

INDUSTRY IN GROWTH POLES OF ROMANIA

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Abstract. A competitive industry can reduce costs and prices, can create new products, thus contributing significantly to productivity growth throughout the economy. The industry is also the main source of innovation necessary for society to meet the challenges faced. Growth poles have the ability to spread economic development in adjacent areas and contributes significantly to the territorial development of the country. This article aims to analyze the current state of industry growth poles of Romania, in terms of number of employees, distribution of sub-industries and density of firms in industry. It also highlights business structures and industry clusters located in the growth poles, as solutions for boosting economic growth and creation of added value. Analysis performed leads to the conclusion that all growth poles are engines of economical development in the industry for the regions of origin. We distinguish growth poles Timișoara and Cluj-Napoca whose economic advantage is given by the favorable position close to the markets of the European Union.

Key words: cluster, industrial parks, strategic sector, growth poles

1. Introduction

Regional development strategy formulation is a key condition for successful implementation of regional programming. An important element of developing this strategy is selecting a pattern of regional and local development. Internationally there are

two dominant models: the poles of growth and integrated endogenous development model (Christofakis and Papadaskalopoulos, 2011).

The concept of "growth pole" was imposed in the 1950s, within the structuralist doctrine of regional

development. Francois Perroux is the father of this concept which considers "growth does not occur everywhere at once, it manifests itself in spots or poles of growth with variable intensities, it is distributed on different channels with variable terminal effects for the whole economy" (Perroux, 1955). He defines the growth pole as a driving unit in a well established environment or a "set of driving units which carries spillover effects on other assemblies defined in the economical and geographical space" (Perroux, 1961).

Growth pole has interregional effects and may alter not only the structure of the region in which it is located, but the scale and intensity of interregional changes, including territorial distribution of population and economic activities (Kuklinski, 1972). The growth pole is a generator of economic activity, which has the ability to induce rapid growth and to generate development in small and medium cities and adjacent rural areas, contributing to the development of the entire region (Popescu, 2011).

Over time, in various regions, there was an unbalanced economic development, a situation that led to the need to find viable solutions for reducing the gaps and ensuring an uniform national development. Creating growth poles was seen as an effective solution for reducing major economic differences existing between the various regions of a country. As the human and economic resources are focused around certain centers, local economies are growing fast, and heavily populated cities pull the economy forward (Quigley, 2013).

The period after the Second World War until the mid-1970s can be characterized as a period of implementation of growth

poles strategy in both developed countries as well as developing countries. Among these are: Austria, Belgium, Bolivia, Italy, Peru, Spain, United States, Venezuela, France (Kinsey, 1978; Friedmann and Weaver, 1979; Richardson, 1981; Parr, 1999; Rossi, 2009). In Romania, before the formation of growth poles, two major phases had to be completed. Thus, in a preliminary stage, during 2001-2007, major cities were seen as cities with growth potential, to be associated with communes in their area of influence, in order to facilitate infrastructure development and achieve the objectives of common interest.

Within the second phase, regulated in late 2008, the government appointed seven national growth poles: Constanța, Craiova and Ploiești in the South, Iași in the East, Brașov and Cluj-Napoca in the center and Timișoara in the West (Fig. 1). Through GD No.998/2008, the seven growth poles were appointed, one for each Region, (except for Bucuresti-Ilfov region) in which investment from EU and national funding programs was made a priority. These poles are the engines of economic growth in Romania, which in the future will strengthen the key role of the neighboring territories (Popa, 2010).

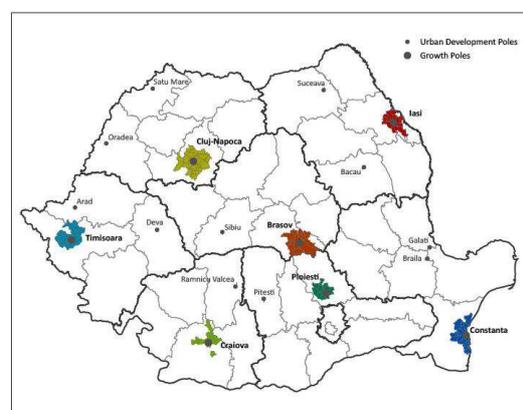


Fig. 1. Growth poles and urban development poles in Romania
(Source: Ionescu-Heroiu *et al.*, 2013)

Besides the growth poles, urban development poles were defined (appointed by HG No. 998/2008) represented by municipalities: Arad, Baia Mare, Bacău, Brăila, Galați, Deva, Oradea, Pitești, Râmnicu-Vâlcea, Satu Mare, Sibiu, Suceava, Târgu Mureș (Fig. 1). Their role is to link growth poles and other small and medium towns of the urban system in order to mitigate and prevent the unbalanced development trends within the region they belong to. They will also help reduce the level of concentration of population and employment in the major urban centers and the creation of a spatial structure that will boost a balanced economical development of the territory. Investments in urban development poles were intended to reduce labor migration to large urban areas.

According to Government Decision no. 998/2008, the seven poles of growth and the thirteen urban development poles were selected based on the following criteria:

- The functional level of specialization;
- Potential for innovation;
- The existence of the business infrastructure;
- The diversity and intensity of the connections between regional and local actors;
- Accessibility and public services (Dranca, 2013).

The current policy of growth poles has several limitations (Ionescu-Heroiu *et al.*, 2013):

- The area of analysis and intervention was limited to 30 km around the city center, but a functional economic area should be larger. Areas of influence should be redefined according to the specific of each pole of growth;

- Metropolitan areas are based on voluntary agreement between cities and there are cities who refuse to join, although they are in the corresponding functional area. This limits the potential for development of integrated projects and the ability to fully benefit from the economic mass of an area. Also, small towns are missing co-financing for metropolitan projects;
- Projects financed by PIDU sites are not fully integrated. New planning tools, such as Integrated Territorial Investments (ITI) should be used, to provide appropriate mechanisms for financing and implementation of integrated projects;
- Focusing on regions does not consider potential synergies that exceed regional boundaries (eg Brașov center is the economic engine for the Center region, but its functional economic area spreads to south and east regions). For now it is premature to assess the impact of the policy of growth poles in Romania, given that the implementation of PIDU projects began in 2010-2011.

Growth poles are often characterized by basic industries around which auxiliary industries develop, with direct or indirect effects. Key industries may include a variety of sectors such as automotive, aerospace, food, etc. Direct effects occur when the basic industry purchases goods and services from its suppliers (upstream related industries) or provide goods and services to its customers (downstream related industries). Indirect effects involve the demand for goods and services by persons engaged in basic industry and auxiliary industries resulting in supporting the development

and expansion of economic activities such as retail.

2. Materials and Methods

The article was written using documents, reports and summaries published by the various authorities with responsibility in territorial development, as the primary source of information. It uses data and reports in the literature that were analyzed, compared and processed in order to shape the conclusions on the influence of industry in economic development of growth poles and assessment of their competitiveness.

The following economic and competitiveness indicators were calculated and analyzed:

- Distribution of employees by sector;
- Number of employees in industry in growth poles;
- Number of enterprises in the industry in growth poles;
- Percentage of employees/sub-industry firms in the growth poles;
- Number of industrial parks;
- Number of clusters.

The analysis was performed only for 2011 because of lack of access to data for other years, but growth pole cities followed the same development as nationwide.

Statistical data sources:

- Romanian Statistical Directory;
- National Trade Register Office;
- European Commission;
- World Bank;
- Integrated Urban Development Plans (IUDPs).

Growth Poles are made from a "city center" and its "area of influence". The analysis took into account the area of influence of growth poles defined in the Integrated

Urban Development Plans from 2008. Analysis was performed for both the urban center and for the growth pole.

The article tries to answer the following questions: how developed is the industry in growth poles? Are growth poles representative regarding industry for their regions of origin?

3. Results and discussion

3.1. Industry in growth pole

The industry has a crucial importance for the European Union and for maintaining its leading position in the world market, given that it provides four fifths of European exports while 80% of investments in research and development in the private sector are coming from manufacturing (European Commission, 2012).

Being able to ensure Europe's first world in many strategic sectors (car industry, the aeronautics, engineering, space sector, the chemical and pharmaceutical sector), allows the industry to assume an important role in the economic recovery of the EU and in creating new jobs. Developing innovative industries could help to overcome existing problems and contribute to the economic development of regions (Toedling *et al.*, 2013).

At EU level, the share of employment in industry was 25.1% in 2011 and has recorded significant variations during 2006-2011, reaching the lowest rate in 2009 (18%) and highest in 2007 (27.7%) (Eurostat, 2014).

As for the year 2011, the Romanian industry has contributed with 1/3 to the GDP, about 21% of the total population of the country being employed in this sector, though a decline occurred after the second half of 2008 (National Institute of Statistics, 2013).

To remedy the unfavorable events in the industry, the European Commission launched in 2010, through the Europe 2020 strategy, a new and ambitious industrial policy, which highlighted the actions needed to increase the attractiveness of Europe for investment and production (European Commission, 2011). Romania closely follows the terms of European Union policy regarding industry, in order to develop a competitive national market, integrated in the European market.

After the Second World War Romanian urban development was characterised by centrally-planned industrialization. (Popescu, 2014). In the industrialization of cities there are three important stages: the stage of industrial development with priority to regional centers and the creation of new specialized industrial cities (1950-1970), the stage of industrialization through great units of county capital centers and medium cities (1970-1980) and, finally, the stage of industrialization of small towns and rural communities, aimed to become agro-industrial centers (1980-1989). Location models outlined in the years 1950s-1960s were influenced by the prevalence of heavy industry which required proximity to sources of raw materials and the achievement of regional specialization, following the example of the Soviet territorial production complexes and of the 'Kolossovsky energy resources cycles' (Hamilton, 1970).

The effect of industrialization on urban centers of growth poles resulted in population growth during 1948-1992 to 440% for Constanța, 390% for Brașov, 350% for Iași and Craiova, 290% for Timișoara, 270% for Cluj-Napoca and

260% for Ploiești (Mihalache and Croitoru, 2011).

The situation today shows that socialist industrialization hasn't brought sustainable development, many of the businesses being created or extended by simple political decision taken centrally, with little attention paid to existing market demand and global economic trends (Expert Forum, 2011).

During the period 1990-2000 Romania went through a difficult period of economic decline, in the context of the deterioration of main macroeconomic equilibria and runaway inflation. Economic restructuring has been accompanied by a significant restriction or closure of existing production capacities, mining, chemical and nonferrous metallurgy being the most affected economic sectors. From 2000-2001, the economic climate has improved, the economy resumed growth and in 2006-2008 brought higher economic growth. Economic and financial crisis that began in the second half of 2008 had a negative impact on the level of investment both foreign and domestic, some foreign companies withdrawing or reducing their presence on the territory of Romania.

Territorial development of the industry shows significant gaps mainly due to natural barriers, level of accessibility to natural resources and public services of general interest. These gaps increase the economic and social problems existing in the territory.

Most economic activities, in particular those with a high gross value added is concentrated in and around large cities, while many small urban areas (especially former mining towns or mono-industrial

cities) have a precarious and rapidly deteriorating economic situation (Lintz *et al.*, 2007).

Reductions in employment in industry growth poles was generally below the national average, being advantaged by industrial diversification and more attractive economic environment. A number of industrial activities in the growth poles survived restructuring and constitute the engine of economic growth, in some cases benefiting from foreign investment. Also large-scale production has been replaced by the small-scale technology - intensive. Greater diversity of services allowed absorption of unemployed in the industry. Population in growth poles followed the nationwide trend, dropping significantly during 1992-2012, except for Cluj - Napoca and Timișoara, which recorded a slight increase. The greatest loss in population was in growth poles Brașov, Constanța, Craiova, well above the average country (around 20%).

Spatially, industrial restructuring has resulted in the abandonment of the original location or its partial reuse through service activities (storage, trade), or development of brownfield industrial parks. Brașov has in the NE a large industrial site where a large number of parcels of land are unused. Redevelopment of abandoned industrial land should be a priority for the local authorities.

The growth pole has been primarily described as a chain of industries, linked to a certain extent to the inputs and outputs, and ruled by an advancing or stimulant industry, regarded as a development engine, based on its ability to innovate, stimulate and dominate other

industries. Kubis *et al.* demonstrated that the secondary sector has a great positive influence on the regional economic growth and, in addition to that, this sector initiates high spillover effects to neighbouring regions (Kubis *et al.*, 2007).

Analyzing the distribution of employment by sectors and the density of firms in the industry, one can notice the high level of importance the growth pole has in the economic development of a region.

Analysis of the distribution of population by types of sectors emphasize that the primary sector in the urban centers and growth poles is employing the lowest number of people (between 0.25% and 2.3%). The tertiary sector has the highest proportion of employees in the growth poles, except for Timișoara. Constanța is leading with the highest number of employees in the tertiary sector.

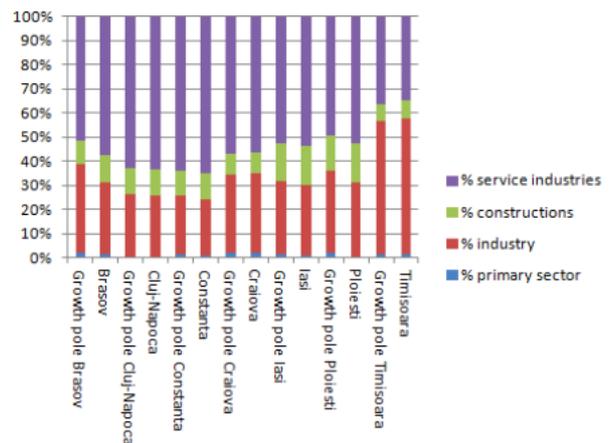


Fig. 2. Percentage of employees engaged in business sectors, in 2011

(Source: National Trade Register Office, 2013)

Percentage of employees in industry in urban centers and growth poles exceeds the industry average employees at national level (21%). The

highest percentage of employees in the industry is in the urban center of Timișoara and growth pole Timișoara, while the lowest is in Constanța and Constanța growth pole (Fig. 2).

Percentage of the industry employees is higher in growth poles than in urban centers, the only exception being Timișoara (Fig. 2).

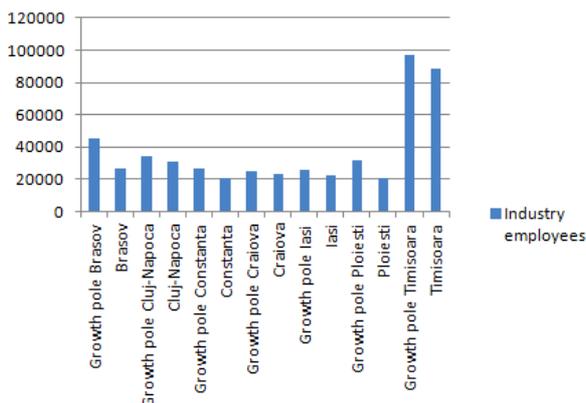


Fig. 3. Number of employees in industry, in 2011 (Source: National Trade Register Office, 2013)

Timișoara has the higher number of employees in industry, nearly triple in relation with the other urban centers and growth poles. The lowest number of industry employees is registered in Craiova, Constanța, Iași (Fig. 3).

Industry with its four subsectors (sections B, C, D and E, according to NACE Rev. 2): mining and quarrying, manufacturing, production and supply of electricity, gas, steam and air conditioning and water supply, cleaning, waste management and remediation activities, contributes in different proportions for the country economic development.

Thus, national percentage of the population employed in industry subsectors are: mining and quarrying - 3.7% of the total number of employees in industry, manufacturing - 85.2%, production and supply of electricity, gas,

steam and air conditioning - 4.1%, water supply, cleaning, waste management and remediation activities - 7% of the total number of employees in the industry .

The highest employees percentage is engaged in manufacturing, in all growth poles, the highest values being recorded in Timișoara (city - 94.9%, pol-95.2%), Brașov (city - 82.4%, pol-88.6%), Cluj-Napoca (city - 81.0%, pol-82.6%), Craiova (city - 82%, pole-82.8%). The lowest number of manufacturing employees is registered in Constanța (city-65.2%, pole - 68.4%), Ploiești (city-68.6%, pole-76.9%), Iași (city-65.2% pole - 68.4%) (Fig. 4).

In the other subsectors, the share of employees is reduced compared to manufacturing, the lowest values being recorded in mining. Ploiești is the only growth pole where the percentage of employees in the mining industry is higher than the proportion recorded at national level. The other growth poles registered a percentage of mining industry employees below national average. Percentage of employees in subsector energy production and supply is lower than the national average only for Timișoara, the other cities and growth poles recording higher values. The highest values are recorded in Ploiești, Iași and Constanța. The number of employees in the subsector of water distribution, waste and sanitation registered values above the national average, excepting Timișoara growth pole. A favorable situation for this subsector is registered in Constanța (city - 22.3%, pole - 20%), followed by Cluj-Napoca (city - 10.3%, pole - 9.5%) (Fig. 4). The number of employees in industry subsectors recorded in the seven growth poles is similar with the situation in the core cities, the differences between these branches being the same in their case.

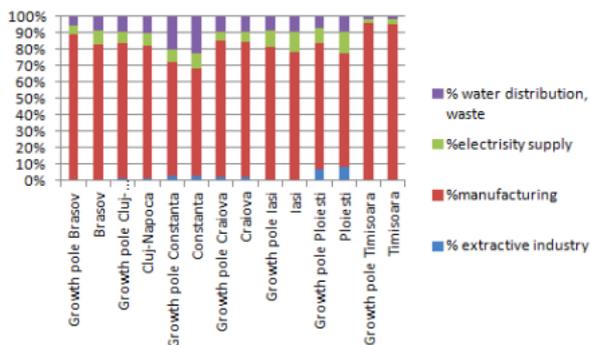


Fig. 4. Distribution of number of employees in industry sub-sector activity, in 2011
(Source: National Trade Register Office, 2013)

The density of industrial firms is different from a growth pole to another, the highest value of this indicator being registered in Cluj-Napoca (city - 6.9%, pole - 6.2%), followed by Timişoara (city - 5 % pole 5.3%) and Braşov (city and pole 4.8%). The lowest density of industry firms is recorded in Iaşi (city - 3.8%, pole - 3.3%) (Fig. 5). All growth poles registered different values of industry companies density, higher than the national average of 2.3%.

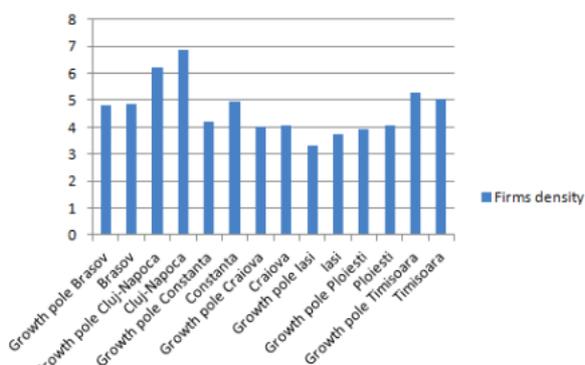


Fig. 5. Firms density in the industry, in 2011
(Source: National Trade Register Office, 2013)

From the analysis it can be noticed that the spread of economic development in the areas of influence is not the one expected: in many cases the increasing number of companies per 1000 inhabitants in urban centers, does not lead to increasing the indicator value for the associated growth pole. This is the case of growth poles Braşov, Cluj-Napoca, Constanţa, Craiova, Iaşi and Ploieşti, where the indicator analyzed is

higher for the urban center, growth pole Timişoara being the only one who does not enroll into this trend. In less developed areas basic infrastructure must be created to encourage short-term mobility and to avoid depopulation. This includes access to technical infrastructure, to quality schools and hospitals, to social services, functional real estate markets etc. On long term, the convergence of living standards will be achieved, as the advantages of peak areas will be distributed to nearby communities (World Bank, 2013).

In the system "urban center - area of influence" people are accessing opportunities (jobs, education, business), facilities (culture, trade) and key public services (health) much easier. This also applies to companies in the influence area regarding the markets and to companies in the urban center regarding the labor force.

The situation of number of firms in the industry by sub-sectors follows the same trend with the number of employees and is favorable to manufacturing. The best representation of this is specific to Iaşi growth pole (93.4%). Differences between growth poles due to the number of firms active in manufacturing, are not significant, the lowest rate being recorded in Constanţa (80.4%) (Fig. 6).

On the opposite side are the other three branches, the lowest share of the number of companies being registered for extractive industry. Subsector water distribution, waste and sanitation is best represented in Ploieşti and Constanţa, while the subsector power supply draws most firms in Constanţa and Timişoara.

It is important to encourage the creation of a diversified economic base with small and medium enterprises. A foreign

company that decides to invest in an area can decide as quickly to relocate somewhere else- Nokia example in Cluj. Almost all growth poles have a foreign company with many employees that participates in the achievement of a significant proportion of pole firms revenue (Braşov - Schaeffler, Cluj-Napoca - Fujikura Automotive, Constanţa - RomPetrol, Craiova -Ford, Iaşi - Delphi Diesel Systems, Ploieşti - Yazaki Group) (Ionescu-Heroiu *et al.*, 2013).

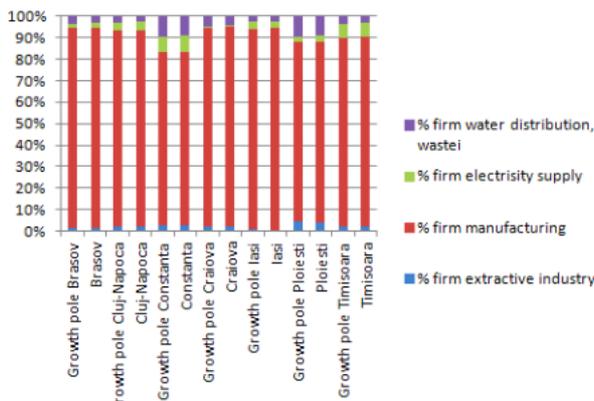


Fig. 6. Distribution of the number of firms in the industry sub-sectors of activity, in 2011 (Source: National Trade Register Office, 2013)

Industry sector in all growth poles plays an important part in their region. Population in the growth poles represents 10-20% of the population in the region of origin, while the number of employees in the industry in growth poles represents between 16-50% in the the total number of industry employees in the regions (Fig. 7). The industry firms in the growth poles represent between 25-40% of the total number of industrial companies in the regions. Growth pole Timişoara has the best representation of the industry in the West region.

World Bank studies have emphasized three key dimensions of economic development: density (economic mass) as concentration of economic resources, distance – as connecting areas to centers of economic growth and division - as

easing of cross-border trade with international markets (World Bank, 2009).

Also from the study „Romania - Growth poles policy: the next phase” shows that only three growth poles - Timişoara, Cluj-Napoca and Constanţa had a national level economic performance, justifying the growth pole qualifier , the other four poles performed below the national average (ie were not national growth engines). On the other hand, all growth poles could be considered regional economic engines, because of their role in the region (Ionescu-Heroiu *et al.*, 2013).

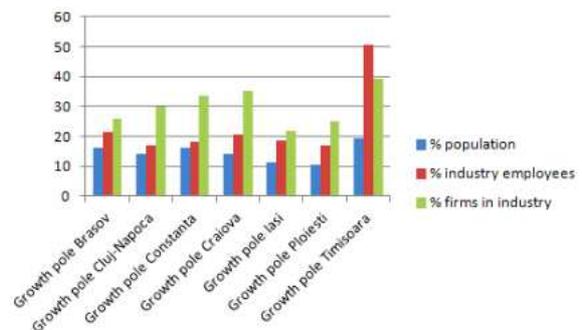


Fig. 7. The representation of growth poles according to the region of origin, 2011 (Source: National Trade Register Office, 2013)

The analysis performed in the article showed that the largest number of employees in the industry is found in Timişoara growth pole and the largest number of firms in the industry is located in Cluj growth pole. The results of the two growth poles in the industry are better due to the favorable position, close to the markets of the European Union.

Increased performance in the industry for other growth poles can be achieved by developing better connectivity infrastructure to markets also by increasing demographic and economic mass, through development of the transport network (roads, railways) on a radius of one hour around large cities.

3.2. Infrastructure business and industry clusters

Economic development at local and regional level is supported by creating business structures in which firms enjoy certain specific facilities and services. In the last 15-20 years there were attempts to create a modern business infrastructure, consisting of industrial and technological parks, business centers, business incubators etc., serving to meet the specific requirements of investors.

Industrial parks are playing an important role in the business structures. The role of industrial parks is to stimulate economic development in order to achieve technological transfer, to attract investment and to harness the human resources of the area. Development of industrial parks has began in 2001 when the government, through a legislative decision (OG 65/2001 with subsequent amendments) has granted support through some facilities for investors wishing to concentrate in certain locations with adequate infrastructure for industrial activities. In 2013 there were developed 57 industrial parks (established under Government Ordinance 65/2001) 18 of which being located in the growth poles (Cluj-Napoca -4, Ploiești -7, Brașov-6, Craiova-1). In Groth Poles Timișoara, Constanța and Iași, there is not developed any industrial park (Ministry of Regional Development and Public Administration, 2013).

Industrial parks occupy the largest areas in Ploiești growth pole - 633909 ha, with 10078 people involved, followed by Cluj-Napoca growth pole with 283492 ha and 2247 employees, Brașov growth pole with 237.1 ha and 4758 employees. In Craiova growth pole the Industrial Park occupy 18.3 hectares and involve 534 employees (Fig. 8).

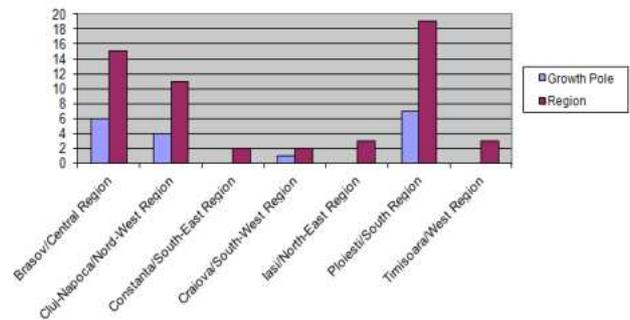


Fig. 8. Number of industrial parks by Regions and Growth Poles, 2013

(Source: Ministry of Regional Development and Public Administration, 2013)

Science and technology parks have to encourage the cooperation between universities and innovative companies, thus fulfilling some of the prerequisites of a true cluster. According to Law 50/2003 regarding the establishment and functioning of science and technology parks, seven science and technology parks (with provisional/ temporary authorization) were created in: Galați, Brăila, Slobozia, Brașov, București, Timișoara and Iași.

Currently only four functional technology parks are established, in Iași, Timișoara, București, Galați. The scientific and Technology Park in Iași growth pole has attracted 28 SMEs with 214 employees, and the one in Timișoara has 7 SMEs with 44 employees. The proportion of these parks is very small and it is too early to conclude whether or not they can be the cornerstone of potential clusters.

A recent economic process is the emergence of economic clusters that can boost economic development and bring greater added value.

Clusters are geographic concentrations of interconnected companies and institutions, in a certain field. Clusters include a group of related industries and

other important competitive entities. These include, for example, specialized inputs suppliers, such as components, machinery and services, or specialized infrastructure providers.

Often clusters are extending downstream to various distribution channels and customers and laterally to manufacturers of complementary products and to the industries related by skills, technologies or common inputs. Finally, some clusters include governmental institutions and other institutions - such as universities, standards agencies, think tanks, vocational training providers and employers - that provide specialized training, education, information, research and support (Porter, 1998).

Clusters are defined in the Romanian legislation (GD 918/2006 - The "Impact" Program): the cluster is a group of manufacturers, users and/or beneficiaries, with the purpose of implementing EU best practices in order to increase business competitiveness.

Clusters exist in two forms:

- Emergent cluster - congestion of enterprises, including SMEs, universities and research and development institutions, local authorities in the early stages of collaboration and/or institutional organization.
- Innovative Cluster - cluster of advanced collaborative activities, which aims to stimulate innovation activity by promoting sustained interactions between its members (exchange facilities, know-how and expertise) and by contributing to technology transfer, networking and information dissemination among members of the cluster.

In Romania clusters are developed in 6 of the 7 growth poles, namely: Timișoara, Cluj-Napoca, Brașov, Craiova, Constanța și Iași.

Values of turnover and exports for the clusters in recent years are considerable, these bunch of companies providing jobs for thousands of people.

Figure 9 presents the situation in the industry clusters in the growth poles, according to data registered at the Ministry of Economy (Ministry of Economy, 2013).

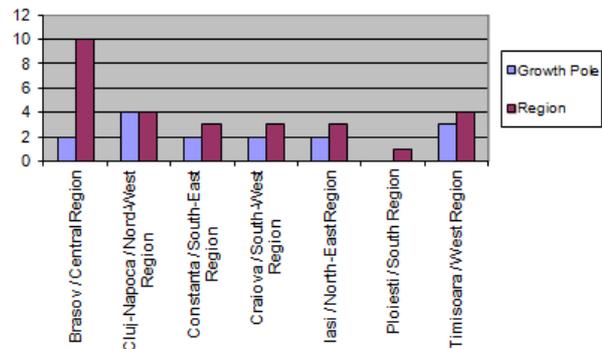


Fig. 9. Number of Clusters by Regions and Growth Poles, 2011
(Source: Ministry of Economy, 2013)

Automotivest, a cluster of West Region Romania (Timișoara), has as main objective to create an economic environment that supports cluster initiative in automotive industry (automotive). According to the data of Cluster Association in Romania, in 2011 AUTOMOTIVEST - Regional Cluster recorded a turnover of 1,6 bn lei, exports of 360 million lei and over 4,300 jobs. Another automotive cluster is Automotive South West Oltenia Pole, established in order to develop this sub-sector in the South West Oltenia region.

Established in 2011 in Timișoara, the Regional ICT Cluster aims to promote and support regional companies activating in the field of Information and

Communications Technology (Cluster ICT) and recorded in 2011 a turnover of approximately 148 million euro.

Sustainable energy cluster ROSENC was created in 2011 in Timișoara, in order to promote, inform and support research and development activities in the field of renewable resource, energy efficiency and sustainability. Another cluster in this field is MedGreen Pole, created to develop and promote these types of energy.

Consisting of a small number of members compared to other clusters, Transylvania Aerospace Cluster (TAC) aims to create an aviation industrial center in Brașov, using high level of specialization of the members in this area. Electro-technical ETREC Regional Cluster, founded in 2010, is cluster and center of excellence in electrotechnics and aims strategic development areas in four directions: motors, generators and drives; renewable energy; automotive electrical and electronic equipment and logistical support services.

Regional ICT Competitiveness Cluster PoleOltenia, created in Growth Pole Craiova, provides consulting services for Romanian SMEs, in order to increase their competitiveness in ICT.

The association of all members to create Furniture Transylvania Cluster, in Cluj-Napoca, is supporting the furniture industry by increasing its competitiveness at national and international level.

With a turnover of over 3 billion euros, Maritim Cluster brings together companies and maritime companies, educational institutions and research profile and authority in the field.

IT New Media Iași, was founded in 2012 in order to create a community of companies that develop products and services online.

Territorial distribution of clusters in the growth poles is shown in figure 10.

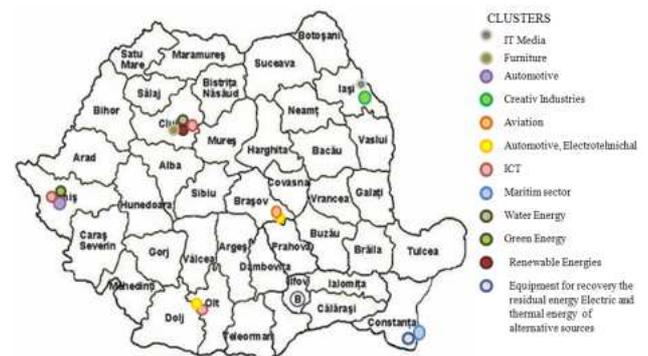


Fig. 10. Distribution of clusters in the growth poles, 2011

(Source: Ministry of Economy, 2013)

Until now the development of companies has been made individually, based on company policies but in the future, it will follow the development of horizontal relationships, particularly in target areas such as automotive, software and telecommunications, renewable energies, etc. in order to create clusters. Following its ability to ensure a strong partnership between the private sector (firms) and public sector (schools, public administration), the cluster can contribute to competitiveness and innovation in industry and other sectors.

Creation and development of existing clusters can constitute a viable solution to develop national industry and increase its competitiveness.

3. Conclusion

Growth poles are viable solutions for reducing regional disparities, by promoting beneficial economic effects over a larger influence area. Economic development of growth poles is provided largely by industry.

Both through the 7- growth poles (Constanța, Craiova, Ploiești, Iași, Brașov, Cluj-Napoca and Timișoara) and throughout the country, the industry contributes significantly towards the achievement of economic development.

Cluj-Napoca Growth Pole recorded the highest number of firms in the industry / 1000 inhabitants, but in terms of the number of active employees in this sector is ahead of the Timișoara Growth Pole.

The advantages of these poles can be justified by the proximity to the European Union markets. All the growth poles benefits from indicators values above the average country indicators: the percentage of employees in the industry and the density of firms in the industry.

Analysis of data on the number of firms in the industry indicates that current growth poles are indeed the main engines of industry in regions they belong to, each of them containing over 25% of the companies in the industry at regional level.

Evolution of GDP and of the revenues of firms in the industry, would have increased the analysis capacity of the study, but this data was not available.

Business structures and clusters are positioned at the level of major growth poles, representing feasible solutions for boosting economic development, value creation and competitiveness.

The analysis performed emphasizes that growth poles have the potential to increase their competitiveness and to represent a strong economic engine for sustainable economic growth.

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