

## COOPETITION AS A BUSINESS STRATEGY THAT CHANGES THE MARKET STRUCTURES: THE CASE OF LONG-DISTANCE PASSENGER TRANSPORT MARKETS IN POLAND

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**Purpose:** This paper concerns the phenomenon of two-way causality effect between market structures and coopetition occurrence. It is assumed that certain characteristics of an existing market structure implicate the decision to deploy the strategy of coopetition by companies. Moreover, the opposite effect might be expected, that is coopetition between market rivals changes the market structure on which it was implemented in the first place. In the paper various aspects and approaches of the abovementioned phenomena have been considered.

**Design/methodology/approach:** The author investigates the events, motives and values that lead companies to deploy the coopetition strategy. Furthermore, the theoretical and conceptual bases for the effect of the coopetition impacting the change of market structures have been provided. A wide analysis of managers' decision resulting from the occurrence of certain strategic events has been conducted with the use of comparison matrixes. Finally, in the last part of the study the author's empirical research on two passenger transport relevant markets has been presented.

**Findings:** Certain market strategies characteristics affected companies to deploy the coopetition strategy and the other way round, the strategy changed the market structure in the result of competitors' decision. Taking into consideration all of the theoretical, conceptual and empirical aspects raised throughout the course of the research, both hypotheses have been confirmed.

**Research limitations/implications:** The author has used mostly qualitative methods such as observation, conceptualization or cause and effect analysis in which the natural existence of errors might occur. To test the hypotheses the researcher had to create assumptions and models that represent what should happen if every aspects successfully appear. It might be expected that some other variables affected the market structures during the research that the author was not aware of. Thus, one should interpret the results with the inclusion of the *ceteris paribus*.

**Practical implications:** Instead of applying the high cost strategies such as price wars or demand seeking, one might use the coopetition to create added values with little or even zero cost. What is more, this strategy may result in higher pricing power, higher market size or better level of innovation.

**Originality/value:** The publication discusses the coopetition phenomenon from the innovative perspective of two-way causality (influence) between market structures and coopetition itself while most of the studies concern only one-way cause and effect between those variables. Conclusions drawn from this paper can be useful for entrepreneurs and their decision making process.

**Keywords:** coepetition, market structure, business strategy, competitive strategy, passenger transport.

**Category of the paper:** Research paper, Viewpoint.

## 1. Introduction

The main purpose of management science is to provide entrepreneurs with information on how to run their companies or firms they are in the lead of more effectively (Drucker, 1955). One of the most useful concepts from the business owners perspective is business strategy (Jarzabkowski, 2005, pp. 29-31). Much research has been carried out in this area with the effect of at least dozens of different business strategies (Chrisman et al., 1988; Peng, 2000, pp. 15-20). Yet over the years, the most recognizable competitive strategies have been narrowed down into three main approaches. One approach has been established on the basis of price or non-price competition which result in corresponding competitive advantages (Belleflamme, 2010, pp. 31-34). Another popular theory was advanced by Porter (1998) with his groups of generic strategies that include: differentiation, overall cost leadership and focus strategy. On the other hand one might observe the group of strategies based on the pressure of each competitor on the level of competition rivalry (Grimm et al., 2006, pp. 44-47). More precisely, companies might act in three different ways depending on the competitive intensity. Firstly, firms can compete in full manner in almost every possible way. Secondly, they might create reciprocity cooperation in some parts of the business and maintain competition in the other ones. Finally, a company's strategy can be settled on full cooperation switching the competitive rivalry to the partnership agreements. This paper concerns the last two of the abovementioned approaches and in the final section it analyses them on the example of long-distance passenger transport markets in Poland. It investigates the case when companies decide to sign cooperation agreements in the fields that are normally within the scope of rivalry. Resulting from these decisions the specific business strategies of coepetition might be observed. Firms decide to cooperate instead of compete to achieve both-sides added value especially when it comes to the customers perception of their products (Fernandez et al., 2014). Due to the possible risks of cooperation with market rivals the strategy of coepetition seems to be a rather rare choice of business strategy. In this paper an attempt is made to shed a new light on that approach by examining the real markets evidence of using this kind of strategy despite the risk it might entail. It is also of key importance to determine the possible results of adopting this strategy especially for the market structure and the intensity of the competition. The coepetition concept shall be dealt with in more details in two sections: the theoretical one with an emphasis on the comparison of business strategies as well as the empirical one in which the research outcomes concerning competitive strategies within long-distance passenger transport markets will be demonstrated.

## 2. Theoretical background and hypotheses

This section will broaden the deliberations about business strategies presented in the introduction. The focus shall be put on the theoretical issues that might bring the better understanding of the coopetition examples which are included in the empirical part. Firstly, it is necessary to properly characterize the concept of coopetition, which is why various approaches and definitions will be presented. The author also concentrates on the coopetition comparison to the similar strategies based on the partial cooperation. Basic characteristics and conditions to apply coopetition on determined markets shall be presented as well. In this section the author of this paper puts forward an innovative conceptualization of two-way causality between market structures and coopetition where both phenomena affect each other before and after each of them occurs.

### 2.1. To rival or to cooperate: competition among the partnership forms of company competition

Constantly changing business environments with high intensity of industry rivalry has led the strategy and management scholars to establish within the years a completely new business strategy of coopetition. However, due to the high popularity of this concept on the real markets, much discrepancy in the definitions, characteristics, conditions and models has been observed.

The first well-known evidence of business usage of coopetition as well as the first coining of the term are assigned to Ray Noorda when he was working for Novell company in the 1980s (Walley, 2007). He has described the cooperation between Novell and 3Com as an alliance among two technology competitors that develops common standards to grow the overall market for their products (Bouncken et al., 2015). Through several years the concept has evolved in the domain of game theory. Consequently, Brandenburger and Nalebuff (1996) have presented groundbreaking research on coopetition that led to their best-selling book and widely cited publications. Their view on the coopetition is based on value-net game theory where players aim to create a larger market size by cooperating to increase benefits for all players involved in the partnership and subsequently divide the larger market among the players by competing. Thus, rivals decide to cooperate in the part of increasing demand volume and at the same time they compete in the part of dividing the supply understood as sales value. The abovementioned theory has been recognized as the *actor school of thought* due to the much focus on players (actors), rather than on acts. Yet another approach was presented by Bengtsson and Cock (2000) who proposed the refreshed research on coopetition which is known as the *activity school of thought*. In their understanding coopetition is a dyadic and one to one relationship between a pair of firms, meaning that firms cooperate in activities far from their customers, while simultaneously competing in activities close to the customers. Furthermore, various discussions appeared from both schools' perspective resulting in at least twenty new definitions and

hundreds of empirical evidences (Bengtsson and Raza-Ullah, 2016; Gnyawali and Charleton, 2018; Ritala, 2012). For the purpose of this paper the author uses these definitions of coopetition that focus on the business use case and strategic management. One of the recent most cited studies on the *actor school of thought* is the work of Pathak, Wu and Johnston (2014). From their perspective firms (actors) collaborate in a supply network where they develop relational strategic games in which cooperation and competition between one another occurs. Their relative force in the network affects the level of cooperation and rivalry in the network. However, much more studies that indicate the coopetition as a business strategy on the real industry cases have been conducted in the domain of activity school of thought. Various views (Fernandez et al., 2014; Gnyawali, and Park, 2011; Ho, and Ganesan, 2013; Raza-Ullah et al., 2014) emphasize coopetition as a strategy that indicates simultaneous cooperation and competition between two or more firms with an aim to provide more valuable product from the customer's perspective. This strategy, in turn, causes higher revenue for each cooperating rival comparing to the strategy based only on competition (Ritala, 2012). With regard to the presented approaches the author assumes that whenever the term 'coopetition' is used, it shall be understood as the business strategy in accordance with the facets of the *activity school of thought*.

One may observe other forms of reciprocity cooperation in competition environments. The importance of such an overview is to establish the differences between coopetition and other partnership forms of rivalry to avoid any misconceptions. Thus, it is essential to consider such covenants as companies: cooperation agreement, alliance and merge and how they are related to the concept of coopetition.

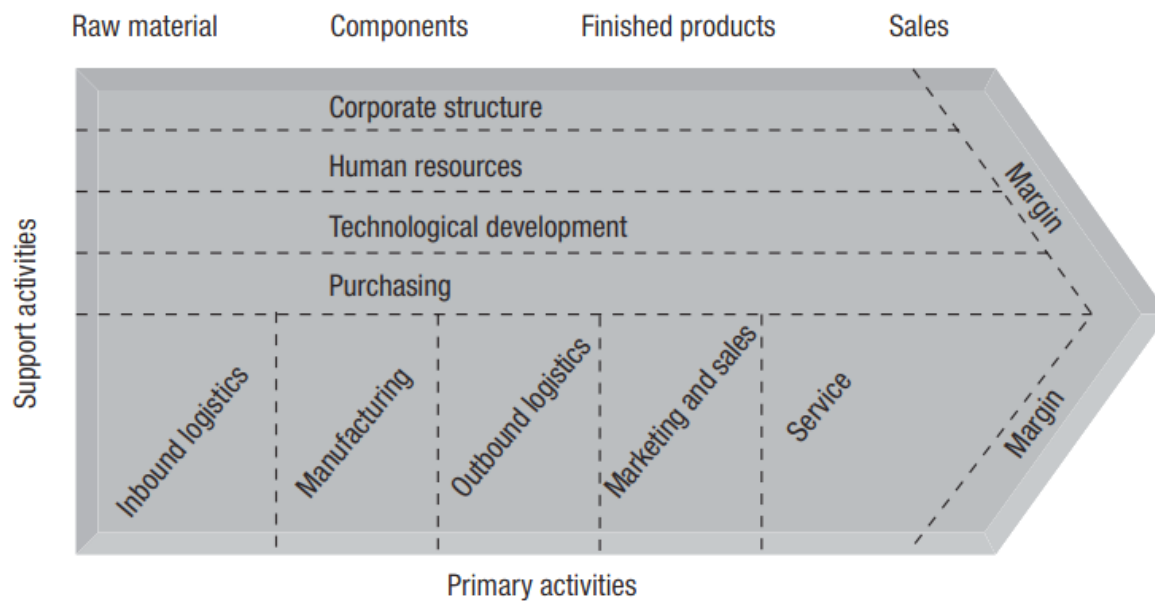
To begin with, companies may establish a simple cooperation agreement on any segment of their business, i.e. R&D, logistics, production, fully preserving their corporate identity. In line with that, cooperation occurs when two or more firms voluntarily arrange common processes between them involving exchange, share, or development of products, technologies, or services (Gnyawali, and Charleton, 2018). This kind of cooperation might evolve in more complex directions by creating a separate joint-venture entity that brings added value to both sides of the agreement. In such a case the form of alliance is enacted (Varadarajan, and Cunningham, 1995). Nevertheless, a joint-venture company is not the only kind of alliance. As for alliances, the other most cited variations are: equity strategic alliance, outsourcing or product licensing (Das, and Teng, 2000; Galloway et al., 2017). Therefore, the majority of alliances involves the shared equity meant by capital investments for the specific purpose of cooperation. The cooperators usually maintain the competition intensity on a regular basis. Thus, one might define strategic alliance as an interorganizational cooperative strategy that connects specific resources and skills by the cooperating organizations in order to achieve common goals, as well as goals specific to the individual partners, with the investment of shared capital especially via joint corporation (Varadarajan, and Cunningham, 1995). When, in turn, the cooperation requires high amount of capital investments or it is essential to create "less risk

bond”, the merger might occur (Das, and Teng, 2000; Antelo, and Peón, 2019). This type of strategic partnership is the final step of cooperation between two or more competitors when the rivalry on the market ceases. As a result, merged companies connect their resources as well as customer base, or in other words their market share, into one business entity. Taking into account the abovementioned types of cooperation agreements one could indicate the correlations between them and characterize the coopetition itself. As pointed out earlier, competition often appears in the form of strategy that integrates business processes of two or more competitors to create a new, higher value. Competition in these processes is no longer in existence. However, the rest of business is kept in an unchanged state (Bengtsson, and Kock, 2014). Thus, coopetition cannot be implemented in the form of any merger or collusion via separate equity joint-venture partnership because of the mutual exclusion of rivalry and cooperation (Antelo, and Peón, 2019; Bouncken et al., 2016). Therefore, whenever companies decide to create a new entity with one shareholding or an ownership structure to compete on the market one shall not consider it as coopetition but rather a strategy of full cooperation or strategic collusion (Gnyawali, and Charleton, 2018; Grimm et al., 2006; Hamel, 1991). Nevertheless, coopetition might exist in many legal forms of cooperation such as alliances, partnership agreements or joint venture on the condition that such partnership maintains some intensity of competition especially by disengagement of shareholding within parent companies (Bouncken et al., 2016). As a result a company receives pure strategic engagement of coopetition with a high level of liberality for each partner as well as the added values that will be considered in the following section.

## **2.2. Coopetition between rivals impacts their value chains**

Much interesting research with empirical evidences has been carried out in the area of value-added theory as a result of implementing the coopetition strategy. It is widely accepted by many researchers that through coopetition partners receive the exchange of technological, financial, marketing, or other managerial skills (Bengtsson, and Kock, 2014; Pathak et al., 2014; Song, and Lee, 2012; Gnyawali, and Park, 2011; Brandenburger, and Nalebuff, 1996; Niemczyk, and Trzaska, 2020). What is more, the specialization of a certain part of the business has been observed (Gnyawali, and Park, 2011; Mariani, 2016; Rusko, 2011; Tether, 2002; Wu, 2014; Yami and Neme, 2014). This is possible due to the access to new resources that create new availabilities to run business more efficiently in at least one of the following aspects: costs, production efficiency, know-how, R&D or soft skills like marketing, HR, PR (Das, and Teng, 2000). Furthermore, it has been established that these aspects are frequently of simultaneous occurrence, which allows companies to obtain a very desirable effect of synergy. These approaches also highlight the fact of sharing the business risk between the partners of cooperation (Quintana-Garcia, and Benavides-Velasco, 2004). The phenomenon of value creation within the cooperating companies might be presented in Porter’s concept of value chain (1998, pp. 48-52). The value chain, depicted in Figure 1, disaggregates a firm into its essential

strategic activities in order to acknowledge the distribution of costs and the existing and potential sources of differentiation. A company may achieve competitive advantage by performing these activities more cheaply, quickly or qualitatively better than its competitors.



**Figure 1.** The value chain model. Source: (Karlöf, and Lövingsson, 2005, pp. 389-391).

This simple and yet very accurate model illustrates where the margin comes from in most of the businesses. One should examine the phenomenon of cooperation strategy in line with this approach by analyzing the possible impact on each of the activities within the value chain. Moreover, it may provide the answer to the question whether cooperation brings any added value to its members. It is assumed that through the established cooperation either a product's final unit cost will be lower or the quality or effectiveness of value chain activities will rise (Bouncken et al., 2015; Brandenburger, and Nalebuff, 1996). These effects might occur by exchange of one or more of the following resources: human, financial or physical capital, rare materials or components, knowledge, innovations (patents, know-how) or unique, effective processes (Kotler, and Keller, 2012, pp. 221-244; Grimm et al., 2006, pp. 44-48). However, to make it happen, the basic rule of cooperation strategy, that is the rivalry suspension, must be established (Bengtsson, and Kock, 2014). The lack of competition in gathering of some of the indicated resources may result in a better performance of each partner considered as higher margin. Increasing the level of margin is possible by virtue of greater effectiveness in resources processing.

### 2.3. Two-way causality between market structures and cooperation

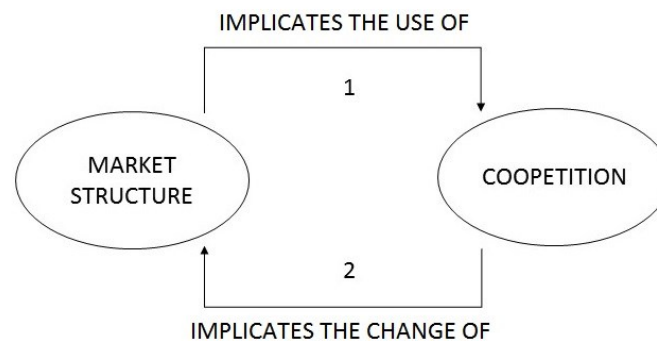
This section concerns the theoretical aspects of the issue mentioned in the title, namely the causes and effects of cooperation on the market structures. The author assumes that between these two variables one may observe the effect of two-way causality. It is a term used to define certain economic correlations or relationships and it occurs when a predictive variable is

dependent on the variable of prediction (Pearl, 2000; Schmit, and Phelps, 1985). An accurate illustration of two-way causality is the relationship between demand and price meant as a function of price. According to the assumptions it is in fact a two-way relationship for the reason that price is also a function of demand, that is to say, price (P) is a function of demand:  $P = f(D)$ ; and demand (D) is a function of price;  $D = g(P)$ . In the light of the aforementioned findings the same relationship might be observed within market structures and competition. Therefore, two main hypotheses of the following research can be formulated:

*H1) Certain characteristics of an existing market structure implicate the decision to deploy a competition strategy by companies operating in this market.*

*H2) The occurrence of the competition strategy implicates another effect in the opposite way; competition between market rivals changes the market structure on which it was implemented in the first place.*

Thus, such two events, represented by hypotheses H1 and H2, that appear one from another and one after another demonstrates the two-way causality phenomenon. Due to the lack of calculable variables these hypotheses are not presented with a mathematical equation, but instead they are illustrated with a model created by the author of this paper (Figure 2).



**Figure 2.** Two-way causality model that represents the research hypotheses. Source: Author's work.

### 3. Methodology and data

The research methodology is based mainly on the pragmatist approach with a focus on the operationalization of many concepts introduced in the paper. The methodology of non-participant observation as well as strictly defined cause and effect relationship analysis has been used as well. The empirical qualitative study with the support of numerical data has been conducted by the methods of nonprobability sampling, systematic reviews and systematic data collection.

### **3.1. Study aims and objectives**

The possible reasons to deploy coopetition strategy from the perspective of particular market structures and its characteristics shall be dealt with in the following sections. It is also of key importance to establish the presupposed factors of influence of market structures on deploying the coopetition strategy and contrarily the influence of coopetition strategy on changing the market structures. It is also crucial to discover and test these assumptions on the empirical evidence. Thus, the aims of the study as well as the methods of explanations are multithreaded. Firstly, the study attempts to identify and describe the characteristics of market structures that might have an impact on deploying the coopetition strategy. Secondly, these characteristics will be cross-checked with certain strategic events that may also lead to occurrence of coopetition strategy within indicated market structures. Moreover, the model's assumptions of coopetition influencing the market structures will be considered. On top of that, the author provides an empirical study in which the attention is especially focused on the presupposition formulated in the previous steps of the study. Therefore, the data section includes the author's six-year long research on coopetition occurrence within relevant markets of long-distance passenger transport markets in Poland as well as in the whole industry.

### **3.2. Particular market structures as a requirement for coopetition occurrence**

In management sciences the causes and motives of deploying the coopetition strategy between companies have already been concerned in various studies (Belleflamme, 2010, p. 65; Besanko, 2013, p. 33; Niemczyk, and Trzaska, 2020; Rusko, 2011). One might get acquainted with such theories as mentioned earlier in the paper: value-added with regard to the firm's value chain or a resource-based view. Additionally, the research has also demonstrated that companies decide to deploy the coopetition strategy because they are willing to expand their market position meant as the size of their customer base (Ann Peng et al., 2018). To do so, companies try to improve their production or distribution or marketing processes. In the result of coopetition the effects of i.e. wider products distribution, faster production or better brand awareness might be expected (Gnyawali, and Charleton, 2018). In that, the purpose of increasing the market size might be achieved (Certo et al., 2006). These arguments are undoubtedly valid and the author uses them to support his hypotheses. However, it is not the only approach one should to consider. The author suggests to investigate the issue of coopetition strategy not only from the perspective of research in management sciences but also from the ones in the domain of economics. This approach is certainly needed to properly consider the two-way causality effect between market structures and coopetition for the reason of the origination of the market structures theories in the science of economics. Economists have carried out an exceptional work on the characteristics of each market structure especially in the terms of product standardization, number of competitors, price fixing, intensity and types of competition and last but not least the market share of largest firms (Bernanke et al., 2009;



Besanko, 2013, pp. 50-120; Krugman, and Wells, 2013, pp. 30-65). The author will make use of these concepts, precepts and interrelations to describe the abovementioned two-way causality in more details, from the perspective of two sciences: management and economics. To establish the most important factors to be analysed within the market structures theories one might first look for the reasons that companies change their business strategy (Hitt et al., 2015, pp. 321-356; Arora et al., 2004; Yip, 2004). The answers have been deduced by the management sciences and the most cited individual motives are: (1) the strategic objectives are not achieved in the certain amount of time (i.e. increasing companies value, widening the market size, launching exact amount of new products); (2) demand is not satisfactory or it is decreasing; (3) margin is decreasing, that is to say, the price of the product goes down or the unit cost of product rises with no implication on the price increase; (4) the level of innovation is not satisfactory; (5) the competitive advantages start to disappear; (6) the intensity of competition is too high. According to these motives, one shall devote closer attention to the following aspects of market structures: (1) competition intensity measured by the degree of monopoly (pricing) power; (2) typical number of competing firms; (3) level of product differentiation; (4) basic type of the competition (price or non-price); (5) level of boundaries to enter the market for potential competitors.

Taking into consideration both approaches the author has carried out an analysis of the theoretical possibility to deploy the coopetition strategy between companies operating within a particular market structure facing strategic events as indicated earlier. First of all, the comparison matrix (A) of important market structures characteristics has been conducted (Table 1), on the basis of the literature review, the matrix (B) of coopetition occurrence in the face of specific strategic events has been established (Table 2).

**Table 1.**

*Comparison matrix (A) of important market structures characteristics*

Characteristic	Market type	Monopoly	Oligopoly	Monopolistic competition
Degree of monopoly (pricing) power		Very high	High	Low to medium
Typical number of competing firms		1	2-6 Depending on HHI index	>6, Mostly big number of small companies
Level of product differentiation		Unique product without close substitution	Differentiated	Differentiated
Basic type of competition		High by price (mostly as entry barriers) Low by non-price	High by price, Medium by non-price	Medium by price, High by non-price
Level of boundaries to enter the market		Very high	High	Low to medium

Source: author's work based on (Bernanke et al., 2009, pp. 55-76; Krugman, and Wells, 2013, pp. 44-65; Varian, 1992, pp. 23-32; Dixit, and Stiglitz, 1977; Stigler, 1964).

**Table 2.***Matrix (B) of coopetition occurrence in the face of specific strategic events*

Strategic event	Coopetition occurrence	Coopetition occurrence in monopoly conditions	Coopetition occurrence in oligopoly conditions	Coopetition occurrence in monopolistic competition conditions
Strategic objectives are not achieved in the certain amount of time		POSSIBLE	POSSIBLE	NOT POSSIBLE
Demand is not satisfactory or it is decreasing		NOT POSSIBLE	VERY POSSIBLE	VERY POSSIBLE
Margin is decreasing (high cost or lower prices)		NOT POSSIBLE	VERY POSSIBLE	POSSIBLE
The level of innovation is not satisfactory		POSSIBLE	VERY POSSIBLE	NOT POSSIBLE
The competitive advantages are getting lost		NOT POSSIBLE	POSSIBLE	NOT POSSIBLE
The intensity of competition is too high		NOT POSSIBLE	VERY POSSIBLE	POSSIBLE

Source: author's work based on (Besanko, 2013; Hitt et al., 2015).

According to the characteristics presented in Matrix (A) the possible impact of each variable on the possibility of coopetition occurrence should be considered. The basic and first assumption is to verify whether any characteristic of market structures puts a pressure on managers to look for changes in their business strategy with the special focus on coopetition. This method is used regardless of the abovementioned approach from the management sciences. Undoubtedly, these established consequences of strategic events usually guide companies to change their business strategy but the question posed in this paper is whether the market structure characteristics affect these choices too (Peng, 2000; Yip, 2004). This phenomenon is still not clear due to the lack of such cross-check studies in the literature even if it is necessary to properly consider the occurrence of coopetition in a result of certain strategic events (Bengtsson, and Raza-Ullah, 2016; Besanko, 2013; Johnson et al., 2009). Thus, the author has performed such an analysis with the result of matrix (B) with three available answers: NOT POSSIBLE; POSSIBLE; VERY POSSIBLE. The answers have been given on the dyadic presumptions in which companies, by managers' decision, face the crucial strategic issues and that they simultaneously act on particular market structure: monopoly, oligopoly or monopolistic competition. The perfect competition market structure has been left aside in this research due to a very low business use case.

### 3.3. The future impact of coopetition on market structure

Assuming that only two competitors operating on the particular of the aforementioned market structures apply the business strategy of coopetition, the change of the market structure within which they operate might be expected. In this case the issue of change should be considered especially as the differentiation in terms of: (1) the number of actual competitors operating in the market; (2) price power of each competitor. By examining the change of any of those two variables it is possible to analyse the actual change of whole market structure (Besanko, 2013, pp. 233-236). Thus, there is some probability that due to occurrence of coopetition strategy between two rivals or one rival and a potential competitor, the market structure will change towards a different market structure (i.e. oligopoly into monopoly or contrarily monopoly to oligopoly). This kind of approach in the paper has been established on the basis of economics theories particularly the competition theories originated from the game theory (Bernanke et al., 2009, pp. 231-255; Besanko, 2013, pp. 101-132; Hitt et al., 2015, pp. 231-245). The theories of competition have brought up tremendous contribution to the possible explanations of companies moves fulfilled by managers' behaviour in the result of appearance of crucial strategic event. Thus, the object of the analysis are the companies operating on the market with the focus on two rivals that has deployed the coopetition strategy. Therefore, the analysed event (action) is the strategic move of these two companies and the analysed effect (reaction) is the final decision to abandon or expand the competition between them. The managers reaction that are considered in the study are as follows: (1) decision to maintain the long-term coopetition and by that the rivalry too; (2) decision to switch from coopetition to almost full cooperation so that the actual competition is abandoned; (3) decision to change the relevant market or industry due to high intensity of rivalry in spite of the coopetition occurrence. In the result of such cause and effect analysis the comparison matrix (C) has been prepared (Table 3). The strategic events that have been revealed during the process of literature review appeared in this matrix as a hot-spot to deploy the coopetition strategy as it was concerned in matrix (B). However, in that part answers represent the possible long-term effect meant as a significant change to the market structures resulting from coopetition occurrence between two rivals (potential rivals in case of monopoly).

**Table 3.**

*Matrix (C) of various long-term effects of cooperation occurrence on the market structures*

Two rivals (or potential rivals) deploy cooperation due to strategic event of:	Within the market structure of:	Monopoly	Oligopoly	Monopolistic competition
		With the long-term effect (change) to market structure of:		
Strategic objectives are not achieved in the certain amount of time		POSSIBLE DUOPOLY CREATION	HIGHER PRICING POWER	NONE
Demand is not satisfactory or it is decreasing		NONE	MINUS 1 COMPETITOR	HIGHER PRICING POWER
Margin is decreasing (high cost or lower prices)		NONE	MINUS 1 COMPETITOR	HIGHER PRICING POWER
The level of innovation is not satisfactory		HIGHER PRICING POWER	HIGHER PRICING POWER	NONE
The competitive advantages are getting lost		NONE	HIGHER PRICING POWER	NONE
The intensity of competition is too high		NONE	MINUS 1 COMPETITOR	MINUS X COMPETITORS

Source: author's work.

## 4. Data

This section sheds a new light on the issue of two-way causality by examining the hypotheses from the perspective of real evidence of cooperation strategy occurrence. The objects of author's analysis are long-distance passenger transport relevant markets in Poland as well as the industry itself. The author presents data collected for two relevant markets in the period of a six-year study in the characteristics of: (1) average prices of one-way journey for each competitor; (2) number of competitors operating in each year of study; (3) type of market structure identified in the course of research; (4) exact time and length of cooperation strategy occurrence on these markets; (5) market size estimated from supply side method. Passenger transport relevant markets have been delineated partially on the basis of detailed methods such as cross-price elasticity and correlation of price developments and partially on the method named as O&D (*Point of Origin – point of Destination*). According to this approach, every passage combination with the same point of origin and point of destination should be considered as separate market from the customers' viewpoint. Many studies in the area of passenger transport relevant markets have been carried out by the European Commission in which we can find the following explanations of O&D approach: the Commission looks at the different transport possibilities in the market, that is, all direct and in-direct transport methods between two points (i.e. cities) are concerned (European Commission, 2010; Gremminger, 2003, p. 75). Also, it is of key importance to identify whether the types of transport services are not too differentiated in the form of: quality, price or even journey time and repeatability of the service. Thus, every market must be considered separately and shall be examined taking into

account the abovementioned rules. In result, relevant passenger transport market may include different types of conveyance i.e. by train, plane or bus, but it simultaneously should be similar in terms of customers' utility (journey time, quality). Certain cross-price elasticity ratio should be determined too. Therefore, the author's research has been conducted within two relevant markets:

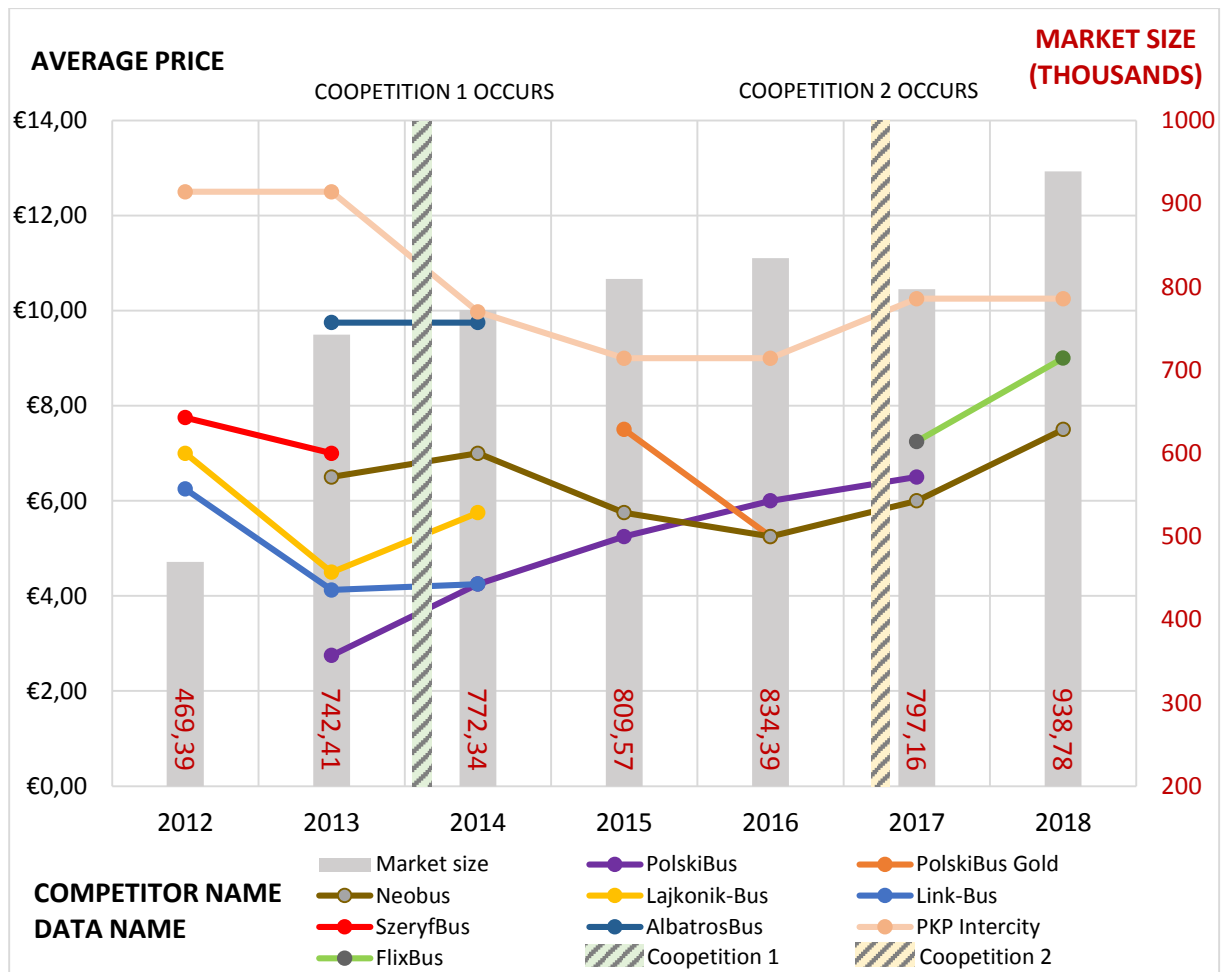
- 1) Long-distance passenger transport market between the cities of Wrocław (Poland) and Kraków (Poland).
- 2) Long-distance international passenger transport market between the cities of Kraków (Poland) and Praha (Czech Republic).

The data for the first market is presented in Figure 4 and the data for the second market is presented in Figure 5.

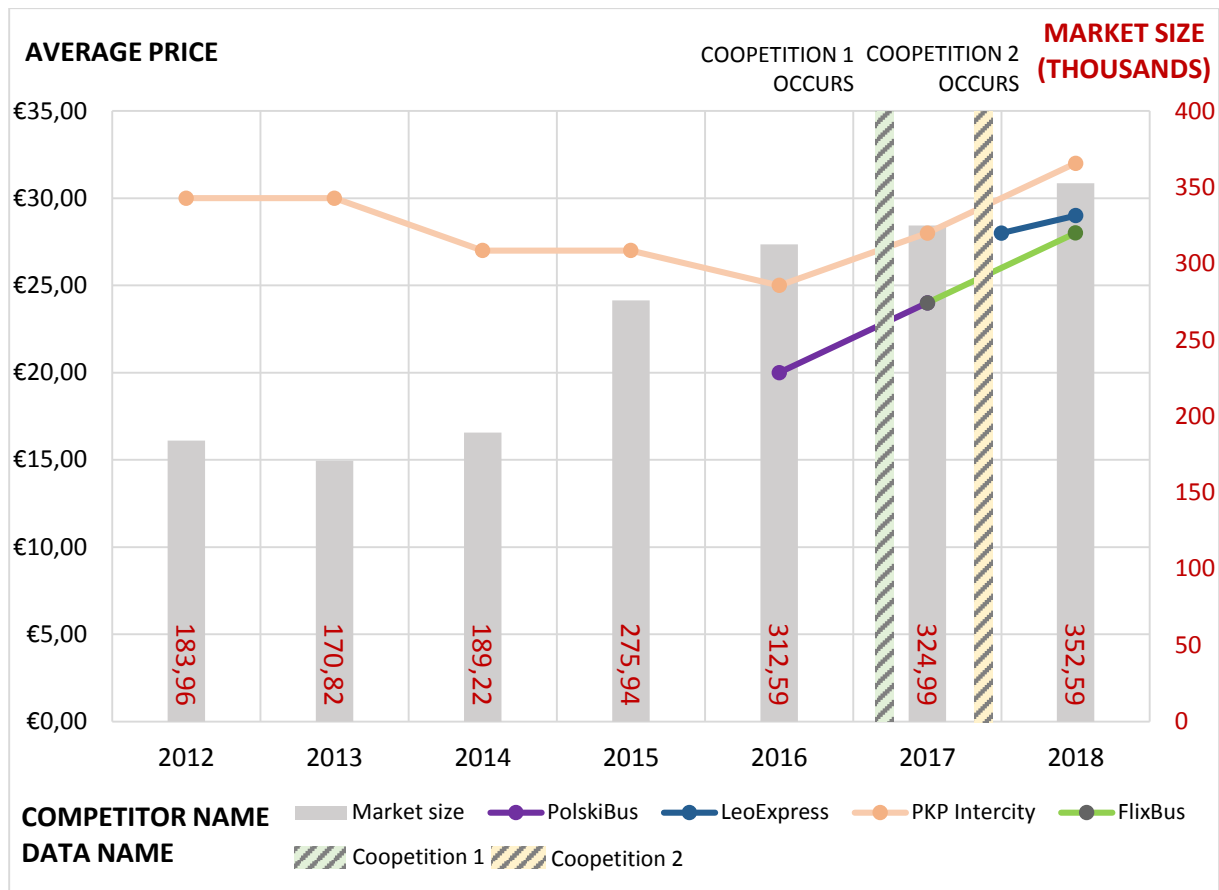
The data collection methods have been used as follows:

- 1) Average price has been counted for every competitor for 12 periods (months) in each analysed year. The data has been collected in all periods on the 16th day of the month. The prices have been checked on the last day of the month with an average of prices for one-way journey on that day. That is, the prices have been noted around 14 days before the date of the journey (last day of the month) for each competitor.
- 2) Market share data is presented for each year. The data has been estimated on the author's observations as well as the assumptions from the supply side method. The total number of journeys in each month has been multiplied by the typical number of available seats in a certain conveyance delivered by every competitor. The number of seats has been adjusted (multiplied) with the rate of 0.68 that represents an average load factor of 68% seats. This number appeared in a different author's studies for the purpose of this paper.
- 3) Coopetition occurrence has been presented as a point in the figure that refers to the exact official date of deploying the coopetition between two rivals.

The data source for each variable has been generated mostly from the official companies' Internet communication channels, especially from competitors' main websites, sales platforms and press releases. The author has carried out much research by observation particularly in the areas of market structures and coopetition occurrence as well as unknown variables such as seats availability and load factor.



**Figure 4.** Graphic presentation of crucial data from conducted research on Market 1. Source: author's work.



**Figure 5.** Graphic presentation of crucial data from conducted research on market number 2. Source: author's work.

## 5. Results

Following the objectives outlined in the research aims and objectives the results of the analysis shall be provided in this section. To explain the most important cause and effect relationships the author will use the example of oligopoly as a market structure in which the probability of coopetition strategy occurrence is the highest.

### 5.1. First-way causality between Particular market structures and coopetition occurrence

The first step to analyse the results is to partially examine hypothesis H1, so that one might explain the impact of market structures on the occurrence of coopetition strategy on the example of oligopoly. Thus, one should bear in mind not only all of the aspects that determine oligopoly as a market structure but it also needs to be checked if the highlighted strategic issues would really lead to change the business strategy of a theoretical company that acts within oligopoly. The assumption here is that it is not obvious that a company will change their business strategy every single time when a problematic strategic event occurs. Considering the author's

hypotheses in more details, the main reasons of that unresponsiveness are implemented in the particular characteristics of market structures such as: (1) degree of monopoly (pricing) power; (2) level of product differentiation; (3) basic type of competition. By analysing mostly only these three dimensions of market structures one might achieve the theoretical answer to the question posed earlier in the section. Certainly, the other characteristics of market structures are important too, but it is not necessary to include them in each case. Going back to the example of oligopoly, one might note that in oligopoly the selected characteristics are as below: (1) degree of pricing power is high; (2) product is differentiated; (3) competition rivalry is based mostly on pricing strategies (high) and averagely on non-priced strategies (medium). Therefore, having noted them, one may further analyse how these variables affect the managers strategic decisions such as deployment of cooperation with other competitor in a response to certain strategic events enclosed in the matrix (B). Firstly, by having high monopoly (pricing) power, companies that operate in oligopoly structures are very likely to consider the cooperation strategy because of the natural willingness to increase such power. The cooperation allows oligopoly companies to face the problems of decreasing margin or a not satisfactory demand level. Furthermore, differentiated product increases the chance of cooperation occurrence due to the high possibility of achieving new and unique competitive advantages resulting from cooperation with another industry firm. Finally, the type of competition (price or non-price) affects the strategic moves of an oligopoly firm. In the face of tough strategic events such as decreasing demand or decreasing margin oligopoly firms, at least in theory, act in a very ineffective way. Usually the reactions are price wars between competitors or attempts to perform illegal activity such as price fixing i.e. via cartel, although these only exacerbate the problems that occurred at first. Nevertheless, cooperation strategy might be a remedy for such reactions. By implementing simultaneous cooperation with its competitor, oligopoly firm may achieve much better control of its pricing power comparing to usual reactions. The cooperation would also be much more effective strategy while oligopolists face potential entrance to the market. Instead of using the predatory pricing as an entry barrier, oligopolists may cooperate to i.e.: (1) create new innovation; (2) widen sales distribution; (3) create common marketing campaigns. Therefore, cooperation should bring much more added value for both competitors contrarily to choose 'typical' strategies. Thus, the occurrence of cooperation strategy is very likely to happen because of specific characteristics of market structures. In this case, the oligopoly nuances implicate the cooperation deployment.

## **5.2. Second-way causality between cooperation occurrence and market structures. results**

Matrix (C) presented in section 3.3. outlines the second effect (causality) that might appear due to the cooperation deployment between two rivals (or a rival with a potential competitor). Therefore, it puts forward arguments to examine the hypothesis H2. To receive such arguments one should answer two simple and yet very important questions: (1) what are the long-term



advantages of coopetition that rivals have already agreed on? (2) Should rivals still maintain this strategy or would it be more effective to change it further? Thus, continuing the example of oligopoly, these questions might be answered as follows: (1) oligopolists may achieve significant increase of price power due to the higher level of innovation or cost effectiveness or wider market size; (2) when the added values from competitive advantages reach marginal utility equaling to zero (there is no more added value as a result of coopetition) oligopolists should expand their cooperation (Besanko, 2013, pp. 154-165; Stigler, 1964). One of the most effective possibilities is to create the so-called one entity. Therefore, second answer results in the aforementioned second causality appearance. Two firms that act on the medium-competitive market with a couple of other competitors, such as oligopoly, after some period of time may not receive anymore any added value from the coopetition strategy. That happens especially when the aim of coopetition was to create innovations or some other non-competitive advantage. After the advantage is accomplished, such firms must decide to dissolve the coopetition and return to full competition or they can reach the cooperation on a higher level. One might expect that such firms act rationally. Thus, more added value and higher effectiveness would be achieved from the next step of cooperation i.e. strategic alliance, merger (Hitt et al., 2015, pp. 244-247; Antelo, and Peón, 2019). Therefore, the author proves that in the long-term one might expect that rationally acting competitors who deployed the coopetition strategy would create another formation similar to one entity. Furthermore, it does not have to be a merger, but this should be new entity that cooperate in so many levels that it practically abandoned rivalry between themselves. Consequently, the market structure on which these two companies operate excludes one competitor. Therefore, on the example of duopoly, this market structure might change in the long-term into monopoly due to the abandonment of rivalry between two competitors.

### 5.3. Data analysis and conclusion from empirical evidence

The final results with an analysis for both markets – number 1 depicted in Figure 4 and market number 2 depicted in Figure 5 – are presented below in Table 3.

**Table 3.**

*A summary of findings for the data section*

Result no.	Analysed result	Market 1	Market 2
1.	Market size	The market size trend line is going up in the course of research regardless of changes in price, number of competition or market structure. Therefore, anytime competitors had a chance to increase the average price, they achieved higher profits due to the probable low ratio of price elasticity.	One might observe a low but continuous growth of the market in the course of research. The reason for that could be low changes in terms of the market characteristics i.e. prices, level of innovations, new entrance.

Cont. table 3.

2.	Number of competitors	Number of competitors have significantly decreased since the beginning of research from 8 competitors to only 3 from which 2 companies represents road passenger transport by bus and 1 company belongs to a railway passenger transport industry.	For the very long time this market used to be monopoly and the only service has been provided by railway company PKP Intercity. Since year 2016 market has evolved from monopoly to oligopoly of 3 firms (2 by train and 1 by bus).
3.	Average price fluctuation	Average price for one-way journey has been fluctuating for each competitor due to the use of price discrimination strategy as well as changes in the pricing power. However, the stabilization of prices might be observed in the times when the number of companies have been 'in the middle', that is around the number of 4-5.	Average price for one-way journey has been quite constant even though new competitors have entered the market. This is the result of high pricing power of each competitor.
4.	Coopetition occurrence with general description	1st coopetition occurred on 13/16/2013 between bus conveyance competitors: Link-Bus and Lajkonik-Bus. 2nd coopetition occurred on 12/11/2017 between bus conveyance competitors: FlixBus and PolskiBus.	1st coopetition occurred on 15/12/2016 when FlixBus has signed an agreement with PolskiBus to cooperate in the areas of sales and marketing. 2nd coopetition occurred on 20/06/2017 when PKP Intercity has signed cooperation agreement with LeoExpress and allowed its competitor to use their resources (railway tracks and infrastructure).
5.	Effects of coopetition	Very high increase of average price might be observed for competitors that implemented the coopetition strategy between themselves. Hence, the improvement of pricing power appeared. Also, the informal collusion in terms of distribution might have happened.	The number of competitors has increased without any negative effect for oligopolists in terms of intensity of rivalry as well as demand size. Moreover, the only railway company operating on that market till 2018, PKP Intercity, has gained extra funds due to signing coopetition agreement. LeoExpress has gained high savings thanks to coopetition.
6.	Market structure differentiation	Having in mind changes in terms of number of competitors as well as price fluctuation one might examine many differentiations of market structures since the research has begun.	Market structure started to differentiate from 2016 due to the entrance of PolskiBus. Furthermore, the market structure has changed quite rapidly from monopoly to oligopoly of 3 firms due to another new entrance of LeoExpress and coopetition of Polskibus with FlixBus.

Source: author's work.

For the purpose of this paper it is of key importance to accentuate the results that might support both hypotheses. Therefore, the empirical study has demonstrated that coopetition on the markets occurred for the reason of certain characteristics of the market structures. On Market 1 the first coopetition instance has been observed due to the decreasing margin. Market structure of oligopoly of many firms forced the competitors to start competing by price wars. In such conditions, two competitors deployed coopetition by agreement to partially abandon competition by change of their journey schedule so that they never interfere. Moreover, they started dyadic marketing activities. In result, they gained higher pricing power by dividing the supply. However, as an effect of higher average prices on that market, in that time, another competitor has been encouraged to enter the market. Once again, most of the competitors started price wars trying to oust a new competitor. Contrarily to the plan, four companies have announced bankruptcy for the reason of too high rivalry intensity. After these

events, prices went higher and the market structure changed to the oligopoly of three and later four firms. Afterwards, market structure yet once again encouraged the competitors to sign cooperation agreement. This time, two companies (PolskiBus and FlixBus) have noticed that they can achieve an added value by integrating their value chains. Thus, one competitor took over all the processes regarding transportation such as infrastructure (buses, service base) and the other one occupied the processes of sales distribution, marketing and innovations. In result, one brand has been established, although two competitors still maintained their own entities. Resulting from that decision, oligopoly of four firms has changed to oligopoly of three firms. Therefore, in both cases of cooperation on Market 1 one might observe the same two-way causality effect. Market structure impacted firms to deploy cooperation and that same cooperation further 'forced' companies to change the market structure once again. By analyzing the examples of cooperation occurrence on Market 2 one might observe the same situation of cooperation between FlixBus and PolskiBus. Nonetheless, six months after the first cooperation occurrence, the second cooperation appeared in the railway industry. Company PKP Intercity have signed the agreement with a potential rival LeoExpress and allowed its competitor to use their resources (railway tracks and infrastructure). Market structure of duopoly or even monopoly if one analyses only the railway industry has encouraged two firms to sign such an agreement. The reason of such a decision is in the high pricing power. PKP Intercity by allowing to use their infrastructure has led in a new competitor to the market. However, their pricing power has not negatively changed due to the stable and high demand. Moreover, LeoExpress pays rent fee to PKP Intercity and so this company has achieved extra funds. LeoExpress, in turn, did not have to create completely new railway infrastructure so it has cut down the investment costs and achieved added value. This example yet one more time has shown that market structure characteristics impacted competitors to deploy the cooperation strategy and afterwards it has changed the market structure. From the duopoly, market structure changed to oligopoly of three firms.

## **6. Discussion and conclusion**

### **6.1. Conclusion**

The main purpose of this paper was to examine the two-way causality effect between market structures and cooperation occurrence. The author has hypothesized that certain characteristics of existing market structure implicate the decision to deploy cooperation strategy within companies operating in this market (H1). Moreover, the occurrence of the cooperation strategy implicates another effect in the opposite way, that is cooperation between market rivals change the market structure on which it was implemented in the first place (H2). To examine the hypotheses various methodologies have been used. The second section concerned many

theoretical aspects that could support the hypotheses. It has been established how the cooperation is defined according to many approaches. The comparison to other cooperation strategies has been conducted too. Moreover, the author considered the aspects of events, motives and values that lead to the deployment of cooperation strategy. Furthermore, a wide analysis of two-way causality phenomena was conducted. The research in section 3 and 4 has shown that there is a high probability for cooperation to occur in certain characteristics of market structures. Also, the theoretical and conceptual bases for the opposite effect of cooperation impacting the change of market structures were provided. Nonetheless, the final and very useful part was to verify the hypotheses by carrying out research in the empirical section. The real market evidence's proved both of indicated main problems in the paper to appear. Hence, certain market strategies characteristics affected companies to deploy the cooperation strategy and the other way round, the strategy changed the market structure in the result of competitors' decision. Taking into consideration all of the theoretical, conceptual and empirical aspects raised throughout the course of the research, both hypotheses have been confirmed.

## **6.2. Limitations and suggestions for future researchers**

The scientific rigor demonstrated by the researcher throughout the studies did not preclude the existence of some restrictions therein. The author has used mostly qualitative methods such as observation, conceptualization or cause and effect analysis in which the natural existence of errors might occur. To test the hypotheses the researcher had to create assumptions and models that represent what should happen if every aspects successfully appear. It might be expected that some other variables affected the market structures during the research that the author was not aware of. Thus, one should interpret the results with the inclusion of the *ceteris paribus* condition. Furthermore, the empirical studies have been limited to two examples of relevant markets due to the use of nonprobability sampling. Hence, for future researchers it might be worth to extend the studies to other relevant markets or industries, so that the assumptions could be tested in more details.

## **6.3. Managerial implications**

This paper concerned various problems that companies face during the processes of competition. When the crucial strategic events occur business owners sometimes act in very standard ways without broader perspective on alternative strategic solutions that may be deployed like eponymous cooperation. Thus, instead of applying the high cost strategies such as price wars or demand seeking, one might use the cooperation to create added values with little or even zero cost. What is more, this strategy may result in higher pricing power, higher market size or better level of innovation. However, applying cooperation might be risky for the reason of cooperation with company's rival. Nonetheless, it is certainly worth of trying as one of the solutions for hard times.

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