

SMART SPECIALIZATIONS IN THE STRATEGIES OF MEDIUM-SIZED CITIES. EXPERIENCES OF THE ŚWIĘTOKRZYSKIE PROVINCE

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Abstract. Smart specialization strategies, which at the regional level are to serve the implementation of smart growth strategies, are an extremely important tool of innovation policy and strategies. Innovation policy should incorporate elements of scientific, technological and industrial policy. In a narrow sense, innovation policy is a set of documents: strategies, programs, directives, reports, measures and assessments that are supposed to shape it. The article formulates the thesis that without improving the key factor – economic, quality of human capital and social constituting their specific potentials – the implementation of the concept of smart specializations is not possible in weak cities and voivodeships. The aim of the study is to present strategic documents and potentials facilitating the process of selecting and developing smart specializations based on the experience of the region and its medium-sized cities.

Key words: innovation, innovativeness, innovation potential, smart specializations, medium-sized cities.

JEL Classification: O18, O31, R11

1. Introduction

Smart specialization strategies are an extremely important tool of innovation policy and strategies, which at the regional level are to serve the implementation of smart growth strategies. Innovation policy should involve elements of scientific, technological and industrial policy. In the narrow sense, innovation policy is a set of documents: strategies, programs, directives, reports, measures and assessments to shape it. The article formulates the thesis that the implementation of the concept of smart specializations is not possible in weak cities and voivodeships, without improving the key factors: economic, quality of human capital and social constituting their specific potentials. The purpose of the study is to present strategic documents and potentials facilitating the process of selecting and developing smart specializations using the experience of the region and its medium-sized cities.

2. Identifying smart specializations

The concept of smart specializations appeared in connection with the long-term programming of cohesion policy in the time horizon for 2014-2020. *The Europe 2020 Strategy* [2010] became the opening document and the European Commission presented documents describing how regional policy can affect “smart growth”. They are included in two regulations:

- establishing common provisions for the Structural Funds and the Cohesion Fund [*European Commission* 2012];

- regarding the European Regional Development Fund [*European Commission* 2012].

Poland also addressed the issue of smart specializations in program documents regarding the assumptions of socio-economic development. The most important documents include:

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- *Poland 2030. The third wave of modernity. Long-term national development strategy* [2013];
- *National Spatial Development Concept until 2030* [2011];
- *National Strategy of Regional Development 2010-2020. Regions, Cities, Rural Areas* [2010];
- *National Development Strategy 2020: Active society, competitive economy, efficient state* [2012].

One of three priorities of the *Europe 2020 Strategy* is intelligent development, i.e. the development of an economy based on knowledge and innovation as a driving force for Europe's socio-economic development. The initiative for improving framework conditions and access to funding for research and innovation – Innovation Union [European Commission 2010] is of key importance for the successful implementation of smart specializations. Two other initiatives are complementary to the implementation of the smart development model in the European Union:

- *Youth on the move* aimed at improving the results of education systems and increasing the attractiveness of European higher education in the international arena;
- *The Digital Agenda for Europe* enabling the spread of high-speed Internet and access for households and businesses to benefit from the Digital Single Market.

In a special document entitled: *Regional policy contributing to smart growth in the Europe 2020 Strategy*, the European Commission set out how regional policy can contribute to smart economic growth in the EU. The EU assumes that regional policy will support smart growth in all regions, with particular emphasis on science and technology parks as institutions relevant to stimulating innovation and regional development. The document sets out the list of actions that, according to the European Commission, allow achieving the goals of smart growth programmed in the *Europe 2020 Strategy*. The basic action was the implementation of smart specialization, which is to serve the concentration of resources in the most promising areas of comparative advantages of individual regions. Smart specialization is a key concept of regional innovation policy. It promotes effective, efficient and synergistic use of public funds for investments in research and innovation. This means having an innovation-oriented development strategy in the region, which is based on strengths and competitive advantages. This leads to the specialisation of the economy in an intelligent way, based on the resources of the region and determining what specialties can be developed compared to those in other regions.

The smart specialization strategy is, according to this document, a multi-annual strategy focused on well-functioning national and regional research and innovation systems. The distinguishing feature of smart specialization strategies is their strong orientation towards the use of global competitive advantages.

From the point of view of the issues of smart specialization undertaken by Poland in program documents concerning the assumptions of the socio-economic and spatial development of the country in the perspective of 2030, and in the horizon identical to the programming of the EU financial perspective, i.e. until 2020, integrated strategies are very important:

- *Strategy for Sustainable Development of Rural, Agriculture and Fisheries for 2012–2020* [2012];
- *Transport Development Strategy up to 2020* (with a perspective up to 2030) [2013];
- *Efficient State Strategy 2020* [2013];
- *Strategy for Innovation and Efficiency of the Economy "Dynamic Poland 2020"* [2013];
- *Social Capital Development Strategy 2020* [2013];
- *Strategy for the Development of the National Security System of the Republic of Poland 2022* [2013];
- *Human Capital Development Strategy 2020* [2013];
- *Energy Security and Environment 2020 Strategy* [2012].

The *Dynamic Poland 2020* strategy [2013] stated that the need to identify smart specializations at the national and regional level results from the obligation for Poland to fulfill ex ante conditionalities, defined by the European Commission is necessary to indicate support for the development of R&D and enterprises from structural funds of the EU for 2014-2020.

The documents indicating the national specializations in research and innovation are:

- Polish Road Map of Research Infrastructure.
- National Research Program.
- Results of foresight projects.

The issue of matching smart specializations to the regional development context is presented in the document *Dynamic Poland 2020* indicating three most important sources of inspiration. It is important to support the introduction of innovation not only in the field of new industries but also in the search and implementation of innovative solutions in the areas of traditionally key branches of regional or local economies. However, in the longer term, it is important to achieve a diversified structure of the economy, based on the pillar of modern services and industries and technologies with the highest growth potential.

3. Designation of smart specializations

The process of determining smart regional specializations was bottom-up, which is why there was a great diversity in the methodology, the process of their emergence and final effects. Two approaches to emerging regional smart specializations can be distinguished: industry and process. In the industry approach, the focus is on the selection of specific industries or their groups. The process approach departs from traditionally understood industries and is more focused on the relationships between various regional potentials: economic, institutional, social, etc.

Table 1
Smart specializations of voivodeships

Voivodeship	ICT / multimedia	bioeconomy	healthy food	medicine / health tourism	machine and metal industry	energy (including renewable energy)	chemistry	creative industries	business services	construction	logistics and water and civil engineering	high quality of life	woodworking and furniture industry	mining industry	manufacture of products from the so-called plastic	textile industry / design	aviation and space technology	gate to the east	offshore technologies	water economics	Total sum
dolnośląskie	x	x	x	x	x		x							x							7
kujawsko-pomorskie	x	x		x	x			x			x				x						7
lubelskie	x	x		x		x															4
lubuskie		x	x	x	x								x								5
łódzkie	x		x	x		x				x					x						6
małopolskie	x	x				x	x														4
mazowieckie	x		x						x			x									4
opolskie			x		x	x	x			x											5
podkarpackie	x											x					x				3
podlaskie		x															x				2
pomorskie	x	x		x		x		x	x		x							x			8
śląskie			x	x	x					x											4
warmińsko-mazurskie			x										x						x		3
wielkopolskie	x	x	x		x		x	x													6
zachodniopomorskie		x		x	x				x		x										5
świętokrzyskie			x	x	x					x											4
total	9	9	9	9	8	5	4	3	3	4	4	2	2	1	1	1	1	1	1	1	

Source: Dziemianowicz et al. 2014, p. 74

Discussions on the process of identifying and selecting smart specializations coincided with the process of updating voivodeship development strategies and regional innovation strategies, which, according to the provisions of the *Act* [2006] on the *principles of conducting development policy*, are subject to public consultation. The issue of regional specializations was an element given to wide consultations. Table 1 contains smart specializations of voivodeships, which have been grouped into 20 thematic areas.

In individual voivodeships, 2 to 8 smart specializations have been designated and they are the resultant of their potentials. Smart specializations are defined both in sectoral, horizontal and multifaceted terms indicating the need for cooperation not only on the economic but also social and institutional levels. The most frequently chosen smart specializations include information and communication technologies, which were selected by 10 voivodeships. They are defined very differently from understanding the ICT sector (information processing, multimedia, programming, ICT services) to focusing on the computer games industry. Choosing ICT as a key specialization can mean equalizing the level of regional potential in this area. From a strategic point of view, this is the right way forward, it can mean that the development of the information society in Poland has become an important goal of public authorities at the regional level.

It should be borne in mind that the voivodeships also reported specializations for which the European Commission will allocate the largest financial support. *Life science*, sustainable energy (low carbon economy) and ICT have been at the forefront for years.

Analysis of the number of smart specializations in individual voivodeships leads to the conclusion that most voivodeships base their development on fields related to natural resources: bioeconomy, healthy food, health tourism. There are also voivodeships in which traditional industries will continue to play an important role in regional development, e.g. the metal and construction industries in the Świętokrzyskie province. It seems likely that the limitation to a few specializations in the voivodeship was the result of the desire to indicate the actual regional specification and may indicate a mature approach to assessing own potentials. The process of selecting smart specializations in voivodeships is still open, and the monitoring of current smart specializations should contribute to their possible modification.

In Poland, apart from regional smart specializations, national specializations have been selected. The process of identification and selection of national smart specializations began in 2012. The basic documents constituting the starting point for determining national smart specializations were: *Technological industry foresight – InSight 2030 and the National Research*

Program. The national smart specialization is an open document that will be subject to constant verification and updating based on a system of monitoring the occurring socio-economic changes. KIS defines economic priorities in the area of R+D+I, the development of which will ensure the creation of innovative socio-economic solutions, increasing the added value of the economy and increasing its competitiveness on foreign markets. The KIS document indicates 18 national smart specializations, which were defined in the following sections: healthy society, agri-food bioeconomy, forestwood and environmental bioeconomy, sustainable energy, natural resources and waste management, innovative technologies and industrial processes.

The implementation of KIS will take place through the implementation of national programs, e.g. projects, NCB and R, PARP, as well as using EU funds under operational programs, mainly POIR. In Poland, work on smart specializations was carried out at both the national and regional level. It should be emphasized that the work was carried out independently and that no rule was adopted that national smart specializations override the specializations defined at the regional level.

Identifying smart national and regional specializations is not a completed process. Along with the change of socio-economic conditions in the country and voivodeships and the results of rankings regarding innovation, it may be necessary to update the choices made, which is why national and regional innovation strategies should be constantly monitored.

4. Smart specializations in the province and cities

Various research methods and tools were used innovatively in the work on *the Regional Innovation Strategy of the Świętokrzyskie Voivodeship until 2020*. As a result of conducted work, knowledge about the innovation potential of the province was obtained. Świętokrzyskie, constituting the basis for building the competitive position of the region, including regional specializations, including smart specializations. When determining them, it was not enough to identify competitive advantages. The relationships between development areas and key technologies for the development of the region had to be determined. They were looking for such industries that, when supported, would activate the voivodeship. Many possibilities were analyzed, such as *design*, which was later rejected, because it was recognized that in many other regions such areas appear, and the potential of the province. Świętokrzyskie is too small for this.

Regional specializations, including smart specializations, are based on endogenous potentials and serve to increase the competitive position of the

region, including sustainability. Actions taken in the Świętokrzyskie in the area of identification of regional specializations, including smart specializations, have been focused on determining: the unique features and assets of the region, the possibility of gaining competitive advantages and the focusing of regional partners and resources around the vision and challenges of the region. The strategic goal of the RIS3 Research and Innovation Strategy is: *by 2020, the Świętokrzyskie Voivodeship will have a culture conducive to innovation, entrepreneurship and competitiveness, which will help create new and sustainable jobs for highly qualified employees and support economic growth that will be faster than the national average.*

On February 24, 2014, the Sejmik of the Świętokrzyskie Voivodeship unanimously adopted the *Research and Innovation Strategy (RIS3)*. From *Absorption to results – how to stimulate the potential of the Świętokrzyskie 2014-2020 +*. RIS 2014-2020 + is an integral part of the strategic order set out by the *Development Strategy of the Świętokrzyskie Voivodeship (SRWS) until 2020*. SRWS sets the main directions of the voivodeship's development and points to the existing economic potentials. The purpose of RIS3 is to further develop these potentials by choosing smart specializations that will allow to increase the effectiveness of public support granted for the development of innovations related to new technologies and accelerate the economic development of the voivodeship. Currently, four areas of the economy are selected that are smart specializations of the Świętokrzyskie province: **metal and foundry sector, resource-efficient construction, health tourism, modern agriculture and food processing**, which are supported by three horizontal areas: **information and communication technologies (ICT), sustainable energy development and the trade fair and congress industry** (*Strategy RIS3 2014*).

The choice of smart specializations is to be a way to spend public funds more efficiently to increase the impact of the R&D sector and innovation on existing competitive advantages and contribute to faster development. The development of the RIS3 strategy in accordance with the concept of "smart specialization" was a pre-condition (Ex ante conditionalities) for receiving EU funding. If these conditions were not met, corrective action would have to be taken in 2014/2015. The Świętokrzyskie Voivodeship will receive over 1.3 billion EUR in the period 2014-2020, from the entire pool reserved for Poland in the amount of 72.9 billion EUR, including approx. 10 billion EUR for innovation support programs at the national and regional level. New EU funds will be introduced to the economy of the voivodeship mainly through the Regional Operational Program (RPO), which is one of the most important instruments within the region's responsibility to dispose of funds for innovation in 2014-2020.

The Research and Innovation Strategy (RIS3) is a document indicating general areas that require special intervention by the Local Government of the Świętokrzyskie Voivodeship and units implementing or conducting the *Strategy's* assumptions in the sphere of innovation throughout the region. This document only sets out examples of action lines whose implementation would contribute to the implementation of the operational objectives indicated, which in turn would translate into the strategic goal of RIS3. In itself, the *Strategy* does not assume specific initiatives and undertakings that could be implemented within its framework, and thus does not indicate the location, type and scale of these undertakings that in any way could negatively affect the voivodeship's sustainable development or environmental protection.

We are currently witnessing very dynamic socio-economic and technological changes in which cities play a key role. The demographic boom and dynamic urbanization, strengthened by globalization processes and an unprecedented flow of population, capital and information, mean that cities face unprecedented challenges, needing new development strategies. Cities must constantly evolve and adapt to the changing needs of their inhabitants, hence the bastions of innovation were usually cities, which in turn supported the development of their countries (Florida, 2015).

In Polish literature, the concept of a medium-sized city is not explicit. In most cases, a range of 20,000 is given. up to 100,000 residents, as characteristic of this group of urban centers. However, both upper and lower limits of this range raise doubts, changed by the authors depending on research needs. The authors in the conducted research assumed that a medium-sized city is a city with 10,000 to 100,000 inhabitants. residents with a region-forming nature of many connections and being a kind of "relay" of development impulses with a balanced system of socio-economic gravities (labor market, commuting, permanent migrations).

Analyzing the development strategies of medium-sized cities in the Świętokrzyskie Voivodeship, it should be stated that there are no references to the smart specializations adopted in the Voivodeship. Only in Busko Zdrój's Strategy can we find a reference to smart specialization, i.e. health and health tourism.

5. Conclusion

The proposed specializations of Polish voivodeships should be supported by the necessary potentials for their development (the potential of the economy, the potential of science, the potential of technology and innovation, and intellectual potential). To this end, potential deficits and how to make up for them

Table 2

Strategies for medium-sized cities

Town	Strategy Period	Strategy's objectives	Smart specialization reference
Ostrowiec Świętokrzyski	2014-2020	Natural and cultural environment. Economy and infrastructure. Social sphere.	None
Skarżysko – Kamienna	2014-2020	Revitalizing post-industrial areas and modernizing existing industrial plants. Modernization and development of tourist and recreation base.	None
Starachowice	2018-2027	A modern and attractive city with an improved spatial structure. Stimulating the development of Starachowice based on its economic potential.	None
Sandomierz	2015-2025	Creating decent living and development conditions for the inhabitants of the city of Sandomierz. Developing the royal tourist offer.	None
Końskie	2014-2022	Adaptation of technical and spatial infrastructure to development needs. Development of human capital and improvement of social infrastructure.	None
Busko-Zdroj	2015-2025	Development of tourism based on natural resources. Increased entrepreneurship and social activity. The increase in the attractiveness of living conditions.	There is one referring to pro-health tourism
Staszów	2015-2025	The development of entrepreneurship and economic activity. Identity and social activity development. The increase in the attractiveness of housing and the shaping of public spaces in rural and urban areas.	None
Jędrzejów	2015-2020	Developing conditions for creating new jobs, improving infrastructure, and reducing the amount of harmful substances in the air.	None
Pińczów	2015-2022	Creating conditions for the development of entrepreneurship and agriculture. Increasing the tourist attractiveness of the commune by using its natural values and cultural heritage, building tourist infrastructure facilities and its effective promotion.	None
Włoszczowa	2015-2024	Aesthetic and functional public space. Attractive offer of recreation, culture and education. Increase in economic and social activity.	None

Source: Own study based on the development strategy of the above cities, which are annexes to the Resolutions of the City Councils

must be identified. This may result in questioning the advisability of investing in some of the specializations proposed by marshal offices. Such likely actions may be important in the context of obtaining funds from operational programs. Currently, the ideas of smart specializations are updated by voivodeships, ministries and external institutions that interpret the intentions of various levels of administration. There are probably many smart specializations waiting for a final settlement in the area of number, types, sources of financing or levels of responsibility. The implementation of the concept of smart specializations must be supported by changes in economic structures, the quality of human and social capital in the economically weakest voivodeships, including Świętokrzyskie. New challenges are also waiting for medium-sized cities, which, e.g. in the Świętokrzyskie Province (except Busko Zdrój) have not chosen and focused on smart specializations.

Identification of *smart* specializations in the province medium-sized Świętokrzyskie and its cities should provide:

- focusing policy and investment support on key regional challenges and needs to ensure knowledge-based development;
- economic strength of identified regional assets;
- use of strengths, competitive advantage and the potential for excellence of the region;
- the possibility of obtaining lasting competitive – identification of research areas in the region;
- monitoring according to smart specializations.

Probably, identification of smart specializations in the province Świętokrzyskie and its medium-sized cities will be conducive to the partner system of co-management for the development of research and innovation at the regional level, contributing to the development of the Świętokrzyskie Province.

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