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LOGISTICS CAPABILITIES OF FIRMS ON THE RESEARCH CONCERNING LOGISTIC CAPABILITIES OF FIRMS. THE RESULT OF THE EMPIRICAL RESEARCH

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Purpose: The aim of this article is to present the results of a research conducted on logistics capabilities in the context of achieving firm's success.
Design/methodology/approach: The research results presented were conducted using literature review and the Delphi method.
Findings: The results of the research present the degree to which the individual identified logistics capabilities of the firm contribute to market and economic effects.
Research limitations/implications: Further research in the field of firm logistics capabilities should focus on identifying differences in the degree of impact on the indicators of success depending on the profile of the firm and the relationship between logistics capabilities.
Practical implications: The results of the research provide guidance for firms that are interested in achieving success by developing logistics capabilities.
Originality/value: The results of the research present previously unheard-of studies assessing the extent to which logistical capabilities have an impact on market and economic effects as a determinant of a firm's success.
Keywords: logistics capabilities, success
Category of the paper: research paper.

1. Introduction

Companies conduct certain processes and activities related to their operations in order to, among other things, acquire and retain customers, increase sales level and make a profit. Achieving the above market and economic outcomes, especially in a competitive environment, can be a challenge for firms that can be overcome by leveraging logistics capabilities.

The aim of this article is to present the results of empirical research conducted into the impact of logistics capabilities on expected market and economic outcomes as determinants of firm's success.

The article presents: 1) the characteristics of logistics capabilities as one type of firm's capabilities, 2) the assumptions of the research conducted and 3) the results of the empirical research conducted.

2. Logistics capabilities as a type of firm’s capabilities

The firm's capabilities are characterised by the fact that they cannot be acquired, but can only be shaped within the firm on the basis of the processes implemented and the resources possessed. The consequence of this view of the firm's capabilities is that they are highly differentiated. According to the criterion of distinguishing capabilities by their function, we can differentiate logistics capabilities.

Logistics capabilities are a complex set of skills created as a result of a firm's knowledge (Gligor, Holcomb, 2012). They are the firm's unique skills, developed and strengthened within the framework of time- and quality-based competition (Morash, Droge, Vickery, 1996) or sets of skills relating to the integration and use of logistics resources (Matwiejczuk, 2014).

Logistics capabilities are also considered by some authors as a specific type of resource that enables the realization of any activity leading to an increase in the firm's competitive position (Daugherty, Stank, Elinger,1998) or the achievement of the firm's fundamental goals in the area of logistics (Mathien, 2020).

Logistics capabilities can contribute to the achievement of goals if they are difficult to imitate and recreate (Olavarrieta, Ellinger, 1997) and are rare and of high value (Gligor, Holcomb, 2014). Moreover, they are related to both internal and external processes of the firm. Internally, they are related to the planning, coordination and integration of activities, while externally, they are related to the realisation of activities to ensure proper customer service and supplier relations (Gligor, Holcomb, 2014). By integrating the internal and external nature of logistics capabilities, they ensure the coordination of activities within the firm and the complex systems in the environment.

3. Methods

Logistics capabilities of firms are the subject of many management and logistics studies, while their contribution to firm success has not been fully explored. Therefore, the aim of this research was to identify logistics capabilities which have an impact on the expected market and economic outcomes by assessing the degree of influence of logistics capabilities on the determinants of success. The Delphi method was chosen for this study, which is a method that uses

the knowledge and opinion of experts on the issue under investigation (Walasek, Woźniakowski, 2011). The Delphi method research was chosen because it allows the opinions of independent experts to be known in studies where there are insufficient empirical findings, as is the case with the role of logistics capability in achieving determinants of success.

The research was conducted by using the CAWI technique with a questionnaire as the tool. The use of this technique allowed experts who belonged to different centres and firms within the country to participate in the study.

The questionnaire consisted of two main parts. The first part related to defining the profile of the experts, with questions about the place of employment, professional seniority as well as the degree of familiarity with the subject matter of the study. The second part of the questionnaire contained two matrix questions regarding the degree of impact of logistics capabilities on the expected market and economic outcomes. The degree of impact was assessed by the experts according to a 7-point Likert scale, according to the assumption that a score of '1' means a very low degree of impact, while a score of '7' is a very high degree of impact.

The experts participating in the research belonged to two groups: (1) academics and (2) firm employees. The academics were those belonging to the discipline of management science and quality, employed in departments of logistics and/or supply chain management and who were authors or co-authors of publications in the area of logistics and/or supply chain management. In contrast, experts from the entrepreneurial group are employees employed at various levels and positions involved in the implementation of logistics processes in manufacturing firms.

Table 1.
Identified logistics capabilities with acronyms

Distribution service performance	EUD	Quality capabilities	ZJ
Post-sale customer service	POK	Widespread distribution coverage capabilities	ZZSD
Pre-sale customer service	PSOK	Responsiveness capabilities	ZZSR
Flexibility capabilities	ZE	Time management capabilities	ZZC
Innovation capabilities	ZI	Cost management capabilities	ZZK
Information focus capabilities	ZKI	Agility capabilities	ZZ
Evaluation capabilities	ZOPC	Information technology capabilities	ZTI
Supplier appraisal	ZOD	Information management capabilities	ZZI
Organization capabilities	ZO	Supply management interface capabilities	ZZŁD
Capabilities to respond to target markets	ZRRD	Demand management capability	ZZP
Standardization capabilities	ZS	Integration capabilities	ZIN
Learning capabilities	ZU	Measurement capabilities	ZP
Simplification capabilities	ZUP	Information exchange and sharing capabilities	ZWIU
Collaboration capabilities	ZW	Supply management capabilities	ZZD
Capabilities to ensure transport reliability	ZZNT	Customer focus capabilities	ZKK

Source: Own elaboration based on the research conducted.

The subject of the study was logistics capabilities and the market and economic outcomes identified through the analysis and critique of the literature. The literature review enabled

the recognition of 192 logistics capabilities, which were then narrowed down to 30 logistics capabilities that were the subject of further research. Due to the extensive names of the logistics capabilities, they have been coded using the acronyms developed to enable the presentation of the research findings (Table 1).

The literature research led to the identification of six market outcomes and seven economic outcomes, which are presented below (Table 2).

Table 2.
Identified market and economic outcomes

Market outcomes	Economic outcomes
Customer satisfaction	Sales revenue
Customer loyalty	profit
Customer confidence	Net profit margin
Absolute market share	Return on assets
Relative market share	Return on invested capital
Market share served	Return on equity
	Return on investment

Source: Own elaboration based on the research conducted.

The first recognised market outcome is customer satisfaction, which is identified with satisfaction with the consumption of purchased goods and services (Dziduch, Blicharz, 2014, Leninkumar, 2017). Satisfaction can be considered from a marketing point of view as a state in which the product features are identical to the customer's expectations (Kotler, 1999) or in a psychological context as an emotional reaction to the comparison of the consumption experience with the customer's individual needs (Mazurek-Łopacińska, 2003). Customer satisfaction maintained over a long period of time can lead to the emergence of customer loyalty, which is a state in which the customer, fully accepting the terms of the purchase and sale transaction, is indifferent to the actions taken by competitors (Studzińska, 2015, Dick, Basu, 1994). The characteristic of a loyal customer is loyalty created on the basis of satisfaction (Hill, Alexander, 2003). Customer loyalty, in turn, can be a factor in the development of trust (Ryciuk, 2016, Reichheld, Schefter, 2000), being an opportunity to become sensitive to the other party based on credibility (Sankowska, 2011), which relates to the product, brand or manufacturer.

Another market outcome is market share, which can be considered in three dimensions: 1) absolute, 2) relative and 3) share of the market served. Absolute market share is the percentage of sales in the entire market in which the firm operates, while relative market share presents the volume of sales as a percentage of sales of competitors in a given market (Kozielski, Pogorzelski, Dziekoński, Urbanek, 2006). In contrast, market share in the market served refers to the specific segment in which a firm operates (Lambin, 2001).

The identified economic outcomes include sales revenue and the associated profit, which is the positive financial result of the firm, which is the fundamental purpose of doing business, ensuring ongoing operations, investments and development (Gontarczyk-Skowrońska, 2016).

Linked to profit, in turn, is the net profit margin defined by the return on sales ratio. This is an indicator that shows what level of profit after tax has been generated by the revenues from business activities (Wędzki, 2006). Another economic outcome is the return on assets, which presents the ratio of net profit to the total level of assets, representing the ability of assets to create profit (Prędkiewicz, Węgrzyn, 2014). In turn, the profitability of invested capital shows what the ratio of profit from the firm's current activities is to the capital employed in the firm's activities (Pomykalska, Pomykalski, 2010). On the other hand, the profitability of equity, related to the creation of the firm's value, illustrates what the amount of profit per unit of equity involved is (Gołębiowski, 2020). Finally, the last economic outcome is the profitability of investments, which represents the profitability of the firm's investment decisions (Rachlin, 2019).

4. Results

The research involved 40 experts, including 27 experts from the academic community and 13 employees of manufacturing firms. The experts from the academic community represented a full cross-section of academic titles and degrees. They were characterized largely by work experience of more than 10 years and were employed in both public and non-public universities across Poland. Experts from the entrepreneurial group were mostly employed in large firms operating in the market for more than 10 years. Moreover, these individuals were characterised by considerable work experience. The survey was conducted in two rounds. In the first round, the experts were asked to determine the degree of impact of logistics capabilities on market outcomes (Figure 1) and economic outcomes (Figure 2).

Experts attributed the highest importance scores for market outcomes to responsiveness capabilities, flexibility capabilities and collaboration capabilities. These capabilities achieved the highest importance ratings among the logistics capabilities studied (Table 3).

Such expert assessments suggest that in order for a firm to achieve customer satisfaction, loyalty and trust, and adequate market share, it is first and foremost necessary to develop capabilities aimed at adapting to rapidly changing environments.

Collaborative capabilities, which should be developed through cooperation both within and outside the firm, will also contribute to market outcomes. Cooperation between organizational units improves the flow of information and streamlines processes. On the other hand, cooperation with external partners contributes to the development of positive relationships with the environment.

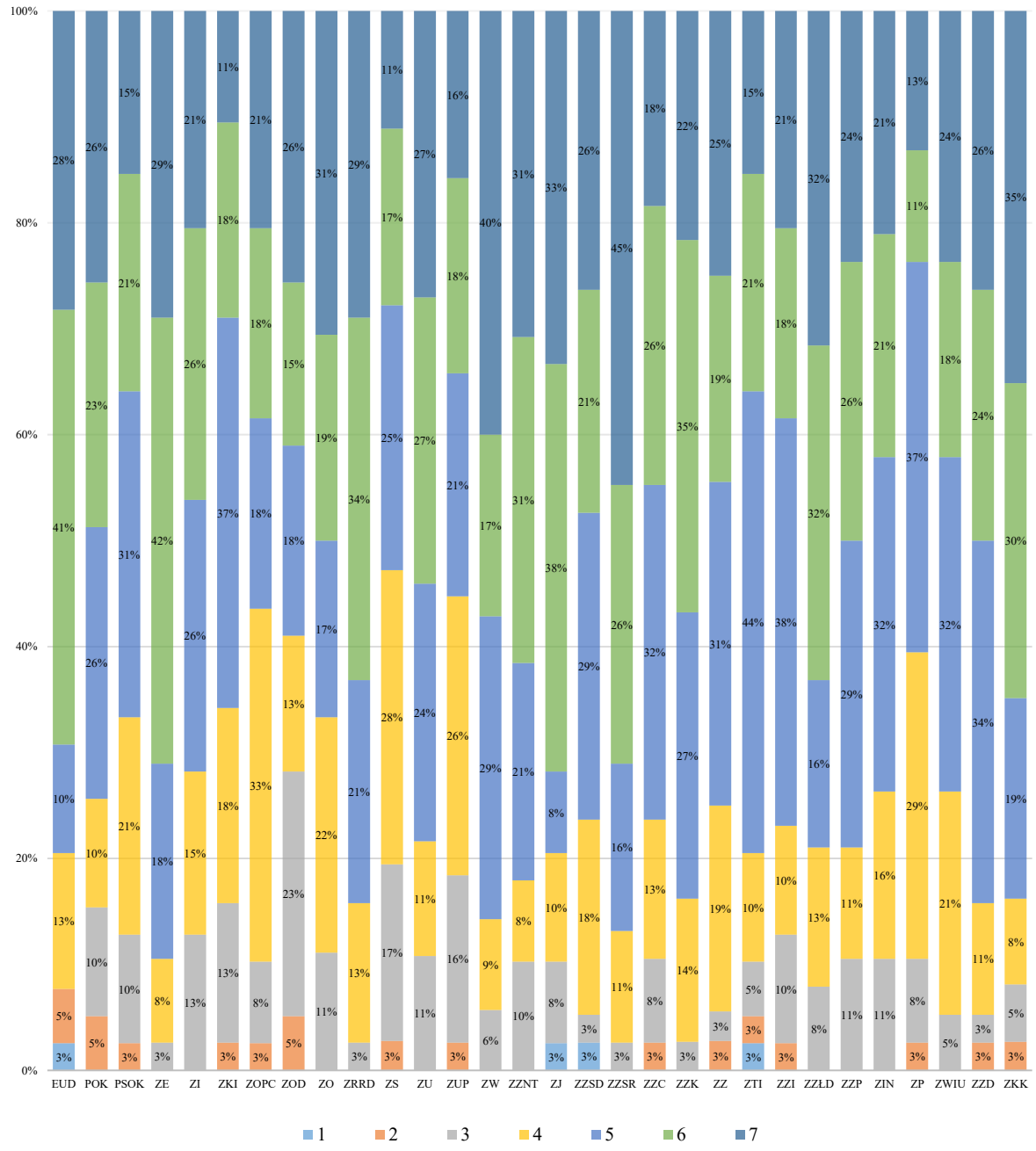

Figure 1. Assessing the degree of impact of logistics capabilities on market effects:
Source: Own elaboration based on the research conducted.

The research shows that according to the experts, simplification capabilities, measurement capabilities and standardization capabilities have the least impact on market outcomes. The low importance indicators of these capabilities show that, according to the experts, logistics capabilities related to the firm's core business enable the expected market outcomes to a lesser extent than capabilities directed at the environment.

In the study, experts were also asked to assess the degree of impact of logistics capabilities on economic outcomes (Figure 2).

Table 3.
Indicators of importance for logistics capabilities interacting on market outcomes

Logistics capabilities	Value of indicators of importance
Responsiveness capabilities	75,00
Flexibility capabilities	71,71
Collaboration capabilities	69,29
Customer focus capabilities	68,92
Capabilities to respond to target markets	68,42
Quality capabilities	67,59
Supply management interface capabilities	66,45
Distribution service performance	66,31
Capabilities to ensure transport reliability	66,03
Cost management capabilities	64,86
Supply management capabilities	63,82
Learning capabilities	62,16
Demand management capabilities	60,53
Widespread distribution coverage capabilities	60,18
Agility capabilities	59,72
Organization capabilities	59,03
Information exchange and sharing capabilities	58,55
Post-sale customer service	58,33
Time management capabilities	57,24
Integration capabilities	56,58
Innovation capabilities	56,41
Information management capabilities	55,77
Information technology capabilities	54,13
Pre-sale customer service	51,28
Evaluation capabilities	51,28
Supplier appraisal	49,36
Information focus capabilities	47,37
Simplification capabilities	46,71
Measurement capabilities	46,71
Standardization capabilities	43,06

Source: Own elaboration based on the research conducted.

The highest index of importance was achieved by cost management capabilities (Table 4). Such results confirm that in order for a firm to achieve profits and profitability rates at a satisfactory level, it must focus on activities related to proper cost management.

Supply chain management capabilities and demand management capabilities were also rated relatively highly by the experts, which signals the importance of management aspects in achieving economic outcomes. The lowest importance ratings for economic outcomes according to the experts should be attributed to pre-sales customer service, simplification capabilities and measurement capabilities. The low importance ratings for the indicated capabilities indicate that the capabilities that are least important for achieving economic outcomes are those relating

to pre-sales customer service and those aimed at measuring and eliminating complex and elaborate activities.

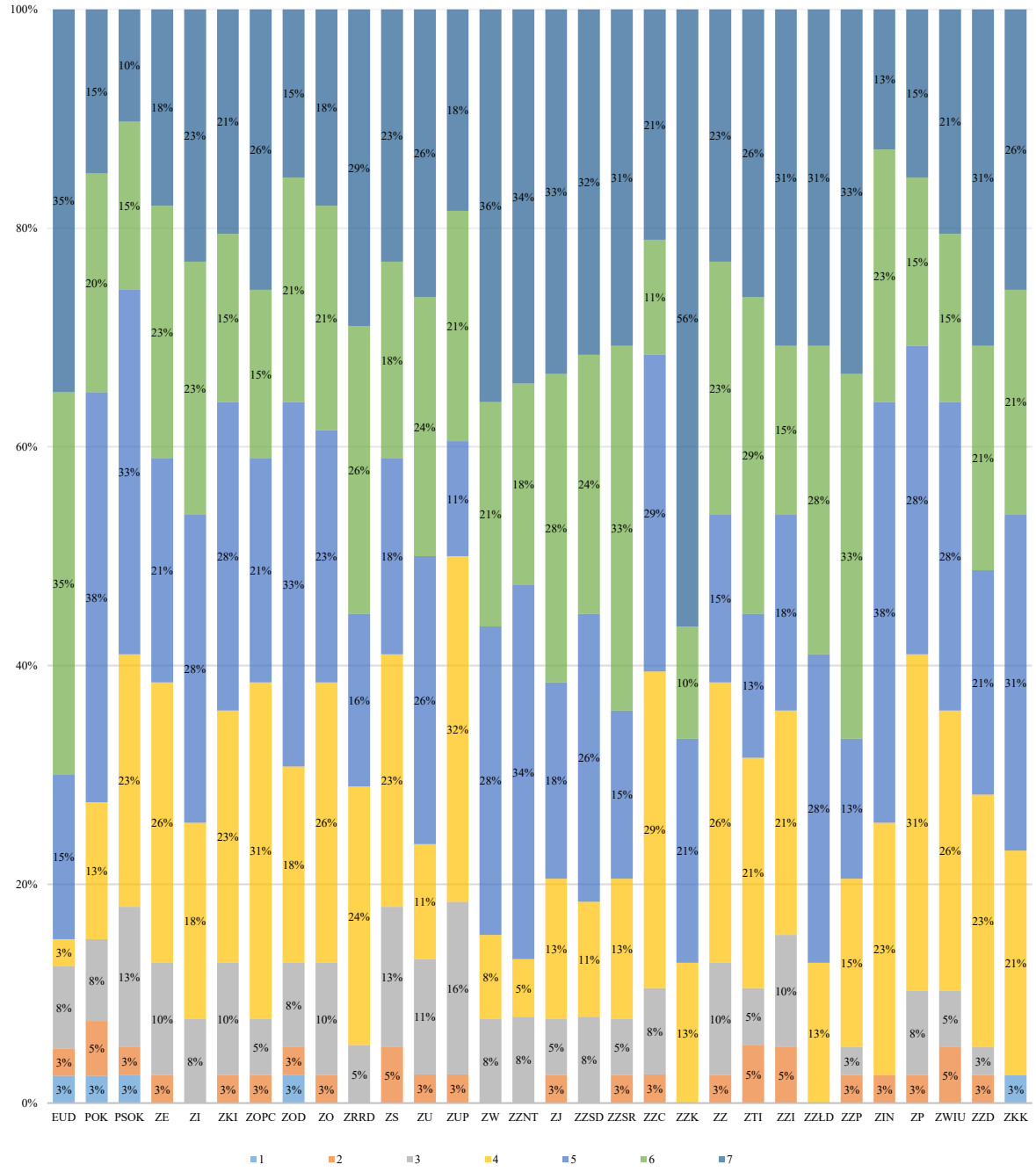

Figure 2. Assessing the degree of impact of logistics capabilities on economic effects.

Source: Own elaboration based on the research conducted.

Table 4.
Indicators of importance for logistics capabilities interacting on economic outcomes

Logistics capabilities	Value of indicators of importance
Cost management capabilities	77,56
Supply management interface capabilities	69,23
Demand management capability	68,59
Distribution service performance	68,38
Collaboration capabilities	67,31
Quality capabilities	66,67
Responsiveness capabilities	66,67
Capabilities to ensure transport reliability	66,45
Widespread distribution coverage capabilities	65,13
Capabilities to respond to target markets	62,50
Supply management capabilities	62,18
Customer focus capabilities	60,54
Learning capabilities	59,87
Information technology capabilities	59,87
Innovation capabilities	58,97
Information management capabilities	56,41
Evaluation capabilities	55,13
Integration capabilities	55,13
Agility capabilities	54,49
Information exchange and sharing capabilities	52,56
Flexibility capabilities	51,92
Information focus capabilities	51,92
Organization capabilities	51,28
Standardization capabilities	51,28
Supplier appraisal	50,92
Post-sale customer service	50,88
Time management capabilities	50,66
Measurement capabilities	48,72
Simplification capabilities	47,37
Pre-sale customer service	43,23

Source: Own elaboration based on the research conducted.

Analysing the results of the study, it can be seen that there are some differences in the assessment of the degree of impact of logistics capabilities on market and economic outcomes (Table 5). The biggest differences between the experts' assessments are found in the case of flexibility capabilities, responsiveness capabilities and cost management capabilities. The remaining capabilities show relatively similar assessments of the degree of impact on market and economic outcomes. It should also be noted that all surveyed logistics capabilities were rated medium, high or very high by the experts, which confirms the importance of logistics capabilities in achieving success determinants in the form of market and economic outcomes.

Table 5.
Indicators of importance for logistics capabilities interacting on economic&market outcomes

Logistics capabilities	Indicators of importance on market outcomes	Indicators of importance on economic outcomes
Distribution service performance	66,31	68,38
Post-sale customer service	58,33	50,88
Pre-sale customer service	51,28	43,23
Flexibility capabilities	71,71	51,92
Innovation capabilities	56,41	58,97
Information focus capabilities	47,37	51,92
Supplier appraisal	49,36	50,92
Evaluation capabilities	51,28	55,13
Organization capabilities	59,03	51,28
Capabilities to respond to target markets	68,42	62,50
Standardization capabilities	43,06	51,28
Learning capabilities	62,16	59,87
Simplification capabilities	46,71	47,37
Collaboration capabilities	69,29	67,31
Capabilities to ensure transport reliability	66,03	66,45
Quality capabilities	67,59	66,67
Widespread distribution coverage capabilities	60,18	65,13
Responsiveness capabilities	75,00	66,67
Time management capabilities	57,24	50,66
Cost management capabilities	64,86	77,56
Agility capabilities	59,72	54,49
Information technology capabilities	54,13	59,87
Information management capabilities	55,77	56,41
Supply management interface capabilities	66,45	69,23
Supply management capabilities	60,53	68,59
Integration capabilities	56,58	55,13
Measurement capabilities	46,71	48,72
Information exchange and sharing capabilities	58,55	52,56
Supply management capabilities	63,82	62,18
Customer focus capabilities	68,92	60,54

Source: Own elaboration based on the research conducted.

In the first round of the research, the experts were also asked to suggest other logistics capabilities than those indicated that may contribute to market and economic outcomes. The experts indicated that to the group of logistics capabilities affecting market outcomes should be added the capabilities for risk management and the capabilities for seeking alternative suppliers. And, to the group of logistics capabilities impacting on economic outcomes should be added risk management capabilities.

In the second round of the study, the experts verified the results of the first round of the research and reassessed the degree of impact of logistics capabilities on market outcomes and

economic outcomes. In reassessing the degree of impact of logistics capabilities on the determinants of success, the experts maintained their previous ratings for most logistics capabilities. The experts only pointed out the need to indicate higher ratings for process and activity evaluation capabilities and standardisation capabilities in terms of impact on market outcomes. In the case of the impact on economic outcomes, the experts again found that cost management capabilities were the most important in achieving them, confirming the relevance of this group of logistics capabilities in achieving economic outcomes.

In a second round of the study, the experts also assessed the degree of impact for the two new groups of logistics capabilities identified in round one of the study. In terms of the impact on market outcomes, the experts assessed the degree of impact of the risk management capabilities at a very high level, while the new supplier search capabilities according to the experts have a high degree of impact on market outcomes. In contrast, the degree of impact of risk management capabilities on economic outcomes according to the experts is at the highest level.

5. Conclusion

Logistics capabilities are an important factor in achieving the expected market and economic outcomes that are determinants of success, as evidenced by the results of studies conducted on the impact of logistics capabilities.

Research illustrates that the logistics capabilities identified have a significant impact on both market and economic outcomes. Moreover, the degree to which each group of capabilities influences a particular group of outcomes varies, so logistics capabilities should be considered in the context of a group of both market and economic outcomes. The research conducted has practical implications for firms aiming to achieve competitive advantage as a result of the determinants of firm success. The research also shows which logistics capabilities should be developed to influence market and economic outcomes as determinants of firm success.

The results of the study support the arguments of J.T. Mentzer, S. Min and L.M. Bobbitt (2000) and D.F. Lynch, S.B. Keller and J. Ozment (2000) about the contribution of logistics capability to the success of the firm. Logistics capabilities have a significant impact on market outcomes, the most important being responsiveness capabilities and flexibility capabilities, which confirms the thesis of D.J. Bowersox, D.J. Closs and T.P. Stanek (1999). Research conducted on the impact of logistics capabilities on economic outcomes indicate that these capabilities have a significant impact on profit, revenue and profitability indicators, which supports the arguments of L. Liu and D. Luo (2012), E.A. Morash, C.L.M. Droge and S.K. Vickery (1996) and P.J. Daugherty, T.P. Stank and A.E. Elinger (1998).

The main limitations of the research are the variability and diversity of logistics capabilities developed within firms, which affects the dynamism of capabilities and their impact on firm success.

The research carried out into the impact of logistics capabilities on firm success can form the basis for further research into logistics capabilities, in particular to verify if and how the sets of capabilities affecting firm success in given industries change and how the degree of impact of logistics capabilities changes in different market situations.

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