

Evaluation of logistic cooperation services in Lithuanian retail chains in the context of New Industrialization

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Abstract — The most important task of industrialization is to improve the productivity of a country or a region. The aim of this article is to evaluate main factors of choosing logistic cooperation services in order to improve logistic processes in Lithuanian retail market chains under the new conditions of industrialization. The objective of logistics is to minimize the price and to ensure the efficient distribution and maintenance of the required goods and products in the market in due time. Most retail companies have to make structural logistic decisions- to use outsource logistic cooperation services or to manage logistics on their own. As global competition grows, logistics services has a growing demand for cost, staffing and management improvements, with more focus on the company's core business. According to Langley (2018), Batarliene, Jarasiuniene (2017), Meidute and others. (2014), Parashkevov, (2007) studies- the benefits of logistics cooperation are: focusing on core business, using best practices and experience, increasing competitiveness, reducing costs of logistic. However, research showed the logistic cooperation potential in Lithuania retail chains depends on country policy, business thinking and understanding the process of logistic cooperation in order to operate under the new industrialization conditions.

Keywords — *logistic cooperation, retail chain, services, economic cooperation.*

I. INTRODUCTION

Competition growth and rising costs of material resources, changed a business focus of Lithuania retailers into the core business processes, service quality and customer satisfaction. All this might happen if an efficient holistic service, logistics, marketing cooperation system is created in the company. In our case logistic cooperation services is created and maintained. However, with regard to the research practice, it can be argued that the level of investigation of logistic cooperation services in the Lithuanian market is very low. There is no analysis of how the sales chain understands logistics cooperation, what services it uses, and what causes the whole existence of this process. Thus, in this context, the question arises, what causes the Lithuanian retail chains to

have their own logistics department while using logistic cooperation services in view of possible problems and benefits in this process?

In order to answer this question, the concept of logistics cooperation and the retail chain, service specifics and opportunities for economic cooperation should be cleared first. The responses would identify possible logistical cooperation problems and the economic benefits to the retail chains.

The object of the article is logistic cooperation services in Lithuanian retail chains.

The aim of the research is to evaluate the logistic cooperation services in Lithuanian retail chains, presenting the directions for improvement of such services.

Research tasks:

1. To analyze the aspects of logistic cooperation services and retail network connection.
2. To evaluate selection criteria of logistic cooperation services in Lithuanian retail chains.
3. To summarize the results of the expert evaluation and to provide directions of improvement of the logistic cooperation services.

II. THEORY

Definitin of logistic cooperation services

One of the main goals of logistics is to distribute goods and products to the market. One of the key decisions taken by retail companies is to manage logistics themselves or hire outside firms to carry out such functions. Depending on who owns the company's logistics, it can affect trading, performance or competitiveness (Palsaitis, 2010) or customer reaction (Lis and Bajdor, 2017). According to Pateman et al. (2016), cooperation is primarily due to the competitive dynamics. It encourages companies to use their own resources and the resources of other companies when they bring together higher value.

Logistics is undoubtedly an important area of activity for a present-day enterprise (Kawa and Anholcer, 2018). In recent years, when the world has become a global market,

logistics managers must seek or expand the list of world-class suppliers and service providers capable of achieving strategic corporate goals and ensuring efficient delivery and distribution. According to Palsaitis (2011), "the majority of companies have no policy formulated on this issue and prefer to choose a solution every time they need it" (p. 259). According Switala and Klosa, 2015 the term "cooperation" is generally understood as a particular type of activity that businesses decide to pursue together in a particular place and time. However, the main trend observed in logistics is "to do it yourself, or to buy?" This means that when making such decisions, it becomes necessary to carry out a detailed selection of criteria, advantages or disadvantages, a specific economic analysis of the services themselves or, ultimately, economic analysis.

A modern logistic approach should focus on the main activities of the company in cooperation with other logistics companies that offer not only transportation and warehousing services but also a wider range of services, including the development, management and transfer of logistics operations to specialized agents (Garcia-Alcazar et al 2018). In the logistics system, this process consists of: supplier (finished product), user (final product) and logistics service provider (third party logistics) (Meidute, 2012).

It should be noted that in a particular logistics system, process participants can be understood as suppliers and users of different levels. For example, suppliers are separate and / or different raw materials, and consumers are wholesalers, retailers or retail chains. Third-party logistics or 3PL (third party logistics) companies are logistics providers located in one place providing storage, transportation or other logistics management services that can make comprehensive decisions on the logistics chain of a company (Vinod, 2007). Like the majority of the decisions, the decision to outsource the logistics operations to third party (3 PL) is related to both positive and negative consequences (Meidute et al. 2012).

Summarizing the concept of logistic cooperation services, it can be argued that logistical cooperation is a two-partner cooperation, a logistic service or a process of providing services, which pursues certain goals, benefits and profits. An important prerequisite for a company is to separate and distribute logistical activities to an business unit that can offer the undoubted advantage of quality, speed, flexibility, experience and cost that the company itself is unable to achieve and what is necessary for the existence of a logistics cooperation provider.

Criteria of choosing logistic cooperation services providers

In order to making decisions and shape the policy of logistics cooperation, it is undoubtedly necessary to carry out a detailed analysis of alternatives, analyze the potential advantages and disadvantages of logistic cooperation, risks and possible problems. Palsaitis (2011), Yang (2014), Batarliene, Jarasiuniene (2017) distinguish the following advantages and disadvantages of logistic cooperation: it can be argued that each company will differ in their relation to each other, as different needs, volumes and opportunities exist.

However, the scientific literature proves, that the greatest benefits of such services is the concentration of direct business, reducing logistics costs, transferring risks, and the company does not need to have hardware or management experience to realize the service required. The main disadvantages of logistic cooperation could be the affiliation of the companies in their corporate governance process. There is also a great risk for businesses of leak of commercial or technological secrets. Companies are often afraid to lose their intellectual capital. It is also often stand the question about the reliability of the supply chain, because business are afraid to transfer their experience, technology to another company. Minalga (2004), Palsaitis (2011), Meidute (2012), Langley (2017) provide the criteria for the selection of logistics service providers, which are presented in Table 1.

TABLE .I. CRITERIA FOR SELECTION OF LOGISTIC COOPERATION SERVICE PROVIDERS

Service selection criteria	Respondents, %
Lowest price and costs	77
Guaranteed arrival date	75
Good customer service / attention	63
Cargo tracking	54
Shortest terms of service	38
Money saving	35
Smooth Customs Clearance services	30
Warranties, poster services and risks	23

^a Source: Minalga, 2004, Palsaitis, 2011, Meidute, 2012, Langley, 2017

As we can see, there are quite a number of selection criteria that potential service providers can judge. The most important are their lowest price and costs. Also, one of the most important criteria for customers is the guarantees, good customer service, quality. In addition, researchers highlight other no less important criteria, such as the location of the logistic center (Onden et al, 2018), the successful use / implementation of information technology (Worwa, 2018). Among the criteria not mentioned in the table, it would be worth mentioning in the analysis that attention should be paid to the level of utilization of information technology, the basis of intangible assets - the developed infrastructure of the service provider, the use of new equipment / transport as well as financial stability, profitability, good feedback / reputation and experience in similar activities, which often tells a lot about specific service providers (Farahani et al., 2011). Finally, it must be acknowledged that the choice of the service provider is determined by the needs of the company itself and the evaluation of the selection criteria already mentioned.

The assessment and selection of service providers is a very responsible process. Logistics service providers are compared on the basis of their activities and criteria, which also need to be evaluated since, according to Xiang et al (2016), most of the core activities are centralized in logistics centers. The service provider is selected through an evaluation

system, in which the main criteria are: price, quality, reliability and delivery time. According to Yang (2014), price is the main motive for choosing a phase. Many companies opt for a variety of valuation systems for choosing a service provider and also take into account informal assessment or additional quality or quantity criteria: management quality, control processes, flexibility in the event of unforeseen changes, financially sound analysis based on personal contacts.

III. RESEARCH METHODOLOGY

The study was conducted in January 2018 - April 2018. 16 experts in charge of management took part in the expert evaluation. The selection of experts was based on one common criterion, Kardel (2016): Experts engaged in the logistics processes of the company, or management-related management positions in companies whose stores form the company's sales network in Lithuania.

In order to analyze the elements mentioned in the subject of the study, a quantitative study was carried out in the process of selecting an expert assessment method. The probabilistic survey method of active individual experts was chosen - questionnaire survey by Augustinaitis and others. (2009). The questionnaire consists of a group of interrelated questions requiring expert answers. The expert questionnaire consists of 18 questions. This is a closed dichotomy question, which has one of two answers, multichotomies, which have answers from more than two options (questions 1-3, 7, 9, 11-15), open-ended - to find out the company in which the experts work, duties and work length of service (16-18 questions). It should be noted that the "other" field was added to some questions (1, 3, 8, 9, 11, 13, 15) containing more than a few statements or answers, in which experts could write their opinions. The structure of the study instrument (questionnaire) is presented in Table 2.

TABLE II. RESEARCH INSTRUMENT STRUCTURE

Structure of questionnaire	Evaluation criteria	Questions
Introductory part	What is the purpose of investigation; how the answers will be used; the expert's confidentiality guarantee	-
Main part	The concept of logistic cooperation: market of logistic services companies in Lithuania, advantages, criteria and motives for choosing logistic services	1-6
	Information about the logistics system of the retail chain	7-8
	Use of logistic cooperation services, problems and benefits	9-13
Closing part (Demographical questions)	Gender, Education, Company, Position, Responsibilities, Work experience (years)	14-18

The survey questionnaire consists of 3 parts, two of which reflect specific questions, identify specific facts. The introductory part provides brief information on the purpose, responses and confidentiality of the investigation. The second part is the basis of the research, which explains aspects of

logistic cooperation in Lithuanian retail chains. The final part is the basic information about the experts.

In compiling the questions, the method of assessment of opinions was used - Likert scale. The experts were asked to indicate their importance (strengths, criteria), agreement (motives / reasons) with the level of each of the statements given (4-6, 8 questions), where 1 - totally irrelevant / totally disagree, 2 - irrelevant / disagreeable, 3 - Neither important nor disrespectful / disagree with, nor disagree with, 4 - Important / Accept, 5 - Very important / Completely agree.

The experts were coded (E1, E2 ... En) by quantifying the importance and relevance of the estimates (statements) estimates, thus calculating the total averages.

The Cronbach alpha coefficient (Pukenas, 2009) was used to assess the internal consistency of the questionnaire scales. To assess whether the expert opinions were united on individual issues, the Kendall W concordance coefficients were calculated. It is also possible to verify whether the concordance is statistically significant - p value is less than 0.05, which means the unanimity of expert opinions (Pukenas, 2009).

In order to categorize the opinions of experts participating in the study according to the variables into certain groups, a factor analysis was used - taking into account the correlation between the variables, isolating all the main factors uniting the experts, when the question consists of these variables - the reasons for having their own logistic unit. Experts are divided into several groups, the factors that unite them. Correlation suitability for factor analysis is estimated by the Kaiser-Meier-Olkin measure (KMO), which should be well over the factor analysis of 0.6 (Tabachnick, Fidell, 2007), and the Bartlett sphericity criterion $p < 0.05$. By applying the Varimax rotation method, exclusive factors have been obtained for further interpretation of the data. One of the characteristics of the factors is the dissemination, for the factor to be analyzed should be more than 10%. (Bilevičienė and Jonušauskas, 2010).

IV. RESEARCH RESULTS OF EVALUATION LOGISTIC COOPERATION SERVICES IN LITHUANIAN RETAIL CHAINS

Based on the selection criteria, the evaluation involved experts holding managerial position in logistics or management responsibilities. The stores of the retail companies represented by experts represent retail chains in Lithuania. Though most of the potential experts were skeptical about the survey, they did not tend to give it time, during the survey, 16 representatives of retail chains were surveyed, most of which represent the phenomena of logistical cooperation between large companies.

Logistics cooperation is understood by experts of the trade network as a service, at the time specified in the contract, ensuring a defined complex of logistics services (38%). Most experts (81%) agreed that if there is a possibility to develop logistic cooperation in retail chains, the market in Lithuania is sufficient (63% of experts say), while every third expert (31%) believes that this market needs development. One expert said

that the market is overflowing, but with a large selection, after a consistent analysis of service provider selection criteria, it remains to choose the right and most useful logistics agent.

The results contradict modern logistical approach, when companies should focus on the main - trading activities, transferring logistic processes to a specialized logistics company. Retail chains are reluctant to pass on logistics-related processes to a logistics service provider. The potential disadvantages of logistical cooperation may be contributing to this, when companies are afraid to get used to and transfer the technological experience already acquired. The collaborative process would not contribute to the preservation of business and technological secrets or the avoidance of dependency on the service provider.

One of the most important advantages of logistics cooperation services is the fact that the company does not need the technical equipment (transport, warehousing, IT tools) (expert evaluation average - 4.44) and logistics cost reduction (expert evaluation average - 3.94). The calculated Cronbach Alpha coefficient was equal to 0.764, which indicates that the scale of the assessment of the question was established in a proper and consistent manner. However, the concentration coefficient for Kendall W was not significant in this case ($W = 0.103$, $p = 0.090 > 0.05$). Experts' opinions on the benefits of logistic cooperation services were controversial when estimates of significance were quite different. The ratings of all experts for the benefits almost always fluctuated throughout the question scale. Such an assessment may be due to a different marketing network management policy or approach to logistics. Also, experts' competence, lack of depth, or the problem of clashes in practice with such advantages could be affected, when the value of the abovementioned advantages is unimaginable. Therefore, the important thing to do when choosing a service provider is to evaluate an enterprise that has undeniable experience, hardware, providing risk reduction, increased competitiveness or logistics cost reduction opportunities to enable successful collaboration.

The main purpose for companies to cooperate with logistics companies is the quality of services (average 4.55), based on the fact that logistics companies are recognized as more specialized (3.75). The calculated Cronbach Alpha coefficient was equal to 0.720, which indicates that the scale of the assessment of the question was established in a proper and consistent manner.

Experts mostly agreed that logistics companies were more specialized (10 experts), while the remaining 6 remained neutral or totally disagreed. Regarding the cooperative motive with which experts tend to be neutral or disagree (12 experts), the logistics company provides better quality services, while only 4 experts agreed. This essentially again shows that the estimates were "scattered" and there was no unanimous opinion of experts in this case. This could be due to the personal experience of each of the experts, the encounter with the problems or the different benefits obtained by cooperating with various logistics partners.

By analyzing the criteria for choosing a logistics cooperation provider, in addition to the quality of service, which is measured over a longer period, experts rely on good feedback about the logistics service provider (expert evaluation average - 4.38) in public space. It can be mentioned that the lowest cost and cost is not the main criterion (expert judgment average - 4.31) when choosing a provider of such services, and is assessed in the same way as the minimum service deadlines, the lowest risk and guarantee, and good customer service. The calculated Cronbach Alpha coefficient was equal to 0.797, which indicates that the scale of the assessment of the question was formed properly and consistently. The calculated Kendall W factor in this case was significant ($W = 0.192$, $p = 0.001 < 0.05$). The compatibility of expert opinions with regard to the criteria for selecting a logistics cooperation provider was sufficient and statistically significant.

V. DISCUSSION

In order to thoroughly analyse the situation of the logistics cooperation in the retail chains, it was not difficult to address issues related to logistical cooperation problems and benefits. It has been determined that retail chains are most affected by the improvement of service quality (50%), service delivery terms (38%), the cost of services (19%). It loses its continuous development, which will help maintain a stable, long-lasting cooperative relationship. However, in the face of these problems, it could be argued that choosing a service provider is likely to always choose those who are most flexible and best meet the economic expectations of their trading network. The rapidly changing needs of users in various logistical activities form an increasing demand for service quality. This problem area is most emphasized in the evaluation, and therefore logistics companies should be given more financial and human resources to continuously improve the quality of service. Also, take into account the possibility of implementing ISO quality management standards in the company's activities, which would ensure that the services provided meet the quality standards and legal requirements.

The direction of improvement related to the price of services can be influenced by participants in the logistics channel, competitors, state regulation, or psychological factors. In determining the cost of services, one should keep in mind the possible introduction of a discount system and a continuous analysis of the market and competitors. Business-related problems should be solved by improving the system of "just in time" (JIT). It is very important to offer the service when it's most needed. Terms of service also depend on the staffing effort and the quality of the services provided, the efficient use of technology and information technology.

Though companies face problems (75 percent), research shows that most companies (69 percent) are economically beneficial in their collaboration. It can be concluded that Lithuanian retail chains, in cooperation with logistics companies, have the opportunity to reduce costs related to logistics activities, improve customer service, save time and optimize their activities. It also reduces the

company's profits by reducing costs by focusing on the company's core business. The economic benefits, which are aimed at mutually beneficial and valuable partnership, create the conditions for the development of logistic cooperation and show that this process between logistics companies and retail chains in Lithuania is possible and necessary.

VI. CONCLUSION

After analyzing the theoretical aspects of logistics cooperation services and retail network, it can be argued that the main theoretical benefit of cooperation is the concentration of the main trading activity in reducing risk, logistics costs - when the company does not need to have the technical equipment necessary to realize the service. The main drawbacks are the admission of another company to management processes, the possible loss of control of logistics functions.

The choice of the service provider is carried out in stages: from the planning of needs to the assessment and selection of the service provider. The following key evaluation criteria can be distinguished: the lowest cost and cost, guarantees, customer service, quality of services and assortment, well-developed infrastructure, sufficient IT capabilities, financial stability, good reviews, reputation and experience.

Strategic logistical cooperation opportunities are related to the development of joint logistical integration aimed at mutual benefit and profitable partnership, which also increases the value of companies.

Having assessed the Lithuanian retail network market, the results of logistics cooperation services and 16 experts representing retail chains, it was established that retail chains face the lack of quality improvement of services provided, delivery terms, prices, lack of IT capabilities and variety of services. However, it should be noted that while businesses face problems, most of the retail chains are economically beneficial in terms of cooperation: reducing costs related to logistics, improving customer service performance, and saving time on delivering better services. It should be noted that successful logistical cooperation is a mutually profitable and valuable partnership, which shows that this process is possible and necessary in the market of Lithuanian retail chains.

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