

THE IMPORTANCE OF CLUSTERS FOR IMPROVING THE REGIONAL COMPETITIVENESS IN ROMANIA

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Abstract: *Cluster is a territorial agglomeration of specialized and highly competitive business. There are a variety of different theories of training and development of competitiveness, but as practice shows the successful development of firms and various elements of economic systems, the most effective mechanisms to increase competitiveness is cluster theory. The purpose of the work paper is to points out the importance of clusters for economic development, on the one hand, and on the other hand, to prove the impact of clusters' increase on the development of regional competitiveness.*

Keywords: *cluster, competitiveness, index of regional competitiveness, regional development, environmental economy*

The competitiveness evaluation for clusters and regions – Introduction and problem definition

Worldwide, the measurement and assessment of competitiveness has become a concern for scientific research and governments, especially after 70 decades, with entry into the so-called "environmental economy"¹. Currently, are enjoying attention to macro-level assessment of international competitiveness reports prepared annually by several organizations:

¹ Popa H.L. (2006): *Competitiveness. Concepts, factors, evaluations, ways to increase*, Politehnica Publisher, Timișoara, ISBN 978-973-625-368-3

- International Institute for Management Development (IMD) from Lausanne – Switzerland, since 1989 [WCY-IMD, 2008]. IMD published annually in May "World Competitiveness Yearbook" of 61 countries and regions (2006) / 55 countries (2007) / 55 countries (2008), with 314 / 323 / 331 benchmarks (77 / 79 / 80 - macroeconomic performance , 73 / 72 / 73 - government efficiency, 69 / 71 / 70 - business efficiency, 95 / 101 / 108 - infrastructure), calculating a maximum aggregate score of 100 [points]
- World Economic Forum (WEF) din Geneva – from Geneva – Switzerland, since 1980 [WEF-GCR, 2008]. WEF published annually, in September, the „Global Competitiveness Report"² for 134 countries (2008-2009), with over 100 evaluation criteria (Global Competitiveness Index considers benchmarks for 12 categories: institutions, infrastructure, macroeconomic stability, health and education institutions; university education and continuous efficiency in the markets - goods, labor, financial, technological dynamism, complexity of business, market size, innovation), calculating an aggregate score of maximum 6 [points]
- World Bank (WB) from Washington D.C. – SUA, since 1978. Each World Bank Annual Report is dedicated to an area that contribute to competitiveness increase, as supplemented by the World Development Indicators [WDI³, 2008], which allow the factors of competitiveness' rankings.

The practical arrangements for the assessment of competitiveness are fundamentally the following⁴:

- Evaluate the attribute that consider specific categories of environmental performance / media considered, eg for technical environment - economic (market) are considered 7 categories of performance, measured by level (very small / small / medium / high / very

² WEF-GCR (2008) „*Global Competitiveness Report*”, World Economic Forum, Geneva, ISBN 1-4039-9636-9

³ WDI (2008): *World Development Indicators*, World Bank, Washington

⁴ Popa H.L. (2006): *Competitiveness. Concepts, factors, evaluations, ways to increase*, Politehnica Publisher, Timișoara, ISBN 978-973-625-368-3

high): the variety of supply, quantity offered, the time / times of assimilation & production and marketing, quality of supply and production & marketing costs and prices, liquidity, economic efficiency;

- quantify the aggregate score be using when determining the weighted arithmetic mean [WEF-GCR, 2008; WCY-IMD, 2008; CCIAT-TF, 2008⁵] or the weighted geometric mean of performance, either ratings [Dinu and Mereuta⁶, 2001];
- concentrated absolut evaluation which considers the report K_g / K_e between global competitiveness and economic competitiveness, or simply, report $N_{gi} / P_{vi} (C_{ci})$ of the overall quality N_{gi} product range offered and the selling price or cost P_{vi} or complete cost C_{ci} of considered i range, ie the value V (position in the market) of the supply
- position (value) of product range i on the market, defined compared to competition on a report $N_{gi} / P_{vi} (C_{ci})$, sugestive reflected
- competitiveness' profile, summarized on base of quantification by aggregation at level of competitive components
- relative quantification made to a competitor in the market (index p) on base of the report K_g / K_p or against the leader of the market (index 0) on the report K_g / K_0 .

After 1990, in Romania have achieved annual rankings of firms based on assessments of economic performance of companies and cooperative organizations, grouped in five size classes (performance criteria for annual top firms, conducted by the Chambers of Commerce and Industry and Chamber of Commerce and Industry of Romania) [TF-TM⁷, 2008, TF-RV, 2008⁸].

⁵ CCIAT-TF (2008): *Topul firmelor din Județul Timiș 2007/Top of companies in Timis County 2007*, Chamber of Commerce, Industry and Agriculture Timisoara

⁶ Dinu M., Mereuță C. (2001): *Romanian Economy 1990 – 2000. Compendium*, Economic Publisher, Bucuresti, ISBN 973-590-431-4

⁷ TF-TM (2008): *Top Companies 2000/2001 / ... /2007* in Timis County, Chamber of Commerce, Industry and Agriculture of Timisoara, Timisoara, 2001 / 2002 / / 2008

⁸ TF-RV (2008): *Top companies 2005/2006/2007* in Western Region, Association of Chambers of Commerce and Industry of Western Region

Even if the number and variety of performance criteria of Top companies are still limited by the number of competitive performance considered and was not reflected in every aspect, the annual rankings are very important for revealing the evolution of firms and branches of the Romanian economy.

The companies, that were ranked on the first three places last 5 editions, receive Excellence Trophy and the companies that have the three top ranked last 3 editions receive Distinction of Excellence. The Top of direct exporters contains 10 productive companies with the largest incomes realised from exports.

A relatively simple practical assessment of clusters' competitiveness can be made by [the level] in the global market (aggregate criteria: shares in world exports / in world production / on global market)⁹:

- [3] the strongest global cluster (leader in the global market)
- [2] cluster in the top 3 worldwide (very important in the global market share)
- [1] cluster in the top 10 worldwide (major share in global market)
- [0] significant internationally cluster (small share in global market)
- [-1] significant national cluster (very small share in global market)
- [-2] cluster regionally significant (insignificant in global market share)
- [-3] uncompetitive cluster

Globally, are recognized the annual rankings achieved by the companies, realised by Forbes magazine (business and financial magazine founded in the U.S., 1917): Forbes 500, the U.S., Forbes 2000, for the world economy.

The performances aggregated by Forbes are: revenues, profits, assets, market value of the company (market capitalization) [Forbes¹⁰, 2008]. By default, Forbes 2000 ranking is an aggregate evaluation of the competitiveness of the 2000 clusters (transnational, multinational and national great companies).

⁹ van der Linde C.(2003): *The Demography of Clusters – Findings from the Clusters Meta-Study*, in *Innovation Clusters and Interregional Competition*, Springer, New York, p.130-149, ISBN 978-3540009993

¹⁰ Forbes (2008): *The Global 2000*, http://www.forbes.com/lists/2008/18/biz_2000global08_The-Global_2000_Rank.html, 02.04.2008

Both Forbes 2000 rankings and ratings of the specialized agencies IMD Lausanne, Geneva WEF, World Bank involution clearly reflects the EU's competitiveness, increased regular enlargement (in 2004: 10 countries in 2007: 2 countries, Romania and Bulgaria, face with differences in competitiveness difficult to eliminate the medium and long term) and, after 2007, the global economic crisis.

Competitive advantage and clusters' politics in Western V Region – Results of the evaluation at regional level

Western Region are among the most developed regions of Romania. Are well represented all economic sectors: industry, agriculture and services. The main industries present in the region are:

- automotive industry (spare parts for cars) in which the major investors are foreign companies or joint ventures in Germany, Austria, Japan, United States of America such as Siemens VDO Automotive, Dura Automotive, Hella, Draxlmayer, Kromberg & Schubert, SEWS, Eybl Automotive, Continental, Contitech, BOS Automotive, Delphi Packard, TRW Automotive, Coficab, etc.
- agriculture, animal husbandry and food industry where there is a potentially very important because climatic and soil conditions, this is turning Romanian and foreign companies such as Smithfield, Agrobanat, Bardem Holding, etc.
- chemical industry focuses on production of paints, detergents, petrochemicals, medicinal products where the most important companies are ICC Azur, Procter & Gamble, etc. Chimsport.
- electronics industry represented by several major companies, the most representative being transnational subsidiaries Alcatel, Solectron / Flextronics, Kathrein, etc.
- software industry has seen explosive growth in recent years, companies here are both foreign companies and Romanian companies that have customers in other countries, foreign firms,

- clothing and footwear industry, which had its peak in the late 1990s and early 2000s, today its importance decreases with investors moving to Asia and to Eastern Europe
- Wood processing industry,
- machine building: electrical machinery, equipment, water, rail transport, etc..

It can be said that the Western region, in general, is still an area "clean" in terms of environmental quality, there are no highly industrialized areas, where pollution is a major problem.

As a competitive advantage in the Western region emerges following:

- developed communications network, with connections throughout Europe,
- natural resources and raw materials varied
- presence of many agricultural industries and extensive
- potential for tourism and rural tourism, entertainment and social-cultural activities,
- highly skilled workforce in various fields
- academic developed, the potential for scientific research school network developed
- advanced mentality of the inhabitants of this area, both because contact with the West was made long before 1990 and the existence of significant minority (Germans, Hungarians, Serbs, etc.)
- a great potential for development of regional clusters across all sectors.

Review in field of clusters in Western Region was based on the following findings, principles and directions of research:

- After the 1995 census were made relatively more general studies about clusters and in Romania, both by Romanian authors and foreign authors, without managing to cause significant acceleration clusterizării and competitiveness clusters with local capital, including Western V Region;

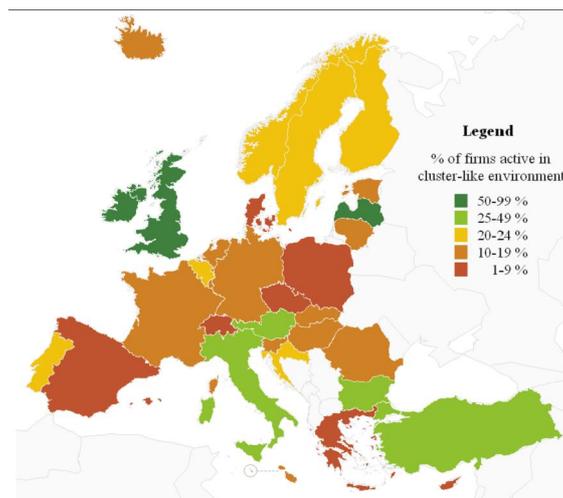


Fig. 1. *Medium level of clustering in Europe inl 2006¹¹ [IBC, 2006]*

Level 1 (1-9%): Spain, Switzerland, Denmark, Czech Republic, Poland, Greece, Cyprus

Level 2 (10-19%): France, Iceland, Netherlands, Poland, Malta, Slovenia, Hungary, Slovakia, ROMANIA, Latvia, Estonia

Level 3 (20-24%): Portugal, Belgium, Norway, Sweden, Finland, Croatia

Level 4 (25-49%): Italy, Austria, Bulgaria, Turkey

Level 5 (50-99%): England, Ireland, Lithuania

- As reflected Figure 1. [IBC, 2006], is clearly established a presence in Romania CLUSTERING an early level (10 to 19% of firms are active in clusters), level based primarily on "relocation" and foreign direct investment (FDI);
- In Romania (as well as in Scandinavian countries, Germany and Poland), the legislation provides tax incentives to companies associated in the cluster, but after 1991 were granted tax incentives to free zones, business incubators, industrial parks and technology etc. that have been effective in most cases;

¹¹ IBC (2006): *2006 Innobarometer on cluster's role in facilitating innovation in Europe*, Analytical Report, Flash Eurobarometer 187 – The Gallup Organization

- In Romania managerial culture is still weak in 2006, only 34% of managers know the concept of cluster - which is among the lowest percentages in Europe, with Cyprus (25%), Spain (32%), Greece (37%) - compared with 94% in the UK and Slovenia, 87% in Austria, 86% in Ireland, 81% in Finland.

Conclusions and proposes

In V Western Region there is a culture of competitiveness and clusters, although economic activity is conducive to such entities: the interviews held with the entrepreneurs of the four counties, most knew what a cluster and, logically, or what benefits, what benefits could have the membership of such a structure (this disregard is due primarily to lack of association in Romanian culture, each believing that he knows better what to do and that is not the case for others to - represent interests or that he should represent the interests of others!).

Review is essential to an orderly cluster unit, which ensures comparability of an clustering world, the preferred solution is the EU or "clusters Profiles" developed in the U.S. at the Institute for Strategy and Competitiveness, Harward Business School.

It is also urgently necessary to create a powerful database capable CRKT clusters to reflect the increasingly precise evolution of regional clusters and euro-regional competitiveness.

International experience shows that PPPs initiatives to develop clusters from three distinct areas of interest of public policy, much less integrated in countries with low levels CLUSTERING - levels 1 and 2:

- regional policy, industrial and related to the work of SMEs
- policies to attract foreign direct investment (FDI)
- policies related to science, research and innovation

To increase the competitiveness of regional / national / continental priority is to develop new ways of creating flexible integrative development and increased competitiveness clusters, without which the census and study clusters is a futile exercise.

It is urgent to undertake research and software development culture overall competitiveness (value), without which it is impossible to increase competitiveness, welfare and sustainable development.

Following the market study conducted following findings emerged:

a) The distribution by size/turnover of the companies in Region V West is typical functioning market economy, creating favorable prerequisites „clustering”:

- 84% micro-enterprises numbers, with 17% of turnover;
- 12% small enterprises, with 25% of turnover;
- 3% medium enterprises, with 24% of turnover;
- 1% large enterprises, with 34% of turnover.

b) The most important counties in which are developed / entities can develop cluster is Timis counties (43% of all active firms from West Region) and Arad (23% of all active firms from West Region). In these counties are 66% of all firms, many joint ventures or foreign (about 7000 in Timis county, ca. 3000 in Arad county) and have heard of cluster/clusters are in their countries of origin,

c) Caras-Severin county (11% of all active companies of West Region, ca. 800 joint ventures or foreign) and Hunedoara (23% of all active companies of West Region, ca. 1000 joint ventures or foreign) are much less developed than other counties and entrepreneurial culture leaves much to be desired. In these districts is more difficult to rapidly develop clusters, the economic and entrepreneurial consciousness, these counties are following the Timis and Arad.

d) In Timis county factor / significant facilitator in the establishment and development of agricultural and industrial clusters has been and is the Chamber of Commerce, Industry and Agriculture (CCIAT). Since 1994 public-private partnership orientation, particularly Chamber of Commerce, Industry and Agriculture Timisoara (12 sections organized by sector-technology and be a "Competitiveness" - Production, Innovation, Environment, Quality), was stimulate and facilitate the establishment and

development of agricultural and industrial clusters as a basis for competitive development of Timis County, in close cooperation with all actors and factors:

- performance and preclustered existing firms in the county before 1994,
- business organizations,
- local and county government,
- strong research and development community and university (9 universities accredited) in the county,
- schools and institutions forming labor force in the county and region, relatively rich resources and diverse county of Timis,
- local and foreign investors, attracted by the Timis County and West region→
- Romanian banks and lending institutions and foreign.

f) After 2006, the Western V Region includes clusters of ca. 8800 active companies.

Western V Region's active clusters may be classified into two broad categories in terms of stage of their life:

(1) clusters, at the pre-cluster and cluster consists (mostly clusters of domestic capital),

(2) clusters, at the clusters developed and extended clusters outside the region (mostly clusters with foreign capital which the business-leader is the parent company abroad or in Romania - where Dacia Pitesti Group), registering from their approx. 900 exporters.

Obviously, the global economic crisis triggered in 2008 have affected all these clusters, due to significant reduction of overall market demand. But, all clusters have a competitive strategy to counter the crisis and assimilates new products more competitive, which will be produced and sold in the post-crisis in national and global market.

The integrated economy in the world in the early 21's the EU and the euro area, which has come partly stages:

1. Preferential trade area

2. Free trade area
3. Customs Union
4. Common market
5. Economic and Monetary Union (part)
6. Full economic integration based on global competitive cluster
7. Economic and political integration complete

In the integration phase 6, the EU has funded many projects and funds and promote the clusterizării. A first opportunity for Western Region is a project Cloe (2004 - 2010) Cluster Over Europe [Cloe, 2004]. Cloe project (2004 - 2010) major contribution to stage 6. in 7 regions: Karlsruhe (developer Cloe, Germany), Lyon (France), Värmland (Sweden), Upper Austria (Austria), Tartu (Estonia), Timisoara (Romania) and Kaliningrad (Russia). This project develops 12 fields for clusters of clusters Cloe: Automotive, nanotechnologies, plasturgie, biotechnology, textiles, furniture-wood, energy, food, health, information and communication technology, packaging, other - special. Any organization in Romania can connect and cooperate in the Cloe project.

Sources:

- Popa H.L. s.a. (2007), *The management of clusters' competitiveness*, Politehnica Press, Timisoara, 2007, ISBN 978-973-625-523-6
- Porter, M. (1998), *Clusters and the new economics of competition*, Boston: Harvard Business Review, Nov/Dec
- SNE (2005), *National Strategy of Exports for Romania*, 2005-2009 period, Romanian Government, Bucuresti
- TF-RV (2008), *Top Companies 2005/2006/2007 Western Region*, Association of Chambers of Commerce and Industry of Western Region
- VICLI (2001), *Virtual Clustering Identification and Dissemination of Strategic Territorial Planning Best Practices for Certain Countries of Danubian and Southern Europe*, INTERREG II C – CADSES, Bruxelles

- WDI (2008), *World Development Indicators*, World Bank, Washington
- WCY-IMD (2008), „*World Competitiveness Yearbook*“, International Institute for Management Development, Lausanne, ISBN 978-2-9700514-1-1
- WEF-GCR (2008), „*Global Competitiveness Report*“, World Economic Forum, Geneva, ISBN 1-4039-9636-9