region because of powerful externalities and spillovers across firms (and other types of institutions) within a cluster. Clusters drive productivity and innovation. Firms located within a cluster can transact more efficiently, share technologies and knowledge more readily, operate more flexibly, start new businesses more easily, they perceive and implement innovations more rapidly (Hitiris, 2003). The EU cluster policy is supposed to provide a platform bringing together regional, national and European actors, with the objective to implement European cluster policy agenda (Baldwin and

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Wyplosz, 2009). The role of the Commission in this process is mainly to facilitate all forms of cooperation that could lead to more competitive clusters in Europe, by providing neutral economic analysis on existing and emerging clusters, identifying good practices, providing intelligence on cooperation opportunities and facilitating networking at both practical and strategic levels.

While in the past, the size of a company was important, today the size of a cluster is becoming increasingly important, in particular, the size of the network and its infrastructure. Firm itself can be even smaller if suitable suppliers support the business and institutions around. This development paradigm of globalization leads to still greater emphasis on specialization, so that specific projects can be implemented somewhere in the best specific locations, instead of being in one location (Fojtikova and Kovarova, 2014). A new paradigm of international competition has emerged. It is based not only on innovations and modernization, but also on specialization. Each region, each country is flourishing in the area, in which it can achieve a unique specialization and competitiveness, and this means more competition for opportunities rather than for market share.

This paper will discuss how cluster policy is implemented within Slovak environment by assessing their synergies and parallels, how important role it plays to assure sustainable economic growth and enhance the EU competitiveness within the international economics environment. Comparative analysis methods followed by logical deduction have been applied. The main goal of this paper is to figure out in what way the EU cluster policies are implemented in Slovakia in order to enhance competitiveness and foster social and economic development.

**EU cluster policy – the way how innovation is to be involved in regions.** Large majority of all clusters we currently observe have developed without any help from designated policies intended to create them. Given the mounting evidence that such clusters make a positive contribution to the performance of a region where they exist, pressure is increasing to design policies that can foster the development of clusters or increase their economic benefits. First of all, we will define cluster policies as policies that fall into one of the following categories. Cluster development policies directed at creating, mobilizing, or strengthening a particular cluster, e.g. a national funding competition for the best life science cluster strategies. Cluster leveraging policies that use a cluster lens to increase the efficiency of a specific instrument, e.g. R&D subsidy provided only to companies in regional clusters where subsidy is likely to incur spillover effects beyond the recipient firm (Mitchel, Muysken and Van Veen, 2006). M. Jovanovic (2014) states that cluster facilitating policies are directed at the elements of microeconomic business environment to increase the likelihood of clusters to emerge, e.g. regional or competition policies that remove barriers in competition between locations. Policies falling into the first category are traditionally at the core of what researchers have looked at.

There are several cluster programs in the EU. To increase the innovative capacity and competitiveness as well as for networking of high-performing European cluster initiatives with each other, the European Commission provides various cluster and innovation-policy instruments in different Directorates-General. In addition, most European countries have implemented cluster-specific policies and programs to support the development of sustainable, competitive regions in the national states.

Cluster programs in the EU are supposed to improve competitiveness and innovative capacities of regions. At the European Union level there have been first cohesion policy instruments to develop innovative and regional strategies since the early 1980s (Cihelkova and Hnat, 2008). F. McDonald and S. Dearden (2005) argue that explicit cluster policy programs have been around since the late 1990s. On the part of the European Commission the Directorates-General "Regional Policy", "Enterprise and Industry" and "Research and Innovation" are mainly responsible. The three lead Directorates-General have implemented several actions and initiatives in the context of particular program priorities, which respectively focus on each other promotion and support.

Beside the European Commission, national states have also developed enhanced cluster policies in the recent years. Although country-specific cluster supporting programs also have different priorities in focus and further different instruments are used, they still pursue the same objectives: the need-based support for cluster actors and the improvement of conditions for sustainable regional and sectoral development of clusters (Larry, 2007).

N. Larry (2007) noted that policies at European, national, or regional levels should be mutually supportive and reinforcing to influence competitiveness, innovation and performance in Europe overall. Also L. Harakalova, (2014) argues that although clusters are mainly national and regional phenomenon, the EU seeks to contribute to their creation, development and cooperation.

A significant difference exists between the empirical phenomenon of clusters and cluster policies and initiatives based on their creation or development. Often these terms are used interchangeably, and this creates some confusion. Active clusters leave traces, which can themselves be statistically recorded, for example, in the area of specialization or concentration of employment within the sector. In contrast, cluster policy is an expression of a targeted, focused strategy, creating political priorities and allocating funding to support innovation, regional development or other policy objectives (Hostak etc., 2013). In reality, however, there can be found all possible combinations between clusters and cluster policies, as indicated by the examples: clusters formed spontaneously without any economic policy support; cluster policy sooner or later leading to real clusters; cluster policy with no statistically significant impact on the formation of a real cluster etc. (Fojtikova and Lebidzik, 2008).

Regarding the EU cluster policy management system an important event was the establishment of the European Cluster Alliance (European Cluster Observatory – ECA) in 2006 as an open platform to maintain a political dialogue at European level, which should help increase the efficiency of cluster policies leading to creation of competitive clusters (Grencikova, Vojtovic and Gullerova, 2013). ECA umbrella network the INNO-Nets, which aims to strengthen cooperation in the field of cluster policies, to promote the knowledge of SMEs, international knowledge, linking industry and research institutions, and supporting innovations in services. As part of the EU efforts to create more world-class clusters across the EU by strengthening cluster excellence, the Commission launched in 2009, under the Competitiveness and Innovation Program, the European Cluster Excellence Initiative (ECEI). To continue the successful work of this pan-European initiative which involved 13 partners from 9 European countries ESCA – The European Secretariat for Cluster Analysis

was established by one of the partners, VDI/VDE Innovation + Technik GmbH, to offer practical advice to cluster management organizations (Eurostat Press Office, 2015). Today, ESCA is a network of cluster experts from 28 countries.

A professional cluster management can contribute to such development through projects and services that tap into cluster's potential (Spankova and Grecnikova, 2014). The European Cluster Excellence Initiative, proclaimed by the European Commission DG Enterprise and Industry, has developed methodologies and tools to support cluster organizations in improving their capacities and capabilities in management. Being members of the European Cluster Excellence Initiative 13 project partners from 9 European countries – all well experienced in the field of cluster management and support – created a uniform set of cluster management quality indicators and developed a quality labeling system for professional cluster management with the aim to get this methodology a proof of quality accepted all over the EU (Krajnakova and Vojtovic, 2012).

**Cluster environment analysis in Slovakia.** Slovak clusters were established in the last decade with varying degrees of competitiveness. In Slovak conditions clusters are disadvantaged due to underdeveloped innovation system which does not have: technology platforms, clustering innovative companies with centres of knowledge and innovation, appropriate state and regional aid portfolio of innovative financing tools, technology centres and start-up centres, as it is typical for developed EU countries. Slovak clusters are seeking opportunities and partnerships abroad so as to ensure their acceptance, sustainability and output. Automotive, engineering and tourism clusters are best known in Slovakia. They have emerged, despite the absence of appropriate legislation, which would define and promote clusters. According to Slovak Innovation and Energetic Agency (2016) Slovak Republic has so far generated only 20 clusters, some of which do not show any activity. In fact, there are two types of cluster organizations in Slovakia:

- 1) clusters in tourism;
- 2) technological cluster organizations.

As a success story in Slovak clustering we can mention the "Automotive Cluster Slovakia" in Trnava. Its mission is to promote the development of subcontractors to the automotive industry, which is the pillar of Slovak economy and export and to help ensure their continued competitiveness at home and abroad through peer groupings of industrial enterprises, universities, research institutions and other stakeholders from the private and public sector. Among its priorities we can add networking in the automotive industry, creation of appropriate environment for technology transfer, creating conditions for education of skilled labor, promote the relations between the manufacturing sector with research and development organizations, search for suitable partners and present cluster members abroad, mediate and optimize the use of EU funds etc.

In tourism there is "Liptov cluster". The current vision of its development is to build up from Liptov region a recognizable tourist destination along with the strategic objective to increase travel to the Liptov region (Haviernikova and Strunz, 2014). It is necessary to mention that tourism clusters in Slovakia work on the basis of tourist associations and not as typical clusters, thus they are not as successful as technological clusters.

Besides traditional types of clusters, there can be noted a growing potential for the emergence of new cross-sectoral clusters. Two pilot projects in the framework of international project "CluStrat" belong to this group. "CluStrat" is a strategic innovation project implemented through the Central Europe Program co-financed by the European Regional Development Fund. Within the Slovak part the Slovak Business Agency, Cluster AT+R and Clusters Union of Slovakia are the project partners (Ivanova, 2014). A common strategy for new concepts of clustering within emerging economic sectors is developed under these pilot projects within "CluStrat" to challenge SMEs to expand their activities. The first one "Buildings with zero energy usage – the use of green energy" appears to be an opportunity for public and business environment in the EU regions to achieve costs saving through energy resources saving. The project's output is a benchmarking study for Slovak market, which deals with old buildings transformation into the ones with nearly zero energy consumption. The key idea of this project is to incorporate the idea of energy savings into the national and regional strategic policy documents. Unfortunately, what do not work are legislation and business conditions and, finally, financial instruments supporting the energy efficiency of old buildings transformation (Lipkova, 2012). The second pilot project is called "Active development of aging people focused on support for smart homes and households". Elderly and disabled people are the target group in it, and the central idea in it is that new types of household equipment are to facilitate the daily life of the target population.

**Discussion.** Besides the common types of clusters (technological and tourism) there is also another challenge emerging in Slovak clustering practice. It concerns the so-called cross-sectoral clustering with the goal to change the view on clusters functioning, to apply best approaches to cluster policies of individual countries/regions and in cooperation with other project partners to ensure the project implementation in real life.

Slovak cluster policy cannot be seen as a developed one. It is still in its initial phase with a range of problems to be solved. However, the situation can be improved through better assistance organization in the years to come. Generally, Slovak cluster activities are limited and focused mainly on the promotion of cross-sector partnerships among businesses, staff skills and qualification levels upgrade by means of experience exchange in the areas of new technologies, processes and services. At present we can see the limited number of options to be involved in projects, underdevelopment legislation in terms of clusters enhancement, additionally, proposed project calls are often not aimed at cluster. Those are the pitfalls that clusters have to deal with in order to be successful.

The main reason being Slovak success story of industrial clusters was their immediate adaption to changed conditions in international business and especially international division of labor, balanced and proportional industry location. Nonetheless according to K. Haviernikova (2014) competition has been intensified not only in businesses, but also in municipalities and regions, especially in relation to their own economic activities and in relation to the attraction of new economic activities to its territory, thus, it is desirable to promote clusters formation further. K. Krajco (2013) argues that clusters and policy support for the development of SME must be based on three points. The first one assumes that the basis for regional policy is to build it on

local strengths. Secondly, development of innovation and R&D centers at the regional level has to foster the development of other economic activities, help strengthen regional development and eliminate regional discrepancies. Thirdly, creation of local networks of enterprises, public institutions and trade unions is to link regional administrations to national authorities while lobbying.

**Conclusion.** The paper provides a comprehensive overview of the basic principles and objectives forming the backbone of the EU cluster policy and the nature of its operation mechanism along with the Slovak way of clustering. Clusters play an important role when it comes to SMEs access to innovation and research, or joint development at international markets. They also play a crucial role in the allocation of Structural Funds which requires prioritization and specialization by regions. The European Union recognizes the importance of clusters and their prospects for economic development and therefore, clusters are always the subject of intense debate at the general European level. The EU also supports the exchange of information, strategies development and expert analysis including through support associations and initiatives that focus on clusters development.

Interdependence of spatial structure and economic development is gaining importance, especially today, under competition between the regions of Europe under uneven economic development and growth. The consequence of this is the emergence of a new method of solving economic growth, unemployment and financial problems through new organization of economic space and regional growth through clusters. These are the tools leading to increased economic growth, sustainable social and economic development and higher quality of life for all.

#### References:

- Baldwin, R., Wyplosz, Ch.* (2009). *The Economics of European integration*. 3rd edition. McGraw-Hill Higher Education, Berkshire UK.
- Cihelkova E., Hnat, P.* (2008). Future of the European union within the new regionalism context. *Politická ekonomie*, 56(1): 67–79.
- European Commission (2015). EU Cluster portal // [ec.europa.eu](http://ec.europa.eu).
- European Commission (2015). Europe 2020 // [ec.europa.eu](http://ec.europa.eu).
- Eurostat Press Office (2015). Eurostat // [ec.europa.eu](http://ec.europa.eu).
- Fojtikova, L., Kovarova, J.* (2014). Influence of China's Entry into the WTO on Cross-border Financing. Proceedings of the 14th International conference on finance and banking (pp. 74–79). Ostrava: VSB.
- Fojtikova, L., Lebedzik, M.* (2008). *Spolecne politiky Evropske unie*. C.H.Beck, Praha, Czech Rep.
- Grencikova, A., Vojtovic, S., Gullerova, M.* (2013). Staff qualification and the quality of tourism-related services in the Nitra region. *Bulletin of Geography*, 21: 41–48.
- Harakalova, L.* (2014). New Form of the Common Agricultural Policy of the European Union After 2014. Proceedings of the 2nd international conference on european integration 2014 (ICEI 2014) (pp. 211–218). Ostrava: VSB.
- Haviernikova, K.* (2014). The analysis of industrial branches in the Trencin region suitable for the cluster creation. METAL 2014: 23rd international conference on metallurgy and materials (pp. 1697–1702). Ostrava: Tanger.
- Haviernikova, K., Strunz, H.* (2014). The comparison of selected methods used for identification of cluster potential in the regions of the Slovak Republic. SGEM conference on political sciences law, finance economics & tourism: Conference proceedings volume IV. Economic & tourism, STEF92 Technology (pp. 693–699). Sofia, Bulgaria.
- Hitiris, T.* (2003). *European Union Economics*. 5th ed. Prentice Hall (Pearson Education Ltd.), London, UK.
- Hostak, P., Lys, T., Yang, Y.G., Carr, E.* (2013). An examination of the impact of the Sarbanes-Oxley Act on the attractiveness of U.S. capital markets for foreign firms. *Review of Accounting Studies*, 18(2): 522–559.

- Ivanova, E.* (2014). Foreign direct investments and their impact on socioeconomic growth in the regions of Slovakia. SGEM conference on political sciences law, finance economics & tourism: Conference proceedings volume IV. Economic & tourism. STEF92 Technology (pp. 287–294). Sofia, Bulgaria.
- Jovanovic, M.N.* (2014). The Economics of European Integration. 2nd ed. Edward Elgar Publishing, UK, USA.
- Krajco, K.* (2013). Measurement model, the cluster's performance in the international arena. International relations 2013: Contemporary issues of world economics and politics (Vol. 1–4, pp. 397–401). Bratislava: Ekonom.
- Krajnakova, E., Vojtovic, S.* (2012). New Economy versus creative Industry. Social and Economic Review (Slovakia), 10(4): 43–49.
- Larry, N.* (2007). The Economics of Europe and the European Union. Cambridge University Press.
- Lipkova, L.* (2012). Innovation Policy of the European Union. Proceedings of the 1st international conference on European integration 2012, ICEI 2012 (pp. 171–178). Ostrava: VSB.
- McDonald, F., Dearden, St.* (2005). European Economic Integration. 4th ed. Prentice Hall (Pearson Education Ltd.), London. 412 p.
- Mitchel, W., Muysken, J., Van Veen, T.* (2006). Growth and Cohesion in the European Union (The Impact of Macroeconomic Policy). Edward Elgar, Cheltenham, UK.
- Slovak Innovation and Energetic Agency (2016). Cluster initiatives in Slovakia // [www.siea.sk](http://www.siea.sk).
- Spankova, J., Grencikova, A.* (2014). Remuneration and motivation of employees in transport undertakings. SGEM conference on political sciences law, finance economics & tourism: Conference proceedings volume III Economics & Tourism, STEF92 Technology (pp. 495–502). Sofia, Bulgaria.

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