# Quality of Courier Services from the Customer Perspective in the Republic of Serbia

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Abstract: The recent growth of the e-commerce sector—especially during and after the COVID-19 pandemic—has led to the expansion of the Courier, Express and Parcel (CEP) market. To remain competitive, courier companies had to adjust their business models to meet not only high demand but also customer expectations. The aim of this work is to assess the quality of courier services in the Republic of Serbia from the customers' perspective. The relevant data was obtained via an electronic survey, which was informed by a comprehensive literature review. The online questionnaire was distributed via social networks (Facebook and Viber) in February 2023 and the subsequent statistical analyses revealed that, in the Republic of Serbia, satisfaction with courier delivery services is affected by the use frequency, customer characteristics (employment status, level of concern regarding personal data security) as well as the courier service characteristics (e.g. responsiveness, timeliness, delivery status, payment options).

Keywords: courier companies; courier services; customer satisfaction; delivery; Serbia; survey

#### 1 INTRODUCTION

Courier services are among the fastest-growing ecommerce sectors owing to the increased popularity of online shopping. While online platforms for purchasing clothes, shoes, electronic devices, household devices, cosmetics, car spare parts, bags, books, etc. have existed before the COVID-19 pandemic, the demand for this service has rapidly increased in recent years.

In 2023, 185 billion parcels were shipped worldwide, and their volume is expected to reach 256 billion in 2027 [1]. According to the data provided by the companies operating in the Serbian Courier, Express and Parcel (CEP) market—A2B Express, AKS, Bex Express, City Express, DHL Express, Express Courier, FedEx, Serbian Post, TNT, Union Sped, YU/PD, and others—in Serbia, with a population under 7 million, about 51.2 million parcels were delivered in 2022 [2]. Clearly, such a large number of courier companies in a relatively small CEP market has resulted in intensive competition.

As third-party service providers, courier companies are completely dependent on the logistics, and the efficiency of parcel collection and delivery will determine their overall profitability, but customer satisfaction. For example, upon the receipt of a customer request, they typically deploy a relatively small vehicle/van to collect the item from the sender to the central depot [3]. At these premises, all parcels are assigned a unique number, which provides accurate data about the recipient and the sender, and are sorted by addresses and assigned to delivery vehicles.

At the beginning of e-commerce development, courier companies provided standard services for customers and cooperated with big online stores. However, they now need to offer an extensive range of services—such as online tracking capabilities, along with proof of delivery, payment collection, and return services—to stay competitive. In terms of the logistics organisation, e-commerce companies can be classified into one of the following categories [4]:

1) Own logistics – retailers independently perform all logistics operations, except the delivery to the customer,

- which is performed by a courier company. This form is effective for small businesses.
- 2) Dropshipping the product is directly shipped via courier from an external warehouse (belonging to the manufacturer or distributor) to the customer. This form is mainly adopted in medium-sized businesses.
- One-stop e-commerce the entire process (warehousing, inventory management, receiving orders, packing parcels, preparing documents, handling returns, and cooperating with carriers) is executed by an online store owner.

While these models differ, courier services remain the vital last link in the online shopping, and their quality determines the level of customer satisfaction with the entire process. Accordingly, extensive research has been conducted on the different dimensions of courier service quality and their relative importance for customer satisfaction. Nonetheless, given the optimistic predictions regarding the CEP market growth, additional empirical studies are needed to gain a greater understanding of this new social phenomenon. The present study aims to contribute to this endeavour by examining the quality of courier services from customers' perspective in the Republic of Serbia. The purpose is to gain new insights into the factors that motivate or hinder courier service usage, as well as those that are most relevant to the customers, thus facilitating further improvements in this sector.

The remainder of the paper is organised into four sections. Section 2 is designated for the literature review, while the research methodology is outlined in Section 3. The obtained results are presented and discussed in Section 4. After sharing some further observations in Section 5, the paper closes by stating the study limitations and proposing some beneficial directions for future research in this domain.

### 2 LITERATURE REVIEW

In extant research, courier service quality is typically examined from customers' perspective, couriers' perspective, and/or online retailers' perspective. For

example, based on the work of Kamble and colleagues [5], in 2020, Hendayani and Dharmawan [6] derived the following nine dimensions of courier service quality from the customer perspective: information quality, ordering procedures, ordering release quantities, timeliness, order accuracy, order quality, order conditions, order discrepancy handling, and personnel contact quality. Information quality relates to the accuracy and timeliness of information provided by the courier. Ordering procedure encompasses receiving customer orders, collecting and sending the parcels, and similar processes. Ordering release quantities pertain to the shipping quantity that allows the courier to achieve a lower transport price and the company policy. Timeliness is defined as the time that elapses from the creation of shipping order to the delivery to the customer. Order accuracy involves timely information provision to customers, allowing their parcels to be tracked in real time. Order quality is related to the courier service quality standards promised to the customers. Order conditions refer to the parcel damage protection and transport prices. Order discrepancy handling pertains to the way differences in the expected and delivered services are resolved. Personnel contact quality refers to the conduct of the courier company representatives when communicating with customers.

On the other hand, Gulc [7] used exploratory factor analysis to develop a courier service quality scale from the ecustomers' perspective comprising seven dimensions—reliability, visual identification, service complexity, relational capital, social responsibility, responsiveness, and technical quality—and the corresponding variables. Ejdys and Gulc [8] concurred with this perspective, but also emphasised the importance of trust and technological aspects in the customer assessment of courier service quality.

Gulc [9] subsequently developed a relational model of courier service quality in the B2C e-commerce sector considering the multi-stakeholder perspective of e-shops, courier companies, and e-customers. According to the proposed model, courier service quality is determined by factors that can be classified as crucial, determinant, result, autonomous, or external. The author considered efficient and fast order processing as the crucial factor. The determinant factors comprised courier responsiveness to reported problems, easy contact with the courier, and efficient communication between courier employees and customers. The result factors are delivery timeliness and effectiveness, and positive customer experience with the courier service. The autonomous (order compliance and completeness) and external factors (e.g., delivery mode and schedule flexibility) were found to exert a smaller influence on the courier service quality [9].

In 2020, Wang [10] conducted a survey of Australian courier companies in order to assess their logistics capabilities based on which operation flexibility-oriented capability (courier's ability to provide flexible logistics services), process optimisation-focused capability (courier's ability to improve business processes with the aim of providing the best logistics services for customers), and innovation-focused capability (courier's ability to implement

new technologies and solutions in business processes) emerged as the key elements in this sector.

Based on a survey conducted by Marcysiak [11] in 2021, the main factors Polish customers consider when choosing a courier company are delivery interval, price, and safety. When it comes to individual elements of customer service quality, the customers give precedence to delivery flexibility, followed by reliability, communication with the operator, and delivery punctuality.

As a part of another study conducted in Poland, Swircz and Racz [12] also focused on the customers' decision-making process when using courier services. They assessed the importance of shipping price, order completion time, availability of delivery time slots, waiting period, staff communicativeness, order placement flexibility, complaint options, order integrity, delivery integrity, technical support, ease of order placement, interaction with company staff, delivery timeliness, availability of different payment options, tracking information, warranty on shipment, company origin, company reputation, personal experience, and customer service. Their findings revealed that Polish consumers are most influenced by shipping price, delivery timeliness, waiting time, order integrity, and tracking information.

In 2020, Rajendran [13] analysed online reviews of four world-leading courier companies posted on social networks during the preceding eight-year period. Using text analysis tools, the author identified the most common causes of customer dissatisfaction with courier services, namely product mishandling (lost parcels, deliveries left outdoors, or items thrown over the fence), delivery issues (delivery to a wrong address, late delivery, and missed delivery), customer support issues (long wait and hold times, disrespectful employees, lack of immediate response, and poor communication), problems with delivery drivers (stealing parcels, mishandling parcels, and lying about customer availability), website and online tracking issues (incorrect tracking system and non-user-friendly interface) and other issues related to services (unable to talk to humans, no dropbox system, and no flat rate boxes).

Based on the aforementioned findings, the courier service quality is primarily determined by: delivery timeliness [6, 7, 9-12], communication with the courier [6, 7, 9-13], delivery tracking information [6-8, 10, 12, 13], parcel handling [6, 7, 9, 11-13], shipping price [6, 10-12], payment options [12], and customer data security [7, 8]. Delivery timeliness refers to the time period between the shipping order creation and the parcel delivery to the customer. Communication with the courier encompasses accurate and timely provision of information to the customer in an honest and polite manner. Delivery tracking information relates to the real-time access to the delivery status. Parcel handling refers to careful and safe parcel handling during the entire delivery process. Shipping price is the monetary amount customer is charged for the courier service. Payment options refer to the various means by which customers can pay for courier services. Customer data security is measured by the level of confidence customers have in the courier's capability to safeguard personal and sensitive data from misuse.

#### 3 METHODOLOGY

The aim of this study is to assess the quality of courier services in the Republic of Serbia from the customers' perspective. Accordingly, the following main research questions are formulated:

- 1) What is the level of satisfaction with and relative importance of individual courier service characteristics?
- 2) What are the key reasons for dissatisfaction with courier services?
- 3) How often do respondents use courier services?
- 4) What payment method do users of courier services prefer?
- 5) Do users have confidence in the security of personal data they provide to courier services?

Additional, more specific, research questions are also addressed as a part of this investigation:

- 1) Is there a link between customer age and courier service use frequency?
- 2) Is there a link between the employment status (student, employed, unemployed, and retired) and courier service use frequency?
- 3) Is there a link between customer age and the method of payment for courier services?

Table 1 Basic information about the survey methodology

Table I basic information ab	Table I basic information about the survey methodology				
Characteristics of the survey methodology	Description				
Location:	Republic of Serbia				
Timeframe for research implementation:	February-April 2023				
Participants/Respondents:	Courier service users				
Type of sample:	Simple random sample				
Overall number of responses:	426				
Number of valid responses:	379				
Research method:	Survey				
Survey technique:	Survey questionnaire in Google Forms				
Survey questionnaire distribution:	Facebook and Viber (no specific focus group)				

The methodology adopted for addressing these questions included desk research, an electronic survey, and statistical data analysis. First, literature review was conducted to identify the key factors affecting courier company choice. These findings were subsequently used to develop a 19-item questionnaire probing into the respondents' gender, age, employment status, prior courier service use, courier service use frequency, last usage of courier services, delivery interval, payment method, satisfaction with delivery time, satisfaction with communication with the courier, satisfaction with package status updates, importance of courier service provider selection, importance of payment card option, importance of delivery speed, importance of communication with the delivery driver, importance of package status updates, confidence in the security of personal data provided to the courier company, negative experience in personal data abuse, and reasons for dissatisfaction with courier services. The respondents were instructed to provide their general views, i.e., without reference to a specific

courier company or time period. The questionnaire was posted online through Google Forms on Facebook and Viber in February 2023. On Facebook, the questionnaire achieved 2,486 clicks. The participation in the survey was voluntary and individuals that submitted completed questionnaires did not receive any compensation. The basic information about the survey methodology is given in Tab. 1. The collected data were subsequently analysed using SPSS software in order to gain new insights into the Serbian customers' level of satisfaction with the courier service quality.

## 4 STUDY RESULTS

The present study, exploring the quality of courier services from customers' perspective in the Republic of Serbia, was conducted from February to April 2023. While 426 individuals completed the survey, only 379 valid responses were retained for analysis. The sample comprised 68.60% females and 31.40% males, whereby those in the18-24 age group predominated (55.7%), followed by those aged 25-34 (22.4%), the 35-44 age group (11.6%), and those aged 45-60 (9.5%) and over 60 (0.8%). Moreover, 49.1% of respondents were employed, 43.5% were students, 3.7% were pupils, 2.4% were unemployed, and 1.3% were retired.

Although the survey was intended for courier service users, 334 (88.1%) questionnaires were completed by those that have previously used a courier service. The remaining 45 respondents, who indicated that they do not use courier services, provided the following reasons for this decision:

- Courier companies are not accurate; delays are frequent (4.2%)
- Courier companies do not handle packages adequately (3.2%)
- Courier companies are not reliable (2.9%)
- Delivery drivers are rude (1.6%).

Tab. 2 provides findings regarding the courier service use frequency, last usage of courier services, delivery interval, and payment method. According to the tabulated data, 41.4% of the sample uses courier services once per year or several times per year, while 28% of respondents require this service once a month. Most of the respondents used courier services a month ago (28.5%) or a few days ago (23.5%), and in the majority of cases the parcel was delivered within 2–5 working days (62.3%) and payment was made in cash upon delivery (65.2%).

Although 93.1% of respondents had no direct experience of personal data abuse, only 65.3% of the sample felt confident that the courier company would keep their information safe.

According to the *Chi-squared test of independence*, age was statistically significantly related to the courier service use frequency ( $\chi^2(15, n = 379) = 33.452, p < 0.01$ ). To assess the strength of this relationship, statistical power analysis was conducted, yielding phi = 0.297. According to Cohen's guidelines [14] this coefficient value is indicative of a moderate effect size. *Cramer's V* = 0.172 also showed moderate effect size according to [15]. This indicator is particularly relevant for cross tabulation analyses involving

more than two variables with two categorical answers, which is the case here.

On the other hand, the relationship between users' employment status and the courier service use frequency was not statistically significant ( $\chi^2(4, n = 334) = 4.173, p = 0.383$ ).

**Table 2** Some important categorical variables and the corresponding frequencies

Categorical variables (N = 334)		Frequency (1)	Percentage (%)
Frequency of	Once per year or several times per year	157	41.4
courier services	Once per month	106	28
usage	Several times per month	57	15
	Several times per week	11	2.9
	Every day	3	0.8
Last usage	A few days ago	89	23.5
	A few weeks ago	59	15.6
	A month ago	108	28.5
	Three months ago	46	12.1
	Six months ago	22	5.8
	A year ago	10	2.6
Delivery period	One hour	5	1.3
	Few hours	4	1.1
	One day	37	9.8
	2-5 working days	236	62.3
	5-10 working days	34	9.0
	More than 10 working days	18	4.7
Payment	Cash payment on delivery	225	65.2
method*	Card payment on delivery	40	10.6
	Payment by bank transfer before delivery	47	12.4

<sup>\*</sup>The number of respondents varies for this variable

Chi-Square test of independence further revealed that the method of payment for courier services significantly differs depending on the user's age ( $\chi^2(6, n = 334) = 12.367, p = 0.05$ ). The statistical power analysis yielded phi = 0.192, which is considered between small and moderate effect size [14]. On the other hand, Cramer's V = 0.136 is indicative of moderate effect size [15].

The payment method choice also significantly differed based on the employment status ( $\chi^2(15, n = 334) = 9.923, p < 0.05$ ). Once again, strength of this relationship is between small and moderate effect size based on phi = 0.172 [14], and is indicative of moderate effect size based on *Cramer's* V=0.122 [15].

It is also noteworthy that 79.7% of those aged 18-24 and 56.8% of those aged 35-44 pay cash on delivery, while the payment by card on delivery (16.2%) and payment by bank transfer before delivery (27.0%) options are most likely to be chosen by those in the 35-44 age group.

These findings were further explored by conducting *Bonferroni-adjusted pairwise z-tests*. According to the obtained results, in the 18-24 age group, the frequency of cash payment on delivery (n = 157 or 79.7%) significantly differed from that related to payment by bank transfer before delivery (n = 19 or 9.6%). Significant difference also emerged between cash payment on delivery (n = 21 or 56.8%) and payment by bank transfer before delivery (n = 10 or 27.0%) in the 35-44 age group. Other pairwise comparisons were not statistically significant.

Next, respondents' ratings on a 5-point Likert scale for the level of satisfaction with delivery speed, communication and package status updates, as well as the importance of courier service characteristics (such as courier service provider, payment card option, delivery speed, communication with the delivery driver, and package status updates) were analysed and the findings are shown in Fig. 1.

As students and employed were the most frequent users of courier services, their responses were subjected to further analyses to determine their satisfaction with and perceived importance of individual courier service characteristics. For that purpose, it was necessary to verify the following assumptions:

- Independence of observations independent observations were achieved because each observation in the database was obtained from one respondent. There were no respondents who filled out the questionnaire more than once. Respondents were selected randomly.
- Normality of distribution *Kolmogorov–Smirnov* test indicated that three variables—level of satisfaction with delivery speed, level of satisfaction with communication, and level of satisfaction with package status updates—were not normally distributed. However, for a sample larger than 30, this assumption does not have to be met.
- Homogeneity of variance Levene's test of equality of variances was performed. According to the Tabachnick and Fidell's guidelines [16], the significance values in Levene's test need to be greater than sig > 0.05 in order to reject the assumption that variances are not equal. For the two groups of scale variables, the obtained significance levels were: level of satisfaction with delivery speed (sig = 0.073), level of satisfaction with communication (sig = 0.00), level of satisfaction with package status updates (sig = 0.000), importance of courier service provider selection (sig = 0.509), importance of payment card option (sig = 0.780), importance of delivery speed (sig = 0.000), importance of communication with the delivery driver (sig = 0.474), and importance of package status updates (sig = 0.536). For variables where the assumption of homogeneity of variance was violated (sig < 0.05), Welsh test was used, as it is robust to violations of the assumption of homogeneity of variance.

Next, *independent samples t-test* was performed to compare the satisfaction level of students and employed. As can be seen from Tab. 3, their satisfaction with the delivery speed was comparable at M = 3.80, SD = 1.14 vs. M = 3.97, SD = 1.06 (t(323) = -1.390, p = 0.165). No statistically significant differences emerged between their ratings for the satisfaction with communication with courier service providers—students (M = 3.48, SD = 1.15), employed (M = 3.71, SD = 1.27), (t(323) = -1.520, p = 0.129). On the other hand, employed respondents rated their satisfaction with package status updates (M = 3.91, SD = 1.10) statistically significantly (p < 0.01) higher than did students (M = 3.30, SD = 1.49), t(300,4) = -4.227, p = 0.009. Based on  $\eta^2 = 0.0524$ , this represents a medium effect size [14].



Figure 1 Level of satisfaction with and the importance of courier service characteristics

Independent samples t-test was also performed to compare the level of importance that students and employed assign to individual courier service characteristics (Tab. 3). Students provided statistically significantly lower ratings (M = 3.51, SD = 1.35) than employed (M = 3.83, SD = 1.37) for the importance of payment card option (t(323) = -2.120, p = 0.05) with small effect size ( $\eta^2 = 0.014$ ). They also found the delivery speed statistically significantly less important (M = 3.70, SD = 0.66) than employed users (M = 4.51, SD = 0.79), (t(310.62) = 2.298, p = 0.022) with small effect size ( $\eta^2 = 0.016$ ). For other indicators, no statistically significant differences (p < 0.05) between these groups were noted.

Table 3 Mean values for variables that measure the satisfaction level and the perceived importance of courier service characteristics

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	User status	
Variables and mean values	Students	Employed
	N = 164	N = 161
Level of satisfaction with delivery speed	3.80	3.97
Level of satisfaction with communication	3.48	3.71
Level of satisfaction with package status updates	3.30** ~	3.91** ~
Importance of courier service provider selection	3.41	3.64
Importance of payment card option	3.51*¬	3.83*¬
Importance of delivery speed	4.70* ¬	4.51* ¬
Importance of communic. with the delivery driver	4.31	4.40
Importance of package status updates	4.42	4.35
Stat. significance:	**p < 0.01 (t-test) *p < 0.05 (t-test)	
Eta squared $(\eta^2)$ :	• 0.11-0.14 (lar ~ 0.05-0.10 (mo ~ 0.01-0.04 (sr	edium effect size)

The participants' survey responses to multiple-choice questions were also analysed to identify the main reasons for dissatisfaction with courier services in the Republic of Serbia and the results are provided in Tab. 4.

As would be expected, students and pupils were most concerned with high delivery costs (42.5%), but also indicated that delivery speed could lead to dissatisfaction (36.6%), which was the primary issue for employed individuals (47.8%), followed by high delivery costs (35.7%). Somewhat surprisingly, only 28.6% of pensioners and unemployed cited high delivery costs as the main cause for dissatisfaction.

To situate these findings in the right context, they were compared with the results obtained in other studies. For example, in 2020, Dones and Young [17] conducted a survey in Philippines and found that 93.3% of the respondents used

courier services, which is comparable to 88.1% obtained in Serbia. On the other hand, frequency of courier service usage in Poland is much greater than in Serbia, as Marcysiak [11] reported 54.6%, 28.5%, and 16.9% for several times a month, once per month, and several times a year, respectively, while Swirz and Racz [12] noted 35%, 26%, and 22%. In Serbia, most courier service users (65.2%) prefer cash payment upon delivery, concurring with their counterparts in Philippines (82.5%) [17]. As in the present study satisfaction ratings were given on a 5-point Likert scale, the average of 3.89 for the delivery speed can be considered high, concurring with the results obtained in Poland, where 56.2% and 11.1% of respondents provided high and very high ratings, respectively [11]. In the present study, high delivery prices were the most important cause of dissatisfaction with courier services, supporting the findings obtained for Polish consumers [11, 12]. Similar surveys have shown that users also expect better communication with the courier [6, 18], as well as adequate handling of their packages [6, 11, 18].

Table 4 Frequency of reasons for dissatisfaction with the package delivery process

Reasons for dissatisfaction	Students and pupils	Employed	Unemployed and retired
High delivery price	42.5%	35.7%	28.6%
Delivery speed	36.6%	47.8%	7.1%
Poor communication	27.9%	21.6%	7.1%
Misunderstandings and delivery person's impatience	25.1%	21.1%	7.1%
Poor and inadequate package handling	20.7%	24.9%	0%
Non-compliance with the agreement	17.3%	22.2%	14.3%
Sense of insecurity	12.8%	13.5%	7.1%

# 5 CONCLUSION

The global demand for courier services is booming primarily due to the rapid e-commerce development and growth. This trend is also apparent in the Republic of Serbia where online purchases are on the rise, and consumers expect timely, reliable, and cheap delivery, for which they typically rely on courier companies. Although many courier companies operate in the Serbian market and the competition is very intensive, customers usually cannot choose their preferred courier, as the selection (if any) is determined by the e-retailers.

The aim of this study was to assess the quality of courier services in the Republic of Serbia from the customers' perspective. The obtained results reveal that courier services are usually used once per year or several times per year, but the usage frequency differs significantly based on customer age, rather than employment status. Most users receive their delivery within 2-5 working days and, while majority of respondents were satisfied with this delivery speed, they indicated that this interval should be shorter. Generally, Serbian consumers prefer to pay for courier services in cash upon delivery. As most users had no prior negative experience with personal data abuse, they have confidence that the courier company will keep their sensitive information

safe. Based on their rating of courier service characteristics, delivery speed is considered the most important, followed by up-to-date information about the delivery status, and communication with the delivery driver. Moreover, users are least satisfied with high delivery costs, followed by delivery speed, and poor communication.

The findings of this study offer valuable insights into customers' satisfaction levels with various quality characteristics of courier services. While service quality in the courier industry is not as easily quantifiable as in the manufacturing sector, this research underscores the critical need to bridge theory and practice. For practitioners and managers, the results reported in this work pave the way for actionable recommendations and strategic plans for service quality enhancement. These findings can serve as a foundation for developing policies aimed at managing and improving service quality in service-oriented settings. Additionally, the statistical framework developed in this study can facilitate a deeper understanding of the factors driving and/or hindering consumer satisfaction by linking the structural parameters of service settings to practical solutions within the industry. This connection can aid the ongoing efforts at refining service delivery and addressing customer needs more effectively. In summary, this research not only contributes to the academic literature on service quality determinants but also offers tangible implications for improving courier services from both a theoretical and practical standpoint.

When interpreting these findings, some limitations of this study should be noted. First, the survey was conducted in one developing country—the Republic of Serbia—and in a relatively short time period in 2023. Second, only the courier service users' perspective was considered. Third, the sample size was relatively small (only 379 valid responses were received).

In the future, similar empirical studies about the quality of courier services in the Republic of Serbia and other countries from the customers', courier companies' and eshops' perspective should be conducted to address these shortcomings and provide a more comprehensive insight into the factors explored in this article. Likewise, it would be beneficial to examine the alternatives to courier services.

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