# LOGISTIC SERVICE QUALITY (LSQ) ON SHOPEEXPRESS

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## ABSTRACT

*The COVID-19 pandemic, which began in mid-2020, has driven a significant shift towards online buying and selling through E-commerce platforms. Notably, Shopee has experienced a surge in website visits as a result. To cater to this demand, Shopee relies on Last Mile Delivery, facilitated by their service called Shopee Xpress. In order to maintain a competitive edge in the crowded shipping services market, a thorough analysis and evaluation of customer perceptions regarding Shopee Xpress' expedition services have been conducted. The research employs two key methodologies: Logistics Service Quality (LSQ) and Important Performance Analysis (IPA). Data was collected through a questionnaire structured around five variables and fifteen LSQ indicators. Among these variables, the Image variable emerged as the one that best aligned with customer expectations and actual performance. The IPA approach further yielded a prioritized mapping of areas that require evaluation and enhancement. This mapping is based on indicators' relative importance. From this prioritization, a series of proposed enhancements have been formulated for Shopee Xpress. In conclusion, the COVID-19 pandemic catalyzed a surge in online transactions, prompting E-commerce platforms like Shopee to adapt. Shopee Xpress, the platform's Last Mile Delivery service, became pivotal in meeting this demand. The research's amalgamation of LSQ and IPA methodologies provided valuable insights into customer perceptions. The resulting identification of the Image variable as the most significant alignment between expectations and performance underscores its importance. The IPA-driven prioritization of indicators also paved the way for targeted improvements, shaping a roadmap for Shopee Xpress' ongoing enhancement.*

**Keywords**: *Customer Satisfaction, E-commerce, Importance Performance Analysis (IPA), Last Mile Delivery, Logistic Service Quality (LSQ).*

## 1.    Introduction

Currently, the Indonesian lifestyle is influenced by the development of the digital era, which is marked by the increasing number of internet users from year to year. This digitalization affects the consumptive nature, especially during the COVID-19 pandemic. The Covid-19 pandemic since mid-2020 has affected community activities, including the reduction in direct transactions because the Indonesian government has implemented PPKM (Enforcement of Community Activity Restrictions). In dealing with this phenomenon, some people do online shopping as a solution for their needs and desires through E-Commerce applications. E-commerce is a process of buying and selling products electronically by consumers and from

company to company with computers as intermediaries for business transactions (Mahadevan, 2000).

One of the popular E-commerce applications in Indonesia that have increased the number of visits during the COVID-19 pandemic is Shopee. According to data from Katadata, Shopee recorded an average of 132.8 million monthly visitors in the first quarter of 2022. Transactions on Shopee from April to June increased by 130%, so the average transaction per day reached 2.8 million. Figure 1 shows the trending data for the first quarter of 2022.
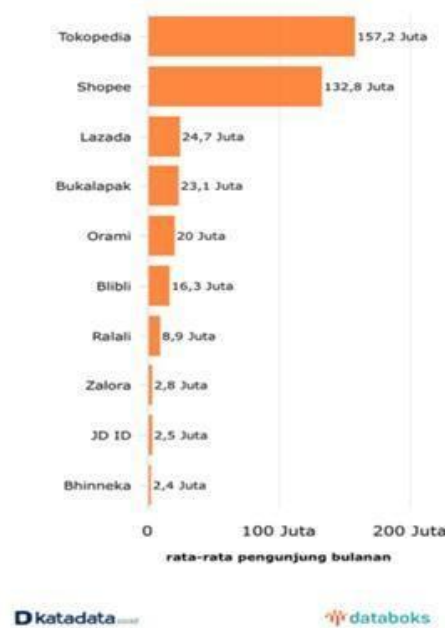


Figure 1. 10 E-Commerce with the Most Visitors in the First Quarter of 2022.

The development of internet users who use E-commerce applications is followed by the growth of shipping service companies in Indonesia, including JNE, J&T Express, SiCepat, AnterAja, and others. According to a survey by MarkPlus Inc, most Indonesians who use expedition services to send goods purchased from E-commerce are 85.2% (kontan. co id, 2020). From 2020 Shopee has provided its expedition service based on Last Mile Delivery, namely Shopee Xpress. Last-mile delivery is a service from businesses to end consumers (Lim et al., 2018). Each Shopee Express delivery service has advantages in terms of time estimation, shipping costs, and area coverage to satisfy consumer needs.

Along with the development of expedition service competition, the formulation of the problem that the author wants to examine is to measure good indicators and find indicators that require evaluation to improve the quality of last mile logistics services at Shopee Xpress based on customer perceptions using the IPA (Importance and Performance Analysis) method.

A literature study shows that LSQ (Logistic Service Quality) is a comprehensive, organized activity to meet customer needs and get customer satisfaction (Kang & Kim, 2009). Maintaining the quality of LSQ (Logistic Service Quality) in companies and e-commerce will increase customer satisfaction and consumer loyalty. Delivery time and logistics information are the main things for consumers, followed by other LSQ factors (Saura *et al*., 2008; Ab Malek *et al*., 2021; Hafez *et al.,* 2021). There are five variables for the simplified LSQ (Logistic Service Quality) (Thai, 2013): Order Fulfillment Quality, Image, Information

Quality, Customer Focus Quality (Firdaus *et al.,* 2023), and timeliness. Thai also claimed that the validated dimensions can be used to validate the quality of logistics services provided by logistics service providers (2013). At the same time, Firdhausa *et al.* (2021) showed that timeliness, information quality, order accuracy & condition variables, and personnel contact quality have a significant effect on customer satisfaction.

There are five variables for the simplified LSQ (Logistic Service Quality) (Thai, 2013): Order Fulfillment Quality, Image, Information Quality, Customer Focus Quality, and timeliness. Thai even claims that the validated dimensions can be used to validate the quality of logistics services provided by logistics service providers (2013). This research was also conducted by Firdhausa et al. (2021) research results show that timeliness, information quality, order accuracy & condition variables, and personnel contact quality have a significant effect on customer satisfaction.

Furthermore, IPA (Importance Performance Analysis) method introduced by Martilla and James (1977) is used to measure the relationship between consumer perceptions and priorities for improving product/service quality, which is also known as quadrant analysis (Latu & Everett, 2000). IPA has the primary function of displaying information related to service factors that, according to consumers, significantly affect their satisfaction and loyalty and service factors that, according to consumers, need to be improved because current conditions are not satisfactory.

The Importance Performance Matrix is divided into four quadrants, namely Quadrant A (Concentrate Here), which is an area that contains items with a relatively high level of importance. However, in reality, it is not by user expectations. Quadrant B (Keep Up the Good Work) performs reasonably well. However, customers still expect better performance. Quadrant C (Low Priority), which has a relatively low level of importance and the fact that the performance is not too exceptional, and Quadrant D (Possible Overkill), which is a relatively low level of importance, is felt by users to be too excessive.
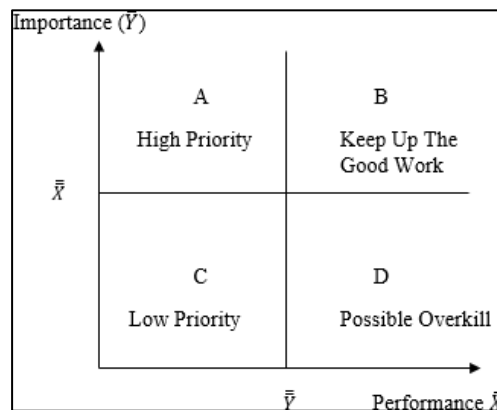


Figure 2. IPA Cartesian Diagram.

## 2.    Methodology

The research employed a survey methodology to collect primary data. This primary data was acquired through a questionnaire survey targeting ShopeeXpress customers who have conducted transactions on Shopee. The survey was specifically designed for Indonesian individuals aged 17 and above, who have received purchase packages via Shopee Express courier services on at least two occasions. The determination of the sample size followed the guidance of Hair *et al.* (2012, as cited in Faridha *et al*. 2022), which suggests that the sample

size should be determined by multiplying the number of indicators by a factor ranging from 5 to 10. The number of samples in this study is calculated as follows:

$$\text{Sample Size} = \text{number of indicators} \times 5 = 15 \times 5 = 75.$$

Based on the above calculation, a minimum sample of 75 people is obtained. The determination of the measurement scale in this study is adjusted to the results of previous studies. The measurement scale that will be used is the Likert Scale and divided into two parts: the interest questionnaire will use a score of 1 for very unimportant and 5 for very important. Meanwhile, the performance questionnaire measures the level of agreement on performance satisfaction that consumers feel today, scoring 1 for very dissatisfied and 5 for very satisfied. Before collecting data, the author conducted a literature study from previous research that discussed similar research and then obtained indicators by the 5 Logistic Service Quality (LSQ) variables that would be used as a reference in this study.

Order Fulfillment Quality variable refers to the suitability of the package received by the consumer in good condition. The indicators are: (Q1) The quality of the package received is in good condition; (Q2) The package quantity is correct according to the receipt; and (Q3) The package is sent to the correct address.

- The image variable is a person's impression of an object, item, or organization, which will then be stored in the consumer's memory (Kotler & Keller, 2014). The indicators are: (Q4) The company guarantees consumer confidentiality and information; (Q5) Companies are easily recognized by their attributes; and (Q6) The experience of consumers after using the service is considered good.
- Information Quality variable is the ability of courier service providers to enter the relevant product information, which is very important to attract customers' interest. The indicators are (Q7) Availability of information on the choice of the type of delivery service; (Q8) Availability of facilities to track shipments; and (Q9) Application of information technology in customer service.
- Customer Focus Quality Variable ensures that the services provided are by consumer needs and of good quality. The indicators are: (Q10) The types of services provided are tailored to the needs of consumers; (Q11) Employees have a friendly and competent attitude; (Q12) Customer service has good skills and knowledge.

The timeliness variable refers to whether orders placed are delivered on time as promised (Saura, I.G., Frances, D.S., Contri. G.B. and Blasco, M.F, 2008). The indicators are (Q13) Delivery arrived at the promised time, (Q14) Timeliness with tracking facilities, and (Q15) Speed of handling complaints from consumers.

## 3.    Results and Discussion

### 3.1 Validity test of Importance & Performance Logistic Service Quality

A questionnaire is claimed to be valid if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire (Ghozali, 2018). Based on the Product Moment Table with a sample (N) of 125 people and a significance level of 5%, the rTable obtained is 0.176Ab, Malek et al. (2021). Then the researcher processed the data using SPSS STATISTICS V25 software, it was found that all the question indicators had the results

rCount > rTable, then the validity test results for Importance & Performance were declared valid. The data from the validity test will be shown in Table 1.

Table 1(a). Validity Test.

| Indicators | Importance | | | | Performance | |
|---|---|---|---|---|---|---|
| | **RValue** | **rTabel** | **Status** | **rValue** | **rTable** | **Status** |
| Q1 | 0,588 | 0,174 | Valid | 0,522 | 0,174 | Valid |
| Q2 | 0,489 | 0,174 | Valid | 0,446 | 0,174 | Valid |
| Q3 | 0,676 | 0,174 | Valid | 0,566 | 0,174 | Valid |
| Q4 | 0,521 | 0,174 | Valid | 0,593 | 0,174 | Valid |
| Q5 | 0,574 | 0,174 | Valid | 0,611 | 0,174 | Valid |
| Q6 | 0,712 | 0,174 | Valid | 0,792 | 0,174 | Valid |
| Q7 | 0,723 | 0,174 | Valid | 0,757 | 0,174 | Valid |
| Q8 | 0,736 | 0,174 | Valid | 0,765 | 0,174 | Valid |
| Q9 | 0,705 | 0,174 | Valid | 0,722 | 0,174 | Valid |
| Q10 | 0,664 | 0,174 | Valid | 0,758 | 0,174 | Valid |
| Q11 | 0,706 | 0,174 | Valid | 0,667 | 0,174 | Valid |
| Q12 | 0,726 | 0,174 | Valid | 0,792 | 0,174 | Valid |
| Q13 | 0,700 | 0,174 | Valid | 0,791 | 0,174 | Valid |
| Q14 | 0,622 | 0,174 | Valid | 0,752 | 0,174 | Valid |
| Q15 | 0,728 | 0,174 | Valid | 0,773 | 0,174 | Valid |

After conducting validity tests, reliability tests also need to be done to measure the level of consistency of respondents' answers to questions based on respondents' understanding of the questionnaire. To measure the reliability results in this study using Cronbach's Alpha coefficient. A variable is claimed to be reliable if it has Cronbach's Alpha of more than 0.60 (> 0.60). The reliability tests that were done using SPSS software on the Importance questionnaire have an alpha value of 0.904, and the Performance questionnaire has an alpha value of 0.919. This shows that all questions on the perception questionnaire are considered reliable or consistent. The data from the reliability test will be shown in Table 2.

Table 2. Reliability Test.

| Variable | Cronbach's Alpha | Standard | Status |
|---|---|---|---|
| Importance | 0,904 | 0,60 | Reliable |
| Performance | 0,919 | 0,60 | Reliable |

## 3.2 Descriptive Analysis

Table 3 summarizes the demographic of the respondents. The results show that from 125 respondents in this study were dominated by women, as much as 54%, and men, 46%. This shows that women are more inclined to shop online than men. Furthermore, the age of respondents who have the most transactions through e-Commerce is the age of 17-21 years, as much as 71%, followed by respondents aged 22-25 years, as much as 20% where which shows that most of the people who use ShopeeXpress are teenagers to their early 20s. Supported by as many as 84% who have transactions through e-Commerce are students. The frequency of using ShopeeXpress by respondents is more than 2 times with a percentage of 100%. Table 1 shows that most of the respondents are in Jakarta, Bogor, Depok, Tangerang, and Bekasi, as much as 91%. This is also due to the factor of distributing questionnaires conducted by researchers who are living in Jakarta.

Table 3. Descriptive Analysis of User Demographics.

| Aspect | Respondent Profile | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 58 | 46% |
| | Female | 67 | 54% |
| | Total | 125 | 100% |
| Age | 17-21 | 89 | 71% |
| | 22-25 | 25 | 20% |
| | 25-29 | 2 | 2% |
| | Over 29 | 9 | 7% |
| | Total | 125 | 100% |
| Jobs | Student | 105 | 84% |
| | Employee | 14 | 11% |
| | Self-Employee | 3 | 2% |
| | Lecturer/Teacher | 1 | 1% |
| | Others | 2 | 2% |
| | Total | 125 | 100% |
| Shopee Xpress Usage Frequency | Never | 0 | 0% |
| | 1 Time | 0 | 0% |
| | More than 2 Times | 125 | 100% |
| | Total | 125 | 100% |
| Origin | Jabodetabek | 114 | 91% |
| | Non-Jabodetabek | 11 | 9% |
| | Total | 125 | 100% |

### 3.3 Discrepancy between Importance and Performance

From Table 4(a) and Table 4(b), it can be seen that the attribute that has a discrepancy is negative. This shows that several ShopeeXpress performance indicators still do not meet the expectations of their customers. Furthermore, the calculation of the level of suitability of interests and satisfaction in the form of a percentage will be carried out. This level of suitability will later be used to determine the order of the variables that have the most influence on ShopeeXpress customer satisfaction. The formula that will be used is: $Tki = (Xi : Yi) \times 100\%$ where Tki = respondent's level of suitability and Xi = score of satisfaction assessment of company performance Yi = assessment score of customer interest or importance.

Table 4(a). GAP and level of attribute suitability.

| Variable | Code | Importance | Performance | GAP | Suitability |
|---|---|---|---|---|---|
| Order Fulfilment Quality | Q1 | 4.736 | 4.576 | -0.16 | 96.62% |
| | Q2 | 4.752 | 4.592 | -0.16 | 96.63% |
| | Q3 | 4.8 | 4.656 | -0.144 | 97.00% |
| Image | Q4 | 4.632 | 4.52 | -0.112 | 97.58% |
| | Q5 | 4.472 | 4.488 | 0.016 | 100% |
| | Q6 | 4.424 | 4.4 | -0.024 | 99.46% |
| | Q7 | 4.472 | 4.472 | 0 | 100% |

Table 4(b). GAP and level of attribute suitability.

| Variable | Code | Importance | Performance | GAP | Suitability |
|---|---|---|---|---|---|
| Timeliness | Q13 | 4.584 | 4.368 | -0.216 | 95.29% |
| | Q14 | 4.52 | 4.424 | -0.096 | 97.88% |
| | Q15 | 4.52 | 4.336 | -0.184 | 95.93% |
| Information Quality | Q8 | 4.656 | 4.56 | -0.096 | 97.94% |
| | Q9 | 4.544 | 4.424 | -0.12 | 97.36% |
| Customer Focus Quality | Q10 | 4.6 | 4.512 | -0.088 | 98.09% |
| | Q11 | 4.536 | 4.416 | -0.12 | 97.35% |
| | Q12 | 4.504 | 4.464 | -0.04 | 99.11% |

The criteria for testing are as follows:
1. If Tki < 100% then the service cannot be said yet satisfying.
2. If Tki = 100% then the service can be said satisfying.
3. If TKI > 100% then the service can be said to be very good satisfying.

From Table 4, it can be seen that there are two indicators that have a 100% suitability level, or the service can be said to be very satisfying, namely Q5 and Q7. This is followed by Q6, Q12, Q4, Q8, Q10, Q14, Q1, Q2, Q3, Q9, Q11, Q15 and Q13.

## 3.4 Priority Mapping

Priority mapping analysis in processing data using SPSS V25 software in order to obtain a Cartesian Importance Performance Analysis diagram for all ShopeeXpress customer respondents to Logistic Service Quality. The Cartesian diagram of the research results can be seen in Figure 3. It shows that there is one indicator that is in quadrant A or (Concentrate Here), namely Q13; there are 6 indicators that are in quadrant B (Keep Up the Good Work); Quadrant B, namely Q1, Q2, Q3, Q4, Q8, and Q10; then there are 7 indicators that are in quadrant C (Low Priority) namely Q6, Q7, Q9, Q11, Q12, Q14, Q15; and 1 indicator that is in quadrant D (Possible Overkill) that is Q5.

From the results of priority mapping using the Cartesian IPA diagram, it can be seen if there is only one attribute that is in quadrant A or the quadrant that is the main focus when evaluating and improving, namely the attribute with code Q13. And there are six attributes that are in quadrant B that already have a reasonably good performance, but customers still expect better performance than that, namely attributes with codes Q1, Q2, Q3, Q4, Q8, and Q10. Based on the priority mapping, the authors designed several Logistic Service Quality development programs for last-mile delivery services at ShopeeXpress as follows:
a. Tighten the SOP for storing and separating packages according to the type of goods (Q1).
b. Periodically re-check at every package delivery checkpoint (Q2).
c. Provide a navigation application that makes it easier for couriers to find the recipient's address (Q3).
d. Tighten security protocols to restrict unknown parties from accessing consumer information (Q4).
e. Utilizing information technology to create an application or web to track goods with receipts (Q8).
f. Provide more service options with a broader range of prices and delivery range (Q10).
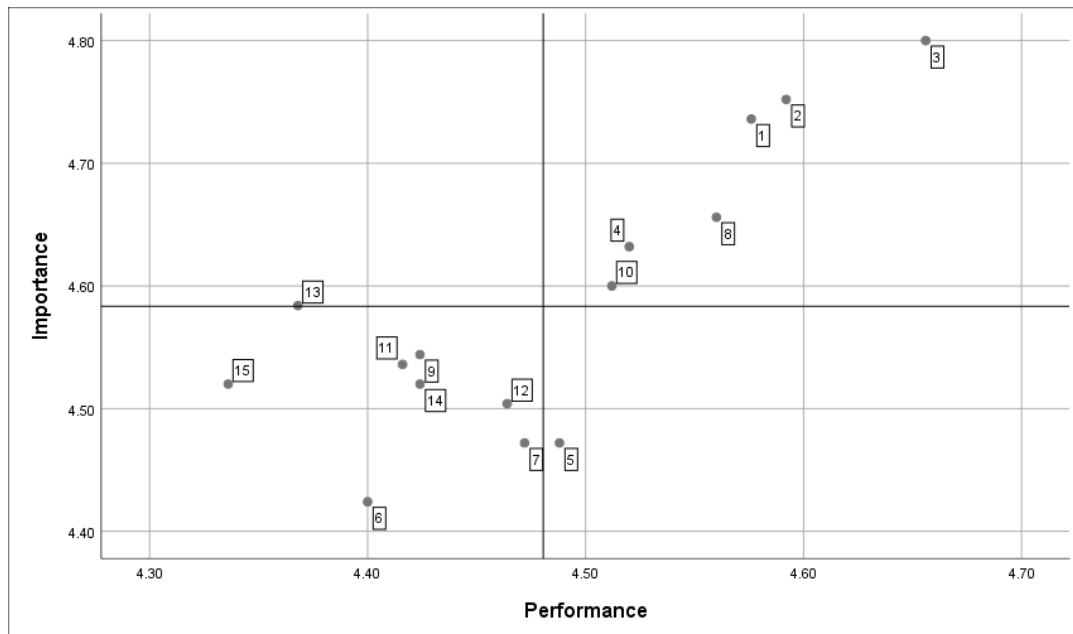g. Reviewing the estimated delivery time and adjusting for the cost and distance traveled (Q13).

Figure 3. Cartesian Diagram.

## 4.    Conclusion

Based on the results of the analysis processing that has been done, here are some things that have been found, including. The analysis of last-mile logistics service quality measurement on ShopeeXpress obtained from Logistic Service Quality obtained as many as five variables with 15 indicators that are suitable for use and supported by using SPSS V25, which states that it is valid and reliable. The indicators that have a 100% suitability level or the service can be said to be very satisfying are Q5 (Companies are easily recognized by their attributes) and Q7 (Availability of information on the choice of the type of delivery service). From the data processing results using the Importance Performance Analysis (IPA) method, it can be seen that seven indicators must be prioritized for improvement, and eight other indicators already have performance that matches and even exceeds customer expectations. From the priority mapping, seven proposed improvements were made to ShopeeXpress to improve performance in last-mile logistics activities. This research has several obstacles, namely the diversity of respondents and the distribution of questionnaires that do not cover all regions in Indonesia. The suggestion for further research is to use other variables in LSQ (Logistic Service Quality). Suggestions for the company are that the company is expected to be able to carry out the inputs contained in the proposed improvement design section as soon as possible by the required priority level. Another suggestion for companies is to listen to consumers' voices more often by distributing online questionnaires through social media to get feedback so that they can continue to improve and maintain their position during the competition for expedition services.

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**Author Contribution**

Author 1 and Author 2 prepared the literature review, the research methodology and performed fieldwork as part of their final year project. Author 3 and Author 4 are the supervisors who actually oversaw the whole research.

**Conflict of Interest**

The authors have no conflicts of interest to declare.

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