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THE SIGNIFICANCE OF REGIONAL SMART SPECIALISATIONS IN DEVELOPMENT OF ENTERPRISES: THE CASE OF THE PODLASKIE VOIVODESHIP

| Abstract

- *Goal* – The purpose of this article is to analyse the significance of regional smart specialisations for supporting local enterprises, using the case of Podlaskie Voivodeship. In the course of analyses and deliberations, the following research hypothesis was tested: implementing regional smart specialisations plays a crucial role in the growth of enterprises in the Podlaskie Voivodeship.
- *Research methodology* – In order to achieve the objective and verify the hypothesis, the author applied literature reviews, descriptive and comparative analyses based on publicly available secondary data published by the Central Statistical Office (GUS), as well as reports and documents prepared by the local government authorities of the Podlaskie Voivodeship.
- *Score/results* – Without doubt, the shift in the paradigm of regional development based on the theory of learning regions, investing in solutions supportive of entrepreneurship, enhancing competitiveness, and fostering innovation is essential for the economic growth of individual countries. Since it is not possible to be a leader in all spheres of the economy, specialisation is becoming increasingly important.
- *Originality/value* – The conducted analysis yielded a positive assessment of the impact of regional specialisations on the development of enterprises in the Podlaskie Voivodeship. Favourable trends have been observed with regards to the number of national economy entities operating in the private sector per 10,000 working-age inhabitants, expenditures on R&D activities in relation to GDP, the share of enterprise expenditures in total R&D expenditures, as well as the share of net revenue from the sale of innovative products in industrial enterprises in total net sales revenue. All

values indicate a positive direction of changes in the economic structure of the Podlaskie Voivodeship. In view of the above, the research hypothesis has been validated. The implementation of regional smart specialisations plays an important role in the development of enterprises in the Podlaskie Voivodeship.

| **Keywords:** regional smart specialisation, enterprises, development.

1. Introduction

Enterprises play a significant role in the development of every region. At the same time, due to their nature, these entities are inherently tied to the area in which they operate. There is a feedback loop in which the level of enterprise development determines the competitiveness of the region in which they are active, while the environment where they function influences their development opportunities. For this reason, it is important to diagnose the potential of a given area and to determine the factors that might stimulate its growth. Recognising these interdependencies has given rise to a paradigm shift in regional development policies, leading to greater emphasis on smart specialisations. Knowledge, its development and implementation, which lie at the core of the concept, are reflected in the increased competitiveness of entities within a given region, along with enhanced entrepreneurial growth and greater innovation.

Therefore, the purpose of this article is to analyse the significance of regional smart specialisations for supporting local enterprises, based on the example of the Podlaskie Voivodeship. In the course of analyses and deliberations, the following research hypothesis was tested: implementing regional smart specialisations plays a crucial role in the growth of enterprises in the Podlaskie Voivodeship. In order to achieve the objective and verify the hypothesis, the author applied literature reviews, descriptive and comparative analyses based on publicly available secondary data published by the Central Statistical Office [GUS], as well as reports and documents prepared by the local government authorities of the Podlaskie Voivodeship.

2. Paradigm shift in regional development based on smart specialisations

A paradigm, understood as a set of theories and concepts that provide the foundation for a given field, enables the creation of new detailed theories based on

the empirical data and existing knowledge [Chrząszcz, 2021: 50]. A. Klesińska, citing T.S. Kuhn's position, argues that "scientific revolutions are a non-cumulative developmental episode during which an older paradigm is completely or partly replaced by a newer, incompatible one. However, the new paradigm cannot be built upon its predecessor, but can only replace it" [Klesińska, 2017: 94].

An analogous evolution occurs in the case of the directions and priorities of regional policies, which assume that all activities should contribute to the development of a region [Kudełko, 2016: 341]. Due to the significant spatial variability of development conditions in different regions, there is an ongoing discussion about the traditional dichotomy between efficiency and equality goals [Barca, 2009]. T. Vanthillo and A. Verhetsel undertook an analysis of the old and the new paradigms [Vanthillo, Verhetsel, 2012: 5]; their findings are presented in Table 1.

The new paradigm involves, among other things, the capacity of regions to learn and apply the acquired knowledge, build competitiveness through the development of entrepreneurship and innovation, strategic programming of regional smart specialisations, integration and co-operation with the business environment – all of which are embodied in regional smart specialisations. E. Szostak believes that an important component of growth based on smart specialisations is a policy encapsulated in the "place-based-innovation" principle, i.e. territorial policies that integrate innovation into development processes. The adopted concept emphasises the importance of geographical, institutional, cultural, and social contexts [Szostak, 2015: 210]. What is a key aspect of this approach is leveraging the unique features of a given place and adjusting regional and local policies to align with them [Asheim, Grillitsch, Trippl, 2017: 74–99].

The introduction of the new paradigm of regional development based on smart specialisations makes it possible to utilise the geographical, institutional, cultural, and social potentials of particular regions [Grillitsch, Asheim, 2018: 1640]. F. Barca claims that territory-focused development contributes to increased availability of goods, services, and information, thus driving innovation and entrepreneurship [Barca, 2009]. However, utilising the potential of a region requires adapting actions to its specific characteristics and current needs, taking into consideration both endogenous and exogenous factors. J. Bachtler and D. Yuill emphasise that nowadays development and its growth rates are dependent on the factors that shape it, including innovation, networking, the quality of human capital, and entrepreneurship [Bachtler, Yuill, 2001]

Table 1.Paradigm shift of regional development policy

	Old/classic paradigm	New/modern paradigm
Conceptual basis	Industrial location theories, key factors are regional attributes e.g. production, costs, availability of workers	Learning region theories key factors are regional capabilities e.g. innovative milieux, clusters, networks
Aim(s) objectives	Equity through balanced regional development	Increased competitiveness and equity e.g. entrepreneurship, innovation
General policy framework	Compensating temporarily for location disadvantages of lagging regions, responding to shocks (e.g. industrial decline) – reactive to problem	Tapping underutilised potential in all regions enhancing regional competitiveness through regional and strategies programming (e.g. smart specialisation strategies)-proactive for potential
Sphere of action	Sectoral approach with a limited set of sectors-narrow (economic/industrial policies)	Integrated and comprehensive development projects with wider policy coverage – broad (integrated development projects)
Spatial orientation	Targeted at Lagging regions, with administrative areas	All-region focus, with orientation towards functional economics areas
Approach	One-size-fits-all approach	Context-specific approach (place-based approach)
Focus	Exogenous investments and transfers	Endogenous local assets and knowledge
Instruments	Incentive scheme with subsidies and state aid with focus on hard infrastructures and Business aid (often to individual firms)	Development programme with mixed investments for soft and hard capital e.g. business environment, labor market, infrastructure
Actors Organisation	Top down policy development by central government	Collective policy development by different level of government and various stakeholders (public, private, NGOs)
Evaluation/ Outcomes	Ex post evaluation, measurable outcomes	Ex ante, interim, ex post evaluation with difficulties to measure outcomes

Source: T. Vanthillo, A. Verhetsel, *Paradigm Change in Regional Policy: towards Smart Specialisation? Lessons from Flanders (Belgium)*, "Belgeo " 2012, No. 1–2, p. 5.

When implementing the concept of smart specialisations in a strategy of regional development, it is necessary to simultaneously consider resource and budget constraints, as well as external development factors. The sectoral specifics of every region, the interconnections between sectors, and the innovative infrastructure must also be taken into account [Kraus, McDowell, Ribeiro-Sorianoc, Rodríguez-García, 2021: 177]. Consequently, these actions will reinforce the existing potential, give rise to the development of modern sectors, and raise the level of the region. Therefore, the literature on the subject proposes that smart specialisation can be defined as “...actions based on identifying and selecting fields with the greatest potential, which help ensure the region’s competitive advantage on an international scale”, which is in line with the assumptions of the new paradigm [Szostak, 2015: 211].

3. The essence of regional smart specialisations

The basis for the introduction of smart specialisations was the adoption in 2010 of the “Europe 2020 Strategy – A Strategy for Smart, Sustainable, and Inclusive Growth,” which aimed to set a new direction and framework for the economic development of the European Union countries. Through smart specialisations, the EU economy was expected to become intelligent and sustainable, fostering social inclusion, achieving high employment and productivity rates, and demonstrating greater social cohesion. To achieve the intended development direction, three priorities were emphasised in the document [www 1]:

- smart growth: development of knowledge- and innovation-based economy;
- sustainable growth: supporting an economy that uses resources more efficiently is more environmentally friendly, and more competitive;
- inclusive growth: supporting an economy with high employment levels, ensuring social and territorial cohesion.

To achieve the adopted objectives, in the next step, member states were obliged to develop national smart specialisations (NSS), which then gave an impetus for regional smart specialisations (RSS) that take into account such aspects as: employment, innovation, education, social inclusion, as well as climate change and energy policies. The strategies had to define social and economic priorities for particular regions and countries in terms of research, development and innovation, as well as areas of investment focus that would enhance the

economy's added value, increase its competitiveness in foreign markets, and improve the quality of life. According to the assumptions of the new paradigm, smart specialisations are to take into consideration the existing scientific and business potential in the area of R&D&I, current development opportunities of the economy, existing cooperative ties within the areas of specialisation, development trends, and market niches with competitive advantages facilitating competition with other countries [www 2].

As a result, the above criteria provided a foundation for drafting a list of national smart specialisations, the implementation and reinforcement of which was intended to enable lasting economic growth through more competitive services, products, and technologies. They were also supposed to improve the quality of life for society, and to enhance the state of the natural environment. In order to succeed in achieving the intended goals, regional smart specialisations were developed so as to take full advantage of the potentials of particular voivodeships. The idea behind smart specialisations was to diagnose and foster the technological advantages of every region, which is stressed in the regional strategies of particular voivodeships [Owczarczuk, Trzaska, 2024: 138]. As A. Grądział rightly points out, designing smart specialisation strategies calls for a proper diagnosis of the innovation potentials of regions, their strengths and weaknesses, and complementarities in terms of scientific, technological, innovative, and economic capabilities [Grądział, 2014: 248].

Among the key components of selecting smart specialisations of regions there is entrepreneurial discovery which inspires the stakeholders involved in identifying priorities in the fields of research, development, and innovation around which investments in the given region should focus [Ropega, 2016: 97]. M. Piątkowski, T. Szuba, and G. Walczak are convinced that when identifying smart specialisations, the specific characteristics of a given region should be considered, along with its weak and strong points, as well as economic challenges [Piątkowski, Szuba, Wolszczak, 2014].

A list of regional smart specialisations has been created according to the established criteria, as presented in Table 2.

Table 2. Regional smart specialisations

Voivodeship	Regional Smart Specialisations
Dolnośląskie voivodeship	chemical and pharmaceutical sector, spatial mobility, high-quality food, raw materials and recycled materials, production of machines, devices, processing of materials, information and communication technologies (ICT)
Kujawsko-Pomorskie voivodeship	the best safe food – processing, fertilizers and packaging, medicine, medical services and health tourism, automotive industry, transport devices and industrial automation, tools, injection moulds, products from plastics, information processing, multimedia, programming, ICT services, bio-smart specialisation – natural potential, environment, energetics, transport, logistics, trade – water and land routes, cultural heritage, art, creative industries
Lubuskie voivodeship	green economy – eco-innovation, health and quality of life – eco-development, innovative industry – sustainable development, cooperation and business cooperation
Opolskie voivodeship	chemical technologies (sustainable), sustainable technologies of building industry and wood, machine and metal industry technologies, power industry technologies (including renewable energy sources, improving, energy performance), agri-food technologies, processes and products of health and environmental protection (life and environmental science) – potential smart specialisation
Pomorskie voivodeship	off-shore and port logistic technologies, interactive technologies in information-saturated environment, eco-effective technologies in production, transmission, distribution and consumption of energy and fuels and in building industry, medical technologies in the scope of civilisation diseases and ageing
Śląskie voivodeship	energetics, medicine, information and communication technologies, green economy, developing industries
Wielkopolskie voivodeship	bio-raw materials and food for conscious consumers, interiors of the future, industry of the future, specialised logistic processes, modern medical technologies, ICT-based growth
Zachodniopomorskie voivodeship	large-size civil engineering structures, advanced metal products, wood and furniture products, environmentally friendly packaging, chemical and material engineering products, modern agri-food processing, multi-modal transport and logistics, products based on information technologies

Voivodeship	Regional Smart Specialisations
Lubelskie voivodeship	bio-economy, medicine and health, low-emission energetics, information science and automation
Łódzkie voivodeship	modern textile and fashion industry (including design), advanced building materials, medicine, pharmacy, cosmetics, energetics, including renewable energy sources, innovative agriculture and agri-food processing, information science and telecommunication
Małopolskie voivodeship	life sciences, sustainable energy, information and communication technologies, chemistry, metal production, electrical engineering and machine industry, creative industries and leisure industries
Mazowieckie voivodeship	safe food, smart management systems, modern services for business, high quality of life
Podkarpackie voivodeship	aviation and space technology, quality of life, information and telecommunication (ICT)
Podlaskie voivodeship	agri-food industry and sectors combined with it with a value chain medical sector and life sciences, and sectors combined with them with a value chain, eco-innovations, environmental sciences, and sectors combined with them with a value chain, metal and machine industry, boat-building and sectors combined with a value chain
Świętokrzyskie voivodeship	resource-saving building industry, metal foundry industry, health and pro-health tourism, modern agriculture and food processing, information and communication technologies (ICT), sustainable energetic development, fair and congress sector
Warmińsko-Mazurskie voivodeship	water economics, high-quality food, wood and furniture making

Source: [www 2.](#)

The analysis of the list of regional smart specialisations reveals that a number of voivodeships recognise the opportunities associated with bolstering industries and sectors that have traditionally been well-established in the regions, for instance production of machinery and equipment, and material processing in Dolnośląskie Voivodeship, large-scale water and land constructions in the Zachodniopomorskie Voivodeship, modern textile and fashion industries (including design) in the Łódzkie Voivodeship, or aviation and space exploration in the Podkarpackie Voivodeship. The information and communication sectors are among key areas of

development for many regions – these have been taken into account in the case of 10 voivodeships. Also, in 10 voivodeships specialisations related to medicine, life sciences, and improving the quality of life have been identified. Energy is another major area, featuring in the RSSs of 8 voivodeships. Considerable emphasis has been placed on food production; it has been identified as a strategic area by 5 voivodeships: Dolnośląskie, Kujawsko-Pomorskie, Wielkopolskie, Mazowieckie, and Warmińsko-Mazurskie. Focus on sustainable development is an important aspect of developing regional smart specialisation strategies. This has been taken into consideration in the regional strategies of the Świętokrzyskie, Małopolskie, Opolskie, and Lubuskie Voivodeships.

At this point, it is worth considering the opportunity cost of rejecting alternative development directions, other than the selected ones. A similar issue is indicated by M. Piątkowski, T. Szuba, and G. Walczak, who discern the risk associated with choosing a sector with low productivity, which may provide minimal impetus for the development of the given region [Piątkowski, Szuba, Wolszczak, 2014]. Additionally, the literature points to the risks related to the concentration of modern technologies in regions with the highest scientific and research potential, which may result in increasing polarisation of the development of individual regions [Gorzelak, 2004: 245; Nazarczuk 2013: 17]. Nevertheless, given that no region can prioritise all sectors, it is crucial to leverage every region's potential in specific fields that can stimulate further growth.

4. Regional smart specialisations in the Podlaskie Voivodeship

The choice of specific smart specialisations is influenced by such factors as globalisation, technological advancements, changes in the demographic structure of society, increased migration, urbanisation, and the development of green technologies [Miara, 2024: 105].

In Podlaskie Voivodeship, the following smart specialisations have been indicated as instrumental supporting innovation: the agri-food industry, metal and machinery sector, medical sector, eco-innovations, and ICT, in connection with core industries. These sectors form the backbone of smart specialisations [www 3].

Priority R&D&I measures assigned to the selected economic sectors and are presented in Table 3.

Table 3. The intelligent specialisations of the Podlaskie voivodeship

Sectors of economy	Priority activities B+R+I
1.1. Agro-industry food and sectors chained values and ICT in connection with the sector (designated mainly due to high LQzatr)	• efficient agriculture and precise plant and animal production • food industry, in particular milk production and processing • efficiency and quality monitoring systems in plant and animal production • and milk processing • high-quality food, traditional food, organic food • logistics and distribution for the sector • use of agricultural raw materials for non-food purposes • other related
1.2. Metal industry machine-building, shipbuilding and related sectors value chain and ICT in connection with the sector (designated mainly due to high LQzatr)	• metal processing • production of machines and devices, in particular for the needs of agriculture, construction, forestry and the food industry • production of ships and boats using modern materials, structures and equipment • robotics, industry 4.0 • other related
1.3. Medical sector, science about life and related sectors value chain and ICT in connection with the sector (designated mainly because of the high scientific and research potential	• diagnosis of lifestyle diseases • genetics and molecular biology • production of medicinal products • modern methods of therapy, including infertility treatment • medical engineering technologies, biotechnology/bioinformatics • regenerative medicine, silver economy • rehabilitation, physical therapy, health tourism • medical implants • sensor technologies and robotics in medicine, Internet of Things in medicine • other related
1.4. Eco-innovation, science on the environment and sectors chained values and ICT in connection with the sector (designated mainly due to the general characteristics of the region)	• eco-innovations • eco-development (e.g. ecological engineering, biodiversity research, ecotourism) • ecological agriculture and processing • sustainable sourcing and processing of wood and other raw materials • renewable energy in a distributed model, production of devices for generating energy from renewable energy sources, obtaining energy from waste, excluding activities that cause serious damage circular economy damage, • ecological, resource- and energy-saving construction, production of prefabricated houses, production for construction purposes, automation and robotisation processes in ecological construction • circular economy (circular economy) • sustainable design • energy efficiency technologies • management, control and monitoring systems in the field of eco-innovation • solutions for electromobility and powering vehicles with alternative fuels • solutions using hydrogen technologies • water management systems • other related

Source: *Plan rozwoju przedsiębiorczości w oparciu o inteligentne specjalizacje województwa podlaskiego 2021–2027+ RIS3 2027+*, Załącznik do Uchwały nr 236/4257/2021 Zarządu Województwa Podlaskiego z dnia 24 listopada 2021 r. [www 3].

In the Podlaskie Voivodeship, the RSS implementation strategy was incorporated in the *Entrepreneurship Development Plan Based on Smart Specialisations of the Podlaskie Voivodeship for years 2015–2020+* [www 3]. It was subsequently planned to be continued in *Entrepreneurship Development Plan Based on Smart Specialisations of the Podlaskie Voivodeship for years 2021–2027+*. In both documents, it was anticipated that the plans' implementation would be assessed through the analysis of changes in the operations of companies from the Podlaskie, as well as the development of entrepreneurship and innovation in the region.

The concept of regional smart specialisations provides a foundation for institutional support of local entrepreneurs in capitalising on their strengths and implementing solutions that enhance their market standing. On the one hand, enterprises can conduct business activities within a specialisation critical to their region's growth. On the other hand, they gain the opportunity to participate in various projects related to the development of smart specialisations aligned with the idea of RSS and NSS. Co-operation between the scientific, public, and business sectors critical to the analysed provinces, aimed at fostering entrepreneurship and innovation that drive competitive advantage is a prerequisite for properly targeted support.

5. Assessment of the impact of regional smart specialisations on enterprise development in the Podlaskie Voivodeship

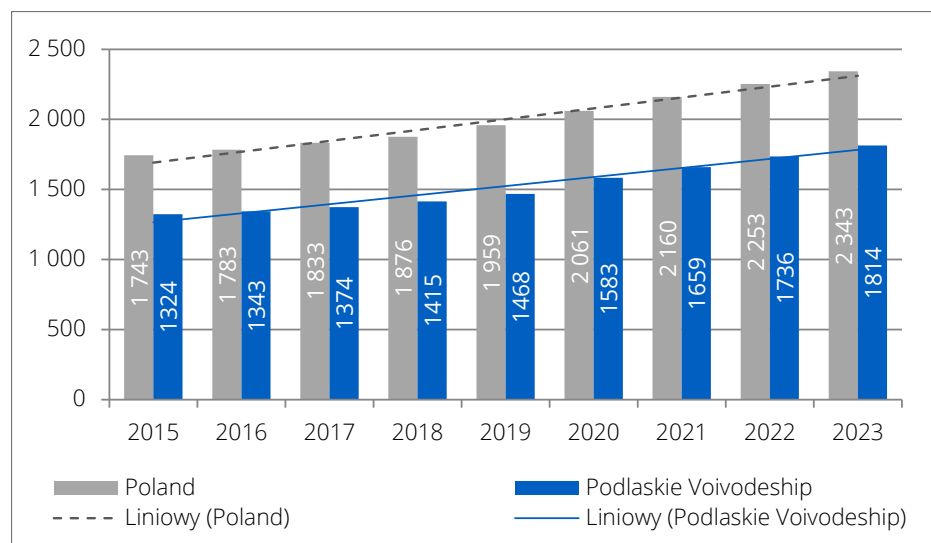
In terms of the region's level of innovation, measured as the cumulative effect of available financial and organisational resources, as well as the institutional environment, the Podlaskie Voivodeship is classified as an emerging innovator [www 3].

When analysing the number of private sector entities in the national economy per 10,000 inhabitants in the Podlaskie Voivodeship, it can be noted that the years 2015–2023 saw continuous growth, as evidenced by the data in Chart 1.

In 2023 there were already 1814 enterprises operating, which represented an increase of slightly more than 37% compared to 2015, which is in line with the goals of the implemented RSS 2027+ strategy [www 3]. Despite the upward trend, however, significant differences are still observed between the number of private sector entities in the national economy per 10,000 inhabitants in the Podlaskie Voivodeship and the rest of Poland. If this trend continues, the development of entrepreneurship in the Podlaskie Voivodeship can be slower than in the other regions of the country. The problem was recognised in the report *Strategic Diagnosis of the Podlaskie Voivodeship*, published in 2020 by the Podlaskie Voivodeship Marshal's

Office. It was noted that although entrepreneurship indicators had been rising, their values significantly differed from the results achieved by other voivodeship capitals. In addition, the document raised the issue of peripheralisation faced by many areas of the Podlaskie Voivodeship [*Diagnoza strategiczna...*, 2020].

Chart 1. Number of national economy entities (private sector) per 10,000 inhabitants of working age, years 2015–2023

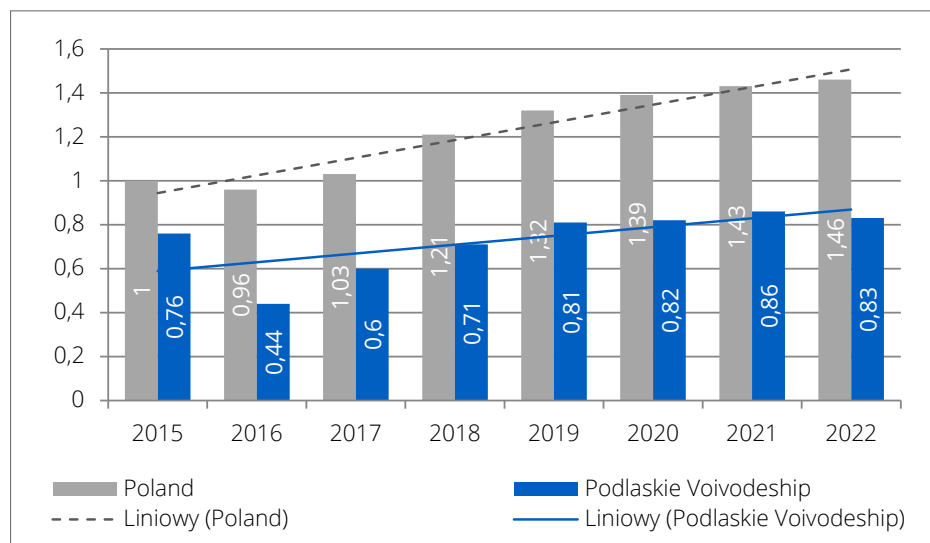


Source: the author's own work based on: GUS BDL

Among the positive phenomena observed in the Podlaskie Voivodeship there is the increasing expenditure on research and development activities (Chart 2), which plays a significant role in boosting the innovation of enterprises. Year 2022 was the only exception – when expenditures decreased by 0.03% compared to the previous year. Nevertheless, according to the assumptions of the plan, by 2027, the share of expenditures on research and development activities in the region is expected to reach 1% of GDP [www 3], which is feasible according to the current trend.

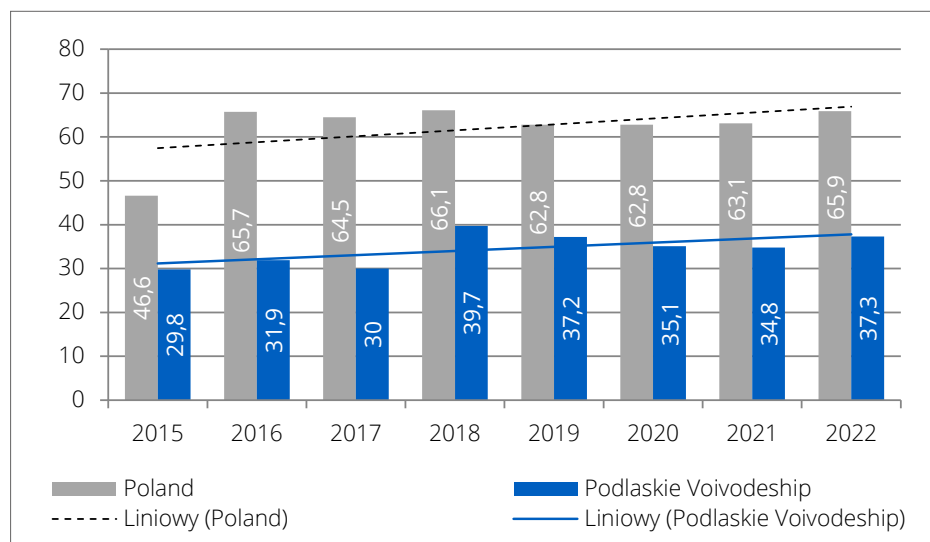
Nevertheless, also in this case, the dynamics are lower in comparison to data from the other regions of Poland, which over the coming years may result in increased disparities between regional development levels. Therefore, intensified efforts are necessary on the part of entrepreneurs, as well as the government sector, higher education institutions, and non-commercial organisations to boost expenditures on research and development [www 3]. The share of enterprise expenditures in total R&D expenditures in the years 2015–2022 is presented in Chart 3.

Chart 2. Expenditure on R&D activity in relation to GDP, years 2015–2022 (in %)



Source: the author's own work based on: GUS BDL

Chart 3. Share of enterprise expenditures in total R&D expenditures* during the years 2015–2022 (in %)



Source: the author's own work based on: GUS BDL

In the Podlaskie Voivodeship, the share of enterprise expenditures on research and development activities reached its highest value – almost 40% – in 2018. Despite a decline in values from 2019 to 2021, the following year brought an increase in the share to 37.3%. This is particularly important as according to the assumptions of the RSS3 2027+ plan, the share of enterprise sector expenditures on R&D in total internal R&D expenditures should reach 48% by 2027 [*Raport o stanie...*, 2024: 136], which raises the chances of achieving the target values.

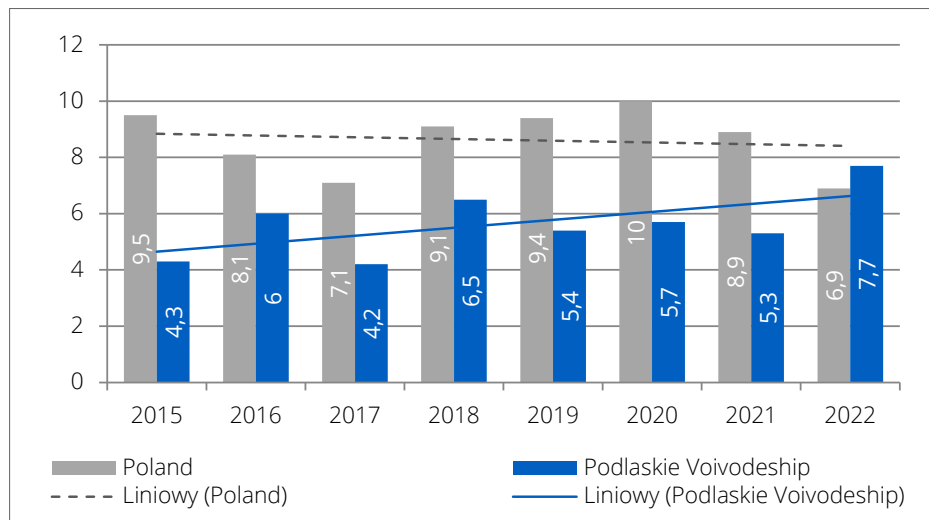
Another area that requires intensified efforts is increasing the involvement of entrepreneurs in utilising patent protection. The number of patents granted to entities operating in the Podlaskie Voivodeship accounted for only 1–2% on a national scale [www 4]. This underscores the need to undertake further initiatives in this respect. At the same time, the “Report on the State of the Voivodeship for 2023” clearly indicates that it is enterprises that demonstrate the most pronounced engagement in this area compared to other categories of entities, surpassing both scientific institutions and individuals in terms of activity levels [The Podlaskie Voivodeship, The Podlaskie Voivodeship Marshal’s Office: *Raport o stanie...*, 2024: 146].

As regards selecting regional smart specialisations, it is essential that the diagnosis conducted by the Marshal’s Office of the position of sectors forming the core of the region’s specialisations should validate their robust position. This was confirmed by the findings of research into the employment location quotient, which highlighted sectors excelling in job creation compared to the rest of Poland. The highest values were reported for the agri-food industry, metal and machinery industry, and shipbuilding industry, along with their value chains, which emphasises the growing economic standing of sectors classified as the regional smart specialisations of the Podlaskie Voivodeship.

The share of net revenue from the sales of innovative products in industrial enterprises’ total sales revenue should also be acknowledged as a favourable occurrence, as evidenced by the data presented in Chart 4.

The below data prove an increase in the economic efficiency of the entities operating in the Podlaskie Voivodeship, as well as the effectiveness of converting innovative solutions into generation of higher revenue. Additionally, the share of net sales revenue from innovative products in industrial enterprises’ total net sales revenue in the Podlaskie Voivodeship demonstrated an upward trend from 2015 to 2022. Furthermore, in 2022, this value exceeded the national average.

Chart 4. Share of net sales revenue from innovative products in industrial enterprises' total net sales revenue, years 2015–2022 (in %)



Source: the author's own work based on: GUS BDL

The analysis of changes occurring in the fields of entrepreneurship and innovation in the Podlaskie's enterprises confirms the presence of positive developments. This is evidenced by data characterising employment levels, financial results, and innovation performance. At the same time, it is emphasised that the rate of the recorded changes is not sufficient for the Podlaskie to improve its position against other regions. Even so, the dynamic growth of the region's strategic sectors justifies a positive evaluation of the effects of implementing the concept of regional development based on regional smart specialisations.

6. Conclusions

Without doubt, the shift in the paradigm of regional development based on the theory of learning regions, investing in solutions supportive of entrepreneurship, enhancing competitiveness, and fostering innovation is essential for the economic growth of individual countries. Since it is not possible to be a leader in all spheres of the economy, specialisation is becoming increasingly important. Hence, it is advisable to focus on those areas that demonstrate significant potential and allow for achieving competitive advantage. Diagnosing key industries within regional

smart specialisations can prove to be an impetus for the development of a given region. Owing to them, it is possible to define a region's potential, identify its strengths, and find methods to address weaknesses and counteract threats. Enterprises play a significant role in this process, on the one hand – they contribute to the development of the region in which they operate and – on the other hand – they benefit from the created investment climate.

The conducted analysis yielded a positive assessment of the impact of regional specialisations on the development of enterprises in the Podlaskie Voivodeship. Favourable trends have been observed with regards to the number of national economy entities operating in the private sector per 10,000 working-age inhabitants, expenditures on R&D activities in relation to GDP, the share of enterprise expenditures in total R&D expenditures, as well as the share of net revenue from the sale of innovative products in industrial enterprises in total net sales revenue. All values indicate a positive direction of changes in the economic structure of the Podlaskie Voivodeship. In view of the above, the research hypothesis has been validated. The implementation of regional smart specialisations plays an important role in the development of enterprises in the Podlaskie Voivodeship.

Nonetheless, what requires attention is the rate of the ongoing changes, which still indicates existing disparities in relation to the overall development pace of the country. Undoubtedly, the impact of regional smart specialisations on the development of enterprises in individual voivodeships calls for further research in order to achieve the intended results. This research should include economic entities operating within the core of the specialisations, as well as those outside of it, which may potentially lay the foundation for emerging specialisations.

| References

- Asheim B.T., Grillitsch M., Trippl M., 2017, *Smart Specialisation as an Innovation-Driven Strategy for Economic Diversification: Examples from Scandinavian Regions*, [in:] S. Radosevic, A. Curaj, R. Gheorghiu, L. Andreescu, I. Wade (eds), *Advances in the Theory and Practice of Smart Specialisation*, London.
- Bachtler J., Yuill D., 2001, *Policies and Strategies for Regional Development: A Shift in Paradigm?*, "Regional and Industrial Policy Research", Paper 46.
- Barca F., 2009, *An Agenda for a Reformed Cohesion Policy – Independent Report*, Brussels, European Commission.

- Chrząszcz B., 2021, *Paradygmat według koncepcji Thomasa Samuela Kuhna. Analiza metodologiczno-prawna*, "Folia Iuridica Universitatis Wratislaviensis, Vol. 10(1).
- Diagnoza strategiczna województwa podlaskiego, 2020, Urząd Marszałkowski Województwa Podlaskiego, Białystok, <https://rpo.wrotapodlasia.pl/pl/wiadomosci/diagnoza-strategiczna-wojewodztwa.htm> [date of access: 20.11.2024].
- Gorzelak G., 2004, *Polska polityka regionalna – cele, uwarunkowania, instytucje, instrumenty*, [in:] T.G. Grosse (ed.), *Polska wobec nowej polityki spójności Unii Europejskiej*, Instytut Spraw Publicznych, Warszawa.
- Grądział A., 2014, *Strategia inteligentnej specjalizacji stymulatorem rozwoju gospodarczego regionów*, "Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania, No. 37, Vol. 2.
- Grillitsch M., Asheim B., 2018, *Place-Based Innovation Policy for Industrial Diversification in Regions*, "European Planning Studies", Vol. 26 No. 8.
- Kielesińska A., 2017, *Paradygmat rozwoju regionalnego w aspekcie przedsiębiorczości społecznej*, "Humanities and Social Sciences", Vol. XXII, No. 24(1).
- Kraus S., McDowell W., Ribeiro-Soriano D.E., Rodríguez-García M., 2012, *The Role of Innovation and Knowledge for Entrepreneurship and Regional Development*, "Entrepreneurship & Regional Development", Vol. 33, No. 3–4.
- Kudęłko J., 2016, *Nowy paradygmat rozwoju w realizacji polityki spójności*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", No. 449.
- Miara A., 2024, *Instrumenty wspierania rozwoju inteligentnych specjalizacji w województwie podlaskim i ich wpływ na rozwój sektora MSP*, "Optimum. Economic Studies", No. 3(117).
- Nazarczuk J., 2013, *Potencjał rozwojowy a aktywność inwestycyjna województw i podregionów Polski*, Olsztyn.
- Owczarczuk M., Trzaska K., 2024, *Regionalne inteligentne specjalizacje a transformacja cyfrowa przedsiębiorstw w Polsce*, "UR Journal of Humanities and Social Sciences", Vol. 30, No. 1.
- Piątkowski M., Szuba T., Wolszczak G., 2014, *Review of National and Regional Research and Innovation Strategies for Smart Specialisation in Poland*, World Bank, Warszawa.
- Plan rozwoju przedsiębiorczości w oparciu o inteligentne specjalizacje województwa podlaskiego 2021–2027+ RIS3 2027+, Załącznik do Uchwały nr 236/4257/2021 Zarządu Województwa Podlaskiego z dnia 24 listopada 2021, <https://strategia.wrotapodlasia.pl> [date of access: 27.11.2024].
- Ropęga J., 2016, *Znaczenie wdrożenia inteligentnych specjalizacji dla rozwoju sektora MSP*, "Nauki o zarządzaniu", No. 3.
- Raport o stanie województwa za 2023 rok, 2024, Urząd Marszałkowski Województwa Podlaskiego, Białystok.
- Sztostak E., 2015, *Inteligentne specjalizacje w rozwoju regionu*, "Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach", No. 209.
- Vanthillo T., Verhetsel A., 2012, *Paradigm Change in Regional Policy: Towards Smart Specialisation? Lessons from Flanders (Belgium)*, "Belgeo", No. 1–2.

- www 1: https://ec.europa.eu/eu2020/pdf/1_PL_ACT_part1_v1.pdf [date of access: 27.11.2024].
- www 2: <https://smart.gov.pl/pl/co-to-jest-inteligentna-specjalizacja/skad-sie-wziely-inteligentne-specjalizacje> [date of access: 27.11.2024].
- www 3: https://funduszeupodlaskie.pl/wp-content/uploads/2024/09/b.-Plan_RI3_2027.pdf [date of access: 27.11.2024].
- www 4: <https://uprp.gov.pl> [date of access: 26.11.2024].