
The Role of Cluster Policy in Shaping Regional Competitiveness: The Case of Poland

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Anna Horzela¹, Sławomir Olko²

Abstract:

Purpose: The purpose of the paper is to identify the strategic goals of the implemented cluster policy in the EU and in Poland, using the example of a selected region, the Silesian Voivodeship.

Design/Methodology/Approach: Using the data obtained from national documents on cluster policy, a comparative analysis was used for the research. Based on the conducted literature research, the following thesis was formulated: Cluster policy contributes to increasing the competitiveness of regions by stimulating cooperation in defining strategic development goals and cooperation in achieving these goals.

Findings: The first part of the work presents the theoretical foundations of cluster policy, in particular its essence, definitions and division. Attention was also focused on the identification of documents relating to cluster policy in Poland. In the research part, the authors conducted a comparative analysis of selected documents concerning European and Polish cluster policy.

Practical Implications: Formulating a cluster policy at the national and regional level that takes into account increasing the competitiveness of the region.

Originality/value: In theoretical aspect, the paper organizes the current state of knowledge in the field of Polish cluster policy, in particular taking into account the Silesian Voivodeship. The presented research aspect is a source of knowledge about the competitiveness of the studied region, taking into account the applicable cluster policy. In the research part, the authors argue that it is important to properly adjust the cluster policy to a given region in order to increase the level of productivity, but above all the competitiveness of the entire economy.

Keywords: Cluster policy, cooperation, development strategy, European Union, regional competitiveness, Silesian voivodeship.

JEL codes: O31, R11.

Paper type: Research article.

¹Silesian University of Technology; Corresponding author; Anna.Horzela@polsl.pl;

²Silesian University of Technology; Slawomir.Olko@polsl.pl;

1. Introduction

The concept of a cluster, especially an industrial cluster, has gained great popularity in the last two decades, both in the scientific literature and in economic practice. Industrial clusters are considered key players in economic growth and innovation in the modern world (Rune Njøs and Stig-Erik Jakobsen, 2016). There is a belief among economic practitioners and a large part of economists that clusters can constitute, under certain conditions, determinants of regional development. Thus, they have become a natural object of interest for people responsible for shaping economic processes at various levels, starting from the global level, through the national and regional level, to the local level. One of the consequences of the popularity of these concepts was the implementation at various levels of government of more or less coordinated activities aimed at the development of clusters, including the development of regions, by stimulating the formation of industrial clusters.

A cluster policy (or cluster-based policy) has emerged, which is now a key point in local and regional policies implemented by authorities in individual countries around the world. It was noticed that the participation of innovative networks of enterprises is of great importance in creating economic development and is the driving force of the economy (Drelich-Skulska, Jankowiak, and Mazurek, 2014). The basis of cluster policy is the idea of departing from an individual approach to an enterprise in favour of its relationship with the environment and the conviction that public support should be directed to groups of enterprises and not to individual companies. This approach lowers transaction costs and facilitates learning processes. Government activities in the field of creating a network of connections between local entities accelerate their competitive advantage and improve the effectiveness of their functioning (Weresa, 2014).

This research presents the role of cluster policy in shaping the competitiveness of regions on the example of a selected region of Poland. After this introduction, the second part of the paper contains a short review of the literature on the essence and definition of cluster policy, the three-stage division of cluster policy, ending with the identification of documents relating to European and Polish cluster policy. Based on the conducted literature research, the following thesis was formulated: *Cluster policy contributes to increasing the competitiveness of regions by stimulating cooperation in defining strategic development goals and cooperation in achieving these goals.*

2. Literature Review

According to the definition, cluster-based policy is a set of instruments and actions used by authorities at various levels to increase the competitiveness of the economy (Brodzicki *et al.*, 2004). Cluster policy can be undertaken independently of the sector, but sectoral support influences the functioning of clusters in a given sector (Popova *et al.*, 2015). This task is carried out by developing new or stimulating the development of existing clusters, mainly at the regional level (Drelich, Jankowiak,

and Mazurek, 2014). This policy is based on the assumption that the main driving force is the market (Klemens, 2018), based on cooperation and collaboration of various entities (Brodzicki and Kuczevska, 2012). Policy based on clusters is of strategic nature and its main goal is to create new values and stimulate development and innovation. It can be understood in a broader or a narrower sense. In a broader scope, it covers various types of policies and instruments that support the development of the cluster. Policy that affects clusters is not always referred to as cluster policy. More often it is referred to as regional policy, research and innovation, industrial policy or SME policy (European Communities, 2007). On the other hand, in a narrower sense, cluster policy includes activities consisting in supporting cluster coordinators, whose work contributes to the development of a given network of business entities and environmental institutions (Dzierżanowski, 2006).

The Polish cluster development policy has a mixed dimension and is implemented both at the regional and national levels. Cluster policy is not an independent policy, it is an element of innovation policy (Margiel, 2014). The key to shaping the cluster policy is defining and understanding the cluster, but we can deal with the difference in definitions formulated by the scientific community and definitions for the needs of shaping the cluster policy. L. Knop (2013; 2015) conducted an in-depth analysis of the cluster category presented in the world literature, pointing to the differences and evolution of this concept. Based on the analyses, the author indicates that the cluster can be defined as: "... a group of subjects from different backgrounds: business, science, self-government and civil society, operating in a specific ecosystem, focused on a specific territory and/or around a specific specialization.

The synergy effect is achieved through formal and informal relationships, shaped by the cluster's potential and social capital, which not only describe the way in which the cluster operates, but also emerge and develop on the basis of joint ventures (including innovations), knowledge exchange and competence development" (Knop, 2013). On the other hand, the practical definition of a cluster developed for the implementation of the cluster policy requires a detailed definition of its organizational form, the minimum number of members, the sector they represent (business, research units, administration, civic sector) and their organizational form. As part of the 2015 inventory of clusters in Poland, it was found that a cluster can be considered a network of cooperating entities that meets, inter alia, three key criteria:

- has at least one valid document proving its existence, such as: contract, agreement, statute or other equivalent document,
- has a specific economic specialization,
- consists of representatives of the business and science sector (PARP, 2015).

In Poland, the documents guiding the cluster policy include the report "Poland 2030", which forms the basis for the Long-term National Development Strategy and the National Strategy for Regional Development 2030. Other documents related to

the cluster policy are the National Reform Program for the implementation of the Europe 2020 strategy with the 2020/2021 update and the 2030 Productivity Strategy.

In cluster policy, a three-level division of clusters is adopted (Bucka, 2017). First of all, these are the Key National Clusters of significant importance for the country's economy and high international competitiveness. These clusters have a high scientific and technological potential. These clusters are selected at the country level based on criteria concerning e.g., critical mass, innovation or development potential, planned and existing cooperation, as well as the experience and potential of the cluster coordinator (Frankowska *et al.*, 2020). The second group is the Key Regional Clusters (KRC), which constitute the greatest competitive potential for the region's economy. KRC is part of regional smart specializations related to national and regional innovation strategies, which are designed to achieve a competitive advantage through the synthesis of strengths in research and innovation with business needs. They also aim to take advantage of emerging market development opportunities (European Parliament and the EU Council, 2013).

A characteristic feature of key national and regional clusters is greater research and development intensity, as well as greater use of knowledge and strong links between enterprises, universities and research institutions. The development of such interactions stimulates the innovativeness of enterprises operating within the cluster and enables the commercialization of knowledge and technology transfer (Dzierżanowski, 2012). The last group are Local Clusters, which are characterized by the stimulation of bottom-up formation and involvement of cluster participants in the processes of strategic planning of the development of joint cluster undertakings at the local level.

The effect of the cluster policy should be, first of all, an increase in the competitiveness of the region. In the practical approach to measuring and comparative analysis of the competitiveness of regions, the European Regional Competitiveness Index (RCI) has been used since 2010, which includes three dimensions: basic dimension - 40 indicators, efficiency dimension - 18 indicators and innovation dimension - 26 indicators (RCI, 2019). Such an approach emphasizes, above all, the competitiveness of the region as a place to live for its inhabitants, and then the dimensions related to the regional product (the efficiency and innovation dimension) are analysed, which also indirectly serve the inhabitants of the region (Charron *et al.*, 2014).

Currently, many changes can be observed in the world economy, related to, *inter alia*, the emergence of new industries, a change in the strategic position of sectors or the blurring of sector boundaries (European Commission, 2021). These processes determine the need to focus activities on the formation of new clusters (seed clusters), which, under appropriate conditions of the regional environment, will constitute the driving force of a given region (Choińska-Jackiewicz *et al.*, 2020). Better economic growth of the region facilitates the creation of regional networks of

connections and easier creation of partnerships between organizations (Klemens, 2020). Seed clusters and growth clusters constitute the basis for the selection of the National Key Clusters at the supra-regional level. Due to their specialization, these clusters often fit into the strategy of developing smart specializations.

Building a competitive advantage of the regions will be possible with focusing primarily on the development of the existing clusters. Support for seed clusters should be preceded by an analysis of the profitability of this type of activity in the context of the industry specialization of such a cluster and the development possibilities of a given specialization in the region or national specialization. In this context, the analysis of the efficiency of cluster policy should take into account economic and social effects, especially in developing countries (Aboal, 2020). In highly developed countries, the cluster policy strengthens the research and development activity of sectors, leading to an increase in enterprises' own expenditure. This is mainly due to the orientation of companies' strategic knowledge about the directions of technological development (Hassine and Mathieu, 2020). The efficient management of cluster initiatives is also extremely important in the cluster policy (Ketels, 2013).

Developing and developed clusters provide many benefits not only to entities operating in them, but also support the development of the entire region in which they operate. Key National Clusters also have an impact on the development of the national economy or cross-border areas. It can be considered that clusters are a kind of catalysts or accelerators of international and supra-sectoral cooperation. Clusters often support the implementation of smart specialization of regions, becoming a tool for deepening and developing this concept.

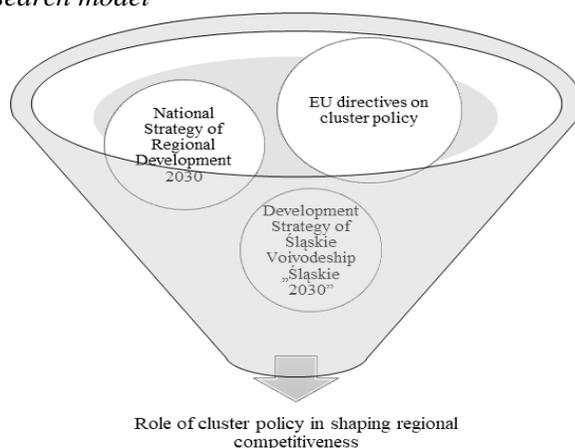
3. Research Methodology

The main aim of the research was to identify strategic goals of the implemented cluster policy in the EU and in Poland, using the example of a selected region, the Silesian Voivodeship, whose competitiveness in the RCI ranking is low. As part of the research process, the following research questions were formulated:

1. What strategic documents at the European, national and regional level relate to the content of the implemented cluster policy?
2. What are the strategic goals related to the implementation of cluster policy at the European, national and regional level?
3. What detailed programs at the European and national level can be considered as the means of impact resulting from the implemented cluster policy?
4. What is the role of the formulated cluster policy in shaping the competitiveness of the selected region - the Silesian Voivodeship?

This paper uses a comparative analysis of the Cluster Policy Documents. As part of the research process, the following documents relating to the cluster policy were identified: European Union directives related to the cluster policy, the National Strategy of Regional Development 2030 and the Development Strategy of the Silesian Voivodeship "Śląskie 2030" (Figure 1). As an example in the research part, the region of the Silesian Voivodeship was presented, because according to the last cluster inventory it is the area with the most clusters - 21% of the total number of clusters in Poland. The Silesian Voivodeship is located in the southern part of Poland with 28 clusters. The second place is occupied by the Mazowieckie Voivodeship with 13 clusters (Buczyńska, Frączek, and Kryjom, 2016).

Figure 1. Research model



Source: Own conception.

The conducted observations and analysis of strategic documents allow for the formulation of the following thesis:

Cluster policy contributes to increasing the competitiveness of regions by stimulating cooperation in defining strategic development goals and cooperation in achieving these goals.

This means that the logic of the process begins with cooperation and dialogue between entities in the process of defining development directions in the form of smart specializations, formulating priorities and goals. The secondary stage is the achievement of the assumed goals with the use of public and private funds.

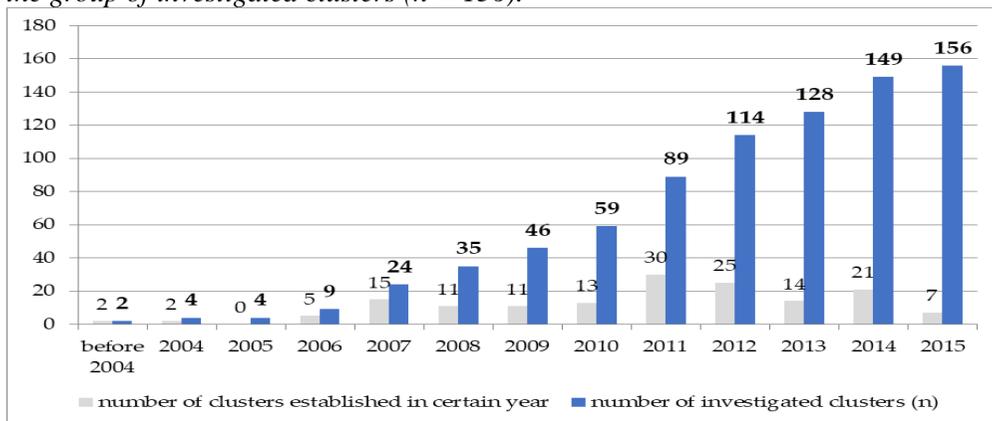
The analyses did not take into account the effects of the cluster policy in the form of a real increase in competitiveness, and focused on the objectives of the cluster policy contained in strategic documents. This allowed to define the role of the cluster policy in shaping the competitiveness of regions.

4. Results

The Global Cluster Survey shows that the mid-1980s are indicated as the beginning of the formation of clusters. By the mid-1990s, 32 clusters had been established. However, almost 60% of clusters in the world were established after 2007 (Lindqvist, Ketels, and Sölvell, 2012). Polish cluster structures, compared to clusters in Europe and in the world, can be classified as young structures. According to the benchmarking carried out in Europe as part of the NGP Excellence project, clusters were established mainly in 1997-2010 (e.g., in Finland between 1997 and 2007, in Norway in 2003-2007, in Austria 1999-2003, in Germany in 1998-2006) (Lämmer-Gamp, Meier zu Köcker, Christensen, and Muller 2012).

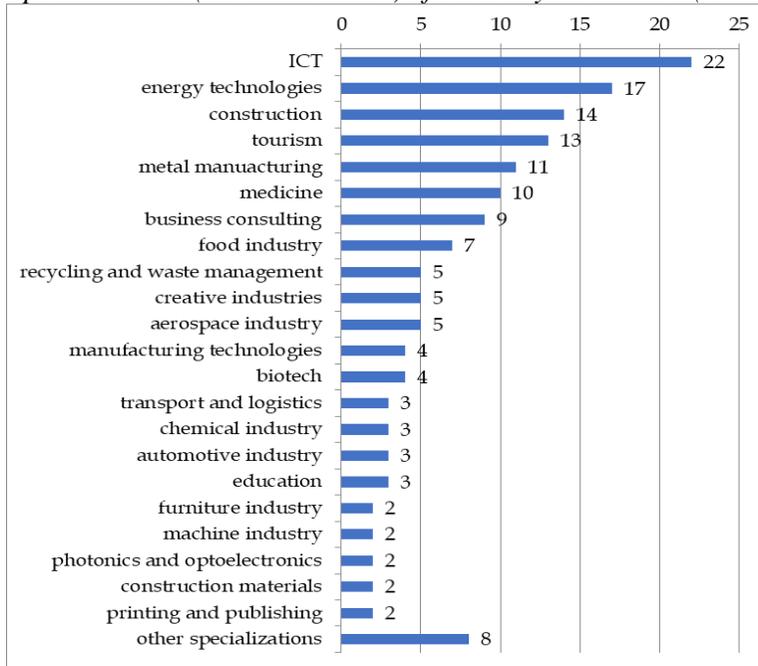
The cluster policy in Poland led to the creation of $n = 156$ clusters in the period from 2004 to 2015 (Figure 2). Since 2015, no activities consisting in the identification or inventory of clusters on a nationwide scale have been carried out. However, it can be concluded that currently no more than half of the identified number shows activity, including most of the clusters with the status of the National Key Cluster. The number of clusters reflects well the development of clusters as an effect of cluster policy, however, it is related to the quantitative trap, as opposed to qualitative treatment of clusters.

Figure 2. The number of clusters established in Poland in the period 2004-2015 — the group of investigated clusters ($n = 156$).



Source: Own research with the team with L. Knop (Knop & Olko, 2018).

Cluster specializations that occur in Poland, presented in Figure 3, result from the specificity of sectors present in Poland. It is not surprising that the ICT sector, as a horizontal, innovative and related sector, is also the most numerous among clusters. Cluster specializations are significantly related to the existing smart specializations of regions and national smart specializations. Hence the presence of sectors such as energy, construction (including energy-saving construction) and medicine among the specializations of the analysed clusters.

Figure 3. Specialisations (dominant sector) of the analysed clusters (n=156)

Source: Own research with the team with L. Knop (Knop & Olko, 2018).

In the further part, the results of the comparative analysis are presented, explaining what the future directions of the cluster policy should be and what role the cluster policy plays in shaping the competitiveness of regions on the example of the Silesian Voivodeship.

4.1 Cluster Policy in the European Union

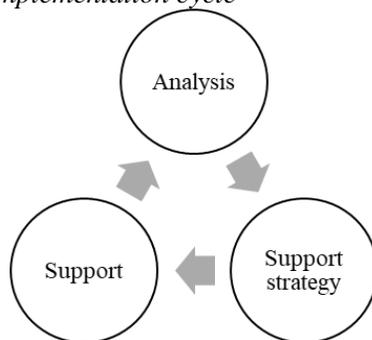
When referring to European Union documents, one should bear in mind the Communication from the Commission to the European Parliament, the Council of the European Economic and Social Committee and the Committee of the Regions “A global approach to research and innovation: Europe's strategy for international cooperation in a changing world COM (2021)”. In the quoted document, it is recommended that the Member States, when implementing economic policy, combine the tools of industrial and regional policy in order to create a smart specialization platform. Such action will allow regions to introduce smart specialization programs, while clusters can be an instrument supporting the implementation of smart specialization assumptions in regions and thus in the entire EU.

In the further part of the communication, the European Union declares support for small and medium-sized enterprises in establishing cooperation with world-class clusters and undertakes to help in achieving cooperation and innovation in the cross-

border and inter-sectoral dimension. The communication emphasizes the fact that clusters have great potential for creating an appropriate environment conducive to innovation, integration of small and medium-sized enterprises groups and their internationalization (Choińska-Jackiewicz *et al.*, 2020). Therefore, the European Commission undertakes many initiatives under the COSME or Horizon 2020 programs to support SME development and innovation through clusters. In particular, attention is paid to building links in less developed regions and in Member States and regions with poor R&D&I performance.

Another important document is the introduction of the Smart Guide to Cluster Policy to the European Commission's report, which indicates cluster policy and smart specialization strategies as key elements in the implementation of the European growth strategy (European Commission, 2016). The quoted study recommends that modern cluster policy should be based on a systemic approach that combines various policies and programs under one common strategy (such as e.g., smart specialization). Thus, cluster policy should be understood as a framework strategy that goes beyond just offering support for network activities and establishing network organizations (European Commission, 2016). Cluster policy should be implemented according to a repeating pattern, starting from the analysis, through the support strategy and support for clusters. The cycle is presented in Figure 4.

Figure 4. Cluster policy implementation cycle



Source: European Commission, 2016.

The first step in implementing cluster policy is the analysis of the regional economy. Then, a support strategy should be developed by selecting priority support areas and planned activities. After selecting the appropriate strategy, measures are implemented and their impact is assessed. After evaluation, the cycle starts all over again.

The next important document of the European Union, taking into account clusters, is the Conclusions of the European Council on the EU industrial policy strategy developed in 2018 (Guichard, 2018). They emphasize the need for further improvement of the European cluster policy. The aim of such activities is to combine regional clusters into pan-European world-class clusters based on the

principles of smart specialization and to support the emergence of new value chains in Europe. The discussed Conclusions of the European Union also indicate that cluster companies show a higher level of innovation than companies belonging to the network. An example may be a greater number of registered trademarks, applying for more patents or greater cooperation and export compared to companies from outside the cluster. Such activities mean the need to improve the policy of supporting the cooperation of regional clusters from individual Member States and, at a later stage, to create large European clusters with a global reach.

Referring to this document, it can be indicated that in the national perspective, attention should be focused on increasing the openness of national and regional clusters and on cooperation with clusters from other EU Member States with a similar profile of activity. This approach will allow to build clusters with global potential. Many representatives of the European Commission deal with cluster policy, indicating its main pillars. A. Sobczak includes among them: treating clusters as accelerators of innovation and industrial changes, interregional and international cluster cooperation and building greater capacity of clusters for development and cooperation (Sobczak, 2018). A. Tessarolo adds that it is now necessary to move from the cluster support model to the model of using clusters as a tool to support small and medium-sized enterprises (Tessarolo, 2018).

At the level of the European Commission, particular attention is paid to the issues of cluster management and their professionalization. The EC launched the European Cluster Excellence Program under the COSME program to strengthen cluster management excellence. In 2020, under this program, 13 European cluster partnerships for cluster excellence were established, bringing together 69 European partners. These partnerships strengthen their cluster management skills and strategies undertaken by, inter alia, benchmarking, mentoring, training, but also implement new tools to promote strategic interregional cooperation (European Commission, 2020). Therefore, it seems reasonable to include the principles of cluster management and improvement both at the national and regional level in the Polish assumptions of the cluster policy. These activities should cover the largest possible number of clusters and their coordinators. Key National Clusters and growth clusters that aspire to this group are of particular importance.

The current recommendations on the direction of the development of the European Union cluster policy can also be found in the communication of the 4th European Cluster Policy Forum published in Bucharest in 2019. The communication recognizes clusters as a key means of transforming industry and internationalization of European entities into global markets. The main goal of the future cluster policy is the internationalization of clusters. Such activities support small and medium-sized enterprises in accessing global value chains through initiatives such as the European Cluster Collaboration Platform, the EU's Go Go program, which supports strategic cluster partnerships for international cooperation, and international cluster association events. The necessity to further support clusters, e.g., in the field of

internationalization, in strengthening the competitive potential and the ability to operate efficiently, in organizing projects aimed at building trust between clusters in Europe and supporting clusters (and thus small and medium-sized enterprises) in the digital transformation. The European Commission considers it justified to include clusters as participants of Digital Innovation Hubs. The European Digital Innovation Hubs in Digital Europe Program of 2020 recognizes clusters as actors in innovative ecosystems that can perform many functions in hubs, especially taking into account the provision of innovative services and training developing digital competences. The potential of clusters should be used to transform the digital economy through the transfer of specialist knowledge.

A document related to clusters is also the European Cohesion Policy for 2021-2027. The European Commission indicated in it new directions of cluster policy, focusing mainly on greater support in the creation of pan-European clusters in priority areas of the economy, i.e., efficient waste management, big data technology, bioeconomy, mobility based on Internet access and advanced production technologies. Cohesion policy also involves investments in innovation, transport, digital networks, employment, education, social inclusion and sustainable development.

The support of the European Union also involves networking, cooperation, exchange of experience and activities related to innovation clusters, including between enterprises, research organizations and public institutions. The European Social Fund, part of Cohesion Policy, aims to create a smarter Europe by developing skills in smart specialization, key enabling technologies and industrial transformation, sectoral cooperation in skills and entrepreneurship, training researchers, networking and partnerships between higher education institutions, vocational education and training institutions, research and technology centres, and enterprises and clusters, and support for micro, small and medium-sized enterprises and for the social economy.

4.2 Polish Cluster Policy

The basic strategic document of Polish regional policy is currently the National Strategy for Regional Development 2030, which was developed in September 2019 in Warsaw by the Ministry of Funds and Regional Policy. This strategy develops the provisions of the previous Strategy for Responsible Development until 2020. The main goal of the 2030 National Strategy for Regional Development is the effective use of the internal potentials of territories and their specializations to achieve sustainable development of the country, which will create conditions for increasing the income of Polish residents while achieving social, economic, environmental and spatial cohesion. This objective is implemented through three specific objectives, namely: increasing the cohesion of the country's development in the social, economic, environmental and spatial dimensions, strengthening regional competitive advantages and improving the quality of management and implementation of territorially oriented policies.

The National Strategy of Regional Development 2030 in its provisions also refers directly to the activities of clusters. In the subsection on focusing on pro-innovation activities, it was mentioned that an important instrument will be to support the development of new and existing clusters and other structured forms of economic cooperation. Strengthening the potential of clusters operating in a given region may contribute to a significant increase in the innovative potential of enterprises, research units and other entities operating within the given cluster structures. The above may also bring significant benefits related to the formation of social capital and the strengthening of cooperation between local actors.

The implemented cluster policy at the regional level is a key element of the cluster policy of the whole country. In order to achieve the synergy effect and to effectively support clusters, it is necessary to coordinate the activities of the central administration and local government units. On the other hand, in the sub-chapter on stimulating the growth of innovation in regions, attention was focused on the development of instruments for supporting clusters in synergistic regions with support at the national and international level, and on strengthening export-oriented companies and economic clusters. The National Strategy of Regional Development 2030 ensures coordination in the implementation of cluster policy at the national and regional level.

Referring to the previously discussed directives of the European Union, the National Strategy of Regional Development 2030 closely corresponds to them by implementing, both at the national and regional level, activities for promotion and ensuring understanding of the concept of smart specialization among entrepreneurs and scientists and perceiving it as a key action in the field of national and regional innovation policy.

The discussed strategy also assumes the coordination of the policy of supporting regional clusters with regional smart specializations through, inter alia, initiating cooperation, establishing partnerships, diagnosing the area and selecting smart specializations, ensuring legal regulations, promotion, information, organization, as well as contact and cooperation with the Ministry of Investment and Development. The strategy supports the competitiveness of regions and assumes the continuation of activities aimed at increasing the quality of human and social capital as well as the development of entrepreneurship and innovation.

Therefore, local clusters and thus local enterprises will be supported. In the region's development processes, the strategy assumes activities aimed at modern digital technologies through, inter alia, development of economic innovations and information and communication technologies, increasing digital accessibility, quality and efficiency of public services, building new generation wireless networks, implementing the concept of a smart city and village using the latest technologies and open data, and creating an information society by reducing digital exclusion and developing digital skills at every level.

4.3 Cluster Policy in the Silesian Voivodeship

The Silesian Voivodeship is the area with the largest number of clusters 21% of the total number of clusters in Poland. The basic document that regulates the cluster policy of this region is the Development Strategy of the Silesian Voivodeship "Śląskie 2030". This strategy is a continuation of the Development Strategy of the Silesian Voivodeship "Śląskie 2020+" from 2013 and strictly relates to the previously described European Union directives and national documents. Still a current potential as well as a challenge for the Silesian Voivodeship is its settlement character, high level of urbanization and high human potential. This region is strongly developed in terms of economy, with a diversified economic structure and valuable natural values. Intensive economic restructuring processes take place in this area, which significantly affect its potential, causing also numerous social changes.

The dynamization of the processes of just transformation of the region towards a modern, ecological economy is a key challenge for the Silesian Voivodeship. The construction of the new Development Strategy was based on responsible development, i.e., one that, by building a competitive strength with the use of new development factors, provides participation and benefits to all social groups. The vision of the development of the Silesian Voivodeship assumes that it will be a modern European region with a competitive economy, resulting from a responsible transformation, providing development opportunities for its inhabitants and offering a high quality of life in a clean environment. The analysed strategy was based on four strategic goals:

1. The Silesian Voivodeship as a region of responsible economic transformation (operational objectives: Competitive economy, Innovative economy, Strong local entrepreneurship),
2. The Silesian Voivodeship as a resident-friendly region (operational objectives: High quality of social services, including health services, Active resident, Attractive and effective education and learning system),
3. The Silesian Voivodeship as a region of high-quality environment and space (operational objectives: High quality of the environment, Effective infrastructure, Attractive living conditions, comprehensive revitalization, prevention and adaptation to climate change),
4. The Silesian Voivodeship as an efficiently managed region (operational objectives: Sustainable territorial development, Active cooperation with the environment and creating a strong brand of the region, Modern public administration).

The first operational objective of the Development Strategy for the Silesian Voivodeship "Śląskie 2030" strictly relates to the cluster policy. A competitive economy assumes the diversification of the economic structure and the development of economy 4.0, including support for the processes of automation, flexibility and digitization of enterprise production, and strengthening the competences of current

and future industry personnel. Extremely important here is also the development of infrastructure that facilitates locating and running a business, including economic activity zones, the Polish Investment Zone, technology parks, industrial parks and clusters, with particular emphasis on clusters with the status of a National Key Cluster.

The competitive economy also assumes support for traditional sectors in terms of increasing their competitiveness, e.g., by modernizing technological processes, improving work safety, reducing the negative impact on the environment and developing human resources. Another declared activity is economic promotion and improvement of the quality of business environment services, acting for the internationalization of the activities of companies and clusters. The Development Strategy for the Silesian Voivodeship "Śląskie 2030" also assumes the development of cooperation between enterprises, including within clusters and networks, as well as the promotion and implementation of the circular economy.

Another document determining the cluster policy in the studied area is the Regional Innovation Strategy of the Silesian Voivodeship 2030. It is in line with the documents discussed in the previous section, i.e. the European Union's Cohesion Policy for 2021-2027, the National Strategy for Regional Development 2030 and the Development Strategy for the Silesian Voivodeship "Śląskie 2030". The main goal of the analysed strategy is: Smart Silesia - innovative and intelligent economic transformation ensuring the competitive advantage of the region on the international arena. This goal is planned to be achieved through the implementation of four strategic goals, such as:

1. Increasing the capacity of entities of the regional innovation ecosystem to generate and implement innovations and modern technological solutions,
2. Ensuring an inclusive digital transformation in the region's economy and society,
3. Supporting the competitiveness and effective transformation of the entities of the regional innovation ecosystem towards national and international champions,
4. Developing the competences of employees and entities of the regional innovation ecosystem for smart specialization, digital transformation and innovative entrepreneurship.

The above goals are consistent with national and European documents concerning cluster policy. Taking into account the cluster policy, one should also cite a specific objective concerning increasing the capacity of entities of the regional innovation ecosystem to generate and implement innovations and modern technological solutions. As part of this objective, further substantive and organizational transformation processes are assumed, strengthening competences around the competitive advantages of individual entities in the research and development sector, strengthening the role of clusters as integrators of innovative services and

intensifying cooperation with enterprises and recognizing their development needs. Modernizing the infrastructure and increasing competences in the field of commercialization of research results and cooperation with enterprises will allow to strengthen the activity of clusters in international research and development projects and thus contribute to the development of internationalization of Silesian enterprises.

5. Discussion

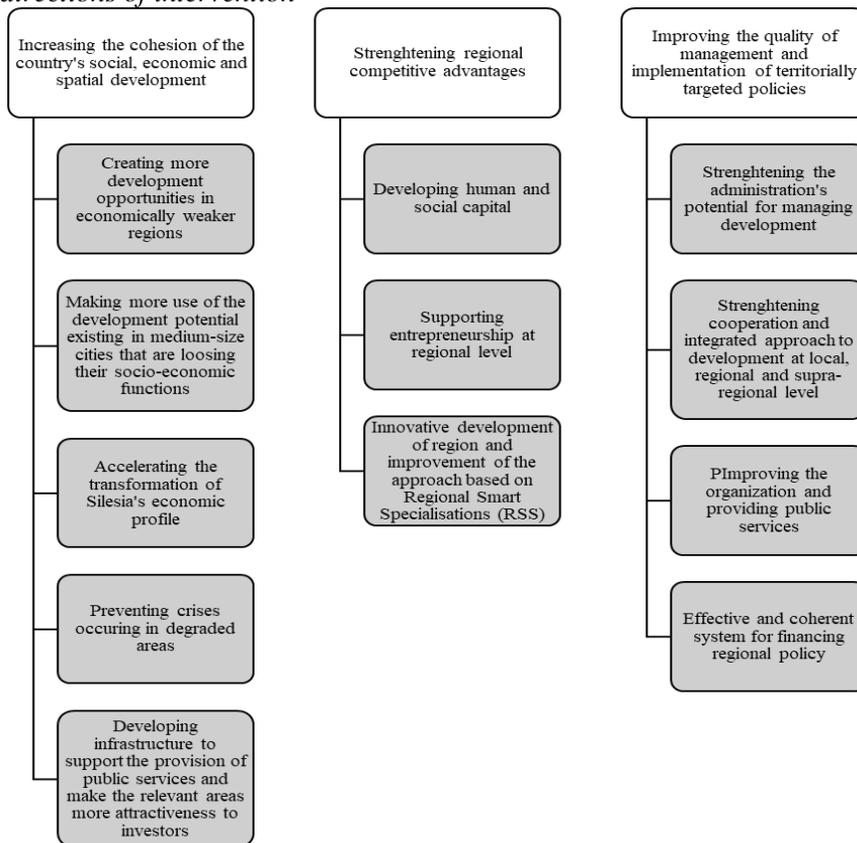
In recent years, there has been a noticeable increase in the involvement of the European Commission in activities for the cluster policy. It focuses mainly on regional policy and is aimed at minimizing or eliminating trade and investment barriers, which is the key to increasing the efficiency and competitiveness of individual European regions. The initiatives of the European Commission contribute to the development and promotion of a strategic approach to clusters. These activities consist in strengthening the knowledge resources in the cluster and contribute to a more effective use of research on innovation.

Based on the literature studies and the analysis of documents concerning the cluster policy, it can be concluded that the main goal of the work has been achieved and the thesis has been verified. Taking into account the detailed directives of the European Union in the field of cluster policy, it becomes justified to start a discussion on the objectives of the cluster policy in Poland. The policy of the European Union regarding clusters assumes that the member states should build their cluster policies based on the requirements of economy 4.0, and the clusters themselves should be treated as a key means of transforming industry and internationalization of European entities into global markets. The planned EU actions described in this paper are primarily aimed at strengthening the competitive potential of the regions. It therefore recommended to include the principles of cluster management and improvement both at the national and regional level in the Polish assumptions of the cluster policy.

These activities should cover the largest possible number of clusters and their coordinators. In line with the 2030 National Strategy for Regional Development, the main goal of the Polish cluster policy is to effectively use the internal potentials of territories and their specializations to achieve sustainable development of the country. This goal is achieved through three specific goals. These goals and the directions of their development are presented in Figure 5.

The main goal of the European future cluster policy is the internationalization of clusters. Such activities support small and medium-sized enterprises in gaining access to global value chains. As shown in Figure 5, the goals developed under the 2030 National Strategy for Regional Development are the same as the goals set by the European Union. The necessity to further support clusters, e.g., in the field of strengthening the competitive potential and the ability to operate efficiently, as well as in the organization of projects aimed at building trust between clusters throughout the European Union is becoming of key importance.

Figure 5. Specific objectives of National Strategy of Regional Development 2030 and directions of intervention



Source: National Strategy of Regional Development 2030.

On the basis of the analysis of documents concerning the cluster policy, it can be indicated that the goal of the future cluster policy should be to strengthen the innovativeness and competitiveness of the Polish economy, based on the intensification of cooperation, interactions and knowledge flows. The development of existing clusters should be strengthened, but also clusters that are just emerging should be supported. The development of strategic economic specializations is also of key importance, i.e., the selection of Key National Clusters and Key Regional Clusters and focusing public support on these clusters.

Taking into account the increase in the competitiveness of regions, attention should be focused on increasing the number of innovative goods and services offered by enterprises included in the clusters, both on the Polish and foreign market, which will lead to an increase in exports throughout the country. Another activity is to increase the external networking of clusters and entities operating in them, in particular in international sectors.

An important goal is also to strengthen joint strategic planning within the framework of functioning in the cluster. Attention should also be focused on mobilizing private investment in clusters, in particular on innovation and research and development activities. These activities should result in the creation of new companies and an inflow of investments from abroad. It is also extremely important to undertake projects for the development of the ecosystem of environmental institutions, i.e., education, technology transfer centres, science centres, technology parks, which will allow for a more appropriate adaptation of their offer to the needs of entities operating within the cluster.

Cluster policy should also lead to an increase in the efficiency of the use of public expenditures through their concentration and obtaining synergy between various policies conducted in the country and the support instruments offered, such as in the field of human capital, research and development, internationalization, or in the field of infrastructure development or promotion.

The most important effects of the implementation of the cluster policy include increasing the scope of knowledge in the enterprise sector about the subject of activity and sources of competitive advantage within the scope of the conducted activity. This knowledge applies to both technological aspects, as well as market, marketing (related to getting to know and satisfying the specific needs of customers), cooperation, and shaping the business model. Even before the stage of very intensive support for clusters in the EU countries (2010-2020), Iammarino and McCann (2006) indicated knowledge and knowledge spillovers as the main and long-term effects of cooperation within clusters.

Cluster policy should therefore, apart from the issue of direct financial support for Projects for clusters, promote practices increasing regional social capital and the level of trust between partners thanks to cooperation, exchange of knowledge and its sharing in order to increase the level of competition between enterprises and regions. Grashof (2021) groups the problems related to the implementation of cluster policy: connectivity and network problems, resources and capability problems, matching problems, diversity problems, market and industry problems, institutional problems. The author is in favour of a tailor made cluster policy that is adapted at the regional level to specific problems that actually occur in the practice of the functioning of clusters.

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