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Innovation and Knowledge in the Context of Regional Development

Summary

The aim of the article is to present the role of innovation and knowledge in the development of a region. The method of subject literature analysis has shown three aspects of the issue of innovation and knowledge in the regional context. The first is a reference to the learning region concept. Second - showing the role of the creative class in the development of a region. Third aspect touches on innovative systems as socio-economical, institutional, productive and innovative networks creating a functional whole. Analysis and characteristics presented in the paper demonstrate the practical benefits of increasing innovation and knowledge in development processes and enhancing competitiveness of a region. In the dimension of social implications, the analysis indicates the indispensability of collective learning, using knowledge, human capital and innovation as well as networked cooperative-competitive relationship and cooperation as pro-development impulses of regional economy. This article is a review and analysis of the literature on the subject of selected aspects of innovation and knowledge in the regional development perspective.

Key words: learning region, creative class, innovation system, knowledge, regional development.

JEL codes: R11, A31, D83, F63

Introduction

Innovation and knowledge are currently deciding about economic development and growth (Drucker 2004; Verspagen 2005; Christensen 2010). Countries and regions creating and using knowledge and innovation in their economic processes acquire high pace of economic development and gain competitive advantage over the surrounding. Capability to create, acquire and use innovation on the regional level depends on a dynamic system of mutually related elements. Among them the most important are: real level of innovation demand, possibility to exchange ideas and experience with external surrounding, network correlations between regional subjects, social systems’ openness for change and their ability to absorb innovation, effectiveness of shaping material and human resources oriented at innovation, acceptance and social approval for the broadly defined innovation activity (Grosse 2007). Developmental processes outlined and stimulated by innovation take the form of the system of mutually related and interdependent changes leading to building modern learning society and economy based on knowledge. Such social and economic structures are capable of using advanced technologies effectively, as well as high adapting abilities of changes generated by the process of globalization.
The learning region

Knowledge has lately become a basic resource of modern economy. Thus, there is a notable growth when it comes to the importance of interactive learning processes both within organizational and spatial – local and regional – framework (Mailat and Kebir 1999; Capello and Faggian 2005). Functional necessity of knowledge and innovation in the learning processes finds its expression in the concept of the learning region which has been developed in academic literature since 1990’s (Florida 1995; Asheim 1996; Morgan 1997). The notion of the learning region was first applied on the basis of economic geography, where it was used to characterize and emphasize the role of cooperation and collective learning within the framework of regional clusters in order to raise the level of innovation and competitiveness of companies and regions. Within the inside structure of the learning region one may distinguish three basic classes (groups) of subdivisions: companies, regional structures, regional institutions (Rutten and Boekema 2007). From the perspective of practical functioning results of social-economical structures of cluster nature, the learning region should be treated as pro-developmental coalition of various regional institutional actors using the resources of human and social capital (Tuziak 2013).

Richard Florida (1995), in his analysis of the types of regional development in the context of the demands of knowledge based economy, introduced the issue of the learning region concept in combination with the features of a massive production region. Its feature is permanent creation and connecting the phases of innovation and production. Industrial infrastructure in this region is created by companies network and the delivery system as a source of innovation. In the learning region there is a constant raising of human resources values, employees are highly qualified and motivated to continuous education. Physical infrastructure and region communication is oriented on the global needs and the system of electronic data exchange. Industrial regulation system of the learning region is flexible, the relations between business entities are based on mutual network dependencies.

In the concept of the learning region it is emphasized that the factors of the world companies competitiveness as innovation, network connections, flexibility and entrepreneurship have their source on the local and regional level, defined in the social – dimensional context (Rutten and Boekema 2012). Social-territorial learning system is created by the local actors working within the framework of a flexible structure of network connections. This network includes, besides the economical subjects, also social, political, administrative and institutional actors, among whom there is a favorable exchange of knowledge and information. The region organized according to these rules gain foundations of permanent development and effective functioning, increasing its adapting capabilities in view of new challenges. The evolution of regions toward social and economic territorial learning structures is a useful adapting strategy during globalization, facilitating partaking in this process due to learning and diffusion of knowledge within the framework of a given territory being a dynamic system of mutually related and network cooperating subjects (Singh 2005; Jewtuchowicz 2005; Rutten et al. 2014).
The process of collective learning in the regional dimension has a complex form and it proceeds on various levels of organizational and economic structures (Morgan 1997; Cooke and Schwartz 2007). In literature four types of collective learning are distinguished: the interactive, the organizational and the institutional one, and learning through learning (Maillat and Kebir 1999; Jewtuchowicz 2005). Interactive learning is implemented within the framework of relations between the subjects of production coordination process and innovation introduction. Interactive learning is a process during which essential knowledge coming to the production system and acquired individually be people, companies and institutions, is later integrated in the system of knowledge networks and used when implementing various enterprises. Organizational learning refers to organization as a whole and it is based on developing relations between the actors. When it comes to learning on organizational level, it is not the individual but the group knowledge which is of the key importance – the experience of each member of the organization creates its individual, complex resource and therefore increases the system ability to learn as a whole.

Learning in the institutional dimension refers to the institution ability to adapt its structures, action procedures and goals to the changing external needs and conditions. Formal institutions as public organizations, associations, development agencies etc., as well as the informal ones as values system, rules, conventions, trust, behavior pattern etc., play a crucial, pro-developmental role in the functioning of the learning region. Learning through learning is the process favoring knowledge accumulation and its faster development. During this process one initiates the mechanism which is based on the fact that the more the individual learns, the better it develops its ability to absorb new content, making it easier to keep learning. This type of learning is very important when it comes to region development, as it builds its specificity and raises the benefits of location which binds the investors with a specific territory (Jewtuchowicz 2005).

The essence of the concept of the learning region is not existing only within analytical and functional frame of conditions or the course and results of learning in territorial dimension. The learning region is a dynamic connection of the three mutually conditioning themselves processes happening on a set dimension – learning, permanent innovation creation and progressive territoriarity of development. Those processes and phenomena have intraregional character, but they also influence the relation between the region and the global economy. The learning region is creative, it has an ability to attract and keep creative, open for changes and pro-innovation oriented actors. The analytical and practical usage of the learning region concept is proven by the fact that it is permanently present in the academic discussion, in various scenes and modifications. One of examples of a lively discussion on the learning region is Regional Studies „From learning region to learning in socio-spatial context” – 46 (8) 2012 – an issue which is completely devoted to this subject.

The creative class

Richard Florida, in his broad study entitled The Rice of the Creative Class: And How It’s Transforming Work, Leisure, Community and Everyday Live (2004), devoted solely to the
creative class in USA, in the course of deep comparative analysis proves that creative people are the main factor deciding about development and competitive advantage of cities and regions. From the research conducted by the author it concludes that territorial arrangement of the creative class is very uneven, and that their representatives are centered in places characterized by a city-like climate, tolerance, openness to newcomers, ideas, values, lifestyles etc.

Florida understands creative class not as based on trades classification, but on the typology of professional specializations (Florida 2004; 2005). His definition of the creative class is based on the assumption that it is created by people doing creative and innovative jobs, and this may be found in any particular trade. Creative employees focus on diagnosing problems, finding new solutions and creating meaning forms, new configurations and knowledge packages on the basis of its already existing elements (Boschma and Fritsch 2008, p. 287). Florida (2004) distinguished two categories in the structure of the creative class. The first is the super creative core – this group is created by employees of a broad range of disciplines, such as science, engineering, education, computer design, as well as people connected with art, designing and media. Their representatives are involved in creating process. The super creative core is highly innovative, it creates new products and commercial goods. The main professional goal of the members of the super creative group is to look for creative and innovative solutions. Their work involves not solving the problems, but searching for them. The second category within the creative class is built of creative professionals, i.e. people of thorough technical education, working in the trades of health, finances, law and education. Their professional activity is based on solving particular problems using their high essential competences and abilities gained during higher education. The creative class is also created by representatives of bohemia – artists, poets, people dealing with design, entertainment, fashion etc.

According to Florida, people’s climate is much more decisive than business climate when it comes to growth stimulation of cities and regions. Creative people stimulate and attract new types of economic enterprises, especially innovative ones, which are focused in the areas of highly advanced technologies. In the interesting analysis of factors deciding about happiness of cities, it was indicated that the factor playing essential role in the growth of the welfare and the feeling of happiness of metropolises citizens is human capital. It turned out to be more important than the income and other variables influencing happiness and life satisfaction (Florida et al. 2013).

The essence of the creative class in the region economic developmental processes is included in the belief that “geography is important”, thus economy works not only in dimension, but also in place (Jałowiecki and Szczepański 2006; Boschma and Fritsch 2008). Representatives of the creative class pay attention to the place and specific characteristic of urban community. They are willing to emigrate and settle in the so called creative centers, i.e. cities open to incomers, tolerance, multiethnicity and cultural diversity. The city striving for the citizens from the creative class should offer them suitable conditions which could be summarized in the “three T’s” formula (Florida 2004), i.e.: talent – talented and educated citizens with a high human capital; tolerance – varied, open for newcomers and tolerant community; technology – technological infrastructure, innovative trades, advanced technol-
ogies. The creative class values meritocracy, variety, individualism, as well as infrastructure quality and urban services, so when searching for a new place of residence and work, these are conditions and values which are important for them. When it comes to localization choices made by creative people, it is treating variety as a source of inspiration essential for creating innovation which matters.

In the concept of the creative class the emphasis is on social and cultural factors of regional development. Social, cultural and mental features of a given place (city, region) such as tolerance, variety and openness are important determinants of development as they attract creative people. The activity of creative class brings tangible results and benefits connected with new ideas, advanced technologies, innovation and the region faster development. Within the concept of the creative class, a very important role is played by universities, as they attract and center creative and talented people who may implement their ideas and innovative enterprises there. Regions gain competitive advantage and opportunity to develop if they are capable of using innovation and technology produced by universities. Numerous studies, analysis and elaborations prove that currently universities take great credit for social and economic development of regions (Etzkowitz 2002; Harding et al. 2007; Olechnicka 2012).

The contribution of the creative class concept is, among others, verification of a traditional approach to localization factors in business activity, according to which surrounding favoring economic growth should be characterized with good business climate. This view was critically evaluated and it was noted that the most important and the first in the cause and effect sequence is good climate for people. Representatives of the creative class do not choose their places of residence and work only on the basis of economic growth. The dependency has the opposite direction – high economic growth is a result of concentration of the creative class specialist in specific places. Thus, it is not the people who move looking for jobs, but jobs moving with the people (Jałowiecki and Szczepański 2006; Boschma and Fritsch 2008).

Innovative systems

In the concept of the innovative system special attention is paid to the importance of cooperation, technology and information exchange, as well as mutual relations between individual elements of the system (Fritsch 2001). One can identify three basic ways of understanding innovative systems (Wojnicka 2006). In the first approach, innovative system is a network of institutions of public and private sector, due to which acquisition, modification and spreading of new technology takes place (Freeman 1991; 2002). In the second approach, innovative system is a set of institutions whose actions, together or individually, contribute to the development and diffusion of new technologies, creating a functional system within the framework of which governments formulate and execute policies influencing innovative processes (Rutten et al. 2014). In the third understanding, one emphasizes the system of mutual connections between the institutions – universities, businessmen, govern-
ment agencies, financial and consulting institutions etc., which create, store and transfer knowledge, abilities and tools defining new technologies (Metcalfe 2005).

In the studies and analysis of innovative systems one could distinguish several levels – the sector, the local, the regional, the national, and, finally, the global one (Lundvall 2008; Freeman 2002; Malerba 2004). The results of studies on the innovation of companies within the context of local development dynamics indicate that interactions are more intensive and the scope of cooperation between the elements of innovative systems is broader on the regional then on the national level (Vaz et al. 2004). That is why more often the attention of theorists and researchers is paid to the recognition of developmental potential, factors and conditioning of competitiveness, as well as innovational regions systems (Cooke et al. 2004; Grosse 2007; Gorzelak and Jałowiecki 2000; Szczepański et al. 2008; Nowakowska 2009; Olechnicka 2012).

Regional innovative systems consist of many mutually related elements creating a functional whole (Edquist 1997; Wojnicka 2006). The first one includes institutions generating knowledge and innovation, i.e. companies, institutions mediating in the transfer of advanced technologies and providing business connected services, universities, R&D centers and public authorities. The second element of the structural innovation system includes knowledge transferring channels, enabling interaction, cooperation and substantive interdependence between the institutions. The third element of innovative system is its social and institutional surrounding, shaped by the market, public authorities and innovation infrastructure as financial, communicative and transport system. The forth element of innovative system includes its immanent features as: a) openness expressed as ability to acquire external knowledge and as connections with other innovative centers; b) behavior culture on the company and institutional level, determining the attitude of public authorities and local community toward enterprise, outlined by historically shaped social and cultural specifics of a given region; c) the whole – i.e. the existence of all of the essential elements (Wojnicka 2006).

When it comes to the pace, direction and coordination of developmental processes, accurate connection of national innovation systems with innovation systems functioning on regional level is very important (Okoń-Horodyńska 2000). The quality and effectiveness of these connections depend on the character and scope of cooperation between regional political elites, as well as how advanced the public-private partnership is in the area of financing developmentally important enterprises and investments. Regionalization of innovative and developmental processes means, among others, that country policy addressed to peripheral and less developed regions should prioritize stimulating creation of regional innovation strategies in these areas (Grosse 2007; Tuziak and Tuziak 2009; Tuziak 2008; 2013). The processes of creating and functioning of both regional and national innovation systems always proceed in the broadly understood social and cultural context. Encouraging the study and implementation of innovation strategy on the regional level cannot therefore be limited to shaping only the institutions and networks of their mutual relations and cooperation. It is essential to develop resources of social and intellectual capital, the scope and the form of cooperation, raising the level of trust, creativity, as well as establishing values, attitudes and behaviors on which the working of network connections is based.
Conclusions

A common denominator of the learning region, the creative class and the innovation system concepts is the recognition of knowledge and innovation as the main factor in economic growth and development of companies, but also the whole social-cultural systems, i.e., cities, regions, and countries. All of the mentioned concepts are connected by its approach to knowledge and innovation in territorial perspective. Innovation and knowledge in territorial terms are treated as interdependent elements of the creating resources process, engaging both the company and its external surrounding, and leading to gaining new technology, product, and process (Maillat 2001). Territory is not an exogenous factor in creating innovation and technology, but it is directly present in their creation. Economic activity is therefore always within a certain territorial context (Crevoisier 2004).

One of the results of globalization process is growth in the number of territorial, mainly regional, production systems, creating cooperation-competitive systems. Competitiveness between those systems is not based only on lowering the costs of production factors. Its main indicator is a complex set of resources, including human resources (among others as the creative class potential) stimulating the processes of creating and absorbing knowledge and innovation. Within the global competitiveness the winning regions are the ones which prove themselves as creative and open for change, implementing effective ways of creating and using knowledge in the process of permanent learning (Cooke and Schwartz 2007). The learning regions generate resources of useful knowledge, new ideas and solutions, creating environment and institutional infrastructure facilitating information and knowledge exchange, as well as strengthening creative developmental impulses within the framework of innovation system (Morgan 1997). This way regions which are rich in the creative class become the source of innovation, the driving force of the region and economic growth, as well as important actors in the global market game.

Bibliography


Innowacyjność i wiedza w kontekście rozwoju regionu

Streszczenie

Celem artykułu jest przedstawienie roli innowacyjności i wiedzy w rozwoju regionu. Stosując metodę analizy literatury przedmiotu przedstawiono trzy aspekty problematyki innowacyjności i wiedzy w kontekście regionalnym. Pierwszym jest odniesienie do koncepcji uczącego się regionu. Drugim – ukazanie roli klasy kreatywnej w rozwoju regionu. Trzecim aspekt przedmiotowej problematyki to system innowacyjne jako sieciowe układy społeczno-ekonomiczne, instytucjonalne, produkcyjne i innowacyjne tworzące funkcjonalną całość. Przeprowadzone analizy wskazują na nieodzowność zbiorowego uczenia się, wykorzystania zasobów wiedzy, kapitału ludzkiego i innowacyjności oraz sieciowych kooperacyjno-konkurencyjnych powiązań i współpracy jako prorozwojowych impulsów regionalnej gospodarki. Artykuł jest przeglądem i analizą literatury w za-
INNOVATION AND KNOWLEDGE IN THE CONTEXT OF REGIONAL DEVELOPMENT

kresie wybranych aspektów problematyki innowacyjności i wiedzy w perspektywie rozwoju regionalnego.

Słowa kluczowe: uczący się region, klasa kreatywna, system innowacji, wiedza, rozwój regionu.

Kody JEL: R11, O31, D83, F63

Инновационность и знания в контексте развития региона

Резюме

Цель статьи – представить роль инновационности и знаний в развитии региона. Применяя метод анализа литературы предмета, представили три аспекта проблематики инновационности и знаний в региональном контексте. Первый – ссылка на концепцию учащегося региона. Второй – указание роли созидательного класса в развитии региона. Третий аспект обсуждаемой проблематики – инновационные системы как сетевые социально-экономические, институциональные, производственные и инновационные структуры, создающие функциональное целое. Проведенные анализы указали практические выгоды, вытекающие из развития инновационности и знаний в процессах развития и повышения конкурентоспособности региона. С точки зрения социальных импликаций анализы указывают необходимость коллективной учебы, использования накопленных знаний, человеческого капитала и инновационности, а также сетевых кооперативно-конкурентных связей и сотрудничества как импульсов, направленных на развитие региональной экономики. Статья – обзор и анализ литературы в области изобранных аспектов проблематики инновационности и знаний в перспективе регионального развития.

Ключевые слова: учащийся регион, созидательный класс, система инноваций, знания, развитие региона.

Коды JEL: R11, O31, D83, F63

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