

LOGISTIC CUSTOMER SERVICE PROCESS IN THE FACE OF THE COVID-19 PANDEMIC

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Purpose: The main purpose of this article is to recognise whether changes in logistic customer service made by the surveyed companies after the outbreak of the COVID-19 pandemic differed depending on the size of the company, the type of business and the role that the surveyed enterprise played in the supply chain.

Design/methodology/approach: The results of empirical research conducted on a research sample of 250 companies are described (in the section concerning logistic customer service). The research was carried out in the second quarter of 2021.

Findings: The processes taking place in enterprises to which special attention was paid and those which were the most important for enterprises from the point of view of logistic customer service are indicated. The changes in logistic customer service made after the outbreak of the COVID-19 pandemic are outlined.

Research limitations/implications: In the face of the ongoing pandemic, business representatives' perception of logistic customer service may change over time. It is therefore worth repeating the research described in this article in the post-pandemic period in order to conduct a comparative analysis that may be a source of an interesting scientific discussion.

Practical implications: Indicating the scope of the changes in logistic customer service made by enterprises during the COVID-19 pandemic may constitute the basis for enterprises to compare their activities with those performed by the enterprises participating in the research. These changes can be implemented to gain a competitive advantage.

Social implications: Building awareness of the need to introduce changes in a company's operations during the COVID-19 pandemic is a necessary element for creating new standards in the area of logistic customer service, for which not only economic values, but also ecological and social values are increasingly important.

Originality/value: The processes taking place in enterprises and affecting customer satisfaction (which translates into a company's profit) during the COVID-19 pandemic have not yet been thoroughly studied due to the course of the pandemic and its duration. This article is addressed to managers dealing with logistic customer service.

Keywords: logistic customer service, pandemic, COVID-19.

Category of the paper: Research paper.

1. Introduction

This article summarises part of the empirical research carried out at the Department of Business Logistics at the University of Economics in Katowice. The research team addressed the concept of sustainable supply chains as it still has been poorly explored. Many authors (Beske, Seuring, 2014; Krzywda, Krzywda, 2014; Dubey et al., 2017) point out the need for further in-depth studies and analyses, mainly due to the multidimensionality and complexity of the issue under consideration, as well as the high cognitive value of the research results. It is worth emphasising that no extensive research on sustainable supply chains has been conducted in Poland so far.

The research was carried out in the second quarter of 2021, using computer-assisted telephone interviewing (CATI). A total of 250 enterprises were surveyed. The aim of the research was to identify the possibility of applying the concept of a sustainable supply chain based on already functioning, traditionally understood supply chains. One of the aspects discussed in the above-mentioned empirical research was logistic customer service in the conditions of the COVID-19 pandemic, which is described further in this article.

2. The importance of logistic customer service for the functioning of an enterprise

Dynamic changes taking place in the environment of enterprises make it necessary to constantly monitor and carry out activities necessary to maintain an advantage over the competition. Therefore, it is important to understand that what can distinguish a company from other enterprises operating in a similar market segment is manifested by (Christopher, Peck, 2005):

- an innovative product that meets customer expectations and solves their problems in an expected manner; by offering attractive products, a company emphasises the value of its own brand;
- the client relationship, based on building loyal cooperation with a client, bringing mutual benefits and proving the quality of service offered; the economic benefits achieved thanks to cooperation between a customer and a supplier;
- an efficient supply chain that flexibly manages the network, reacts quickly to changes and brings together optimal suppliers; high quality of service at the lowest possible cost.

It is this client relationship that has a significant impact on the activities and functioning of a company. In the highly competitive environment in which many companies operate, skilful customer service management enables an enterprise to gain a competitive advantage over other

companies in the market. An effective and efficient customer service process can ensure a high quality of service and thus customer satisfaction (Lysenko-Ryba, 2020, p. 132).

Customer service is divided into pre-transactional, transactional and post-transactional phases (cf. Kempny, 2001). Logistic customer service involves the physical manipulation of a company's products in the transactional phase and then in the post-transaction phase. However, it should be noted that logistic customer service has been widely discussed and defined by Halicka and Świętny (2012), Kempny (2001), Kisperska-Moroń and Krzyżaniak (2009), Walasek (2014) and others.

A definition of logistic customer service is also provided by Sarder: 'Logistics customer service is a part of a firm's overall customer service offering, customer service elements that are specific to logistics operations including fulfilment, speed, quality, and cost' (2020, p. 198).

As Marzena Kramarz (2016, p. 225) notes, the key variables that build logistic customer service are order fulfilment time, completeness, timeliness, certainty, product availability from stock, flexibility of orders, as well as convenience, including attributes related to service personnel, as well as documentation and the method of order transmission and product receipt. In turn, Sarder points out that 'one approach to maintaining good logistical support and cutting costs is to concentrate on communication solutions such as tracking shipment, status update, and accommodating last minute change request' (2020, p. 198).

On the other hand, when analysing the activities of enterprises in supply chains, it can be noticed that the awareness of the need to balance the supply chain and thus create new standards in the area of logistic customer service is growing because not only economic, but also ecological and social values are becoming more important. Undoubtedly, the high quality of customer service in the supply chain affects efficiency and customer retention. Therefore, in order to meet customers' expectations, enterprises adopt logistic service strategies, which, as Baraniecka (2011, p. 266) notes, should be well-thought-out, well-designed and implemented. This kind of strategy performs two functions:

- it allows the goals of logistics services to be adjusted to the strategic goals of a company, which involves optimisation of the quality and costs of customer service affecting its profitability;
- it allows for further improvement (going beyond the individual possibilities of the individual activities of an enterprise) in terms of costs and the quality of service through the implementation of projects based on advanced cooperation with a client.

Recently, however, the current satisfaction of customer needs has been shaken, and the chain has even been broken in some industries due to the outbreak and development of the COVID-19 pandemic. Research by Edelman on the key role that companies would play during the COVID-19 pandemic covered 12 markets. The interviews were conducted with 12,000 people from Brazil, Canada, China, France, Germany, India, Italy, Japan, South Africa, South Korea, Great Britain and the United States. The results turned out to be unambiguous: as many as 90% of the respondents believed that enterprises should do their best to protect the welfare

and financial security of their employees and suppliers, even if it entailed significant financial losses, until the end of the pandemic (Edelman 2020). Therefore, it can be concluded that the respondents want their needs to be met on an ongoing basis, regardless of the pandemic situation. As a result, it was interesting from the researcher's point of view to analyse changes made in logistic customer service after the outbreak of the COVID-19 pandemic in enterprises depending on their size, the type of business and the role they play in the supply chain.

3. Analysis of research results

The empirical research, which included 250 enterprises, was carried out in the second quarter of 2021 using CATI. The structure of the studied enterprises was as follows:

- subgroup 1: 200 small and medium-size enterprises,
- subgroup 2: 50 large enterprises.

It should be noted that quota sampling was used for the individual subgroups, taking into account the dominant type of business activity according to the Polish Classification of Activities (PCA). This means that the sample of subgroup 1 reflects the structure of the general population of small and medium-size enterprises, and the structure of subgroup 2 that of large enterprises operating in Poland.

The research results were analysed using the methods of descriptive statistics (including measures of the community structure and the interdependence of phenomena) and statistical inference. The respondents were dominated by owners and representatives of senior and middle management – a total of 72% of the respondents. On the other hand, 28% of the respondents were people who held specialist positions in these enterprises.

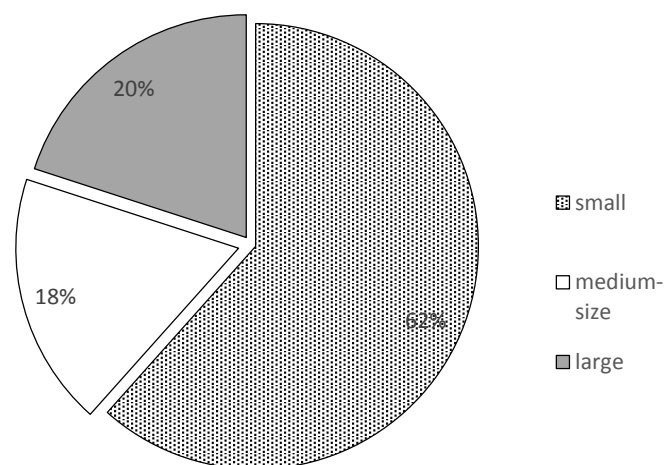


Figure 1. The Enterprises by size.

As mentioned earlier, 250 enterprises were surveyed, and 80% of them employed from 10 to 249 people, and 20% employed 250 or more people (Figure 1).

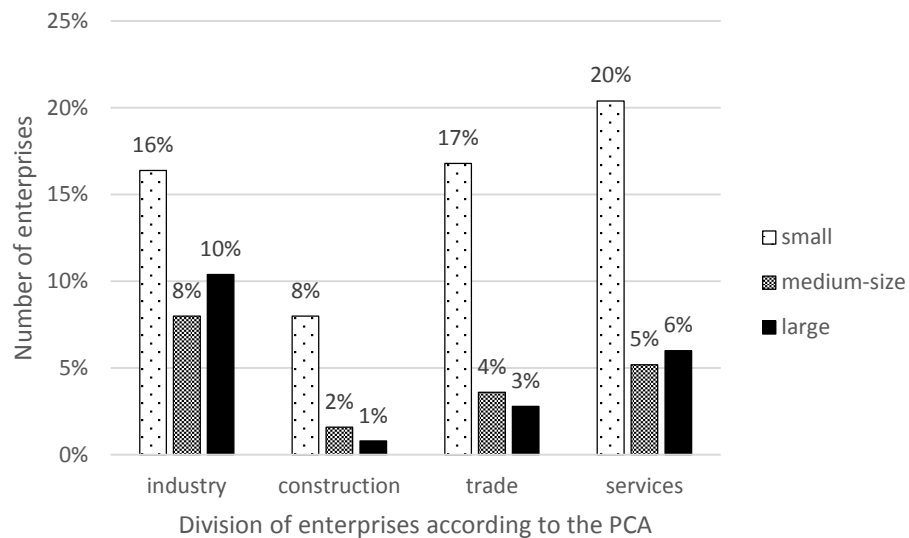


Figure 2. The Enterprises by category.

Figure 2 shows the categories of the surveyed enterprises, taking into account the PCA in line with the principle adopted by the Central Statistical Office (GUS, 2016, p. 11). The following PCA classes: B, C, D and E were assigned to the ‘industry’ category. Moreover, except for B, C, D and E – ‘industry’, F – ‘construction’ and G – ‘trade’, classes from I to S were assigned to the general category of ‘services’ (in line with the classification made by the Polish Agency for Enterprise Development). Overall, 35% (87 entities) of enterprises were qualified to the ‘industry’ category, 10% (26 entities) to the ‘construction’ category, 23% (58 entities) to the ‘trade’ category and 32% (79 entities) to the ‘services’ category.

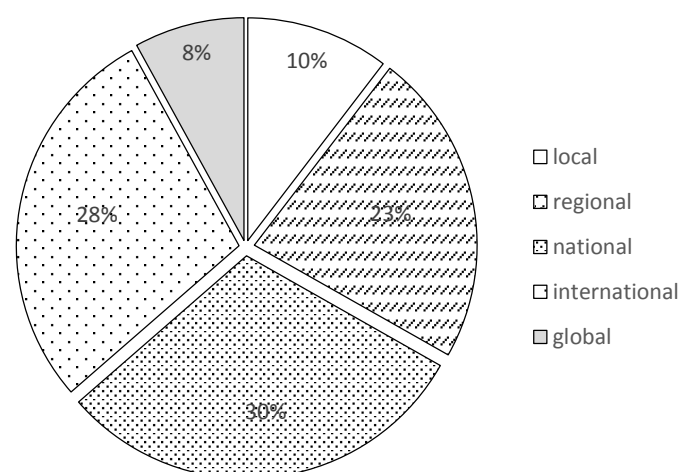


Figure 3. Geographic reach of enterprises.

Overall, 64% (160 entities) of the enterprises had a local, regional and national reach, and the remaining 36% (90 entities) had an international and global reach (Figure 3).

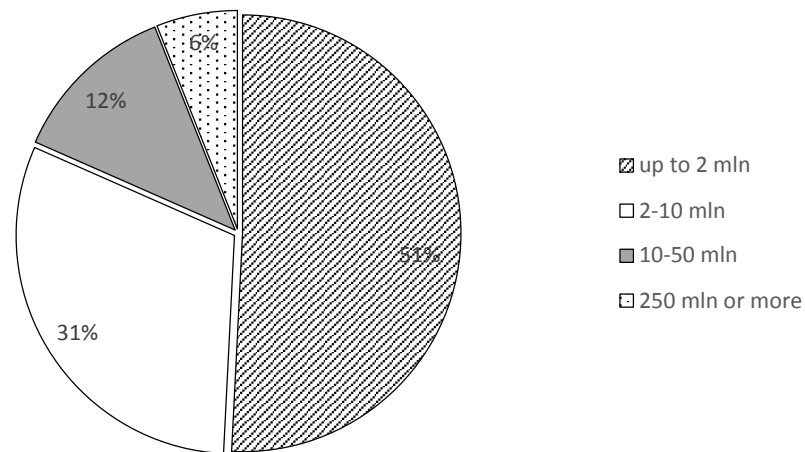


Figure 4. Annual net turnover (in Euros).

The respondents also commented on the amount of the annual net turnover (in Euros). These results are presented in Figure 4. More than half of the surveyed companies declared a turnover of up to 2 million, 31% (77 entities) up to 10 million, 12% (31 entities) up to 50 million, and the remaining 6% (15 entities) of 250 million or more.

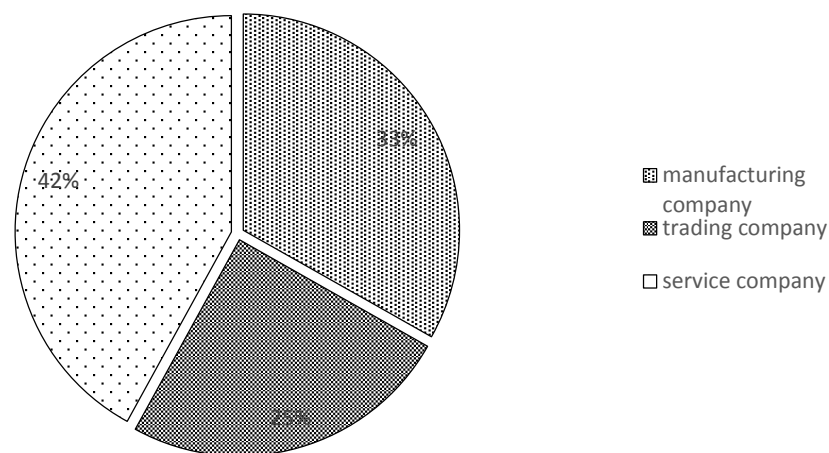


Figure 5. Type of company.

The research involved 33% (83 entities) manufacturing companies, 25% (62 entities) trading companies, and 44% (105 entities) service companies (Figure 5).

The respondents were also asked about their companies' position in the supply chain. The results obtained are as follows: 9% (23 entities) were indirect suppliers of the supply chain leader, 12% (30 entities) were direct suppliers of the supply chain leader, 38% were supply chain leaders (96 entities), and 40% (101 entities) were direct recipients of the supply chain leader (Figure 6).

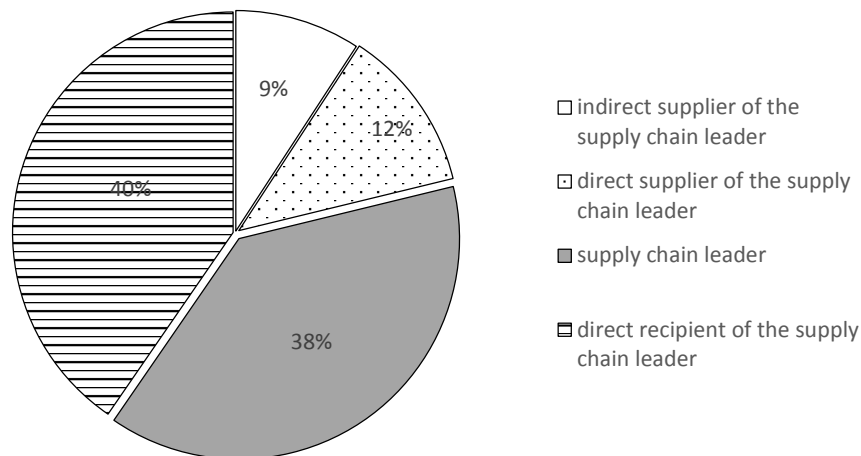


Figure 6. Position in the supply chain.

As part of the research, the surveyed representatives of the 250 business entities were asked to which processes their enterprises paid special attention, and which were the most important for them from the point of view of logistic customer service (the Mann-Whitney U test and p-values were used for this purpose).

Table 1.

Correlations between the variables of the logistic customer service process and the variables that are key to building logistic customer service

variables	uniqueness of service	luxury service regardless of costs (a price-insensitive customer)	excellent communication with a customer in the ordering process and after the sale of a product	distribution of unique products and excellent after-sales service, particularly spare parts
the shortest delivery time	109 (47%)	-	-	-
product availability from stock	-	-	-	101 (40%)
reliability of deliveries (particularly timeliness)	-	-	-	-
flexibility of logistic customer service	109 (47%)	-	-	-
accuracy and completeness	-	25 (10%)	-	-
supply of spare parts	-	-	147 (59%)	-

Source: own study.

It was found that 47% of the surveyed companies declaring that they offered unique services paid attention to shortening the delivery time and the flexibility of logistic customer service. More than half (59%) of the enterprises noted the importance of excellent communication with clients in the context of spare parts delivery.

Cramér's V and p-value were also calculated for the above variables, amounting to 0.25 and 0.01, respectively. Based on these results, it can be concluded that those companies that care about excellent communication less often indicated the uniqueness of service and more often pointed to the maximisation of the quality of service (the highest standards) implemented in the supply chain. Additionally, those companies that most care about the distribution of unique products and excellent after-sales service much less often indicated the uniqueness of service and more often excellent communication with clients (Cramér's V of 0.31 and p-value of < 0.01).

Another correlation verified during the research was that between the size of a surveyed company and the key variables building its logistic customer service (Table 2).

Table 2.

Distribution of the frequency of responses to questions describing the correlation between the size of a surveyed enterprise and the key variables building logistic customer service

Size of company	Small	Medium-size	Large	N	Pearson's chi-squared test	p-value
Variables	Real numbers (theoretical)	Real numbers (theoretical)	Real numbers (theoretical)			
The shortest delivery time (time and delivery tailored to customer requirements)	44 (33,9)	5 (10,1)	6 (11,0)	55	25,545	0,004
Availability of a product from stock	27 (24,6)	7 (7,4)	6 (8,0)	40		
Reliability of deliveries (particularly timely deliveries)	19 (17,9)	8 (5,3)	2 (5,8)	29		
Flexibility	22 (31,4)	10 (9,4)	19 (10,2)	51		
Accuracy and completeness	25 (30,2)	12 (9,0)	12 (9,8)	49		
Delivery of spare parts	17 (16,0)	4 (4,8)	5 (5,2)	26		
Total	154	46	50	250		

* Significant variables are marked in bold.

Source: own study.

Based on the analysis of the correlations between the size of the surveyed companies and the key variables that build logistic customer service, it can be seen that medium-size and large enterprises are less interested in the shortest delivery times and deliveries of spare parts than small enterprises. It can also be noticed that the declared significance of the accuracy and completeness of deliveries is higher in the case of medium-size and large enterprises and lower in the case of small enterprises.

Another studied correlation was that between changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic, and the size of a studied enterprise. The detailed results of the study are presented in Table 3.

Table 3.

Correlation between changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic and the size of a studied enterprise

Declared change	Small	Medium-size	Large	Kruskal-Wallis equality-of-populations rank test	p-value
time of response to an inquiry	1,558	1,739	1,9	8,32	0,016
geographic reach	1,61	1,587	2,34	5,39	0,068
timeliness and form of delivery (e.g., mail order sale)	1,857	1,978	2,34	12,01	0,003
time from placing an order to delivery	1,896	1,935	2,44	12,99	0,002
completeness of supplies	1,506	1,565	1,78	7,93	0,019
faultless deliveries understood as deliveries without damage, errors in documentation, etc.	1,377	1,543	1,56	2,97	0,226
flow of information about delivery/delivery difficulties	1,61	1,826	2,02	6,16	0,046
organisational changes	1,831	2,652	2,92	35,87	<0,001
price changes	1,76	2,369	2,1	14,49	<0,001
complaint handling procedure	1,35	1,848	1,82	27,08	<0,001

The crossed-out data in the table mean no correlation.

Source: own study.

Given that $p < 0.1$, the difference is statistically significant. Hence, the conclusion that at least one pair of groups of enterprises differs significantly in terms of the size of a company. After analysing the results from Table 3, it can be concluded that changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic were more important for medium-size and large enterprises than for small enterprises. Additionally, it can be seen that with the increase in the size of an enterprise, these processes changed more.

The correlation between changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic and the type of business activity was also studied.

Table 4.

Correlation between changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic and the type of business activity

Declared change	Manufacturing	Trading	Service	Kruskal-Wallis equality-of-populations rank test	p-value
time of response to the inquiry	1,675	1,548	1,714	1,57	0,457
geographic reach	1,626	1,823	1,6	6,29	0,043
timeliness and form of delivery (e.g., mail order sale)	2,084	2,258	1,724	13	0,002
time from placing an order to delivery	2,048	2,226	1,857	4	0,135
completeness of supplies	1,626	1,79	1,4	8,51	0,014
faultless deliveries understood as deliveries without damage, errors in documentation, etc.	1,53	1,564	1,304	8,36	0,015

Cont. table 4.

flow of information about delivery/delivery difficulties	1,783	1,919	1,580	5,19	0,075
organisational changes	2,193	2,129	2,248	0,43	0,808
price changes	2,048	1,889	1,886	1,32	0,517
complaint handling procedure	1,675	1,516	1,438	3,72	0,156

* The crossed-out data in the table mean no correlation.

Source: own study.

Considering that $p < 0.1$, the difference is statistically significant. Hence, the conclusion that at least one pair of groups of enterprises differs significantly depending on the type of business activity. After analysing the results from Table 4, it can be concluded that changes in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic were more important for trading and service companies than for manufacturing companies.

After performing the above analyses, it was necessary to recognise whether the changes introduced after the outbreak of the COVID-19 pandemic in the surveyed companies differed depending on the size of the company, the type of business and the role that the surveyed enterprise played in the supply chain.

Table 5.

Differentiation of changes in the processes related to logistic customer service

Variable	Size of company	Type of business	Position in the supply chain
time of response to the inquiry	NO	NO	YES
geographic reach	NO	YES	NO
timeliness and form of delivery (e.g., mail order sale)	YES	YES	YES
time from placing an order to delivery	YES	NO	YES
completeness of supplies	NO	NO	YES
faultless deliveries understood as deliveries without damage, errors in documentation, etc.	NO	NO	NO
flow of information about delivery/delivery difficulties	NO	NO	NO
organisational changes	YES	NO	NO
price changes	YES	NO	NO
complaint handling procedure	NO	NO	YES

* 'YES' – a given variable differentiates changes in the processes related to logistic customer service; 'NO' – a given variable does not differentiate changes in the processes related to logistic customer service.

Source: Zwolińska 2021, p. 84

Based on Table 5, it can be concluded that the variables that most differentiate changes in the processes related to logistic customer service in the surveyed enterprises are the position in the supply chain occupied by the company and its size.

4. Summary of the research results

Logistic customer service undoubtedly has a significant impact on the competitiveness of enterprises. Attention should be paid not only to external stakeholders, but also to the activities of internal stakeholders who contribute to increasing the level of customer satisfaction. This is important because a satisfied customer is more likely to repeat purchases than one who gives up a purchase or gives a negative opinion about a purchase for various reasons. Of course, it should be remembered that, as with other processes taking place in a company, in this case the Pareto principle should be applied, according to which only 20% of satisfied customers generate 80% of the profits. Therefore, changes taking place in logistic customer service during the COVID-19 pandemic result from both the changing needs of customers, which are forced by the pandemic situation, and the legal provisions regulating the functioning of enterprises during the pandemic. As can be seen, the pandemic has affected behavioural patterns and therefore companies need to keep pace with the changes that have occurred.

The empirical research results have shown that the variables that most differentiate changes in the processes related to logistic customer service in the surveyed companies are the enterprise's position in the supply chain and the size of this enterprise. Moreover, it can be concluded that changes made in the processes related to logistic customer service after the outbreak of the COVID-19 pandemic are more important for medium-size and large enterprises than for small enterprises, and that they are more important for trading and service companies than for manufacturing companies.

In summary, this article describes part of a larger research project focusing on the concept of sustainable supply chains. Indicating the scope of changes in logistic customer service made by enterprises during the COVID-19 pandemic may constitute the basis for enterprises to compare their activities with those performed by the enterprises participating in the research. Companies can also implement these changes to gain a competitive advantage.

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