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## Selected Aspects of Innovative Activity by Region – Comparative Analysis in Spatial Section by Subregion in Western Poland

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**Abstract:**

**Purpose:** The aim of the article is to show how innovation is developing in the sub-regions of western Poland and how entrepreneurs and local government can ensure an increase in innovative dynamism. The article puts forward the following research hypothesis - the intensification of pro-innovative activities in enterprises and formal and institutional support locally (in sub-regions) will ensure an increase in the innovativeness of the regional economy. In line with the objective and hypothesis, the following research question was formulated - what specific undertakings should be implemented to ensure an increase in innovation in the region under study? Therefore, the issue of innovation in classical and contemporary terms (in the theoretical-cognitive dimension) was addressed first, followed by innovation in enterprises in regional terms (in the practical dimension). The main element of the article is the identification of the reasons for the decline in innovative activity and proposals for measures to increase innovative dynamism in the studied region.

**Design/Methodology/Approach:** The research approach used in the theoretical part of the article is based on the method of critical analysis of the literature. The considerations in the empirical part have a positive dimension, i.e. a descriptive and explanatory one (concerning the actual state of innovative activity of enterprises in western Poland) and a normative one, i.e. recommending what should be done to increase the innovative dynamism of the studied enterprises. The method of analysis and synthesis, comparison and deduction was also used.

**Findings:** The research approach used made it possible to identify the reasons for the decline in innovative activity in the studied region and subregions, and to identify the necessary measures to improve the current state in the field of innovative activities.

**Practical Implications:** The research showed that there is adequate potential in the western Polish region to implement the recommended measures aimed at increasing the innovative dynamism of enterprises.

**Originality/Value:** The choice of the title of the article is due to the fact that the research topic undertaken is timely and important from the point of view of local and regional economic development. The research topic undertaken, especially recommendations for regional and sub-regional development through innovation, has not been the subject of extensive scientific discussion in the international arena.

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## 1. Introduction

Today, innovation is a source of competitiveness for businesses and, in parallel, a driving force for economic growth and development on a national, regional and local level. It is therefore necessary to consolidate innovative attitudes among entrepreneurs and a coordinated approach to innovation management and the involvement of different stakeholder groups in innovation processes. In addition, an important role at the local and regional level, should be played by institutional and financial support for innovative activities.

The subject of the study concerns a selected spatial subsystem of the Polish economy, namely three subregions located in western Poland. The focus is on the study of selected problems of innovative activity of enterprises in 2016-2021 in relation to Pomorze Zachodnie, Ziemia Lubuska and Dolny Śląsk in a system including provinces (subregions) and the area of western Poland as a region, broken down into two periods, i.e., 2016-2018 and 2019-2021.

The main premise that determined this methodological approach is the complexity and heterogeneity of the entire system of the Polish economy. The excessive complexity of the economic system as a whole (the division of the economy into sections, divisions, groups and the territorial division of the country covering all the provinces) makes it difficult to study this issue in depth.

## 2. Literature Review

The subject matter of the article determines the definition of innovation (in classical and contemporary terms) and innovative activity. In classical terms, innovation is defined as the introduction of new or improved products and technologies, the creation of new economic organizations, the discovery and mastery of new markets (Schumpeter, 1960).

Drucker also emphasizes that innovation is changes in products, marketing, organization and management. The second concept, innovation activity, involves a

set of systemic and organized activities involving continuous monitoring of changes in the environment to identify opportunities for innovation. It implies a willingness to organize for entrepreneurship, the creation of new business and the exclusion of innovation outside the traditional management structure (Drucker, 1968; 1998).

Nowadays, innovation is regarded as the positive effects of implementing a particular idea or process. These effects can be considered from the point of view of the company, employees, customers, business partners and the economy. This means that the concept of 'open innovation' is now dominant.

This is due to the diversity of innovation stakeholders and the existence of multiple sources of innovation (Dodgson, Gann, and Philips, 2014). According to Freeman, technical innovation, based on new technologies and science-technology linkages, plays an important role in the structure of innovations implemented in economies.

The researcher emphasises that an innovation is the first use of a new product, machine, system or process (Freeman, 2002). The formal approach assumes that innovation activities include research, implementation activities, purchase of machinery and equipment, training of employees, marketing of new products and services (OECD, 2001).

Currently, a broad approach to innovation is dominant, and systematic (and not just occasional) introduction of innovations in all areas of business operation is treated as a condition for achieving market success (Grudzewski and Hejduk, 2004; Justesen, 2004). Innovation is the ability of an enterprise to put into practice the results of scientific research and new ideas (Stawasz, 1999).

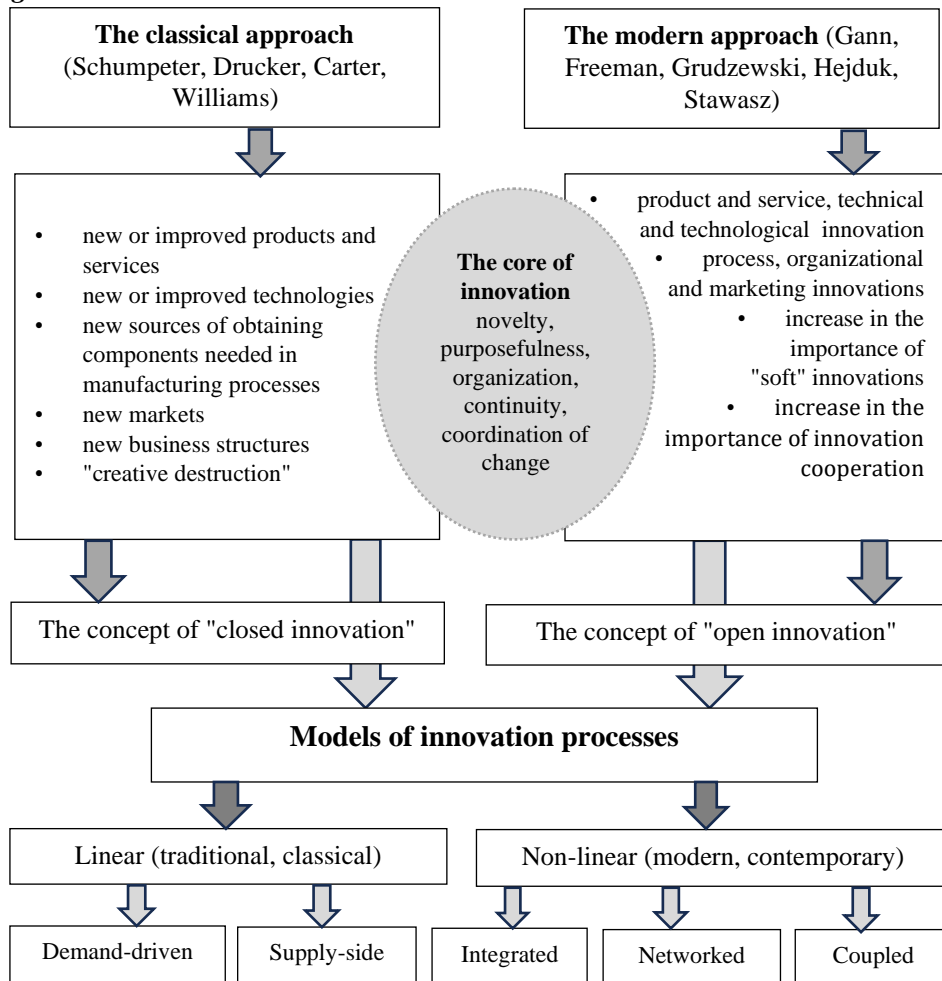
Some researchers (Rutten, 2003) have a scientific discourse on the broad and narrow understanding of innovation, and still others - in addition to the typical product and process innovations - introduce the concept of position and paradigm innovation (Tidd and Bessant, 2011).

Innovations should express themselves in the conscious, purposeful and orderly introduction of new or significantly improved products and services, technologies and modes of operation in organization and management, marketing, logistics. They should generate differentiated socio-economic benefits, provide increased efficiency and/or utility. Innovation is more than rationalization or invention. Innovation is the transfiguration of an idea into a concrete product, service or process (Brojak-Trzaskowska, 2018).

Innovation and innovation activities according to the classical and contemporary approaches, together with an indication of the common part of these approaches (the so-called core), are shown in Figure 1.

When explaining the term innovation, it is necessary to emphasize the fact of initiating, implementing and generating benefits associated with a new idea (practical and meliorative dimension), while innovative activity refers to the totality of undertakings (research, design, financial, organizational and technical) associated with the introduction of a novel idea (functional and process dimension).

**Figure 1.** Core innovation and innovation activities

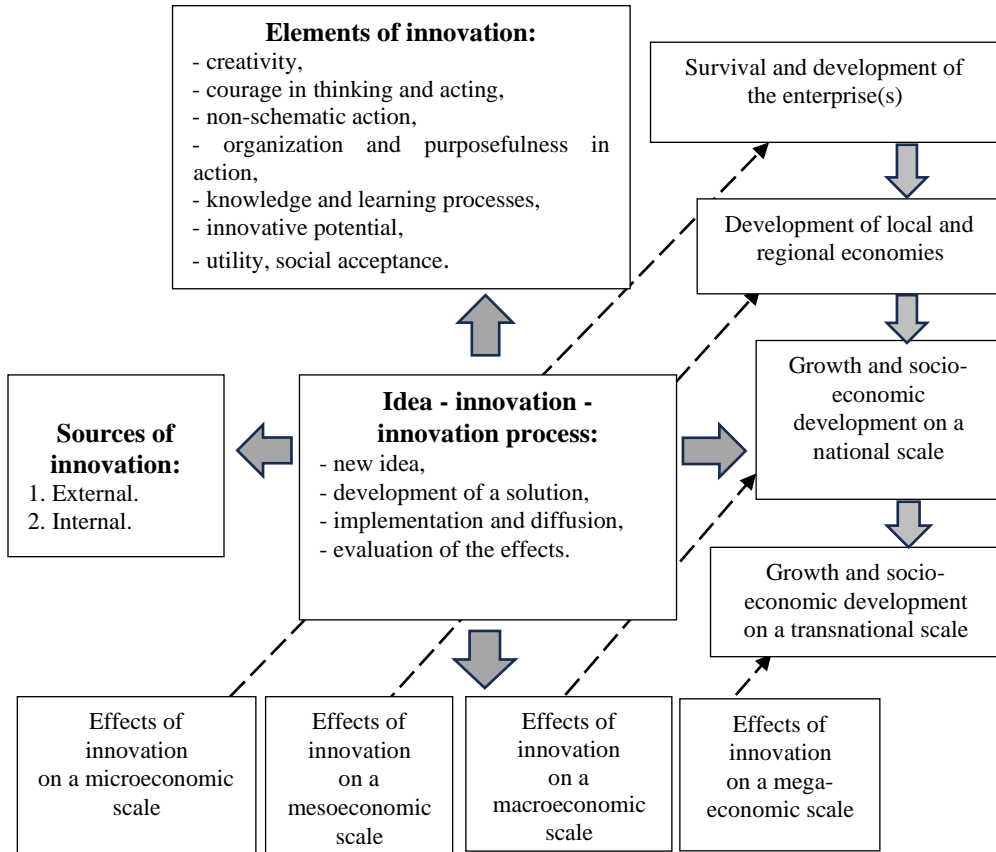


*Source: Own study.*

The basic relationship between innovation and its elements and socio-economic growth and development at different reference scales is shown in Figure 2. Creativity (ingenuity) is not the same as innovation. Creativity expresses the willingness to generate new ideas and solutions, while innovation is the practical implementation of these ideas and the realization of the benefits of doing so. Another component of innovation is innovation potential, which includes adequate human and organizational, managerial, technical and financial resources.

The mentioned components are important in the case of innovation activities independently carried out by enterprises or in the case of innovation cooperation.

**Figure 2.** *The basic relationship between innovation and its elements and socio-economic growth and development*



*Source: Own study.*

The effects of innovation can be considered at various research scales. For example, in enterprises, they relate to improving the economic and financial situation, increasing labor productivity, improving quality, rationalizing own costs incurred, streamlining processes and increasing competitiveness.

Making rational and effective innovation investment decisions is determined by effective innovation management (Knosala *et al.*, 2014; Karlik, 2012; Szatkowski, 2016; Žuber, 2016). This process is carried out in enterprises by owners and managers or by employees (in the case of a decentralized management system), at the level of the national economy (by state administration institutions) and regional and local economies (by local government units).

### 3. Results – Innovative Activity of Enterprises in the Provinces of Western Poland

This section of the article uses the results of an empirical study.

**Table 1.** *Innovative activity of enterprises in the provinces of western Poland in 2016-2021*

Territorial units within a region (provinces as sub-regions)	Share of innovation active enterprises (in % of total economic entities)			
	Industry sector		Service sector	
	2016-2018	2019-2021	2016-2018	2019-2021
Zachodniopomorskie	23,8	17,2	16,5	7,3
Lubuskie	22,8	19,1	13,3	8,1
Dolnośląskie	20,7	22,7	24,8	22,7

**Source:** *Compiled on the basis of (Innovation activities, 2019; Innovation activities, 2022).*

The data presented in Table 1 show a unfavourable downward trend in the innovative activity of enterprises. This phenomenon applies to the entire service sector and all surveyed subregions. The largest decline in innovative dynamism in 2019-2021 (compared to the previous period) concerned service enterprises in Pomorze Zachodnie (56% decline) and Ziemia Lubuska (39% decline).

The situation is similar in the industry sector. The largest decrease in the size examined (by almost 28%) occurred in the Pomorze Zachodnie subregion. An exception is Dolny Śląsk, where an increase in the share of industrial enterprises active in innovation by almost 10% in the second period under review was recorded.

When analysing data on the effects of innovative activity, it is worth noting the revenue from the sale of innovative products. For example, in 2021, Lubuskie's industrial enterprises were ranked first in the country in terms of the share of these revenues in total revenues (15.1%).

The corresponding figure for Dolny Śląsk was 6.4%, while for Pomorze Zachodnie it was only 2.1%. In the case of service companies, the share was much lower, amounting to 3% in Dolny Śląsk, 0.6 in Pomorze Zachodnie and 0.2 in Ziemia Lubuska (Innovation activities, 2022).

**Table 2.** *Enterprises in the western Polish provinces that received public financial support for innovation in 2016-2021*

Territorial units within a region	In % of the total number of innovation-active enterprises	
	Industry sector	Service sector

(provinces as sub- regions)	2016-2018	2019-2021	2016-2018	2019-2021
Zachodniopomorskie	12,3	8,4	1,8	11,5
Lubuskie	16,2	2,8	20,2	13,3
Dolnośląskie	14,6	9,2	7,3	6,3

*Source:* Compiled on the basis of *Innovation activities, 2019; Innovation activities, 2022.*

The data presented in Table 2 show a decrease in public financial support for innovation across the industry sector in the region under study, but a very large increase in public support in the service sector in West Pomerania was observed between 2019 and 2021 compared to the baseline period, which should be viewed positively.

In the case of outlays on innovative activities (in PLN million) in the studied sub-regions, Dolny Śląsk fared best, with outlays of 1726.2 in industry and 2048.3 in services in 2021. Correspondingly, in Pomorze Zachodnie it was 408 in industry and 136.9 in services, while in Lubuskie it was 359.5 and 28.7.

#### **4. Discussion**

The results of the survey indicate a decline in the innovative dynamism of enterprises in western Poland. The low level of innovativeness is a result of socio-economic and political phenomena (external causes), including the COVID-19 pandemic and its consequences, Russia's armed aggression against Ukraine, the economic crisis and the deterioration of macroeconomic indicators (instability of interest rates and exchange rates, inflation). Internal causes of low innovation include deterioration of the financial situation of enterprises, lack of surplus funds, high risks and costs of innovation.

The development of local and regional economies requires the activation of policies at the local government level and their adaptation to the socio-economic situation (Brojak-Trzaskowska, Porada-Rochoń, and Klein, 2022). In regional policies, it is important to recognise the multi-stakeholder regional structures, the need to eliminate socio-economic spatial disparities, stimulate entrepreneurship and improve the quality of life, using diverse instruments to achieve these goals and the endogenous potential of a region. The set objectives and mechanisms of regional development should be consistent with the concept of development at the national level (Pietrzyk, 2004).

The increase in innovation activity in the region under study requires the intensification of pro-innovation activities at different levels: from economic units through cooperation with other enterprises and business environment institutions to local government units.

In the case of enterprises, it is important to obtain alternative sources of funding for

innovation, to consolidate creative behaviour, to create "knowledge and innovation networks" in order to spread costs and risks over a larger number of units and to exploit synergistic effects.

## 5. Conclusions

On the basis of theoretical research, it has been concluded that innovation is the result of creativity, original, out-of-the-box thinking, courage and a willingness to take risks. It is an undertaking that should be characterised by positive social and economic impact, determining the diffusion of innovation processes. Innovation should be regarded as a vehicle for organisational and technical progress in societies and economies.

In the light of empirical studies, a decline in innovation activity was found in the entire region of western Poland and in individual subregions, especially the West Pomeranian and Lubuskie subregions. The situation is slightly better in the Lower Silesian subregion. On the one hand, this phenomenon is a symptom of the general economic downturn. On the other hand, worsened macroeconomic indicators are conditions in which entrepreneurs do not invest in innovation.

At the sub-regional level, the development of endogenous potential, regional integration processes, stimulation of innovation processes, diversification of the economic structure, eco-development, development of intellectual capital and rational spatial development are recommended (Brol, 2006; Mróz and Mróz, 2014).

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