

Why should National Economies be Based on Clusters - Positive and Negative Sites -

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Abstract

The subject of research on this paper is the clusters and their contribution to the development of the innovation of national economies. They have been identified as one of the pillars for their rapid economic development. The relevance of the research on the innovation aspect of clusters, the development of the national economy both in the Republic of Macedonia and among the EU Member States stems from the role of clusters in overcoming economic problems on the one hand, as well as facilitation of the private initiative, acceleration of economic growth and the improvement of employment opportunities as factors of the economic development of countries on the other.

In conditions of globalization of the world economy, the issue of developing the competitiveness of businesses and their contribution to national economies, is creating conditions for developing the private sector by providing favourable business climate and eliminating administrative and bureaucratic obstacles, is raised.

The survey, conducted through data analysis in EU member states, confirmed the assumptions of the great importance and potential of clusters for the national economies of the EU member states.

Key words: cluster; entrepreneurship; innovation; business; competitiveness;

1. Introduction

The existence of the cluster as a form of organization of businesses is known long time ago in a different economies as geographical concentration of businesses, but without significant impact on national economies. In fact, the existence of crafts of a geographical area that cooperated in certain areas as part of the laws of nature is a fact which shows that this form of organization existed across centuries in many regions. This means that the clusters have long been an integral part of national economies, but with significantly limited role. In the economic literature, the term *cluster* becomes prominent in the 90s years of last century with the publication of the book "Competitive advantage of the nation" by Michael Porter, professor of Harvard University. From the Porter analysis of the competitiveness of companies can be concluded that, the leading companies do not operate in isolation from other businesses, they operate as part of a wider group of complementary companies. This group of related companies is called clusters. So, the concept of cluster association is not new. Some authors started to think for a cluster in the early twentieth century, when arise and corporation which main aims was to increase company productivity. After that, the cluster began to be seen as an opportunity to introduce innovative thinking for a company or business, and opportunity for the region development. This consideration recently expands the national and multinational level.

2. Why should national economies be based on clusters

- Positive and negative sites -

Clusters have a major impact on the development of the national economies, especially in the EU countries. This conclusion is supported by the fact that, in the formation of clusters in some EU Member States, national institutions also participate through developed clustering programs. Such a policy to support the formation of clusters has been implemented through agencies under the supervision of certain ministries. Thus, a national policy for the formation of clusters has been developed in

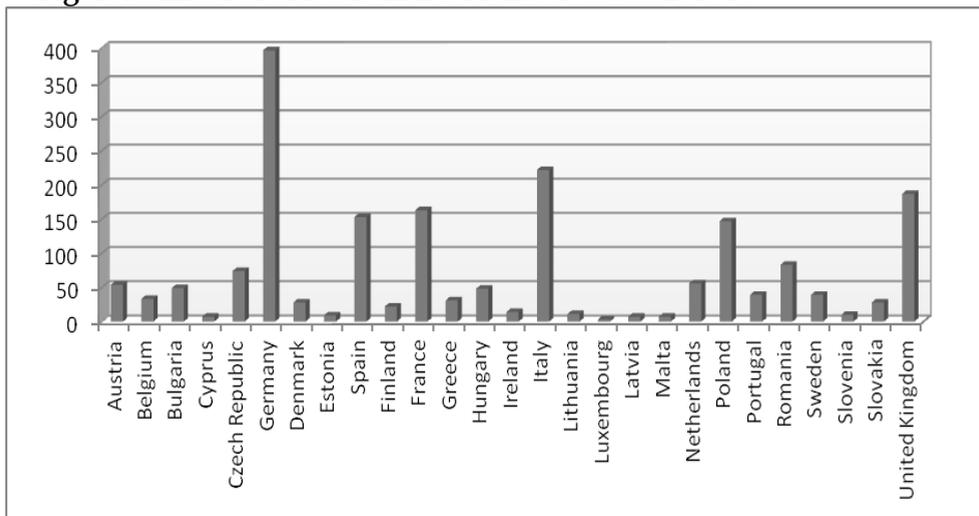
the Netherlands, while regional initiatives that emerge in the direction of cluster development are usually implemented as separate programs.

According to the analysis of the data made in different time periods, more precisely in 2008, 2011 and 2015, it is concluded that, the number of clusters in the countries of Western Europe has been steadily increasing, both in number and volume, and thus including various activities.

This shows that, clusters are an important part of the European economic reality. Based on the analysis made by the cluster observatory, it can be concluded that in 2015 approximately 38% of EU employees are employed in clustered companies, taking into account that the number of employees in clusters depending on the country are ranging from 14.2% in Malta to just under 50% in Romania.¹

According to the data obtained from the cluster observatory, which are shown on Fig. 1, is concluded that the largest number of clusters in 2015 was in Germany, followed Italy and the United Kingdom, while the lowest number of clusters, is in Luxembourg.

Fig. 1. Number of clusters in EU Member States 2015 r.



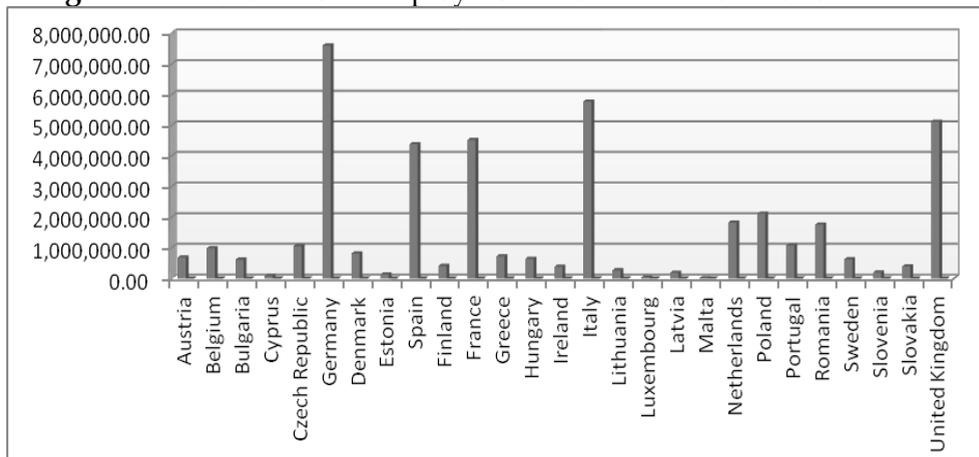
Source: cluster observatory, 2017

¹ The data are extracted from the European Cluster Observatory and are based on data that includes cluster information that is statistically identified in 32 countries, as well as the cluster policy developed in these countries at the national or regional level.

Using the same source, it can be noted that analogously to the data from Fig. 1, the largest number of employees in clusters in 2015 are in Germany, Italy and the UK, and the smallest in Luxembourg (Fig. 2). Considering that, Germany is a country of about 80 million inhabitants, as well as Italy and the United Kingdom with approximately the same number of population about 61 million inhabitants, it can be concluded that according to the population, the conclusion from Fig. 2 is logical. However, according to an analysis made using data from the cluster observatory, which processed data on cluster workers compared to the total number of employees in the countries that are considered in the processing of data, the remaining ones are Romania.

Depending on the number of population, the number of employees in clusters is shown through Fig. 2.

Fig. 2. Number of cluster employees in EU Member States 2015 r.



Source: cluster observatory, 2017

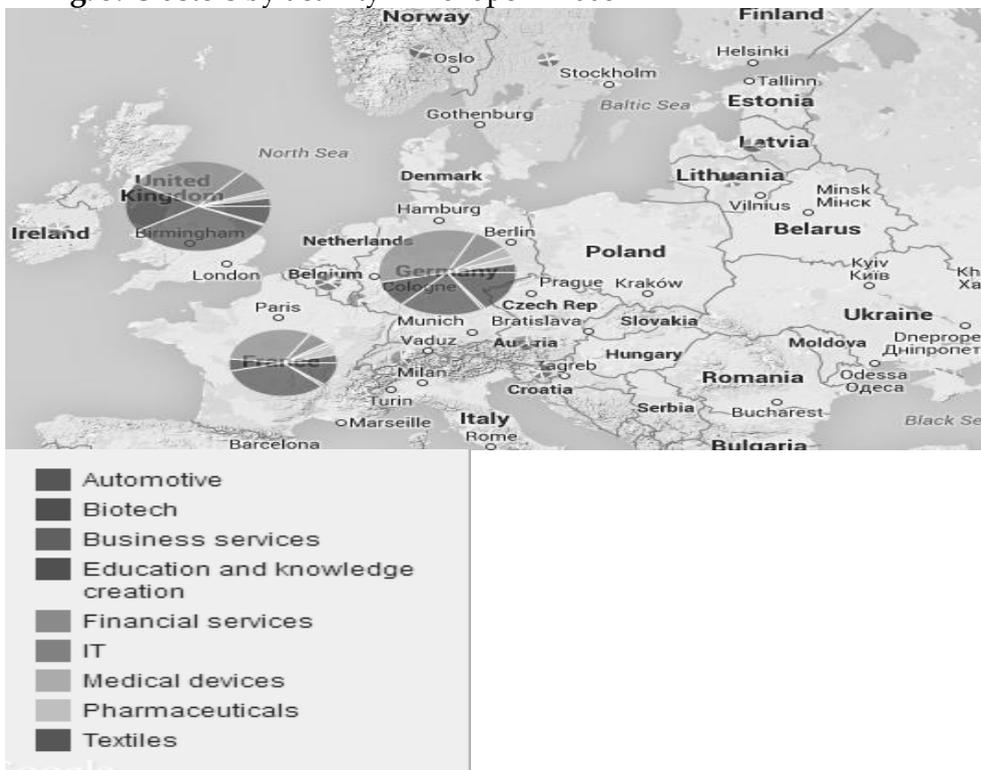
This analysis points to the fact that clusters are among the most relevant microeconomic factors that influence the level of prosperity of the region. Taking into account, the importance of clusters in labour accumulation, the European Cluster Observatory focuses its efforts on profiling clusters with a specialized product program, believing that such clusters will be more prosperous and employ more workers. Additionally, a large number of other companies that are indirectly involved in the work of the cluster, will also contribute to the development of the national economy and which

according to the increased workload, will profit. From here, the increased scope of work will also trigger the need for new employments.

Since the beginning of the 21st century, significant progress has been made and the spread of clustering throughout the territory of Europe. One of the reasons for this expansion of the formation of clusters is the collapse of the socialist bloc towards the end of the 20th century and the changes that occurred in the economic order of the eastern European countries. According to the analysis, in 2008, the clusters were most prevalent in Western European countries (Fig. 3), for their number to notice significant growth in eastern European countries in 2011 (Fig. 4).

Activities, which are covered by clustering, are mostly retained in all three years of analysis (2008, 2011 and 2015).

Fig. 3. Clusters by activity in Europe in 2008



Source: cluster observatory, 2017

In 2008, clusters were more prevalent in the more developed Western European countries, with the largest number of clusters in the UK, Germany and France. According to the activity, in almost all countries, the largest numbers of clusters exist in the financial sector, business services, the textile industry, the information technology industry and education (Fig. 3). As a result of the positive effects, that has been achieved in national economies and the establishment of a growing number of companies, in 2011, the number of clusters increased, significantly and took a growing swing in Central and Eastern Europe, especially in the Russian Federation. The activities in which there is a common interest in cluster, gathering is from the fields of education, financial sector, automobile industry, textile industry (Fig. 4).

Fig. 4. Clusters by activity in Europe in 2011



Source: cluster observatory, 2017

According to the analyzed data, the number of clusters is continuously increasing, mostly in the same areas, i.e. in the same activities as mentioned above. In 2015, clusters in Europe are increasingly spreading (see Figure 5). There is almost no country in Europe where this clustering process has not started. According to the analysis, in 2015, the largest numbers of clusters were recorded in Great Britain, Germany, France, Italy and the Russian Federation.

Fig. 5. Clusters by activity in Europe in 2015



Source: cluster observatory, 2017

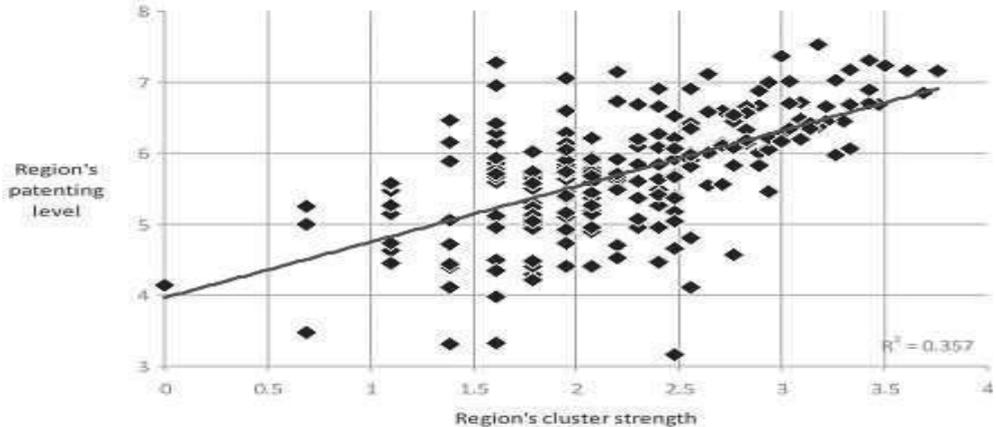
International trade, together with the planning of the national economic development, greatly influences the way of realization of the set strategic goals. Hence, both innovative thinking and the introduction of new more competitive products will affect the creation of positive effects in the operation of clusters.

Thus, according to the results of the Innobarometer survey in 2010 in the 27 member states of the European Union, which includes clustering

companies and non-cluster companies, the result is that more innovative are the companies that are part of the cluster, unlike those who are not part of the cluster. Or nearly 78% of innovative clustering companies are introducing new or significantly improved production programs. Similarly, 63% of cluster companies introduce innovative production technology, compared with 56% of non-clustered companies. The results indicate that, clusters encourage innovation and clustering companies are more interested in engaging in research on market needs than doing non-business clusters, 53% versus 33%. Also, from the analysis of Innobarometer, the results obtained suggest that companies that are part of a cluster have a higher percentage of reported inventions compared to other companies.

According to the above, similar results are obtained through data from the European Cluster Observatory (www.clusterobservatory.eu) from which it is concluded that, the relationship between the regional specialization i.e. the degree of clustering and innovative performance measured as the level of patenting new inventions is of great importance. According to Fig. 6, which shows the regions and the representation of clusters in the same with the reported inventions, the regions in Europe where no clusters are formed, from which it can be noted that in these regions, innovative thinking is at a rather low level confirms with the low number of reported inventions (Solvell, 2008). On the other hand, in regions ranked at the peak of Europe by number of clusters, the frequency of reported inventions is high, which can be seen from Figure 6 (Solvell, 2008).

Fig. 6. The significance of the cluster and the number of reported inventions in Europe



Source: European Cluster Observatory. ISC/CSC cluster codes 1.0, dataset 20070613

Clusters, as a contemporary economic and organizational form of association and interconnection of various types of entities from the economy, service providers and various institutions of regional and national character as well as higher education and research institutions, are aimed at stimulating the economic growth of a country or region (Solvell, 2008). The experiences of certain countries point to the fact that this type of association contributes to strong economic development and represents a true response to the globalization of the world market. This is confirmed by several case studies made by prominent researchers in this field presented below.

Namely, Porter's 2003 study on clusters in the United States points to the fact that a large percentage of employees are part of cluster companies, using the positive effects of a higher degree of economic development, higher wages, and increased employment (Eu Commission, 2008).???

The same result was obtained from a study done on the cluster of biopharmaceuticals in Denmark, which suggests that the greater non-specialization of the region leads to greater economic development and all the benefits of that development. (EU Commission, 2008).

Another study by Weinberg and Lindquist in 2008, which covers 4,000 new entrepreneurial firms in the information sector in Sweden, points to the fact that clustered companies create more jobs, pay higher taxes, pay

higher salaries to employees (EU Commission, 2008). In addition to this study, the fact is that clusters have a positive effect on the survival of companies. A study made by Brenner and Guildner (EU Commission, 2008) in 2006, points to the positive relationship between clusters and economic performance. This study confirms the significance of the clusters in the economic development of the region or one country, while stressing that the cluster, and how old it is, still positively affects the national economy, unemployment, incomes and the development of new companies. The only remark is the delay in joining the new technological changes, which leads to the conclusion that it needs to be changed and adapted to the new contexts and challenges.

Summarized together, it can be said that there is strong evidence of generating good economic results through which the positive aspects of clusters' work are determined which (Competitiveness 2017):

They contribute to improving production through better communication between companies and suppliers, which ensures lower transaction costs, the rejection of the need for stocks, the avoidance of import costs and the payment from the front. They provide access to specialized information from different areas that can be used locally. Given the involvement of the different institutions within a cluster, companies have a wide access to public goods and special services, such as training programs, quality control, testing laboratories, and the like.

Contributing to increasing innovation activities by improving the opportunities for recognizing innovation opportunities, while using the benefits of cluster membership, companies perform research at substantially lower prices that reduce and the total cost that is included in the price of the product / service. Also, the established links within the cluster will enable companies to access formal sources of funding whose funds will be directed towards innovating new products and services.

Encourage new business associations through good practices and positive practices by which companies are given the opportunity to engage in the cluster by offering them the entire network of market information and connecting with related companies. Clusters attract more suppliers in their vicinity because consumers are more concentrated and costs and risks are reduced, with the particular importance of the opportunity given to small and medium-sized companies to achieve economic growth through cluster retention.

Attract foreign direct investments through the opportunities offered to companies as part of a cluster to have operational advantages, further strengthening their position and reliability in attracting investment and providing more information about the local business environment, which certainly contributes to the facilitation of the feature for investment;

Although numerous examples that are mentioned throughout the text indicate the role and significance of clusters in the economic development of an economy, however, it should be borne in mind that clusters in their functioning have certain requirements to be answered, which can be said to represent the negative side of the functioning of the clusters. Namely, the members of the cluster are exposed to financial expenses in the form of membership fees in order to cover the costs incurred in the functioning of the cluster. Although companies are structurally and organisationally well organized, it should also be done with the organizational structure of the cluster, for which a management team is needed that will be adequately trained to manage the cluster and its management, which is also necessary and additional financial expenditure. Often the question is raised about the impact and role of larger companies and the imposition of their influence on smaller cluster companies. Not always, the cluster companies are willing to collaborate with each other and share their positive experiences, ideas, technology and knowledge. Therefore, in certain cases, the clusters do not have a tendency of growth and development, additionally this problem is increased if the local administration acts bureaucratically and does not meet the requirements and needs of the cluster. There is a suspicion that cluster companies can be brought into a situation of reduced production of their own ideas, and hence more difficult acceptance of the need for change.

2.1. Good practice

A good indicator of the challenge faced by companies and the possible failure to be part of the cluster will be presented with the example of the cluster for wood in Croatia. The wood industry in the Republic of Croatia is composed of relatively small family businesses that produce almost the same range of products on the domestic market. The Croatian furniture industry is fragmented and dispersed throughout the territory, slow to modernization, and low level of competitiveness. It should be borne in mind that the wood mass resources in Croatia are large and of high quality,

and this advantage was recognized by the Croatian Competitiveness Initiative. In fact, the wood industry for the Republic of Croatia is a significant industrial branch that covers a large number of small companies and which can grow into a significant economic branch for the state. One of the characteristics of the wood industry in Croatia is the fragmentation of production, that is, 60% of the companies from this branch are with fewer than five employees, and only 6% of the companies with more than 200 employees. Earnings per employee amounted to about 230 thousand kunas, which is only 45% of the Croatian average, while the average monthly paid-up gross salary is 3,400 kunas, which is only 60% of the Croatian average. Therefore, the challenge was to network all these small companies within the cluster model as an opportunity to provide assistance that will serve as a catalyst for attracting qualified and talented workers and creative designers in the timber industry. The Croatian cluster for wood works in the direction of developing the wood industry, by providing guidelines for timber companies and adopting measures. In addition, the goal was to establish a network of all parts of the value chain, that is, suppliers, primary producers, processors, importers, exporters and manufacturers, universities as well as structures from the local and national authorities. These challenges have contributed to the Croatian wood cluster to use its own knowledge and foreign experience to achieve a common community goal - a competitive wood industry focused on strategic development and increased value. The establishment of the cluster for wood in Croatia was funded by USAID's United States Agency for International Development. The Cluster in May 2003 promoted its strategy with an ambitious program - which included increasing the export of finished products from the Croatian wood industry by 20 times and opening up 40,000 jobs in the wood industry in the next seven years. However, besides achieving the stated goals, a goal was also set that aimed at creating and developing Croatian design as a recognizable world brand.

Despite the undertaken development measures, the proposed strategy for the development of the wood industry in Croatia through the establishment of a cluster did not give the expected result. The reasons for this are the economic crisis that engulfed Croatia and the rest of Europe, as well as the lack of co-operability of the overall program. Thus, the projected goals were not fulfilled, and in relation to the engagement of the workforce, there was a reverse process, ie instead of increasing there was a decrease in

the labour force in the wood industry. Today, the Croatian wood cluster exists, but without some specific projects.

However, clustering in Europe takes on a growing swing and support from local and national governments through a series of projects that support cluster associations, providing a range of training programs for all stakeholders. In this direction, a wide range of activities are aimed at strengthening the awareness for supporting clustering and the possibilities for strengthening the innovation potential of the companies.

3. Conclusion

Cluster development, is one of the fundamental tools of the EU to promote regional competitiveness and encourage innovation among companies, including family businesses. A large number of companies concentrated in certain EU regions receive support in collaboration with other companies in resolving common issues as well as in joint participation of projects co-financed by the EU. These projects help clusters to connect with higher education institutions, as well as innovation and development institutions, as well as to introduce new innovative products on the market. This trend of connecting companies is more pronounced in the countries of Western Europe, while in Eastern Europe, as a result of the changes that have taken place in the last 20 years and the collapse of large conglomerates, this trend is taking place at a slower pace.

One of the main advantages of clusters, which help to improve the economic climate in the country, both regionally and nationally, is the contribution and incentive they provide for the establishment of new companies. Most often, new companies are established within the cluster for a variety of reasons, but the possibility of forming companies outside the cluster is not excluded, and they are stimulated by the need to provide external services to the cluster.

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