International Journal of Management, Knowledge and Learning, 6(1), 97–114

Manufacturers' Benefits from Their Cooperation with Key Retailers in the Context of Business Models: A Cluster Analysis

Marzanna Witek-Hajduk
Warsaw School of Economics, Poland

Tomasz Marcin Napiórkowski
Warsaw School of Economics, Poland

The aim of this study is to examine if, among consumer durable goods' manufacturers operating in Poland, clusters could be distinguished in terms of the strength of benefits obtained from their cooperation with the key retailer. Also, this article aims to verify if these clusters could be differentiated according to the business models employed by the two parties. With the CATI method data was collected from 613 respondents that were clustered into 5 groups. The established clusters proved to differ statistically in terms of the manufacturer's business model. From the perspective of the manufacturer, however, these differences proved to be poor predictors of the overall level of the obtained benefits.

Keywords: business model, consumer durables market, cooperation, coopetition, cluster analysis, manufacturer-retailer relationships

Introduction

The issue of the inter-organizational relationships, including buyer-supplier relationships, for years has remained a topic of numerous studies (Soosay & Hyland, 2015). Manufacturers-retailers relationships are classified as vertical inter-organizational relationships (Ailawadi et al., 2010; Antoinette & Hyland, 2015). According to Bengtsson, Hinttu, and Kock (2003), there are four types of inter-organizational relationships: cooperation, competition, coopetition, and coexistence. According to this typology, the relationships between manufacturer and retailers as partners in the supply chain can be recognised as cooperation (Tsou, Fang, Lo, & Huang, 2009; Buxmann, von Ahsen, & Diaz, 2008) or coopetition (Kim, Kim, Pae, & Yip, 2013; Li, Liu, & Liu, 2011; Osarenkhoe, 2010). Anderson and Narus (1990) stipulate that cooperation is characterised by both interdependence and simultaneity of the joint and individual partners' objectives and by a voluntary entry into a relationship. Buxmann et al. (2008) distinguish decentralised cooperation and centralised cooperation. The former pertains to cooperation, where the

parties independently make plans and then exchange information on issues concerning their processes of planning, and the latter concerns cooperation, where one party deals with planning for all engaged in the relationship. The authors emphasise that the centralised cooperation usually leads to better results in comparison to the decentralised approach. Coopetition between a manufacturer and a retailer includes the simultaneous relation of horizontal cooperation and horizontal or vertical competition (Kotzab & Teller, 2003; Bengtsson, Hinttu, & Kock, 2003). In this case, a manufacturer and a retailer work together to achieve joint goals, yet at the same time they compete to realise individual objectives (Kim et al., 2013). Coopetition between a manufacturer and a retailer takes place when a manufacturer produces both their own and the retailer's brand/brands and where the latter competes with the manufacturer's brand or when the retailer simultaneously sells not only the retailer's brand/brands produced by the cooperating manufacturer, but also the manufacturer's brand/brands.

There are few studies on the cooperation and coopetition between manufacturers and retailers in the market of consumer durables (Chow, Kaynak, & Yang, 2011) compared to numerous studies on the cooperation of manufacturers with retailers on the FMCG market (Kotzab & Teller, 2003; Vlachos, Bourlakis, & Karalis, 2008). Researchers more often take the perspective of retailers (Chavhan, Mahajan, & Sarang, 2012; Ahmed & Hendry, 2012; Swoboda, Pop, & Dabija, 2010; Dapiran & Hogarth-Scott, 2003) than manufacturers (Gomez-Arias & Bello-Acebron, 2008; Blundell & Hingley, 2001). The cooperation and coopetition between the manufacturer and the retailer are crucial for improving their efficiency. Nonetheless, the factors determining efficiency and the benefits that are achieved by the relationship of the parties have not yet been fully explored. Many researchers are focused on a narrow perspective – supply chain management or relationship marketing (Corsten & Kumar, 2005; Dhar, Hoch, & Kumar, 2001). There are only a few empirical studies, especially few using quantitative methods, on the topic of benefits resulting from the relationship between a manufacturer and a retailer (Mentzer, Foggin & Golicic, 2000; Simatupang & Sridharan, 2002).

Studies have supported not only the benefits from supplier-retailer relationships but also some negative outcomes that arise due to the conflicts between cooperating partners (Gerzon, 2006) originating from the frequent contract infringements by partners (Radaev, 2013), price changes for downstream partners and demand for faster delivery from upstream partners (Bartoçu, Doğan, Bartoçu, & Kulakli, 2010) or regarding their online sales strategy (Webb, 2002). However, the outcome of a conflict depends on the cooperating partners' interactions (Radaev, 2013) and reactions, including the adopted conflict management strategy (Webb, 2002; Lam, Chin, & Pun, 2007; Bobot, 2011).

In the recent decades, the role of manufacturers and retailers in the value chain has evolved, which has been accompanied by changes in their business models. Therefore, many authors suggest that the supply chain management, including various aspects of manufacturer-retailer relationships, should be studied from the perspective of the partners' business models (Trkman, Budler, & Groznik, 2015).

This article consists of the following parts: the first part, via a literature study, examines the benefits of the manufacturer-retailer cooperation. Next, the literature review changes its focus to the presentation of the key business models of both, manufacturers and retailers. The third section is an empirical section, which consists of a cluster analysis followed by an ANOVA test with post hocs. The aim of the statistical analysis is to answer the following research questions and examine: (1) If, among consumer durable goods' manufacturers operating on the Polish market, there could be distinguished clusters in terms of the strength of benefits they obtain from their cooperation with the key retailer, and (2) If these clusters are statistically different with respect to the business models employed by the two parties.

Benefits from the Manufacturer-Retailer Cooperation

Authors of the papers on the outcomes of supplier-buyer, including manufacturer-retailer, relationships emphasise that the cooperation between the manufacturer and the retailer can contribute to achieving individual objectives and/or joint objectives and/or benefits (Tuusjarvii & Moeller, 2009; Pereira, Brito, & Mariotto, 2013). According to Terpend, Tyler, Krause and Handfield (2008), the mentioned relationships, can contribute to the improvement of operational performance, integration-based improvements, capability-based improvements and to a better financial performance. Cooperation also supports shared improved outcomes (Heide & John, 1990) and aids the creation of competitive advantages that relationship partners would not reach alone (Singh & Power, 2009; Togar & Sridharan, 2002; Simatupang & Sridharan, 2002; Nolan, 2007). To achieve this, they need to develop an appropriate level of mutual trust, share information of crucial importance (Larson & Kulchitsky, 2000), make joint decisions and, in some cases, integrate supply chain processes. According to the resource-based view, the creation of relation-specific assets through the acquisition of complementary resources from a partner contributes to the achievement of competitive advantages (Dyer & Singh, 1998). In turn, according to the transaction cost theory, cooperation allows to gain a competitive advantage by lowering transaction costs and enabling the creation of relationship-specific investments, information sharing or involving partners in value-added activities (Grover, Teng, & Fiedler, 2002). Cooperation between manufacturers and retailers supports the formation or maintenance of the competitive ad-

vantage of cooperating parties not only because it helps to reduce costs (Larson, 1994; Svensson, 2002) but also because it improves the level of customer service (Svensson, 2002), quality (Larson, 1994), delivery and logistics service performance (Artz, 1999) and allows to extend the product portfolio. Another benefit from the cooperation between manufacturers and retailers is outcomes improvement (Hewett & Bearden, 2001) and a risk reduction through sharing it with a partner (Parkhe, 1993).

According to the studies on the vertical relationships in the supply chain (Heide & John, 1990; Noordewier, John, & Nevin, 1990; Anderson & Narus, 1990), cooperation leads to better outcomes than relationships oriented towards rivalry (Palmatier, Dant, Grewal, & Evans, 2006). Following Kim et al. (2013), the stronger the cooperative dimension of manufacturer-retailer relationship, the greater the joint benefits achieved by the parties. Furthermore, a stronger competitive dimension of the relationship does not influence the changes in the joint benefits (Kim et al., 2013). The results of the cooperation are also determined by the level of dependence (Heide & John, 1988) and trust between manufacturer and retailer (Kumar, Scheer, & Steenkamp, 1995). Authors also emphasise that close cooperation with one partner can make it difficult to achieve economies of scale and reduce costs (Dyer, 1996; Corsten & Felde, 2005).

Manufacturers and Retailers in the Business Model Context

Starting from the 90s of the last century, the number of publications on the business models has steadily increased. Authors are not unanimous about the definition of a business model, including its elements and typology. A business model is understood, among others, as: a way an organization creates value proposition for its customers (Magretta, 2002; Osterwalder et al., 2005), the way an organization generates revenues/incomes (Timmers, 1998; Rappa, 2000; Linder & Cantrell, 2000) or profits (Slywotzky, Morrison, & Andelman, 2000), the architecture of an organization or the set of its competences (Timmers, 1998) or its business logic (Osterwalder et al., 2005). According to Torbay, Osterwalder and Pigneur (2001), a business model is an architecture of an organisation and a network of its partners contributing to the creation of marketing activities and to the delivery of value to the target groups in order to generate profits and sustainable revenue streams. In turn, Dudzik, Gołębiowski, and Witek-Hajduk (2008) define a business model as the logic underlying a company's business activities in a given business unit and is comprised of a description of the value proposition addressed to its target groups, essential resources, activities, external relationships of a firm and revenue sources.

According to Anderson, Day, and Rangan (1997), the traditional boundaries between retailers and manufacturers vanish and the diversification

Table 1 Characteristics of Manufacturers' Business Models

Model	Characteristics
Tradition-alists	The value proposition for customers: functional benefits of products, and the relationship of these benefits to costs. Lack of unique resources. Passive role in the supply chain. Weak bargaining power in relations with partners in the supply chain. The internal supply chain is relatively long: R&D, production, marketing, sales and after-sales services. Sources of the revenues: sales of manufactured products.
Market players	The value proposition for customers: functional benefits offered by products, as well as the strength of the brand and relationships with other members of the value chain. Unique resources: advanced technologies, strong brand, patents, unique designs and recipes, and managerial skills. The internal supply chain: long (R&D, production, marketing, sales and after-sales services). Leader of its supply chain. Partner relationships in the supply chain. Sources of the revenues: the sale of self-manufactured products, supplemented by income from licensing technology, brand names and franchising.
Contractors	The value proposition for customers: functional product benefits. Unique resources: production facility and equipment. Internal supply chain: focused on the production or services for third parties. Passive role in the supply chain. Sources of the revenues: sales of manufactured products or services.

Notes Adapted from Witek-Hajduk (2016).

of their business models occurs (Witek-Hajduk, 2016). Those changes are triggered by the consolidation of retail chains, development of information technology, easier retailers' access to information about customers (Kotzab & Schnedlitz, 1999), increased use of multichannel distribution (Seiders, Berry, & Gresham, 2000), plural governance (Heide, 2003) and an increase in sales of private brands (Soberman & Parker, 2006). Referring to the typology of the business models proposed by Dudzik and Witek-Hajduk (2007), Witek-Hajduk (2016) points out that manufacturers, that is companies, in which production is a part of the internal value chain and is an action carried out by these companies, implement the following business models: the Traditionalist, the Market Player or the Contractor; whereas retailers choose business models of the Distributor or the Integrator. Short descriptions of these business models are shown in Table 1 and Table 2.

Different variants of relationships between the manufacturer and the retailer can be distinguished due to the configuration of business models implemented by the parties in a given business. This may exert an impact

Table 2 Characteristics of Retailers' Business Models

Model	Characteristics
Distributors	The value proposition for customers: a favourable relation of functional and emotional benefits of products to their costs. Unique resources/competencies: market knowledge (about suppliers and customers). The internal supply chain: short and focused on the sales function. Sources of the revenues: trade intermediary.
Integrators	The value proposition for customers: favourable functional features of products, strong brands, patents, etc. Internal supply chain: focused on R&D, designing, marketing, sales and after-sales services, while manufacturing is outsourced. Partner relationships with members of a supply chain. Sources of the revenues: sales of its own brand-name products and offering its own unique know-how and technology by means of franchising and licensing.

Notes Adapted from Witek-Hajduk (2016).

on the joint and individual cooperation outcomes/benefits. The business model of the partner determines what complementary resources, including unique assets, can be available to the other party of the relationship and in what processes in the value chain they can cooperate. Business models of cooperating partners determine also their potential in terms of creation/co-creation of the value for the customers. However, there is a lack of studies on the benefits/outcomes of the cooperation between the manufacturer and the retailer resulting from the configuration of the business models of the both parties. Many authors are focused on the benefits from the manufacture-retailer cooperation in the production of private labels. Cooperation in this area is more common between manufacturers using the Contractor as a key business model, but sometimes it is undertaken also by the Market Players or Traditionalists offering the manufacturer's brands. Authors underline that cooperation in the production of private labels may have a negative impact on the manufacturer's competitive position and brand equity, including a brand image of the national brand (de Chernatony & McDonald, 1998; Halstead & Ward, 1995; Hoch, 1996; Quelch & Harding, 1996). Moreover, cooperation in this field can cause complications in production and distribution and, as a result, an increase in costs (Quelch & Harding, 1996) and a dependence on the retailer caused by sharing with him experience and knowledge (e.g. about the innovative technology and cost structure) (Kumar & Steenkamp, 2010). In a number of publications, several advantages for manufacturers from the cooperation with retailers in the production of private labels are mentioned (Witek-Hajduk, 2015): utilization and improvement of production capacity (Hoch, 1996; Oubina, Rubiuo, & Yaüge, 2006), improvement in profitability (Oubina et al., 2006),

production costs reduction (Quelch & Harding, 1996), transfer of revenues from the production of private labels to the development of the manufacturer's brands (Verhoef, Nijssen, & Sloot, 2002), maintenance of the level of production (Quelch & Harding, 1996), risk reduction (Jonas & Roosen, 2005), lack of branding-related expenditures (Omar, 1999), improvement of relationships with retailers (Narasimhan & Wilcox, 1998), support of the process of the new product development (Dunne & Narasimhan, 1999) and branding (Quelch & Harding, 1996), the achievement of effective inventory control (Dunne & Narasimhan, 1999), an increase of the manufacturers' brands awareness (Halstead & Ward, 1995; Gomez-Arias & Bello-Acebron, 2008), prevention of the production of store brands by other manufacturers (Oubina et al., 2006), an increase in market share (Dhar & Hoch, 1997; Verhoef et al., 2002; Kumar & Steenkamp, 2007), the achievement of benefits from the retailers' promotional activities (Omar, 1999) and diversification of product lines (Dunne & Narasimhan, 1999).

Based on the examined literature, we aim to test the following hypothesis: Among consumer durable goods' manufacturers operating on the Polish market, there could be distinguished clusters in terms of the strength of benefits they obtain from their cooperation with the key retailer, and these clusters are statistically different with respect to the business models employed by the two parties.

If our hypothesis proves to be true, we hope to find that the composition of each cluster in regard to the studied business models would help explain the extent of benefits enjoyed by the manufacturers, i.e. there would be a unidirectional relationship between the two variables.

Methods of Data Collection and Statistical Analysis

The aim of this section is to empirically confirm our hypothesis. The procedure follows the steps presented in Figure 1.

To confirm the research hypothesis, this study uses CATI-collected data of 613 medium and large Polish manufacturers of durable consumer goods, where respondents were the managers responsible for relations with retailers. The sample was randomly drawn from 1,661 records extracted from the EMIS database with the penetration rate of 36.9% and the response rate of 82.61%. The respondents were asked a set of questions about individual and joint benefits from their cooperation with a key retailer of consumer durables goods that they had cooperated with.

The concept of benefits was measured as a reflective construct with sets of Likert-scale items. As part of a multi-construct survey, respondents were asked to agree-disagree on whether a given statement representing a particular benefit (list provided in Table 3) applies to their firm. The question asked was worded as follows: 'Please provide an opinion on a case of ben-

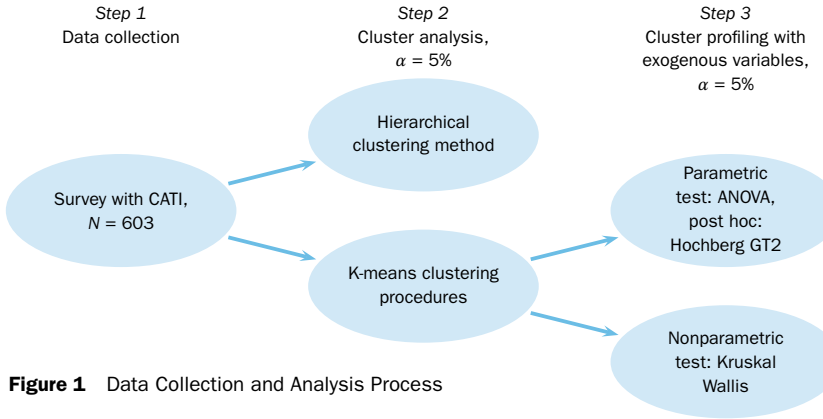

Figure 1 Data Collection and Analysis Process

efits coming from your direct relationship with a key retailer in the category of durable consumer goods on the Polish market on a scale 1–5, where 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree.'

These answers constitute data for the clustering variables. Respondents were also presented with descriptions (see Table 1 and Table 2) of: (1) three business models (Traditionalist, Market Player and Contractor) for the manufacturers and asked to choose the business model that best characterized their firms and (2) two retailers' business models (Distributor and Integrator) and asked which one best described the business logic of their key retailer. These constituted data for the exogenous variables.

To operationalize the set goal, a cluster analysis with a set of accompanying ANOVA tests was carried out (Schmoltiz & Wallenburg, 2011).

The first step in the cluster analysis is to search for a significant collinearity between the variables. Based on the analysis of Pearson linear correlation coefficients across all studied variables, it can be concluded that there is no issue of significant cross-linearity as in none of the cases there are values of the studied coefficients greater than the absolute value of 0.9.

A dendrogram, which is a result of the hierarchical clustering method, with Ward clustering method and with Squared Euclidean centroid distance measure, suggests possibilities ranging from a 4- to a 7-cluster solution.

After conducting a series of *k*-means clustering procedures, the 5-cluster solution (Table 3) has been proven to be the most stable as (1) the number of cluster members reached the lowest difference between the hierarchical and the *k*-means (ranging from 4% for cluster 1 to 19% for cluster 3, see Sarstedt & Mooi, 2014; Zaborek & Mirońska, 2014) and (2) allowed for the lowest difference between the initial (the ones coming from the hierarchical method) and the final cluster centres (the highest average difference is seen in cluster 2, 5%, with an overall average equal to 3% – all measured

Table 3 Final Cluster Centres

Benefits	Clusters				
	1	2	3	4	5
Limited risk	3.36	4.59	3.64	2.33	4.89
Obtained or strengthened our cost advantages over other manufacturers	3.33	3.15	3.56	2.07	2.44
Increased the effectiveness of our actions	3.82	4.09	4.32	2.79	4.23
Strengthened the relationships of our firm with consumers	3.54	4.58	4.30	2.72	4.59
Strengthened our auction/business position as compared with other co-operators	3.65	3.16	4.08	2.12	2.53
Strengthened the image of our brands/firm	3.76	4.13	4.40	3.12	3.97
Created a unique offer as compared with other manufacturers	3.20	3.71	4.36	2.19	3.05
Increased the quality of our products and services	3.72	4.27	4.44	2.98	4.00
Increased the exposition of products in our stores	2.32	3.97	3.99	2.47	3.69
Obtained marketing know-how	2.63	3.07	3.91	1.88	3.54
Increased our market share	3.80	3.34	4.51	2.93	2.65
Reached range benefits (geographical expansion, including international, new target markets, new distribution channels)	3.54	2.70	4.28	2.72	4.35
Reached along with our key retailer a high level of shared profits	3.44	2.28	4.23	2.74	2.01
Worked out a high level of profits with our key retailer	3.36	3.47	4.02	2.49	4.19
Increased common profits shared with our common retailer	2.54	2.01	3.34	1.93	1.99
Number of cases per cluster	100	86	87	43	297

differences are in absolute values in order to avoid cancelling out). The procedure was guided by a set of requirements as listed by Sarstedt and Mooi (2014).

A set of ANOVA tests (all sig. = 0.000) with Welch (1951) correction (all sig. = 0.000) when needed (due to a lack of homogeneity of variance as indicated by a set of Levene's tests – all sig. = 0.000 except for the 'Strengthened out auction/business position as compared with other co-operators' variable where sig. = 0.116) (Sarstedt & Mooi, 2014) confirms that the means of clustering variables significantly (α = 5%) differ between (at least two) clusters.

In order to provide a ranking to the clusters, the average of cluster centres for each group was calculated. And so, the order of clusters ranging from the one with the highest to the one with the lowest level of obtained benefits (with the calculated mean) is as follows: 3 (4.09), 2 (3.50), 5 (3.47), 1 (3.33) and 4 (2.50).

Table 4 Means of the Exogenous Variables within the Clusters

Exogenous variable	Cluster number				
	1	2	3	4	5
Business model: Traditionalist	0.35	0.7209	0.3448	0.4186	0.6431
Business model: Market player	0.21	0.1279	0.3563	0.3023	0.1751
Business model: Contractor	0.44	0.1512	0.2989	0.2791	0.1818
Partner's business model: Distributor	0.46	0.7209	0.4713	0.6047	0.7239
Partner's business model: Integrator	0.54	0.2791	0.5287	0.3953	0.2761
Cluster rank	IV	II	I	V	III

When comparing across clusters, members of cluster 3 (cluster numbering as set by the clustering procedure) represent firms enjoying the highest benefits across almost all the ones listed, with the limitation of risk being the weakest realised benefit. Cluster number 2 is represented by manufacturers whose highest benefits, as compared to other groups, encompass those related to creating a better (more unique and more visible) offer and to increasing their relationship with consumers, all while decreasing the overall level of perceived risk. In other words, manufacturers from this group focus on increasing their own sales and are not that concerned with achieving common benefits. Manufacturers in cluster 5 gain significant range benefits (geographical expansion, including international, new target markets etc.) that can be linked to other obtained benefits, namely, an increase in the strength of their relationship with their consumers, better product quality and effectiveness of their actions. Interestingly, members of this cluster rank the highest in terms of limiting risk and working out a high level of profits with their key retailer. Firms in cluster 1, as compared with those classified in other groups, are characterised by benefits that relate to an increase in their competitive position against other manufacturers albeit to a small degree. Lastly, manufacturers in cluster 4 appear to obtain next to no benefits from their cooperation with their key retailer. Interestingly, with the exception of clusters 3 and 5, obtained benefits are not of the joint nature.

The results of ANOVA tests – all sig. ≤ 0.001 – (accompanied by a set of Levene's tests – all sig. ≤ 0.013 – and Welch – all sig. ≤ 0.004) show that there is a statistically significant difference among the examined clusters when looking at all three business models practised by the manufacturer and both partner retailer's business models. Because the dependent variable is not a continuous variable (i.e., it is a categorical one) – despite the general robustness of ANOVA – Kruskal Wallis tests (Kruskal & Wallis, 1952; Field, 2009) were conducted to confirm the obtained results – all sig. ≤ 0.001.

Cluster 3 (i.e., the highest level of reported benefits) has an almost equal

distribution of business models employed across both manufacturers and retailers, while in cluster 4 (the other side of the spectrum) there is a slight advantage of Traditionalists (41.86%) over Market Players and Contractors (30.23% and 27.91%, respectively) and of Distributors (60.47%) over Integrators (39.63) (Table 4). However, the business model of the key retailer cannot be decisive when examining the level of obtained benefits as (and to a greater extent) what was said for the cluster with the lowest rank is true for clusters 2 (ratio of 72.09/27.91) and 5 (73.39/27.61), which are ranked second and third after cluster 3. Similarly, cluster number 1 (ranked as one but last) has the analysed distribution (46/54) nearly identical to the one in cluster 3. Returning to the business model of the manufacturer, the within-cluster composition also serves as a poor predictor of the cluster rank (i.e., the level of obtained benefits) as cluster 2 (ranked second best) has a large share of Traditionalists (72.09%) with very few Market Players (12.79%) and Contractors (12.12%) – distribution similar to that of cluster 5 (ranked as number 3): 64.31/17.51/18.18; additionally, clusters 3 (rank I) and 4 (rank V) also have a near alike distribution of manufacturer's business models.

Because of the design of the hypotheses in ANOVA, a set of post hoc (Hochberg GT2) was carried out to examine the extent of the examined differences. We have found that the Traditionalist business model differentiates the clusters the most (i.e., the highest number of found statistically significant differences), but it failed to differentiate between clusters 3 (rank I) and 4 (rank V). The same for the Contractor and the Distributor manufacturer business models. Similarly, as much as types of business models of retailers do differentiate between the three middle clusters, they fail to differentiate between the two clusters that represent two sides of the spectrum of the level of benefits enjoyed, i.e. clusters 3 and 4. In fact, with the exception of the Traditionalist model, no differences are found between cluster 4 and other clusters.

As the final step of our empirical analysis, we graphed a share of the business models employed within a cluster across cluster ranks to see if there is a unidirectional relationship (Figure 2) – we found none.

Our empirical analysis leads us to conclude that as much as there are differences between some of the established clusters in their composition of the business models used by both manufacturers and retailers, they do not allow us to explain the differences in the extent of enjoyed benefits.

Conclusions

In this study, we have examined the topic of the relationship between manufacturers and their key retailers and the resulting benefits for the manufacturer, and have framed it within the context of business models employed by both manufacturers and retailers.

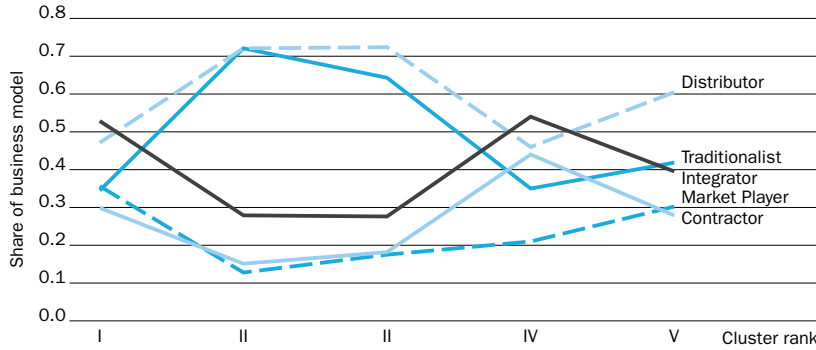

Figure 2 Share of a Business Model Employed within a Cluster across Cluster Ranks

Our assumption was that if there are statistically significant differences in business models applied across groups of manufacturers that were established according to the level of benefits they enjoy from their relationship with the key retailer, then these types of business models of manufacturers and retailers can serve as predictors of the size of the studied benefits.

First, we established the researched topic within the literature on the relationships between manufacturers and retailers, and then, within the literature on the business models applied by the mentioned parties. Next, we aimed to see if the manufacturers can be grouped in accordance with the benefits they enjoy from the cooperation with their key retailer. To do so, a combined (hierarchical and *k*-means) cluster analysis was applied, which has shown that such groups can be statistically established. With the use of ANOVA tests, we have looked if the business models used by manufacturers and retailers statistically differ across the established clusters.

Our results show that, as much as some statistically significant differences in the shares of business models applied can be found between the clusters, these differences do not explain the level of obtained benefits.

The source of our finding, we believe, can come from the fact that (as mentioned in the literature study) there is a vanishing line between a manufacturer and a retailer and the fact that in reality firms are hardly ever purely classified as only one business model type with the ratio between two or more business models employed being dependent on many factors. Additionally, there could also exist differences in term of the applied business model across various product categories. Lastly, as our results show, we do not exclude the possibility (rather we support it) that there is a wide set of determinants of benefits achieved by manufacturers from their cooperation with their key retailers.

At the same time, we are aware of the limitation of the study, which chiefly arise from the methods used to obtain and the use of data. Firstly, as

our data is questioner-derived, it can suffer from respondents' subjectivism. Given that the measured constructs are of qualitative nature, this source of potential error is recognized, but cannot be eliminated. Secondly, we do realize that it is impossible to generalize based on cluster analysis due to its sensitivity; therefore, we hope that our results will serve as hypothesis for further research on other samples.

Further studies should focus on the identification of possible determinants of the found differences at the level of benefits enjoyed. Given that a manufacturer-key retailer cooperation can refer to various elements of the value chain, the identification of manufacturers' clusters in terms of both the benefits from these cooperation and the cooperation areas could also be an important topic of further studies. Also, conflicts arising from the partnership between firms within a value chain should be given more attention as there is a limited number of existing studies, especially of those that look to the topic from the perspective of business models.

Acknowledgements

The project was funded by the National Science Centre conferred on the basis of the decision No. UMO-2013/11/B/HS4/02123.

References

Ahmed, M., & Hendry, L. (2012). Supplier development literature review and key future research areas. *International Journal of Engineering and Technology Innovation, 2*(4), 293–303.

Ailawadi, K. L., Bradlow, E. T., Draganska, M., Nijs, V., Rooderkerk, R. P., Sudhir, K., Wilbur, K. C., & Zhang, J. (2010). Empirical models of manufacturer-retailer interaction: A review and agenda for future research. *Market Letters, 21,* 273–285.

Anderson, E., Day, G. S., & Rangan, V. K. (1997). Strategic channel design. *Sloan Management Review, 38*(4), 59–69.

Anderson, J. C., & Narus, J. A. (1990). Model of distributor firm and manufacturer firm. *Journal of Marketing, 54*(1), 42–58.

Antoinette, C., & Hyland, S. P. (2015). A decade of supply chain collaboration and directions for future research. *Supply Chain Management: An International Journal, 20*(6), 613–630.

Artz, K. W. (1999). Buyer-supplier performance: The role of asset specificity, reciprocal investments and relational exchange. *British Journal of Management, 10*(2), 113–126.

Bartoçu, S., Doğan, H., Bartoçu, E. & Kulakli, A. (2010) Suppy chain-based conflict: A study from textile exporters' perspectives. *Journal of Global Strategic Management, 4*(2), 90–102.

Bengtsson, M., Hinttu, S., & Kock, S. (2003, 4–6 September). *Relationships of cooperation and competition between competitors.* Paper presented at the 19th Annual IMP Conference, Lugano, Switzerland.

Blundell, R. K., & Hingley, M. K. (2001). Exploring growth in vertical inter-firm relationships: Small-medium supplying multiple food retailers. *Journal of Small Business and Enterprise Development, 8*(3), 245–265.

Bobot, L. (2011). Functional and dysfunctional conflicts in retailer-supplier relationships. *International Journal of Retail & Distribution Management, 39*(1), 25–50.

Buxmann, P., von Ahsen, A., & Diaz, L. M. (2008). Economic evaluation of cooperation scenarios in supply chains. *Journal of Enterprise Information Management, 21*(3), 247–262.

Chavhan, R., Mahajan, S. K., & Sarang, P. J. (2012). Supplier development. *Journal of Mechanical and Civil Engineering, 3,* 37–51.

Chow, C. S. F., Kaynak, E., & Yang, C. J. (2011). Channel power struggle between a manufacturer giant and a retailer giant in China: Who is the winner? *Competitiveness Review: An International Business Journal, 21*(3), 306–321.

Corsten, D., & Felde, J. (2005). Exploring the performance effects of key-supplier collaboration. *International Journal of Physical Distribution & Logistics Management, 35*(6), 445–461.

Corsten, D., & Kumar, N. (2005). Do suppliers benefit from collaborative relationships with large retailers? An empirical investigation of efficient consumer response adoption. *Journal of Marketing, 69*(3), 80–94.

Dapiran, G. P., & Hogarth-Scott, S. (2003). Are cooperation and trust being confused with power? An analysis of food retailing in Australia and the UK. *International Journal of Retailing & Distribution Management, 31*(5), 256–267.

de Chernatony, L., & McDonald, M. (1998). *Creating powerful brands in consumer, service and industrial markets.* Oxford, England: Butterworth-Heinemann.

Dhar, S., S. Hoch, & N. Kumar. (2001). Effective category management depends on the role of the category. *Journal of Retailing, 77*(2), 165–184.

Dhar, S. K., & Hoch, S. J. (1997). Why store penetration varies by retailer. *Marketing Science, 16*(3), 208–227.

Dudzik, T. M., Gołębiowski, T., & Witek-Hajduk, M. K. (2008). Modele biznesu – aspekty teoretyczne. In T. Gołębiowski, T. M. Dudzik, M. Lewandowska, & M. K. Witek-Hajduk (Eds.), *Modele biznesu polskich przedsiębiorstw* (pp. 13–94). Warsaw, Poland: Oficyna Wydawnicza SGH.

Dudzik, T. M., & Witek-Hajduk, M. K. (2007). Typologia modeli biznesu. *Gospodarka materiałowa i logistyka, 9,* 18–23.

Dunne, D., & Narasimhan, C. (1999). The New appeal of private labels. *Harvard Business Review, 77*(3), 41–52.

Dyer, J. H. 1996. Does governance matter? Keiretsu alliances and asset specificity as sources of Japanese competitive advantage. *Organization Science, 7*(6), 649–666.

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review, 23*(4), 660–679.

Field, A. (2009). *Discovering statistics using SPSS.* London: SAGE.

Gerzon, M. (2006). *Leading through conflict: How successful leaders transform differences into opportunities.* Boston, MA: Harvard Business School Press.

Gomez-Arias, J. T., & Bello-Acebron, L. (2008). Why do leading brand manufacturers supply private labels? *Journal of Business & Industrial Marketing, 23*(4), 273–278.

Grover, V., Teng, J., & Fiedler, K. (2002). Investigating the role of information technology in building buyer-supplier relationships. *Journal of Association for Information Systems, 3,* 217–245.

Halstead, D., & Ward, C. B. (1995). Assessing the vulnerability of private label brands. *Journal of Product and Brand Management, 4*(3), 38–48.

Heide, J. B. (2003). Plural governance in industrial purchasing. *Journal of Marketing, 67*(4), 18–29.

Heide, J. B., & John, G. (1990). Alliances in industrial purchasing: The determinants of joint action in buyer-supplier relationships. *Journal of Marketing Research, 27*(1), 24–36.

Hewett, K., & Bearden, W. O. (2001). Dependence, trust, and relational behavior on the part of foreign subsidiary marketing operations: Implications for managing global marketing operations. *Journal of Marketing, 65*(4), 51–66.

Hoch, S. J. (1996). How should national brands think about private labels? *Sloan Management Review, 37*(Winter), 89–102.

Jonas, A., & Roosen, J. (2005). Private labels for premium products – the example of organic food. *International Journal of Retail & Distribution Management, 33*(8), 636–653.

Kim, S., Kim, N., Pae, J. H., & Yip, L. (2013). Cooperate 'and' compete: Coopetition strategy in retailer-supplier relationships. *Journal of Business & Industrial Marketing, 28*(4), 263–275.

Kotzab, H., & Schnedlitz, P. (1999). Retailing, don't forget it in your supply chain management concept. *Journal für Betriebswirtschaft, 4,* 140–153.

Kotzab, H., & Teller, C. (2003). Value-adding partnerships and co-opetition models in the grocery industry. *International Journal of Physical Distribution & Logistics Management, 33*(3), 268–281.

Kruskal, W. H., & Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis. *Journal of the American Statistical Association, 47*(260), 583–621.

Kumar, N., Scheer, L. K., & Steenkamp, J.-B. E. M. (1995). The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research, 32*(3), 348–356.

Kumar, N., & Steenkamp, J.-B. (2010). *Strategia marek własnych.* Warsaw, Poland: Oficyna Wolters Kluwer Business.

Lam, P. K., Chin, K. S., & Pun, F. T. (2007). Managing conflict in collaborative new product development: A supplier perspective. *International Journal of Quality & Reliability Management, 24*(9), 891–907.

Larson, P. D. (1994). An empirical study of inter-organizational functional integration and total costs. *Journal of Business Logistics, 15*(1), 153–169.

Larson, P. D., & Kulchitsky, J. D. (2000). The use and impact of communication media in purchasing and supply management. *Journal of Supply Chain Management, 5*(2), 29–37.

Li, Y., Liu, Y., & Liu, H. (2011). Co-opetition, distributor's entrepreneurial orientation and manufacturer's knowledge acquisition: Evidence from China. *Journal of Operations Management, 29,* 128–142.

Linder, J. C., & Cantrell, S. (2001). Five business-model myths that hold companies back. *Strategy and Leadership, 29*(6), 13–18.

Magretta, J. (2002). Why business models matter? *Harvard Business Review, 5,* 86–92.

Mentzer, J. T., Foggin, J. H., & Golicic, S. L. (2000). Collaboration: The enablers, impediments, and benefits. *Supply Chain Management Review, 5*(6), 52–58.

Narasimhan, C., & Wilcox, R. D. (1998). Private labels and the channel relationship: A cross-category analysis. *The Journal of Business, 71*(4), 573–600.

Nolan, K. (2007). The pursuit of distinction. *Retailing Today, 46*(9), 33.

Noordewier, T., John, G., & Nevin, J. (1990). Performance outcomes of purchasing arrangements in industrial buyer vendor relationships. *Journal of Marketing, 54*(4), 80–93.

Omar, O. (1999). *Retail marketing.* London: Pitman.

Osterwalder, A., Pigneur Y., & Tucci, C. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of Association for Information System, 16,* 1–25.

Oubina, J. Rubiuo, N., & Yaüge, J. (2006). Strategic management of store brands: An analysis from the manufacturer's perspective. *International Journal of Retail & Distribution Management, 34*(10), 742–760.

Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2006). Factors influencing the effectiveness of relationship marketing: A meta-analysis. *Journal of Marketing, 70*(4), 136–153.

Parkhe, A. (1993). Strategic alliance structuring: A game theoretic and transaction cost examination of interfirm cooperation. *Academy of Management Journal, 36*(4), 794–829.

Pereira, E., Brito, Z., & Mariotto, G. (2013). Benefits of cooperation between buyers and providers: A study in the field of information and communications technology. *Review of Business Management, 15*(47), 241–261.

Osarenkhoe, A. (2010). A coopetition strategy – a study of inter-firm dynamics between competition and cooperation. *Business Strategy Series, 11*(6), 343–362.

Quelch, J. A., & Harding, D. (1996). Brands versus private labels: Fighting to win. *Harvard Business Review, 74*(1), 99–109.

Radaev, R. (2013). Market power and relational conflicts in Russian retailing. *Journal of Business & Industrial Marketing, 28*(3), 167–177.

Rappa, M. (2001). *Managing the digital enterprise: Business models on the web.* Retrieved from http://digitalenterprise.org/models/models.html

Sarstedt, M., & Mooi, E. (2014). *A concise guide to market research: The process, data, and methods using IBM SPSS Statistics.* Berlin: Springer.

Schmoltiz, C., & Wallenburg, C. M. (2011). Horizontal cooperations between logistics service providers: Motives, structure, performance. *International Journal of Physical Distribution & Logistics Management, 41,* 552–575.

Seiders, K., Berry, L. L., & Gresham, L. G. (2000). Attention retailers! How convenient is your convenience strategy? *Sloan Management Review, 41*(3), 79–89.

Simatupang, T. M., & Sridharan, R. (2002). The collaborative supply chain. *International Journal of Logistics Management, 13*(1), 15–30.

Singh, P. J., & Power, D. (2009). The nature and effectiveness of collaboration between IRMS, their customers and suppliers: A supply chain perspective. *Supply Chain Management: An International Journal, 14*(3), 189–200.

Slywotzky, A. J., Morrison, D., & Andelman, B. (2000). *Strefa zysku: Strategiczne modele działalności.* Warsaw, Poland: PWE.

Soberman, D. A., & Parker, P. M. (2006). The economics of quality-equivalent store brands. *International Journal of Research in Marketing, 23*(2), 125–139.

Soosay, C. A., & Hyland, P. (2015). A decade of supply chain collaboration and directions for future research. *Supply Chain Management: An International Journal, 20*(6), 613–630.

Svensson, G. (2002). The theoretical foundation of supply chain management: A functionalist theory of marketing. *International Journal of Physical Distribution & Logistics Management, 32*(9), 734–754.

Swoboda, B., Pop, N. A., & Dabija, D. C. (2010). Vertical alliances between retail and manufacturer companies in the fashion industry. *Amfiteatru Economic, 12*(28), 634–649.

Terpend, R., Tyler, B. B., Krause, D. R., & Handfield, R. B. (2008). Buyer-supplier relationships: Derived value over two decades. *Journal of Supply Chain Management, 44*(2), 28–55.

Timmers, P. (1998). Business models for electronic commerce. *Electronic Markets, 2,* 3–8.

Togar, M. S., & Sridharan, R. (2002). The collaborative supply chain. *International Journal of Logistics Management, 13*(1), 15–30.

Torbay, M. D., Osterwalder, A., & Pigneur, Y. (2001). eBusiness model design, classification and measurements. *Thunderbird International Business Review, 44*(1), 5–23.

Trkman, P., Budler, M., & Groznik, A. (2015). A business model approach to supply chain management. *Supply Chain Management: An International Journal, 20*(6), 587–602.

Tsou, C.-S., Fang, H.-H., Lo, H.-C., & Huang, C.-H. (2009). A study of cooperative advertising in a manufacturer-retailer supply chain. *International Journal of Information and Management Sciences, 20,* 15–26.

Tuusjarvi, E., & Moeller, K. (2009). Multiplicity of norms in inter-company cooperation. *Journal of Business & Industrial Marketing, 24*(7), 519–528.

Verhoef, P. C., Nijssen, E. J., Sloot, L. M. (2002). Strategic reactions of national brands manufacturers towards private labels: An empirical study in The Netherlands. *European Journal of Marketing, 36*(11/12), 1309–1326.

Vlachos, I. P., Bourlakis, M., & Karalis, V. (2008). Manufacturer-retailer collaboration in the supply chain: Empirical evidence from the Greek food sector. *International Journal of Logistics Research and Applications, 11*(4), 267–277.

Webb, K. (2002). Managing channels of distribution in the age of electronic commerce. *Industrial Marketing Management, 31*(2), 95–102.

Welch, B. (1951). On the comparison of several mean values: An alternative approach. *Biometrika, 38*(3/4), 330–336.

Witek-Hajduk, M. K. (2015). Cele wytwarzania przez producentów produktów pod markami detalistów. *Gospodarka Materiałowa i Logistyka, 11,* 24–31.

Witek-Hajduk, M. K. (2016). Relacje między producentami a detalistami. In M. K. Witek-Hajduk, J. Cygler, A. Sznajder, A. Napiórkowska, & T. Napiórkowski (Eds.), *Relacje między producentami a detalistami – kontekst modeli biznesu* (pp. 45–90). Warsaw, Poland: PWN.

Zaborek, P., & Mirońska, D. (2014). Segmentation of Polish consumers based on their attitudes towards cause related marketing. *Gospodarka Materiałowa i Logistyka, 10,* 2–10.

Marzanna Witek-Hajduk is Associate Professor in Warsaw School of Economics, Collegium of World Economy, Institute of International Management and Marketing and Former Deputy Dean of the Collegium of World Economy. Director of Postgraduate Studies in Brand Management and Postgraduate Studies in Luxury Products and Brands Management. Lectures on: international business management, brand management and international marketing. Participant of a plenty of research projects related to marketing alliances, internationalization strategies, business models and brand management. Author or co-author and editor of numerous articles and monographs. *mwitek@sgh.waw.pl*

Tomasz Marcin Napiórkowski is Assistant Professor at the Warsaw School of Economics in Poland and Lecturer at the Łazarski University. Since he returned to Poland in 2011 from the US (where he studied and worked at the Old Dominion University), he authored/co-authored 12 scientific texts (6 of them published in Polish and English), conducted 17 scientific projects (including grants from the Polish National Science Centre, INSO 3 and for the European Commission, DG Enterprise) and 8 consultancy projects (for Master Card, The Conference of Financial Companies in Poland and Krajowy Rejestr Długów). Tomasz focuses on macroeconomic conditions, especially Foreign Direct Investment, as well as on forward-looking topics like innovation's role in economic growth. *tnapio@sgh.waw.pl*