

# Impact of delivery service quality on customer satisfaction in online shopping

**Melisa Şenlikci**

Pamukkale University, Faculty of Engineering

e-mail: melisasenlikci@gmail.com

**Aleksandra Gulc**

Bialystok University of Technology, Faculty of Engineering Management

e-mail: a.gulc@pb.edu.pl

**DOI:** 10.24427/az-2023-0026

## Abstract

The rapid growth of e-commerce sector worldwide has brought new challenges, especially caused by Covid-19 pandemic. The concept of service quality should be understood in relation to all stakeholders involved in the delivery process in order to fully satisfy the needs of e-customers. The main result of the communication between supplier and customer is the customer's evaluation of the service after receiving it. The aim of this article is to evaluate customer satisfaction with online shopping and parcel delivery services. In the first part of the article, a literature review was conducted to clarify the concept of service quality. In research part, a diagnostic survey method was used to assess and collect data on customer opinions about online shopping and delivery methods. Questions were prepared on the basis of the literature review and participants were asked to respond using a Likert scale. The questions in the survey were mainly related to delivery method and level of satisfaction, but also online safety, delivery time, functionality of e-commerce websites and the text used to present the product. Based on the authors' research results, it turned out that the method of delivery is the main factor determining customer satisfaction.

## Key words

Service quality, online shopping, delivery service, customer satisfaction, delivery methods

## Introduction

The rate of online shopping has been increasing rapidly worldwide. According to the Eurostat website; “60% of people in the EU aged 16 to 74 shopped online during the year prior to the survey in 2019, compared with 56% in 2018” [<https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20200420-2>, 29.11.2022]. According to the definition of Lee and Lin “online shopping is a complex process that can be divided into various sub-processes such as navigation, searching for information, online transactions, or customer interactions” [Lee and Lin, 2005, p. 162].

Covid-19 pandemic, which broke out in 2019 and caused the world being placed on high alert in 2020, resulted in many changes on the global market. Covid-19 outbreak has had the greatest effect on the market due to severe restrictions placed by the government on economic activity and social life [Koch, Frommeyer, Schewe, 2020]. As a result of the rapid spread of pandemic, consumers avoided face-to-face contact and online consumption became more attractive [Özay, 2021]. Transport and forwarding services increased by 48% in comparison to the period before Covid 19 pandemic [Lenczewska, 2022, p.68]. According to e-commerce survey data published by Eurostat on 2 February 2022 in 12 months prior to the 2021 survey, 90% of people aged 16 to 74 in the EU had used Internet, while 74% of them had bought or ordered goods or services for private use. Online shopping increased by 1 percentage point (pp) compared with 2020 (73% of internet users) and by 11 pp compared with 2016 (63%)” [Eurostat, Online shopping ever more, 2022]. Customers can shop online and receive their products whenever they want, but it is important to know what is their satisfaction with this service. To consider service quality and evaluate customer satisfaction, it is critical to know the online shopping process and relation between these aspects. Service quality generally refers to the service provider ability to meet and exceed customer expectations [Altman and Hernon, 1998, p.53]. According to Chang and Wang’s definition, customer satisfaction is “the psychological reaction of the customer with respect to his or her prior experience with comparison between expected and perceived performance” [Chang and Wang, 2007, p.11]. An online store is responsible for the entire process of delivering products purchased online by customers. Service quality and customer satisfaction can be affected by disruptions in this process. Even with the most well-experienced orders, there is a sudden drop in customer satisfaction if the delivery of the ordered product takes too long or the product is damaged [Coşr et al, 2017, p. 190]. According to DHL, the courier-logistics company serving more than 220 countries, 93% of territories European shoppers say their online shopping choices are influenced by the

delivery options offered and in addition 75% of shoppers have abandoned their shopping because their preferred delivery option was not available [<https://www.dhl.com>, 04.01.2023]. In light of these statements, it can be concluded that delivery service play an important role in online shopping, customer satisfaction.

The purpose of this article is to evaluate online shoppers satisfaction with delivery service, level of trust in the online shopping process and satisfaction with preferred delivery method. The target group of the research were the students from different countries. An electronic survey was used in this article as a research tool. This survey was prepared using "Google Forms" and sent via social media or distributed in the library to the participants. Finally, 100 completed questionnaires were properly filled in and collected. In the first part of the survey, the demographic characteristics of the participants were asked. The second and third parts of the questionnaire were dynamically prepared, so participants were directed to different questions based on their answers. In the second part of the survey, participants were asked whether they had previously shopped online. Participants who had not previously shopped online were asked to explain why they had not made an online purchase, and if they did not, they were not allowed to proceed. In the last part of the survey, the participants were asked to choose their preferred delivery method. The last part of the survey focused on the determination of respondents' satisfaction with delivery services depending on the way of delivery they chose. This study is organised in five sections: introduction, literature review, research data, results and discussion.

## **1. Literature review**

### **1.1. Dimensions of service quality**

In the digital world, the service sector continues to develop and expand. Service quality refers to the service provider's ability to satisfy the customer [Ramya et al., 2019, p.38]. Comparing service sector to production one, a customer purchasing a manufactured product has concrete clues to determine product quality, but in case of customer purchasing a service, it is not possible to determine its quality in advance [Parasuraman et al., 1985]. According to Alzaydi et al., production goods can be stored while service can be consumed as soon as it is served. The simultaneous production and consumption of the service, makes it difficult to measure its quality. To measure service quality, different scales have been developed in the literature. It is crucial that service providers and customers interact in the service sector [Alzaydi et al., 2018]. Cox and Dale suggest that an online business to be successful must be

able to offer systems, networks, purchasing, shipping, and customer service that are integrated [Cox and Dale, 2001].

In order to measure service quality, Parasuraman et al. originally proposed 10 dimensions: tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding/knowing customers and access [Parasuraman et al., 1985]. Later, the dimensions of communication, credibility, security, competence, courtesy, understanding/knowing customers, and access were gathered under the dimensions of assurance and empathy. Finally, it was determined that the SERVQUAL model (service quality gap model) had five dimensions. These are tangibles, reliability, responsiveness, assurance, empathy [Parasuraman et al., 1988]. SERVQUAL model is frequently applied to evaluate service quality [Prentkovskis et al., 2018, p. 2]. Today businesses monitor customers satisfaction, their own performance, as well as prestige of their competitors [Pakurár et al., 2019, p.3]. In general, the quality of offered service can be determined by the level of meeting customer expectations [Santos, 2003, p. 234]. Different service quality dimensions have been applied in particular sector to measure and evaluate customer satisfaction in the literature. Although the SERVQUAL model is the most common method of evaluating service quality, its general characteristics have been discussed frequently in the literature, as it needs to be customized according to certain types of services [Gulc, 2020, p.140]. The research conducted by Pakurár et al. aimed to determine the impact of service quality dimensions on customer satisfaction in the Jordanian banking sector. In this article, in addition to the five main dimensions (reliability, empathy, responsiveness, assurance and concreteness), three more dimensions were added: financial aspect, access and employee competences. As a result, it was concluded that tangibles, responsiveness, empathy, assurance, reliability, access, financial aspect, and employee competences had significant and positive impact on customer satisfaction in the Jordanian Banking sector [Pakurár et al., 2019]. In the study conducted by Law et al., service quality, customer satisfaction and repurchase intention were investigated from Laotian air passengers' perspective. In this research, it was concluded customer satisfaction was affected by many factors, like price and perceived value, loyalty program value, produce uniqueness and perceived value, safety, ease of convenience, promotion, service interaction and perceived value, brand credibility value, reliability and dependability and service quality significantly [Szpilko et al., 2021; Law et al., 2022, Szydło et al., 2022]. According to Santos, the concept of service quality in e-commerce (e-service quality) can be defined as "the consumers' overall evaluation and judgement of the excellence and quality of e-service offerings in the virtual marketplace" [Santos, 2003, pp.235]. In addition, Santos divides the e-service quality dimensions into two as incubative dimension and active

dimension. Incubative dimensions cover the concepts of ease of use, appearance, linkage, structure and layout, content. Active dimensions cover the concepts of reliability, efficiency, support, communication, security, incentive [Santos, 2003]. In Lee and Lin's article, website design, reliability, responsiveness, trust, and personalization are considered as dimensions of e-service quality [Lee and Lin, 2005, p. 164]. Bauer et al. identified five quality dimensions in their study. These are functionality/design, enjoyment, process, reliability, and responsiveness [Bauer et al., 2006]. The service quality dimensions determined by the authors according to their own studies are presented in table 1.

**Tab. 1.** Dimensions of service quality according to different authors

<b>Study</b>	<b>Service quality dimensions</b>
Parasuraman et al., 1985	Tangibles, Reliability, Responsiveness, Communication, Credibility, Security, Competence, Courtesy, Understanding/Knowing Customers Access
Parasuraman et al., 1988	Tangibles, Reliability, Responsiveness, Assurance, Empathy
Cox and Dale, 2001	Accessibility, Communication, Credibility, Understanding, Appearance, Availability
Santos, 2003	Reliability, Efficiency, Support, Communication, Security, Incentive, Ease of Use, Appearance, Linkage, Structure& Layout, Content
Lee and Lin, 2005	Web Site Design, Reliability, Responsiveness, Trust, Personalization
Bauer et al., 2006	Functionality/Design, Enjoyment, Process, Reliability, Responsiveness
Pakurár et al., 2019	Tangibles, Responsiveness, Empathy, Assurance, Reliability, Access, Financial Aspects, Employee Competences
Gulc, 2020	Reliability, Visual Identification, Service Complexity, Relational Capital, Social Responsibility, Responsiveness, Technical Quality

Source: authors' own elaboration based of literature review.

Based on the table, the reliability dimension is included in all studies except one, while responsiveness dimension is included in all studies except two, and tangible dimension is included in three studies. This table indicates that each type of service requires its own specific dimensions.

## 1.2. Online shopping around the world and in Poland

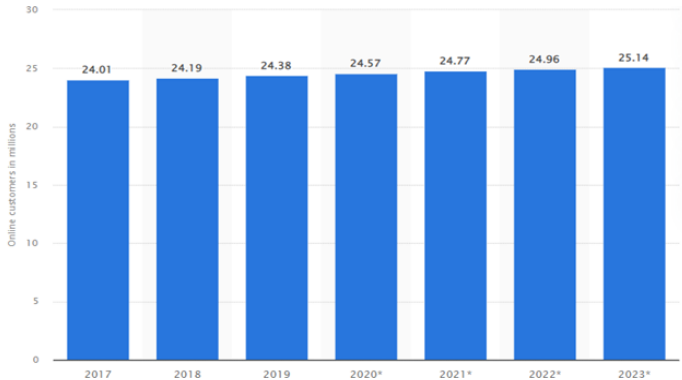
According to a study published by Eurostat on February 2, 2022, the proportion of Internet users who bought or ordered goods or services for private use in 2016 and 2021, is displayed in Fig. 1. According to this table, the rates in 2021 in all countries have increased in comparison to 2016. In addition, it is concluded that the highest rate of online shopping among European countries in 2016 was in Denmark (83.93%), Germany (81.54%) and Luxembourg (80.31%). In 2021, it is concluded that the highest online shopping rate among European countries is in the Netherlands (93.96%), Denmark (91.75%) and Sweden (89.27%). Compared to 2016, internet users in Poland who bought or ordered goods or services for private use rate increased by 14.68 percentage points to 70.41% in 2021 [Eurostat Data Browser, Internet purchases by individuals (until 2019); Eurostat Data Browser, Internet purchases by individuals (2020 onwards), 05.01.2023]. In addition, Eurostat reported that 74% of internet users in Europe shopped online in 2021 [Eurostat Statistics Explained, E-commerce statistics for individuals, 05.01.2023].



**Fig. 1.** Internet users who bought or ordered goods or services for private use

Source: <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20220202-1>.

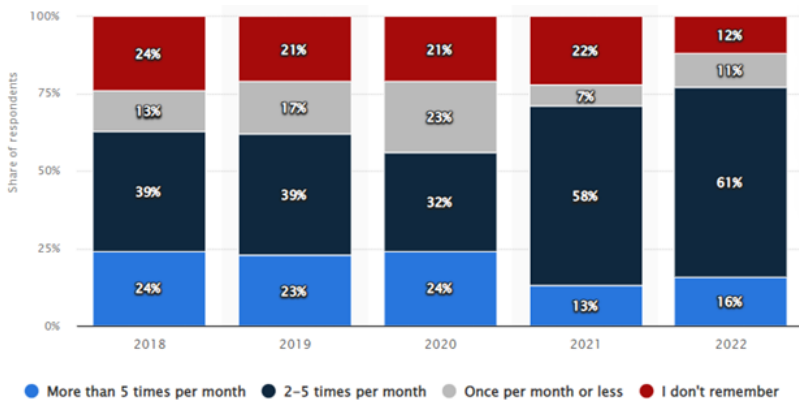
According to Statista data, in the study conducted in 2020, online shopping rates in Poland are shown in Figure 2. According to this data, it is predicted that 25.14 million people will shop online in Poland in 2023.



**Fig. 2.** Number of consumers shopping online in Poland from 2017 to 2023 (in millions)

Source: <https://www.statista.com/statistics/1108959/poland-consumers-shopping-online/>.

The online shopping frequency rates in Poland by year are presented in Figure 3. In the period from 2018 to 2022, those who were shopping online 2-5 times per month represent the majority. In 2022, respondents were shopping online more frequently in comparison with previous years: 61% of online customers in Poland shopped online 2-5 times per month, compared to 39% in 2018 and 2019. In 2022, 16% of online customers in Poland shopped online more than 5 times per month, while the highest rate was in 2020 (24%) and the least in 2021 (13%).



**Fig. 3.** Frequency of shopping online in Poland from 2018 to 2022

Source: <https://www.statista.com/statistics/1098539/poland-frequency-of-shopping-online/>.

### **1.3. Customer satisfaction during online shopping**

Customers prefer e-commerce more than physical stores [Rita, Oliveira, Farisa, 2019, p.1]. It is easier to evaluate the technical features and prices of products online [Santos, 2003, p.235]. The biggest challenge in online shopping is to satisfy customers and maintain their satisfaction [Rita et al., 2019, p.1]. Rita et al., who surveyed 355 Indonesian online customers, focused on 4 dimensions of e-service quality: website design, customer service, security/privacy, and fulfilment. It was concluded that website design, security/privacy, and fulfilment had an important relationship with overall e-service quality, but customer service did not have an important relationship with overall e-service quality. As a result of this study, it was proved that overall e-service quality had an important relationship with customer satisfaction and customer trust. In addition, according to this study, companies should prepare website designs for their customers in their online stores using sufficient and interesting visuals, make clear explanations, provide easy payment, provide an excellent service offering discounts/promotions, not prolong delivery times, and keep customer data secure and private [Rita et al., 2019]. Khan et al. directly tested each dimension of e-service quality with client satisfaction. The study focuses on five dimensions of e-service quality: website design, responsiveness, trust, privacy, and reliability. According to the study, all dimensions except responsiveness have a significant relationship with customer satisfaction. In this study, the reliability dimension was determined to have the strongest relationship with customer satisfaction among the remaining four dimensions (website design, trust, privacy, and reliability). Therefore, this article recommends that online stores prioritize the increase in reliability of their transactions [Khan et al., 2020]. As stated by Karim, the most important problems for online shoppers are the difficulties associated with the delivery process, privacy concerns, and the difficulty in contacting customer service. Moreover, this study indicates that high delivery costs and the inability to deliver the product at the desired time are obstacles to online shopping [Karim, 2013].

### **1.4. Delivery time and reliability in online shopping**

The literature review has shown that delivery service is one of the key factors effecting e-clients satisfaction. The study by Coşar et al. examined the impact of the delivery process on customer satisfaction levels in online shopping by surveying 114 participants. Satisfaction levels of online customers were evaluated concerning five factors: website design, reliability, time saved, product variety and delivery perfor-



mance. Five hypotheses were to be tested in this study. The first hypothesis examined whether the delivery process, which included time, cost, cargo packaging, and brand criteria, affected the satisfaction of online customers. According to this analysis, customer satisfaction was strongly affected by the delivery processes. The second hypothesis about the privacy of the customer private information was also accepted, so it was concluded that the confidentiality factor had significant and positive impact on customer satisfaction. In the last three hypotheses, it was determined that income level, age group and gender had no significant relationship with customer satisfaction [Coşa et al., 2017]. In her study Gulc investigated the evaluation of courier service quality and how customer expectations towards courier service will change today and in the future. The results of this study indicated that delivery time, trust, flexibility, and price got the highest scores among customers' evaluating criteria of the quality of courier services today, while comprehensive service, modern technology, and modern packaging solutions are the least scored ones. In addition, it is foreseen that in the future (5-10 years), the most important criteria according to customers will be delivery time, reliability, and flexibility, as well as tele-technology (Information and Communications Technology, mobile apps, the ability to manage shipment tracking, the ability to generate reports, constant contact with the client, etc.) [Gulc, 2017]. In addition, another Gulc's study was focused on 7 dimensions that determine courier service quality: reliability, visual identification, service complexity, relational capital, social responsibility, responsiveness, technical quality. Among these dimensions, reliability is the most important, and then in the order: responsiveness, technical quality, relational capital, service complexity, visual identification, and social responsibility is the last. The reliability dimension, which is the most important variable, includes 5 variables: timeliness of delivery, successful delivery attempt, compliance and completeness of delivery, lack of damage to the package, efficient and fast handling of order [Gulc, 2020].

### **1.5. Delivery method in online shopping**

With the effect of increasing demands, the delivery process in online shopping may be delayed by many reasons, so in result the online shopper may feel insecure. If the suppliers cannot complete the order on time or the packages are stolen, they will have to pay double the delivery and/or product prices of these products. In addition, if customers' personal information is compromised, trust in suppliers will be negatively affected [An at al., 2022]. In online shopping, this delivery process can be stressful for both suppliers and customers. In this process, the delivery service plays an important role. From the delivery method selected by the customer to the

courier service selected by the customer, every detail affects the quality of the delivery process. Orders placed on the Internet must be delivered to the customer [Visser et al., 2014]. In the opinion of Brad Rollo, CSO and Co-Founder of GoFor Delivers, the last mile refers to the final part of the supply chain in which a product is delivered to a customer's home, workplace, or collection point, such as a locked box, in a business (retail store, warehouse, distribution centre) [<https://deliver-better.com/blog/what-is-last-mile-delivery>, 06.01.2023]. Today, home delivery is the most popular last mile delivery service [Yuan et al., 2018]. According to Visser et al. home delivery is a good option for consumers, but it also causes problems. Customers report the following problems: receiving the order late, the clients absence to receive the order, being charged too much for delivery, and being required to wait at home for the order to be delivered. According to the carriers, these problems also include additional cost required for the repeated delivery process, the goods cannot be delivered [Visser et al., 2014, p.18]. According to Visser and Francke, a number of customers take advantage of point-of-collection services (click and collect) or other designated collection points (partner points) due to problems in home delivery service [Visser and Frankce, 2015]. In Click & Collect service, customers place their order online (click), then receives it from the collection area (collect) [Jara et al., 2018]. When a customer chooses to pick up the order from another collection point, they place their order online and then pick up from a local business (e.g. bakery, grocery) in the area. Nowadays more popular are also parcel lockers as an alternative to the delivery of products purchased from online shopping to the door. According to DHL Company “parcel lockers offer customers the convenience to pick up their packages from a nearby secure locker that is accessible 24/7” [<https.dhl.com>, 12.12.2022]. According to Putzger, the parcel locker service requires 10% less cost and is more than 3 times faster than traditional delivery method [Putzger, 2020]. In addition, customers do not have to give their home addresses, so there is a lower risk of personal information being stolen [An et al., 2022]. According to the statistical data obtained from the Statista website, the favourite delivery method used in Poland was Inpost parcel machine (81% of respondents). According to the Inpost logistics company “parcel lockers form the cutting-edge network of over 19000 devices throughout Poland, constituting the largest business structure of this type in the country” [<https://inpost.pl>, 20.01.2023]. In a report published by DHL

Company, online shoppers' preferences for delivery methods have a significant effect on their shopping behaviours [https://www.dhl.com, 04.01.2023].

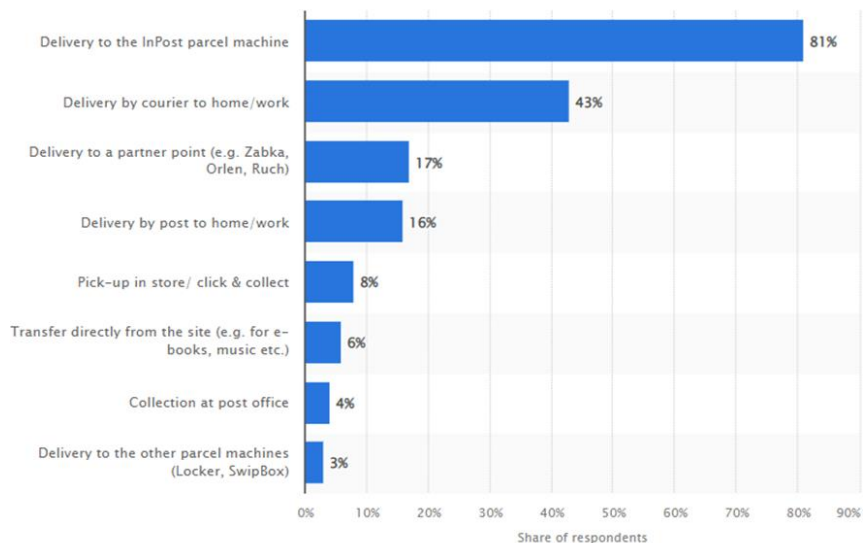


Fig. 4. Favorite delivery methods used for online shopping in Poland in 2022

Source: https://www.statista.com/statistics/958978/poland-e-commerce-delivery-methods/.

According to the report published by Turkish Statistical Institute (TUIK) on August 26, 2022, the share of people in Turkey, who purchased goods or services (e-commerce) for private use on the Internet in the last 12 months, reached 44.3% in 2021 and 46.2% in 2022 [https://data.tuik.gov.tr, 07.01.2023]. Comparing to Poland, the clients in Turkey preferences are totally different. Home delivery is preferred by 96% of e-clients, then delivery to the workplace by 32%, while pick-up at the pick-up point by only 15% of customers [https://www.marketingturkiye.com.tr, 07.01.2023]. Three most popular e-commerce sites in Turkey are Trendyol, Hepsiburada, and N11 [https://www.verikaynagi.com, 07.01.2023]. Trendyol, which was established in 2010 in Turkey and later entered the European market, has its own pick-up points. These pick-up points consist of pick-up branches and parcel locker [https://www.trendyol.com, 07.01.2023]. Increasing demand for click and collect methods, which streamline the delivery process, suggests that the net of parcel lockers may also expand soon [https://oncecouponatime.com/tr, 07.01.2023].

## 2. Research methodology

A survey was used as a research method in this study, which was intended to examine customer satisfaction with online shopping and delivery services. The data was collected from 11 January 2023 to 15 January 2023. The survey consists of 8 part with 33 questions in total, but since participants were directed to different questions based on their answers, the number of questions answered varies dynamically. The sequence of survey questions conducted within the scope of this study are shown in Figure 5 as a flow chart.

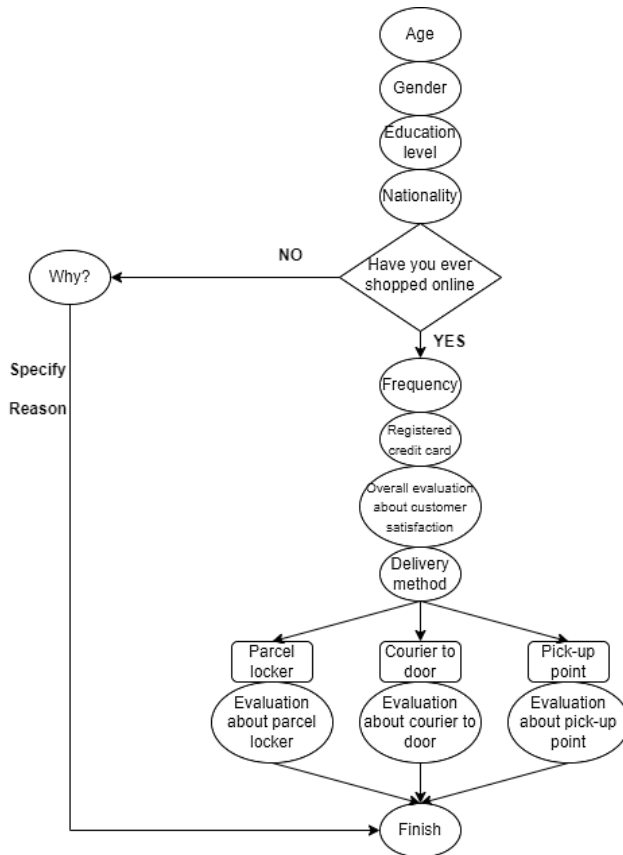


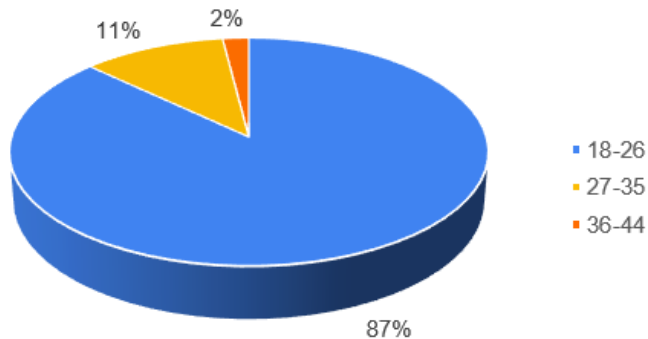
Fig. 5. Flow chart of survey questions

Source: authors' own study.

In first part of the survey, the participants were asked about their demographic data and whether they had shopped online in the past. The questions include the participant's age, gender, education level, and nationality. Participants who marked the option "I have never shopped online before" in the first section were directed to the eighth section in which they were asked for their reasons for not shopping online. The second part of the survey asked the participants about their frequency of online shopping and whether they had registered their credit card information online. An evaluation of online shopping was included in the third part of the survey using a Likert scale of 1 to 5 (where 1 indicates strongly disagree and 5 - strongly agree). As part of the fourth section of the survey, participants were asked which method of delivery they usually preferred. According to the delivery method chosen by the participant, the participant was directed to the fifth section (parcel locker), the sixth section (courier to door) or the seventh section (pick-up point). Participants were asked to respond to Likert scale questions in these sections.

### 3. Research results

The survey in this study was limited to 100 answers. Most of respondents were females (55%) and the rest – males (45%). The majority of participants was at the age of 18-26 (87%) , while the minority between the ages of 27-35 (11%), and only 2% between the ages of 36-44 (Fig. 6). Among participants, there were 77% of those studying on bachelor's degree, 22% studying on a master's degree, and 1% on doctorate studies (Fig. 7).



**Fig. 6.** Age of respondents [%]

Source: authors' own study.

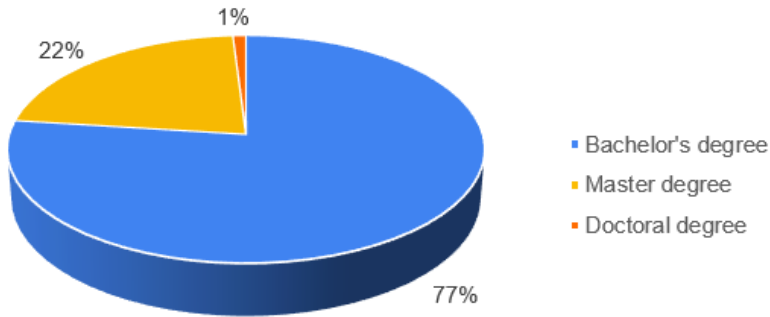


Fig. 7. Education level of respondents [%]

Source: authors' own study.

Students of different nationalities participated in the survey, including 43% of Turkish participants, 20% - Polish, 12% - Spanish, 4% - Italian, Czech, French, Algerian, 3% Lithuanian, 2% - Afghan, and 1% - Azerbaijani, Bulgarian, Dutch, Palestinian participants (Fig. 8).

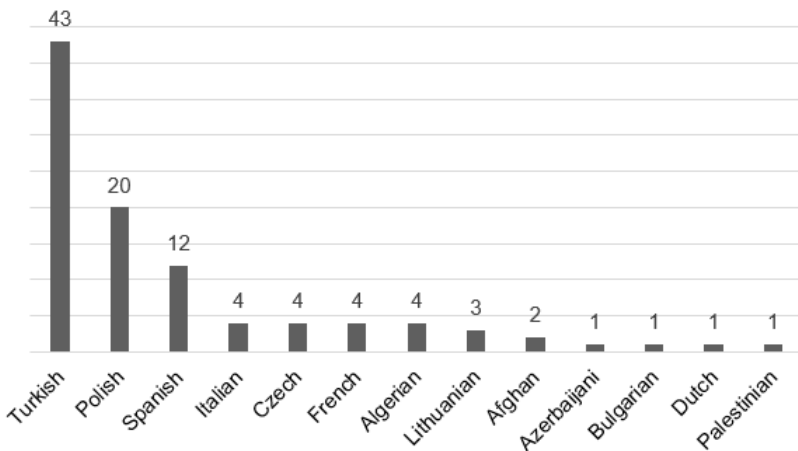


Fig. 8. Nationality of respondents

Source: authors' own study.

Each participant in the survey was purchasing online at least once. Therefore, the eighth part of the questionnaire was not answered at all. Additionally, more than half of the participants - 61% made online purchases once a month or less frequently, 36% - twice or five times a month, and 3% more than five times a month (Fig. 9).

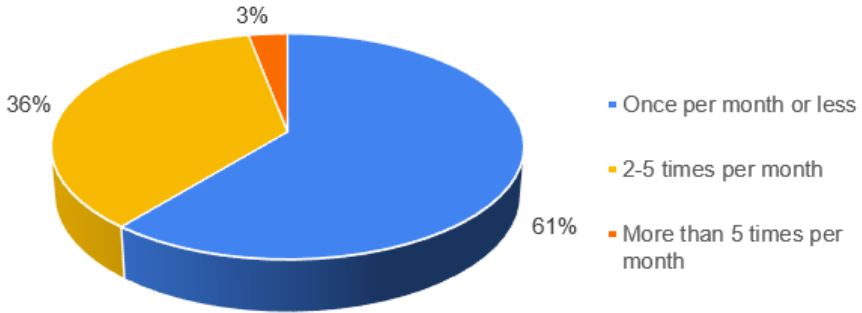


Fig. 9. Frequency of online shopping of respondents [%]

Source: authors' own study.

The participants were asked to make overall evaluation of online shopping, which results are shown in Figure 10.

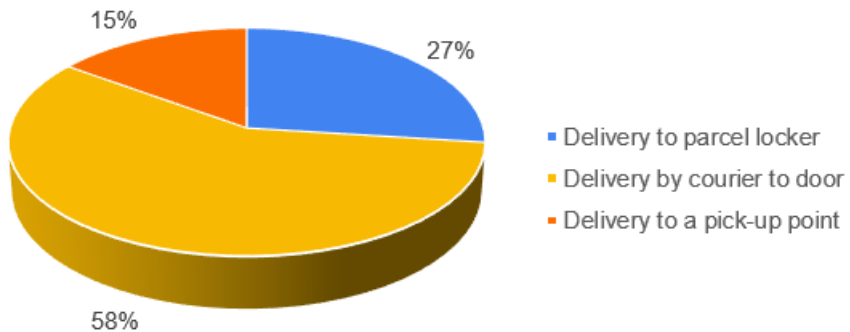


Fig. 10. overall evaluation about online shopping

Source: authors' own study.

These evaluation questions were scored on scale from 1 to 5, and then the arithmetic mean was calculated. The participants indicated that they were satisfied with online shopping with a score of 4.24, they feel safe when shopping online (3.69). They think that online shopping saves time (mean of 4.33) and find the pictures of the products adequate and obvious (3.58). Moreover, they find the descriptions of the products adequate and understandable (3.64). With a score of 3.72 the participants agreed that it is important with which delivery company the online store is partnering. Further, the mean assessment of participants satisfaction with delivery service prices while online shopping was 3.52.

In the fourth part of the survey, respondents answered which delivery method was preferred while shopping online. The majority of participants - 58% selected home delivery, 27% selected parcel lockers, and 15% pick-up points (Fig. 11).



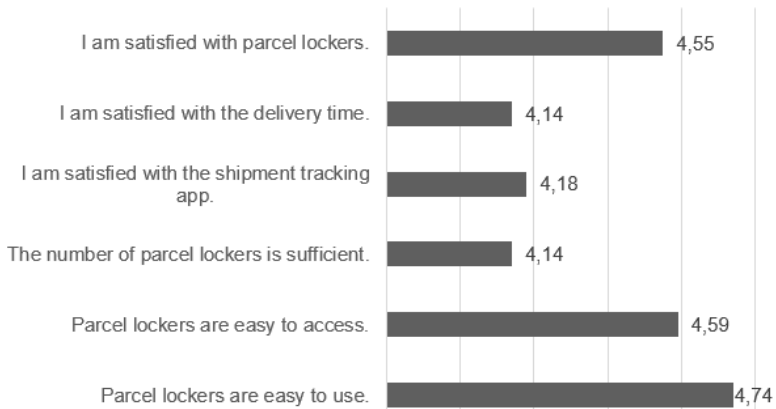
**Fig. 11.** Delivery methods chosen by respondents [%]

Source: authors' own study.

Respondents were asked to rate their preferred delivery method on a scale from 1 to 5. The arithmetic mean of these evaluations are presented in Figures 12-14. According to the results, the survey participants are the most satisfied with parcel lockers (mean 4.55). In second place with the score of 4.46 are pickup points, while in third place are courier services to the door with 4.44 points. Parcel lockers rank first in terms of satisfaction with delivery time, with a maximum score of 4.14 points. Pick-up points are in the second place with 3.86 points, and courier service to door is in the last place with 3.84 points. Additionally, participants were asked to rate their satisfaction with the cargo tracking application. In this case, the participants who selected the parcel locker method rated their satisfaction level with the cargo

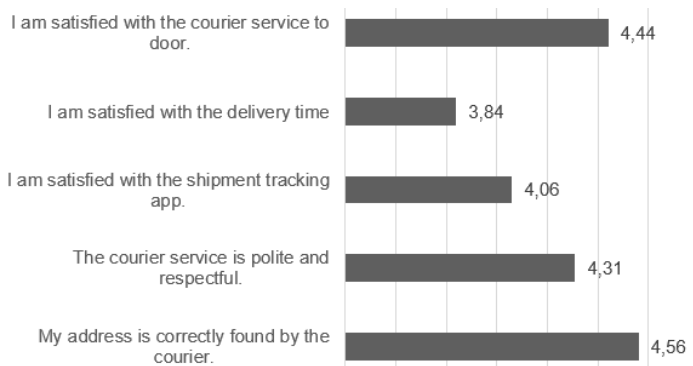


tracking application as 4.18, those who chose the courier to door method as 4.06 and those who selected the pick-up points method as 4.13. Those who chose the parcel locker delivery method rated their satisfaction with the number of lockers as 4.14 and those who chose the pick-up points delivery method assessed their satisfaction level much lower - 3.53.



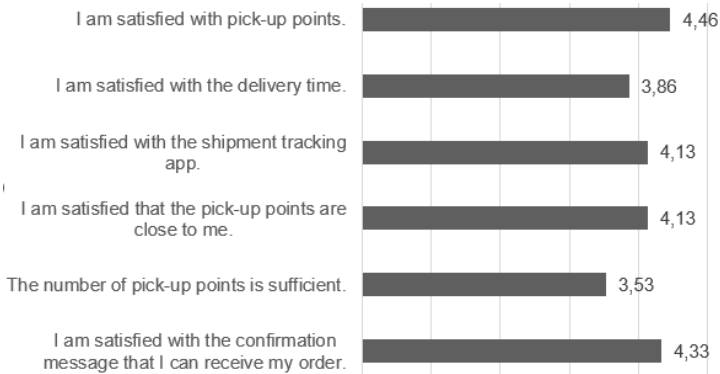
**Fig. 12.** Evaluation About Parcel Lockers (arithmetic Means)

Source: authors' own study.



**Fig. 13.** Evaluation About Courier To Door (arithmetic Means)

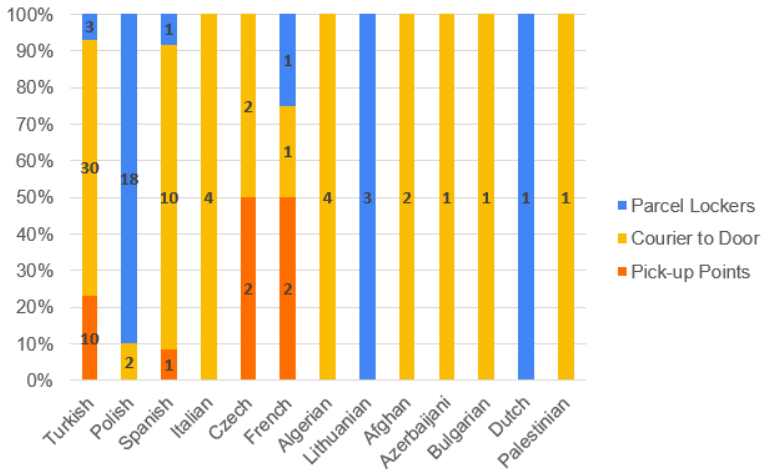
Source: authors' own study.



**Fig. 14.** Evaluation About Pick-Up Points (arithmetic Means)

Source: authors' own study.

Figure 15 presents the preferred delivery method, both as a percentage and as a numerical value, among respondents from different nationalities.



**Fig. 15.** Preferred delivery methods by nationality

Source: authors' own study.

In the survey, 6.98% of the Turkish respondents chose parcel lockers, 23.25% selected pick-up points, and 69.77% selected home delivery. On the contrary, 90%

of the Polish respondents preferred parcel lockers as the delivery method when shopping online, and 10% chose home delivery.

Taking into account respondents' nationality, table 2 presents the level satisfaction with online shopping and preferred method of delivery. Among most numerous groups of respondents, the most satisfied with online shopping were Polish students (mean score 4,65), while the least - Afghan (mean score 3,0). The most satisfied with parcel lockers are Spanish students (mean 5,0), Algerian with courier service (4,75).

**Tab. 2.** Satisfaction with delivery methods and online shopping by nationality

Nationalities	I am satisfied with online shopping.	I am satisfied with parcel lockers.	I am satisfied with the courier service to door.	I am satisfied with pick-up points.
Turkish	4,06	4,66	4,46	4,2
Polish	4,65	4,61	4,5	
Spanish	4,5	5	4,3	5
Italian	4,25		4,5	
Czech	4,25		5	5
French	4,25	4	4	5
Algerian	4		4,75	
Lithuanian	4,33	4,33		
Afghan	3		3,5	

Source: authors' own study.

#### 4. Discussion

As the literature review proved, various dimensions were used to measure service quality. Similarly, many researchers have proposed different attributes and dimensions to measure e-service quality [Rita, 2019]. In online shopping, customer satisfaction is affected by many factors, such as security, website design, delivery time, delivery price and delivery method. To measure the quality of e-service, it is also important to consider the website design in addition to all the other factors. Based on the literature examined in this study, it was concluded that certain dimensions of service quality have a positive and significant impact on customer satisfaction. Among these effects, reliability was found to be the most important and commonly used dimension. Customers satisfaction is also affected by responsiveness and tangibles dimensions in addition to the reliability dimension. In order to ensure customer satisfaction in online shopping, in addition to all these dimensions, website design, delivery time, delivery price, and confidentiality factors are also considered.

The purpose of research presented in this paper, was to evaluate the quality of online shopping as well as customer satisfaction related to delivery service. All participants indicated that they were very satisfied with online shopping overall, while

less feeling safe during shopping online. The majority of the participants registered their cards in the online store. Additionally, the fact that courier companies know the home addresses of customers can lead online customers to doubt the security and confidentiality of their transactions. Most respondents in the survey were Turkish, Polish, and Spanish. Most Turkish and Spanish online shoppers prefer to have their products delivered to their houses. In Poland, parcel lockers are the most common delivery method for online shopping, which is in accordance with common trends [<https://www.statista.com>, 09.12.2022]. Polish consumers feel much safe while online shopping than Turkish and Spanish ones. There are some security issues that can arise such as confidentiality of personal information, clear knowledge of the home address in the preferred method of home delivery when shopping online. Although the preferred delivery method is not directly responsible for making the customer feel safe during online shopping, it does have a significant impact on the customer's perception of safety. The research has also some limitation. To determine whether the differences in the scores obtained from the survey are directly related to analysed factors (preferred distribution method, website design, delivery prices), the number of respondents and the sample size should be equal for all nationalities.

## Conclusions

The purpose of this study was to review and analyse the literature concerning the measurement of service quality, the factors influencing the service quality offered by online shopping and delivery methods. Customer satisfaction in online shopping is known to be affected by determinants such as reliability, website design, and security. In addition, whenever an online order is placed, the process of delivering the product to the customer is involved. This process is primarily influenced by the method of delivery chosen by the customer. The participants of survey were asked about their preferred method of delivery when shopping online. Home delivery was chosen by the majority of the respondents. The online customers are satisfied with home delivery, parcel locker and pick-up points at the same level. According to the customer survey, the parcel locker method was the best way to ensure delivery on time. According to participants who prefer parcel lockers, the number of parcel lockers is sufficient, easy to access and easy to use. With the pick-up point method, participants are satisfied with the closeness of the points, and they find their number sufficient. The participants who preferred home delivery evaluated the courier service as polite and respectful, stating that the courier confirmed that their home address correct. The ease of use of parcel lockers is also a significant benefit for customers. In the context of online shopping, parcel locker delivery method provides its

customers with the ability to receive their packages 24/7, as well as its ease of use. To determine the location of the parcel lockers, it is important to know the busiest areas of the city and to place them where they are most convenient for customers. Thanks to result of this study, online stores can evaluate their own website designs and offer a variety of delivery methods. Logistic companies can also review and evaluate their own services, diversify delivery methods, deliver cargo within the city, and optimize the position and number of parcel lockers and pick-up points. Increasing customer satisfaction can be achieved by close cooperation between e-commerce platforms, shops and logistics companies. Last mile delivery may consist of multiple orders destined for different locations, consequently last-mile costs increase to more than half of total shipping costs [<https://deliverbetter.com/blog/what-is-last-mile-delivery>, 21.01.2023]. Furthermore, home delivery may cause additional traffic congestion in areas with heavy traffic, and it is considered to be a waste of energy and an additional expense to distribute orders to numerous locations. Awareness of such problems can pave the way for the implementation of urban planning studies in the future and could be used in further studies concerning last mile delivery. Finally, if online stores attitudes match the wishes of the customer, the level of satisfaction will increase. It is crucial that both online stores and logistics services ensure customer satisfaction in order to succeed in the marketplace.

## **ORCID iD**

Aleksandra Gulc: <https://orcid.org/0000-0002-6401-4765>

## **Literature**

1. Altman E., Hernon P. (1998), *Service Quality and Customer Satisfaction Do Matter*, *American Libraries* 29 (7), pp. 53-54.
2. Alzaydi Z.M., Hajla A.A., Nguyen B., Jayawardhena C. (2018), *A review of service quality and service delivery Towards a customer co-production and customer-integration approach*, *Business Process Management Journal* 24 (1), pp. 295-328.
3. An H.S., Park A., Song J.M., Chung C. (2022), *Consumers' adoption of parcel locker service: protection and technology perspectives*, *Cogent Business & Management*, 9:1.
4. Bauer H.H., Falk T., Hammerschmidt M. (2006), *eTransQual: A transaction process-based approach for capturing service quality in online shopping*, *Journal of Business Research* 59, pp. 866-875.

5. Chang H.H., Wang H.W. (2007), *The Relationships Among E-Service Quality, Value, Satisfaction and Loyalty in Online Shopping*, E - European Advances in Consumer Research Volume 8, eds. Stefania Borghini, Mary Ann McGrath, and
6. Cele Otnes, Duluth, MN: Association for Consumer Research, pp. 10-14.
7. Coşar C., Panyi K., Varga A. (2017), *Try Not To Be Late! – The Importance Of Delivery Service In Online Shopping*, Organizations And Markets In Emerging Economies 8 (2), pp. 177-192.
8. Cox J., Dale B.G. (2001), *Service quality and e-commerce: an exploratory analysis*, Managing Service Quality 11 (2), pp. 121-131
9. DHL Company Web Site, <https://www.dhl.com/global-en/home/about-us.html> [04.01.2023].
10. DHL Company Web Site, <https://www.dhl.com/global-en/microsites/ecs/parcel-connect/insights/dhl-online-shopper-report-2022.html> [04.01.2023].
11. DHL Company Web Site, <https://lot.dhl.com/glossary/parcel-lockers/> [12.12.2022].
12. Eurostat, Online shopping ever more, <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20220202-1> [13.01.2023].
13. Eurostat Web Site, <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20200420-2> [29.11.2022].
14. Eurostat Web Site, <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20220202-1> [03.01.2023].
15. Eurostat Web Site, [https://ec.europa.eu/eurostat/databrowser/view/ISOC\\_EC\\_IBUY\\_\\_custom\\_1982843/bookmark/bar?lang=en&bookmarkId=d56c5337-abae-422d-8194-4bb54a182201](https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IBUY__custom_1982843/bookmark/bar?lang=en&bookmarkId=d56c5337-abae-422d-8194-4bb54a182201) [05.01.2023].
16. Eurostat Web Site, [https://ec.europa.eu/eurostat/databrowser/view/ISOC\\_EC\\_IB20\\_\\_custom\\_1982796/bookmark/bar?lang=en&bookmarkId=c53a4435-7924-46be-a138-42065d024778](https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IB20__custom_1982796/bookmark/bar?lang=en&bookmarkId=c53a4435-7924-46be-a138-42065d024778) [05.01.2023].
17. Eurostat Web Site, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce\\_statistics\\_for\\_individuals](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals) [05.01.2023].
18. Gofor Delivers Web Site, Rollo B., <https://deliverbetter.com/blog/what-is-last-mile-delivery> [06.01.2023].
19. Gulc A. (2020), *Determinants of Courier Service Quality in e-Commerce from Customers' Perspective*, Quality Innovation Prosperity / Kvalita Inovácia Prosperita 24 (2), pp. 137-152.
20. Gulc A. (2017), *Courier service quality from the clients' perspective*, Engineering Management in Production and Services, Volume 9, Issue 1, pp. 36-45.
21. Inpost Web Site, <https://inpost.pl/en/about-inpost#:~:text=Parcel%20Lockers%20form%20the%20cutting,strengths%20are%20speed%20and%20convenience.> [20.01.2023].

22. Jara M., Vyt D., Mevel O., Morvan T., Morvan N. (2018), *Measuring customers benefits of click and collect*, Journal of Services Marketing 32 (4), pp. 430-442.
23. Karim R.A. (2013), *Customer Satisfaction in Online Shopping: a study into the reasons for motivations and inhibitions*, Journal of Business and Management, Volume 11, Issue 6, pp. 13-20.
24. Khan A., Zubair S.S., Khurram S., Khan M.A. (2020), *Service Quality Dimensions and Customer Satisfaction in online shopping: A customer's perspective*, Journal of Applied Economics and Business Studies, Volume 4, Issue 1, pp. 53-76.
25. Koch J., Frommeyer B., Schewe G. (2020), *Online Shopping Motives during the COVID-19 Pandemic—Lessons from the Crisis*, Sustainability 2020, 12, 10247.
26. Law C.C.H., Zhang Y., Gow J. (2022), *Airline service quality, customer satisfaction, and repurchase Intention: Laotian air passengers' perspective*, Case Studies on Transport Policy 10, pp.741-750.
27. Lee G.G., Lin H.F. (2005), *Customer perceptions of e-service quality in online shopping*, International Journal of Retail & Distribution Management 33 (2), pp. 161-176.
28. Lenczewska M. (2022), *Changes in buying behavior of customers in shipping services during Covid-19 pandemic*, Academy of Management 6 (3), pp. 59-80.
29. Marketing Türkiye Web Site, <https://www.marketingturkiye.com.tr/haberler/turkiyede-online-alisveris-yeni-normal/> [07.01.2023].
30. Özay M.A. (2021), *Covid-19 Etikisiyle Tüketicilerin Online Satın Alma Davranışlarında Yaşanan Değişimlerin İncelenmesi*, Ekonomi, İşletme ve Yönetim Dergisi 5 (1), pp. 1-25.
31. Pakurár M., Haddad H., Nagy J., Popp J., Oláh J. (2019), *The Service Quality Dimensions that Affect Customer Satisfaction in the Jordanian Banking Sector*, Sustainability 11 (1113), pp. 1-24.
32. Parasuraman A.P., Berry L.L., Zeithaml V.A. (1985), *A Conceptual Model of Service Quality and its Implication for Future Research (SERVQUAL)*, Journal of Marketing 49, pp. 41-50.
33. Parasuraman A.P., Berry L.L., Zeithaml V.A. (1988), *SERVQUAL: A multiple- Item Scale for measuring consumer perceptions of service quality*, Journal of Retailing 64 (1), pp. 12-40.
34. Prentkovskis O., Erceg Ž., Stević Ž., Tanackov I., Vasiljević M., Gavranović M. (2018), *A New Methodology for Improving Service Quality Measurement: Delphi-FU-COM-SERVQUAL Model*, Symmetry 10 (757), pp. 1-25.
35. Putgzer I. (2020), <https://theloadstar.com/parcel-locker-and-low-cost-network-operators-eye-last-mile-opportunities/> [10.12.2022].
36. Ramya N., Kowsalya A., Dharanipriya K. (2019), *Service Quality and Its Dimensions*, EPRA International Journal of Research & Development 4 (2).

37. Rita P., Oliveira T., Farisa A. (2019), *The impact of e-service quality and customer satisfaction on customer behavior in online shopping*, Heliyon 5, pp. 1-14.
38. Santos J. (2003), *E-service quality: a model of virtual service quality dimensions*, Managing Service Quality 13 (3), pp. 233-246.
39. Statista Web Site, <https://www.statista.com/statistics/1108959/poland-consumers-shopping-online/> [04.12.2022].
40. Statista Web Site, <https://www.statista.com/statistics/1098539/poland-frequency-of-shopping-online/> [04.12.2022].
41. Statista Web Site, <https://www.statista.com/statistics/958978/poland-e-commerce-delivery-methods/>, [09.12.2022].
42. Szpilko D., Szydło J., Glińska E., Kobylińska U., Rollnik-Sadowska E., Ryciuk U. (2021), *Theoretical and practical aspects of business activity. Business planing*, Oficyna Wydawnicza Politechniki Białostockiej, Białystok.
43. Szydło J., Szpilko D., Glińska E., Kobylińska U., Rollnik-Sadowska E., Ryciuk U. (2022), *Theoretical and practical aspects of business activity. Starting a business*, Oficyna Wydawnicza Politechniki Białostockiej, Białystok.
44. Trendyol Web Site, <https://www.trendyol.com/s/gel-al-noktasi> [07.01.2023].
45. Turkish Statistical Institute (TUIK) Web Site, [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2022-45587](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2022-45587) [07.01.2023].
46. Visser J., Francke J. (2015), *Internet Shopping And Its Impacts On Mobility*, In Proceedings of the 25th World Road Congress (PIARC).
47. Visser J., Nemoto T., Browne M. (2014), *Home Delivery and the Impacts on Urban Freight Transport: A Review*, Procedia- Social and Behavioral Sciences 125, pp. 15-27.
48. Yuan Y., Cattaruzza D., Ogier M., Semet F. (2018), *Last Mile Delivery Problem*, 7th Workshop on Freight Transportation and Logistics.
49. Veri Kaynağı Web Site, <https://www.verikaynagi.com/grafik/internet-uzerinden-en-sik-alisveris-yapilan-e-ticaret-siteleri/> [07.01.2023].



# **Wpływ jakości dostaw na satysfakcję klienta podczas zakupów internetowych**

## **Streszczenie**

Dynamiczny wzrost branży e-commerce na całym świecie przyniósł nowe wyzwania, zwłaszcza w obliczu pandemii Covid-19. Pojęcie jakości usług powinno być rozumiane w odniesieniu do wszystkich podmiotów uczestniczących w procesie realizacji zamówienia, aby w pełni zaspokoić potrzeby e-klientów. Efektem komunikacji między dostawcą a klientem jest ocena usługi przez klienta po jej otrzymaniu. Celem niniejszego artykułu jest ocena satysfakcji klientów z usług zakupów online i dostaw przesyłek. W pierwszej części artykułu dokonano przeglądu literatury w celu wyjaśnienia pojęcia jakości usług. Do oceny i zebrania danych na temat opinii klientów o zakupach online i sposobach dostawy zastosowano metodę sondażu diagnostycznego. Pytania zostały przygotowane na podstawie przeglądu literatury, a uczestnicy zostali poproszeni o udzielenie odpowiedzi przy użyciu skali Likerta. Część pytań w ankiecie dotyczyła przede wszystkim sposobu dostawy oraz stopnia zadowolenia, ale również bezpieczeństwa w sieci, czasu dostawy, funkcjonalności witryn e-sklepów i prezentacji produktu. Wyniki badań przeprowadzonych przez autorki potwierdzają, że sposób dostawy jest głównym czynnikiem determinującym poziom satysfakcji klientów.

## **Słowa kluczowe**

Jakość usług, zakupy online, usługa dostawy, zadowolenie klienta, metody dostawy