

# Uncertain Supply Chain Management

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## Service quality, punctual cargo delivery, and customer loyalty: The mediating role of customer decisions

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### ABSTRACT

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The main problem of this research was that Shopee Express, one of the companies operating in a delivery service provided by an e-commerce platform, faced a significant challenge in keeping its existence and showed a decreased performance. This research empirically examined the influence of service quality and punctual delivery on customer loyalty through customer decision as the intervening variable in the logistic company Shopee Express case study. The sample of this research was the customers of Shopee Express, with as many as 203 respondents using the path analysis method. From the discussion, it was known that there was a significant influence of service quality and punctual delivery simultaneously on customer loyalty through customer decision, and there was a significant influence of customer decisions on customer loyalty. The implication of this research was the importance of Shopee Express Indonesia continuously improving its service quality and punctual delivery to enhance customer decisions and customer loyalty. The key finding of this research could give valuable insight to the company management in developing its strategy to improve customer satisfaction and loyalty.

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## 1. Introduction

E-commerce is increasingly used along with the rapid development of information and communication technology, bringing about an increased consumption of goods and an influence on the use of or the need for delivery services. Cargo delivery service in Indonesia has become a public need, especially with e-commerce, which can reduce the traffic jams in Jakarta. To maintain delivery service, it needs a good service quality. Service quality is the main factor influencing consumer loyalty because the consumer whose personal value is satisfied and experiencing a positive mood on services will be highly loyal to the company. Consumers frequently become unloyal due to lousy service or decreased service quality compared with customer expectations. Besides service quality, punctual delivery is also a factor that influences consumer loyalty. Punctual delivery is urgent for cargo delivery service companies, and all incoming packages must be delivered as scheduled. This, of course, will relate to customer loyalty, which will have either a good or bad impact on the companies' existence. Punctuality is vital in increasing customer satisfaction and customer loyalty to the cargo delivery business (Ieman et al., 2023). Klein and Sharma (2022) suggest that website administrators maintain the involvement of consumers and consider consumers' decision-making style when handling potential visitors and turning them into purchasers. Supiyandi et al. (2022) found that the administrator of the shop application should pay more attention to the factors influencing brand equity because they have a positive and significant influence on the decision for online purchasing. Other variables, such as brand image and price, also partially

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influence purchase decisions, especially in Shopee (Norvadewi et al., 2023). There are pretty many previous researches related to the four variables being studied, i.e., customer loyalty, service quality, punctuality, and customer decision (Alzoubi & Inairat, 2020; Dewi et al., 2021; Jasin et al., 2023; Marina et al., 2023; Nguyen & Vo, 2024; Ricardianto et al., 2023a; Salhab et al., 2023).

Shopee Express Indonesia is a company operating in a delivery service provided by the e-commerce platform of Shopee. This delivery service provides package delivery service integrated with Shopee's system, so that Shopee's sellers can easily use it to send their products to buyers. In addition, Shopee Express Indonesia also provides various delivery services at different prices according to the sender's needs. The provided services are regular, fast, and same-day delivery. The loyalty of Shopee Express Indonesia customers can be seen from several factors, namely service quality and punctual delivery. Customers decide to use Shopee Express Indonesia when the service quality meets customer expectations, and the delivery is punctual. Related to Shopee's business, consumer trust has a positive relation with the purchase intention of Shopee, and it has the potency to develop its prospect and strategy to succeed in the global e-commerce market (Madan et al., 2022). In 2023, Shopee Express Indonesia faced a significant challenge in maintaining its company existence. The company's internal data shows a decrease in the performance of Shopee Express Indonesia, which can directly impact customer loyalty.

Service quality and punctual delivery are key factors that may contribute to decreased sales. Decreased service quality and uncertainty of cargo delivery time can cause customer dissatisfaction, which can lower customer loyalty and obstruct purchase decisions in the future.

## 2. Literature Review

### 2.1. Customer Loyalty

Theoretically, the willingness of a consumer to keep using the same product is one form of loyalty (Kotler & Keller, 2016). Pereira et al. (2016) emphasize how, indirectly, customer contribution can make the resource of customer loyalty stronger. Li et al. (2017) explain that a loyal customer will positively impact a customer's rights. Customer loyalty can be implemented starting from the intention to repurchase, recommend to others and not to move to others (Andri et al., 2022; Ricardianto et al., 2023b). Liu (2007) stated that loyalty is also a variable in the decision to direct purchases made by the decision-making unit over time.

### 2.2. Service Quality

Theoretically, service quality relies on the user's gap to improve the quality by using the dimensions of guarantee, empathy, reliability, response, and tangible (Zeithaml & Bitner, 2011). Service quality in logistic services is a series of interactions among service providers (Thai, 2014). Several factors determine the quality of service delivery services, such as crucial factors, results, autonomy, and external factors (Gulch, 2021). Quality customer service is through a competitive buying and selling, after-sales service process, and sustainable marketing contact with customers (Marcysiak, 2021).

### 2.3. Punctual Delivery

Principally, time is one of the main dimensions in the delivery window and an essential component in the transaction phase (Razani & Bin Azmi, 2022). Theoretically, punctual delivery is the delivery schedule that has been agreed that must be obeyed until arriving at the delivery destination (Hasan & Salah, 2018). Punctuality is essential and entirely up to date to complete work on time (Kahn et al., 2002), especially in the logistical activities of transportation mode (Michnik & Lo, 2009). Punctuality is the implementation of agreement in a specific time among different parties (Huang et al., 2019). Punctuality is a primary factor that measures the production synchronization and its lateness (Guo et al., 2022).

### 2.4. Customer Decision

Theoretically, customer satisfaction is a customer's decision to buy or not buy a product (Kotler & Keller, 2016). Customer decision is the desire that has been determined and the decision to buy the product or service. Customers are willing to buy for maximum satisfying results and will give profit to the future of an organization, which is very useful for business companies (Kim & Ko, 2010). David and Albert (2002) state that a purchase decision is a procedure for decision-making, and physical activities are involved. Customers need to find information on the service before evaluating and considering buying the product or service (Sidi, 2010).

The aim of this research is to understand and analyze the direct and indirect influences of service quality and punctual cargo delivery on customer loyalty through customer decision-making at Shopee Express Indonesia. In this research, the correlation of each variable can be described in the form of a model and hypothesis.

**H<sub>1</sub>:** *Service quality directly influences customer loyalty.*

**H<sub>2</sub>:** Punctual cargo delivery directly influences customer loyalty.

**H<sub>3</sub>:** Service quality and punctual cargo delivery indirectly influence customer loyalty.

**H<sub>4</sub>:** Service quality and customer decisions indirectly influence customer decisions.

**H<sub>5</sub>:** Punctual cargo delivery directly influences consumer decisions.

**H<sub>6</sub>:** Service quality and punctual cargo delivery directly, through customer decisions indirectly influence customer loyalty.

**H<sub>7</sub>:** Punctual cargo delivery indirectly influences customer loyalty through customer decisions.

Based on the aim of this research, the seven hypotheses will be proven and tested empirically as follows:

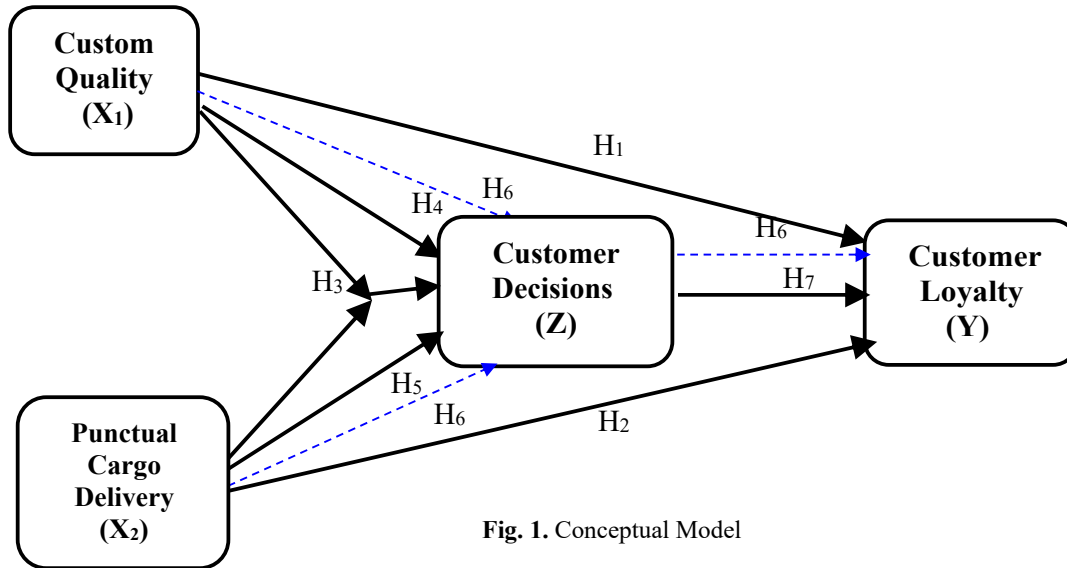


Fig. 1. Conceptual Model

### 3. Research Method

The target population of this research is the customers of Shopee Express Indonesia. In contrast, the reached population as the sample frame is the number of Shopee Express Indonesia customers, as many as 412 customers within three months. Based on the statistical result using the Slovin formula, it can be known that the number of samples for this research is 203 respondents. Service quality is the dependent variable in this research and has five operational dimensions: tangible, reliability, responsiveness, assurance, and empathy. As the second dependent variable, punctual cargo delivery has three operational dimensions, namely the transportation used, estimated time of cargo arriving at the consignee and the distance travelled. Customer loyalty as a dependent variable has four operational dimensions: making regular repeat purchases, inter-line product or service purchases, giving reference to others, and showing closeness to competitors' attraction. Meanwhile, as an intervening variable, customer decision has three operational dimensions: product choices, brand choices, and the determination of purchase time. The research method used is path analysis through validity, reliability, and hypothesis testing.

### 4. Results and Discussion

#### 4.1. Result of Hypothesis Testing

The hypothesis tests used to determine whether independent variables have a significant influence on dependent variables, in this case, are service quality and punctual delivery on customer loyalty. Based on the calculation in the first hypothesis, the value of  $t_{\text{statistics}}$  is 20.383, and the value of  $t_{\text{table}}$  is 1.701, meaning that  $t_{\text{statistics}} > t_{\text{table}}$  that is  $20.383 > 1.653$ . Therefore, the service quality variable has a positive influence on customer loyalty. In the second hypothesis testing, the value of  $t_{\text{statistics}}$  is 20.922, and the value of  $t_{\text{table}}$  is 1.653, meaning that  $t_{\text{statistics}} > t_{\text{table}}$  that is  $20.922 > 1.653$ . Because  $t_{\text{statistics}}$  are more significant than the  $t_{\text{table}}$ , the punctual cargo delivery variable positively influences customer loyalty. Simultaneous significance testing or F test is used to know the simultaneous influences of independent variables on the dependent variable, in this case, the influence of service quality and punctual cargo delivery on customer loyalty through customer decision as the intervening variable. Based on the data analysis, the value of  $F_{\text{statistics}}$  is 282.848, and the value of  $F_{\text{table}}$  is 3.04. Therefore, the variables of service quality and punctual cargo delivery significantly and simultaneously influence the variable of customer loyalty.

#### 4.2. Path Analysis Model – Structure 1

The value of  $R_{\text{Square}}$  is 0.739, showing that the influence of service quality and punctual cargo delivery variables on customer loyalty is 73.9%, and the value of  $e1$  is 0.510. However, through the multiple regression calculation, the  $\beta$  coefficient for service quality is 0.439, and for punctual delivery, it is 0.459. Therefore, the path model—structure 1 diagram is obtained as follows (Figure 2).

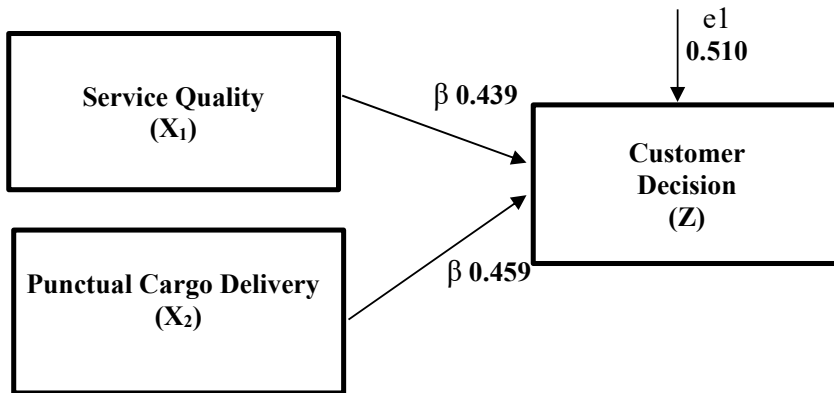


Fig. 2. Path Analysis Model – Structure 1

#### 4.3. Path Analysis Model – Structure 2

The value of  $R_{\text{Square}}$  is 0.779, showing that the influence of the variables of service quality and punctual delivery on customer loyalty through  $Z$  is 77.9%, and the value of  $e2$  is 0.470. However, through the calculation of multiple regression, the  $\beta$  coefficient for service quality is 0.375, for punctual delivery is 0.294, and for customer loyalty is 0.270. Therefore, the path model—structure two diagrams is obtained as follows (Figure 3).

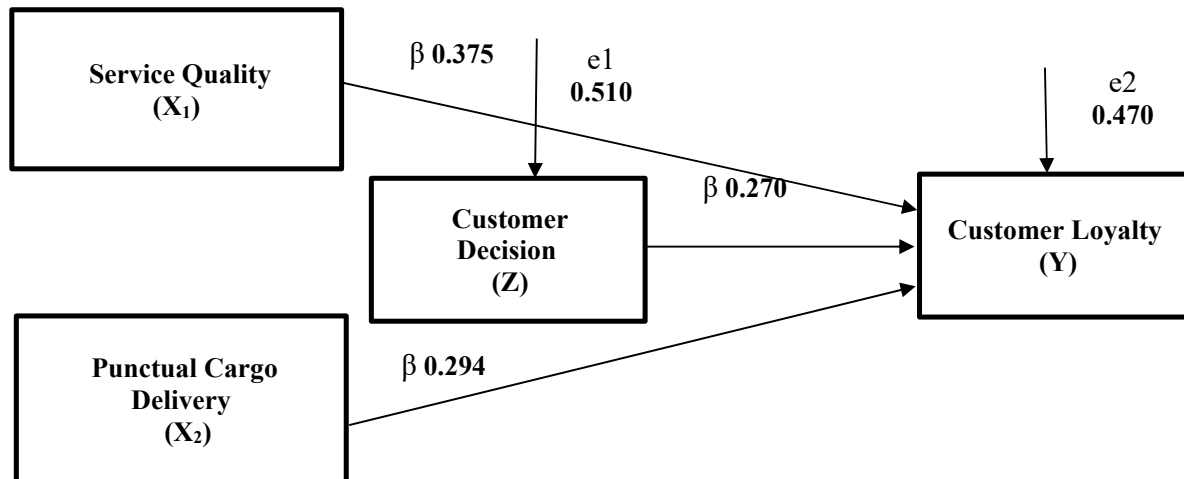


Fig. 3. Path Analysis Model – Structure 2

#### 4.4. Discussion

##### 4.4.1. Service Quality and Customer Loyalty

Based on partial hypothesis testing, it is found that  $t_{\text{statistics}}$  is more significant than  $t_{\text{he table}}$ , making this first hypothesis accepted, meaning that service quality positively influences customer loyalty. Therefore, the implementation of service quality influences customer loyalty. This means that the loyalty of Shopee Express Indonesia customers is influenced by service quality. In general, the result of this hypothesis testing supports some previous studies that service quality positively influences customer loyalty (Budiarti et al., 2013; Kuswibowo & Tyasti, 2023; Merdekawati, 2023; Priyanto et al., 2023). Whereas for freight forwarding activities, the result of the first hypothesis testing of this research is in line with the result of previous research by Mahidin et al. (2024), Tan et al. (2024), and Safitri and Masreviastuti (2024) that service quality positively influences customer loyalty. Thus, based on the results of this first hypothesis testing and some previous research, service quality positively influences the loyalty of Shopee Express Indonesia customers.

#### 4.4.2. Punctual Cargo Delivery and Customer Loyalty

Based on partial hypothesis testing, it is found that  $t_{statistics}$  is more significant than  $t_{the\ tables}$ , making this second hypothesis accepted, meaning that punctual cargo delivery positively influences customer loyalty. Therefore, the implementation of punctual cargo delivery influences customer loyalty. This means that the loyalty of Shopee Express Indonesia customers is influenced by punctual cargo delivery. This research is different from the hypothesis by Pahrudin et al. (2024), stating that punctual cargo delivery does not influence customer loyalty. Thus, based on the results of this first hypothesis testing and some previous research, even though supporting research has yet to be found, punctual cargo delivery still positively influences the loyalty of Shopee Express Indonesia customers.

#### 4.4.3. Service Quality and Punctual Cargo Delivery on Customer Loyalty

Based on the regression of Model 2, service quality and punctual cargo delivery are stated to significantly influence customer loyalty. Therefore, the third hypothesis shows that service quality and customer decisions influence Shopee Express Indonesia customers' decisions. Whereas for freight forwarding activities, this research is in line with the result of previous research by Mahidin et al. (2024), Tan et al. (2024), and Safitri and Masreviastuti (2024) that service quality positively influences customer loyalty. Thus, based on the results of this third hypothesis testing and some previous research, service quality and punctual cargo delivery significantly increase the loyalty of Shopee Express Indonesia customers.

#### 4.4.4 Service Quality and Customer Decision Influence Customer Loyalty

Based on the regression of Model 2, the variable of service quality significantly influences customer decisions. Therefore, the fourth hypothesis shows that Shopee Express Indonesia customers' decisions are influenced by service quality. The result of this research supports the research by Hidayat et al. (2023), Agustina and Mulyaningtyas (2023), and Terok (2016), especially on freight forwarding activities, in which the variable of service quality significantly influences customer decisions. In general, this research is in line with some findings of previous research stating that service quality significantly influences customer decision (Barokah & Nahar, 2019; Manunggal & Rohim, 2022; Pereira et al., 2024; Putera et al., 2022; Putri & Nilowardono, 2021; Romadhoni et al., 2018; Wahyuni & Praninta, 2021). Thus, based on the results of the fourth hypothesis testing and some previous research, service quality positively influences the decision of Shopee Express Indonesia customers.

#### 4.4.5 Punctual Cargo Delivery and Customer Decision Indirectly Influence Customer Loyalty

Based on the regression of Model 1, punctual cargo delivery significantly influences customer decisions. Therefore, this fifth hypothesis shows that the decision of Shopee Express Indonesia customers is influenced by punctual cargo delivery. In general, this research is in line with some findings of previous research stating that punctual cargo delivery significantly influences customer decisions (Do et al., 2023; Huma et al., 2020; Saura et al., 2008; Truong et al., 2023). The result of this hypothesis testing also supports some previous studies that service quality positively influences customer loyalty (Budiarti et al., 2013; Kuswibowo & Tyasti, 2023; Merdekawati, 2023; Rahmanita et al., 2023). The result of this research is also in line with the findings by Rahmasari (2024) and Shahnita et al. (2024) in one part of the hypothesis that punctual cargo delivery significantly influences customer decisions. In general, this research is also in line with several findings of previous research and theoretical reviews stating that customer decision significantly influences customer loyalty (Barata et al., 2024; Daga & Indriakati, 2022; Khanifah & Budiono, 2022). This research supports the research by Rahmasari (2024), especially in freight forwarding activities, in which the variable of punctual cargo delivery significantly influences customer decisions. Thus, based on the results of the fourth hypothesis testing and some previous research, punctual cargo delivery significantly influences the decision of Shopee Express Indonesia customers.

#### 4.4.6 Service Quality and Punctual Cargo Delivery through Customer Decisions on Customer Loyalty

Based on the simultaneous hypothesis testing, it is found that the variables of service quality and punctual cargo delivery, through customer decision, simultaneously have a significant influence on customer loyalty. Therefore, this sixth hypothesis shows that the loyalty of Shopee Express Indonesia customers is influenced by service quality and punctual cargo delivery. The result of this research supports the research by Kuswibowo and Tyasti (2023), especially in the freight forwarding activities, that there is a strong correlation between the variable of customer decision and customer loyalty. This research is also in line with several findings of previous research and theoretical reviews stating that customer decision significantly influences customer loyalty (Daga & Indriakati, 2022; Khanifah & Budiono, 2022; Pahala et al., 2021). However, according to Pahrudin et al. (2024), some parts of this research differ from the result of another hypothesis that punctual cargo delivery does not influence customer loyalty. Thus, based on the result of this sixth hypothesis and the previous research, even though in-line research has yet to be found, this hypothesis is that punctual cargo delivery still positively influences the loyalty of Shopee Express Indonesia customers.

#### 4.5 Customer Decision and Customer Loyalty

Based on the regression of Model 2, it is found that customer decision significantly influences customer loyalty. Therefore, this seventh hypothesis shows that customer decisions influence the loyalty of Shopee Express Indonesia customers. The result of this research supports the research by Kuswibowo and Tyasti (2023), especially in the freight forwarding activities, that there is a strong collaboration between the variable of customer decision and customer loyalty. In general, this research also aligns with some findings of previous research and theoretical reviews stating that customer decision significantly influences customer loyalty (Parasuraman, 2010; Daga & Indriakati, 2022; Khanifah & Budiono, 2022). Thus, based on the result of the seventh hypothesis testing and the results of some previous research, customer decisions significantly influence the loyalty of Shopee Express Indonesia customers.

Based on previous research, which used some variables and hypotheses as well as the existing research gap, it can be determined that the second hypothesis, namely punctual cargo delivery and customer loyalty, is not found in previous research. The second hypothesis can be regarded as Novel in this research.

#### 5. Conclusion

According to customers, the information on cargo tracking is not always accurate, so companies need to renew the cargo tracking system, increase the transparency of the delivery process, or improve communication with customers concerning the status of consignment. Customers state that lateness often happens during the delivery, so companies should increase the awareness of the possibility of lateness and effective communication with customers, invest in the technology that enables real-time tracking, or improve the distribution network to minimize the risk of lateness in the future and develop a comprehensive risk management strategy such as alternative route of delivery to cope with the possibility of disruption in the cargo delivery.

According to customers, competitors' services have an attractiveness that makes customers curious. So, the company needs to pay attention to the services provided by their competitors and try to accomplish their services to stay competitive, make a deeper analysis of what kind of services are considered by competitors as attractive, and how this will influence customers' perception. Customers state that their trust in the brand of Shopee Express Indonesia (Hub Ciracas) is a determiner of service quality. So, the company should accomplish its service strategy. This may include improving communication with customers, improving product or service quality, or even changing company policy to support customer trust. If the customer trust in the brand is low due to low awareness or understanding of the brand, the implication is that it needs to develop a more effective marketing strategy.

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