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MEASURING THE QUALITY OF LOGISTICS SERVICES FOR INDIVIDUAL CUSTOMERS USING THE SERVQUAL METHOD WITH AN EXEMPLARY COMPANY FROM THE CEP INDUSTRY

Logistics service is a key process performed by CEP enterprises. Measuring quality of service in companies from this branch of industry is a current priority that has to be achieved in order to adjust their offers to the current market requirements. This paper will indicate the possibilities of using the SERVQUAL method to measure the expected and perceived quality of logistics services offered to individual customers of shipping and forwarding companies, and also to identify areas for improvement. The study used the example of InPost LLC. The purpose of the study determined the research procedure, which included indirect research focused on the analysis of literature sources, and direct research conducted among individual customers who used the services of the research object. The SERVQUAL method enabled the formulation of a general rating of service quality, based on the discrepancies between quality as perceived and expected by survey participants, considering the significance of five dimensions.

Keywords: logistics customer service, customer satisfaction, SERVQUAL, CEP industry, InPost LLC

1. INTRODUCTION

Development of competitive advantage is inseparably linked to continuous rivalry of companies to attract institutional or individual customers (Szydełko, 2012). As a result, enterprises implement various strategies, one of which is the customer journey strategy, that can be described as a “thoughtful foresight action plan aimed at systematic progress to reach an assumed customer service pattern, which should allow to maintain or reach a specific market position” (Bujak, Szot, 2009). It is worth noting that customer service in logistics is one of the major competitiveness factors in today's companies operating in various industries (Długosz, 2010; Kramarz, 2016; Krzywda 2019; Matuszczak, Chračhol-

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-Barczyk, 2016; Meidutė-Kavaliauskienė, Aranskis, Litvinenko, 2014; Sandberg, Abrahamsson, 2011; Sarder, 2021; Zwolińska, 2022).

Logistics customer service is an important and interesting field of scientific research, in particular in the context of the growing importance of the courier, express and parcel delivery industry (CEP industry). An increase in the number of deliveries and growing demand for services related with logistics order processing occurred mainly in connection with wider access to online goods sources, growing popularity of electronic sales channels (particularly during the COVID-19 pandemic) and dynamic development of marketing and sales tools in e-commerce. These factors can be also connected with the intensification of competition on the logistics services market. A noteworthy fact is that customer service quality is becoming a part of development of competitive advantage between companies, also because the quality of products itself, in the material context, is no longer synonymous with luxury and there are even more expectations on the consumer market that concern reliability, certainty, flexibility and delivery-related communication with customers. This situation forces companies to adjust their services on a regular basis, in order to meet customers' expectations, or even exceed them. In that connection, one of the major processes that should be implemented in every company, is systematic evaluation of customer satisfaction to improve the quality of service.

A combination of three subjects of interest in the scientific and management field: logistics, courier services and customer satisfaction measurement gives a specific scope of research, encompassing evaluation and improvement of logistics customer service in a model courier company. A courier company in which logistics customer service has been analysed is InPost LLC, a private logistics operator from Poland. They are a leader on the modern logistics services market and the first company in Poland to build a network of automated parcel machines (Paczkomat) – self-service parcel sending and picking points, available 24/7. This innovative technology allows customers to pick their parcels more conveniently. It is also a cheaper and more environmentally friendly solution. Automated parcel machines have increased efficiency of logistic services, and their success has been largely determined by the speed of service, with 98 percent of parcels delivered on the next day (<https://inpost.pl/o-inpost>). InPost is not only the operator of automated parcel machines. They also offer high quality courier services. From traditional delivery of parcels to the recipient's address, through express shipping with delivery on the same day, to innovative SmartCourier service, allowing quick and safe delivery of confidential documents. The company is constantly growing, and is oriented on extending services for the e-commerce market by offering innovative solutions including: Courier Packages for enterprises, shop integration and fulfilment.

Logistics has a vital role in professional customer service (Woźniak, 2017; Janczewska, Janczewski, 2020). However, there is no uniform and widely approved definition of logistics customer service. The references provide two formulations, telling that customer service is a broad concept that is not easy to define and includes all touch points between the supplier and the buyer, as well as material and non-material elements (Harrison, Van Hoek, 2008). First attempts to formulate a definition of customer service were made by La Londe and P.H. Zinszer (1976). They described that process as:

- all necessary activities, including the receipt, preparing, completion and financial processing of customer orders, and resolving any issues that may appear in connection with these activities,
- certainty and reliability of goods delivery according to customer's expectations,

- comprehensive activity engaging all business areas to deliver goods in a satisfactory manner,
- overall order processing, including customer communication, loading, transport, invoicing, product control and warranty services,
- timely delivery of products that meet customer orders, including timely delivery of sales documentation.

Keeping high quality of logistics processes is not easy. But measuring the key quality points of these processes from the customer's perspective can also be difficult in practice. Companies can use universal quality tools for process improvement, widely described in the literature, that support the evaluation of quality and customer satisfaction, e.g. in the area of logistics order processing. These methods include SERVQUAL and CSI. Having measured the quality of the process with them, the company is able to indicate areas that require improvement and implement optimisation³.

Due to the limited volume of this publication, the research process has been based on the SERVQUAL method. It assumes that ensuring proper quality of service means meeting customer expectations. It consists in measuring the difference between quality perceived by the customer and quality expected by the customer (Frąś, 2014).

2. OBJECTIVE AND METHODOLOGY

In this article, the authors intend to present the results of empirical research focused on the recognition of the customer expectations regarding the logistic customer service of a model courier company and the actual quality of this process carried out by InPost LLC.

This paper will indicate the possibilities to use the SERVQUAL method in measuring the expected and perceived quality of logistics services offered to individual customers of shipping and forwarding companies, and also in identifying areas to improve, using the example of InPost LLC.

The thesis of the paper is the claim that companies operating in the CEP industry must: be aware of the significance of logistics customer service as one of the key factors of competitiveness, measure customer satisfaction using verified methods supporting quality-oriented management and take improving actions based on the outcomes of the satisfaction measurement.

The following research problems have been formulated:

1. How do customers perceive the quality of logistics services offered by InPost LLC?
2. Do InPost LLC meet customers' expectations in terms of logistics customer service as a courier company?
3. Are there any quality aspects (tangibility, reliability, responsiveness, assurance and empathy) that should be improved at InPost LLC as a leader on the courier services market?

The purpose of the work has determined the research procedure. The theoretical part (introduction) has been based on a research procedure that included indirect research focused on analysing literature sources and deductive reasoning. In the empirical part, the

³ Using the terminology related to quality, specified in the ISO 9000:2015 standard, we can distinguish three types of corrective and preventive actions that can be applied at the process quality improvement stage. These include (ISO 9000:2015): 1) correction – to take action to eliminate a detected nonconformity, 2) corrective action – to take action to eliminate the cause of a nonconformity and to prevent recurrence, 3) preventive action – to take action to eliminate the cause of a potential nonconformity or other potential undesirable situation.

following quantitative research methods have been applied: direct research conducted among individual customers who used the services of the research object with the use of surveying techniques and statistical methods. A survey questionnaire has been drafted, reflecting the procedure used in the SERVQUAL method. The responses provided in the survey questionnaire have been individualised to reflect the specificity of services offered to individual customers by InPost LLC. The CAWI (*Computer Assisted Web Interview*) survey technique has been used, in form of an on-line survey sent to participants through the social media. The questionnaire was available on Microsoft Forms, where authors drafted the survey and participants could provide their answers. This survey distribution channel allowed to reach a wide group of customers using InPost LLC services in a short time. Survey participants could complete the survey at a most convenient moment.

The survey questionnaire consisted of three parts in order to:

1. Check customer expectations of logistics services provided by a model (ideal) courier company.
2. Check perceived quality of logistics customer service provided by InPost LLC.
3. Check the significance of five quality aspects (tangibility, reliability, responsiveness, assurance and empathy) from the participants' point of view.

The division of the survey questionnaire used for the SERVQUAL analysis was based on the scheme introduced by V.A. Zeithaml, A. Parasuraman and L.L. Berry (1990), but exact formulations included in the document were modified to reflect the specificity of logistics customer service offered by courier companies.

Data were collected from 30 November until 7 December 2022. 211 survey questionnaires were received, 41 of which were rejected due to missing data or improper classification of quality aspects. 80.6 per cent of survey questionnaires were filled correctly (170 filled forms were analysed). In order to reach the goal formulated above, the final analysis has been made based using the responses of a group consisting of 166 survey participants. Those were persons who did not reply "Never" to the question concerning the frequency of using courier services provided by InPost LLC in the previous three years (2020, 2021 and 2022). Responses of 4 participants, who had not used services offered by the analysed company, were rejected.

In the survey, participants were asked to indicate, among others:

- to what extent a model (ideal) courier company should meet the 22 requirements divided into five quality aspects,
- to what extent those 22 features reflect the way they perceive the actual (experience-based) quality of logistics services offered by InPost LLC.

In the survey questionnaire, participants used a 5-grade Likert scale, where 1 indicated that the interviewee strongly disagrees, 2 – disagrees, 3 – is neutral, 4 – agrees and 5 – strongly agrees with a given statement.

3. RESEARCH RESULTS

The first part of the responses, concerning the difference between the expected (E) and perceived (P) quality is presented in Table 1. It contains the list of 22 features divided into 5 quality aspects, evaluated at two levels: survey participants' expectations for logistics customer service offered by a model shipping company and the actual quality of service offered by InPost LLC, as perceived by the survey participants. For the purposes of an in-depth analysis focused on the comparison of rated quality dimensions for the model courier company and InPost LLC, basic descriptive statistics have been determined. Average rating

for a model courier company based on 22 features (participants' expectations - E), average rating for InPost LLC (quality of logistics services perceived by survey participants - P) and the difference between the perceived and expected quality of logistics customer service (P-E) have been determined.

Table 1. Summary of results received using the SERVQUAL method for 22 features in 5 quality dimensions evaluated for a model courier company and InPost LLC

Overall features evaluated by survey participants (score 1 to 5) with reference to a model courier company and InPost LLC.	Average rating for a model courier company (E)	Average rating for InPost LLC (P)	P-E
Quality dimension No. 1: tangibility			
1. Technical infrastructure (vehicles and automatic parcel machines) of a courier company is very good and visually appealing.	4.13	4.12	-0.01
2. Courier company uses modern technical and IT infrastructure and functional technologies.	4.50	4.31	-0.19
3. Courier company has clear and easy to follow profiles in social media and promotional materials. Its mobile app is intuitive and user friendly.	4.54	4.12	-0.42
4. Courier company uses innovative (e.g. environmentally friendly) and nice parcel boxes.	4.13	3.66	-0.46
Quality dimension No. 2: reliability			
5. Delivered parcels are not damaged and intact.	4.85	4.25	-0.60
6. If customer reports a problem, employees of the courier company are willing to help and competent.	4.75	3.98	-0.77
7. Parcels are delivered on time, as declared before shipment.	4.69	4.42	-0.27
8. Delivery and sending of parcel are handled properly (e.g. delivery of parcel to a right addressee, drafting necessary documentation, receiving electronic delivery confirmation, handing a parcel shipment or return confirmation to a client).	4.65	4.43	-0.22
9. Multiparcel shipment delivered by the courier company is complete.	4.81	4.43	-0.39
Quality dimension No. 3: Responsiveness			
10. Customer can reach out to a courier or call the company hotline.	4.59	4.08	-0.51
11. Employees of the courier company are always willing to help the customer.	4.48	3.98	-0.50
12. Courier company always informs customer on delivery date and time using electronic communication channels (e-mail or SMS).	4.63	4.56	-0.07
13. Courier company is available 24/7 (delivery and sending parcels).	3.61	3.79	0.17

Table 1 (cont.). Summary of results received using the SERVQUAL method for 22 features in 5 quality dimensions evaluated for a model courier company and InPost LLC

Overall features evaluated by survey participants (score 1 to 5) with reference to a model courier company and InPost LLC.	Average rating for a model courier company (E)	Average rating for InPost LLC (P)	P-E
Quality dimension No. 4: Assurance			
14. Employees and technical/IT infrastructure of the courier company are trustworthy (e.g. guaranteed security of shipment, personal data and transactions).	4.71	4.17	-0.54
15. Courier company hotline is available 24/7.	3.49	3.36	-0.14
16. Courier company personnel has necessary knowledge to reply to customers' questions, respond to their needs and problems and help in solving them.	4.46	4.01	-0.45
17. Courier company personnel is kind and attentive.	4.61	4.11	-0.49
Quality dimension No. 5: Empathy			
18. Courier company has an extensive network of parcel delivery points (automatic parcel machines or parcel service points).	4.54	4.52	-0.02
19. Courier company accepts multiple payment methods.	4.53	4.34	-0.19
20. Relatively low cost of parcel service.	4.20	4.01	-0.19
21. Customers can change the method or point of delivery.	4.27	3.84	-0.43
22. Courier company strives to improve the quality of service and checks customer feedback.	4.60	4.02	-0.58

Explanation: P-E – a gap between the perceived and expected service quality.

Source: Author's own work based on the research results.

To explain the first research problem, the average rating of perceived quality of logistics customer service offered by InPost LLC was taken into account. Data analysis has indicated that the following features were most appreciated: informing customers on every change in the time of delivery using electronic means of communication, e.g. e-mail or SMS (4.56), extensive network of parcel collection points - Paczkomat or PaczkoPunkt (4.52), delivery of complete multiparcel shipments (4.43), proper delivery and sending of parcels (4.43) and consistency of actual and declared time of delivery (4.42). The following features of services offered by InPost LLC received the lowest average rating: 24/7 hotline availability (3.36), innovative (e.g. environmentally friendly) packaging (3.66), 24/7 service availability (3.79).

For 21 evaluated features (95%) of logistics customer service, the difference between the average rating received on the basis of customer experience with InPost LLC services and expectations for a model courier company, was a negative value (P-E). It means that the analysed company did not fulfil all customers' expectations. The highest discrepancies between the average rating of customer experience and customer expectations occurred in the following criteria: personnel competence and readiness to help if customer encounters a problem (-0.77, reliability dimension), delivery of a non-damaged and intact parcel

(-0.60, reliability dimension) and strive for service quality improvement and customer feedback analysis (-0.58, empathy dimension). The analysis of gaps between the perceived and expected service quality with near-zero values suggests that individual customers of InPost LLC are satisfied with the efficiency and visual appeal of company's technical infrastructure (-0.01, tangibility dimension), extensive network of parcel delivery and sending points (-0.02, empathy dimension) and informing customers on the time of delivery and shipment status using electronic means of communication (-0.07, responsiveness dimension). As far as 24/7 service availability is concerned (delivery or sending of parcels), perceived quality received higher score than customers' expectations in this aspect (0.17).

The second part of the responses, concerning the difference between the expected (E) and perceived (P) quality, taking into account the weight, is presented in Table 2. According to the SERVQUAL analysis procedure, average weight values (W) have been determined based on the participants' evaluation of significance of the five quality dimensions. The analysis has shown that the highest participants' expectations were connected with the reliability dimension (0.355), while the lowest with the assurance aspect (0.15). The outcomes have been compared with the average rating of individual aspects for a model courier company (E) and for InPost LLC (P). They allowed to determine the difference between the perceived and expected quality of logistics service for the five aspects without considering their weight (P-E) and considering their weight ((P-E)*W).

Table 2. Data used for the calculation of the difference between the perceived and expected quality of logistics service for the five quality dimensions, with reference to their weight

Dimension	The average of the grades		Average weight values (W)	P-E	(P-E)*W
	Expectation (E)	Perception (P)			
Tangibility	4.324	4.054	0.158	-0.270	-0.043
Reliability	4.749	4.300	0.355	-0.449	-0.159
Responsiveness	4.330	4.104	0.173	-0.226	-0.039
Assurance	4.319	3.914	0.150	-0.405	-0.061
Empathy	4.429	4.143	0.163	-0.286	-0.047

Source: Author's own work based on the research results.

At this stage of the analysis, certain conclusions are possible, reflecting the significance (weight) of a given aspect for survey participants. We can also indicate areas to improve in particular companies. For all quality aspects of logistics customer service, the non-weighted and weighted differences between the average rating received on the basis of customer experience with InPost LLC services and expectations for a model courier company were negative values (P-E). This means that there are discrepancies between participants' expectations for courier services and their actual satisfaction with InPost LLC. In order to explain the second research problem, we should indicate that this company did not meet customers' expectations for quality of logistics services, considering the five aspects of quality. The data presented in Table 2 indicate that the largest gap (without reference to significance) occurs for the reliability aspect (-0.449), while the smallest for the responsiveness dimension (-0.226). In order to translate the outcomes of the analysis into proposed improvement in areas particularly important for the customers, Table 2 also

presents subjective quality assessment for the five analysed aspects. The largest differences between the perceived and expected quality of logistics service, considering the significance, occurred in the reliability (-0.159) and assurance (-0.061) aspects.

When trying to explain the third research problem, it should be noted that the analysis of presented data leads to a conclusion that the evaluated courier company should first take improvement actions to achieve higher quality of logistics customer service in two aspects: reliability and assurance, focusing on the other dimensions, including empathy, tangibility and responsiveness in a further perspective.

4. CONCLUSIONS

In the current turbulent economic and geopolitical situation, companies must search for new strategies that would help them overcome the crisis. The management process in modern enterprises from the CEP industry must be based on the awareness of the significance of logistics customer service, being one of the key factors of competitiveness, and should involve improving actions based on the analysis of differences between quality perceived and expected by customers.

This paper indicated the possibilities to use the SERVQUAL method in measuring the expected and perceived quality of logistic services offered to individual customers of shipping and forwarding companies, and also in identifying areas to improve, using the example of InPost LLC.

The method used in the empirical research among InPost LLC customers provided data concerning subjective quality rating in five dimensions: tangibility, reliability, responsiveness, assurance and empathy, presented in this publication. Beside that, customer service process areas that require improvement have been identified. The largest differences between the perceived and expected quality of logistics service, considering the significance, occurred in the reliability and assurance aspects. In the reliability dimension, the largest discrepancies in the rating occurred for the criteria of personnel competence and readiness to help if customer encounters a problem and also for delivery of non-damaged and intact parcels. When analysing the aspect of assurance, the largest discrepancies in the rating appeared for the criteria of building customer trust for the employees and technical/IT infrastructure of the courier company (e.g. by ensuring security of parcel service, personal data and transactions) and also personnel behaviour (kindness and attentiveness). In the further perspective, the analysed company should focus on the following aspects:

- empathy (survey participants expect that InPost LLC would increase efforts to improve the offered services and customer feedback analysis),
- tangibility (survey participants expect wider use of innovative and environmentally friendly packaging materials),
- responsiveness (survey participants expect improvement of communication channels, including contact with courier or hotline of courier company).

InPost LLC is a leader on the Polish market of shipping services, however, there are areas in the analysed process of logistics customer service that should be improved to build a better image of the company and increase customer satisfaction. It is noteworthy that improvement actions should be first taken in areas where subjective quality rating is low. Next, customer satisfaction must be analysed again. Since trends in consumer behaviour may change, finding new ways to improve quality of service is a necessity, especially in

highly competitive industries. That is why regular use of the SERVQUAL method is recommended.

The impact of the research efforts includes implications both for the management practice in InPost LLC and other courier companies. This paper shows the possibility to use the SERVQUAL method in measuring quality and improving logistics customer service in a single courier company, which could be an inspiration for other similar enterprises (see: Ratajczak, Lorenc, 2015; Janczewska, Janczewski, 2020).

Undoubtedly, logistics customer service is a key process performed by companies in the CEP industry, so measuring quality of customer service should be a priority, in order to adjust the offer to current market requirements and to implement optimising activities. These companies can use universal instruments (including SERVQUAL method), widely described in relevant publications, that support the evaluation of customer satisfaction, e.g. in the area of logistic order processing.

The authors are quite sure that certain limitations could not be eliminated in the conducted study. These were mostly associated with the assumed methodological approach. The data collection process has been based on gathering respondents opinions, subjective by nature, which could also affect the quality and content of formulated conclusions. In the survey questionnaire, 5-grade scoring scale has been used, which is not without significance in terms of objectiveness of the results. Interpretation of scoring (despite attachment of relevant descriptions) may vary within the respondents group.

The outcomes of the analysis, as well as related conclusions might be the starting point for further, in-depth empirical study concerning InPost LCC and other courier companies.

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