

## Supporting regional competitiveness through innovation. Case study: Sud Muntenia

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**Abstract.** The present research underlies on the idea that recently, in both governmental long term strategies and economic theories, regions are considered as centres of economic growth and as hubs in knowledge spill-over of and that innovation is a key component of long-term economic prosperity. The analysis focuses on discovering how regional competitiveness can be supported by innovation, emphasizing also the role that economic agglomeration and clusters have in this process. The study is based on a Romanian region, Sud Muntenia, and presents an image of the innovation support structures, academic environment, innovation partnerships and clusters allocation in the region in comparison to the national level. The used methodology relies on quantitative and qualitative instruments, information being processed from statistical data, focus groups and questionnaires applied on the main regional actors involved in the innovation process.

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### 1. INTRODUCTION

Competitiveness is one of the vexed, widely used and defined concepts by economists and scholars over the past years from different points of view. If the the concept regarding firm competitiveness is well defined and has received greater attention, when it comes to analyzing a region's competitiveness, things are not that clear and so far a common opinion hasn't been reached. The *macro-economic* level of the concept is poorly defined and strongly contested.

Despite the fact that improving a nation's or region's competitiveness is frequently presented as a central goal of economic policies and that recent developments in both public policy and economic theories place regions as centres of economic growth and of the improvement in the living standards, as key points of governance, organization and decision, arguments abound as to define what this means and whether it is even sensible to talk of competitiveness at a macro-economic level at all (*A Study on the Factors of Regional Competitiveness*). This is why presenting some of the definitions that are mainly used when it comes to regional competitiveness is important.

*“A nation’s competitiveness is the degree to which it can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously expanding the real incomes of its citizens. Competitiveness at the national level is based on superior productivity performance and the economy’s ability to shift output to high productivity activities which in turn can generate high levels of real wages. Competitiveness is associated with rising living standards, expanding employment opportunities, and the ability of a nation to maintain its international obligations. It is not just a measure of the nation’s ability to sell abroad, and to maintain trade equilibrium.” (The Report of the President’s Commission on Competitiveness, 1984 - in “AA Study on the Factors of Regional Competitiveness”)*

“An economy is competitive if its population can enjoy high and rising standards of living and high employment on a sustainable basis. More precisely, the level of economic activity should not cause an unsustainable external balance of the economy nor should it compromise the welfare of future generations.”

*(European Competitiveness Report, 2000)*

According to Porter, the appropriate definition of competitiveness is productivity. A region’s competitiveness and standard of living (wealth) is determined by the productivity with which it uses its human, capital, and natural resources (Porter, 2002).

Theories that regard regions as hubs of knowledge draw heavily on the notion of innovation, based on Schumpeterian and evolutionary economic insights. Innovation is seen as an interactive learning process that requires interactions between a range of actors, such as contractors and subcontractors, equipment and component suppliers, users or customers, competitors, private and public research laboratories. Systems of innovation also include universities and other institutions of higher education, providers of consultancy and technical services, state authorities and regulatory bodies (Hotz-Hart 2002, after OECD 1999).

It is beyond doubt that knowledge and innovation play a key role in economic development. This is even more visible at a regional level, as geographic disaggregation only highlights differences in development.

Michael Porter’s concept of *geographical clusters* has had considerable influence. Drawing on empirical evidence from a wide range of countries, he argues that a nation’s globally competitive industries tend invariably to exhibit geographical clustering in particular regions (Porter, 1998). This clustering is both the result of, and reinforces, the interactions between what he calls the ‘competitive diamond’. A region’s relative competitiveness depends on the existence and degree of development of, and interaction between, the four key subsystems of his diamond. (*A Study on the Factors of Regional Competitiveness*).

The European Union is among the pioneers of policy initiatives regarding the implementation of economic agglomeration concepts. The preoccupation for the reduction of disparities within the EU was probably the most powerful trigger, as this theme is given a very special attention in the regional development policy. (Cojanu, 2011).

Recent studies at the EU level deepen further the territoriality element, emphasizing the role of cities and urban areas in general, as the main sources of economic competitiveness. During the last decades EU has shifted political focus to innovation, the knowledge economy and sustainable competitiveness. Cluster based strategies have become central place in industry policy, but also in connection with regional and science policy at the EU level (Ketels&call, 2012). Clusters and networks have been identified as crucial instruments for the implementation of the Europe 2020 strategy of the EU. The EU 2020 flagship initiatives ‘Innovation Union’ and ‘An integrated industrial policy for the globalization era’ in particular mention clusters and networks as critical tools. The latter notably states that “Clusters and networks improve industrial competi-

tiveness and innovation by bringing together resources and expertise, promoting cooperation among businesses, public authorities and universities” but also that “there is a need to develop more globally competitive clusters and networks” (Ketels, 2012).

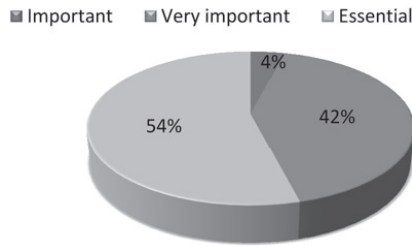
## 2. CASE STUDY: SUD MUNTENIA

### 2.1. Innovation system

The region is located in the south of Romania and it includes 7 counties (Argeş, Călăraşi, Dâmboviţa, Giurgiu, Ialomiţa, Prahova, and Teleorman), 16 municipalities and 32 towns. Industry is diverse and is the key contributor to the local economy (16.2%). Some sectors have a long tradition, e.g. chemical and petrochemical machinery and products, automotive (Dacia factories), machinery, equipment and transport devices, construction materials, textiles and food industry. Agriculture has a huge exploitation potential, with 80.2% arable land. The region has a good road and rail transport infrastructure and connections to five pan-European transport corridors and the A1 and A2 highways. Naval transport is a main regional advantage due to the access to the main European navigation route of the Danube and to four harbors. The region accounts for nearly 33% of Romania’s touristic potential due to the Danube, the southern part of the Carpathian Mountains, thermal resorts, national parks, agro-cultural and religious tourism, etc. The economy has high spatial segregation between the industrialized, richer North and the agricultural, poorer South. The region ranks 3<sup>rd</sup> in terms of national RDI resources: it accounts for 7.7% of RDI expenditure, 6.1% of R&D units (82 research institutions, including 57 private, and 10.3% of RDI employees (4,484 people) (INS 2005, 2009).

Regional innovation potential is relatively low: with a total of 457 innovative enterprises out of the 5,171 at national level, the South-East ranks 6<sup>th</sup> among the eight regions of the country (Innobarometer 2008). Innovative enterprises account for 19.9% of the total enterprise population (slightly lower than the 21.1% national average), with large enterprises being the most innovative (48%). Innovation expenditure is very low at 1.5% of the total enterprises turnover and is mostly used for acquisition of equipment and software (82%). Process and product innovators account for 9,1% of the total national (2004-2006 data), and include a majority of SMEs (84%), concentrated in industry (75%) and services (25%) (*Regional Innovation Monitor*).

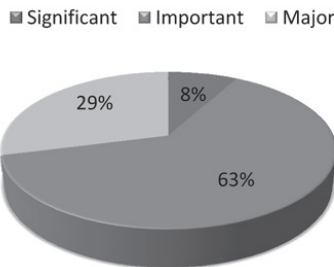
The innovation culture analyzed during the focus groups with the main actors in the RDI system varies greatly from one type of company to another. Regional entrepreneurs’ perception on the importance and need for innovation as a driver of economic competitiveness expressed in the focus groups is likely to encourage and promote innovation in the economic activity they perform. Private companies participating in focus groups perceive innovation as “absolutely necessary in present circumstances where a lower price is no longer enough.” Innovation is seen as an investment that requires high initial costs, does not bring immediate benefits but long-term ones, still because of the novelty brought to market it can be “sold” at a high price.



**Figure 1. The role of innovation in the economic development of a region**

*Source: author's calculations based on questionnaires*

Regarding the role that innovation plays in the economic development of a region, most participants consider innovation as critical, 42 percent of those present perceive innovation as an important factor, the difference of 4 percentage points appreciating the role of innovation as being important.



**Figure 2. The role of innovation in the economic development of a company**

*Source: author's calculations based on questionnaires*

The ratio is not as balanced when the perception of the role that innovation plays in economic development of a company is considered. The benefits derived from investing in innovation made by a company are more noticeable than in the case of a region. Thus, the proportion of entrepreneurs who consider the role of innovation as very important for a company's competitiveness is overwhelming, 29% of respondents believing that innovation plays an important role, a significant role for innovation is considered by 8% of the participants.

The innovation support structure is represented by 16 industrial parks (30% of the national value), a business incubator in Câmpulung Muscel, Argeş, one centre of technology transfer, innovation and business at the University of Ploieşti, offering consulting services designed especially for the petrochemical industry and one innovation relay centre. The range of services offered are less varied and limited in most cases to electricity, gas, water, sewage, drainage system, and parking. The available infrastructure requires large investments and their visibility among companies in the private sector should be improved. The prevailing fields of the hosted companies are textile, petrochemical, construction, electronics, medical and sanitary. Regarding the shareholder structure, they are owned mainly by county councils, except the 2 private parks: Allianso Business Park (Ariceştii Rahtivani) and Industrial Park Kolkata - Bradu (Argecom) and

2 with joint public-private ownership: Technological and Industrial Park North and Industrial Park Mija in Dâmbovița County.

Disparities between the southern and northern part of the region are retrieved also in the geographical distribution of the support structures within the region. Thus, an overwhelming share is located in the northern counties. The representative county from this point of view is Prahova that after the inclusion of Mizil and Urlați in the industrial parks category has a number of 8 such structures, ranking second nationally after Brasov. The region's most developed industrial park is Ploiesti Industrial Park, with a public ownership with plans of expansion by opening new "work points" in Mizil, Ciorani and Urlați.

The geographical distribution of universities and research institutes in the region confirms once again the regional disparities between the northern and southern part of the region. Thus, most research institutions are located in the north and their fields of study are accredited in conjunction with developed industries in the area (the petrochemical in Prahova, engineering and metallurgy in Dâmbovița County). Academic and research environment of the region is represented by four public and private universities, with 33 faculties, located mainly in Arges and Dâmbovița counties [14]: University of Valahia, Targoviste; Oil and Gas University - Ploiesti; University of Pitesti and "Constantin Brancoveanu" University – Pitesti. The region has a significant number of research institutes in various fields closely related to the predominant industries in the region. Universities have a very diverse and complementary organizational framework for RDI activities, some universities have started having a more pronounced entrepreneurial character – getting involved in start-ups, spin-offs and spill-over processes. The region benefits of a large percentage of specialized personnel involved in research activities (2nd place after Bucharest-Ilfov Region), though is facing a phenomenon of migration of highly talented students and researchers to Bucharest or abroad.

Partnerships between SMEs, Research institutes and Universities in the region exist, but are specific and do not become permanent. The level of collaboration is different from one enterprise to another and according to the profile of each university. Common projects are developed mainly with universities and research institutes from the Bucharest-Ilfov region. Few successful partnerships between the private sector and the academia and research sector were mentioned during the focus groups. Although both parties show their readiness to collaborate, things are still at an incipient and declarative stage.

## 2.2. Clusters

Clusters are seen as an important factor for the explanation of the empirical phenomenon of geographical concentration of economic and innovation activities. More than one definition of clusters exists, depending on its purpose and the specific context of its use.

The "Community Framework for State Aid for Research and Development and Innovation" defines innovation clusters as "groupings of independent undertakings — innovative start-ups, small, medium and large undertakings as well as research organizations — operating in a particular sector and region and designed to stimulate innovative activity by promoting intensive interactions, sharing of facilities and exchange of knowledge and expertise and by contributing effectively to technology transfer, networking and information dissemination among the undertakings in the cluster."

One of the most used definitions of a cluster is the one of Michael Porter: "clusters can be understood as geographic concentrations of interconnected businesses, suppliers and organizations in a particular field. They bring together a variety of linked industries and stakeholders, as well as governmental and other institutions such as universities or trade associations. Importantly, a cluster is not simply composed of a group of similar businesses – for example car manufacturers – as this would be better understood as a sector. Instead,

clusters represent fully formed ‘economies’ incorporating the various intertwined stakeholders involved in the production of a particular theme of end product.” (Porter, 198).

The regional cluster is defined as an industrial cluster, in which member firms are in close proximity to each other (Enright, 2000).

There is no consensus when it comes to identifying and mapping clusters, either in terms of the key variables that should be taken into account or the procedures by which the geographical boundaries of clusters should be determined (Martin & Sunley, 2002).

Innovation is increasingly characterized as an open process, in which many different actors—companies, customers, investors, universities, and other organizations—cooperate in a complex ways. Ideas move across institutional boundaries more frequently. The traditional linear model of innovation with clearly assigned roles for basic research at the university, and applied research in a company R&D centre, is no longer relevant. Innovation can benefit from geographic proximity which facilitates the flows of tacit knowledge and the unplanned interactions that are critical parts of the innovation process. This is one of the reasons why innovation occurs locally whereas its benefits spread more widely through productivity gains. Clusters may embody the characteristics of the modern innovation process: they can be considered as “reduced scale innovation systems” (*Innovative Clusters. Drivers of National Innovative Systems, OECD, 2001*). Statistical evidence indicates a positive relationship between the presence of clusters and the prosperity of regional economies has brought to the fore the positive role that clusters and networks could play. Clusters and networks are increasingly seen as catalysts for accelerating industrial transformation and for developing new regional competitive advantages, speeding up the creation of firms and jobs and thereby contributing to growth and prosperity (*European Competitiveness Report, 2012*).

The general accepted *triple helix model* has to be adapted to the Romanian reality and transformed in a “Four clover” model, where the fourth actor is being represented by catalyst institutions: service providers in the field of innovation and technological transfer, centers for technological transfers, chambers of commerce etc (Guth, 2010).

In Sud Muntenia there were identified four clusters in Argeş, Dâmboviţa and Prahova having as main activity tourism, electro tehnics, automotive and food. Out of this clusters, the Manufacture of motor vehicles cluster in Argeş (AUTO-AG) is classified as a three stars cluster. (Cojanu, 2011).

Dacia-Renault has comprised all the elements of the mature innovative industrial cluster, without being a pivot of the scientific research and world technology. Thus, Dacia-Renault is the center of ACAROM–ODETTE Romania (Association of Automobile Constructors from Romania), being the best structured and functional cluster, comprising small and big firms within the main production activity and within the support activities, consulting firms, research firms, financial organizations, universities. All the other clusters have lacked at least one main element for innovation: the financial organizations (Dudian, 2011).

Table 1

## Clusters in Sud Muntenia

NAME	FIELD	COUNTY
Agro-food Sud	Agro Food	Southern part
Electrotehnica	Electrotehnics	Arges & Dambovita
Carpathians Cluster	Tourism	Prahova
Dacia Renault Cluster	Automotive	Arges & Dambovita

Source: <http://clustero.eu>

Calarasi is considered as a potential cluster in Agriculture, Tourism and Electro technical Industry, Ploiesti with its area of influence - 3 cities (Băicoi, Boldești –Scăieni, Plopeni) and 10 communes is thought to be a growth pole and Dacia Renault Cluster as a potential competitiveness pole. The region has a great potential in developing clusters also in the glass and agricultural sectors.

### 3. CONCLUSIONS

The access and the availability of industry data and company business strategies are very limited. Sud Muntenia has a set of valuable RDI factors: four university centres, a significant number of research institutes, high percentage of staff involved in research, tradition in mechanical engineering, petrochemical and agricultural good representation of business support structures, specialized human resources engaged in R&D, emerging clusters in machinery, petrochemicals industry and agriculture with great potential, the presence of large companies and multinationals in both traditional and emerging industries, a geographical proximity to Bucharest-Ilfov region, and thus by leveraging these strengths it can increase its economic competitiveness and focus on areas that have in which it has the needed human, financial and infrastructure.

Potential areas that can carry innovation research projects could be those in: machine building, petrochemical, electronics, agriculture or environment, creation of industrial parks, organic farms, and cultural-creative industries by making traditional handicrafts.

The future belongs to integrated projects, which involve inter-regional, cross-border and transnational actors and achieve socio-economic goals for the entire community this is why we must establish and clarify the context of construction and implementing EU-funded projects. Permanent adaptation of the educational system in all its stages, creating conditions to stimulate innovation, sufficient funding and promoting the benefits of innovation are factors on which we need to act now, thinking of the future. Europe needs RDI to deal with an aging population, climate change, resource and energy deficiency and to experience a smart, prosperous and inclusive development.

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