**Int. j. adv. multidisc. res. stud.** 2023; 3(1):391-396

**Received:** 28-11-2022
**Accepted:** 08-01-2023

International Journal of Advanced Multidisciplinary Research and Studies

**ISSN: 2583-049X**

# Expectations For Final Delivery Services after Buying Electronic Products on E-Commerce Platforms in HCMC

**[1] Cao Van Quyen, [2] Ho Thien Thong Minh, [3] Truong Thi Hai Thuan**
[1, 2, 3] The Saigon International University, Vietnam

Corresponding Author: **Ho Thien Thong Minh**

**Abstract**
On e-commerce platforms, last-mile delivery (LMD) is one of the most important factors in the customer's shopping experience. However, last-mile delivery in Vietnam has not kept pace with the development of e-commerce with many challenges. One of the most popular items on the e-commerce channel is electronic products. However, because of the strict requirements on product return and exchange in the context of last-mile delivery service in Vietnam is still not optimal. Therefore, it is necessary to study customer expectations for last mile delivery service when purchasing electronic products on e-commerce platforms as it helps to better meet customer expectations.The results of the empirical study show that there is a relationship between the factors constituting the delivery service quality and the customer's expectation of delivery service for electronic products, in the following order: Reliability, Safety and the connection between buyer and seller, Shipping Price, Delivery Time, and Shipper.

**Keywords:** Customers' Expectation, E-commerce, Electronic Category, Last Mile Delivery

## 1. Context

Last-mile delivery is almost the final factor determining the customer's shopping experience in the e-commerce environment. However, the growth rate of last mile delivery in Vietnam has not kept pace with the rapid development of e-commerce when facing many challenges in terms of human resources, infrastructure and technology. Currently, the ratio of logistics costs to GDP of Vietnam accounts for 20.9%,much higher than other countries in the region, such as China, Malaysia, the Philippines, Thailand and Singapore, and above the global average of 14%. Specifically, transportation costs in Vietnam currently account for about 30-40% of product costs; Meanwhile, most e-commerce transactions in Vietnam are now done in the form of paying after delivering, and the rate of unsuccessful orders is also quite high 8-10%. This not only causes a lot of difficulties for online sellers, but also incurs a lot of extra costs for logistics businesses to complete orders. Furthermore, nearly 25% of online shoppers are willing to pay quite a bit more for same-day or instant delivery (Joerss *et al*., 2016) [6]. Therefore, investing in forwarding services from the very beginning will be one of the wise strategies of an e-commerce business. According to VECOM, electronic products are one of the most purchased items on e-commerce platforms with many strict requirements on product warranty and return. If the delivery service is still difficult, it will be difficult to meet the return of products, this is also one of the reasons why customers are afraid to buy electronic products on e-commerce platforms. Therefore, it is necessary to study customer expectations for last-mile delivery service when purchasing electronic products on e-commerce platforms in order to better meet customer expectations, promote development of e-commerce due to the leverage of last mile delivery service.

## 2. Theoretical Foundations and Research Models

### 2.1 Theoretical foundations

***Last-mile delivery***

Last mile delivery is the final stage of B2C (Business to Customer) delivery in a predefined distribution area,including a series of activities and processes of value important to all parties involved in the distribution, including logistics services from the point of origin to the point of final transshipment and the point of destination of the goods (Gevaers *et al*., 2009) [4]. Some popular last-mile delivery methods include: last-mile delivery by traditional means (trucks, motorbikes), lockers, crowdsourced delivery (Dinh Thu Phuong, 2018) [3].

***Customer expectations***

Expectancy theory holds that people's behavior and motivations are not necessarily determined by reality, but rather by people's perceptions of future expectations and revolve around three concepts, including: expectation, instrumentality and value. This theory can understand that customer satisfaction is the result of a comparison of the effectiveness of the service between what they expect before using the service and after using it (Vroom *et al*. 2005) [10].

***Models of service quality assessment***

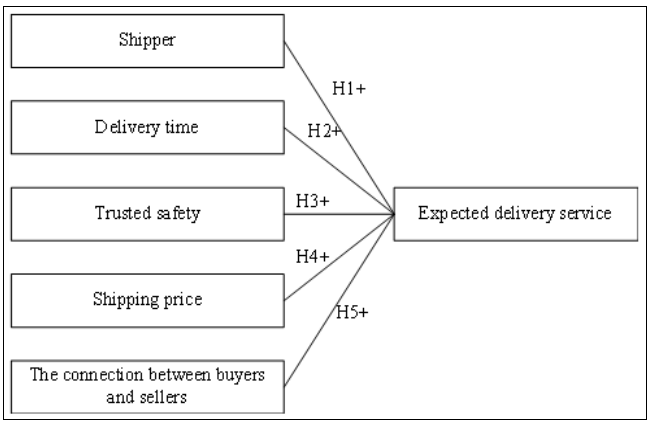
The SERVQUAL model of Parasuraman *et al*. (1985) [9] includes 5 gaps and 10 service quality components, in which service quality is the gap between customers' expectations and perceptions when used through the service. (The service quality composite model of Brogowicz *et al*. (1990) [1] suggests that the service quality gap can exist even if the customer has never used the service but heard others talk about the service, or heard through advertising or other media, the model considers three factors including: company image, external influences and traditional marketing activities. In the technical/functional quality assessment model of Grönroos (1984) [5], service quality is measured by three criteria: technical quality, functional quality and image quality.

***Related studies***

Lin *et al*. (2011) [7] studied the factors affecting online consumer satisfaction in Taiwan including: information quality, system quality, service quality, product quality., delivery quality and price perception; in which, delivery quality plays the most important role. Dang (2020) [2] conducted a survey on customer satisfaction for last mile delivery services in the e-commerce environment including aspects: delivery time, damaged products in shipping process, the ability to track the delivery journey, the behavior and attitude of the shipper, the warranty policy and the return of defective products. This is one of the important bases to build the model for this study.

**2.2 Proposed research model**

Based on theory, this study proposes 5 hypotheses with 19 observed variables representing the factors of delivery service quality, and 3 observed variables representing the customer's expectation of delivery service. The proposed research model is shown in Fig 1:




**Source:** Proposed by authors

**Fig 1:** Proposed research model

***Shipper:*** The customer's interest in the shipper about the service and the level of customer satisfaction from the shipper. This variable is one of the tangible factors that customers can directly see when interacting with the service based on the SERVQUAL scale.

Hypothesis H1: *Shipper has a positive effect on delivery service expectations.*

***Delivery time:*** The customer's level of interest in on-time service response and easy access to services, specifically, the efficiency in delivery time in aspects such as quick delivery time, convenient location and time of receiving goods, …This variable belongs to two criteria: Reliability and Accessibility of SERVQUAL scale.

Hypothesis H2: *Delivery time has a positive effect on service expectations.*

***Reliability and safety:*** The customer's interest in ensuring the safety and reliability of information and assets (orders) during the use of the service. This variable is based on the work of Lin *et al* (2011) [7], Dang (2020) [2], and belongs to the Safety criterion of the SERVQUAL scale.

Hypothesis H3: *Reliable security has a positive effect on delivery service expectations.*

***Shipping price:*** Effects of shipping price on online electronic product purchase decisions and customer behavior towards shipping fee support programs on e-commerce platforms. This variable is based on the work of Dang (2020) [2] when measuring customer satisfaction with last mile delivery service.

Hypothesis H4: *Shipping price has a positive effect on delivery service expectations.*

***The connection between buyers and sellers:*** The level of interest of customers in connecting between themselves and the seller throughout the buying journey (supported with timely information, effective communication, clear support policies...). This variable is the result of expert interviews to complete the research model.

Hypothesis H5: *The connection between buyers and sellers has a positive effect on delivery service expectations.*

**3. Research Methods**

Using a mixed method (Dinh Ba Hung Anh, 2017) [8] to conduct research through two phases including: preliminary research (1) and formal research (2). (1) Preliminary study using qualitative methods to adjust the research model accordingly along with the construction and completion of the questionnaire. Qualitative research through in-depth interviews with experts to discover new factors and assess the suitability of the research model,

Group interviews with customers who have had the experience of buying electronic products on e-commerce platforms to check the understandability of the questionnaire. Preliminary research results show that there are 19 observed variables representing 5 independent

variables and 3 observed variables representing 1 dependent variable. (2) Formal research using quantitative research methods to measure and test hypotheses about the impact of service quality factors on expected delivery service. Using 3 non-probability sampling techniques including judgment, snowball sampling and norm to send the online survey to survey respondents via email and social media. The total number of samples collected was 412, and 182 samples were excluded (mainly not subject to the survey such as not having the required age, never having shopping experience on the e-commerce platform, studying and working outside Ho Chi Minh City), the remaining 230 satisfactory samples were analyzed by SPSS 20 software.

## 4. Research Results

### 4.1 Description of survey characteristics

Detailed description of the survey sample on demographic characteristics and experience of shopping for electronic products on the e-commerce platform is presented in Table 1.

**Table 1**. Descriptive statistics

| Characteristic | Quantity | Ratio (%) | Characteristic | Quantity | Ratio (%) |
|---|---|---|---|---|---|
| **Research sample** | **230** | **100** | | | |
| **Gender** | | | **Have/haven't bought electronic products on e-commerce platforms** | | |
| Male | 94 | 37.60 | Have bought | 181 | 78.70 |
| Female | 156 | 62.40 | Haven't bought | 49 | 21.30 |
| **Age** | | | **Highest payout for purchased electronic products** | | |
| 18 - 23 years old | 83 | 36.10 | Less than 500 thousand | 47 | 26.00 |
| 23 - 30 years old | 67 | 29.10 | From 500 thousand to 1 million | 44 | 24.30 |
| 30 - 39 years old | 56 | 24.30 | From 1 to 3 million | 29 | 16.00 |
| Over 39 years old | 24 | 10.40 | Over 3 million | 61 | 33.70 |
| **Job** | | | **Type of electronic product purchased on e-commerce platforms** | | |
| Student | 83 | 36.10 | Phone, tablet. | 49 | 15.00 |
| Worker | 147 | 63.90 | Electronic refrigeration. | 34 | 10.40 |
| **Critical level** | | | Accessories and digital devices | 111 | 33.90 |
| 2 | 3 | 1.30 | Laptops, IT equipment. | 33 | 10.10 |
| 3 | 28 | 12.20 | Camera, filming. | 11 | 3.40 |
| 4 | 100 | 43.50 | Electric Appliances. | 73 | 22.30 |
| 5 | 99 | 43.00 | Others | 16 | 4.90 |

**Source:** Compiled by authors, 2022

The final study sample was collected including 230 customers; in which, 37.6% are male and 62.4% female. Customers participating in the age group: from 18 to under 23 years old (36.1%), from 23 to under 30 years old (29.1%), from 30 to under 39 years old (24.3%) and from 39 years old and above (10.4%). Regarding careers, students (36.1%), the rest are working people (63.9%). Customers who have ever bought electronic products are 78.7% and 21.3% have never bought electronic products. Payment levels for purchased electronic products: less than 500,000 VND (26%), from 500,000 VND to 1 million VND (24.3%), 1 to 3 million VND (16%) and over 3 million VND (33.7%). The survey sample also showed that the type of electronic products purchased on e-commerce platforms accounted for the highest percentage of accessories and digital devices (33.9%), followed by household electrical appliances (22. 3%), the lowest are cameras and video cameras (3.4%).

### 4.2 Scale test results

The results of Cronbach's Alpha reliability test for the groups of factors are as follows:

**Table 2:** Cronbach's Alpha reliability analysis results

| Ingredient scale | Symbol | The number of observed variables | Iterm – Total Corelation | Cronbach's Alpha |
|---|---|---|---|---|
| Shipper | NV | 3 | ≥ 0.507 | 0.722 |
| Reliability and Safety | AT | 4 | ≥ 0.576 | 0.853 |
| The connection between buyers and sellers | KN | 3 | ≥ 0.522 | 0.799 |
| Delivery time | TG | 4 | ≥ 0.394 | 0.730 |
| Shipping price | GC | 5 | ≥ 0.402 | 0.800 |
| Expected delivery service | PT | 3 | ≥ 0.664 | 0.816 |

**Source:** Compiled by authors

Cronbach's Alpha coefficient for the delivery staff scale; Reliable and Safety; The connection between buyers and sellers; Delivery time; Shipping Price and Expected Delivery Service are 0.722; 0.853; 0.799; 0.730; 0.80 and 0.816. Thus, all 6 values are greater than 0.6 and the sum of all variables is greater than 0.3. Therefore, these scales meet the requirements to continue performing exploratory factor analysis (EFA). The results of the Cronbach's Alpha reliability test with no observed variables excluded, 19 observed variables of 5 independent variables and 3 observed variables of 1 dependent variable were continued to be included in the EFA exploratory factor analysis. The EFA exploratory factor analysis was performed 4 times by the Equamax rotation method with a factor loading factor of 0.5, and a total of 2 unsatisfactory observed variables gave specific results as shown in Table 2.

KMO coefficient = 0.86 at sig significance level. = 0.000 in Bartlett's test, inferring that the variables are correlated with each other in the population, the EFA method of exploratory factor integration is suitable for the research data set.

- 17 variables were included in factor analysis according to Eigenvalue criteria greater than 1, 4 factors were

extracted and all 17 variables were observed to have factor loading > 0.5.

- Cumulative value = 65.60% indicates that the first 4 factors explain 65.60% of the data variation.
- Rename 4 factors extracted, including: Reliability and Safety, and Connection between buyers and sellers (AK), Shipping Price (GC), Delivery Time (TG), Shipper (NV).

The results of factor analysis for the dependent variable shown in Table 3 show that the observed variables are grouped into 1 factor and have loading coefficients all greater than 0.5.

**Table 3:** The results of factor analysis for the independent variable

| Encode | Observed variables | Factors | | | |
|---|---|---|---|---|---|
| | | AK | GC | TG | NV |
| KN1 | The ability to return electronic products to the seller through the shipper if there is a problem right after checking the delivered goods. | 0.857 | | | |
| AT4 | The level of safety assurance for electronic products delivered from long distances. | 0.826 | | | |
| AT1 | Ensuring the safety of electronic products during transportation. | 0.823 | | | |
| KN3 | There is a timely notice from the e-commerce platform, the shop if there is a problem with the transportation process (delivery time is not as expected, lost goods...). | 0.818 | | | |
| AT2 | The possibility of loss of goods, wrong delivery of goods to others, especially high-value electronic products when paid by prepaid forms. | 0.760 | | | |
| KN2 | Answering questions from the shipper when the goods are delivered without me needing to contact the seller. | 0.587 | | | |
| AT3 | Order tracking system during shipping. | 0.556 | | | |
| GC3 | How the difference between order value and shipping affects my decision to buy electronic products online. | | 0.811 | | |
| GC5 | Freeship programs, partial shipping subsidies encourage my decision to buy electronic products. | | 0.793 | | |
| GC2 | Shipping costs affect my ordering decision. | | 0.748 | | |
| GC4 | I often hunt for coupons, promotional tickets about shipping fees. | | 0.747 | | |
| TG3 | I am willing to buy electronic products with higher prices but faster delivery than other shops. | | | 0.876 | |
| TG2 | I am willing to pay higher shipping charges for fast delivery services. | | | 0.763 | |
| TG4 | I want electronic products to be delivered as quickly as possible to satisfy my desire to experience the technology element. | | | 0.693 | |
| NV2 | Answering questions from the shipper when the goods are delivered. | | | | 0.859 |
| NV1 | Answering questions from the shipper when the goods are delivered without me needing to contact the seller. | | | | 0.692 |
| NV3 | The attitude of the shipper towards the consignee. | | | | 0.640 |
| Eigen value | | 6.430 | 1,907 | 1,572 | 1,242 |
| Total variance extracted | | 65,602% | | | |

**Source:** Compiled by authors, 2022

**Table 4:** The results of factor analysis for the dependent variable

| Encode | Observed variables | Delivery service expectations |
|---|---|---|
| PT1 | I will continue to buy electronic products on e-commerce platforms if the delivery service meets my expectations. | 0.727 |
| PT2 | I will recommend to friends and relatives about buying electronic products on e-commerce platforms if I have a good delivery service experience. | 0.739 |
| PT3 | I will be satisfied with my electronic product purchase if the delivery service meets my expectations. | 0.727 |

**Source:** Compiled by authors

### 4.3 The results of testing the research model and hypotheses

**Table 5:** Descriptive analysis and correlation between factors after EFA

| Factor | Medium | Standard deviation | PT | KNAT | GC | TG |
|---|---|---|---|---|---|---|
| **PT** | 3.94 | 0.67 | 1 | | | |
| **KNAT** | 4.16 | 0.66 | 0.573** | 1 | | |
| **GC** | 3.71 | 0.74 | 0.450** | 0.415** | 1 | |
| **TG** | 3.55 | 0.76 | 0.429** | 0.361** | 0.290** | 1 |
| **NV** | 3.67 | 0.69 | 0.346** | 0.541** | 0.334** | 0.319** |

**Source:** compiled by authors

**Note**: * denotes p < 5%, ** denotes p < 1%

This result shows that the dependent variables KNAT, GC, TG and NV are closely correlated with the dependent variable PT at p value <1%. This is an important basis for conducting regression analysis. Next, the study carried out multivariate regression analysis and the results are given in the following table:

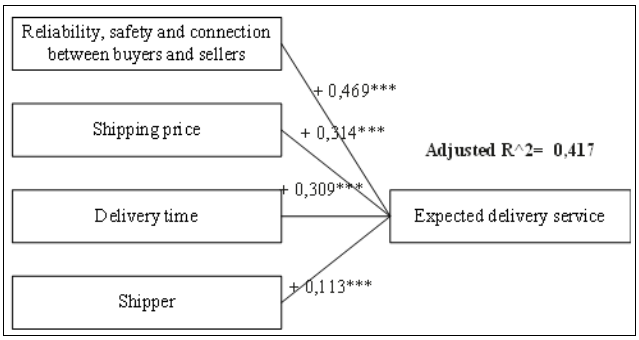
**Table 6:** Results of multivariable regression analysis

| Dependent variable | Normalization coefficient | | Expectation | t statistics | VIF |
|---|---|---|---|---|---|
| **Delivery Service Expectations** | **β** | **Error** | | | |
| **Independent variables** | | | | | |
| Reliable security and connection between buyers and sellers | 0.469*** | 0.050 | Positive | 9.304 | 1.000 |
| Shipping price | 0.314*** | 0.050 | Positive | 6.225 | 1.000 |
| Delivery time | 0.309*** | 0.050 | Positive | 6.135 | 1.000 |
| Shipper | 0.113** | 0.050 | Positive | 2.233 | 1.000 |
| **Constant** | 1,630E-16 | 0.050 | | 0.000 | |
| Test Indicators | | | | | |
| $R^2$ | | 0.427 | | | |
| Adjusted $R^2$ | | 0.417 | | | |
| F-Statistics (sig) | | 41,982 (0.000) | | | |
| Durbin-Watson | | 1.960 | | | |

**Source:** Compiled by authors
**Note**: ** denotes sig < 5%, *** denotes sig < 1%

The results show that adjusted $R^2$ = 0.417, that is, the regression model is relatively consistent with the sample data set at 41.7%,that is, the independent variables included in the regression effect 41.7% of the change of the dependent variable. The analysis results also show that there are 4 independent variables that are statistically significant in the model (due to sig. < 0.05). In the above variables, there is no multicollinearity because all the VIF values of the variables are less than 10. The results show that,the factor that has the strongest influence on the expectation of delivery service is the reliability, safety and connection between the buyer and the seller (β = 0.469), followed by the shipping price (β = 0.314), delivery time (β = 0.309) and finally the shipper (β = 0.113).

### 4.4 Discussing research results




**Source:** Proposed by authors

**Fig 2:** Results of multivariable regression analysis

The results of testing hypotheses H1, H2, H3, H4 are accepted, all significant Sig < 0.05. This result shows that there is a relationship between the factors constituting the delivery service quality and the customer's expectations about the delivery service. The reliability and safety and the connection between buyers and sellers are the strongest factors and have a positive impact on the customer's expectation of delivery service in Ho Chi Minh City with the coefficient of 0.469. Next, Shipping price is the second strongest factor that has the same positive effect on delivery service expectations with a coefficient of 0.314. Delivery time is the 3rd strongest factor that has a positive influence on delivery service expectations with a coefficient of 0.309. The last factor that has a positive effect on delivery service expectations is Shipper with a coefficient of 0.113. These results are similar to the results of previous studies by Lin *et al* (2011) [7] and Dang (2020) [2].The biggest difference of the study is that the two independent factors, reliability and safety and the connection between buyers and sellers, converge on the same factor, named reliability and safety and the connection between buyers and sellers is also the most influential factor on delivery service expectations.

## 5. Conclusions and Recommendations

### 5.1 Conclusion

This study has contributed to strengthening the theoretical basis of service quality and customer expectations for e-commerce activities, especially last-mile delivery services. With the obtained research results, the authors have accomplished the set objectives, used quantitative research methods including statistics and regression to be able to identify 4 factors constituting the quality of delivery services with delivery service expectations for customers' electronic products, in order: Reliability, Safety and connection between buyers and sellers, shipping prices, delivery times, and shipper.

### 5.2 Recommendations

From the obtained results, this study proposes some managerial implications as follows:

The safety and reliability and the connection between buyers and sellers are the most influential factors and have a positive impact on customers' expectations of delivery services in Ho Chi Minh City. What customers care most about delivery services is ensuring the safety of electronic products during transportation. Due to the characteristics of this industry, buyers often have strict requirements for warranty, product return; Therefore, reverse logistics is considered as a decisive strategy to solve the existing problems that any order will encounter, such as refunds and returns. E-commerce businesses and shipping units need to develop delivery services in the direction of caring about customer emotions, such as timely updating of arising problems on orders, focusing on the shipper's role in responding to product information quickly and directly to buyers. In addition, businesses also need to pay attention to two main target groups: students and working people. Workers will be more interested in reliability, safety and the connection between buyers and sellers than students.

Shipping cost is the second strongest factor that has a positive effect on delivery service expectations. There should be coordination between the trading floor and the delivery unit to have preferential policies, reduce shipping prices for customers, such as freeship policy or a partial subsidy on shipping fees. In addition, businesses need to

consider the difference between the order value and the shipping fee in order to propose an appropriate shipping fee and promote the order decision.

Delivery time is the third strongest factor that has a positive effect on delivery service expectations. As can be seen, customers all want fast delivery service. Currently, e-commerce businesses and shipping units all have fiercely competitive strategies for fast delivery services but no delivery service for urgent products. Therefore, e-commerce platforms should have a policy for sellers to decide on the method of shipping goods for urgent customers, such as taking advantage of technology motorbike taxi resources (Grab, GoJek…) for delivery. Shipper is the last factor that has a positive effect on delivery service expectations. This shows that customers are also very interested in the shipper about the service attitude and the level of customer satisfaction. Therefore, e-commerce businesses and shipping units need to focus on recruiting and training shippers with necessary skills such as: Delivery staff is the last factor that has a positive effect on delivery service expectations. This shows that customers are also very interested in the delivery staff about the service attitude and the level of customer satisfaction. Therefore, e-commerce businesses and shipping companies need to focus on recruiting and training delivery staff with necessary skills such as: skills to arrange a reasonable delivery route, find a way, communicate and be friendly with customers, preserve goods and handle problems arising during delivery.

**Limitations and development directions**

This study was conducted during the Covid-19 pandemic, so the survey process as well as the expert interviews were not conducted directly, so the information collected is still limited. Due to limited resources and costs, the survey subjects were limited to the Ho Chi Minh City area, the sample is not representative for the whole country and the sample is simply randomly selected, so the results may be subjectively affected by different factors from the survey target group. To make research results more in-depth and accurate, we need to expand the survey subjects in many different areas with different educational and cultural levels to identify any differences or similarities in factors affecting customer expectations when purchasing electronic products on e-commerce platforms. Moreover, the study only stopped at surveying how delivery service quality factors affect customer expectations, but did not mention the actual purchase intention. Therefore, in further studies, the relationship between delivery service expectations and online electronic product purchase behavior should be considered.

## 6. References


1. Brogowicz AA, Delene LM, Lyth DM. A Synthesised Service Quality Model with Managerial Implications. International Journal of Service Industry Management. 1990; 1(1):27-45. Doi: https://doi.org/10.1108/09564239010001640
2. Dang T. E-commerce and order fulfillment operations towards customer satisfaction in the Vietnamese market, 2020. https://urn.fi/URN:NBN:fi:amk-2020101421333
3. Dinh Thu Phuong. Solution for last mile delivery in Logistics. Proceedings of the 1st International Conference Trade and Distribution. Baria-Vungtau University, 2018. http://lib.bvu.edu.vn/bitstream/TVDHBRVT/19296/1/Giai-phap-cho-hoat-dong-giao-hang.pdf
4. Gevaers R, Van de Voorde E, Vanelslander T. Characteristics of innovations in last-mile logistics-using best practices, case studies and making the link with green and sustainable logistics. Association for European Transport and Contributors, 2009, 1-21. https://trid.trb.org/view/1107297
5. Grönroos C. A service quality model and its marketing implications. European Journal of Marketing. 1984; 18(4):36-44. Doi: https://doi.org/10.1108/EUM0000000004784
6. Joerss M, Schröder J, Neuhaus F, Klink C, Mann F. Parcel delivery: The future of last mile. McKinsey & Company, 2016, 1-32. https://bdkep.de/files/bdkep-dateien/pdf/2016_the_future_of_last_mile.pdf
7. Lin CC, Wu HY, Chang YF. The critical factors impact on online customer satisfaction. Procedia Computer Science. 2011; 3:276-281.
8. Dinh Ba Hung Anh. Scientific research methods in business and social. Ho Ci Minh Economics Publishing House, 2017.
9. Parasuraman A, Zeithaml VA, Berry LL. A conceptual model of service quality and its implications for future research. Journal of Marketing. 1985; 49(4):41-50.
10. Vroom V, Porter L, Lawler E. Expectancy theories. Organizational Behavior. 2005; 1:94-113.