

INNOVATION AND TECHNOLOGICAL TRANSFER – DECISIVE FACTORS IN INCREASING REGIONAL COMPETITIVENESS

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Abstract: We can't talk about national prosperity and high living standard if we don't correlate them directly to the effective implementation of technology. This implies recovery of the results of creative activities. Innovation and technological transfer are determinants of growth competitiveness both nationally and regionally. This paper attempts to highlight the decisive role of the research and development activity and of the innovation in a region's economic development.

1. INTRODUCTION

In the present, at the level of first decade of the third millennium, we can say that the national prosperity and the high individual life standard are directly linked to an efficient application of the technology, which presumes to value the results of a creative activity. So, we have to understand well the link between the innovation, technology, productivity and competitive of a region.

The social and politic frame that is constituted to European and world level encourages the process of innovation and to be applied the technology, which is assimilated by it with the social and politic welfare. Into European Union countries, the science and technology have a major ace up increasing in importance because it contributes to study the knowledge, to improve the life conditions and to enforce the international competitiveness.

In this field Romania crosses a period full of trying in order to rebuild the society with its two components: economical reconstruction and rehabilitation. In ensemble, the efforts for rehabilitation, the research and innovation field has a very important role at least as human aspect.

The innovation and knowledge are determinate factors of the increasing of micro and macro-economical competitive at the national and regional economy, based on the production of non-material value. The research –development activity together with the innovation constitute a strategic decisive component for the economical development and for social progress. So, the science, technology and innovation represent fields that generate constantly technological progress assuring the durability of the economical development and competitiveness of Romania.

2. IMPACT OF INOVATION AND RESEARCH-DEVELOPMENT ACTIVITY OVER THE ROMANIAN ECONOMICAL ENVIRONMENT

Regarding the innovation activity, Romania is situated behind other European states. So, if we refer to the period 2004-2006, only 20% of the companies have developed some innovation activity. This percent is much behind the data from European Union, where almost 51% of the companies as being innovating.

At national level, the expenses of innovation is very low, representing 1.5% of the total business figure and almost 3,6% of business figure of innovative enterprises.

INNOVATION EXPENDITURE BY DEVELOPMENT REGION

lei thou current prices

Development Region	2004			2006		
	<i>Innovation expenditure for:</i>			<i>Innovation expenditure for:</i>		
	<i>Research - development activity</i>	<i>Acquisition of machinery, equipment and software</i>	<i>Acquisition of other external knowledge</i>	<i>Research - development activity</i>	<i>Acquisition of machinery, equipment and software</i>	<i>Acquisition of other external knowledge</i>
North - West	53221	167190	14604	88776	654370	5541
Centre	76348	219140	10181	260029	524180	8882
North – Est	41143	341178	5303	102098	242615	6624
South – Est	41966	305355	658	106892	843749	10855
South - Muntenia	134785	669968	16160	145425	952925	25080
Bucharest - Ilfov	439989	821934	791826	623031	889646	81986
South - West	63150	179954	3763	86926	580871	9122
West	39589	148199	3473	43485	122816	5762

Institutul National de Statistica, 2009

2.1. SECTOR OF MIDDLE AND SMALL ENTERPRISES AND THEIR ROLE FOR SUPPORTING THE REGIONAL COMPETITIVENESS

The middle and small enterprises have an important role in European economy representing the main source of management qualities, innovation and requirements of working places.

The benefits that result from co working of **MIDDLE AND SMALL ENTERPRISES** with the research centres are very high. The concrete effects can be observed in economical results of the **MIDDLE AND SMALL ENTERPRISES** when they can impose it or to maintain it on the market (products quality/services) in positive effects generated in chain at national economy level (increase of life level of the population, increasing of the exports).

We dare to conclude that the innovation and technologic transfer contributes to increasing og **MIDDLE AND SMALL ENTERPRISES** competitiveness that implement them into their system of service.

In order to form a full image regarding to **MIDDLE AND SMALL ENTERPRISES** in Romania, to know the nature of innovation activity developed in their frame are very important.

After some researches from the project „COMPETIMM-Development of the managerial competences of **MIDDLE AND SMALL ENTERPRISES** in South-West region -Oltenia” [2] resulted that most investigated enterprises (20,27%) didn't paid attention to innovative activities, which proves that most of the managers are not aware to that fact that, in the context of increasing rivals in all activity fields, the innovation represents the most efficient way of assuring the competitiveness.

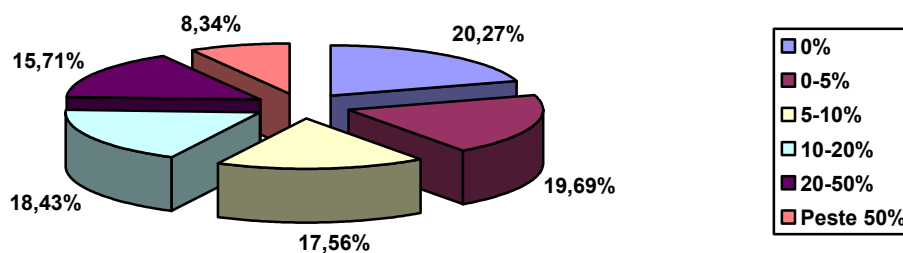


Figure 1.2
Intensity of investments dedicated to the innovation of MIDDLE AND SMALL ENTERPRISES

The examination of the intensity of innovation inside the Middle and Small Enterprises after the regions of development relief the following main aspects:

- The percentages of Middle and Small Enterprises that did not invest in innovation and designed over 50% of investments to innovation are higher in North West region (26,80%, respective 12,37%);
- The companies that record investment ponders of 5-10 and 10-20% are more into the Centre (25,45%, respective 30,91%);
- The south – est has the higher percent of companies that give to innovation between 0% and 5% of their investment founds (31,58%) and he lowest number of companies that give to innovation between 20 și 50% (5,26%)
- The South West region has a high ponder of companies that invested in proportion of 20-50% in inovation (23,02%), and it has the lowest number of companies that give to innovation 5-10% or over 50% (12,30%, respective 3,97%).

Table 1.2
Difference of investitions dedicated depending on the regional placement of Middle and Small Enterprises [2]

Crt. No.	Ponder of investitions dedicated to innovation	Middle and Small Enterprises on development regions							
		North Est	South Est	South	South West	West	North West	Centre	Bucharest
1.	0%	20,11%	21,05%	26,67%	14,68%	25,71%	26,80%	14,55%	21,85%
1.	0-5%	16,20%	31,58%	18,33%	30,16%	15,71%	8,25%	7,27%	16,39%
2.	5-10%	15,64%	14,47%	15,00%	12,30%	22,86%	23,71%	25,45%	19,75%
3.	10-20%	23,46%	17,11%	20,00%	15,87%	10,00%	12,37%	30,91%	19,75%
4.	20-50%	17,32%	5,26%	11,67%	23,02%	14,29%	16,49%	12,73%	12,18%
5.	Peste 50%	7,26%	10,53%	8,33%	3,97%	11,43%	12,37%	9,09%	10,08%

By increasing the expenses linked to the introduction of innovation inside the companies (in order to improve their work and products) it is assured a high volume of selling on existent market and on new markets. This fact leads to increasing the economical competitiveness of the companies, of their belonging regions and of the national economy.

2.2. ACTIVITY OF RESEARCHING – DEVELOPMENT AT REGIONAL LEVEL

One of the factors that potent the competitiveness is the development of researching-development sector. In Romania this sector has low links to economical environment not having a significant contribution to regional economical development. The whole researching-development sector in Romania crosses through a great process of reorganization on new bases.

The ponder of regions in total of expenses for researching-development sector at national level

	2000	2003	2005	2008
North-Est	5,52	4,92	5,52	7,20
South-Est	6,29	3,47	3,59	3,32
South Muntenia	13,27	13,92	11,34	7,69
South-West	4,51	2,8	3,8	2,95
West	5,51	6,11	4,46	5,14
North-West	3,78	4,8	7,52	8,50
Centre	7,81	6,66	4,49	2,69
Bucharest-Ilfov	53,31	57,33	59,28	62,47

Annuar *INS*, 2009

3. REGIONAL INNOVATION VS. REGIONAL INTELLIGENCE

At European Union level there were put into service more strategic projects of regional innovation starting with 1994, and in 2001 it was noticed the launch of first RIS projects RIS (Regional Innovation Strategy) in Central and Eastern Europe. [9]

By traversing some simple steps over 150 of European regions it was placed the innovation into centre of strategies that viewed the competitiveness. These steps refer to:

1. Initiating the regional dialogue
2. Direct implication of whole organisations relevant for defining the innovation politics
3. Analyse of regional needs and capacities of innovation
4. Selecting the priorities for supporting innovation
5. Elaborating the action plans and pilot projects.

For Romania the necessity to impulse the increasing the economical competitiveness especial during 2007-2013, which represents the first step of post-addiction process imposes the essential requirement to reduce and exceed the technological differences that apart it from the rest states of EU, especially as an intense rhythm for implementing the reviewed Lisbon Strategy. [3]

This fact imposes as objective for Romania to accomplish an economic dynamic and competitive environment able to assimilate and develop the fields of high technology and to answer to strategic requirements of long-term development in context of evolution at global level of economy based on knowledge.

From this perspective all regions are direct interested to develop the capacity and to increase the competitiveness of the researching-development and innovation system that should assure the resources and infrastructure necessary for:

- Assuring and developing on intern plan the sources of scientific and technical competence and of the equipments and technical endowments at high level, necessary for developing the sectors and scientific fields of advanced technology.

- Increasing the grade of assimilation, applying and development the knowledge, services and advanced technologies in economical and social environment in order to face the technological evolution at European and international level, assuring in thi way a sustainable increasing of economical competitiveness.

In this way it is impose to be developed a strategy of innovation that should maximise the experiences and regional resources, based on the best practices in EU and also the integration into local, regional and international partner activities. From this point of view, the development of this strategy and implementation it will increase the competitiveness of region level.

The general objective of a strategy for regional innovation is to create a region able to offer to its inhabitants a high quality of life. This objective must be supported by other strategic objectives as follows:

The construction of regional attraction by establishing the measures for attracting attention to business sector (internal investments) and talents.

- Supporting the competitiveness of economic regional sector by:
 - Increasing the continent of innovation and creation opportunities
 - Facilitating the access to knowledge and innovation forms
 - Accelerating the innovation assimilation
- Promoting and developing the endogen partnership by actions ment to assure the support in each stage of the process that leads to appearance and development of start-ups based on knowledge

So it can be made the link between the strategies of regional innovation and so called regional intelligence.

Regional intelligence can be defined as the capacity of a region to both anticipate socio-economic change and manage the knowledge derived from such change for the purpose of developing policies, know-how and innovation to eventually become a centre of competence or a key contributor to the competitiveness of existing regional companies. In other words, regional intelligence is the regional equivalent of the advantages drawn by the private sector from concepts including economic intelligence, technology watch and transfer as well as RTD activities, with all the consequences this carries in terms of management as well as planning, making and implementing decisions. [9]

The aim of regional intelligence is therefore to strengthen the intangible assets of a region and its local business base as well as to maximise added value upon implementing the regional strategy

Technology and innovation represent strategic directions, which guarantee the technological progress and growing regional competitiveness. It is for this reason why the role of public authorities is to create and develop a stimulating framework for RDI activities and for transferring the output of RDI to the business environment.

One of the dreams of local and regional authorities has been to support structures that can stimulate the development of new technologies in their areas.

Before other developments of the subject, it is important to point out that new technology is not an absolute concept, but rather a relative one, that is, it should be defined in relation to the concrete stage of development and development objectives of a specific region.

What is possible to do in a region can be inappropriate in another one. Or what is possible does not correspond to the real objectives of the regional partners.

Nevertheless, projects to introduce new technologies have played an important role in some European regions. There have been three possible models:

- Some regions have supported the development of their own existing technology in order to assume a real leadership in a segment of the economy. This model is relevant in already advanced areas or regions profiting from existing installations.
- Others have identified the main elements and services that their economies will need to develop and have provided them in cooperation with final users - SMEs. This model requires a strong ability to promote SME networks based on their own vision of the future and knowledge of their interests.
- Finally, a few regions started from a regional approach to social needs and requirements, that is from a study of market needs, for defining training, research and production models.

These three models must be used not because of any kind of fashion but according to the real characteristics of a particular region. Most of all, the choice depends on the strategic plan that all the public and private actors are able to define for their future, in a dynamic process of building that future.

4. CONCLUSIONS

Taking into account to the development stage when it is the Romanian economy, respective the necessity of crossing from the economy based on factors to economy based on investments, the innovation and technological transfer constitute the main ways of reducing the economical differences being essential for reaching behind the advanced economies.

When one looks at the history of regional development in Europe during the past few decades, it becomes clear that spatially uneven development has been a typical and in most of the cases an unavoidable feature of the process of technological change and capital accumulation. Today, R&D and innovation-related activities play an important role in these processes. A vast bulk of recent scientific studies has indicated that research; innovations inspired by R&D, and their various spin-off effects have a major positive impact on the regional economy. Techno-economic development is dependent on level of education, R&D, innovativeness, capacity for regeneration and a wide array of other interrelated factors. However, the interplay between different factors involved is highly complex and difficult to demonstrate.

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