

CLUSTERS, CONVERGENCE AND ADVANTAGES FOR SMEs

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Abstract: According to classical definitions, clusters are geographic concentrations of interrelated companies, various suppliers, connected public and private institutions, universities and associations, which are working in a specific field. Nowadays, the business environment became more dynamic and complex. All over the world, there are many firms adopting a cooperative entrepreneurship strategy aiming to attain sustainable development. Cluster initiatives and innovative networks have gained a higher importance in the economic development of the European Union. The main goal of this paper is to analyse the experience of the Romanian and Greek initiatives in developing clusters and cooperation. This study aims to review the literature regarding clusters and their influence on the productivity and competitiveness of the small and medium-sized enterprises, as well as the importance of clusters for the economic development.

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Introduction

The cluster concept is used for different business structures, such as national, regional and cross-border clusters, clusters of competence, industrial, production and innovation systems. The concept it is also used for various purposes, in order to increase the competitiveness of small and medium-sized enterprises (SMEs), support collective research, rationalise the industry, implement environment management system.

Cluster theory suggests that firms that are part of a geographically defined cluster benefit from being a part of that cluster and that these benefits result in economic growth for the region. These benefits accrue as a result of co-location or geographic proximity that, in turn, creates lower input costs for firms through agglomeration economies and facilitates knowledge spillovers that produce innovation and increase

productivity. Consequently, firms in clusters that generate these benefits are more competitive, and regions with effective clusters experience greater growth (Wolman & Hincapie, 2010).

Clusters represent a new way of thinking about national, state, and local economies, and they necessitate new roles for companies, government, and other institutions in enhancing competitiveness (Porter, 2000).

Economic development regions have occurred naturally for centuries. Cluster theory and its application, and cluster-based economic development policy have been in the forefront of regional economic development theory and practice during the past years. It is important for policy makers and practitioners to understand how to action, in order to enhance economic growth and generate additional benefits through cluster activities. In particular, since the analysis and policies based on clusters have become a feature of modern regional economic development policy, it is critical for practitioners to understand the dynamics of clusters and their limitations, as well as the advantages of cluster strategies (Wolman, Hincapie, 2010).

Each cluster includes companies selling mainly outside the region, as well as support firms supplying raw materials, components and business services. These groups of companies that compete or interact with each other are more important to the region's well being than any single, isolated firm no matter how strong or influential it may be. Clusters provide synergy, and that leads to competitive advantage. In clusters, the available pools of experienced workers are larger and more diverse. Suppliers tend to congregate for increased efficiency. A competitive spirit builds energetic strategic alliances form, stimulating rapid growth and innovative (Csaba, 2008).

Business clusters strengthen the region's economy, and they are the best focus for economic development efforts. Although the phenomenon of clusters in one form or another has been recognized and explored in a range of literatures, clusters cannot be understood independent of a broader theory of competition and competitive strategy in a global economy. The prevalence of clusters reveals important insights about the microeconomics of competition and the role of location in competitive advantage. Building and strengthening the existing clusters and developing or introducing other clusters is what will move economies ahead in this new century (Porter, 2000).

Cluster policy and development in Romania

In Romania the cluster concept can be found in various official documents including some laws. There are two terms, besides the definition given by Michael E. Porter, set out below.

Entities from the innovation and technological transfer infrastructure, are defined in by a Government Order of 2003 regarding methodological norms and support modalities for the Research Policy Law, as the assembly of entities constituted with the aim of rendering profitable the results of the research and of the technological transfer. These are innovative incubator centres, technological transfer centres, technological information centres, offices for the connection with industries, and scientific and technological parks. The infrastructure, through its innovative activities, is contributing to increase the quality and competitiveness of the products, processes and services, and to the durable economic development in a competitive environment.

Clusters are defined in a Government Order from 2006, approving the "Stimulation Programme of the Research & Development (R&D) and Innovation - IMPACT", as being groups of performers, users and/or beneficiaries, formed with the

aim to implement the good practices of EU level in the Romanian environment, in order to increase the economic competitiveness of the economic operators.

Even there is no specific law for clusters, the concept appears in all national, regional and sectoral strategies, policies and plans. The National Reform Programme in Romania, in the framework of the Lisbon strategy, shows that there are budgets allocated to different cluster policies, such as the promoting innovation policy and competitiveness policy since 2006.

According to the innovation policy, the new approach should focus on developing instruments allowing the increase of the effectiveness of cooperation schemes among universities, research centres and companies and, on the other hand, the facilitation of the direct transfer of knowledge and technologies among the various actors in the market.

The Romanian Government has issued an Action plan which aims to remove some of the burdens restricting the creation and growth of businesses (company registration and authorisation procedures, legal framework, taxes and duties system, access to finance and information), in order to develop the SMEs sector. The strategic lines of action are:

- The creation of a friendly business environment for the setting up and development of SMEs;
- The improvement of SMEs' access to foreign markets;
- The development of SMEs' productive and innovative activities and the increase of SMEs. competitiveness on various markets;
- The promotion of entrepreneurial culture.

There are more than 15 programmes in progress within the National R&D and Innovation Plan conducted in partnership with R&D entities and institutes, universities and companies. In 2005 an extensive action was launched, in the field of technological platforms, supporting the creation and reinforcement at national level of these public-private partnership structures in view of long-term strategic research guidelines. The national technological platforms are currently being monitored by the National Agency for Scientific Research (ANCS).

The National R&D and Innovation Plan for 2007-2013 encourages companies to take part in corporations with a view to finding solutions to complex problems in priority R&D fields, as well as to initiate innovation projects. In addition, to effective participation in research, companies are stimulated to increase their absorption capacity for new technologies, particularly those developed by R&D and innovation, by means of measures such as the creation of patent databases, information points, brokerage centres and even technological auditing.

Another measure to upgrade the research system is the promotion of clustering in the R&D and innovation field with the aim of increasing the competitiveness of integrated research platforms. The main beneficiaries of these networks are the start-ups and innovative SMEs and the services provided should include clusters combining universities, research, institutes, small and large enterprises which through their close cooperation and interaction have a positive impact on innovation and knowledge transfer.

Nowadays, in Romania most of the companies still base their competitive strategies on the reduced costs of the factors and not on the improvement of productivity. According to the new policies, it is expected that the Romanian

companies will be successful in the market if they concentrate on the promotion of high added value products as well as on the use of the internal pool of resources.

A number of studies identified industrial concentrations similar to clusters in Romania. The first one was coordinated by the International Centre for Entrepreneurial Studies (CISA) in Bucharest in 1998. This research was commissioned by the World Bank's Institute for Economical Development and it focused on the competitiveness of the Romanian entrepreneurs. The analysis identified the existence of three "incipient" cluster forms for software manufacturing, naval engineering and wood industry.

Another major reference of the cluster research field in Romania is the analysis by Marco Riccardo Ferrari, research assistant at the Economics Department of the University of Milano. The study was based on the Italian methodology of industrial districts identification. The survey identified also three "districts", for the wood, textile and ceramics industries.

A relevant research study was developed by Valentin Ionescu, whose analysis was based on the previous studies. In his study, Valentin Ionescu observed the difference between applied methodological criteria by other studies and underlined the uncertainty of a cluster definition.

One study regarding the situation of the Romanian clusters is the VICLI project, developed within the European Program INTERREG II C - CADSES. The project began in 1999 and lasted until 2001. This project tried to identify and to support the cluster development by means of regional know-how transfer. Romania was a partner country in the project and the Transnational Expert Group designated Harghita County as an eligible pilot area for the implementation of the project methodology. The VICLI final report for Romania identified four potential clusters that emerged in the Harghita County: wood processing, pottery, printing and equipment.

Another important project of cluster studying in Romania was the INCLUD project, financed by Interreg III B CADSES Programme. The project run during 2003 – 2004 and its objective was the study of potential clusters in the partner states from Central and Eastern Europe as well as their support based on the Austrian and Italian experience. Some potential clusters were identified in different regions, such as: the textile sector, software, wood processing, steel components and metal products. Some concentrations of companies in the area of chemical industry, machinery and engines have been also found.

An important reference is the WEID project, which investigated, through case studies, the relations between clusters at European level. The project ran for three years, during 2001 - 2004. The project gathered seven partners from Western Europe (Germany, Italy and Great Britain) and Central and Eastern Europe (Czech Republic, Poland, Slovenia and Romania).

Other initiatives aiming at developing innovative clusters in Romania, were: the FP6 Project "Romanian Days of Innovation", run between 2004 – 2005, having as an objective to develop innovative networks at national level in the fields of ICT and biotechnologies; the FP6 project SPRINT" (2005-2007) which had as an objective the development of an innovative network of automotive suppliers in Romania. The novelty of this project consisted in the interest conferred to the research-development activities by creating joint industrial research nucleus in regard to specific topics of research. Another project was carried out in the wood and furniture industry, the FP7 Project "ProWood" (2008-2010), which aimed at establishing an innovative cluster in the Region of Brasov-Covasna.

In accordance with various studies and this analysis, business agglomerations have emerged in Romania, especially in the textile, clothing, wood and automotive industries. Clusters represent an important instrument for promoting industrial development, innovation and competitiveness. They are a real alternative for Romania's economic development.

Cluster initiatives in Greece

According to the „Economic Survey of Greece 2011” by OECD, Greece has embarked on an ambitious adjustment programme to deal with the deep economic crisis by restoring sustainable public finances, competitiveness and the foundations for healthy and solid long-term growth. The Greek Government and other public institutions try to boost competitiveness and innovation by applying cluster policy. Cluster initiatives are important directions in economic, regional and innovation policies and are seen, at the EU level, as a specific instrument of regional innovation policy.

However, the idea of grouping together small and medium-sized companies in order to develop cluster organizations in Greece, was officially launched by the Ministry of Development in 1997, aiming to promote companies, “competitiveness in the fields of manufacturing, marketing and technology transfer”. The participants were mainly SMEs from diverse business environments, education and research institutes.

The implementation of cluster policy is directly or indirectly supported by regional programmes and initiatives in many regions of Greece, i.e. the Regional Innovation Strategy and Regional Innovation Technology Transfer Strategies, which are authorities supervised by the Ministry of Interior.

At present, a very important cluster initiative, the Corallia-Hellenic Technology Clusters Initiative is co-financed by the national budget, structural funds and private sector investments and cooperate with various companies in most regions of Greece.

Corallia Clusters Initiative aims at the development of innovation clusters in high technology sectors that present high potential to increase their competitiveness, improve their position in the global market and adopt a model for the provision of high added value services. Taking into account that clusters provide a powerful tool for economic development, Corallia has placed its emphasis in the transformation of the Greek economy from the “low labour cost economy” model to the “high added value service” model focusing on knowledge economy. Corallia Clusters Initiative is also aiming at boosting competitiveness and entrepreneurship in knowledge-intensive and exports-oriented technology segments, where Greece can attain a worldwide competitive advantage. Another target of Corallia is the development of innovation clusters in different research areas.

Innovation clusters are „groups of companies, organizations, institutions operating in a particular sector and region, designed to stimulate innovative activity by promoting intensive interactions, sharing of facilities and exchange of knowledge and expertise, contributing effectively to technology transfer, networking and information dissemination among the undertakings in the cluster”(Corallia Clusters Initiative, Best Practice Report).

Voted as one among 40 Best Practices in the priority sector “Empowering SMEs with reference to their technological excellence” by the EC DG Industry, Corallia presents also a good practice in the field of innovation. In particular, it has been praised for establishing the Microelectronics Innovation Centre (μ IC) in Athens

and designing and implementing the ‘Career Days’ event in Greece. In 2008 and 2009, it was recognised by the European Commission as a small enterprise ‘best practice’ success story.

There are other cluster initiatives such as the Greek shipping cluster, having a great success in the Greek economy. Greek ship-owners operate the largest fleet in the world, and the industry has a history dating back hundreds of years. The core of the cluster is composed of more than 800 ship operators, tightly clustered around the port of Piraeus in Athens. The key contributing factors to the cluster’s competitiveness are the high degree of firm rivalry fostered by the large number of small companies, a highly favorable tax regime, strong informal networks and institutions for collaboration, as well as the presence of specialized maritime educational institutions.

Lately, there are many other cluster initiatives in various fields in Greece, including the agro-food sector as well as the industry, organic farming, ICT, etc.

Future policy should be directed towards increasing the value added of the clusters to the rest of the economy, building stronger linkages between the cluster and large export markets, and encouraging innovation that will allow the cluster to maintain its competitive advantage.

Are clusters influencing the economic development?

Most of the literature is directed to analyse whether cities or regions that are larger or more dense have better economic performance, which would imply that firms operating in these areas are taking advantage of the agglomerations provided in these areas. Sometimes it is pointed out that may also be possible that more productive and profitable firms choose to locate in large urban regions. Some literature is also focused on why agglomerations occur, or why do cities grow.

The former literature consists mainly of studies that attempt to explain the growth in aggregate regional output, personal income, wages, or employment by using variables that theory and the empirical literature have identified as determinants of growth. Examples of possible explanatory variables include measures of physical capital, human capital, labor market performance or labor force characteristics and geographical characteristics. These serve as control variables to which an independent variable is added as a measure for the extent of clustering or of agglomeration economies. The variable added to measure cluster or agglomeration differs substantially depending on the particular aspect of clustering.

As Porter observed, if parts of a cluster fall within a different traditional industrial or service categories, then a real cluster may be obscured or even unrecognized. Cluster boundaries rarely conform to standard industrial classifications systems, which fail to capture many important actors in competition as well as linkages across industries.

There are several literature reviews and there is broad agreement that the agglomerations concept has positive effects on various measures of economic performance. For example, Glaeser and Gottlieb (2009) conclude that: „There is abundant evidence that manufacturing firms choose clusters in order to reduce transport costs, and this seems to be an important part of the comparative advantage today”.

At the international level, the OECD (2008) analysed the determinants of economic growth in the OECD economies. In their model, agglomerations economies were captured by a specialisation index for each of the sectors, proportion of

employment in the sector weighted by the relative size of the sector. They found that agglomeration economies are partly responsible for the regional growth.

Another type of studies tries to tests whether economies of agglomeration or urbanization economies of agglomeration will produce greater growth. These studies provide support for the existence of agglomeration economies in general, since they nearly all fiind some effects of agglomeration, whether through localization or urbanization economies or both, on economic outcomes.

Some specilists examine whether diverse environments, the more concentrated ones, usually measured by the degree of industry concentration, are more likely to lead to economic growth and innovation. A high degree of industry concentration indicates strong clusters and the presence of concentrated economies, while industrial diversity is seen as evidence of broader urbanization economies and, is less consistent with clusters as a driver of growth. Thus some researchers argue that a positive relationship between industrial concentration and growth is evidence of the importance of clusters, while evidence of a relationship between diversification and growth indicates clusters are less important.

Rosenthal and Strange (2004), Feldman (2000) and Cortright (2006) are only some of the researchers who analysed the impact of the clusters on economic development and growth. Rosenthal and Strange, (2004) observed that in many of the studies specialisation is not related to employment growth, while diversification is. But in a large region an industry could have a large enough presence even though it represented only a small percentage of total employment, to still garner localization economies in a diversified economy. In other words, it may be absolute size of a sector rather than the relative degree of concentration of the sector in the economy that matters.

Despite theoretical or practical analysis of clusters, a generic model that can explain the success and decline of some clusters is not defined yet by the literature. The advantages of this phenomenon is recognized and is one of the main reasons for the current focus on clusters (Porter, 1990), (Porter, 1998), (Morosini, 2004), (Baptista and Swann, 1998), (Sölvell et al, 2003), (Malmberg and Maskell, 2001).

Recognizing the benefits of clusters as a form of economic organization has influenced governments to implement policies (Sölvell et al, 2003), intended to launch initiatives to support existing clusters or to form new ones in regard with SMEs, regional development, economic development, research and innovation at national or local level.

Conclusions

Economic development based on clusters represents a policy that can be adopted by many economies. It could bring benefits in terms of regional development, competitiveness, productivity, high technology and innovation. Clustering activities can generate advantages for the whole economic system.

In the cluster literature, emphasis is put on the level of government intervention. It is considered that the efforts on supporting clustering activities should be coordinated at a regional level. This is particularly important, at this moment, in countries such as Romania and Greece. Due to the complexity of the economic relations and environment that define a cluster, it is necessary to continue research from both theoretical and practical perspectives, so that the theoretical models are validated in practice by overlapping them with any existing cluster cases.

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