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STIMULANTS, HINDRANCES
AND GAUGES OF REGIONAL DEVELOPMENT
– THEORETICAL ANALYSIS

INTRODUCTION

Regional development is an interdisciplinary research issue engaging the attention of economist, political scientists or sociologists. The research on development is continually updated and expanded, presented in new contexts. Since the Polish accession to the European Union activities undertaken in the framework of regional policy and cohesion policy have aimed at continuous development of regions and elimination of economic, social and territorial disparities. This study attempts to synthesise the most important determinants of regional development, i.e. stimulants and hindrances, in order to show how multifaceted this problem is. In addition, a review of the regional development measures was made in order to construct the author's (refreshed and extended) research model.

Regional development is a complex and multidimensional process, leading to the improvement of the socio-economic situation and internal transformations in the region. It is assumed that evolution is associated with the passage from lower, simpler levels to higher and more complex ones, and therefore the aim of regional development is to systematically improve and develop the competitiveness, raise the standard of living and increase the economic potential of the region¹.

In the literature there are many theories connected with regional development which emphasise different aspects and development-oriented

¹ Zakrzewska-Póltorak, A. 2012. *Rozwój regionalny w globalizującej się gospodarce.* [Regional development in the globalizing economy.] Wrocław, p. 21.

determinants² and relate to developmental disparities between regions. Analyzing the region from the point of view of a selected theory, it should be treated as an inseparable cultural, economic and social entirety. The development of the given area is usually defined by means of measures of economic prosperity, which constitute the starting point for research related to intangible needs measured by social indicators³.

Since concepts of development as a whole are not the subject of this study, but the individual stimulants and hindrances, as well as measures which reflect the level of development, attention will be focused on the analysis of factors and barriers to progress, as well as proposals for regional development gauges.

The goal of this study is an attempt to synthesise various stimulants and hindrances into an original gauge of the regional development level based on four main components, i.e. economic development (including competitiveness and innovation), human capital, social capital and the quality of life⁴. The presented, original research model allows you to refresh or expand various gauges of regional development occurring in the literature. Making the operationalisation of the topic we should look at concepts such as stimulants, hindrances, gauges of regional development and the level of regional development. On the basis of the definition cited by Tomasz Tokarski a stimulant (hindrance) should be regarded as ‘such a variable whose high level describes the desired (undesired) status of the studied phenomenon’⁵. Thus, all pro-development factors will be the stimulants of development and

² See more in von Stackelberg, K., Hahne, U. 1998. *Teorie rozwoju regionalnego*. [Theories of regional development.] In: Golinowska, S. ed. *Rozwój ekonomiczny regionów. Rynek pracy. Procesy migracyjne. Polska, Czechy, Niemcy*. [Economic development of regions. Labor market. Migration processes. Poland, the Czech Republic, Germany.] Warszawa, pp. 30–105; Gawlikowska-Hueckel, K. 2002. *Procesy rozwoju regionalnego w Unii Europejskiej. Konwergencja czy polaryzacja?* [The processes of regional development in the European Union. Convergence or polarisation?] Gdańsk; Głąbicka, K., Grewiński, M. 2005. *Polityka spójności społeczno-gospodarczej Unii Europejskiej*. [Policy of socio-economic cohesion of the European Union.] Warszawa; Szewczuk, A., Kogut-Jaworska, M., Ziolo, M. eds. 2011. *Rozwój lokalny i regionalny. Teoria i praktyka*. [Local and regional development. Theory and practice.] Warszawa; Grosse, T.G. 2002. Przegląd koncepcji teoretycznych rozwoju regionalnego. [Overview of theoretical concepts of regional development.] *Studia Regionalne i Lokalne*, no. 1(8), pp. 25–48.

³ Głąbicka, K., Grewiński, M., *op. cit.*, p. 23.

⁴ Dziemianowicz, W., Łukomska, J., Górka, A., and Pawluczuk, M. 2009. *Trendy rozwojowe regionów*. [Development trends of regions.] Warszawa, pp. 13–21.

⁵ Tokarski, T. 2008. Taksonomiczne wskaźniki rozwoju ekonomicznego polskich województw. [Taxonomic indicators of economic development of Polish provinces.]

hindrances are the barriers which adversely affect the development process. A regional development measuring instrument can be defined as a model constructed of appropriate indicators designed to measure the level of development of regions (the phase of progress achieved by the region). This text answers the questions: What are the main stimulants/hindrances affecting regional development? What is competitiveness and what determines it? How are gauges of regional development constructed?

1. STIMULANTS AND HINDRANCES OF REGIONAL DEVELOPMENT

In the literature we can encounter various ways of classifying and dividing factors and barriers to growth. Stanisław Korenik lists five main categories of classification of development factors, i.e. economic, social, technical, ecological and political factors⁶. Focusing on pro-development factors, Danuta Stawasz stresses the importance of: the geographical location and natural values, the demographic situation in the region, infrastructure, economic activity (the factor related both to the national and regional level), investments and fixed assets, labour resources, strengthening of the labour market and the elimination of unemployment, science and innovation, institutions creating 'the market environment', current environmental and living factors⁷.

Jerzy J. Parysek notes that the determination of the development factors is dependent on the way of understanding the regional or local economy. Assuming that the regional/local economy means all intraregional activities of various institutions, aimed at creating new jobs using the resources and factors inherent in the region at that time, using such a simplified approach the development factors should include the resources of the region – its population, environment resources, and capital⁸.

In: Kwiatkowski, E. ed. *Zróżnicowanie rozwoju polskich regionów*. [Diversity of development of Polish regions.] Łódź, p. 271.

⁶ Korenik, S. 2003. *Dysproporcje w rozwoju regionów Polski. Wybrane aspekty*. [Disparities in the development of Polish regions. selected aspects.] Wrocław, p. 65.

⁷ Stawasz, D. includes the following factors to the last category: efficient logistics system, developed tourism and leisure facilities, openness of society, and development of education. See: Stawasz, D. 2000. *Współczesne uwarunkowania rozwoju polskich regionów*. [Contemporary conditions of the development of Polish regions.] Łódź, pp. 125–201.

⁸ Parysek, J.J. 2001. *Podstawy gospodarki lokalnej*. [Fundamentals of the local economy.] Poznań, p. 18.

In order to multiply the factors conducive to development, attention should be paid to values. A special role is played by traditional values present in the region, but also by the process of renewal of lost ones and taking actions which create new values favourable for development⁹. These properly nurtured and used values lead to the creation of ‘new kinds of activity, new companies and institutions, new jobs, new products, attractive locations and real estate, high quality residential buildings, high quality social and infrastructure facilities, new knowledge, new ideas and information, new technologies and innovations, higher qualifications and new skills, new methods of management, entrepreneurship and leadership, new patterns of behaviour and ways of communicating in the region’¹⁰.

According to Wojciech Kosiedowski, classic (basic) development factors (production) are still currently important, i.e. the land, labour and capital which come into wider categories of natural, human and capital resources, but it is important to extend these sets of factors of development. Kosiedowski proposes to distinguish factors of economic, social, technical and technological as well as of ecological nature. A multitude of development factors (within each of these categories there are numerous ‘detailed’ factors) makes their classification and testing a complex issue. All the factors are in fact complementary, some of them can be quantified, measurability of others is difficult or even impossible. Therefore, the considerations of the factors of development are not easy¹¹.

In the study of regional development just as much attention is devoted to development factors, as to barriers which may limit development or even make it impossible. In the literature you can find various ways of classifying barriers to development. W. Kosiedowski made the same specification of barriers to development as he did with development factors, highlighting limitations of economic, social, technical and technological as well as of ecological nature¹².

⁹ Kulczyk-Dynowska, A. 2013. *Rozwój regionalny na obszarach chronionych*. [Regional development in protected areas.] Wrocław, p. 39.

¹⁰ Klasik, A., Kuźnik, F. 2001. Konkurencyjny rozwój regionów w Europie. [Competitive development of regions in Europe.] In: Szymła, Z. ed. *Konkurencyjność miast i regionów*. [The competitiveness of cities and regions.] Kraków, p. 22.

¹¹ Kosiedowski, W. 2001. Teoretyczne problemy rozwoju regionalnego. [Theoretical problems of regional development.] In: Adamiak, J., Kosiedowski, W., Potoczek, A., Słowińska, B. eds. *Zarządzanie rozwojem regionalnym i lokalnym. Problemy teorii i praktyki*. [Management of regional and local development. Problems of theory and practice.] Toruń, pp. 31–34.

¹² Kosiedowski, W. 2005. Wprowadzenie do teorii i praktyki rozwoju regionalnego i lokalnego. [Introduction to the theory and practice of regional and local development.] In:

Trying to classify the barriers the following may be taken into account: the source of their origin (internal and external barriers), the ability to overcome the obstacle (relative and absolute barriers), the versatility of occurrence (systemic, regional/local barriers), the way of influencing the process of development (the barriers that slow down, hinder, prevent development)¹³.

Table 1

External and internal barriers to development

Barriers to development	
External	Internal
The economic recession, Unstable politics (including financial one) towards local governments, High competitiveness of other entities, Unstable policy towards agriculture, Adverse immediate surroundings of the region, Improper management of the country, Underdevelopment of infrastructure, The collapse of moral values, Capital intensity of production, The small attractiveness of the country for investors, The processes of globalisation.	Unemployment and the labour market, Poor condition of technical infrastructure, Human potential, Problems of local economies, Structure of the regional economy, Geographical location, Local and regional finances, Spatial planning, Management of the region, Education, Low level of investment, Area, State of the environment, Consequences of political transformation, Lack of local patriotism and willingness to cooperate.

Source: Prepared on the basis of Sekuła, A. 2004. Postrzegana sytuacja gmin na podstawie analizy SWOT przedstawionej w strategiach rozwoju lokalnego [The perceived situation of municipalities on the basis of a SWOT analysis presented in the local development strategies]. In: Garbacik, B. ed. *Edukacja menadżerska a świadomość przemian cywilizacyjnych* [Managerial education and awareness of civilisational changes]. Gdańsk, p. 101, 103; cited in: Sekuła, A. 2005. Bariery rozwoju lokalnego [Barriers to local development]. *Samorząd terytorialny w zintegrowanej Europie* [Local government in integrated Europe], no. 401, p. 596.

Kosiedowski, W. ed. *Samorząd terytorialny w procesie rozwoju regionalnego i lokalnego*. [Local government in the process of regional and local development.] Toruń, p. 28.

¹³ Sekuła, A. 2005. Bariery rozwoju lokalnego. [Barriers to local development.] *Samorząd terytorialny w zintegrowanej Europie*. [Local government in integrated Europe], no 401, p. 594.

In the studies the criterion of the place of origin of the given obstacle is often used, identifying exogenous and endogenous barriers. Barriers to development are interlinked and, for instance, national problems translate into the situation in the region. The following are the examples of threats.

In turn, Ryszard Domański included the following to the main constraints to development: too small amount of land available for different sectors of the economy, i.e. agriculture, industry, recreation, etc.; negative externalities which concern mainly highly developed, ‘crowded’ regions, which restricts the access to common resources; obsolete or inappropriate spatial development of cities or entire regions creating development thresholds; lack of balance between the elements of spatial development, which decreases efficiency and reduces opportunities to develop the regional economy and adversely affects the quality of life of the population; immobility of material resources and limited mobility of human resources¹⁴.

2. REGIONAL DEVELOPMENT GAUGES

Reliable information plays an important role in the measurement of regional development. In Poland, analyses of development are carried out mainly on the basis of data from the CSO and various financial institutions, tax offices or local governments. The collected data concern mainly: the amount of GDP per capita in the region, the division of the population with regard to the main source of livelihood and employment sectors, the financial situation of the inhabitants of the region, the size of foreign capital, the level of innovation and expenditure on R&D¹⁵.

Measuring instruments of development can be divided into three main groups: related to demographics, living conditions of residents, and measures of economic potential. In the first group, we can apply the indicators concerning: population density, level of economic activity, employment level and structure, unemployment level and structure, the proportion of urban and rural population, the rate of migration. The second group includes, among others, indicators related to the level of health care and level of development of communal infrastructure. The last group connected with the economic potential of the region is mostly determined by: the level of GDP, the rate of production and employment on the basis of sections of the national economy, the value of

¹⁴ Domański, R. 2006. *Geografia ekonomiczna. Ujęcie dynamiczne*. [Economic geography. Dynamic approaches.] Warszawa, pp. 125–126.

¹⁵ Kulczyk-Dynowska, A., *op. cit.*, p. 53.

fixed assets and the degree of their wear, the number of financial, insurance and other institutions which are part of the so-called 'business environment', the development of technical (transport, utilities, energy) infrastructure¹⁶.

The quantification of regional development can be done using the measure proposed by S. Korenik, in which the author singled out eight general gauges and assigned appropriate indicators to them.

Table 2

Gauges and indicators of regional development

Sn.	Gauge	Selected indicators
1.	Total population of the region	<ul style="list-style-type: none"> • The growth dynamics • Population density • The proportion of urban and rural population • The structure of population by age and sex
2.	The size of the labour force	<ul style="list-style-type: none"> • The growth dynamics • The residents' professional activity rate • The education structure • The balance of external migration
3.	The level of employment	<ul style="list-style-type: none"> • The growth dynamics • The structure of employment by sectors of the national economy • The unemployment rate
4.	The size of production fixed assets	<ul style="list-style-type: none"> • The growth dynamics • The structure of assets by type and degree of depreciation, divided into groups of assets
5.	Gross domestic product	<ul style="list-style-type: none"> • Produced and divided, and the relationships between them • The structure of production
6.	Incomes of population	<ul style="list-style-type: none"> • The growth dynamics • The structure of incomes • The structure of private consumption – the way of income spending
7.	Investment outlays	<ul style="list-style-type: none"> • The growth dynamics • The structure of capital • The structure of investments
8.	Infrastructure	<ul style="list-style-type: none"> • The structure of components • The level of decapitalisation • The level of investment broken down into and municipal, state and private investment

Source: Prepared on the basis of Korenik, S. 2003 *Dysproporcje w rozwoju regionów Polski. Wybrane aspekty* [Disparities in the development of Polish regions. Selected aspects]. Wrocław, p. 74.

¹⁶ *Ibidem*.

The level of regional development is inextricably linked to the competitiveness of the region. According to Marian Gorynia, the notion of competitiveness can be understood in at least two ways. The first one treats competitiveness as a characteristic, attribute, or result (usually connected with economic issues) because it assumes that the essence of the market economy consists in the fact that the actors of economic life compete with each other on various levels. The other approach treats competitiveness as a process related to attaining the acquisition of a given feature or attribute or the achievement of a particular result¹⁷.

Competitiveness is most often understood through the prism of competition, that is a zero-sum game. In dictionaries, the notion of competitiveness refers to the ability of an entity (a state, enterprise, etc.) to compete effectively in a particular place and time. Competitiveness defined in this way focuses on the results, the effects of competition, which are usually measured by quantitative indicators¹⁸.

Elżbieta Pogodzińska-Mizdrak interprets the phenomenon of competitiveness as competition between individuals of various kinds, and taking into account the economic aspect, as “the contention for the most advantageous position among rivals in order to gain material benefit and economic status”¹⁹. Also Bolesław Winiarski, analyzing the factors of regional competitiveness, refers the term ‘competitiveness’ to the economic sphere, defining it as ‘the ability of entities operating in the market economy to achieve success in the economic rivalry taking place among them’²⁰.

¹⁷ Understanding competitiveness as a process, it is assumed that over time it will be interpreted in the context of the first category as a feature, attribute, or result. Cited in Gorynia, M. 2009. Teoretyczne aspekty konkurencyjności. [Theoretical aspects of competitiveness.] In: Gorynia, M. and Łązniewska, E. eds. *Kompendium wiedzy o konkurencyjności*. [Compendium of knowledge about competitiveness.] Warszawa, pp. 48–49.

¹⁸ Łązniewska, E., Chmielewski, R., Nowak, P. 2012. Definicje, modele i studia nad regionalną konkurencyjnością. [Definitions, models and studies on regional competitiveness.] In: Gorynia, M. and Łązniewska, E. eds. *Konkurencyjność regionalna. Koncepcje – strategie – przykłady*. [Regional competitiveness. Concepts – strategies – examples.] Warszawa, p. 24.

¹⁹ Pogodzińska-Mizdrak, E. 2005. Czynniki wzrostu konkurencyjności regionów w Polsce a polityka regionalna Unii Europejskiej. [Factors of growth of competitiveness of Polish regions and regional policy of the European Union.] In: Kópczuk, A. and Proniewski, M. eds. *Atrakcyjność inwestycyjna regionu*. [Investment attractiveness of the region.] Białystok, p. 85.

²⁰ Winiarski, B. 1999. Czynniki konkurencyjności regionów. [Factors of competitiveness of regions.] In: Klamut, M. ed. *Konkurencyjność regionów*. [Competitiveness of regions.] Wrocław, p. 48.

Competitiveness of the region in economic terms is the process by which the region (it can be conceived as a whole or by means of indicators of competitiveness, for example, business entities operating in its area) obtains a competitive advantage, thanks to which its development takes place. Competitiveness of the region means that it is able to create specific competitive advantages²¹.

Competitiveness can be examined on several levels. The first level – micro – refers to the competitiveness of individual companies, the second level – meso – deals with the competitiveness of particular sectors, branches, industries of the economy and regions, the third level of the analysis is macro-competitiveness which pertains to the results of the activities of the State in international trade, in particular the increase of its role in export markets²².

The level of competitiveness is determined by the potential of competitiveness, which can be described as ‘the entirety of tangible and intangible resources which are necessary for the organisation to operate on the market arena of competitiveness. This potential is expressed in factors and gauges of competitiveness which illustrate and assign specific values to the given resources’²³.

B. Winiarski recognised that the basic determinant of competitiveness is, first of all, the developed and diversified structure of the economy, whose branches and enterprises are able to participate in the division of labour at the inter-regional and international level, achieving successes in economic competition. Second, good general development, with developed technical-economic and social infrastructure which ensures the transport accessibility of the region, linking the region with the national and international transport system, availability of water, electricity and gas, developed and prosperous system of education, health, welfare, recreation. Third, the presence of scientific research centres which support innovative processes and create the

²¹ Markowski, T. 2008. Teoretyczne podstawy rozwoju lokalnego i regionalnego. [The theoretical basis of local and regional development.] In: Strzelecki, Z. ed. *Gospodarka regionalna i lokalna. [Regional and local economy.]* Warszawa, p. 23.

²² In the literature there is also the phenomenon of mega-competitiveness. As the macro level of the analysis refers to the country as a whole, the mega level should be analyzed in relation to the supranational structures. Cited in Olczyk, M. 2008. Konkurencyjność podmiotów – ujęcie teoretyczne. [Competitiveness of operators – theoretical background.] In: Daszkiewicz, N. ed. *Konkurencyjność, Poziom makro, mezo i mikro. [Competitiveness, macro, meso and micro levels.]* Warszawa pp. 13–14.

²³ Pogodzińska-Mizdrak, E., *op. cit.*, p. 85.

intellectual climate and the presence of universities. Fourth, the existence of institutions operating in the so-called ‘business environment’ and a good condition of the natural environment and land available for investments, reasonable land prices and high productivity of land. However, Winiarski stresses that ‘the competitive strength of regions seems to depend to a greater extent not on what they actually have, but on their skills and professionalism in conducting promotional activities’²⁴.

W. Kosiedowski proposes to include the following in the list of factors determining the level of competitiveness: the diversification of the economic structure, developed communication, the level of innovation and entrepreneurship, the level of education and intellectual potential of the region’s population, a strong urban agglomeration or large urban centres, scientific research centres and development facilities, the ability of development management, the skill to obtain and use domestic and foreign aid funds, self-organisation of society (i.e. developed ‘third sector’) and available investment areas²⁵. Additionally, attention should also be paid to the external situation – the macroeconomic policy pursued by the state authorities, the international situation, the processes of globalisation and subjective factors, for instance, the range and effectiveness of promotional activities, the strong defence of regional interests, lobbying, the shaped image of the region²⁶.

The level of competitiveness is connected with the level of development of the region, as evidenced by the fact that in the examination of both competitiveness and the level of development, related indicators are used, among others, the level of GDP per capita, the number of business operators, the unemployment rate, the education level of the inhabitants of the region or the amount of expenditure on R&D. A set of sample gauges and indicators of competitiveness was developed by Danuta Strahl, highlighting the most important attributes (areas of competitiveness), describing the importance of the attribute and providing statistical measures on the basis of which the given area of competitiveness can be examined.

As in the case of factors enabling regional development, also the increase of the competitiveness of the region is a complex issue. It can be acknowledged that competitiveness is a conglomerate of specific attributes which expressed by means of appropriate indicators give evidence to the position and attractiveness of the region. It is difficult to determine the

²⁴ Winiarski, B. *op. cit.*, pp. 50–51, 54.

²⁵ Kosiedowski, W. Introduction to the theory..., *op. cit.*, p. 33.

²⁶ *Ibidem*, pp. 33–34.

level of competitiveness by making reference only to certain aspects of the analysis, therefore, measures of competitiveness take into account a number of indicators, giving a fuller picture of the study area.

Table 3

Attributes of competitiveness of regions

The attribute – area of competitiveness	What it expresses	Statistical gauges
Human capital	The ability of the region to realise market challenges	<ul style="list-style-type: none"> • The share of employees with tertiary education • The employment rate (number of the employed in relation to the number of the professionally active) • The share of employees with secondary education and seniority over 5 years
Living conditions	The conditions for self-realisation of inhabitants, the creation in the region of opportunities for recreation, safety of life and health, high quality educational opportunities, cultural development, proper communication with the environment	<ul style="list-style-type: none"> • The number of towns which have a tourist resort status, the surface of recreation areas • The number of natural attractions • The existence – or not of airports, highways • The share of roads with an improved surface in the total surface of roads • The number of telephones per 1000 inhabitants • The number of viewers and listeners in theatres, concert halls per 1000 inhabitants • The number of crimes per 1000 inhabitants • The detection rate of recorded crimes
Innovativeness	The possibility of the region to create added value with high market standards	<ul style="list-style-type: none"> • The share of employees of R&D departments • The number of employees of R&D departments per 1000 inhabitants • Outlays on R&D activity per one employee of a R&D department • Outlays on investments per one inhabitant of the region • The share of production of high technology industries in the total industrial production of the region • The number of universities and colleges in the region • The number of academic staff of universities and colleges

The attribute – area of competitiveness	What it expresses	Statistical gauges
Finances of the region	The wealth of the region indicating domestic demand, the possibility of financing investments, entrepreneurship and crediting of population	<ul style="list-style-type: none"> • Savings of population per one inhabitant • Average remuneration in the region • Income at the disposal of one inhabitant • The size of bank lending • The share of „difficult” loans in banks of the region
Information and the possibility of its use	The ability of the region to respond to: market challenges, external threats, changes in the development strategy	<ul style="list-style-type: none"> • The number of Internet users per 1000 inhabitants • The number of mobile and landline telephone users per 1000 inhabitants • The number of professional institutions dealing with information

Source: Strahl, D. 2005. Miara konkurencyjności regionu zorientowana na przyszłość [The measure of competitiveness of the region focused on the future]. In: Rapacz, A. ed. *Problemy konkurencyjności regionów i przedsiębiorstw* [Problems of competitiveness of regions and enterprises]. Wrocław, pp. 26–27.

Summarizing the above considerations on the factors of competitiveness, a region should be regarded as competitive if it: is well equipped with modern factors of production, is innovative, has a developed network of mutual trade connections, has a flexible and specialised lab or market, is characterised by predictable behaviour of actors affecting the development of the region and by the ability to respond to new challenges, has regional leaders who are able to concentrate around them local/regional economic operators and institutions²⁷.

²⁷ Stawasz, D. *op. cit.*, p. 54.

3. THE CONSTRUCTION OF A REGIONAL DEVELOPMENT GAUGE – AN SYNTHETISATION ATTEMPT

This study attempts to synthesize regional development indicators proposed by various authors²⁸. Fairly comprehensive proposals for the creation of a measuring instrument of the level of development are presented by Wojciech Dziemianowicz, Julita Lukomska, Anna Hill and Magda Pawluczuk. The authors propose to analyze the level of development of regions within four major constituent components, namely: the economy, competitiveness, innovation, human capital, social capital, quality of life²⁹.

The first component of the study of the development level is related to the regional economy. Thus, it takes into account *strictly* economic indicators, showing the strength of the economy, its competitiveness and innovativeness, which is one of the most important factors of development in the modern world.

²⁸ See more in Bronisz, U. 2013. *Metody badania konkurencyjności regionów*. [Methods of examining the competitiveness of regions.] Warszawa; Kuciński, K. 2005. Regionalne aspekty koniunktury gospodarczej. [Regional aspects of economic situation.] In: Kaja, J., Piech, K. eds. *Rozwój oraz polityka regionalna i lokalna w Polsce*. [Development and regional and local policy in Poland.] Warszawa, pp. 51–89; Klóska, R. 2010. Innowacyjność województw w Polsce. [Innovativeness of provinces in Poland.] In: Woszczek, Z., Grabiński, T., Tabor, A. eds. *Rozwój ekonomiczno-społeczny mikro i makroregionów*. [Economic and social development of micro and macro-regions.] Chrzanów, pp. 59–65; Olechnicka, A. 2007. Innowacyjność polskich regionów. Metody pomiaru, stan i tendencje. [Innovativeness of Polish regions. Methods of measurement, the status and trends.] In: Gorzelak, G., Tucholska, A. eds. *Rozwój, region, przestrzeń*. [Development, region, space.] Warszawa, pp. 265–288; Pawlik, A. 2011. Potencjał innowacyjny podstawą rozwoju regionalnego. [The innovative potential as the basis for regional development.] In: Harańczyk, A. ed. *Perspektywy rozwoju regionalnego Polski w okresie programowania po 2013 r.* [Polish regional development perspectives in the programming period after 2013.] part. I, vol. CXL, Warszawa, pp. 67–78; Strahl, D. 2005. Miara konkurencyjności regionu zorientowana na przyszłość. [A measure of competitiveness of the region focused on the future.] In: Rapacz, A. ed. *Problemy konkurencyjności regionów i przedsiębiorstw*. [Problems of competitiveness of regions and businesses.] Wrocław, pp. 26–27; Korenik, S. 2003. *Dysproporcje w rozwoju regionów Polski. Wybrane aspekty*. [Disparities in the development of Polish regions. Selected aspects.] Wrocław, p. 74.

²⁹ Dziemianowicz, W., Łukomska, J., Górka, A., Pawluczuk, M., *op. cit.*, pp. 14–21.

Table 4

Development indicators related to the economy, competitiveness and innovations

Indicators	Values in the region
GDP growth rate (ratio: 2008 to 2013)	
GDP <i>per capita</i>	
The size of the revenue / expenditure per capita	
Gross operating surplus	
Labour productivity – gross value added per one employee	
The sectoral structure of gross value added	Section*
	A B, C, D, E F G, H, I, J K, L M, N, O, P, Q, R, S, T
The share of the registered unemployed in the population of working age	
Investments and fixed assets including: – total capital expenditures – capital expenditures in enterprises – the gross value of fixed assets in enterprises – foreign funds in capital investment in enterprises	
The share of the province in national export	
The number of economic entities per 10 thousand inhabitants in working age	
Internal outlays on R&D activity in relation to GDP	
The number of people employed in R&D per 1000 professionally active people	
The number of reported inventions and granted patents per 100 thousand inhabitants	

* Section: A – agriculture, forestry, hunting and fishing; B, C, D, E – industry; F – building industry; G, H, I, J – trade, repair of motor vehicles, transportation and storage, accommodation and catering, information and communication; K, L – financial and insurance activities, real estate market services; M, N, O, P, Q, R, S, T – other services.

Source: Prepared on the basis of: Dziemianowicz, W., Łukomska, J., Górka, A., Pawluczuk, M., 2009. *Trendy rozwojowe regionów [Development trends of regions]*. Warszawa, pp. 15–17; Pawlik, A. 2011. Potencjał innowacyjny podstawą rozwoju regionalnego [The innovative potential as the basis for regional development]. In: Harańczyk, A. ed. *Perspektywy rozwoju regionalnego Polski w okresie programowania po 2013 r. [Polish regional*

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In the era of the knowledge-based economy, the second major component of the development of the region is human capital, which must be understood as the whole pro-development potential of individual units. The indicators of the human capital development level can include basic demographic information and data relating to education.

Table 5

Human capital indicators

The group of indicators	Indicators	Values in the region
Demographic indicators	Rate of natural increase per 1000 inhabitants	
	Fertility rate	
	Internal migration balance	
	International migration balance	
	Population age structure: – Pre-working, – Working – Post-working	
	The proportion of urban and rural population	

The group of indicators	Indicators	Values in the region
Education indicators	Net schooling rate by different levels and types of schools: – Primary and junior high education: • Primary education • Junior high education – Post-primary and secondary education: • Vocational schools • Post-secondary schools • SZiOZ • SPL	
	The number of students per 10 thousand inhabitants	
	The number of graduates per 1000 inhabitants aged 20–29	
	The share of the population with higher education in general population aged 25–59	

Source: Prepared on the basis of: Dziemianowicz, W., Łukomska, J., Górka, A., Pawluczuk, M., 2009. *Trendy rozwojowe regionów [Development trends of regions]*. Warszawa, p. 17; Korenik, S. 2003. *Dysproporcje w rozwoju regionów Polski. Wybrane aspekty [Disparities in the development of Polish regions. Selected aspects]*. Wrocław, p.74; Bronisz, U. 2013. *Metody badania konkurencyjności regionów [Methods of examining the competitiveness of regions]*. Warszawa, pp. 127–129.

Social capital is equally important in regional development. The concept of ‘social capital’ can be defined in many ways – applying it to different elements of social life serving the improvement of the well-being of an individual or of the whole group (functional approach), collective action, networking and co-operation (the paradigm of collective action, cooperation and networks), social stratification (structural approach)³⁰. Social capital is inherently difficult to measure since it refers to the social confidence and solidarity and organisational efficiency. The indicators of social capital which

³⁰ Bartkowski, J. 2007. Kapitał społeczny i jego oddziaływanie na rozwój w ujęciu socjologicznym. [Social capital and its impact on development in sociological terms.] In: Herbst, M. ed. *Kapitał ludzki i kapitał społeczny a rozwój regionalny. [Human capital and social capital and regional development.]* Warszawa, pp. 69–71.

can be measured include: turnout in the elections, the level of crime and crime detection, membership in organisations and the number of non-governmental organisations or the number of blood donors³¹.

Table 6

Social capital indicators

Indicators	Values in the region
Voter turnout in the elections: – Presidential – Parliamentary – The European Parliament – Local government	
The number of crimes: – total – per 10 thousand inhabitants – The rate of detectability of perpetrators	
The sum of memberships in organisations in millions of people per 10 thousand people	
Active organisations and associations per 10 thousand inhabitants	
The number of blood donors in total: – per 1000 inhabitants	

Source: Prepared on the basis of: Dziemianowicz, W., Łukomska, J., Górka, A., Pawluczuk M., 2009. *Trendy rozwojowe regionów* [Development trends of regions]. Warszawa, pp. 17–19; Strahl, D. 2005. Miara konkurencyjności regionu zorientowana na przyszłość [A measure of competitiveness of the region focused on the future]. In: Rapacz, A. ed. *Problemy konkurencyjności regionów i przedsiębiorstw* [Problems of competitiveness of regions and businesses]. Wrocław, pp. 26–27.

The last component of the level of development is the quality of life, which is examined as objective (through statistical indicators of income or housing) and/or as subjective (satisfaction with income, living conditions)³². Therefore, there is no doubt that the first area of research – the objective one, is easier to depict due to the available statistical data. Exemplary indicators of the quality of life are shown in the following table.

³¹ Dziemianowicz W., Łukomska, J., Górka, A., Pawluczuk, M., *op. cit.*, pp. 17–18.

³² Rogala, P. 2009. *Zaprojektowanie i przetestowanie systemu mierzenia jakości życia w gminach*. [Design and testing of system for measuring the quality of life in communities.] Raport z Realizacji Pracy Etap 2, Jelenia Góra–Poznań, p. 6.

Table 7

Quality of life

Indicators	Values in the region
LHDI ^{a)} (values from 0 to 100) – HI – EI – WI ^{b)}	
Income indicators: – Average monthly gross remuneration – The average monthly available income <ul style="list-style-type: none"> • including disposable income – Average monthly expenditure	
Conditions of work: – identified occupational diseases per 10 thousand inhabitants – injured in accidents at work per 1000 employees – the proportion of accidents in the region in the total number of accidents (Poland – 100%)	
Living conditions: – Average usable floor space for 1 person (m ²) – The number of completed dwellings per 10 thousand inhabitants – The number of subscribers per 1000 inhabitants to: <ul style="list-style-type: none"> • Television • Radio • Cable television – The equipment of households with standard durable goods: <ul style="list-style-type: none"> • Refrigerator • Washing machine • Dishwasher • Microwave oven • Passenger car • Television set • Mobile phone • Personal computer (including the Internet) 	

Indicators	Values in the region
<p>Education:</p> <ul style="list-style-type: none"> – The number of students per 1 computer with Internet access in: <ul style="list-style-type: none"> • primary schools, • junior high schools, • senior high schools, – The number of university students per 1 academic teacher – Number of children in kindergartens per 100 seats – The number of students per 1 class in: <ul style="list-style-type: none"> • primary schools, • junior high schools, • senior high vocational and art schools • vocational schools • senior high schools, • post-secondary schools, – Examination pass rate: <ul style="list-style-type: none"> • junior high: <p>The humanities – Polish language The humanities – history and civics Mathematics and natural science – mathematics Mathematics and natural science – natural sciences <ul style="list-style-type: none"> • High School Diploma examinations </p>	
<p>Health care:</p> <ul style="list-style-type: none"> – Population per one hospital bed, – The number of doctors of medicine per 10 thousand inhabitants, – Infant mortality per 1 thousand of live births, – The number of cases of tuberculosis in total: <ul style="list-style-type: none"> • 10 thousand inhabitants 	
<p>Transport and communication:</p> <ul style="list-style-type: none"> – operated railway lines per 100 km² – paved public roads – motor vehicles registered during the year – fatal road accidents per 100 inhabitants – population per one post office – landline (total line) per 1000 inhabitants 	
<p>Culture, tourism and recreation:</p> <ul style="list-style-type: none"> – Visitors to museums and exhibitions, – Seats in permanent cinemas, – Number of cultural centres, clubs and community centres, – Hotel beds per 1000 inhabitants – Occupancy levels in hotels 	

Indicators	Values in the region
– The condition and protection of the natural environment: Sewage treatment plants Outlays on fixed assets in environmental protection (1 inhabitant) Dust and gas air pollution retained or neutralised in pollutant reduction devices Population using sewage treatment plants Wastewater (municipal and industrial) cleaned in relation to the total wastewater requiring treatment Water consumption per 1 inhabitant (in m ³) Energy saving per 1 inhabitant The share of devastated and degraded land in relation to the total The share of legally protected areas in the total area The share of waste collected selectively in relation to the total Waste generated on 1 km ²	

a) LHDI –Local Human Development Index.

b) The components of LHDI are HI –Health Index, EI –Education Index) and WI –Wealth Index.

Source: Prepared on the basis of: *Krajowy Raport o Rozwoju Społecznym Polska 2012. Rozwój regionalny i lokalny [The National Human Development Report Poland 2012. Regional and local development]*. Biuro Projektowe UNDP w Polsce, Warszawa 2012, pp. 55–57; Dziemianowicz, W., Łukomska, J., Górka, A., Pawluczuk, M., 2009. *Trendy rozwojowe regionów [Development trends of regions]*. Warszawa, pp. 20–21; Strahl, D. 2005. *Miara konkurencyjności regionu zorientowana na przyszłość [A measure of competitiveness of the region focused on the future]*. In: Rapacz A. ed. *Problemy konkurencyjności regionów i przedsiębiorstw [Problems of competitiveness of regions and businesses]*. Wrocław, pp. 26–27.

SUMMARY

The analysis conducted in this study shows the multitude of definitions and approaches to stimulants, hindrances and gauges of the level of development. Regardless of the accepted definitions, factors contribute to the potential favourable to the development of the given region, and barriers constitute obstacles restraining this development. The advantage of positive aspects determines the strength of the region and affects its competitiveness which is conducive to further development. In order to examine the level of regional development, meters consisting of a set of specific indicators relating to selected areas of the analysis are created, it is concluded which of the

investigated aspects are the stimulants / hindrances of the development, and conducting an inter-regional comparative analysis it can be determined which of the regions, and on which plane is the most competitive.

According to the assumption that regional development consists of four main components, i.e. the economy, human capital, social capital and quality of life in the region, in each of these aspects indicators which best reflect its state were isolated. In the part related to the regional economy focus should be placed on indicators which: are related to GDP, are connected with the revenue and expenditure per capita, show the sectoral structure of gross value added, unemployment, the state of investments (including foreign ones) and fixed assets, entrepreneurship and innovativeness. The second aspect – human capital – is expressed by the indicators related to demographics and education in the region. Social capital can be illustrated by indicators related to voter turnout, the number of crimes in the region and their detectability, development of the third sector and the number of blood donors. The last component – the quality of life – is expressed by the indicators: LHDI and income (not included in the first component), working, housing and educational conditions (not included in human capital), related to health care, transport and communications, culture, tourism and recreation and protection of the natural environment. It should be noted that a measuring instrument designed in this way is not comprehensive (based on quantitative indicators) or final. Since the issue of regional development is complex, it can be examined in many ways – as a whole or with respect to certain aspects, based on quantitative or qualitative indicators, showing the current status or growth dynamics on selected planes of the analysis. The study of the regional development level and the gauge used for measuring it largely depend on the assumptions made by the researcher and the availability of data and, therefore, its structure can be an individual matter, but it should always take into account all components of development.

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STIMULANTS, HINDRANCES AND GAUGES OF REGIONAL DEVELOPMENT – THEORETICAL ANALYSIS

Summary

The article focuses on the problems of stimulant, hindrances and regional development measures. A broad theoretical analysis presented in this paper, as stimulants defines pro-development factors through which socio-economic development is possible. On the other hand hindrances are factors that inhibit the development of regions or make it impossible. In a study on the development and competitiveness of regions, regional development measures also play an important role. They are a conglomeration of various indicators (economic, social, environmental) that allow indicate the strengths and weaknesses of the regions, identify opportunities and threats studied areas and allow for conducting comparative analyzes. This article contains research model which is constructed based on the analysis of individual stimulant and hindrances of development and regional development measures which are widespread in the literature, constituting their refresh and extension.

STYMULANTY, DESTYMULANTY I MIERNIKI ROZWOJU REGIONALNEGO – ANALIZA TEORETYCZNA

Streszczenie

Artykuł porusza problematykę stymulant, destymulant i mierników rozwoju regionalnego. Szeroka analiza teoretyczna przedstawiona w opracowaniu, jako stymulanty określa czynniki prorozwojowe, dzięki którym możliwy jest rozwój społeczno-gospodarczy, natomiast destymulanty to czynniki, które hamują lub uniemożliwiają rozwój regionów. W badaniach nad rozwojem i konkurencyjnością regionów istotną rolę odgrywają także mierniki rozwoju regionalnego stanowiące konglomerat różnych wskaźników (gospodarczych, społecznych, środowiskowych), które pozwalają wskazać mocne i słabe strony regionów, zidentyfikować szanse i zagrożenia badanych obszarów, a także umożliwiają prowadzenie analiz porównawczych. Niniejszy artykuł zawiera model badawczy, skonstruowany w oparciu o analizę poszczególnych stymulant i destymulant rozwoju oraz rozpowszechnionych w literaturze mierników rozwoju regionalnego, stanowiąc ich odświeżenie i rozszerzenie.

СТИМУЛЯТОРЫ, ДЕСТИМУЛЯТОРЫ И ИЗМЕРИТЕЛИ РЕГИОНАЛЬНОГО РАЗВИТИЯ – ТЕОРЕТИЧЕСКИЙ АНАЛИЗ

Резюме

Статья затрагивает проблематику стимуляторов, дестимуляторов и показателей регионального развития. Обширный теоретический анализ, представленный в исследовании, связан с определением стимуляторов как эволюционирующих факторов, создающих возможности для общественно-экономического развития, дестимуляторы же – факторы, которые тормозят региональное развитие. В исследованиях развития и конкурентоспособности регионов существенную роль играют также измерители регионального развития, представляющие собой конгломерат различных показателей (экономических, общественных, экологических), дающих возможность проведения сравнительных анализов. Настоящая статья демонстрирует модель исследования, сконструированную на основе анализа отдельных стимуляторов и дестимуляторов развития, а также на основе широко представленных в литературе измерителей регионального развития, представляя собой их обновление и расширение.