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Coopetition in the furniture industry cluster versus competitiveness and innovations of selected companies within the cluster

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Abstract: The paper analyses the phenomenon of coopetition in the conditions of a large cluster of companies from the furniture industry in the vicinity of Kepno. It covers a two-stage analysis. The first stage defines the general characteristics of the coopetition potential for the cluster on the basis of the authors' previous research. In this respect, the methodology of J. Cygler was used. At the second stage, using the case study approach, three companies of different market and assets potential were assessed in detail. The study proved that, when assessing the character of business relations at the level of the furniture production cluster, particular entities can be classified in different categories of use in business practice, covering innovations in coopetition relations.

Keywords: cluster coopetition, enterprise, reviews, innovation activities, competence assumptions

JEL codes: L140, L290, L690, D210

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1. Introduction

Coopetition of companies refers to the specific relation between companies, combining the characteristics of cooperation and competition. It is deemed one of the basic types of relations between competitors. The specific nature of this relationship is based on syncretism, meaning the combination of contradictions in the traditional view of the aforementioned two features. The brief definition of coopetition defines it as the relationship between two companies that cooperate within

the same operations and compete within other operations. It has the dimension of an economic and non-economic transaction, in the case of the latter entering the area of informal relationships shaping trust. Therefore, regardless of the coopetition of companies being perceived as a base for the functional aspect in creating a common value chain by the entity – which is manifested, for instance, in the development of complementary relations – its essence, in the long-term perspective, lies in a significant level of mutual trust. From the strategic point of view, coopetition is a derivative of market co-existence and asymmetry in access to resources. The former circumstance fosters competitiveness, while the latter encourages cooperation. Out of many proposals for where to place the coopetition phenomena amongst other formulas, one distinguishes four options of the selection of relation, i.e. competition (COM), cooperation (CO), coexistence (CE), coopetition (CP) (Bengtsson and Kock, 1999: 181). This selection depends on many factors, but two are considered crucial: position in the line of business (sector, industry) – dominant versus weak, as well as access to external resources – high versus low need for this access. A dominant position stimulates selection of the COM or CP relation, while a high need – the CP or CO relation. In a reverse situation, a weak position leans the selection towards CO or CE, while a low need for external resources - towards the COM or CE format (Romaniuk, 2012: 68). Such indications have a synthetic character and do not take account of the effect (impact) of other, more detailed factors on the relation's characteristics, e.g. sectorial characteristics [level of technology, structure, degree of concentration, etc.] or corporate profile of entities [objectives, strategy, size, organisational structure] (Cygler, 2009). The influences resulting from territorial concentration of entities organised in a cluster organisation format or a more impetuous cluster of business entities also cannot be disregarded. Studies of such economic systems indicate their special character. It is defined as the clustering phenomenon, related to the type of bond, regularity of interaction, longevity of relations (Kaźmierski, 2012: 51).

The issue considered in the paper generally applies to analysis and evaluation of premises of company cooperation in the conditions of a large territorial cluster, the specific character of which should trigger the tendency to establish relations typical of the phenomenon of coopetition. Such an assessment is performed at two stages. The main aim of the paper was an assessment of coopetition at the angle of a furniture cluster. This perspective was based on three, different sized, production firms. The first one covers examination of the general background of collaboration in the furniture industry centre, using a set of factors within sectorial and organisational characteristics, according to the model proposal of J. Cygler. This assessment was concretised in previous findings of the 690

authors' research on the cooperation of 14 companies from the furniture industry (Kroik and Świda, 2016: 71-79). This constituted the base for interpretation of three detailed cases of companies as part of the second stage of the study. The selected entities differed in terms of market potential and scale of operations, causing differences in their approaches to competition and innovation. The study used structured interviews with the owners/managers of these companies operating within this cluster. The interviews were supposed to capture any possible differences in the perception of the premises and priorities in shaping competitive advantage through cooperation and the related innovations.

Taking the case study approach is recommended for examining a cooperation relations, due to difficulties in collecting data and research context (Cygler, 2009: 216). The authors tried to fulfil the general procedure of that approach (Dondajewska, 2016: 43). The research goal was to establish what kind of cooperation (cooperation) exists among three furniture cluster firms.

2. Assessment of the sectorial coopetition potential in the furniture industry cluster

The potential assessment used, as it has been mentioned, the methodology of studying the potential of coopetition, identifying the condition in two dimensions; sectorial factors and corporate (organisational) factors. The first dimension was assessed on the basis of the results of previous research, which covered 14 production companies from the Kępno furniture cluster. The sectorial assessment was performed on the basis of characteristics resulting from the analysis of the selected furniture production centre, thus it was assumed that these characteristics reflect the sectorial features. Due to the number of business entities registered in the centre (ca. 1000, according to the data of the County Office in Kępno), the adopted estimates reflect the sectorial situation with high probability. The weights of the factors were kept as in the original proposal of J. Cygler. The results of the factor analysis are shown in Table 1.

Table 1. Estimation of the coopetition factors of the furniture sector on the basis of the study of 14 companies from the Kepno centre

Factors	Weight (w _i)	Characteristics and level according to the scale $(s_i = \text{1-5}) \label{eq:scale}$	value (w _i *s _i)
Technological advancement	3	Intermediate technology sector, (s ₁ =2)	6
Intensification of competitive struggle	3	Average level, this advantage is predictable, $(s_2 = 3)$	9

Susceptibility to globalisation	3	High integration, covering one country, (s ₃ =1)	3
Sector's structure	2	Sector's structure is concentrated around several strategic groups (s ₄ =2)	4
Degree of concentration	2	Many companies are operating, and the leaders hold more than 50% of shares (s ₅ =4)	8
Sector growth rate	2	High growth rate (s ₆ =4)	8
Sector profitability	2	Average (s ₇ =3)	6
Entry barriers	2	High and in some cases their overcoming requires cooperation with competitors (s_8 =4)	8
Supply security	2	Low. Some strategic resources are under the control of several companies (s ₉ =4)	8
Threat of substitute emergence	1	Low (s ₁₀ =2)	2
Sector's age	1	The sector is in the development phase $(s_{11}=3)$	3

Source: Prepared by the authors on the basis of the methodology of (Cygler, 2009: 190-191) and the data from (Kroik and Świda, 2016: 74-78)

The synthetic indicator of coopetition potential of the furniture production centre amounts to $PK_{zm} = 65/11 = 5.9$, with the maximum amounting to 115/11 = 10.45. The percentage of the potential is $PK_{zm\%} = 5.9/10.45 = 56.5\%$. This means that the estimation of the sectorial dimension (from the perspective of the furniture production centre) is close to the conventional threshold of 60%, assumed as the level ensuring favourable conditions for stable coopetition (Cygler, 2009: 199). Due to the possible underestimation of scores, resulting from the assumption of the averaged view of 14 managers/owners of companies within the centre, e.g. with regard to the evaluation of the technology level or the susceptibility to globalisation, the threshold result of 60% could be achieved in specific situations.

3. Assessment of the coopetition organisational potential of companies within the cluster

The results of 14 interviews on the profile of company cooperation within the furniture production centre can also be, as a certain interpretational synthesis, translated to the criteria of the second dimension of the potential, known here as the organisational (corporate) dimension. Such an estimation provides a simplified view of a given situation of two cooperating companies within the 692

cluster, but has a cognitive quality spreading over frequently encountered instances of cooperation. The results of this analysis are presented in Table 2.

Table 2. Estimation of the organisational coopetition factors of the furniture sector on the

basis of the study of 14 companies from the Kepno centre

Factors	Weights (w _j)	Characteristics and level according to the scale	Value (w _{j*} s _j)		
	(··· 3)	$(s_j = 1-5)$			
Complementarity of 3		There are complementary resources	9		
resources	3	of strategic character (s ₁ =3)	,		
Convergence of parties	2	Mainly convergence of smaller	4		
Convergence of parties	2	importance was indicated (s ₂ =2)	7		
Convergence of		There are quite clear differences in			
corporate strategies	2	the strategic orientation of	4		
corporate strategies		companies (s ₃ =2)			
Convergence of		Similar standards are followed,			
organisational cultures	2	which is fostered by territorial	8		
organisational cultures		consistency (s ₄ =4)			
	There is asymmetrical reputation i				
Reputation	2	companies cooperating under a	6		
		contract (s ₅ =3)			
		The cooperating companies often			
Symmetry of sizes	1	have a huge disproportion,	2		
between parties	1	preference for contractual protections	2		
		$(s_6=2)$			
Adjustment of	Adjustment of There is a declarative readiness to				
organisational 1 adap		adapt the structure for the needs of	4		
structures		the cooperation (s ₇ =4)			

Source: Prepared by the authors on the basis of the methodology of (Cygler, 2009: 194-195) and the data from (Kroik and Świda, 2016: 74-78)

The synthetic indicator of coopetition potential of the furniture production centre amounts to $PK_{zm} = 37/7 = 5.29$, with the maximum amounting to 65/7 = 9.29. The percentage of the potential is

 $PK_{zm\%} = 5.29/9.29 = 56.9\%$. This means that the estimation of the sectorial dimension (from the perspective of the furniture production centre) is similar to the estimation in the sectorial dimension. Once again, we can refer to the possible underestimations that would make the indicator approximate 60%.

The final review of the conducted analysis (i.e. results close to the threshold value of 60%) indicates a real possibility of a situation, where single enterprise cooperation systems have the characteristics of all three coopetition categories: stable, unstable, or a lack of this nature of cooperation. In the perspective of the furniture sector, specifically, the cluster is regarded as a low cooperation type cluster – in comparison with creative clusters (Jankowska, 2012: 107).

4. The premises for competition of three companies within the cluster that have a different market position

The presented analysis assessing the coopetition potential of the furniture production centre in two dimensions provides a foundation for examining individual cases of companies. It can be assumed that the entities whose (market, resource) position is higher see the cooperation perspective differently from those with a weaker position. This state results from the aforementioned research of other authors. A unique context of the situation lies in the fact that this proceeds under conditions of a strongly territorially integrated concentration of companies from one industry. Assuming that this concentration gains features typical of a cluster, we may expect strengthening, willingness to share knowledge, access to technology, a product offer, and finally – effectiveness in competing with rivals who are not contractors (Czakon, 2013: 127). Functioning within a cluster is a combination of cooperation and competition, which affects competitiveness of the company, stimulated by the presence of many rivals, the closeness of the relation fostering the pro-innovation attitude, the closeness of partners, the possibility of continuous and direct monitoring of the market situation, the organic growth in knowledge and experience of the labour potential (Grzebyk, 2009: 22). In other words, it is deemed that cooperation between various entities is a determinant accelerating the process of creation and transfer of innovation. Such a process is accentuated by the contemporary models of innovation. On the other hand, these models naturally fit within the concepts of clusters. This concept is based on mutual trust, cooperation, technology, exchange of experiences, and proper communication (Stanienda, 2014: 189-190).

The aforementioned circumstances will allow a case study to cover identification of detailed conditions of development of competitiveness and innovation of companies from the examined economic centre as well as enable the researchers to carry out an in-depth examination of the premises. The applied manner in which information is obtained is based on a structured interview, founded on the prepared questionnaire (consisting of 22 questions), partially modelled on the proposal of M. Gorynia (2008: 223-224). The interviews were conducted by J. Durczak in the period of May-June 2017, focusing on qualitative matters supported by numeric data. Three companies with different market and production potential were selected (the interviewed owners/managers reserved the confidentiality of their entities' names). They are production entities with Polish private capital, operating in this cluster for over 20 years, and thus developing their own formula of competition and cooperation. For convenience of description and interpretations of data, three symbols were introduced - S, M, L - distinguishing their potential measured only by the number of employees.

Company "S" is a small enterprise, employing fewer than 30 people. It is a production, commercial and service enterprise of a natural person. It was established in 1996. Company "M" is a medium-sized production and commercial company, employing from 71 to 150 people. The legal form of this company is: a natural person running business operations. It was established in 1989. The third company is the production and commercial Company "L". It is a big company that was established in 1991 and employs approximately 250 employees. The organisational form of this company is a limited liability company.

The interviews consisted of 22 questions and were supposed to determine:

- the reasons and benefits resulting from the company being located in the Kepno furniture production centre,
- the importance of cooperation with other entities from the Kępno concentration (centre) in creating the competitive advantage of the company,
- the importance of innovative solutions in gaining competitive advantage by the company in the cluster.

The way their own competitiveness and independence in implementing the basic functions (elements of the value chain) was perceived by these companies indicated their differences. They are presented in Tables 3 and 4.

Table 3. Assessment of company competitiveness on a scale of 1-3 and the nature of the market

of undertaken competition

Target market	Competitiveness level				
Target market	1 - low	2 - average	3 - high		
Local			S		
National			M		
International		L			

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

The data from Table 3 confirm the scale of operations of particular entities. It is adequate to their staff and asset potential.

Table 4. Independence of operations compared with elements of the value chain

Product development	Production	Sales	Marketing	Administration and management	After-sales support
M, L	S, M, L	S, M, L	M, L	M, L	M, L

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

Both the medium-sized and the large company take part in all selected phases of the value chain. The questions focused on the premises regarding the location of the company in the area concerned during the period of at least the 20 past years. The selection of the importance of premises is provided in Table 5.

Table 5. The reasons for the companies' location (Greater Poland) and its importance on a scale of: 0 - not important, 1 - slightly important, 2 - moderately important, 3 - highly

important, 4 - crucial

Cause	Assessment
1. Access to the target market in general	S(4), M(2), L(3)
2. Proximity of key customers	S(4), M(1), L(3)
3. Availability of workforce	S(0), M(3), L(0)

4. Educational facilities – schools and vocational education institutions	S(0), M(1), L(0)
5. Availability of cheap resources – local suppliers can achieve the economy of scale	S(2), M(3), L(3)
6. Availability of specific resources – typical of a given location	S(3), M(2), L(3)
7. Proximity of strategic market rivals – easier monitoring and benchmarking	S(4), M(3), L(2)
8. Highly important local context/environment – intercepting local knowledge, information from the environment	S(3), M(2), L(2)
9. Other (e.g. historical conditions, family business)	S(0), M(4) , L(0)

Source: Authors' own elaboration based on the interview with managers/owners of the three examined companies

The assessment of the location-related premises (Table 5) focuses on the access to the target market, acquisition of resources and closeness of competition monitoring. Company M, indicating family-related or historical premises, could have of different perception of the priorities at the beginning of its existence. This results from the assessments of importance of the first three reasons from Table 4.

When assessing the need for and the significance of collaboration in different elements of the close and distant environment, the companies stressed their level slightly differently. The small company did not see such a need at all in several cases. The data in this respect are presented in Table 6.

Table 6. Assessment of the importance of cooperation with selected entities of the environment (the scale as in Table 5)

Entities of the environment - local perspective	Importance assessment
1. Competitors	S(4), M(4), L(0)
2. Industry organisations	S(3), M(4), L(2)
3. Suppliers	S(3), M(4), L(4)
4. Customers	S(4), M(2), L(4)
5. Research and development institutions	S(3), M(2), L(2)

6. Market research and analysis agencies	S(4), M(0), L(2)
7. Distribution and marketing units	S(0), M(3) , L(2)
8. Local government, other institutions	S(0), M(3), L(2)
9. University, other schools	S(1), M(2), L(2)

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

The data in Table 6 show that the large Company L, when operating on international markets, does not pay attention to cooperation with local competitors, but focuses on local suppliers and customers.

When establishing cooperation with various entities of the environment, the three companies – in the opinion of the owners/managers – see many different benefits. The analysis covered 16 such partial effects. Several of them concerned the competitive position built through cooperation. Table 7 suggests that the role of change in the competitive position is visibly emphasised by all the companies.

Table 7. The importance of cooperation for a change in the competitive position of companies

Consequences of cooperation (local/non-local)	Importance for competitiveness
1. Fuller use of market opportunities	S(4/3), M(4), L(2)
2. Strengthening of their position towards local competitors	S(4/3), M(4), L(3)
3. Strengthening of their position towards non-local competitors	S(3), M(4), L(4)
4. Easy acquisition of information about the co-operator - ex-competitor	S(4), M(2), L(2)

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

Table 7 does not identify the nature of the cooperation with competitors, but is a synthetic opinion taking into account the general cooperation formula for the business. Another interesting fact is that market opportunities at creative clusters made also an important factor (average mark 4,43 on scale 1 - 5) in favour of cooperation (Jankowska, 2012: 115).

5. Innovation as the premise of cooperation

According to the owners/managers of the examined companies, cooperation with entities of the environment is hugely important for introducing innovations. In the light of the conducted interviews, many detailed technological, organisational, and market issues were determined. Table 8 presents the way the impact of the implemented innovations on several important effects is perceived.

Table 8. Assessment of the impact of innovative activities undertaken in the period of 2012-

2016 on selected economic and market effects of the examined companies

	Degree of impact			
Characteristics	high	moderate	insignificant	
Growth in the company's sales	S, L	M		
Increase in the company's profitability	L	S, M		
Entry to new markets	L	S, M		
Increase in the share in the current market	S, L	M		
Increase in business competitiveness	M, L	S		
Improved business image	M, L	S		
Improved product (service) image	S, M, L			

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

Of course, the implemented innovations are a result of collaboration with various entities of the environment. Using the approach of M. Gorynia, the survey questions concerning innovation were not changed, but the interviewers outlined the context of the Kepno centre as a conventional analytical unit. This is also how the data in Table 9 should be interpreted.

Table 9. Cooperation in the implemented innovative projects from 2012-2016

Entities and their place of	Poland		Other		
operation	(including	EU	European	USA	Japan
operation	the Kępno		countries		

	centre)				
Other companies within the group	S, M, L	M, L	S, L		
in the value chain of post-					
production phases					
Suppliers (of equipment,	S, M, L	M, L	L	L	
materials, components, software)					
Customers or consumers	S, M, L	M, L	L	L	
Other companies	M, L	M, L	L	L	
Research and development units	M, L				

Source: authors' own elaboration based on the interview with managers/owners of the three examined companies

The previous data recorded during interviews show that the large Company L avoids cooperation with local competitors (Table 5). However, innovative projects cover cooperative activities performed in Poland from the position of an entity dominant towards other entities in the examined cluster. The phenomenon of coopetition inside the cluster structure is regarded as a really interesting research problem (Chorób, 2015: 14).

Conclusions

The conducted interviews, only to a limited extent, allow making more precise determination concerning the use of coopetition relations among companies selected for the study. Entity L does not show a tendency to undertake such actions within the Kepno centre. As it has been mentioned, it undertakes cooperation (CO), but from the position of a dominant entity, which has specific needs concerning resources (Table 5). In this situation, scientific determination gives the possibility of selecting the CP option, but there is strong confirmation that it selects the second envisioned option of CO. According to the proposal of J. Cygler, considered at the level of the furniture production centre, Company L places itself in the area lower than the threshold level of 60% - and it should be assumed that there are no clear features of the coopetition phenomenon. A different assessment can be made for the cooperation of the small Company M. Both the indications included in Table 6 and the limited independence during post-production phases (Table 4), as well as the clear focus on imitation and the unique benchmarking towards competitors (Table 5, item 7) allow presuming that

it fulfils its coopetition potential above the threshold of 60% in the organisational aspect. High flexibility of activities, e.g. related to innovative projects, stimulates the company to cooperate with its competitors, but this relationship fits rather within unstable coopetition.

Company S is conditioned by strong historical relations. Perhaps this is an indirect reason for its inclination towards coopetition being the highest. The results in Tables 6, 7 and 9 indicate such a situation. This indicates that we come to deal with cooperation, within the concentration known as the Kepno furniture production centre, belonging to the area of stable coopetition.

It should be taken into consideration that the case analysis has its imperfections, usually associated with the factor of data interpretation. Furthermore, the interview technique may contain emotional elements, despite it being prepared in a structured form. A certain role of securing this risk is played by the results of the previous research (Kroik and Świda, 2016: 74-78) which restricted the scope of interpretational freedom. Another interesting reflection is that here is a tendency to classify as a cluster any territorial groups of firms – without analysing the simultaneous processes of cooperation and coopetition which are fundamental for clusters (Götz, Jankowska, 2014: 189). That kind of dangerous situation (also J. Cygler postulates the necessity of assessment the coopetition at sectors of lower cooperation capacity) could provide the starting point for future research.

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Kooperencja w klastrze branży meblarskiej a konkurencyjność i innowacje wybranych przedsiębiorstw klastra

Streszczenie

Kooperencja (koopetycja) przedsiębiorstw odnosi się do specyficznej relacji między przedsiębiorstwami wiążącej cechy kooperacji i konkurencji. Podjęty w pracy problem dotyczy oceny przesłanek współpracy przedsiębiorstw w warunkach dużego skupiska terytorialnego. Problem współpracy odniesiony został do przesłanek konkurencyjności i podejmowanych działań innowacyjnych. Specyfika klastrowego skupiska powinna wyzwalać skłonność do zawiązywania relacji charakteryzujących zjawisko koperencji. Dokonano dwu etapowej analizy i oceny. W pierwszym zbadano ogólne tło współpracy w zagłębiu meblowym (klaster), używając metodyki badania zestawu czynników z charakterystyk sektorowych i organizacyjnych. Wykorzystano w tym zakresie, jako źródło informacji, wcześniejsze 14 wywiady nad zaufaniem i współpracą przedsiębiorstw z tego klastra. W drugim etapie zbadane tło współpracy stanowiło bazę dla interpretacji podejścia do konkurencji i innowacji trzech szczegółowych przypadków przedsiębiorstw. Wybrane podmioty różnił potencjał rynkowy i skala działalności, co pozwalało przypuszczać odmienność w szczegółowym ich podejściu do konkurowania i innowacji.

Słowa kluczowe: kooperencja w klastrze, przedsiębiorstwo, wywiady, przesłanki konkurowania, działania innowacyjne