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Entrepreneurship and Innovation – the Modern Concept of Regional Development

Abstract: Experiences from innovative regions demonstrate that a proven model for regional development is a development model associated with a leading university (universities), focused upon technologically advanced innovations, revealing another innovative technology, innovative product, innovative service which will exert influence upon the markets and transform the entire branches of industry. This model has a chance to prove itself in large regional centres (metropolises) that ought to possess a number of essential advantages. Regional centres ought to bring together a significant population, be characterised by the high level of Gross Domestic Product, the high level of Gross Domestic Product *per capita*, and need to concentrate the leading enterprises of innovative industries, enterprises fulfilling the requirements of large customers, business centres, as well as health and public sector institutions.

Key words: entrepreneurship, innovation, region, competition, location barriers

Introduction

“From the point of view of economy, space is not neutral” [Ponsard 1992], and that means that economic processes connected with it are carried out in this space. Individual entities of the regional space are a value for investors, customers, residents and self-government authorities, who are all stakeholders building relationships defined as network connections. The developing connections between an investor and a commune, between businesses and residents, between a city and a region, and between an entrepreneur – manager and a region, and so on, and so forth, are all the expressions of ne-

network connections. The value of space entities, interpreted as a regional resource, finds its expression in the form of benefits which, to a greater or lesser extent, fulfil the expectations of the entities. The exchange of values between regional entities is the offer of unit benefits which can be acquired by, for instance, an investor searching for attractive locations for a planned business venture and, on the other hand, benefits which a particular partner of the exchange receives (for instance, the unit of local government), in the form of direct and indirect developmental factors (for instance, financial resources, jobs, taxes, and the diffusion of innovation), dynamising the development of the entire region, and of its socio-economic structures.

Entrepreneurship and innovation, and regional development

The most modern innovation centres were created near major and leading technical universities, such as Stanford, UC Berkeley and MIT, near Boston. The university model based upon collaboration between science and business results in the high level of transfer of research results into the economy, whereas collaboration between universities has developed horizontal links, which, nowadays, result in the large communities of technologists and entrepreneurs sharing ideas with each and every one. The transfer of ideas, employees, managers, the members of management board, and investors, takes place from one company to another, from a university to a company and back. It was possible to achieve the network effect. The network effect is of particular importance for the implementation of modern innovations because it gives the advantage of a scale which is almost not possible to be received in a different configuration.

Experiences from innovative regions demonstrate that a proven model for regional development is a development model associated with a leading university (universities), focused upon technologically advanced innovations, revealing another innovative technology, innovative product and innovative service, which will exert influence upon the markets and transform the entire branches of industry. This model has a chance to prove itself in large regional centres (metropolises), which ought to possess a number of essential advantages. Regional centres ought to bring together a significant population, be characterised by high Gross Domestic Product, high Gross Domestic Product *per capita*, and concentrate the leading enterprises of innovative industries, enterprises fulfilling the requirements of large customers, business centres, health and public sector institutions.

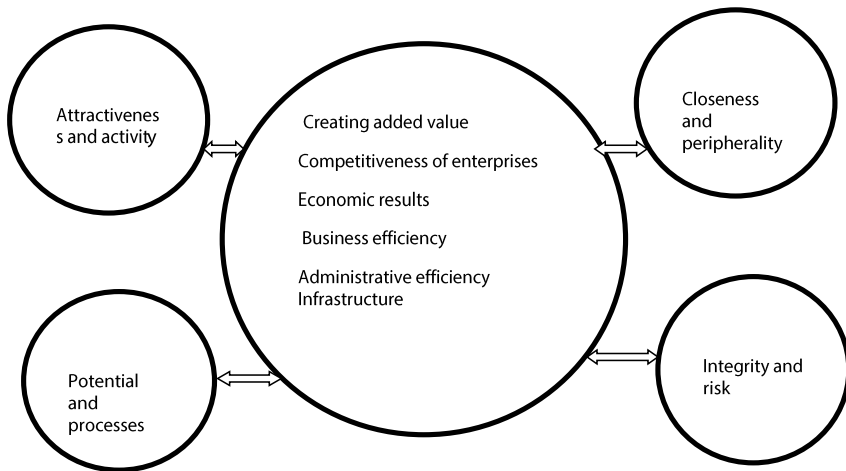
The objective of this article is to identify the factors and sources of regional competitiveness, and also to indicate the regional location-related barriers, which exert influence of various strength upon the development of particular regions.

In this dissertation, the following thesis was formulated: in a developed market economy, regions compete between one another for acquiring these factors of development which contribute to acquiring a permanent competitive advantage. The entrepreneurship and innovativeness of stakeholders are the significant factors of regional development.

Factors and sources of regional competitiveness

Regional competitiveness is a concept defined by the Organisation for Economic Co-operation and Development [Gorynia, Łażniewska 2012] as the capability of regional entities and regions to compete in the global space, and to provide a comparatively high rate of return on the used production factors, a comparatively high level of employment [Grodzka 2017], with the real growth income of the population over an extensive period of time [Markowski 2016].

Figure 1. Determinants of regional competitiveness



Source: own research, based upon IMD World Competitiveness Yearbook 2003. IMD International (Institute), Lausanne, Switzerland, IMD, 2003.

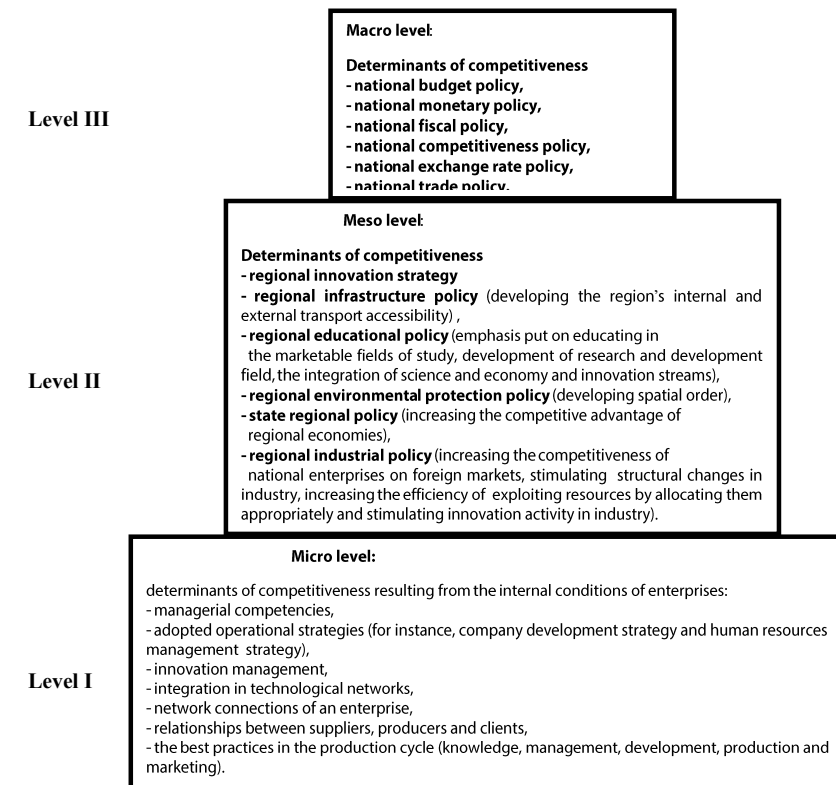
Therefore, it can be presumed that regional competitiveness is determined by four essential factors, and that means the following ones: economic results, administrative efficiency, business efficiency and infrastructure. The so-called regional competitiveness profile is exerted influence upon by a set of four overlapping streams of influence. They are: attractiveness and activity, closeness and peripheral character, integrity and risk (fig. 1).

Regional competitiveness is the capability of the regional economy to stimulate the region's internal resources for the purpose of competing and functioning upon a perma-

ment basis on domestic and global markets, and as the capability to adapt to changes on these markets. It ought to be observed that the competitiveness of the regional economy is not a simple sum of the competitiveness of entities operating in the region in question. The level of competitiveness of the regional economy is under the influence exerted upon by the networks of internal links between regional entities and the environment. This phenomenon can be considered at the three levels of competitiveness (fig. 2).

The term “micro level” is used in the reference to the potential of regional enterprises. It means that, at this level, the most important elements exerting influence upon the competitiveness of regional economy is price, the quality of offered products, the advancement of marketing (access to information, advertising, sales conditions, corporate brand, payment method, product assortment, and influence exerted by the product upon the natural environment [Markowski, Kudłacz 2017].

Figure 2. Levels of the competitiveness of regional economy



Source: own work.

At the first level, the determinants of competitiveness are, first and foremost, factors being the consequences of the internal conditions of enterprises, and, second of all, factors dependent upon the environment. These are managerial competences, operational strategies (for instance, company development strategy and human resources management strategy), innovation management, integration in technological networks, the network connections of an enterprise, relationships between suppliers, producers and customers, and the best practices in the production cycle (knowledge, management, development, production, marketing). The factors dependent upon the environment at the micro level include socio-cultural factors (for instance, quality of human capital and social capital), the behaviour patterns of entities and institutions in the environment, the capability of strategic and political actions undertaken by local governmental institutions.

The term “meso level” is used in the reference to the activity of regional economy entities, and to competitiveness in the aspect of becoming the leader in the industry and gaining permanent competitive advantage on the regional market. When assessing competitiveness at this level, it is indispensable to indicate the share of export production in the total value of production, expenditure on innovation and research and development activities and investments. At the second level, the determinants of competitiveness are regional policies implemented by the central and local government authorities.

The term “macro level” is the reference to the regional economy with the high level of growth, the high dynamics of production and service potential, which is a highly competitive economy, with the increasing level of employment and productivity.

The development of regional economy in our country is spatially diversified, and the economy in individual regions is at the significantly different stages of development. In accordance with the theses of Porter, it can be concluded that the regional economy, facing competitive challenges at the national and international level or global competition, undergoes a number of developmental stages which result from adjustment processes. Analysing the behaviour of the regional economy in the economic conditions of our country, which has had characteristics of the market economy for few years, it ought to be recognised that some regions are at the stage of competitiveness based upon production factors, a characteristic stage for the least developed countries, some regions are at the stage of competitiveness based upon investments, mostly imported investments (a characteristic stage for the so-called “catching-up” countries), and few regions are characterised by the economy based upon innovation, which stage is attributed to developed countries [Borowiecki, Siuta- Tokarska 2012].

Regional competitiveness sources specific to Knowledge-based Economy (KBE)

In accordance with the new paradigm, a developing region is a place where knowledge and innovation are created. The essential factors for the competitiveness of such a region are elements indicated as the components of intellectual capital, human capital, social capital, and the institutional environment as well as development capital and structural capital.

Human capital is one of the essential sources of competitiveness, and it plays a significant role in the regional economy. It is determined by its characteristics, namely by reduced mobility compared with financial capital and a long investment cycle connected with the improvement of its quality.

The essential characteristics of human capital which distinguish it from physical capital include the fact that it does not become a regional property, investments in this capital, and, therefore, investments in knowledge, usually require an extensive period of time and an appropriate social context [Butkiewicz-Schodowska 2015]. Human capital co-creates the intellectual capital of the region [Dziemianowicz, Szlachta 2016], which, together with social and organizational capital, represents the so-called hidden values, which ought to be defined as the intellectual infrastructure of the region. Well-educated individuals are not exclusively a means of implementing innovation in the region, but they are also innovative potential.

Social capital. For an extensive period of time, no deeper considerations were made on this term, until the publication of the works of P. Bourdieu and J. Coleman [Chądzyński, Nowakowska, Przygodzki 2007] in the mid-1980s.

P. Bourdieu defines social capital as a „set of real and potential resources associated with possessing a permanent network of more or less institutionalised relationships supported by mutual knowledge and recognition, or, in other words, membership in a group which provides each and every of its members with support in the form of the capital held by the collective, and credibility which gives them access to credit in the broadest meaning of this word”.

Human capital and social capital as sources of regions' competitiveness are increasingly a determinant of regional innovation, and the acquisition of innovative capabilities has become one of the foundations of the concept of the learning region [Zaucha, Szlachta 2015]. The concept of “learning” regions is based upon the conviction which the capability to create specific and strategic resources is essential to the competitiveness of the region [Jewtuchowicz 2005]. Skills and knowledge are considered primarily as such resources. Emphasis is placed upon the fact that developing these resources is a process, because knowledge is valuable exclusively, when it is updated. In such conditions, the rapidity of learning is also important. The region which acquires information quickly, acquires a better competitive position.

Regional innovation, on the other hand, means the capability of the region to mobilise its potential, to become similar to regions commonly recognised as innovative. Taking over patterns of innovative solutions in the various areas of socio-economic life and the adaptation of modern development mechanisms. The region's innovation depends upon the multi-directional activities of entities oriented towards innovation strategies. In the innovation strategy, the principal "actors" are self-government authorities, managers, cities, universities, organizations, and as the most important participants in the innovation process, exert influence upon the generation, circulation and absorption of knowledge, and upon innovation in the region.

The principal sources of innovation, also referred to the development capital of the region, are the research and development activities of enterprises and scientific institutions, the import of the existing knowledge in the form of patents and licenses, and the purchasing of machinery, and of equipment. Measures used to determine the level of innovation of the region include: the level of expenditures on research and development in private and public sectors and their share in Gross Domestic Product, structure of financing research and development, number of patents submitted by regional universities and research and development institutes, number of patent implementations, employment in the research and development sector (private and public) [Węziak-Białowska 2010], the share of innovative products in the region's total sales and exports.

The factors exerting influence upon the level of competitiveness of regions include the developed institutional framework of the economy. The institutional environment is defined as the "institutional structure", which is interpreted as "rules of the game in a given society or conditions determined by man, shaping interactions between people" [Pietrzyk 2000]. This structure includes historical conditions, traditions, practices, customs, behavioural norms, and legal, educational and fiscal systems. The institutional environment is also the subject-matter of reference in the documents of the European Commission and Organisation for Economic Co-operation and Development. The institutional environment creates opportunities for using its intellectual and social capital in the region.

Regional location barriers

The location barriers exert a different influence upon the development of regions, and the power of this influence is, to a large extent, dependent upon intra-regional and external factors. The self-government authority and the activity of regional structures exert a significant influence upon the duration and the scope of the barriers. The appropriate solution is to prepare and implement the regional strategy of reducing and eliminating the effects of location barriers. This strategy ought to be focused upon investors and ma-

nagers, for the purpose of restricting the influence exerted by location barriers upon the decisions taken by them, and to fulfill their needs and expectations, their personal and business objectives, for the purpose of being an appropriate reference point for shaping future offers, proposals and investment projects which maximise benefits (Table 1).

Table 1. Types of location barriers in regions

Barriers of the natural environment and economic space potential	Insufficient quantity and quality of resources in the form of: mineral resources, water, clean air, soil quality, soil buoyancy, geological structure, the shape and insufficient size of construction sites, quantity and quality of labour (lack of qualified labour force), the lack of housing, undeveloped settlement network,
Instrumental barriers – interventionism policy	<ol style="list-style-type: none"> 1. Legal barriers, legal actions at the level of government and at that of the local government – at the level of government: laws, regulations, at the level of local government – spatial development plans and local management plans. 2. Administrative barriers – are connected with the activities of self-government administration in the field of, for instance, issuing building permits, supervision over investments, permits for the use of facilities, business permits, registration of companies. 3. Economic barriers – the policy of economic incentives: concessions, location preferences, exemptions or tax rebates, various fees (for instance, deposit, parking and notarial fees).
Generic criterion	
Natural environment barriers	They result from the exhaustibility of resources of the natural environment, insufficient resources, the unavailability of resources, the poor quality of resources, spatial allocation, the irrationality of use.
Demographic barriers	We consider them from the point of view of the resources of the labour force and their characteristics; Quantitative characteristics – insufficient labour force, the lack of manpower, the emigration of young and enterprising people, and low birth rate; Quality traits – the inappropriate structure of labour force education, inadequate structure of labour force qualifications, the inadequate age structure of the labour force, the rapid ageing process of the population.
Infrastructural barriers	Lack or underdevelopment of technical, economic and social infrastructure, the shortage of quantitative and qualitative infrastructure, technical and technological old age, low technical efficiency, high failure rate, insufficient service potential, especially on peak demand, restricted structure by type.
Social barriers	Intolerance of the local community, xenophobic behaviour, the negative attitude of the local community to technical progress, innovations and economic changes, the claims of trade unions and fears of changes, the lack of the involvement of local communities in the region's management process, the restricted entrepreneurship of the local community, high unemployment, the low level of education, the lack of activity in creating social capital structures, the low level of the personal income of the population, the lack of readiness to undertake civilization challenges, distrust and reluctance towards neighbours.
Political-administrative barriers	Low level of education and the activity of self-government authorities, the sluggish and corrupt behaviour of local government authorities, populism and non-market economic views, the negative attitude of local and regional authorities to investors, the restricted rapidity and flexibility of local authorities' response to changes taking place in the regional environment.

Source: own work.

Entrepreneurship as a factor of regional development covers a wide range of activities and behaviours of entities shaping the regional structure. The recognition of entrepreneurship as the driving force of economic development on a local, regional and national scale requires an in-depth analysis of entrepreneurship mechanisms, its connections with regional and local policy, defining the role of residents, managers, enterprises, local governments, universities and social organizations in this process, with the rapidity of regional growth, exerts influence upon the innovativeness of economic processes, innovation in the management of the units of local government, and consequently exerts influence upon the quality of life in the region and its competitive position. Entrepreneurship in organizational and economic structures is a part of the development value in the region, which contributes to the creation of a new quality of economy capable of using local and regional opportunities. It is through the prism of the markets that economic progress in the region is assessed, the satisfaction of the society with the standard of living, the resilience of regional management and sustainable development associating economic, ecological and social issues into a harmonised entirety.

Regional recommendations

1. Formation of an innovative culture

An innovative challenge faced by the regional strategies of innovations is raising the awareness of the importance of innovation for the development of regional economies. A low level of the awareness of the significance of innovation is observed in the case of the majority of regional stakeholders, including the lion's share of local communities as well as a large group of the players participating in economic processes, and that means entrepreneurs, self-governmental administration, and also scientific units.

Entrepreneurs, in particular, the leaders of small and medium enterprises, concentrate upon overcoming limitations in business activity, and they are not interested in collaboration with the science sector, which results from the weakness of human capital, and also from the low managerial qualifications of executive personnel.

Self-governmental authorities concentrate upon solving current problems, and are also interested in investments in infrastructure, financed with the use of the means provided by the European Union, the results of which will be visible in a few years. In turn, universities and scientists concentrate upon their essential tasks, and that means upon teaching and personal development; this is the criteria of assessment in their case. They are not interested in the transfer of the results of research into economy because they would benefit very little from that. Their getting promoted as scientists is dependent upon the number of publications rather than upon the number of patents implemented in practice.

2. Investments in human capital

Dynamic changes occurring in the markets, and, to a significant degree, their unpredictability, make entrepreneurs look for new competitive advantages and sources of permanent growth. For this, one ought to turn towards such values as corporate social responsibility, and also human capital, as the significant assets of an organization and the sources of advantages. Therefore, it is qualified employees and their most innovative qualifications, their creativity that ought to become the most innovative values in the eyes of leaders.

Investment in employees frequently does not require substantial outlays. Sometimes, it is enough to have a good idea and to implement it skilfully. External investments are more costly. In this field, human factor is worth relying upon as well. An interesting solution, ever more popular in USA and the West of Europe, is "investments in talent". This is a form of contemporary patronage, under which regions support young and talented individuals, and assist them in commencing their carrier.

3. Strengthening the potential and competences of small and medium enterprises

The basic cause for the weak innovativeness of small and medium enterprises is the low level of involvement in research and development work, which is caused by the lack of financial capital and by the weakness of the human capital of these enterprises. It is necessary to improve the availability of financial capital by means of supporting various funds which are interested in such collaboration.

4. Strengthening the research potential of universities by means of:

Adjusting curricula to the needs of the labour market and knowledge-based economy, increasing the participation of universities in continuing education, collaboration between universities with employers within the scope of strengthening the practical elements of teaching, the participation of employers in the process of educating students, supporting the entities of the entrepreneurship of universities (among others, academic business incubators, spin off and spin out companies, technology parks and academic clusters), strengthening new models/methods of managing a university, and increasing the financial participation of scientific personnel in the transfer of the results of research into economy.

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