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NETWORK STRUCTURES IN THE FURNITURE INDUSTRY – THE INDUSTRIAL NETWORK APPROACH

The aim of the article is to identify the various types of network structures occurring in the furniture industry from the perspective of the industrial network approach, using Poland as an example. The conceptual framework of this article, which comprises the industrial network approach and Actors-Resources-Activities model, together with a secondary sources analysis, is adopted in order to identify the various network structures. Thus a comparison of the identified types of network structures in the furniture industry is developed from the perspective of their actors, resources and activities interdependencies. The main contribution of the article is a proposal to split the two main types of network structures (more formal structures with limited membership fully observable from the outside, e.g. industry clusters and purchasing groups, as well as those which are not fully observable from the outside and are analysed from the perspective of the focal actor) and as a result, to identify and analyse various network structures in the Polish furniture industry.

Keywords: industrial network approach, cooperation, ARA model, business network, industry cluster, purchasing group, furniture industry

Introduction

A network (a business network or a network structure) is quite a phenomenon and not a straightforward concept. Within organisation management there are many ways to understand the term network (business network, network structure) and there is no one widely and consistently applied definition available to conceptualise this term. It should be stressed that narrowing the analysis of network structures down to industry clusters is a mistake. This in turn implies the need to conceptualise the division of network structures as well to adopt the industrial network approach which stresses the significance of all the contacts (network relationships)

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a company has with its surrounding environment [Håkansson, Johanson 1992; Håkansson, Snehota 1995].

Various types of relationships and network structures can have varying effects on entities and can lead to various results. In turn, this, in conjunction with the interdependencies between various structures and relationships, results in managerial problems for companies. Therefore, an understanding of relationships and network dependencies is important for future management decisions at company level as well as within industry and the economy.

The nature of each company's operations is rooted in the specifics of the industry in which they function. For this reason, it is worth analysing network structures for a specific industry. In this case, the focus is the furniture industry, an important market industry which drives many other goods markets. The value of furniture produced in Poland is estimated to be 10th in world rankings (2013) and 4th in Europe (2010) [EPF 2011; PAP 2013]. In 2012, the share of furniture in exports occupied 5th place in a ranking of the value of goods exported from Poland and amounted to 4.3%. On a global scale, the value of exported furniture (about 3%) places Poland in 4th place [WTI estimates; Adamowicz, Wiktorski 2010; EPF 2012].

The analysis of network structures in the furniture industry both in Poland and globally is rather fragmented in nature. Very often it is limited to the analysis of industry clusters [Roolaht 2005; Pikul-Binieć 2009; Kućmański 2011; Herbec 2012], networks within a supply chain (supply networks) [Tunisini, Bocconcelli 2008], transportation agreements [Audy et al. 2011], production orders [Biniasz 2004]), resource networks & resource interaction [Soderlund et al. 2001] and social structures [Dibben, Harris 2001]. Moreover, the analysis pertains to specific management issues within networks (e.g. change management [Kragh, Andersen 2008]). The most frequently analysed case in this industry is the IKEA network structure [e.g. Ford et al. 2002; Baraldi 2003; Baraldi, Waluszewski 2007].

There is a lack of comprehensive analysis of network structures in the furniture industry in subject literature which would serve to systematically document the possible types of network structures (especially in Poland). Therefore, the aim of this article is to identify the various types of network structures occurring in the furniture industry from the perspective of the industrial network approach, using Poland as an example.

The identification of various network structures in the furniture industry should provide a basis for any future analysis of networks, the degree of networking and the complexities of the relationships of a single particular company as well as the whole industry. This in turn could have an impact on the detailed analysis of specific research problems from the perspective of both companies as well as the economy (regulatory ties).

Theoretical background

Organisational management identifies a wide range of network concepts. It is shown that networks can adopt the form of industry clusters, multinationals, joint ventures & strategic alliances, virtual organisations, supply chain networks including manufacturing networks, buying networks etc. As already underlined, organisation management research identifies many ways to understand the term business network or network structure and there is no one widely and consistently applied definition available to conceptualise this term. 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).

Taking into account the broad subject literature, it is possible to propose the following general division of network structures and conceptions associated with them:

- a full network structure fully observable from outside (from the perspective of an external observer) – more formalised networks with limited membership, where all members may be defined, e.g. industry clusters, purchasing networks,
- a network structure which is not fully observable from outside (from the perspective of an external observer) – networks based upon interactions and cooperation observable and analysed from the perspective of studied focal companies according to the industrial network approach.

In keeping with the first general type of network structure, a business network involves a formalised (e.g. in a form of association, company's internal structure) group of business entities with limited membership collaborating for specific purposes [InterTradeIreland 2011]. In line with this, the most popular definition of a network, a flagship company (e.g. the headquarters of a multinational company, a university in an industry cluster, or simply 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 [Jarillo1995]. Under this definition of a network, we refer to the following network structures: multinationals, industry clusters, trade associations, strategic alliances but also, manufacturing networks (such as suppliers collaborating to provide goods to a large manufacturer), purchasing networks (collaboration to buy things together) and service networks (collaboration to offer a common service) [Todeva 2006]. In each of these network structures one can exactly indicate the limited number of network members. These types of network structures are characterised by varying degrees of formality (e.g. industry clusters functioning in the form of associations or clusters based upon informal cooperation), although they are mainly formalised. Often, an analysis of networks

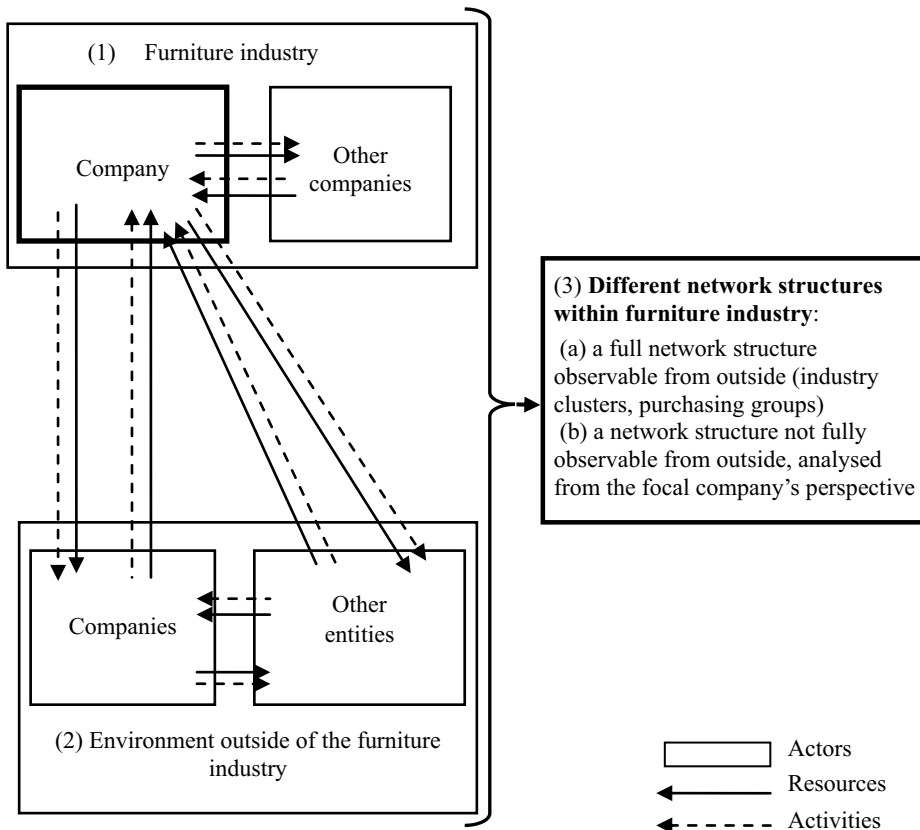
by industry structures and the benefits derived from them are limited to such definitions of networks which, however, results in the very limited scope of the analysis [Ratajczak-Mrozek 2013].

According to the second general type of network structure, a business network (an industrial network) is defined as a set of repetitive transactions based upon structural and relational formations with dynamic boundaries comprising interconnected elements (actors, resources and activities) [Todeva 2006]. A system of relationships is often characterised as being decentralised and largely informal although it may also emerge in a strategic, formal manner. The business network is the effect of historical, mainly long-term close cooperation of a particular company with the entities from its environment and a series of interactions going beyond single buy-sell transactions, which in turn create cooperation norms and build trust, and result in strong network relationships [Turnbull et al. 1996; Ford et al. 1986; Ratajczak-Mrozek 2013]. The analysis of a network is conducted from the perspective of a so-called focal company (a company from whose perspective a network is visualised, not necessary the most powerful entity in a network). That is why there is no single, objective network and different companies and the individuals within them each have a different picture of the structure and characteristics of the network [Ford et al. 2002]. The industrial network approach to defining a business network is linked to the research carried out by the Industrial Marketing and Purchasing Group [IMP Group]. This concept stresses the significance of all the formal and informal, direct and indirect contacts (network relationships) a company has with the entities in its surrounding environment which constitute an extended network.

Conceptual framework and the methodology

In the article, the industrial network approach and the ARA model (Actors-Resources-Activities) are adopted in order to analyse all the various network structures within the furniture industry which makes up the conceptual framework (fig. 1).

The ARA model [Håkansson, Johanson 1992; Håkansson, Snehota 1995] is the basic framework developed within the industrial network approach. According to the ARA model, relationships are made up of actor bonds, activity links and resource ties, which create three overlapping networks. In the case of the ARA model, when analysing a business relationship or a network structure it has to be made clear who the actors are, what their activities are and with which resources they interact [Lenney, Easton 2009]. The understanding of Actors, Resources and Activities within a network makes up part of the network picture [Henneberg et al. 2006]. The network picture refers to the views of the network and its boundaries held by participants in that network [Ford et al. 2002; Henneberg et al. 2006].



Source: Authors' own work

Fig. 1. Conceptual Framework

In keeping with the adopted conceptual framework, companies (actors) operating in the furniture industry have various relationships – both with actors from the industry (1) as well as from outside it (2) (companies, but also administrative or educational institutions, for example) [Ratajczak-Mrozek, Herbec 2013b]. Relationships are tied to interactions, the exchange of resources and conducting of activities. These different actors and network relationships create various network structures in the furniture industry (3).

In this article we identify and analyse the network structures in the furniture industry from the perspective of the adopted division as part of the theoretical background. First, we analyse more formalised networks with limited membership fully observable from outside (a). In this case we identify industry clusters (both formal and informal) and purchasing groups. Then we present an analysis of the potential network structures in the furniture industry not fully observable from outside (b), i.e. according to the network approach when the network is analysed from the perspective of the focal actor. Here as focal actors important entities for

this industry (IKEA Group in Poland, retail companies, and institutions from the surrounding business environment) were chosen. Finally, the main conclusions and areas of further research are presented.

The basis for the presented discussion is the analysis of the secondary sources concerning the data from the furniture industry, including the analysis of network websites and phone interviews with industry cluster representatives. A comparative analysis of sectoral data covers essentially the end of 2013.

Results – network structures in the furniture industry

The characteristics of the actors, resources and activities within the furniture industry are such that the positive effects of network participation are achievable. Due to the significance of this industry for the country's economy, it is essential that some of the less beneficial factors of the industry's development (e.g. little-known brands or insufficient innovation) should be rectified through the active participation of companies in network structures. This is important from the perspective of both the companies and the economy. However, it is important to take in to account the various types of network (e.g. not just industry clusters or supply chain networks, although this in no way detracts from their role and importance) when considering participation in network structures.

Network structures fully observable from the outside (industry clusters and purchasing groups)

Industry clusters

In the furniture industry, clusters defined as the geographic concentration of interconnected companies active in related sectors and linked to the respective institutions from the industry's environment, both cooperating and competing against each other [Porter 1998] are one of the most popular forms of cooperation and network structures. This is also the type of network structure which is often analysed in literature pertaining to this industry [e.g. Pikul-Binieki 2009; Strykowski 2010; Kućmański 2011, Herbec 2012].

As already mentioned in the theoretical background, network structures which are fully observable externally can be formalised to varying degrees and extents. This applies to the clusters under analysis. In practice, there are 5 active clusters in Poland in the furniture industry (as of December 2013)¹, of which 4 can be deemed formal and 1 informal. The analysis of these network structures from the ARA (Actors-Resources-Activities) model perspective is presented in table 1.

¹ 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.

Table 1. Characteristics of furniture industry clusters in Poland – Actors-Resources-Activities perspective

Name	Actors				Coordinator	Resources and Activities Interdependencies	
	Companies	R&D Institutions	Institutions from the surrounding environment	Main goal		Activities	
1	2	3	4	5	6	7	
Eastern Poland Furniture Industry Cluster (Lubelskie Voivodeship) <i>Klaster Przemysłu Meblarskiego Polski Wschodniej</i>	micro – 6 small – 2 medium – 2 large – 0	1	1	Foundation for the Eastern Poland Furniture Industry Cluster <i>Fundacja Na Rzecz Klastra Przemysłu Meblarskiego Polski Wschodniej</i>	NA	<ul style="list-style-type: none"> – Member meetings – Activities linked to the promotion of products – Cooperation with schools (training for students) 	
Associated Furniture Cluster in Elbląg (Warmińsko-mazurskie Voivodeship) <i>Stowarzyszenie Klaster Mebel – Elbląg</i>	micro – 2 small – 4 medium – 8 large – 2	1	4	Elbląg Chamber of Commerce <i>Elbląska Izba Przemysłowo-Handlowa</i>	The consolidation and bonding of competing firms from the furniture industry	<ul style="list-style-type: none"> – Promotion of the furniture industry – Participation in trade fairs – Training (including for students) – Conferences 	
<i>Wielkopolski Furniture Design Cluster (Wielkopolskie Voivodeship) Wielkopolski Klaster Mebel Design</i>	micro – 2 small – 8 medium – 3 large – 0	2	1	<i>Wielkopolskie Chamber of Commerce and industry Wielkopolska Izba Przemysłowo-Handlowa</i>	The creation of an innovative and competitive product, namely the prevalence of furniture produced from light and ecological cellular panels. Expanding markets and the competitiveness of member firms	<ul style="list-style-type: none"> – Delivery of research products with R&D institutions – Cooperation with foreign entities – Organisation of meeting for members of the cluster – Offering free and innovative consultation services 	

Table 1. Continued

1	2	3	4	5	6	7
Wood-Furniture Cluster (Zachodniopomorskie Voivodeship) <i>Klaster Drzewno-Meblarski</i>	total – approx. 10	1	1	Regional Centre for Innovation and Technology Transfer, West Pomeranian University of Technology <i>Regionalne Centrum Innowacji Transferu Technologii, Zachodniopomorski Uniwersytet Technologiczny w Szczecinie</i>	Expansion of the wood and furniture industry in the Zachodniopomorskie voivodeship	<ul style="list-style-type: none"> – Initiative aimed at delivering a project jointly funded by the EU. – The creation of a wood and furniture industry competence centre – Promoting the development of the industry
Szczecinek Furniture Cluster (zachodniopomorskie Voivodeship) Informal cluster <i>Szczecinecki Klaster Meblowy</i>	total – 6	Initiative from 2013. Discussions are on-going with institutions of higher education	Initiative from 2013. Discussions are on-going with entities 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 technology park, improvements to road infrastructure as well as the organisation of conferences taking production floors available

NA – no data

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

It should be noted that the available sources [PARP among others] also refer to other clusters in the furniture industry (aside from those presented in table 1) which include: the Furniture Industry Cluster (Klaster Meblarski) in the Kujawsko-Pomorski Voivodeship, the Lubawski Furniture Industry Cluster (Lubawski Klaster Meblowy), the Wielkopolski Furniture Cluster (Wielkopolski Klaster Meblarski) and the Zachodniopomorski Wood & Furniture Cluster (Zachodniopomorskie Drewno i Meble). However, a thorough analysis of these industry clusters (including phone interviews with cluster representatives and analysis of cluster websites) proved that in practice these clusters do not exist and it is impossible to identify any activities which would serve to demonstrate that the members and/or coordinators are active within the network [Ratajczak-Mrozek, Herbeć 2013a]. In most of these cases, there were initiatives aimed to integrate the industry actors and to finally formalise these structures in order to among other things obtain EU funding for their development. However, these activities did not arouse interest among companies and currently are not being pursued.

The analysis revealed the existence of 4 formal clusters in the furniture industry. 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. 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 network structures through companies.

Actors in most of the aforementioned network structures are differentiated. Examples are the Associated Furniture Cluster in Elbląg (Stowarzyszenie Klaster-Mebel Elbląg – located in the Warminsko-Mazurskie voivodeship) and the Wielkopolski 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.

Among the activities interdependencies, meetings, training courses and other activities linked with attempts to encourage cooperation are dominant. Activities aimed at implementing projects financed by the EU or attempts to obtain financing are worrying to a certain degree. The experiences of other industry clusters (including the furniture industry) often show that once these projects are delivered and/or financing is exhausted, the willingness to cooperate ceases. Such activities (i.e. the attempt to gain financing) are fine, provided that it is not the most important or the only aim of the clusters' establishment.

Among the active furniture industry clusters, there is one where currently (December 2013) it is difficult to identify real formal links between companies

from the industry, although this is still an example of a network structure with limited membership, which is fully observable from outside (it is possible to identify members of the industry cluster as well as the coordinator). 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 industry cluster which is evidence of the activities interdependencies directed towards actors from the furniture industry by suppliers.

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 of formal clusters. Within this industry cluster, there are also activities aimed at obtaining financing for 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 producing materials for furniture production. It can be assumed that in the future, the cluster will aim at creating formal structures which will make it easier to obtain financing.

Purchasing Groups

Another type of network structure in the Polish furniture industry with a formalised structure, limited membership and fully observable from outside are purchasing groups, i.e. which bring together actors utilising shared resources for the purpose of consolidated procurement or for making a purchase through one entity wishing to achieve economies of scale or a stronger negotiating position with suppliers. In the case of the furniture industry, this type of network structure is created largely by trading companies which purchase furniture from producers and suppliers through these structures and then sell the products to the end customer. In turn this type of actor relationships are partly the result of significant dispersion within the furniture industry and somewhat limited capital resources among individual companies, which is not conducive for the efficient development and satisfaction of customer expectations. In such cases, resources (specifically their lack) can be the factor which motivates actors to create formalised network structures. These types of action can provide mutual benefits. For the producers of furniture these are new distribution channels for finished goods, the possibility of increasing production, as well as the optimisation of produced goods. For members of the group this means the improved effectiveness of advertisements and the distribution of specific types of furniture on the market [Hryniewicki 2012].

It can be assumed, that on the Polish market there are up to 5 purchasing groups (whilst in Germany, Poland's main trading partner, there were 24 in 2011 [PBRZ]). The best known examples of this type of network structure are the Polish Furniture Traders Group (Grupa Polskich Kupców Meblowych) as well as

the “Good Furniture” project (Projekt Dobre Meble). An analysis of these groups from the perspective of the ARA model is presented in table 2.

From the perspective of the ARA model, both the analysed network structures are similar in terms of their actors (trading companies and sometimes producers engaged in trading activity), resources (stores owned by associated group members, products) and activities which are mainly aimed at improving companies’ performance through negotiating preferable terms for purchasing furniture and therefore increasing sales margins, achieving better access to market information as well as improving the management process.

Table 2. Characteristics of purchasing groups in Poland, as network structures from the perspective of the ARA model

Name	Number of actors	Resources	Activities
Polish Furniture Traders Group (active since 1996) <i>Grupa Polskich Kupców Meblowych</i>	11	30 furniture stores in 19 cities, with a combined total floor space of approx. 91 km ²	<ul style="list-style-type: none"> – Purchase of furniture from producers and suppliers under the umbrella of an organised trading group – Sale of purchased furniture to end consumers (unified store facades for all group members) – Cooperation in the face of growing Polish and foreign competition – Coordinated marketing strategies and promotions – Market research – Staff training – Cooperation with industry press – Trade fair participation
The Good Furniture Project* (active since 2012) <i>Projekt Dobre Meble</i>	50	Almost 150 stores with a combined total floor space of approx. 300 km ² , which translates into a total market share of around 15%	<ul style="list-style-type: none"> – Purchase of furniture from producers (often produced exclusively for the group) – Sale of furniture including items from various price bands – Aim towards achieving a larger sales margin through lower procurement costs – Cooperation in the face of increasing competition from internet-based stores and the sale of furniture over the internet (internet stores do not incur costs related to things such as the rental of floor space & furniture displays)

* Data as of November 2012

Source: Authors’ own work [Hryniewicki 2012; GPKM]

Network structures not fully observable from the outside

Besides mainly formalised networks whose full structure with limited membership can be observed from the outside, in business practice it is possible to identify those where it is difficult to identify all network actors. These types of networks are analysed from the perspective of focal companies and both their formal and

informal relationships with the surrounding environment and their perception of the network picture. In the case of the furniture industry, these types of networks can be analysed from the perspective of each individual company from the industry or entities from the surrounding business environment by examining their interactions between actors, resources and activities (the ARA model). However, it should be remembered that the network structure will be larger and more structured in the case of the focal company – a large furniture company utilising the services of sub-contractors etc., than in the case of small firms which often aim towards creating a final product using their own resources and investment. Here as focal actors we choose important entities for the furniture industry and the cooperation within this industry.

An example of such a network structure considered from an individual actor perspective could be a Polish subsidiary of an international group (e.g. IKEA). The network of such a subsidiary includes both the formal organisational structure of a multinational company (whose parts are located in Poland and abroad) and relationships with other business entities which do not formally belong to the organisational structure. Such other network actors are its suppliers, sub-suppliers, service providers, customers or even research & development institutions with whom the subsidiary cooperates. In such a case, the network structure can even, to some extent, be based upon informal activities on behalf of the actors which are often the result of long-term close cooperation (e.g. despite long-term cooperation, suppliers do not make up part of the formal group. However, this cooperation can be based upon agreements or just upon routine or trust). This generally applies to large companies with foreign capital which along with domestic suppliers also utilise the resources of local actors. Here the IKEA Group serves as a good example, as well as the suppliers (of materials, accessories etc.) and other network actors linked with but not belonging to the group. One such supplier is a firm (for the purposes of this paper it is called Firm A), which produces mattresses, duvets and pillows mainly for IKEA. From Firm A's perspective, IKEA is one of the main buyers in the network, whilst suppliers are, among others, the producers of textiles (often from Asian markets) and other materials. The boundaries and picture of this cooperation network visualised by Firm A will not cover those of the network viewed from the perspective of the IKEA Group, but in both of the networks it is possible to identify common actors (e.g. transport companies), resources (mattresses, duvets, pillows) and activities (purchase/sale transactions, meetings with company representatives, negotiations etc.) Moreover, the boundaries of such a network change frequently and, due to the presence of informal connections, are therefore also relative, to some extent.

Another different, but important, example would be a network structure analysed from the perspective of the supply chain. Particularly important actors – focal companies from whose perspective such a network should be analysed are retail networks (mostly funded by foreign capital), such as Castorama Polska Sp. z o.o.,

Leroy Merlin Polska Sp. z o.o., OBI Polska or discount stores (e.g. Biedronka). As in the previous example, an analysis of these entities' network structures as focal companies from the perspective of the ARA model would indicate the actors, resources and activities linking them with actors from the furniture industry and in each case, the network picture would be different. Thus the network picture created from the perspective of a firm like Castorama would be extensive, including among all the actors the international subsidiaries of Castorama, suppliers of different products (not only furniture), transport and services companies etc. One of the activities linking furniture suppliers with Castorama would be purchase/sale transactions, repetitive actions with mainly formal cooperation. Under these activities, the actors could use their own or other entities' resources (e.g. furniture producer's vehicles used for transport purposes). Other activity characteristics for Castorama would be selling their products to end-users – both the legal entities and individuals. In the case of the furniture producer, a supplier of Castorama, the network picture would be different in terms of the boundaries of the network, actors, resources and activities. This furniture producer would be in close cooperation with the companies providing the raw materials and materials for the production of the furniture. Among the actors would be the services companies, such as companies providing services in the field of joinery and upholstery, design companies, transport companies and entities from the surrounding business environment as well. Moreover, the produced furniture could be sold within the brand of the producer to legal entities or individuals or as "no name" products to Castorama. Thus, the resources and actions occurring within the network from the furniture producer's perspective depend on the actors from this network.

It is also possible to refer to certain institutions which can offer strong network/cooperation potential and therefore it is worth analysing network structures from their perspective as focal institutions. Examples include institutions from the surrounding business environment which are particularly important from the perspective of the furniture industry. By definition these institutions focus around those actors towards whom their activities are directed (e.g. Poznań University of Life Sciences – Centre for Transfer Innovation and Technology for the Furniture Industry, The Polish Forest-based Sector Technology Platform, The Polish Economic Chamber of Wood Industry, The Polish Chamber of Commerce of Furniture Manufacturers and Wood-Based Panel Producers Association of Poland). The numerous Research & Development institutions which are important for the wood sector (as well as the furniture industry) are another such example (e.g. Research & Development Centre for Wood-Based Panels Sp. z o.o., The Wood Technology Institute as well as Poznan University of Life Sciences' Wood Technology Department). These units can contain various actors in their network structures which can include companies who use their research services, experience etc. These kinds of activities which are not always formal are evidence of the joint utilisation of resources which can be underlined by carrying out an analysis from the per-

spective of the ARA model. The activities of these R&D institutions as well as the institutions from the surrounding business environment concern the conducting of basic and applied research for the development of the wood sector, including the furniture industry, providing accreditation and certification services, analysis and thematic studies, and contributing to knowledge transfer. They address these services mainly to companies (including these from the furniture industry), which are the most important entities in their network structure. On the other hand, from the furniture producers' perspective, these institutions are in their further business environment and collaboration with them is less important than with other entities (e.g. suppliers of materials). Thus, depending on the focal company/institution, the network picture is different.

Conclusions

The main contribution of the article is the proposal to split the two main types of network structures (more formal structures with limited membership fully observable from the outside as well as those which are not fully observable from the outside and are analysed from the perspective of the focal actor) and as a result, to identify and analyse various network structures in the Polish furniture industry. These are industry clusters (both formal and informal), purchasing groups and networks analysed from the perspective of the important entities for this industry – IKEA Group in Poland, retail companies and institutions from the surrounding business environment. It should be stressed that there is a need to expand analysis beyond the formal structures such as industry clusters. The identification of various network structures and network relationships, including those informal but important for the focal company, is an important base for management decisions both at company level as well as throughout the whole economy, including the support of regulatory ties.

The analysis carried out within the article is not free of certain limitations, but these may lay the foundations for future research. The identification of various network structures within the furniture industry constitutes a certain conceptual framework providing for the future analysis of network and relationship complexities of a single company, as well as of a whole industry. Moving forward, it is advisable to carry out a more detailed set of case studies regarding specific network structures, including the networks as seen from the perspective of individual focal companies within the industry. It is also important to identify the relationships between different structures, which additionally increase potential management problems within such interconnected networks (so called übernetworks). 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 qu-

estion as to whether any specific types of networks are more effective than others and generate better results.

It is to be expected that network structures will gain in importance (at a government level as well at the level of individual companies, which notice the positive effects which these networks bring). Hence, the issues presented here require further study both in terms of quantitative and qualitative research.

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STRUKTURY SIECIOWE W BRANŻY MEBLARSKIEJ – PODEJŚCIE SIECIOWE (INDUSTRIAL NETWORK APPROACH)

Streszczenie

Celem artykułu jest identyfikacja różnych typów struktur sieciowych z perspektywy podejścia sieciowego (industrial network approach) występujących w branży meblarskiej analizowanych na przykładzie Polski.

Do analizy wykorzystano model ARA (Actors-Resources-Activities) pozwalający na charakterystykę aktorów, zasobów i działań przedsiębiorstw meblarskich i podmiotów z ich otoczenia z perspektywy podejścia sieciowego.

Zaproponowano podział struktur sieciowych na dwa główne typy: po pierwsze pełna struktura sieciowa możliwa do zaobserwowania z zewnątrz, o ograniczonym członkostwie, oraz po drugie struktura sieciowa niemożliwa w pełni do zaobserwowania z zewnątrz, analizowana z perspektywy poszczególnego dowolnie wybranego przedsiębiorstwa i jego relacji z otoczeniem. Zgodnie z zaproponowanym podziałem i z wykorzystaniem modelu ARA zidentyfikowano i zanalizowano różne struktury sieciowe w branży meblarskiej w Polsce. Są to w ramach pierwszego typu klastry (w tym formalne i niesformalizowane) i grupy zakupowe, a w ramach drugiego sieci analizowane z perspektywy oddziały zagranicznej firmy, podmiotu sieci handlowej i instytucji otoczenia biznesu wyzwających potencjał sieciowy. Podkreślono konieczność wyjścia z analizami poza klastry, których działania nie zawsze są efektywne.

Dokonana identyfikacja różnych struktur sieciowych w branży meblarskiej stanowi pewien schemat koncepcyjny, który daje podstawę do przyszłych analiz z zakresu struktur sieciowych i kompleksowych relacji pojedynczych przedsiębiorstw jak i całej branży.

Słowa kluczowe: podejście sieciowe, współpraca, model ARA, sieć biznesowa, klastry, sieć zakupowa, branża meblarska

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