

# PRACE NAUKOWE

Uniwersytetu Ekonomicznego we Wrocławiu

# RESEARCH PAPERS

of Wrocław University of Economics

Nr 365

## Zarządzanie finansami firm – teoria i praktyka

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Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu  
Wrocław 2014

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Redakcja techniczna i korekta: Barbara Łopusiewicz  
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Projekt okładki: Beata Dębska

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Wrocław 2014

**ISSN 1899-3192**  
**ISBN 978-83-7695-407-3**

Wersja pierwotna: publikacja drukowana

Druk i oprawa:  
EXPOL, P. Rybiński, J. Dąbek, sp.j.  
ul. Brzeska 4, 87-800 Włocławek

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# SUPPORTING THE DEVELOPMENT OF CLUSTERS IN POLAND – DILEMMAS FACED BY PUBLIC POLICY

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**Summary:** Clusters have proved to be an important source of competitiveness for the economic development of regions within the European Union. In recent years many countries in the EU and throughout the world have launched policies aimed at supporting the development of clusters. There are many examples of good practices in the field of cluster policy, but there is no single model that can be applied in all countries and regions. This paper addresses the need to develop a country – specific framework for supporting the development of clusters in Poland. The aim of this paper is to present outcomes of a study carried out in relation to the topic of cluster policy in Poland. This paper contributes in this respect to an ongoing debate in this field by identifying the main areas of strategic choices on both national and regional levels. On the basis of these findings, recommendations for fostering cluster development in Poland are proposed. The proposed recommendations are consistent with the concept of smart specialisation advocated by the European Commission.

**Keywords:** clusters, cluster initiatives, cluster policy, public support, smart specialisation.

DOI: 10.15611/pn.2014.365.08

## 1. Introduction

Beginning in the 1990s, clusters have emerged as one of the central concepts in regional, industrial and innovation policies. “Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region.” [Porter 1990]. This definition of clusters, as used in this paper, is without doubt the most widely accepted. It highlights three key dimensions: the role of geographic proximity, the linkages across economic activities and the relatedness of a specific set of activities.

The presence of strong clusters in a region is positively associated with a range of performance outcomes: average wage, employment growth, patenting and the formation and growth of new businesses [Delgado et al. 2011; 2012]. Additionally,

a strong cluster affects not only its core constituent industries but also industries in related cluster categories [Porter 2003; Delgado et al. 2012].

The benefits for companies located in developed clusters have been widely discussed in literature [Porter 1998; Morosini 2004; Etzkowitz 2002]: bigger local markets for products and services, reduction of transport costs, easier access to resources, a competitive environment for enhancing motivation and/or specialised skills pools. Clusters play a critical role in innovation processes among firms [Furman et al. 2002].

The efficiency of firms benefitting from clustering depends on cooperation mechanisms [Zahra, George 2002]. They can be either informal (social networks) or formal (e.g. use of coordinators). A cluster initiative, which is an organizational form gathering key cluster players for the sake of developing a cluster [Sölvell 2003], can play a crucial role in leveraging collaboration and cooperation within a cluster. It is also a certain form of partnership established in order to define and implement, both the actions and the undertakings relevant to the development of a given agglomeration of companies and support institutions.

According to a recent benchmarking of clusters in Poland [PARP 2012], there are more than 180 cluster initiatives in the country, 45 of which are strong and very active. The main sectors represented are IT/ICT, aviation, eco-energy, construction, medical, food and tourism. These initiatives have been undertaken mostly through the bottom up development. The implementation of joint cooperation projects is one of the main strategic objectives of operations in these clusters. The most successful activities undertaken by the initiatives are in regard to market activity, marketing, training and infrastructure. The lesser effects of cooperation are seen within the scope of technical and organisational innovation, but have significantly improved since the previous benchmarking study two years earlier. More and more cooperation projects are being undertaken but most of the initiatives still face barriers that hamper successful cooperation.

In recent years many countries in the EU and throughout the world have launched policies aimed at both supporting existing clusters and creating favourable conditions for the formation of new ones. Currently, more than 130 programs have been identified which support clusters in 31 European countries [EICMP 2008]. Almost all EU Member States have implemented support programs at national and/or regional level, which suggests that such programs are a key component of national and regional strategies for competitiveness and innovation.<sup>1</sup>

Cluster policies are usually designed to stimulate economic development and innovativeness by addressing market imperfections that may impede the flow of knowledge and technology between different actors within a cluster. These imper-

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<sup>1</sup> Throughout the paper, the term cluster policies is used as the range of efforts empirically referred to by policy makers and practitioners under this heading. The heterogeneity of these efforts makes general statements about cluster policy problematic [Ketels 2013].



fections can arise, due to, among others, insufficient coordination, asymmetry of information and/or historically a contingent path of development of regions (path dependency).

Cluster policy removes obstacles to better economic development through exploiting the synergies which exist between different policies, resulting in better targeting of those policies. In this sense, a cluster policy is an important element of building strong innovation systems, which are seen as the basis for growth. Research carried out in the framework of the European Innovation Scoreboard 2010 shows that there is a strong relationship between the national innovation system and innovativeness of companies. Within enterprises, innovation develops intensively when it is encouraged by favourable framework conditions.

A discussion of cluster policies was initially based mainly on conceptual arguments. Over the years, experience with these policies in the EU has generated much richer data to draw on, although the availability of comprehensive data remains a challenge. There are many examples of good practices in the field of cluster policy, but there is no single model that can be applied in all countries and regions. Specific economic and administrative conditions of each country and region have to be taken into account. This paper addresses the need to develop a country – specific framework for supporting the development of clusters in Poland.

The aim of this paper is to present outcomes of a study carried out in relation to the topic of cluster policy in Poland. This paper contributes in this respect to an ongoing debate in this field by identifying the main areas of strategic choices on both national and regional levels. This paper looks also at the implications for regions considering how to design their smart specialization strategies required by the European Commission [European Commission 2010]. On the basis of these findings, recommendations for fostering cluster development in Poland are proposed.

## 2. Methodology

The findings of the study, presented in this paper, are based on several data sources. The first source, which was the basis of conceptual framework, comprised a broad review of EU and Polish strategic documents, connected in any way to supporting the development of clusters. Furthermore, academic literature and practitioner-oriented reports in the field were thoroughly reviewed.

Additional information was derived from a series of interviews with representatives of four cluster initiatives. The questions focused on the opinions of the interviewees regarding the possible future shape of public policy and support for clusters in Poland. The interviewees represented various stakeholders involved in cluster activities: cluster management teams, regional and local authorities, investment promotion agencies and academia players. In total 9 stakeholders were interviewed. The clusters, chosen for interview operate in: transport and logistics, health and sport, ICT, and biotechnology – both relatively traditional and high-tech sectors. The





clusters were chosen on the basis of representing different types of cluster initiatives. The initiatives, whose representatives were interviewed, differ with regards to e.g. innovative performances, how the initiative is governed, its degree of specialisation, the role of public institutions.

### 3. Role of cluster policy

Cluster policy can take different forms, reflecting different objectives. The first and most horizontal category relates to policies which are aimed at creating a favourable microeconomic business environment for growth and innovation, and which also indirectly stimulate the formation and development of clusters. The second category includes traditional industrial, research and regional policies that use a clustering approach to enhance the effectiveness of a particular instrument. The third category includes development policies aimed at creating, mobilizing and strengthening particular type of clusters resulting in the formation of individual cluster initiatives [European Commission 2008a].

Although many clusters arose spontaneously – without the support of a policy – the role of the public sector in supporting the efforts of clusters is considered by many companies to be very important. Research carried out in the framework of Innobarometer in 2006 [European Commission 2006] indicates that, on average, more than two thirds of the managers of companies that are members of clusters are convinced of the fundamental or very important role of the public sector in the development of clusters.

One of the biggest challenges connected to cluster policies and programs is measuring their effects: these are mostly indirect and interact with a range of other factors (e.g. market). Typically, indicators measuring the effects of cluster policies include: the number of new businesses created, the growth of production, income or exports, the number of innovations produced in cooperation with various entities, etc. [EICMP 2008] However, such detailed data is very difficult to collect. This makes it very hard to determine a clear cause-effect relationship between cluster programs and their potential impact on the economy. Furthermore it makes it difficult to adopt the appropriate time frame, as certain economic and social benefits become apparent only in the long term.

As a general rule, public policy should not aim to create clusters (risk of wishful thinking clusters), but should rather stimulate and support the development of existing or emerging clusters. Strategic documents regarding clusters in the EU [ECPG 2010] assume that cluster policy should focus on those clusters that have the greatest chance of becoming globally competitive.

### 4. Cluster policy in Poland

At national level, cluster policy in Poland is not currently defined as a stand-alone policy. Support for cluster development is, to some extent, an element of innovation



policies formulated in strategic documents [MG 2006]. However, at a national level, clusters – understood as defined economic specializations – are not considered to be direct objects of support.

At the same time there are a few non related support instruments, which are aimed at stimulating the development of clusters – such as the flagship measure 5.1. Innovative Economy Operational Programme and measure 1.4 Operational Programme Development of Eastern Poland. A number of activities have been occasionally implemented by the Polish Agency for Enterprise Development (benchmarking, training and promotion projects).

Cluster policies at regional level are also non-coordinated. In a few regions certain elements of cluster-based policy have been implemented. Some regions have directly pointed to the possibility of supporting formalized clusters from structural funds and earmark a separate measure for this purpose. Some regions combine cluster support activities with other measures, aimed at supporting entrepreneurship or business support institutions and/or building relations between enterprises and R&D. Some regions do not have any instruments directly related to supporting clusters.

A unique situation exists in the Pomerania region, which has adopted a dedicated strategic program to support regional clusters for the period of 2009-2015 [UM 2009]. This program aims to support three types of cluster (key, sub-regional and technological networks). Key clusters, having been selected in a competition, are supported through the focused and coordinated use of available EU regional structural funds.

## 5. Dilemmas faced by public policy

Cluster policies are seen as a tool to internalise local externalities in existing clusters [Ketels 2013]. Cluster policies are thus the ways to upgrade the underlying competitiveness of clusters, not to increase their size. The data on the impact of cluster initiatives on economic outcomes is still fragmentary. The available evidence points to positive effects [Dohse, Staehler 2008; Falck et al. 2008]. The reviews of individual programmes tend to find positive returns for the participants and an expanded capacity for joint action [Cooke et al. 2007].

In the discussion on future cluster policy in Poland, it is widely agreed that there is a need to concentrate public support on clusters with the biggest potential for development [*Klustry w Polsce...* 2012]. It is assumed that it is necessary to prioritize development policy in order to create required critical mass that will enable Polish clusters to compete on a global scale. Achieving a leading position in too many fields is not possible in an age of globalisation and specialisation; hence the suggestion to focus on key clusters. This is an approach which is compliant with the expectation of the European Commission with respect to indicating national and regional smart specialisations [RIS 3 2012].



Academics and practitioners, interviewed for the purpose of this study, also seem to agree that there is a need for broad support for cluster initiatives and cluster coordinators on a regional level as a comprehensive support for networking and cooperation establishment in the Polish economy. It is believed that this kind of support should result in the introduction of criteria for granting public funds, such as that which would give priority to projects implemented in cooperation and partnership with several entities. There is also a broad consensus on the necessity of private co-financing of cluster development.

The policy debate relates rather to the procedure of selection of key national clusters, in particular – the selection criteria. To start with, there is often lack of clarity dealing with: how to measure the relevance of quantitative indicators such as the critical mass of clusters, the role of qualitative indicators in relation to the defined goals of support programmes, and how to compare clusters from different sectors.

It should be emphasized that the selection of key clusters would not automatically mean the allocation of resources, but rather the process of identifying those clusters whose development would be subsequently funded under a separate, dedicated pool of resources. Only in the second phase of the implementation of these programs, would joint research and development projects of the selected clusters compete for funding in the standard application procedures.

Another debate focuses on the question of whether economic policy should be directed at stakeholders of selected clusters (i.e. enterprises and business support institutions such as universities, research institutes, schools, specialized business support institutions etc.) or only at coordinators of cluster initiatives. It discusses the extent to which support for clusters will stipulate the co-financing of different types of agreed investments relevant to their development.

A hot topic within the discussion is the level of funding to support the coordination of initiatives. This support serves the following functions: coordination of activities in the cluster, development of different types of interactions, promoting joint undertakings and developing new products and innovative services.

It is common practice in EU countries to maintain a relatively high level of public funding for cluster organizations. This is illustrated, among others, by the results of international cluster benchmarking studies, i.e. [NGP Cluster Excellence 2011]. These results show that the majority of coordinators depend on public funding for more than 60% of their budget.

Funding of cluster coordinators differs from country to country within the EU and has different time horizons. Support programs aimed at mobilizing actors offer, on average, less than 100,000 euro for a period of three years or less. Programs, which are aimed at providing services and support for cooperation projects, are budgeted at between 100,000 and 1 million euro per year over a period of several years. Programs supporting large scale R&D projects for clusters provide, on average, funding of more than 1 million euro per year for a period of up to 10 years [OECD 2007]. It should be noted, however, that most of the budget for the last two types of programs is not allocated to the coordinator, but directly to the entities operating in the cluster.



On the subject of financing cluster coordinators, one should mention the recommendations of the Working Group for Cluster Policy at the Polish Agency for Enterprise Development [PARP 2012b]. According to these recommendations, the support for the basic functions of coordinators within clusters should be, in principle, available at regional level. On the national level, access should be granted to additional, dedicated co-financing for coordinators of key national clusters for internationalisation – i.e. development of international cooperation and expansion.

Fundamental support for the coordination of cluster development could be awarded in such a way that its joint value would not exceed the amount of 200,000 euro for a period of up to 3 years. The support could be stretched over a period of even 10 years while preserving the periodical evaluation of the coordinator's activity/effectiveness (after 2, 5 and 7 years of activity). The support should be degressive in nature – in the first period its intensity could reach 90% but later it should diminish, so that at the end of the 10th year period, it would not exceed the level of 25%.

It is also worth noting that one of the arguments in favour of maintaining a certain level of public support (also in the later period of the cluster organization operation) are the external benefits associated with its functioning as well as open profile of activities. The basis for such a view is the assumption that the activities of the coordinator should benefit all companies operating in the cluster and not only those which have chosen to participate in the cluster initiative.

Another key policy debate relates to the coordination of policies and public instruments around clusters (especially the key clusters). The implementation of this principle is supposed to boost the effectiveness of public policy and the disbursement of financial resources from structural and national funds [OECD 2007]. The principle of coordination of funds derives from the need to support the development of clusters in an integrated way – i.e. in different intervention areas (stimulation of R&D activity, building of necessary infrastructure, development of human capital, internationalisation, etc.). The adoption of this approach does not generate new public expenses but it leads to their more effective allocation. It foresees fuller exploitation of existing business support infrastructure, especially this financed from structural funds. Cluster based strategies – as part of industry, innovation, regional and science policy – should account for both the rejuvenation of established industries, as well as paving the way for new emerging industries [Ketels et al. 2012].

In countries such as Germany, France, Sweden and Hungary there are cluster programs that select and support national leading economic and technological specializations. In particular the German Spitzencluster program, the French Pôle de compétitivité and the Hungarian cluster program anticipated the transfer of substantial sums of public funds (respectively 600 million euros within 5 years; 1,5 billion euros over 3 years; 1,5 billion euros in the period 2007-13) for financing research and development projects in selected clusters [PARP 2012b]. These funds flow directly to companies and industrial-scientific consortia; while in case of applied research, necessary co-financing from private means is required.



In view of the above problems, cluster policies should also be considered in relation to the expectations of stakeholders (participants in the cluster). In the past, often there were discrepancies between the expectations of the beneficiaries and the support mechanisms offered by cluster policies and programs.

Although cluster representatives, interviewed in relation to this topic, agreed to some extent with most of the recommendations of the Working Group for Cluster Policy, they were careful not to support particular ideas without knowing the details of their implementation. Adding to the discussion, the cluster stakeholders underlined the need to prepare a support scheme for cluster coordinators, which could be used by all regions so as to eliminate the risk that in some regions there would be no support instruments in this scope. They were also of the opinion that authorities of particular regions should cooperate with each other in order to coordinate support for clusters of a supra-regional nature. It seems that it will be necessary to prepare regulations and solutions that will allow for a direct or indirect (i.e. via a coordinator) allocation of support to the entities which area is part of a given cluster, but is located in the territory of a neighbouring region.

## 6. Conclusions and recommendations

Cluster policy constitutes one answer to the problem of market failure with respect to limitations which exist in Poland. These limitations hinder the initiation of cooperation between enterprises as well as between enterprises, the R&D sector and administration. The research on clusters and cluster programmes provides an increasing amount of insight into the specific features that make cluster programmes and cluster initiatives more likely to succeed [Christensen et al. 2012].

Public support – due to so called external effects – will benefit the whole cluster including cluster entities that are not part of the initiative. It is therefore proposed that future cluster policies include support for clusters in broad areas of activity e.g. R&D, international expansion, stimulating sector cooperation and creation of new enterprises.

Apart from that, public policy should support the creation of inter-cluster dialogue and co-operation and support projects jointly implemented by various clusters. The internationalisation of cluster activities should also be supported (taking into account the role that cluster organizations can play in this process). This will ensure that activities carried out in a region are better attuned to the context of international cooperation and competition.

Cluster policy development in Poland is consistent with the concept of smart specialisation proposed by the European Commission<sup>2</sup>. It is worth noting that the

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<sup>2</sup> It advocates that every country and region in EU should concentrate its efforts and resources on a specific small number of priorities or economic specialisations with a significant innovative potential in which it has real competences and resources and in which it can achieve prominence and competitiveness on a global scale.



specific model of cluster policy can supplement “entrepreneurial discovery” of smart specialization.

Policy makers in relation to cluster policy need to be mindful not to focus too narrowly on already existing areas of strengths. Cluster policies in Europe increasingly emphasise the importance of stimulating the development of, so-called, emerging industries. Recommendations by the European Cluster Policy Group [ECPG 2010] suggest that cluster policies should balance support for mature clusters and emerging industries. It also indicates that launching activities in new fields might require types of cluster programmes other than traditional ones for well-established clusters.

The discussion in this paper has identified a number of areas in which further conceptual progress is needed. More work will be necessary to develop tools that practitioners can use, and that can enable them to break free from the tendency to copy and follow generic strategies to develop successful cluster support programmes. This is important not only for the debate about cluster policy but also for the broader emerging debate about a new industrial policy.

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## WSPIERANIE ROZWOJU KLASTRÓW W POLSCE – DYLEMATY POLITYKI PUBLICZNEJ

**Streszczenie:** W ostatnich latach wiele krajów w UE i na świecie uruchomiło programy skierowane na wsparcie rozwoju klastrów. Istnieje wiele przykładów dobrych praktyk w zakresie polityk wspierających klustry, lecz nie funkcjonuje model, który mógłby być zaimplementowany we wszystkich krajach i regionach. Niniejszy artykuł odpowiada na potrzebę stworzenia specyficznych dla kraju założeń wspierania rozwoju klastrów w Polsce. Jego celem jest prezentacja wyników badania dotyczącego przyszłej polityki względem klastrów w Polsce. Artykuł wpisuje się tym samym w rozpoczętą w debatę publiczną poprzez identyfikację głównych obszarów strategicznych decyzji, które będą musiały zostać podjęte na szczeblu krajowym i regionalnym. Na bazie wyników badań zaproponowano szereg rekomendacji dotyczących wspierania rozwoju klastrów w Polsce, a rekomendacje te są zgodne z postulowaną przez Komisję Europejską koncepcją inteligentnych specjalizacji.

**Słowa kluczowe:** klustry, inicjatywa klastrowa, polityka klastrowa, wsparcie publiczne, inteligentne specjalizacje.

