

## COMPETITIVE REGIONS AND STRUGGLING REGIONS IN THE KNOWLEDGE ECONOMY

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**ABSTRACT.** – **Competitive Regions and Struggling Regions in the Knowledge Economy.** We answered the following two main questions of our study: how to ensure the resilience of regions within the knowledge economy and which were the regional strengths in order to promote sustainable development, in the context of an innovative and competitive environment. In this context, regional policy should undergo significant changes in order to adapt to an economy that has changed, more exactly it is necessary to develop a series of less tangible goods, but that support regions to develop their potential. Still, there is no universal formula appropriate for all regions. That is why each region has to create its own strategy for regional development within the knowledge economy. Nevertheless, the common purpose of all regions is to create a sustainable community that is economically competitive, socially inclusive and with a quality environment.

**Keywords:** *regional development, knowledge economy, innovation, competitiveness.*

### 1. INTRODUCTION

The knowledge economy and its impact on regional development is a hot topic in national and international literature (C. Autant-Bernard, M. Fadair, N. Massard, 2013; N. Bellini, M. Landabaso, 2005; P. Cocean, 2011; A. di Minin, 2003; W.W. Powell, K. Snellman, 2004; M. Tălmaciu, 2012; A. Thierstein, M. Walser, 1999; B.J.K. Yeo, 2010; V. Zítek, V. Klímová, 2011) which we also approached in a recent study (O.-R. Ilovan, E. Sochircă, 2012) that we continue and develop in this paper. In addition, starting from the idea that “the path of regional development goes through universities” (P. Cocean, p. 7), we answered the following two main questions of our study: how to ensure the resilience of regions within the knowledge economy and which were the regional strengths in order to promote sustainable development, in the context of an innovative and competitive environment. Under what circumstances does innovation lead not only to economic development, but also to a balanced development for the entire regional system? We are interested in discussing the way a region functions and the features that make it competitive, that ensures its economic success. Moreover, it is important that intra- and interregional disparities diminish rather than increase.

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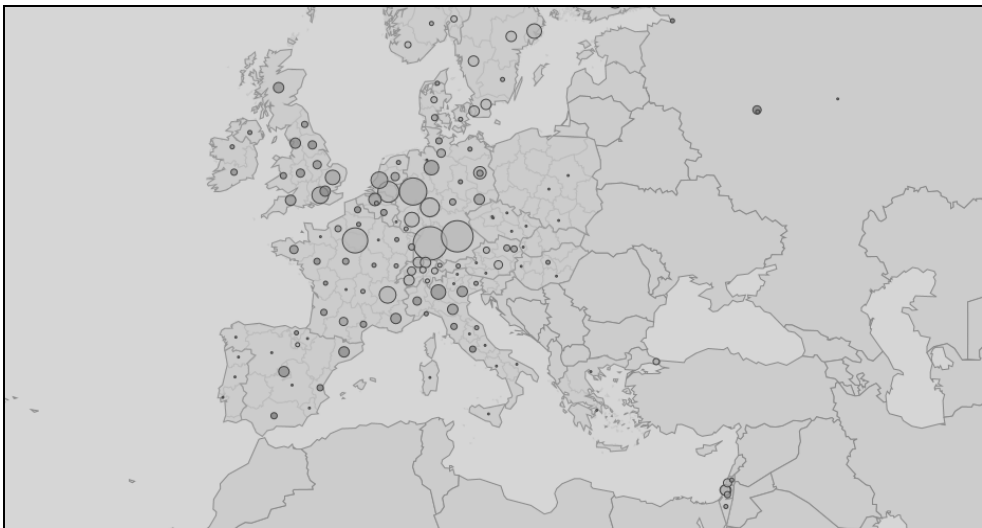
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For globalisation and for the so-called new economy, regions have the answer of innovation. People produce new ideas that lead to new or better goods, services and organizational practices based on innovation. But innovation does not take into account only the research phase (before participating to a competition) and the efforts at the technological level. Innovation includes also financing, training, marketing, knowledge management, R&D, design, counselling, copyright, etc. (N. Bellini, M. Landabaso, p. 2).

In opposition to the classical or traditional economy, based on capitalising resources and on using different types of the extant land, the knowledge economy is defined as “[...] production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence” (W.W. Powell, K. Snellman, p. 201) and as “[...] made up of industries engaged in ideas and creativity, that is, innovation” (B.J.K. Yeo, p. 72).

According to the assessment of the OECD (the last year with this kind of data is 2009), if we compare the innovation activity of the European area with that of the USA, we notice a higher concentration in the European continent that is the northern states, Germany and Switzerland hosting most of the innovation hotspots (fig. 1).



**Fig. 1.** Patent applications/1 million inhabitants in Europe (2009)  
**Source:** <http://oecdwash.org/innovationmapper/>

In addition, the World Bank established a new methodology for quantifying and interpreting the performance in the field of innovation, summing up 148 variables available for 146 countries, and creating two indices: the Knowledge Index (KI) and the Knowledge Economy Index (KEI). The three variables entering the sphere of the knowledge economy are: the Economic Incentive and the Institutional Regime, Education, Innovation and Information & Communications Technology (ICT). Analysing these indices for 2012, we notice that Romania has a minimal number of points (registering, at the

same time, the lowest values for the indicator that measures the volume of expenditure for education), while Sweden, Denmark, Holland, and Finland (fig. 2) are in the top and this is also reflected in social and political decisions.

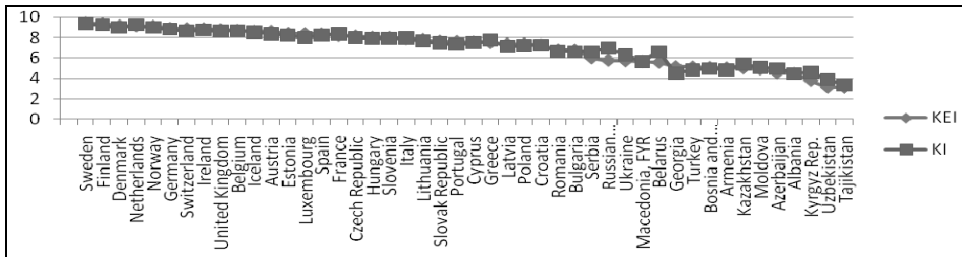


Fig. 2. KEI and KI Indices for Europe and Central Asia (2012)

Source: The World Bank ([http://info.worldbank.org/etools/kam2/KAM\\_page5.asp](http://info.worldbank.org/etools/kam2/KAM_page5.asp))

According to the study realised by W.W. Powell and Kaisa Snellman (2004, p. 202), in a region, in order to build a knowledge-based economy, the following components are necessary: knowledge – human, organisational and intellectual capital – and activities correlated to knowledge – research and development efforts, investment in ICT, investment in education and in training as well as in organisational reforms. Moreover, it is necessary that regional stakeholders promote innovation policies and also promote innovation as a whole at the regional level. It is not by chance that taking into account the spatial dimension of knowledge that the Geography of Innovation develops – a term introduced by Maryann Feldman (1994) (C. Autant-Bernard, M. Fadair, N. Massard, p. 196).

## 2. INNOVATION POLICIES AND FEATURES OF INNOVATIVE REGIONS

A significant constraint appeared and maintained as a result of administrative borders between public research and the economic interest of private firms, but, in recent years, territorial planning has become more and more pragmatic at the regional level (the recommended and best approach to planning is bottom-up) than at the national and at the European levels, the presence of clusters and of innovation systems contributing to the appearance of competitiveness. In addition, the inhabitants' feeling of belonging to a place or to a region is strength in creating partnerships at a regional level (*ESPON Synthesis*, p. 86).

Moreover, knowledge transfer should focus on co-operation between the public and the private sectors on one hand, and, on the other hand, between universities and research institutes and the industrial and tertiary sector, especially the SMEs. Regional economic development should and can be promoted through technological innovation and economic exploitation of knowledge. In this context, in the knowledge economy, the relevant indicators of economic development refer to the workforce occupancy, to ICT technology, and to research and development (P. Cocean, Oana-Ramona Ilovan, p. 10).

Nevertheless, we ask ourselves if regions can have innovation as the basis for their development. Innovation is not a luxury product for rich regions, but it can be also a very powerful engine for most regions that lag behind and look for solutions in order to catch up (N. Bellini, M. Landabaso, p. 9) and therefore, there are *a series of features that developed regions display as a result of capitalising the results of innovation*:

a) *Implementing innovation policies in the case of less developed or struggling regions* is an opportunity (these regions may catch up if they create and promote new and better products and services, based on innovation, for niche markets). Less developed regions or declining regions may build their economic future starting from innovation. From this perspective, it is necessary to “crowd” in the same place all innovation capacities and R&D activities. But, an excessive geographical concentration of innovative activities may lead to an underdeveloped use of the potential of the respective region, as well as to the appearance and maintenance of important interregional disparities.

In this context of concentration and dispersion of new activities in the territory, we notice that a new Geography of Innovation appeared: scientific parks are always placed according to the centre-periphery model that characterises the Geography of Innovation and also peripheral centres appeared. “The Knowledge Factory” may be dispersed especially in regions which are well connected physically and virtually to international R&D networks and to international excellence technological networks (N. Bellini, M. Landabaso, p. 7). Thus, also less developed regions have a chance in the knowledge economy.

b) *The main decision makers for realising optimum knowledge transfers are universities, R&D and education institutes, technological centres, the public sector (at different administrative levels) and companies.* All these contribute to the promotion of regional competitiveness by creating internal knowledge networks. The human capital is the engine of economic development, ensuring the attractiveness and competitiveness of regions. Traditionally, the main factors determining competitiveness are the following: physical infrastructure, access to territory, to the labour market, to raw material, to markets and to capital (*ESPON Synthesis*, p. 79). Innovation and creativity are the necessary ingredients without which one cannot build the image and the economy of a competitive region in the knowledge economy. Moreover, regions should not be only competitive, but also territories where people can lead quality lives, sustainable economic, social, cultural and environmental territories (*ESPON Synthesis*, p. 86).

Leaving aside the European paradox, based on a significant concentration of universities and connected education institutions and a lagging behind industrial basis in what innovation is concerned, especially if we compare Europe to North America (e.g. the case of Silicon Valley), in the European knowledge economy regional actors focus on:

- strengthening the public-private relationships so that the resulted products are used through mechanisms such as attracting all information transmitting channels and encouraging work force to remain in the region (workers, researchers, companies, etc.);
- including and promoting all education types (not only in the university system) to establish partnerships with the SMEs;
- sharing resources instead of developing a large series of small projects in each of the two above-mentioned sectors of activity;
- regional institutions should promote entrepreneurs’ invention patents.

In Romania, the experience on developing cluster type regional networks is at the beginning and, therefore, these networks cover unequally the regional space as they concentrate especially in urban settlements with educational tradition (M. Tălmăciu, p. 915).

c) *European regions almost moved above the phase of learning regions in the knowledge economy, of still experimenting, and for many of them one can see the results.* It has taken appropriate institutions and policies, as well as innovation-based strategies. Beside the urban areas, regions are the key factors in implementing *The Lisbon Strategy* and *Horizon 2020*, the two European documents recommending partnerships at the regional level due to their huge research-development-innovation potential. The European Union helps regions through the structural funds, but the most significant ones are those sent from the national level. What regional actors noticed was that the way regions functioned in the knowledge economy was determined by state policies (they decided at the national level how much to invest in education and in research).

*Innovation and technologization policies, no matter the level they are created for (European, national, regional), give solutions to problems such as: adapting physical research infrastructure; creating a critical mass of the R&D potential in high tech sectors; well trained human capital and R&D teams; entrepreneurial exploitation of innovative results (with focus on generating and diffusing technology in the context in which innovation depends on regional actors' capacity to access the technology and the knowledge in their own region – qualified, well trained work force, R&D capacities, technology and knowledge transfer from technological centres, research institutions and universities – or to connect to all necessary resources at the international level)* (N. Bellini, M. Landabaso, p. 6).

*The regional policy* should contribute to regional economic growth and, at the same time, it should eradicate or diminish interregional disparities (economic growth and cohesion support each other). The objectives of the regional policy should be clear and down to Earth and they require quality management. In this context, it is necessary that a strong public-private partnership exists in addition to co-operation between institutions, while good practice examples should be adapted to the case of each region. For instance, SMEs are more dependent on the context at the regional level in order to innovate than the more technologically advanced sectors. Similarly, the projects that focus on major technological advance suppose that the national government has the top role, not the regional context (N. Bellini, M. Landabaso, p. 2, p. 4).

At present, they consider that people should pay more attention to and give more importance to cultural projects, to innovative projects where many regions co-operate and thus they ensure a favourable context for territorial regeneration through culture, *especially for peripheral regions* from the point of view of development (*ESPON Synthesis*, p. 86). In contrast, technologically advanced sectors (e.g. chemistry, informatics, aeronautics, electronics, communications) are well represented in more *developed regions* and are dependent directly on R&D efforts, they have at the basis firms that are connected and innovative at the international level and they usually have internal capacities for R&D (N. Bellini, M. Landabaso, p. 5).

According to N. Bellini and M. Landabaso (2005, p. 12), *the features of the competitive regions in the knowledge economy are the following:*

- these regions promote economic development objectives that relate directly to the regional policy by means of increasing the regional capacity for innovation;
- these regions ensure their territorial cohesion through business co-operation and creating networks, through focusing on creating a link between the business environment and the knowledge base and on increasing the learning capacity within companies (especially within small and medium-sized enterprises);
- these regions try to understand and give feedback to the innovation request coming from enterprises, by adapting their own research and technological development capacity;
- these regions support ICT use in order to strengthen co-operation through networks in the virtual space;
- these regions target global markets;
- these regions focus on the need to manage knowledge better within companies and to increase the quality of services based on knowledge in the business environment;
- these regions support a certain type of enterprises;
- at a certain point in their evolution, these regions increased though support from the state (public intervention);
- these regions are characterised by economic modernising and diversifying because they are open to new opportunities for business in an environment characterised by a good management of business innovation, by entrepreneurial culture, by technological forecasting, by promoting synergy between the different parts of the research system and of technological development (technological transfer agencies, technological parks, universities, public laboratories, etc.);
- these regions promote work in well linked systems;
- these regions are aware of and give a significant role to the public sector (institutions, public policies, building social capital).

*A series of strengths* support these regional characteristics (N. Bellini, M. Landabaso, p. 10):

- high percentage of innovative companies (companies sharing the development of new products and services);
- sharing knowledge and information – know-who and know-how – among companies;
- promotion of global connections: top scientists and emigrants that come back to the region and have significant links with people abroad or in other regions (investing in quality resources means quality results – products and services);
- good governmental system;
- good governance;
- identifying and accessing opportunities;
- quality management of connections with those outside the region;
- a vision upon innovation (development does not mean only developing and adopting new technologies);
- developing unused potential;
- investing in research in the public system that can lead to qualified human capital (entrepreneurs, researchers and academia);

- infrastructure should ensure rapid communication, high speed transport and global/international connections;
- the physical periphery character of some regions may be altered (diminished) by offering a series of advantages to the top quality work force (a better quality of life than in the overcrowded and polluted metropolitan areas by offering facilities for spending quality time in nature, with resources such as seaside, sun, snow; offering facilities and quality services in health care and education; security; local culture). The quality of the place, especially due to the potential of the natural environment and the offer for recreation activities, has high attractiveness for those who work with knowledge/information. Thus one may notice the irrelevance of the factor distance for them, especially for those working in business in the field of ICT.

### 3. SUSTAINABLE REGIONAL DEVELOPMENT: PURPOSE, FACTORS, AND STRATEGY

*The purpose of sustainable development* is that by means of a quality development we ensure the long term quality of a space meant for living (A. Thierstein, M. Walser, p. 3). Sustainable development is an ideal that we have to target at a series of levels: at the social level (including the institutional one), at the economic and at the environmental level and it supposes management, monitoring development, ensuring the resilience of the regional system under changing circumstances, long term planning and strategies (P. Cocean, Oana-Ramona Ilovan, p. 10): “[...] in order to become truly sustainable, development requires balance, employing reason and a capacity to plan for a long term” (P. Cocean, O.-R. Ilovan, p. 16).

In the centre of the idea of economic sustainability is that human needs are met and good life quality is attained through a more efficient distribution of resources. In this context, sustainable regional development may be obtained only if the impact of the economic activities on the social and natural environment is a good one. Within the knowledge economy, the focus is on the role of the economic component and of its features so that at the regional level sustainable development is accomplished through all its objectives and in all its dimensions (economic, social, and environmental) (A. Thierstein, M. Walser, p. 6).

*The key concepts* that are at the basis of development within the knowledge economy are: information, change, creativity, innovation, developing and reinterpreting, common values, common perception, co-operation, negotiation, dialogue, and fairness. Therefore, *the conditions or factors that lead to success or to a sustainable regional development*, according to A. Thierstein and M. Walser (1999, pp. 15-16), are:

- capacity to adapt to change;
- a business culture based on creativity and innovation, focusing on the responsibility for the community;
- discovering and reinterpreting territorial characteristic features or uniqueness;
- carefully using local knowledge and territorial characteristic features;
- long life learning;
- empowering women more;

- sharing responsibilities;
- sharing the same system of values that would take into account environmental, social, cultural, and economic interdependencies;
- common perception within the community for coherent development;
- long term strategic thinking;
- co-operation among diverse regional actors;
- social cohesion;
- fair interactions;
- a culture of negotiation;
- integrating social and technical abilities in the innovation process in order to minimise frictions, conflicts and failure because of change;
- access to information and to the space for dialogue.

One may notice that *social capital is the one of the key factors* to support sustainable innovation. P. Keefer and S. Knack (p. 1, quoting R. Putnam, 1993, p. 167), define social capital as “features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions.” This kind of interaction also creates informal obligations (P. Keefer, S. Knack, p. 2, *apud* J. Coleman, 1990, chapter 12) that improve social efficiency.

The social capital (or the social and economic networks based on trust) includes the institutions and the relationships (based on certain attitudes and values) that guide and govern interactions among people and contribute to economic and social development. This means that, from economic, social and political perspectives, socio-economic and institutional relationships can create and support economic development, improving the standards of living for the entire population in a certain territory. Therefore, social and economic policies have to take this resource into account.

A. Krishna and Elizabeth Shrader (1999, pp. 9-10) presented a conceptual framework for social capital (quoting M. Olson, 1982; D. North, 1990; K. Bain, N. Hicks, 1998; N. Uphoff, 1996) dividing it into two levels: *the micro level*, including a cognitive type of social capital (values; trust; solidarity; reciprocity; social norms; behaviour; attitudes) and a structural type of social capital (horizontal organizational structure; collective/transparent decision-making process; accountability of leaders; practices of collective action and responsibility) and *the macro level* (level of decentralization; level of participation in the policy process; legal framework; type of regime; rule of law).

So that most of the above conditions are met, a strategy is necessary. A. Thierstein and M. Walser (1999, p. 17) identified the objectives that *a successful strategy for sustainable regional development* should target on a long term:

- understanding problems through being all aware of the risks and of the opportunities before taking an action;
- starting an open process of collective learning about other actors' (persons and regions) different experiences and this collective learning should involve regional resources and the capitalisation of own regional identity;
- creating the necessary context for negotiating and making decisions in common in order to reach trustful partnerships;
- creating a common vision that empowers territorial actors to make decisions about sustainability in their own region;



- orienting services to clients, to results and to effects that answer to people's in the region interests and needs;
- own governance (involving the best possibilities from outside the region and the internal capacity of the regional community to control its own destiny).

Successful development supposes successful planning and attentively preparing a strategy at the regional level, considered the most appropriate one according to the New Regionalism paradigm (J. Benedek, 2009; I. Sagan; J.W. Scott, 2009).

#### 4. CONCLUSIONS

Regional policy should undergo significant changes in order to adapt to an economy that has changed, more exactly it is necessary to develop a series of less tangible goods, but that support regions to develop their potential. Still, there is no universal formula appropriate for all regions. That is why each region has to create its own strategy for regional development within the knowledge economy. Nevertheless, the common purpose of all regions is to create a sustainable community that is economically competitive, socially inclusive and with a quality environment.

#### REFERENCES

1. Autant-Bernard, Corinne, Fadair, Muriel, Massard, Nadine (2013), *Knowledge Diffusion and Innovation Policies within the European Regions: Challenges Based on Recent Empirical Evidence*, in *Research Policy* 42, pp. 196-210, <http://hal.archives-ouvertes.fr/docs/00/49/10/62/PDF/1010.pdf> (Accessed on the 15<sup>th</sup> of May, 2013).
2. Bellini, N., Landabaso, M. (2005), *Learning about Innovation Policy. Reflections on the State of the Art in Europe's Regions*, paper presented at the International Conference of Regional Studies Association "Regional Growth Agendas", 28<sup>th</sup>-31<sup>st</sup> May 2005, University of Aalborg, Denmark.
3. Benedek, J. (2009), *The Emergence of New Regions in Transition Romania*, in Scott J.W. (ed.) *De-coding New Regionalism. Shifting Socio-political Contexts in Central Europe and Latin America*, pp. 233-246, Ashgate, Farnham.
4. Cocean, P. (2011), *Dezvoltarea regională – obiectiv strategic sau provocare multicauzală?*, in *Geographia Napocensis*, year V, no. 1, pp. 5-12, Editura Casa Cărții de Știință, Cluj-Napoca.
5. Cocean, P., Ilovan, Oana-Ramona (2008), *Elemente ale managementului dezvoltării durabile*, în *Geographia Napocensis*, year II, no. 2, pp. 5-17, Editura Casa Cărții de Știință, Cluj-Napoca.
6. Ilovan, Oana-Ramona, Sochircă, Elena (2012), *Coordonatele dezvoltării regionale durabile în economia cunoașterii*, in the volume of the International Scientific Conference "Competitiveness and Innovation in the Knowledge Economy", 28-29 September 2012, Khishinev, Republic of Moldova, pp. 137-140, Editura ASEM, Chișinău.
7. Keefer, P., Knack, S., *Social Capital, Social Norms and the New Institutional Economics*, <http://siteresources.worldbank.org/INTINVTCLI/Resources/socialcapitalsocialnorms.pdf> (Accessed on the 3<sup>rd</sup> of June, 2013).

8. Krishna, A., Shrader, Elizabeth (1999), *Social Capital Assessment Tool*, prepared for the Conference on Social Capital and Poverty Reduction. The World Bank Washington, D.C., June 22-24, 1999, <http://www.langleygroup.com.au/images/sciwp22.pdf> (Accessed on the 3<sup>rd</sup> of June, 2013).
9. Minin di, A. (2003), *Regions in the Global Knowledge Economy*, Pisa, Italy.
10. Powell, W.W., Snellman, Kaisa (2004), *The Knowledge Economy*, in Annual Review of Sociology, 30, pp. 199-220.
11. Rodríguez-Pose, A., Berlepsch von, Viola (2012), *Social Capital and Individual Happiness in Europe*, [https://www.ciret.org/conferences/vienna\\_2012/papers/upload/p\\_72-464030.pdf](https://www.ciret.org/conferences/vienna_2012/papers/upload/p_72-464030.pdf) (Accessed on the 3<sup>rd</sup> of June, 2013).
12. Sagan, Iwona (2009), *Regions, New Regionalism, and Regime Theory: Deciphering Post-Socialist Institutional Change*, in Scott J.W. (ed.) *De-coding New Regionalism. Shifting Socio-political Contexts in Central Europe and Latin America*, pp. 93-109, Ashgate, Farnham.
13. Scott, J.W. (2009), *Systemic Transformation and the Implementation of New Regionalist Paradigms: Experiences of Central Europe and Latin America*, in Scott J.W. (ed.) *De-coding New Regionalism. Shifting Socio-political Contexts in Central Europe and Latin America*, pp. 19-49, Ashgate, Farnham.
14. Tălmăciu, M. (2012), *Emerging Markets Queries in Finance and Business, Considerations Regarding the Development of Romanian Regional Economies through Innovation and Entrepreneurship*, in Procedia Economics and Finance, no. 3, pp. 914-920.
15. Thierstein, A., Walser, M. (1999), *Sustainable Regional Development: Interplay of Top-down and Bottom-up Approaches*, Institute for Public Services and Tourism IDT-HSG, University of St. Gallen Switzerland, <http://www.sre.wu-wien.ac.at/ersa/ersaconfs/ersa99/Papers/a139.pdf> (Accessed on the 1<sup>st</sup> of September, 2012).
16. Yeo, B.J.K. (2010), *Driving the Knowledge Economy: Explaining the Impact of Regional Innovation Capacity on Economic Performance*, in Contemporary Management Research Pages, pp. 71-86, Vol. 6, No. 1, March.
17. Zítek, V., Klímová, Viktorie (2011), *Knowledge Economy and Knowledge Infrastructure*, in International Conference on Applied Economics, pp. 821-828, <http://kastoria.teikoz.gr/icoae2/wordpress/wp-content/uploads/2011/10/084.pdf> (Accessed on the 15<sup>th</sup> of May, 2013).
18. \*\*\* (October, 2006), *Territory Matters for Competitiveness and Cohesion. Facets of Regional Diversity and Potentials in Europe. ESPON Synthesis, Report III, results by autumn 2006*, European Spatial Planning Observation Network.
19. \*\*\* (2010), *EUROPE 2020. A Strategy for Smart, Sustainable and Inclusive Growth*, European Commission, [http://ec.europa.eu/commission\\_2010-2014/president/news/documents/pdf/20100303\\_1\\_en.pdf](http://ec.europa.eu/commission_2010-2014/president/news/documents/pdf/20100303_1_en.pdf) (Accessed on the 1<sup>st</sup> of June, 2013).
20. \*\*\* (2010), *Lisbon Strategy Evaluation Document*, European Commission, [http://ec.europa.eu/europe2020/pdf/lisbon\\_strategy\\_evaluation\\_en.pdf](http://ec.europa.eu/europe2020/pdf/lisbon_strategy_evaluation_en.pdf) (Accessed on the 1<sup>st</sup> of June, 2013).
21. \*\*\* (2011), *Horizon 2020 - The Framework Programme for Research and Innovation, Communication from the Commission to The European Parliament, The Council, The European Economic and Social Committee and The Committee of the Regions*, [http://ec.europa.eu/research/horizon2020/pdf/proposals/communication\\_from\\_the\\_commission\\_-\\_horizon\\_2020\\_-\\_the\\_framework\\_programme\\_for\\_research\\_and\\_innovation.pdf](http://ec.europa.eu/research/horizon2020/pdf/proposals/communication_from_the_commission_-_horizon_2020_-_the_framework_programme_for_research_and_innovation.pdf) (Accessed on the 1<sup>st</sup> of June, 2013).