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Abstract

The question how to increase international competitiveness of enterprises is of great importance, especially for transition economies like that one in Poland. Participating in a cluster is perceived as useful within the market competitive game. Clusters, however, do not exist without market mechanism. They are just a solution which, thanks to their specific attributes, allows to combine rivalry with cooperation. This phenomenon is called coopetition. The aim of the paper is to signal the current stage of research within the clusters field in Poland and highlight a need to investigate coopetition as an attribute of clusters.

1. Introduction

The concept of clusters and coopetition in Poland attracts scientists, politicians and managers' attention. The interest in clusters and coopetition is implied by topicality of the question how to increase international competitiveness of enterprises in globalisation era. What is astonishing in the discussion course is the exposition of significance of a company's

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immediate environment for its market success. In times of globalisation, which manifests itself as an increasing market harmonisation, i.e. deregulation and liberalisation of international goods and services transfer and factors of production, the crucial role of a company's immediate environment for its international competitiveness may seem paradoxical. In times of modern communication technologies, especially global connectedness, economics professionals are facing a question whether geography matters any more. According to research results presented in literature, globalisation escalates business entities propensity for concentration, firms conducting similar activities concentrate in certain countries, regions or locations (Patel, Pavitt 1991, pp. 1-40, Amendoa et.al. 1992, pp. 173-197). Among other things, this manifests itself in clusters creation.

Porter defines clusters as 'geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries (e.g. universities, standards agencies, trade associations) in a particular field that compete but also cooperate' (Porter 1998). It means that all functions of a value chain are distributed and represented by a number of enterprises and other organizations within a region that are linked by commonalities and complementarities. Coopetition is associated with simultaneous competition and cooperation among two or more business partners, particularly competitors, assuming that repetitive interaction takes place (Zerbini, Castalado 2007, pp. 941-954). Although coopetition is just starting to gain supporters, more and more frequently one can hear opinions that it is a promising direction in scientific research and a result of changes in modern management practice (Ketchen, Snow, Hoover 2004, p. 795, Rzońca 2005, pp. 84-90).

The aim of the paper is to signal the current stage of research within the clusters field in Poland and to highlight a need to investigate coopetition as an attribute of clusters because it seems that the concept of clusters is misused. How can one talk about participating in a cluster without being involved in collaboration with market rivals?

The fist part of the paper provides a brief theoretical background of a research into the subject of clusters and coopetition. Poland’s experience with regard to clusters and cluster initiatives is outlined in the subsequent section. This is followed by a presentation of empirical research results. The aim of the research was to investigate the perception of coopetition among companies which are cluster participants and firms which are not involved in this type of business relationships. The paper is concluded with a short discussion.

2. Clusters and coopetition - brief review of theoretical background

The origins of the cluster concept go back to neoclassical economy and Alfred Marshall. In his book entitled 'Principles of economics' (Marshall 1920, pp. 268-271) he used the term 'industrial district'. It was associated with regional concentration of businesses of the same or similar sector. He based his theses on observation of companies from, for example, textile (Manchester) and metallurgic sector (Birmingham) as well as companies producing knives located in the areas of Sheffield. Currently, the issue of clusters is discussed by many researchers, who define the concept in different ways. The most popular is the definition of a cluster proposed by Porter (2000, pp. 15-34), according to which cluster is 'a group of companies existing in geographical neighbourhood and the institutions which are related to them and deal with particular activity, connected by similarities and completing one another'. According to Ketels and Memedovic (2008, pp. 375-392) the definition of cluster is based on three pillars, i.e. geography, creating value and business environment. Geography refers to proximity; clusters as groupings of entities are concentrated in one region within a larger nation or in one town. Creating value means that clusters include different industries, are networks of supportive and related industries engaged in bringing value to customers. Functioning of clusters is connected with creating specific business environment, which is developed thanks to cooperation between business sector, R&D institutions and public sector. Researchers have been trying to identify the most typical attributes of clusters. Their investigation is crucial when one wants to answer the question what a cluster exactly is or, in other words, fix a set of criteria players have to meet to be called a cluster. Among those researchers the name of Ketels (2004) can be mentioned. He defined the following attributes of clusters:

- Proximity: entities need to be sufficiently close in space to allow any positive spillovers and sharing of common resources to occur,
- Linkages: their activities need to have a common goal to be able to benefit from proximity and interaction,
- Interactions: being close and working on related issues seem not enough; some level of interaction is essential,
- Critical mass: a sufficient number of participants present is required for interaction to have a meaningful impact on companies.

Clusters are important since they allow companies to be more productive and competitive than they could be in isolation. Their aim is to strengthen and stabilise local economies by establishing specialised regional networks that are linked to the global market. Benefits of participation in a cluster appear in firm competitiveness. Porter (2000, pp. 15-34) identified three general linkages between clusters and competitiveness, i.e. clusters increase productivity/efficiency; they stimulate and enable innovation, facilitate commercialisation and new business formation. Potential positive feedback of being a cluster participant for improvement of competitiveness can be generated thanks to specific attributes of clusters. Thanks to clusters characteristics an environment which predisposes a firm to increase its competitiveness is created. As one can notice in the above mentioned sets of cluster characteristics, there is coopetition present. Without the phenomenon it is impossible to talk about clusters. Companies in clusters compete and collaborate simultaneously. Only then can they benefit from being a cluster participant. This type of business behaviour and business relationship is embedded in the cluster nature. It can appear in different forms on the market. A cluster or industrial district is only one option, as Dagnino and Padula (2002) suggest.

Motivation of coopetition is connected with companies' aim to mix benefits from confrontational and cooperative behaviour. The research which has already been conducted in the subject of the coopetition impact on firm competitiveness is to be continued.[1] Such data is needed to encourage enterprises to follow the 'win-win' logic of conducting business, which is crucial for creating successful clusters. This kind of business logic is needed especially in Poland and other transition countries, where the level of social capital, above all trust to business partners, is very low.

3. Polish experience with regard to clusters and cluster initiatives. Place of clusters in Wielkopolska in the studies

In 2004, under the auspices of the Competitiveness Institute, a research into cluster initiatives on a global scale was carried out. The research results were presented in the 'Green Book of Cluster Initiatives'. The list of 238 undertakings of this type, which were investigated in 2003, featured one from Poland, i.e. 'Plastic Valley' Tarnów Industrial Cluster. In Poland, it is the Institute for Market Economics (IBnGR) that has devoted a lot of attention to clusters (Brodzicki, Szultka 2002, pp. 45-60, Wojnicka, Brodzicki, Szultka 2003). As early as 2002, the Institute launched a research project to study and determine a possibility and method of exploiting the economic cluster conception with a view to increasing competitiveness and innovativeness of the Polish economy. The research managed to identify an industrial automation quasi-cluster in Gdańsk, a printing cluster in Warsaw and a construction cluster in Świętokrzyski region.

Bojar and Bis (2006, p. 34) tried to prepare a list of cluster initiatives functioning in Poland. On the basis of desk research conducted with the use of data on the internet, they identified 44 cluster initiatives in Poland. It is for sure quite an underestimated number as in Wielkopolska there are 17 of them.

In 'Innobarometer' European Report from the year 2006, which was aimed to investigate a clusters role in fostering innovativeness in Europe, it is highlighted that only 4% of Polish enterprises covered by the study admit functioning within a cluster. Four years ago popularity of the idea of clusters in Poland was quite low. In the same year, Europe Innova (www.europe-innova.org.index.jsp) finished maping clusters in new countries in the European Union and on the basis of the research results one can come to conclusion that the potential to develop clusters in Poland is quite high. Ketels i Sölvell (2006) identified 156 such geographical groupings of companies, taking into account the number of employees, specialisation and concentration of employment in particular sectors of economy. The research results show that the regions with higher GDP per capita are characterised by a higher number of cluster initiatives. The most popular core industries in Polish clusters include food processing, logistics and transport as well as financial services.

The data of the European Cluster Observatory from the year 2007 shows the presence of three clusters from Wielkopolska in the group of 15 biggest clusters (looking at the rate of employment, specialisation and competitive advantage) in Poland (www.clusterobservatory.eu). Those three clusters are focused on furniture, clothing and food industry, and only the furniture cluster is fostered by a cluster initiative.

In 2008, two experts in the field of clustering in Poland conducted direct interviews with coordinators of 24 cluster initiatives in Poland. The research aim was to investigate Polish experience according to cluster initiatives management (Palmen, Baron 2008, pp. 79-83). In the study sample there was one cluster from Wielkopolska, i.e. the Printing and Advertising Cluster from Leszno. The research result bring some important hints, namely how to coordinate and manage clusters, but neither identifies nor explains the phenomenon of coopetition in clusters. It rather shows the intensity of cooperation with R&D institutions, business support organisations or entities representing local government.

The same method or research was used in 2007 by Skawińska and Zalewski (2009, pp. 269-271), who looked at six high-tech clusters in Poland. Speaking more precisely, one should say that the research covered rather six clusters initiatives than real clusters, as in the study sample the Aviation Industry in Świdnik is presented, which in author's opinion cannot be called a cluster. It is just an industry. The study does not develop the scope of knowledge about coopetition within clusters. It brings quite general data according to those cluster initiatives. The research results can just confirm that there are some geographical groupings of innovative companies, i.e. firms in high-tech industries.

More in-depth study focused on three clusters in Wielkopolska was conducted by Gorynia and Jankowska (2008). The research was to investigate interdependencies between participation in a cluster and competitiveness and internationalisation of a firm. The study sample included companies from the Furniture, Automotive and Boiler-making Cluster in Wielkopolska. The research results show that there are signals of coopetition in the Boiler-making and Wielkopolska Automotive Cluster. The firms cooperate with their market rivals but importance of cooperation is perceived as not very important for their competitiveness.

Quite an interesting research was conducted by Clarkson (et.al. 2007, pp. 340-364). In the summer 2006 together with some colleagues, he conducted a research focused on the influence of participation in a cluster on the ability to innovate among Polish and German companies from border regions. The study was conducted among small and medium companies. The research tool was a questionnaire. It was sent to 57 companies. The study sample covers 20 entities. Polish companies from Lubuskie region participated in the research. Lack of resources and strong network of supporting and related industries are a barrier to create clusters in Lubuskie. According to the study results, one can state that in

Poland there is a lack of social capital and openness to changes is quite low. According to Clarkson (et.al. 2007, pp. 340-364), in Poland there is a need to promote relations based on trust and teamwork.

In the third quarter of 2009, the European Cluster Observatory published a detailed list of cluster organisations in Europe (Europe Innova – European Cluster Observatory 2009). The organisations are dedicated to appropriate cluster initiatives. The European Cluster Organisation Directory lists cluster organisations across 203 regions; Poland is among them. Cluster organisation is defined as a public-private organisation set up to improve growth and competitiveness of a cluster in a region. In the Directory there are above 1,100 identified cluster organisations and most of them are focused on information technology industry (70), biotechnology (63), general automotive industry (54), environmental technology industry (47) as well as information and communication technology industry (40). Approximately 25% of the organisations are members of the European Cluster Observatory. In the report, one can find 12 cluster organisations from Poland (see Table 1) and seven of them are members of the Observatory.

Table 1. Cluster organisations in Poland

No.	Organisation	Region	Core industry
1	Automotive Cluster of Dolnośląskie	Dolnośląskie	General Automotive
2	Medycyna Polska	Małopolskie	Healthcare, Medical Technology
3	Tarnów Plastic Valley		Plastics
4	Poland to Europe (P2E)	Mazowieckie	General Business Services, Information Technology
5	Regionalne Ośrodki Szkoleń E-learningowych		General Education
6	Aviation Valley Association	Podkarpackie	Aeronautics
7	KOM-CAST		Metallurgy

8	ICT Pomerania	Pomorskie	Information Technology
9	Printing Cluster	Wielkopolskie	Publishing
10	Wielkopolska Agency for Enterprise Development		General Automotive
11	Wielkopolska ICT Cluster		Information Technology
12	Zielona Chemia	Zachodnio-pomorskie	Chemical

Source: Europe Innova – European Cluster Observatory (2009, pp. 74-75)

Looking at the results of the above mentioned research one can notice that they are still fragmentary and are not based on precise definitions. Researchers prefer to conduct an exploratory research rather than more in-depth study of specific phenomena within a cluster. Before any research in the field of cluster is started, one should answer the question if a geographical concentration of companies really is a cluster. A researcher should be aware of the fact that talking about a cluster is not enough to identify a geographical concentration of companies and supporting institutions. The type of business behaviour and business relationships built on the basis of this behaviour plays a decisive role.

4. Research in the subject of clusters and coopetition in Wielkopolska

4.1.The aim and research questions

Looking at the results of the previous research in the subject of clusters in Poland, one can come to conclusion that different sources show quite different data and present different numbers of clusters and cluster initiatives developed in Poland. This fact should be taken into account when one decides to conduct any research in this field. The author has focused the research on coopetition and clusters in the region of Wielkopolska. The explanation of this spatial scope of research is the fact that according to the data of the European Cluster Observatory from the year 2007 (www.clusterobservatory.eu), three of the biggest clusters in Poland function in Wielkopolska. The European Cluster Organisation Directory (Europe Innova – European Cluster Observatory 2009) lists three institutions of this type in

Wielkopolska. For the other regions the number of cluster organisations is lower, as mentioned in the Directory, although it is necessary to admit that some cluster organisations are not registered in this Directory. According to Ketels and Sölvell (2006), regions with higher GDP per capita are characterised by a higher number of clusters. Wielkopolska belongs to leaders in this ranking. GDP per capita in Wielkopolska in 2007 was 10% higher than the GDP per capita in Poland, when one takes the value of GDP per capita for the whole country in the year 2006 as 100. However, it would be unfounded to formulate a thesis that higher competitiveness of Wielkopolska is determined by the presence of clusters. It must be underlined that the number of clusters or cluster initiatives is important for higher competitiveness of the region but what is much more important is the quality of this phenomenon, which could be associated with sustainability of this kind of market organisations. According to the models regarding a cluster life cycle (Porter 1998, Smith 2008), coopetition appears after the embryonic stage in the life cycle and is necessary for growth and escalation of effects characteristic for clustering process.

In the discussion about clusters in Poland, the research should not be only directed to the matter of calculating special indexes, like location quotient, locational Gini coefficient (Krugman 1991, p. 54) or Ellison-Glaeser index (1997, pp. 889-927). To implement this kind of innovation in the way the market is organised, it is crucial to investigate a type of business relationships among companies declaring participation in a cluster. The mix of competition and cooperation among companies is one of cluster attributes, as the author has highlighted in the first part of the paper. Without collaboration among competitors it is difficult to talk about real clusters in Porter's perspective. The positive effect associated with knowledge spillovers and pressure on changes in productivity, innovativeness and efficiency will not disappear but will be reduced.

The state of research in Poland in the subject of clusters encourages the author to formulate some research questions:

- How do the firms engaged in clusters perceive coopetition?
- Does their perception of coopetition differ from that one of companies implementing other forms of coopetitive behaviour?
- What are the fields of cooperation with rivals?
- Are the firms engaged in clusters able to highlight some advantages and disadvantages of coopetition?
- What are perceived changes in competitiveness and internationalisation of companies caused by coopetition?

The author will try to answer the questions presenting some results of the interviews with companies.

4.2.Method of data collection

The research on coopetition and clusters in Wielkopolska was led from February 2009 to May 2009. The collected data was processed with the use of STATISTICA 8.0 program. In the research, a method of direct interview and, in a case of seven companies, an electronic version of questionnaire form were used. After accomplishing the forms, the answers were sent by an e-mail and the researcher discussed some answers with the respondents. The questionnaire form was a research device. It contained recruitment, substantial, metric and evidence parts. In the substantial part there were questions concerning characteristics of coopetition and relationships between coopetition and international competitiveness and internationalisation of the company. A choice of respondents was made according to three recruitment questions in the questionnaire form. The questions concerned employment, a post of a person who would potentially fill out the form and the fact of cooperating or not cooperating with market rivals. The research was to be carried out among SME and big companies, which are production enterprises – D section – Industrial Processing and F section – Construction industry – focusing on the companies providing building services according to the European Classification of Activity.

One condition of participating in the questionnaire was also acceptance of internationalisation by a company, at least in a form of export. All of the researched companies were placed in Wielkopolska region. The respondents were recruited from the managing board of a medium and high level. For the research of managers' opinions on clusters and coopetition an ordinal scale was used, i.e. a five-level scale, where 1 meant definitely not; 2 – rather not; 3 – it is difficult to say; 4 – rather yes; 5 – definitely yes. The scale style and tone were synchronised with those of specific questions.

4.3.Characteristics of the sample

The primary assumption of the researcher was to rely on a random selection of the companies chosen for the research sample, at the same time the research was in accordance with the selection criteria presented in part 4.2. However, serious obstacles that the researcher encountered at the stage of data gathering enforced alteration of the attitude and a method of non-random unit selection was applied, a convenient selection. The issues of cooperation with market rivals and its implications for enterprises are strictly protected by companies. The size of the sample was established arbitrarily, the author decided to interview at least 50 entities in one region, which fulfilled the established criteria.

The convenient way of the sample selection distinctly indicates that the study results cannot be generalised. The results can just exemplify the perception of clusters and coopetition among enterprises.

The interviews were taken in more than 70 companies, however, the quality of the data gathered in that way caused that only 52 interview questionnaires were used for further analysis. Among those 52 companies there were 19 which employ from 100 to 249 workers, 11 small enterprises with up to 49 employees, 8 entities which employ from 50 to 99 people and 7 companies employing respectively from 250 to 499 workers and more. Among the researched enterprises, limited liability companies formed a dominant group (24 companies), joint-stock companies (13 enterprises) and one-man companies (9 entities). There were also cases of registered partnerships (2 companies), civil companies and co-operatives, also two subjects of each category. 12 of the researched companies had a foreign capital share. The sector structure of the researched population is as follows: 42 companies were from section D – Industrial processing and 10 entities belonged to section F – Construction industry.

4.4.Research results

To characterise the perception of coopetition among firms under the research the author asked about a number of rivals, forms and range of coopetition. It is interesting how the companies, aware of being a cluster participant, perceived coopetition and especially the impact of this type of business relationship on their international competitiveness and internationalisation.

The greatest percentage of respondents declared cooperation with a number of rivals ranging from two to five (percentage of indications – 58.82%). Short-term, temporary agreements were the most popular form of coopetition (percentage of indications – 71.15%), it was indicated that clusters held the second position (percentage of indications – 51.92%), and the third place belonged to business networks (15.38%). In the set of links covered by cooperation with rivals, the first three places belonged to production operations (average form the category of responses – 3.69), products and semi-products supply (3.58) and supply logistics (3.31). Coopetitors of the researched companies were mainly domestic, Polish enterprises, the ones whose sizes were similar to the ones of the respondents.

The perception of coopetition advantages among the participants of clusters and other firms differed only slightly (see Table 2). The most important advantages for cluster participants were:

– access to valuable resources and competencies within the industry and improvement of the competitive position (4.26 for both),

– achieving economies of scale (4.11).

The other companies under the study declared that they cooperated with their rivals because it gave:

– access to valuable resources and competencies within the industry and improvement of the competitive position (4.43 for both),

– improved position in relation to suppliers (4.36),

– complementing each others' activity (4.32).

Table 2. Advantages of coopetition

Advantages of coopetition	Participants of clusters	Others
Reduction of transaction costs	4.04	4.07
Access to valuable resources and competencies within the industry	4.26	4.43
Taking more advantage of market opportunities	4.07	4.09
Improvement of the competitive position	4.26	4.43
Complementing each others' activity	4.11	4.32
Achieving economies of specialisation	4.22	4.27
Improved position in relation to suppliers	3.93	4.36
Improved position in relation to buyers	4.04	4.20
Achieving economies of scale	3.70	3.93
Easy way to obtain information about the cooperator – former competitor	3.78	3.18

Source: Own study

The evaluation of disadvantages among cluster participants is higher than among other companies. Companies engaged in clusters are afraid that they can lose their competitive advantage and core competences can diffuse to their cooperator (4.26), the other firms perceive it as a way the cooperator becomes an even stronger competitor (Table 3).

Table 3. Disadvantages of coopetition

Disdvantages of coopetition	Participants of clusters	Others
It reduces competitive pressure and it has an negative impact on company development and upgrading	3.78	3.18
The co-operator becomes an even stronger competitor	3.96	3.25
The company can loose its competitive advantage and core competences can diffuse to the cooperator	4.26	3.23
The company can pay more attention to the co-operator than customer and neglect client's expectations and needs	3.85	2.89

Source: Own study

In literature, one can come across some data based on empirical research, showing that this type of business relationship brings some positive changes in international competitiveness of firms. Following this kind of reasoning, the author asked the companies to indicate consequences of cooperation with market rivals for the international competitive position of the firm (measured by the market share and profitability of sales on the domestic/foreign markets) and the level of internationalisation. According to the data in Table 4, coopetition in clusters is above all a factor helping increase the domestic market share (3.96) and profitability of sales in the domestic market (3.93). For companies not participating in any cluster it is useful in increasing the domestic market share (4.07) and share of export sales in total sales. It means that cluster participants perceive coopetition as a factor leading to positive changes in their competitive position on the domestic market and for the rest of firms it is helpful in improving the domestic market position and rising the level of internationalisation, which can be measured by the share of export sales in total sales (3.98).

Table 4. Coopetition as a factor changing the international competitive position and the level of internationalisation of a firm

Coopetition as a factor changing the international competitive position and the level of internationalisation of a firm	Participants of clusters	Others
Increase of the market share on the domestic market	3.96	4.07
Increase of profitability of sales on the domestic market	3.93	3.95
Increase of the market share on the foreign market/markets	3.85	3.84
Increase of profitability on the foreign market/markets	3.78	3.75
Increase of export sales in total company sales	3.63	3.98

Source: Own study

5. Conclusions

The subject of clusters in Poland requires more precise and in-depth research. As it was presented in this paper, the studies are very often directed just towards the identification of clusters using some measures. It is not enough. The term 'cluster' is often misused. For researchers a cluster and cluster initiatives are very often the same.

It is necessary to conduct more research on the phenomenon of coopetition, which is responsible for positive effects of participating in a cluster. Real clusters do not exist without a mix of competition and cooperation.

The research results show that among companies from Wielkopolska one can identify entities aware of being involved in collaboration with their market rivals. The firms are able to define advantages and disadvantages of being a coopetitor. The respondents indicated the number of rivals they cooperate with and tried to assess 'the pros and cons' of this peculiar phenomenon. Companies' opinions about changes in their international competitiveness thanks to coopetition are quite positive, as the answers take the level around 4.00 ('rather agree'). However, the perception of coopetition as a factor of changing international competitiveness of a firm does not differ very significantly among companies participating and not involved in clusters. The author draws this conclusion basing only on the results of analysis with the use of descriptive statistics. More in-depth statistical analysis with appropriate statistical tests and models is to be conducted in the future. On the basis of the research the author cannot conclude that coopetition within clusters brings more benefits for firms than coopetition in other forms, i.e. strategic alliances, short-term agreements or networks without geographical proximity.

The obtained results are only a snapshot of business relationships among some firms in the region of Wielkopolska but apart from that fact, it is possible to formulate some general recommendations for companies and entities involved in creating business environment in Wielkopolska. Involvement in cooperation with market rivals means conducting a unique type of competitive strategy. Managers should take into account a strategy of creating competitive advantage using cooperation with their rivals. It is possible to achieve collaborative competitive advantages and use cooperation with some competitors for better performance on the market and to outstrip some other rivals. The cases of firms participating in the research are a kind of evidence that it is possible. In fostering coopetition in Wielkopolska there is a role to be played by the entities of regional and local authorities and institutions of business support organisations like industrial associations or chambers of commerce, etc. Both kinds of institutions could promote the idea. Educational aspect of their activities is of great importance, i.e. organising interesting seminars which present success stories of coopetition told by managers who developed this kind of business relationships.

The prerequisite for cooperation is mutual trust, which is even more needed for cooperation with rivals. Local and regional authorities as well as institutions of business environment as non-business actors could help companies develop relationships based on trust. Efforts of these institutions do not replace companies' activities but can create the atmosphere of trust, promoting ethic business behaviour or organising meetings for networking firms. The biggest disadvantage of cooperation with rivals indicated by the cluster participants is the threat of diffusion of core competences. The core competencies are very often the know-how of a firm. To increase safety in this kind of a business relationship intellectual property rights play a crucial role. Managers need more data and knowledge about how to protect their rights while sharing their know-how. There is a space to be cultivated by the mentioned institutions.

The emergence of coopetition is implied by changes in real world connected with stronger competitive pressure and attempts of firms to be innovative. Transformation in the landscape of business relationships brings a great challenge for researchers. The challenge is methodological in nature. The question how to assess intensity of coopetition among and between companies remains open. What are the appropriate measures? The task is very difficult as coopetition is on the one hand, a process on the market and especially within real, operating clusters and on the other hand, a kind of business strategy. The duality of coopetition is a sign that the phenomenon can be discussed from the perspective of economics and the perspective of management science. The present study does provide guidance for directions as to what factors and relationships deserve to be further investigated.

Endnotes

[1] Brief summary of the research focused on the results of coopetition for the performance of companies can be found in Jankowska (2009, pp. 67-89).

References

Amendoa, G., Guerrieri, P., Padoan, P.C. (1992), 'International patterns of technological accumulation and trade', *Journal of International and Comparative Economics*, Vol. 1, pp. 173-197.

Bojar, E., Bis, J. (2006), 'Rola bezpośrednich inwestycji zagranicznych (BIZ) w klastrach', *Przegląd Organizacji*, No10, pp. 32-36.

Brodzicki, T., Szultka, S. (2002), 'Koncepcja klastrów a konkurencyjność przedsiębiorstw', *Organizacja i Kierowanie*, No 4, pp. 45-60.

Clarkson, M., Fink, M., Kraus, S. (20070, 'Industrial clusters as a factor for innovative drive – in regions of transformation and structural change: A comparative analysis of East Germany and Poland', *Journal for East European Management Studies*, Vol. 10, No 4, pp. 340-364.

Dagnino, G.B., Padula, G. (2002), 'Coopetition Strategy. A New Kind of Interfirm Dynamice for Value Creation', Paper presented at EURAM – the European Academy of Management, Second Annual Conference – *Innovative Research in Management*, Stockholm, 9-11 May 2002, mimeo

Ellison, G., and E. L. Glaeser. (1997), 'Geographic concentration in U.S. manufacturing industries:A dartboard approach' *Journal of Political Economy*, Vol. 105, pp. 889-927.

Europe Innova – European Cluster Observatory 2009, www.clusterobservatory.eu (10.11.2009)

Gorynia, M., Jankowska, B. (2008), *Klastry a międzynarodowa konkurencyjność i internacjonalizacja przedsiębiorstwa*, PWE: Warszawa.

Jankowska B. (2009), Konkurencja czy kooperacja, Ekonomista, No 1, pp. 67-89.

Ketchen, D., Snow C., Hoover V. (2004), 'Research on competitive dynamics: Recent accomplishments and future challenges', *Journal of Management*, Vol. 30, No 6, pp. 779-804.

Ketels, Ch. (2004), The Development of the cluster concept – present experiences and further developments (http://www.isc.hbs.edu/pdf/Frontiers_of_Cluster_Research_2003.11.23.pdf)

Ketels, Ch., Memedovic O. (2008), 'From cluster to cluster – based economic development', *International Journal Technological Learining and Development*, Vol. 1, No 3, pp. 375-392.

Ketels, Ch., Sölvell, L. (2006), *Clusters in the EU-10 New Member Countries*, EU DG Enterprise: Brussels.

Krugman, P.(1991), *Geography and Trade,* Cambridge: MIT Press.

Marshall, A. (1920), *Principles of Economics*, Macmillan: London.

Palmen, L., Baron, M. (2008), *Przewodnik dla animatorów inicjatyw klastrowych w Polsce*, PARP: Warszawa.

Patel, P., Pavitt, K. (1991), 'Large firms in production of the world's technology: an important case of non-globalisation', *Journal of International Business Studies*, Vol. 22, No 1, pp. 1-40.

Porter, M. (1998), *The Competitive Advantage of Nations*, Macmillan: London

Porter, M.E. (2000), 'Location, Competition and Economic Development: Local Clusters in a Global Economy', *Economic Development Quarterly*, Vol. 14, No. 1, pp. 15-34.

Rzońca, W., (2005), Koopetycja-przejaw przeobrażeń we współczesnej praktyce zarządzania, in J. Skalik (Ed.), *Zmiana warunkiem sukcesu. Przeobrażenia metod i praktyk zarządzania*, Prace Naukowe Akademii Ekonomicznej we Wrocławiu: Wrocław, pp. 84-90.

Skawińska, E., Zalewski, R. (2009), *Klastry biznesowe w rozwoju konkurencyjności i innowacyjności regionów*, PWE: Warszawa.

Smith, M. (2008), *Exploring Cluster Dynamics Using Systems Thinking Methodology – an International Study*, Scottisch Enterprise, mimeo.

Sölvell, L., Ketels, Ch. (2003), *The Cluster Initiative Greenbook*, www.cluster-research.org (26.10.2009)

Wojnicka, E., Brodzicki, T., Szultka, S. (2003), *Clusters in Poland*, Instytut Badań nad Gospodarką Rynkową, Gdańsk.

Zerbini, F., Castalado, S. (2007), 'Stay in or get out the Janus? The maintenance of multiplex relationships between buyers and sellers', *Industrial marketing Management*, Vol. 36, No 7, pp. 941-954.

www.europe-innova.org.index.jsp

www.clusterobservatory.eu