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# THE ROLE OF REGIONAL AUTHORITIES' POLICY IN SUPPORTING INNOVATION POTENTIAL OF POMORSKIE VOIVODESHIP*

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**Abstract:** Regional-level authorities are increasingly involved in designing their own strategies to support and enhance innovative local dynamics and improve the performance of their regional innovation systems. The aim of the paper is to assess the role of regional authorities' policy in building innovation capacity of Pomorskie Voivodeship. As research methods, the author used descriptive analysis, analysis of strategic documents and data analysis. The results show that local government authorities of Pomorskie Voivodeship are active in supporting innovativeness of the region. Cluster policy and bottom-up process of defining smart specialisations may be assessed positively. However, a lack of separate governance structures of the regional innovation system, such as planning, organization, motivation and monitoring should be recognized as unfavourable. Finally, it is still necessary to concentrate measures on meeting needs necessary for an effective commercialization of innovative solutions.

**Keywords:** Innovation potential, regional authorities, regional innovation policy

**JEL codes:** R58, R11, O02

## Introduction

Innovation has been and continues to be an important topic of study for a number of different disciplines, including economics, business, engineering, science, and sociology. The importance and role of knowledge assets in determining competitiveness, productivity, and finally output growth is a frequent theme in the

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(spatial and non-spatial) literature (Harris 2008: 16). Recognition of the importance of learning and innovation to regional development leads to the question "how can innovation be fostered and supported?" The regional policies take differing approaches to support for innovation. In some cases, innovation is at the heart of regional policy, with the emergence of "regional innovation policies"; in other cases, regional policy undertakes selective intervention in support of certain aspects of innovation; and in yet other cases, the role of regional policy restricts itself to assisting a supportive business environment as a framework for regional innovation activity (Bachtler *et al.* 2005: 1).

The aim of the paper is to examine the innovation potential of Pomorskie Voivodeship and assess the role of regional authorities' policy in building innovation capacity of the region. Although low percentage of Pomerania's firms implements innovation, those firms, which do it, achieve one of the best results in a country. Since 2006, Pomorskie Voivodeship is a leader in terms of a share of new or substantially modernised products in total revenues. The region has one of the highest input- and output-index of innovativeness among Polish regions (Golejewska 2013). In order to achieve the main objective of the paper, the following detailed objectives are expected to be met: 1. presentation of literature review of regional innovation potential and the role of regional authorities' policy; 2. analysis of innovation potential of Pomorskie Voivodeship; 3. analysis of regional authorities' activities in terms of implemented strategies 4. implications for regional policy. The analysis of potential covers the period 2005–2015. The research is based on data from the Local Data Bank maintained by the National Statistical Office (NSO), Eurostat Regional Database, the Self-Government of the Pomeranian Voivodeship and the Pomerania Development Agency. As research methods, the author used descriptive analysis, analysis of strategic documents and data analysis.

## 1. Theoretical framework

The concept of innovation potential is a critical, but often overlooked, element in the discussion of innovation. Defining and understanding the potential is important because it is the source of all innovations. Potential, as defined by Cheymetova *et al.*, means *a source of opportunities, resources and stock, which can be activated and used to solve a problem or achieve a certain goal* (Cheymetova & Nazmutdinova 2015: 79). The term "innovation potential" is used alternatively to innovation capacity (Kasperkiewicz 2009; Nowakowska 2009a, 2009b) and drivers of innovation (Strahl 2010). Guzik defines it as *the capacity to generate diffusion and consumption of innovation* (Guzik 2004: 2). According to Poniatowicz (1999), regional innovation potential means a set of defined factors characteristic for a given region affecting its capacity to participate in innovation processes. In the literature, most frequently mentioned are simply elements of innovation potential, such as innovative firms; available technologies, patents, know-how; R&D entities; intermediary, supporting and financing institutions; organisational and co-operation relationship between

the above mentioned institutions, and programming and legislative documents concerning innovativeness. According to Koshatzky, elements of the potential are: supply (suppliers of technologies), innovative services, strategies and policies, regional environment, relations between companies, internal relations in firms and R&D activities (Koshatzky 1997, quoted after Siłka 2012).

Region can be regarded as innovation incubator which provides appropriate conditions for setting up and development of innovative companies as well as pro-innovation behaviour among other important entities of that territory. Recent literature calls into question that innovations emerge from the single inventor or even in whole internally within a firm or organization (Amara *et al.* 2003; Wolfe 2009; Johnson 2011). Knowledge-based transformations should not be understand as results of the actions of firms alone, "but as a structural characteristic of knowledge-based economies" (Leydesdorff 2010: 4) and "a social process that depends on interaction and learning" (Hall 2010: 10). The literature indicates various "territorial innovation systems" (Lagendijk 1997; Moulaert & Mehmood 2010). Their typology often includes industrial districts (focused on growth dynamics of small and medium sized enterprises), innovative milieu, regional innovation systems, clusters and learning regions (Lagendijk 1997; Porter 2001; De Propris & Crevoisier 2011). Cooke explains regional innovation system as a combination of regional innovation policies, innovation environment, innovation potential, and innovative network (Cooke 1992). The regions with an institutional framework that facilitates learning and knowledge exchange as well as provides a common framework for a variety of interactions become more successful in global competition (Asheim 2000; Storper 1997, quoted after Zakauskaite 2013: 16).

Regional innovation system is an essential element of integration of science and economy. The system will be of poor quality without taking into account important role of local authorities. The approach of local government bodies to the problem of innovation development presents its innovation policy embodied in legal acts and documents. Innovation policy includes elements of R&D policy, technology policy, infrastructure policy and education policy. It can be more or less selective (Edquist 1999). Local government authorities in most cases recognize their role in developing innovative environments. On the one hand, in accordance with the laws, they develop Regional Innovation Strategies, on the other hand, they remain active in *inter alia* contracting the Regional Operational Programmes. The basic aim of Regional Innovation Strategies is to support regional or local authorities and other regional development organizations in defining and implementing an effective system of supporting innovativeness in the region (Kowalik 2014: 122). A particular case of local authorities' activities in building an innovative economy is public financial support to different pro-development institutions, such as technology transfer centres, science and technology parks and entrepreneurship incubators. Proper functioning of those institutions and implementation of their economic objectives requires adequate financial resources which can't be wholly obtained on a commercial basis. Then supporting their actions from public funds administrated mainly by local government authorities may be necessary (Brezdeń *et al.* 2010).

## 2. Economy and innovation potential of Pomorskie Voivodeship

Pomorskie Voivodeship is characterized by openness of economic relations, as evidenced by, among others, high value of exports (third place in the country) and a significant share of high technology products in export (second place in the country). Pomorskie Voivodeship, apart from high economic activity of inhabitants, is characterized by substantial investment including business sector (fourth position in the country) and high (as compared to domestic average) expenditures per industrial enterprise performing innovation activities (third position in the country). The region belongs to the group of Polish regions in which high innovation inputs correspond with high innovation outputs (Golejewska 2013: 95). When compared with the Visegrad Group regions, Pomorskie is classified as a region with medium levels of both indexes (Golejewska 2014). Regional Innovation Scoreboard 2016 classified the region as a moderate innovator (Hollanders *et al.* 2016: 4).

Table 1 presents innovation potential's indicators for the Pomeranian region in 2005–2015.

The share of population with tertiary education is steadily increasing. At the end of the period considered, it reached the 28.1$ level. There are 27 higher education institutions in the region which accounts for over 6 per cent of all the institutions in Poland. The most important universities in Tri-city are: Gdańsk Technical University, University of Gdańsk and Gdańsk Medical University. Foreign students account for slightly over 2% of the overall number of students which is below the national average.

The share of HRST (Human Resources in Science and Technology) remains also on an unsustainable upward path. The share of R&D personnel and researchers in active population is rather stable and low in comparison to Mazowieckie (1.54% in 2013) or Małopolskie (1.23% in 2013), however above the national average. In 2013, R&D expenditure of the region as a share of GDP was more than two times lower than the EU average (2.03% of GDP), but higher than the national average (0.87% of GDP). In the region, the share of expenditure rose from 0.51% in 2005 to 0.98% of GDP in 2013. In 2014, the share of expenditures on innovation activity in Pomeranian enterprises in national expenditures amounted to 5.1% and was much lower than in the capital region (33.3% of total expenditures). Throughout the whole period considered, the share of expenditures on the innovation activity in companies in gross expenditure on fixed assets did not exceed dozen or so per cent. The share of innovative companies in the total number of enterprises remains one of the lowest in Poland (twelfth position in a country). Pomeranian firms very rare decide to co-operate implementing innovations. In 2015, industrial companies cooperating within clusters or other formalized co-operation represented only 4.3% of innovation active enterprises which was below the national average (6.6%).

Number of entities active in research is steadily increasing. It rose from 54 in 2005 to 196 in 2014. Throughout the analyzed period the number of patent applications did not exceed 10, except 2011. In each year concerned it was lower

Table 1. Innovation potential's indicators for the Pomeranian Region in 2005–2015

| Lp. | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 16.6 | 17.5 | 18.5 | 19.5 | 21.1 | 22.7 | 23.9 | 25.9 | 26.7 | 26.5 | 28.1 |
| X2 | 13.0 | 14.4 | 15.4 | 16.0 | 17.3 | 17.9 | 19.6 | 20.5 | 20.9 | 20.3 | 22.1 |
| X3 | 0.77 | 0.86 | 0.78 | 0.78 | 0.81 | 0.8 | 0.88 | 0.86 | 0.86 | : | : |
| X4 | 0.51 | 0.51 | 0.5 | 0.56 | 0.51 | 0.6 | 0.7 | 1.07 | 0.98 | : | : |
| X5 | : | 11,0 | : | 14,1 | : | 13,9 | 8,7 | 6,0 | : | : | : |
| X6 | : | 26,6 | : | 20,9 | 15,4 | 14,3 | 15,2 | 10,9 | 12,5 | 12,3 | 12,6 |
| X7 | 21.4 | 11.9 | 17 | 8.8 | 5.3 | 4.8 | 5 | 3.6 | 3.9 | 5.3 | 4.3 |
| X8 | : | : | : | 6.1 | 2.6 | 5 | 4 | 3.5 | 2.8 | 2.1 | 2.4 |
| X9 | 54 | 53 | 58 | 58 | 64 | 102 | 128 | 157 | 183 | 196 | : |
| X10 | 2,1 | 1,1 | 7,3 | 5,0 | 5,0 | 7,0 | 10,9 | 8 | : | : | : |
| X11 | 31,0 | 33,5 | 37,4 | 31,9 | : | 49,8 | 47,8 | 46,9 | 23,6 | 31,8 | 21 |
| X12 | 20,5 | 19,3 | 20,2 | 19,8 | 16,8 | 16,5 | 15,4 | 15,7 | 16,2 | 16,5 | : |
| X13 | 1.6 | 1.6 | 2.1 | 2.1 | 1.5 | 2.1 | 1.7 | 1.5 | 1.9 | 1.9 | 1.4 |
| X14 | 26.8 | 26.6 | 28 | 32.1 | 31.5 | 32.2 | 33.5 | 34.2 | 33.1 | 32.2 | 32.7 |

Source: Own elaboration based on Local Data Bank and Eurostat Regional Statistics.

X1 – population with tertiary education, percentage of 25–64 years age class;
X2 – persons with tertiary education (ISCED) and employed in science and technology (HRST core), percentage of active population;
X3 – total R&D personnel and researchers, percentage of active population;
X4 – total intramural R&D expenditure (GERD), percentage of GDP;
X5 – expenditures on the innovation activity in companies in gross expenditure on fixed assets;
X6 – average share of innovative companies in in the total number of enterprises;
X7 – innovating SMEs collaborating with others (percentage of all SMEs), industry
X8 – innovating SMEs collaborating with others (percentage of all SMEs), services;
X9 – entities active in research;
X10 – patent applications to the EPO per million inhabitants;
X11 – share of new or substantially modernized products in total production sold in industrial companies;
X12 – share of net revenues from sales in high and medium-high tech enterprises;
X13 – employment in high-technology manufacturing, percentage of total employment;
X14 – employment in knowledge-intensive services, percentage of total employment.

than the national average. In 2012, the number of region's patent applications represented only 3.4% of the total volume. The region has the highest shares of new or substantially modernized products in total production sold in industrial companies. Unfortunately, the share of net revenues from sales in high and medium-

high-tech enterprises remains far lower than the national average, only 16.5% in 2014. Employment in high-technology manufacturing is much lower than in knowledge-intensive services but higher than the national average. In 2015, the share of employment in high-technology manufacturing amounted to 1.4% and in knowledge-intensive services to 32.7% of total employment.

## 3. Innovation policy of Pomorskie Voivodeship

### 3.1. *Regional Innovation Strategy for Pomorskie Voivodeship*

The regional authorities of Pomorskie Voivodeship assume the role of inspirer and co-ordinator of interventions aimed at the development processes of the region. Development work on *Regional Innovation Strategy for Pomorskie Voivodeship* (RIS-P) was initiated in the year 2002. Three main strategic fields of the strategy implementation were: increased capacity of firms to develop innovations, increased usage and development of the regional R&D potential, establishment of the implementation system of the RIS-P as the basic condition of the main aim of the strategy feasibility. There were four horizontal objectives adopted in the RIS-P:

- building consensus and partnership for the development of information society and innovation in the region,
- encouraging innovation culture and pro-innovative education,
- development support of areas outside the Tri-city agglomeration through innovation,
- development support of SMEs through wide use of the innovation potential of the Tri-city agglomeration (RSI 2004: 29).

The timescale of the strategy covered nine years, from 2005 to 2013. Its implementation process started in May 2005 and was divided into two stages. Initial stage (2005–2006) was devoted to development of the RIS-P system, the second period was dedicated to the fulfilment of the main aims of the project and the related measures (Sekuła 2012: 344). In this period, in Pomorskie Voivodeship were created the Gdańsk Science and Technology Park and the Pomeranian Science and Technology Park in Gdynia. The Regional Innovation Strategy was implemented *i.a.* through the following projects: "InnoPomerania – campaign promoting entrepreneurship, innovativeness and creativity in the region", "InnoPomerania – partnership for innovation" and "Inno-PhD student – grants for doctoral students".

Strategic documents such as innovation strategies should be focused on generation and strengthening regional innovation systems. A network of business support institutions in Pomorskie Voivodeship includes about 120 entities such as regional development agencies, local government entities, associations and foundations for support of entrepreneurship, business incubators, science and technology parks, technology transfer centres, loan, guarantee and venture capital funds etc. (PARP 2011: 3). Potential of business advocacy infrastructure in the region is not used in an efficient way and the offer of business support institutions is not adequate to the

needs of entrepreneurs. There is also lack of support for establishing co-operation between enterprises and R&D institutions, services supporting universities in the process of focusing research on needs of the economy and in the process of technology transfer. Financial potential of institutions supporting development of innovation and entrepreneurship (including loan, guarantee and venture capital funds, banks *etc.*) is substantial, however worrying is a lack of co-ordination of activities of such entities, as well as little knowledge of the scope of their activities among enterprises and scientists (Regionalny Program Strategiczny… 2013: 10).

The assessment of the innovation strategy made for Pomorskie Voivodeship on the basis of areas of activity (development of innovation and entrepreneurship centres; development of financial instruments towards support for new business start-ups and high risk innovative projects; boosting and promotion of technological entrepreneurship) and addressees of the policy (entrepreneurs, business environment institutions, research and development units, local authorities) was satisfactory. The RIS-P to a large extent covered all categories of stakeholders, and well – fields related to development of innovation and entrepreneurship centres, as well as promotion of technological entrepreneurship. It should also be noted that concrete actions in terms of creation of groupings of innovative firms in special economic zones have been assigned to regional authorities (*PARP* 2013: 61). Some concerns included a lack of separate governance structures of the regional innovation system, such as planning, organization, motivation and monitoring. One of the main complains about the strategy was the fact that it lacked the reference to the Regional Development Strategy (Gorzelak *et al.* 2006: 108).

### 3.2. *Pomorskie Voivodeship Development Strategy 2020*

The first priority of *Pomorskie Voivodeship Development Strategy 2020* is modern economy (Strategia Rozwoju Województwa Pomorskiego 2020 2012). The modernization of the region's economy creates opportunities to build good economic (external investment, foreign trade, attracting and implementing innovation), educational and scientific, as well as social links (including cultural). The strategy is implemented through regional strategic programmes. Economic issues, including co-operation of science and business, regulates Regional Strategic Programme "Pomeranian Creativity Port", according to which "modern economy" – the main aim of the strategy, should be achieved through increase in efficiency of companies and improvement of competitiveness of higher education. The first objective should be achieved through:

- dissemination of innovation in enterprises and transfer of knowledge into the economy,
- support for cluster initiatives and projects implemented by clusters,
- support for foreign expansion of enterprises,
- attracting external investment,
- ensuring broadband access, including ultra-high speed networks.

Under the second operational objective the following measures are provided:

- internationalization of higher education and the export of educational services,
- inter-university cooperation within the region,

– cooperation of universities and employers to improve the quality of education,
– support for sub-regional centers for vocational education.

The programme is a continuation of the thematic area of RIS-P which has been adjusted to current challenges and conditions for regional research and innovation strategies for smart specialization. The programme shall be implemented by annual implementation plans. Within the framework of the "Pomeranian Creativity Port", 6 strategic projects are to be implemented. These are:

– "Invest in Pomerania" (PLN 20 million), with the objective of expanding and improving system of attraction and support for foreign direct investment throughout the region;
– "Pomerania Export Broker" (PLN 40 million), focused on increasing the share of the Pomeranian enterprises on foreign markets;
– "Pomeranian Knowledge Triangle" (PLN 13,5 million), aimed at providing high-class research base for sectors with the greatest potential for development/smart specialization; including 4 sub-projects: Research Centre of New Technologies for Prevention and Treatment of Civilization Diseases and Ageing Period, Center for Innovative Technology Applications in Smart Urban Agglomerations (SmartLab), Oil and Gas Laboratory and National Centre for Research on the Baltic Sea;
– "Study in Pomorskie.eu" (PLN 12 million), focused on consistent and effective promotion of Pomeranian universities;
– "Innovation Centre" (PLN 43 million), aimed at fostering and supporting regional cooperation between universities and businesses, and increasing the number and quality of research and implementation projects;
– "Baltic Network of Knowledge and Entrepreneurship" (PLN 90 million) activating the mechanism of cooperation between universities and enterprises enhancing the responsiveness of education to labour market needs and knowledge transfer from universities to the economy by creation of a facility playing a function of Centre of Knowledge and Open Science including the Creative Space and Network of Dispersed Laboratories, the Centre of Knowledge and Technology Transfer, Pre-incubators Spin-Off, the Business Park and the Centre of Graduate (Regionalny Program Strategiczny… 2013: 69–74).

### 3.3. *Regional Programme for Supporting Clusters in Pomorskie Voivodeship in 2009–2015*

Pomorskie Voivodeship was the first Polish region which in 2009 approved *Regional Programme for Supporting Clusters in Pomorskie Voivodeship in 2009–2015* (Regionalny Program Wspierania Klastrów… 2009). The programme indicates the necessity to support interactions and relations between companies and entities from the R&D sector and between administration, in order to prepare regional companies to compete on international markets (PARP 2011: 4–5). It assumes support for creation not only of key clusters but also of clusters identified as sub-regional and potential technological networks, which, with relevant substantive and financial support, may become key clusters in the future and build region's competitive advantage.

Sub-regional clusters shall have potential of local and sub-regional centres, while clusters in the embryonic phase (technological networks) are those which have the chance for intense development in the future based on modern technologies and cooperation with research and development institutions. There have been more than twenty clusters identified in Pomerania region. To the key clusters, selected in the call for proposals, belong: INTERIZON – the Pomeranian ICT Cluster, the Baltic Eco-Energy Cluster and the Gdańsk Construction Cluster. The other clusters operate in such areas as renewable energy, tourism, transport and logistics, finance sector, maritime sector, bio-technology, sailing, amber manufacturing, social economy, leisure industry *etc.*

To implement the programme, the local government, together with the Gdańsk Institute for Market Economy, undertook a number of measures to stimulate cooperation and develop partnership projects implemented then by companies in a particular branch of industry. Branches invited to work together had been identified and indicated as development potential of the region. Invaluable effect of this co-operation, in addition to concrete projects, which were implemented and co-financed by the funds provided under the *Pomerania Regional Operational Programme 2007–2013* (introduced preferences for cluster projects in the form of additional points while applying for funds) was creating broadly understood trust among regional partners. Co-operation and development of positive bonds between Pomeranian entrepreneurs, research institutions and universities stimulated development of entrepreneurship in the region and affecting its competitiveness and quality of life of its residents.

Development of clusters depends to a large extent, on the adopted implementation system of the EU Structural Funds. The co-financing has been foreseen for construction of laboratory infrastructure, execution of research-development projects, creation of certification systems, promotion and internationalization, market analyses, generation and processing of information, construction of educational infrastructure and creation of new curricula, as well as training and consulting. The adopted *Regional Programme for Supporting Clusters in Pomorskie Voivodeship in 2009–2015* assumed the possibility of financing projects related to establishment and development of clusters under sub-measure 1.5.2 of the *Pomerania Regional Operational Programme 2007–2013*: "Support for Regional Pro-innovative Processes" and under sub-measueres 8.1.1, 8.1.2 and 8.2.1 of the *Human Capital Operational Programme 2007–2013*.

New directions for the development of cluster policy, following the decision to discontinue the programme, defines nowadays the "Pomeranian Creativity Port". Support is planned mainly for concrete projects resulting from cluster cooperation. This concerns in particular the thematic areas of the programme in which cluster projects generating high value added are expected. The actions aiming at identifying new and verification of the effectiveness of existing key clusters are planned. It is assumed that existing key clusters should participate in the identification process of Pomerania smart specialisations.

### 3.4. Regional smart specialisations

The notion of smart specialisation is an important framework in the structural funding period 2014–2020 (Czyżewska & Golejewska 2014). There has been a bottom-up process of defining smart specialisations implemented in Pomorskie Voivodeship. Smart specialisations are proposed by so-called partnerships, *i.e.* interested economic and research communities and selected by regional authorities according to the highest development potential. Identification process of smart specialisation should be repeatable, initiated by the Board of Pomorskie Voivodeship, as a rule, every two years. There have been four smart specialisations identified in Pomorskie Voivodeship. Those are:

- offshore- and port and logistic- technologies: environmentally friendly explorations of marine resources, specialized vehicles, devices and constructions in the marine environment, underwater equipment and systems, energy-efficient and low-carbon technologies in sea areas *etc*.,
- interactive technologies in information environment: multimodal human-machine interfaces, embedded systems for intelligent spaces, Internet of things, data transfer, databases, security of data, cloud computing *etc*.,
- eco-efficient technologies in production, transmission, distribution and consumption of energy and fuels and in construction: energy storage, vehicles with alternative drives, energetic use of waste *etc.*,
- medical technologies concerning civilization diseases and ageing period: complex and differentiated solutions in prevention, diagnosis and therapy, systems of care for people with disabilities and the elderly *etc.* [http://drg.pomorskie.eu/inteligentne-specjalizacje].

The concluded agreements specify objectives, material scope, principles of cooperation, rules for accessing financing form the EU structural funds and monitoring rules. As agreed, public support will be directed primarily onto implementation of innovative and R&D projects strengthening the potential of a given specialization. The *Pomerania Regional Operational Programme 2014–2020* provides even support solely for enterprises active in the areas of smart specialisations (the Priority Axis 1 "Commercialization of knowledge") or gives a preference to such enterprises (the Priority Axis 2 "Enterprises").

### 3.5. Use of the EU structural funds for innovative projects in SMEs

Although low percentage of Pomerania's firms implements innovation, those firms, which do it, achieve one of the best results in a country. In the region there is a potential and at the same time a need for funding for innovative projects. Regions are managers of Regional Operational Programmes supporting human capital and an innovative economy and based on priorities of regional innovation strategies. In the programming period 2007–2013, the majority of innovative projects co-financed under the Pomerania Regional Operational Programme has been implemented in manufacturing. Only a small part of them were in high-technology sectors, that are very important for diffusion of innovation. A totally different situation was observed

in services. Unfortunately, only a small part of projects related to investment in firm's R&D activity. Most of them focused on implementation activity. The changes in enterprises focused mostly on incremental innovations which change the scale of the firm but are not unique to the branch (which meets the definition of innovation in the ROP). In Pomorskie Voivodeship, enterprises refrain from cooperation when implementing innovative projects, which prevents from full exploitation of innovation capacity of the region. The results show high concentration of projects in Tri-city agglomeration and adjacent districts, which confirms the role of agglomeration in promoting technology transfer and innovation (Golejewska & Gajda 2015). In the current EU programming period, support is directed to enterprises implementing innovative solutions, as well as to enterprises starting up or developing their R&D activity and cooperating with universities and scientific institutions (with an enterprise as a project leader). *The Pomerania Regional Operational Programme 2014–2020* also supports new enterprises (start-ups) based on innovative solutions, including spin-offs and spin-outs, which will be financed through seed and venture capital. Beside the repayable instruments, the use of grants and mixed instruments is envisaged (Regionalny Program Operacyjny Województwa Pomorskiego… 2015: 21; Golejewska & Gajda 2015).

## Summary

Quantitative potential of Pomeranian enterprises is insufficiently exploited due, *inter alia*, to their insufficient cooperation, unmet modernization and training needs and limited access to capital. Support for companies should be aimed at their modernization in such aspects as improvement of eco-efficiency, international links including expansion into foreign markets, focusing on innovations and areas of intelligent specialisations, better use of the potential of digital technologies, as well as improvement of effectiveness of production processes.

The results show that regional authorities of Pomorskie Voivodeship are active in supporting innovativeness of the region. Developed cluster policy, together with a pilot – at national level – project in the form of identification of key clusters should be evaluated positively. It is a tool focused on development activities towards concentration of resources which is an essential prerequisite for development of regional smart specialisations. However it is still necessary to identify new and verify the effectiveness of existing key clusters. The results of the analysis also confirm that there is still a mutual distrust between companies in Pomorskie Voivodeship as regards innovation activity and also that they do not derive sizeable benefits from cooperation, given the number of patents. It should be considered as important to support more effectively cooperation in and outside the clusters. A bottom-up process of defining smart specialisations implemented in the region can be considered positive, however effects of their implementation still remain to be seen. A point of concern is that projects co-financed by the EU funds in 2007–2013 were mainly implemented in low-technology sectors and focused on implementation

activity of SME-s. In the current EU programming period it should change because preferred are firms starting up or developing their own R&D activity. There's an opinion that outlays for innovative activities in companies are "artificially driven" by the EU funds. Regional authorities should provide instruments enhancing R&D investments in firms to better prepare them for changes envisaged in the New Financial Perspective, after the year 2020.

A lack of separate governance structures of the regional innovation system, such as planning, organization, motivation and monitoring can be recognized as unfavourable. It is also important to implement stronger linkages between strategic documents. The main challenge for the regional authorities should be to promote pro-innovative behaviour in a wider population of enterprises, especially to the use of specific potential of the region and better linking public and private expenditure in this respect. According to the author, support for establishing cooperation between enterprises and R&D institutions should be strengthened. Strategic projects which are significant for creation of modern economy require constant monitoring. There are still not enough bodies responsible for promotion of R&D&I offer among enterprises and cooperation between science and business (Regionalny Program Strategiczny... 2013: 11). Regional innovation centres expect from the authorities systemic support and provision of tools ensuring protection of projects' intellectual property rights (Golejewska 2016). It is necessary to concentrate measures on meeting needs necessary for an effective commercialization of innovative solutions. Finally, more emphasis should be put on promotion of local innovative firms and use of their potential in projects implemented by and for regional and local authorities.

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