

Milena Ratajczak-Mrozek¹⁹, Magdalena Herbec²⁰

ACTIVE AND INACTIVE CLUSTERS IN POLISH FURNITURE INDUSTRY. THE INDUSTRIAL NETWORK APPROACH

Abstract: The aim of the article is to identify clusters whilst at the same time determine which are inactive (i.e. in practice, not engaged in any real activities but which are treated equally as active clusters in various sources) using Polish furniture industry as an example. The analysis which has been carried out here from the perspective of the industrial network approach takes into account the structure and characteristics of the activities which clusters undertake and facilitate the identification of truly active clusters within the industry. In addition clusters are classified as formalised and informal in terms of their real activities, resources and entities. This study stresses the reasons for creating such a network structure in view of the nature of the actions during the start-up of the cluster initiative (bottom-up approach, top-down approach).

Key words: cooperation, industrial network, clusters, triple helix model, formalization, furniture industry

INTRODUCTION

Due to the growing importance of business networks and therefore the economy adopting this phenomenon as an attribute, it is impossible to limit business analysis to individual, isolated firms and to ignore the market conditions in which they operate, including their relationships with entities for the immediate and distant surrounding environment. For this reason there is an increasing level of interest in economic phenomena from the perspective of the network approach.

Due to transactions, formal and informal relationships practically every entity to a varying extent is linked with others, in this way creating a network structure. The essence of business enterprise is of course tied to constant interactions and trade exchange with other entities on the market and „firms should not be seen in isolation but as being connected in business systems” [23]. Moreover important benefits flowing from cooperation and network relationships are important from the perspective of firms (due to at least the improvement of market results achieved [3,4,20,21,23]) as well as specific industries or the economy as a whole (improvement in competitiveness). For this reason an analysis of specifics of industry sectors from network perspective is also important for supporting regulatory ties. In this article the focus of such an analysis is the furniture industry.

In the furniture industry (which is analysed in this article) one of the most popular forms of cooperation and type of network are clusters. This is also the type of network structure which is often analysed in the literature pertaining to the industry [5,6,12,15,25]. Any analysis regarding the functioning of clusters in the furniture industry usually consists of reports identifying industry clusters [5,15,16] or descriptions of the nature of clusters both in relation to firms which participate in them as well as in relation to the whole industry or economy [8,13,14]. Rarely does the analysis deal with the operations or functioning of a specific cluster without being limited to the assumptions defined in formal strategies and/or information posted on web pages, and focus on the identification of real signs of activity [7]. At the same time it is important to stress the significance of carrying out a comprehensive analysis of active clusters and signs of their activities. This is especially relevant given the fact that in business practice there are known examples of various types of cluster activity which ultimately have not aroused the interest of firms and currently are not continued. This is

¹⁹ Milena Ratajczak-Mrozek, PhD, Poznań University of Economics, Department of International Marketing, al. Niepodległości 10, 61-875 Poznań, Poland, e-mail: milena.ratajczak@ue.poznan.pl

²⁰ Magdalena Herbec, M.Sc., Wood Technology Institute, Winiarska 1, 60-674 Poznań, Poland, m_herbec@itd.poznan.pl

important to the extent that in practice inactive clusters are often cited in various types of reports which thereby leads to the distortion or misinterpretation of clusters and network structures within this (furniture) industry. For this reason, the analysis carried out from the perspective of the network approach, which aims to identify real activities, resources and entities, thereby indicating the extent to which clusters are formalised, provides an insight in to the factors influencing management decisions at the firm level or indeed the regulatory decisions pertaining to this field of the economy [19]. The aim of this article therefore is to identify clusters whilst at the same time determining which are inactive (i.e. in practice, not engaged in any real activities but which are treated equally as active clusters in various sources) using the Polish furniture industry as an example. The analysis which has been carried out here from the perspective of the industrial network approach takes in to account the structure and characteristics of the activities which clusters undertake and facilitates the identification of truly active clusters within the industry.

THEORETICAL BACKGROUND

According to the most common definition by M. E. Porter clusters are „(...) geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. (...) Many clusters include governmental and other institutions – such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations – that provide specialized training, education, information, research, and technical support.” [17]. Important elements of clusters are relationships and cooperation which in consequence should generate value added and lead to a competitive advantage on the market.

A cluster constitutes a type of network structure, however, the limitation of network structure analysis solely to clusters is a mistake [22]. Generally social sciences, economics, management or even mathematics (graph theory) assume that a network is a strictly or loosely defined structure of cooperating entities (nodes, actors) linked by so called network relationships (ties, arcs). A cluster, however, is a network considered from the perspective of a structure which is usually formal, where the importance of geographic proximity is stressed (participants of the cluster must be located sufficiently close to each other in order to be able to benefit from the positive effects of penetration and utilisation of shared resources [11]) and where a common industry is also important [22]. Clusters can be classified as a type of network with limited membership, where all members may be defined (...) and the full structure of this type of network is externally observable - fully observable from outside (from the perspective of an external observer) [19]. Such an understanding of a network structure is a business network which involves a formalised (also in the form of an association, company's internal structure) group of business entities with limited membership collaborating for specific purposes [9]. In line with this the most popular definition of a network, a flagship company (e.g. university in a cluster, or just a so called broker) normally acts as the task integrator. The integrator is the one main entity that is actively creating the network in a strategic manner. The flagship company/ institution only has strategic control over those aspects of its partners' business systems which are dedicated to the network [10]. These types of network structures are characterised by a varying degree of formalisation (e.g. clusters functioning in the form of an association or clusters based upon informal cooperation), although they are largely formalised [19].

In a modern economy, the term “cluster” has become a “keyword” which is supposed to ensure the growth of both firms and the economy as a whole. As a result, the support which is provided to firms in Poland is focused largely on the development of cluster initiatives. The start-up of a cluster initiative can be the result of bottom-up activities started by entities interested in cooperation (the

so-called bottom-up approach) or can result from top-down activities undertaken by public authorities (the so called top-down approach) [18] which are often associated with the search/application for funding. There is, however, a serious risk that in once funding ceases the cluster will also cease to function in a given region. The formation of a cluster in such circumstances, however, is not the result of the inherent desire to cooperate but rather a top-down initiative [24]. This constitutes an important pre-requisite for analysing clusters in terms of their actual activity which, among others, can provide a basis for the future evaluation of the effectiveness of measures aimed at the creation of cluster initiatives.

In view of the above and as well as the various motives for creating clusters, the other legal and organisational forms which they can adopt as well as their importance for the economy, it is justifiable to systemise the various issues related to these types of network structures. It is particularly important view these issues from the perspective of the network approach, especially the classification of clusters which actually function within the economy, taking in to account the entity structures and types, as well as the effectiveness of activities undertaken by the cluster.

THE FURNITURE INDUSTRY IN POLAND AND THE IDENTIFICATION OF ITS CLUSTERS

It is difficult to provide a full list of clusters functioning within the furniture industry. The data available in this regard is varied depending upon the source. According to the Polish Agency for Enterprise Development (PARP), in the first quarter of 2013, there were 198 clusters and cluster initiatives in various sectors of the economy, of which 8 were identified in Polish furniture industry [15]. In turn, the European Cluster Observatory website does not mention any furniture industry cluster in Poland [27]. This raises the question regarding the actual status of cooperation between firms in the furniture industry as part of clusters. Are these structures where interaction and cooperation actually takes place, or is this solely “on paper”, “on the website” and in reality there is no interaction relating to exchanging resources and/or joint activities?

As a result of the above it is necessary to analyse the described phenomenon. For this reason, a detailed analysis of data obtained from clusters operating in Polish furniture industry was carried out between March and August 2013. Information regarding these network structures was verified using data available on the cluster websites and the strategic documents they contained, as well as based upon interviews carried out with network structure representatives. The analysis which was carried out regarding the network structures in Polish furniture industry appears to negate the figures obtained from secondary sources of information and provides a basis to presume that there are 5 active clusters in this industry (as of August 2013)²¹. Among them are clusters which are active and with a formalised structure as well as active, informal clusters. Moreover, 4 clusters were identified which were in fact inactive and which due to the lack of joint network relationships between the associated entities, do not constitute a cluster network structure focused on cooperation and the creation of value added. A geographic agglomeration of entities linked with the industry is insufficient to be able to refer to it as a cluster. It is not just a formalised structure which is required, but cooperation and joint activities undertaken by members etc. In the next section of the article, there is a review of the individual types of structures functioning in Polish furniture industry.

ACTIVE FORMAL CLUSTERS

Formal clusters constitute a network structure whereby its members are associated based upon a signed legal agreement (e.g. in the form of an association, understanding etc.). In this way, the relationships/cooperation which take place between individual members of the cluster have a formal

²¹ In reality, furniture companies can also be members of clusters where the main industry is not the furniture industry. Few such cases have been identified in the wood industry. Due to their limited importance, they are not subject to analysis in this article.

nature. The analysis suggests that 4 out of 5 of the active clusters identified in the furniture industry can be deemed to have a formal nature. An analysis of these clusters is presented in table 1.

Table 1. Active formal clusters in furniture industry in Poland in the first half of 2013

Name	Entities	Coordinator	Main goal	Activities
Eastern Poland Furniture Industry Cluster (lubelskie voivodeship) <i>Klaster Przemysłu Meblarskiego Polski Wschodniej</i>	Firms: -micro – 6 -small – 2 -medium – 2 -large – 0 R&D institutions – 1 institutions from the surrounding environment – 1	Foundation for the Eastern Poland Furniture Industry Cluster	NA	– Member meetings – Activities linked to the promotion of products
Associated Furniture Cluster in Elbląg (warmińsko-mazurskie voivodeship) <i>Stowarzyszenie Klaster Mebel – Elbląg</i>	Firms: -micro – 2 -small – 4 -medium – 8 -large – 2 R&D institutions – 1 institutions from the surrounding environment – 4	Elbląg Chamber of Commerce	The consolidation and bonding of competing firms from the furniture industry.	– Promotion of the furniture industry – Participation in trade fairs – Training – Conferences
Wielkopolskie Furniture Design Cluster (wielkopolskie voivodeship) <i>Wielkopolski Klaster Mebel Design</i>	Firms: -micro – 2 -small – 8 -medium – 3 -large – 0 R&D institutions – 2 institutions from the surrounding environment – 1	Wielkopolskie Chamber of Commerce	The creation of an innovative and competitive product, namely the prevalence of furniture produced from light and ecological cell panels. Expanding markets and the competitiveness of member firms.	– Delivery of research products with R&D institutions – Cooperation with foreign entities – Organisation of meetings between members of the cluster – Offering free and innovative consultation services
Wood-Furniture Cluster (zachodniopomorskie voivodeship) <i>Klaster Drzewno-Meblarski</i>	Firms: -micro – 1 -small – 9 -medium – 7 -large – 1 R&D institutions – 3 institutions from the surrounding environment – 0	Zachodniopomorskie Association of Wood and Furniture	Expansion of the wood and furniture industry in the zachodniopomorskie voivodeship.	– Initiative aimed at delivering a project jointly funded by the EU. – The creation of an wood and furniture industry competence centre – Promoting the development of the industry

NA – no data

Source: Authors' own work based upon PARP data [15], cluster websites and telephone interviews with representatives of the clusters.

In most cases the business entities that are members of the aforementioned network structures are differentiated in terms of industry, size or type of entity (firms and/or institutions). Examples are the Associated Furniture Cluster in Elbląg (*Stowarzyszenie Klaster-Mebel Elbląg*) and the

Wielkopolskie Furniture Design Cluster (Wielkopolski Klaster Mebel Design). In the former, members not directly linked to the production of furniture include an insurance company and a visual advertising firm. In the case of the latter, such members include a firm experienced in the production of paper fillings (known as “honeycombs”), a producer of steel, polyester-glass and glass components as well as a firm selling wood based panels, worktops and accessories.

In most active formal clusters the associated members include network actors which are not only local companies from the furniture industry but also representatives from institutions of higher education and those from the surrounding business environment, which corresponds to the Triple Helix model [1,2]. The only exception is the Wood-Furniture Cluster (Klaster Drzewno-Meblarski) in which (as demonstrated by the available sources) there are no members from outside the business environment, however among the associated members there are the R&D institution. In turn, all of the aforementioned formal clusters are coordinated by institutions from outside the business environment. This phenomenon could be evidence of the lack of the need to initiate structures through companies. Moreover firms classified as micro, small or medium-sized dominate the active clusters. At the same time, the differentiated structure resulting from the types of entities which constitute it is typical for most of the aforementioned clusters (including the notable participation of firms from other industries) underlines the importance of cooperation between the furniture industry and entities from its surrounding environment.

The main aims of the clusters are largely focused on ensuring the development of the industry and on maintaining the competitiveness of produced goods. Attention is drawn by the fact that in the case of formal structures, one of the most often cited motivations for creating the structure is the aim of sourcing external funding (e.g. European funds). It is also important to point out that the nature of the activities carried out within the different structures is very similar. Namely, activities aimed at promoting the industry in the region are dominant (e.g. conferences, meetings etc.) as well as activities aiming to grow the industry (training, cooperation with other entities from the surrounding environment etc.).

ACTIVE INFORMAL CLUSTERS

Among the active furniture industry clusters, there is one where currently (September 2013) it is difficult to identify any real formal links between companies from the industry (see table 2). This is the newly created Szczecinek Furniture Cluster (Szczecinecki Klaster Meblowy), where the role of the initiator and currently the coordinator is filled by a firm from the environment surrounding the furniture industry (a producer of wood-based panels). This is an example of an informal network structure which is evidence of the activities interdependencies directed towards entities from the furniture industry by suppliers. It should be noted that in the nearest future this cluster can be formalised because on September 20 a letter of intent was signed between the coordinator company and the representatives of the city Szczecinek, the District Office (Starostwo Powiatowe) in Szczecinek and the institution from the surrounding environment – Pomorska Regional Development Agency.

Despite the fact that this is a relatively new initiative, there is a high level of advancement in the respective activities which appear to be similar to those typical for formal clusters. Within this cluster there are also activities aimed at obtaining financing towards activities. However, in this case it should be noted that during the first months of the cluster’s operations, relatively large costs were incurred in order to build new factories for producing furniture and furniture accessories. It can be assumed that in the future, the cluster will aim towards creating formal structures which will make it easier to obtain financing.

The cluster under discussion constitutes an example of rarely found bottom-up initiatives where the desire to form an association leads to the creation of network structures. It is believed that such activities have a greater chance of creating a permanent and growing network structure, whilst

the relatively short period of time during which this cluster has been operating is not conducive for assessing it in terms of its effectiveness.

Table 2. Active informal clusters in furniture industry in Poland in the first half of 2013

Name	Entities	Coordinator	Main goal	Activities
The Szczecin Furniture Cluster (zachodniopomorskie voivodeship) <i>Szczecinecki Klaster Meblowy</i>	Firms – 6 (Initiative from 2013. There are on-going discussions with institutions of higher education and institutions from the surrounding environment)	Kronospan Szczecinek	Ultimately: the achievement of a regional cluster or national key cluster (which will allow for the cluster to apply for EU funding) as well as an increase in the cluster's importance.	<ul style="list-style-type: none"> – Maintaining high quality of goods – The implementation of new furniture factories – Attempts at obtaining financing – Making production floors available – Cooperation with public institutions in terms of: the creation of a technological park, improvements to road infrastructure as well as the organisation of conferences.

Source: Authors' own work based upon website of the cluster's coordinator and telephone interviews with one of the cluster members.

INACTIVE CLUSTERS

The idea of clustering in recent years has become very popular which frequently leads to such activities taking place. However, the problem, as has been already underlined, is the lack of a detailed analysis regarding the level of actual cooperation, interaction in terms of resources and activities present in these clusters. Upon comparing the results of the analysis with PARP data regarding cluster activities in the furniture industry it is possible to point to examples of structures which in practice do not constitute an active cluster. In these cases it is difficult to even refer to the existence of a cluster structure. This is important to the extent that the clusters which are actually inactive are often included in various reports which in turn leads to the distortion of the picture of clusters and network structures in the furniture industry.

The analysis suggests that the Furniture Cluster in the Kujawsko-Pomorski voivodeship, the Lubawski Cluster, the Wielkopolska Furniture Cluster as well as the Zachodniopomorskie Wood & Furniture Cluster are among the inactive clusters in the furniture industry. Their primary structure and activities are presented in table 3.

In each of the clusters the level of advancement of initiatives during their activity varied. An example of a relatively high-level of activity was demonstrated by The Wielkopolska Furniture Cluster. The plans and assumptions regarding the creation of this structure were presented in the Development Strategy of The Wielkopolska Furniture Cluster in 2007 [28]. The initiatives which were carried out include the organization of conferences aimed at integrating the business environment with entities from the surrounding environment and the creation of conditions conducive for joint activities. Despite efforts, the initiative is currently not operating. It can be assumed that one of the main reasons for which the project failed to survive was the lack of funds. Early initiatives were cofinanced by UE funds. The cluster's website is still active [28], however, the last entries were made in 2007, informing of a joint activity, i.e. a conference to summarise the training project "Increasing the competitiveness of the wood industry". Due to the fact that the Wielkopolskie Furniture Design Cluster operates in the Wielkopolska voivodeship, regional firms which are interested in cooperation are able to become members, whilst the early activities of the now inactive cluster can be to a certain extent credited with spreading the idea of clustering

throughout the region. The Zachodniopomorskie Wood & Furniture Cluster as well as The Regional Development Agency in Torun were in a similar situation.

Table 3. Inactive clusters in the furniture industry in Poland in the first half of 2013

Name	Coordinator	Main goal	Activities
Furniture Cluster (kujawsko-pomorski voivodeship) <i>Klaster meblarski</i>	The Regional Development Agency in Torun <i>Toruńska Agencja Rozwoju Regionalnego</i>	Promotion of the clustering ideology in the region, in three industries referred to in the Regional Industry Innovation Strategy, including the wood and furniture industry.	<ul style="list-style-type: none">– Training, workshops– Conferences– A foreign seminar and learning advanced cluster initiatives– Implementation and promotion of projects cofinanced by the EU
The Lubawski Furniture Cluster (warmińsko-mazurskie voivodeship) <i>Lubawski Klaster Meblowy</i>	Guild of Craftsmen and Entrepreneurs in Lubawa <i>Cech Rzemieślników i Przedsiębiorców w Lubawie</i>	NA	<ul style="list-style-type: none">– Meeting initiated by the coordinator, in order to form a cluster
The Wielkopolska Furniture Cluster (wielkopolska woivodeship) <i>Wielkopolski Klaster Meblarski</i>	The Wielkopolska Agency for Enterprise Development (currently there is a lack of an animator for the cluster) <i>Wielkopolska Agencja Rozwoju Przedsiębiorczości</i>	To identify ways to overcome barriers that do not allow the furniture industry to transform from a "hidden cluster" (i.e. actually existing but not formalised) in to a consciously created cluster by firms from the furniture industry.	<ul style="list-style-type: none">– Preparation of cluster development strategy (including among others to conduct a survey among companies to better identify their needs and the environment in which they operate, the organization of conferences for participants in the cluster)– Meetings,– Implementation of a project cofinanced by the EU
The Zachodniopomorskie Wood & Furniture Cluster (zachodniopomorskie voivodeship) <i>Zachodniopomorskie Drewno i Meble</i>	Association of Wood and Furniture (previously - the Koszalin University of Technology - Park of Science and Technology) in the Zachodniopomorskie Voivodeship <i>Stowarzyszenie Zachodniopomorskie Drewno i Meble</i>	NA	<ul style="list-style-type: none">– Initiatives carried out within the project– Meetings– Implementation of a project cofinanced by the EU

NA – no data

Source: Authors' own work based upon PARP data [15], cluster websites and telephone interviews with representatives of the clusters.

In the case of the former, the initiative was associated with the delivery of an EU cofunded project in the period between 2009 and 2011 and following its completion in 2011, the animator of the initiative changed. The new coordinator became the animator of the Wood & Furniture Cluster

also operating in the Zachodniopomorskie region and (according to the information obtained based upon a telephone interview) in the near future there is a plan to merge the two initiatives. In the case of the Kujawsko-Pomorskie initiative, the activities (as in many other cases) were financed using UE funds. However, firms from furniture industry did not demonstrate any real interest in this type of network structure.

Among the inactive cluster initiatives there are those which have not prompted any interest among firms to which they were directed at a very early stage. Examples are The Lubawski Furniture Cluster and the Furniture Cluster in the Kujawsko-Pomorskie voivodeship. The realisation of these initiatives was limited to one meeting after which none of the firms engaged in any further activity.

Generally speaking, the analysis shows that in practice it is impossible to identify any initiatives which would serve as evidence of activity among members of the clusters as well as their coordinators – in effect such clusters are non-existent. In the case of the discussed clusters, activities essentially consisted of meetings among members, industry representatives and entities from the surrounding business environment. Typically the cluster initiatives which were started in Poland, including those within the furniture industry were largely the effect of public support, in the form of financial instruments as well as other types of support provided by regional authorities [26]. It is significant to note that in the case of those initiatives which were started using funding from that European Union, upon the receipt of this funding there has been no commitment on behalf of members to continue the operations of these clusters.

As the research has shown, unsuccessful activities in furniture industry which aimed to create clusters were the result of a relatively limited need to form associations and the level of self-organisation. For this reason it can be deduced that the undertaken top-down initiatives were the result of a greater level of awareness among entities from the surrounding environment, i.e. public administration etc., regarding the role of such network structures within the economy. In turn firms (the main addressees of these activities) upon engaging in these activities tend to assess their tangible benefits, especially in the short term. These as well as other factors can have an impact on the relatively limited interest in the participation in clusters (with the simultaneous preference for undertaking activities linked to the potential obtainment of funds/subsidies). However, where clusters, despite their outlays, do not generate any positive effects in the form of a permanent cluster/network structure, there can be no talk of any real positive cluster effects on firms, the industry or the country in the long-term.

CONCLUSIONS AND FURTHER RESEARCH

The identification of active and inactive clusters is an important result of the study. The classification of these structures was based upon their constituent entities, goals and activities. Of particular importance was the nature of the activities carried out within clusters from the perspective of the network approach. In this way, using the furniture industry as an example, it has been shown how important it is to filter out inactive clusters in order to obtain a true image of clusters and network structures. The assumptions show that a cluster does not exist if there aren't any joint activities and actual interactions between entities and their resources within the cluster. In such situation there are no synergy or other effects of the cluster.

As can be stated based on the example of the identified active and inactive clusters, the resilience of the cluster can be assured, among others, through joint activities undertaken by associated members based upon a preconceived strategy and a willingness to cooperate among members. The stimulus for undertaking activity cannot be solely financial benefit. These clusters are evidence of the fact that such initiatives often may cease their development due to the lack of continued domestic public or EU funding.

The analysis has identified new directions of research. The study can, among others, be deemed a foundation for an analysis regarding the factors influencing the development of clusters and their operations in various stages of their development. Moreover, it seems particularly important to recognise other types of network structures whose full structure is not observable from the outside, but only from the perspective of focal company. It should be stressed that there is a need to expand analysis beyond that of clusters which are not always effective in the results which they bring. A comprehensive approach to the networks structure analysis should enable to identify the relationships between different structures. In addition, different types of relationships and network types may have different effects on various entities and result in different effects. Therefore, it is important to carry out a detailed analysis of these effects i.e., to answer the question whether or not any specific types of networks are more effective than others and generate better results. It is to be expected that network structures, including clusters, will gain in importance (especially at a government level). Hence the issues presented here require further study both in terms of quantitative and qualitative research.

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