

## THE EFFECT OF PRODUCT PACKAGING QUALITY AND DELIVERY TIME TO CUSTOMER SATISFACTION AND THE IMPLICATION ON CUSTOMER LOYALTY OF PT. SHOPEE INTERNATIONAL INDONESIA IN 2020

Agnes Vicky<sup>1</sup>, Dinar Dewi Kania<sup>2</sup>, Veronica<sup>3</sup>

<sup>1,2,3</sup>Trisakti Institute of Transportation and Logistics, Jakarta, Indonesia

✉ corresponding author: [vickyagnes18@gmail.com](mailto:vickyagnes18@gmail.com)

**Abstract:** The purpose of this study is to analyze the impact of quality of product packaging and delivery time on customer satisfaction and its implications for customer loyalty at PT Shopee International Indonesia. The research method used in this research was descriptive quantitative, where the data was obtained by questionnaires and literature study. The research population was customers who make purchases at least 5-10 times per month at Shopee. The research sample was obtained by non-probability sampling with convenience sampling technique from 154 respondents as a sample of a total population of 250 people. The data analysis technique used in this research was Structural Equation Modeling (SEM). The results of this study show that the quality of product packaging (X1) and delivery time (X2) have a significant effect on customer satisfaction (Y) and customer loyalty (Z) either directly or indirectly. This is evidenced by the t-value (t-value) which is greater than or equal to the critical point (t-value 1.96).

**Keywords:** delivery time, customer satisfaction, e-commerce, customer loyalty

### Introduction

Product packaging by seller is one of the things that can affect customer satisfaction. Packaging has a significant impact on retail supply chain efficiency, where improvements can be achieved through adaptation and development of the packaging logistics concept. To support this improvement, models are needed to evaluate along the supply chain and show the activities involved in the logistics packaging process (Saghir, 2010). In this case, it is seen from time that seller spend on packaging and delivering the product. The seller is given 1-2 working days to package the product after the buyer has successfully checkout and paid. The seller must ensure that the number of Airwaybill is recorded on the order number and has been tracked by the delivery service before the packaging period ends to avoid the funds be automatically returned to the buyer. After the seller sends the product, the buyers can track the status of their order with the number of Airwaybill in the application. If there are problems with the delivery service system, Shopee will help confirming the delivery status to the delivery service that is integrated with Shopee. According to (Peng & Lu, 2017) supplier delivery performance can influence the future

purchasing behavior of their industrial customers, thus reinforcing the idea that is rarely empirically tested on superior delivery performance can help firms compete.

To minimize the ineffectiveness of the product packaging process that causes delays in product deliver, Shopee applies penalty points to sellers. This is to make the quality of product packaging work well and make customers not disappointed with the performance of the store at Shopee. With this regulation, Shopee ensures that customer satisfaction can be achieved, because the shopping experience is comfortable for customers. According to (Tjiptono, 2012) consumer satisfaction is a situation shown by consumers when they realize that their needs and desires are as expected and well fulfilled. The higher the customer satisfaction obtained, the more customers will be loyal to the company.

Customer satisfaction is important in both offline and online shopping environments. E-commerce retailers continue to strive to increase consumer online shopping through improving the quality of electronic services, offering a wide product range, and updating customer expectations in a timely manner (Nisar & Prabhakar, 2017). Customers who are satisfied with something they get, will unconsciously tell or recommend it to others and automatically invite other potential buyers to access the Shopee application and increase the company's revenue or profit. According to (Richa Agrawal et al., 2012) there are 7 things that affect customer loyalty. The seven main determinants of customer loyalty are image, perceived quality, value, satisfaction, emotion, trust and commitment, where each of these things has a direct and indirect relationship.

## ❖ Conceptual Framework

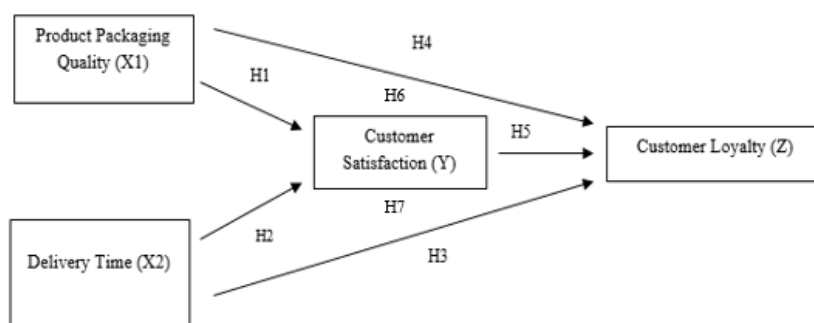


Figure 1.

## Research Method

To analyze the problem, researchers used Structural Equation Modeling (SEM). Structural Equation Modeling is a model that describes the causal relationship between exogenous variables (causal variables) and endogenous variables (effect variables), as well as a combination of two statistical concepts, namely confirmatory factor analysis (CFA) as a measurement model and path analysis as a structural model. This research was conducted between May-December 2020. The sample for this study was 154 respondents from a total population of 250 customers who made purchase at least 5-10 times per month at Shopee.

## Discussion and Result

### ❖ Respondent's identity

Analysis of the identity of the respondents in this study was viewed from several sides, such as: gender, age, education, occupation and Shopee loyalty of respondents.

#### a. Respondents according to the gender

From the data obtained, it shows that male respondents are 25 people or 16.2%, while female respondents are 129 people or 83.8%, which means the average respondent is female.

#### b. Respondents according to the age

From the data obtained, it shows that respondents aged <20 years amount to 4 people or 2.6%, for respondents aged 21-30 years there are 140 people or 90.9%, then for respondents aged 31-40 years, there are 7 people or 4.5% and for respondents aged 41-50 years amount to 3 people or 1.9%. From these results, it can be concluded that the average age of respondents aged is 21-30 years.

#### c. Respondents according to the education

From the data obtained, it shows that respondents with High School's graduate are 5 people or 3.2%; there are 10 people or 6.5% respondents with Diploma graduate; then respondents with the latest education is Bachelor degree, there are 133 people or 86.4% and respondents with post-graduate background are 6 person or 3.9%. From these results, it can be concluded that the average latest education of respondents is Bachelor.

#### d. Respondents according to the occupation

From the data obtained, occupation of the respondents is as follow: 9 people (5.8%) work as housewives, as many as 117 people (76.0%) work as private employees,

as many as 6 people (3.9%) work as part-time workers/ freelance / honorary, 7 people (4.5%) work as civil servants, 9 people (5.8%) work as students, and 6 people (3.9%) work as entrepreneurs. Thus, it can be concluded that the average occupation of respondents is private employees.

e. Respondents according to the Shopee loyalty

From the data obtained, based on Shopee Loyalty shows only 1 person (0.6%) received classic loyalty, as many as 81 people (52.6%) received gold loyalty, respondents with platinum loyalty are 58 people (37.7%), and as many as 14 people (9.1%) earn silver loyalty This can be concluded that the average Shopee Loyalty of respondents is gold.

## **Variable Description**

### **Product delivery packaging quality**

Respondent's responses obtained from 6 statements regarding the quality of product delivery packaging variable show that the highest average score is 4.08 and is included in the good category, namely questions with the code "X1.6" and the lowest average score is of 3.71 and included in the good category, namely questions with the code "X1.3". Meanwhile, the average quality of product delivery packaging is 3.87 and is included in the good category. These results conclude that the majority of respondents think that the quality of product delivery packaging is good.

### **Delivery Time**

Respondent's responses obtained from the 8 statements above regarding the delivery time variable show that the highest average score is 4.06 and is included in the good category, namely questions with the code "X2.7" and the lowest average score, which is 3.60, is included in the good category, namely questions with the code "X2.3". Meanwhile, the average delivery time variable is 3.76 and is included in the good category. These results conclude that the majority of respondents think that the delivery time is good.

### **Customer satisfaction**

Respondent's responses obtained from the 7 statements regarding the customer satisfaction variable show that the highest average score is 4.06 and is included in the good category, namely questions with the code "Y.5" and the lowest average score, which is 3.56, is included in the good category, namely questions with the code "Y.1". While the average obtained from the customer satisfaction variable is 3.83 and is included in the good category. These results conclude that the majority of respondents consider that customer satisfaction is good.

## Customer loyalty

Respondent's responses obtained from the 7 statements regarding the customer loyalty variable show that the highest average score is 3.95 and is included in the good category, namely questions with the code "Z.6" and the lowest average score, which is 3.69, is included in the good category, namely questions with the code "Z.2". While the average obtained from the customer loyalty variable is 3.84 and is included in the good category. These results conclude that the majority of respondents consider that customer loyalty is good.

## Measurement of Variable

No	Variable / Dimensions	Item	Measurement Item
1	Quality of Product Packaging (X1)	X1.1	The seller packs my product in a short time
2		X1.2	If the product that I ordered is out of stock, the seller will contact via chat in the application
3		X3.1	If there is a delay in product packaging, the seller will contact via chat in the application
4		X4.1	My order is packed by the seller in accordance with the time given
5		X5.1	Product packaging status information in the application is in accordance with the packaging made by the seller
6		X6.1	On the product packaging that I received, there is a shipping label that matched the address and details of the product I bought
7		Delivery Time (X2)	X2.1
8	X2.2		I receive my order according to the estimated delivery on the application
9	X2.3		The delivery service delivers my order quickly
10	X2.4		I rarely have problems with the delivery of my order
11	X2.5		If there is a delay in the delivery of the order, it is caused by the delivery service
12	X2.6		The courier who delivers my order will contact me if the order is on its way to the delivery destination address
13	X2.7		My order is sent to the right address and there is rarely a delivery error

14		X2.8	If there is a problem with the delivery, then I can find out the information quickly
15	Customer Satisfaction (Y)	Y.1	Seller at Shopee gives a very good service.
16		Y.2	The product I receive met my expectations
17		Y.3	I will visit the Shopee application again in the future
18		Y.4	I will continue to buy on Shopee in the near future
19		Y.5	I recommend Shopee to my friends, family and others
20		Y.6	If my order is damaged/lost during shipping, the seller and Shopee will replace the funds
21		Y.7	The order guarantee period and the refund/item feature on Shopee are very helpful
22	Customer Loyalty (Z)	Z.1	I can get the product I need at Shopee
23		Z.2	I am satisfied with the seller's service at Shopee
24		Z.3	Shopee customer service is very helpful, if there are problems when I access the application to shop
25		Z.4	I feel safe shopping at Shopee
26		Z.5	I believe Shopee will keep my personal information safe
27		Z.6	Shopee is my first choice when I want to do online shopping
28		Z.7	I see positive testimonials about Shopee from users of the application

**Table 1.**

## Validity and Reliability Test

The results from the validity test on each variable have a loading factor value of 0.5, and have a t value of more than 1.96. This indicates all indicators on the variable are declared valid or can be used to measure the structural equation modeling (SEM) model. The reliability test on each research variable exceed the standard value. It is known that the latent variable has a construct reliability coefficient value greater than or equal to the critical value, namely CR 0.7 and AVE 0.5. This shows that the four variables have a good level of reliability.

## Goodness of Fit

### Structural Model Suitability Evaluation

Size of Goodness of Fit		Target Match Rate	Estimated Results	Match Rate
1	Chi-Square	$p\text{-value} > 0.05$	0,000	Bad fit
2	RMSEA	$RMSEA < 0.08$	0,049	Good fit
3	ECVI	$ECVI < ECVI$ Saturated dan ECVI Independence	3,900	Good fit
		- ECVI Saturated	5,307	
		- ECVI Independence	7,807	
4	AIC	$AIC < AIC$ Saturated dan AIC Independence	596,692	Good fit
		- AIC Saturated	812,000	
		- AIC Independence	11,944,618	
5	NFI	$NFI \geq 0.90$	0,958	Good fit
6	CFI	$CFI \geq 0.90$	0,987	Good fit

<i>Size of Goodness of Fit</i>	<i>Target Match Rate</i>	<i>Estimated Results</i>	<i>Match Rate</i>	
7	<i>NNFI</i>	<i>NNFI ≥ 0.90</i>	<i>0,985</i>	<i>Good fit</i>
8	<i>IFI</i>	<i>IFI ≥ 0.90</i>	<i>0,987</i>	<i>Good fit</i>
9	<i>RFI</i>	<i>RFI ≥ 0.90</i>	<i>0,954</i>	<i>Good fit</i>
10	<i>GFI</i>	<i>GFI ≥ 0.90</i>	<i>0,819</i>	<i>Marginal fit</i>
11	<i>AGFI</i>	<i>AGFI ≥ 0.90</i>	<i>0,787</i>	<i>Bad fit</i>
12	<i>PGFI</i>	<i>PGFI ≥ 0.60</i>	<i>0,694</i>	<i>Good fit</i>
13	<i>PNFI</i>	<i>PNFI &gt; 0.09</i>	<i>0,872</i>	<i>Marginal fit</i>
14	<i>SRMR</i>	<i>RMR &lt; 0.05</i>	<i>0,049</i>	<i>Good fit</i>
15	<i>CN</i>	<i>Critical N (CN) &lt; N</i>	<i>125,986</i>	<i>Good fit</i>

**Table 2.**

Based on the goodness of fit test, It is known that from the 15 (fifteen) measurements of the model suitability test, there are 13 (thirteen) measurements of the suitability of the model which are declared good (good fit), namely RMSEA, NFI, CFI, NNFI, IFI, RFI, PGFI, PNFI, RMR, Critical n (CN), ECVI, AIC, and GFI, while testing the suitability of the Chi Square and AGFI models are declared bad fit.

According to (Gunarto, 2018), it is suggested that none of the goodness of fit indices (GOFI) measures can exclusively be used as a basis for evaluating the overall suitability of the model. For that, it is recommended to use other fit criteria. Thus it can be stated that from the results of this test, the model can be used. This means that empirically the influence of the quality of product delivery packaging and delivery time, on customer satisfaction and its implications for customer loyalty is in accordance with the theoretical model.

## Structural Model

### Standardized Coefficient Estimation Results

### T-Values Estimation Results

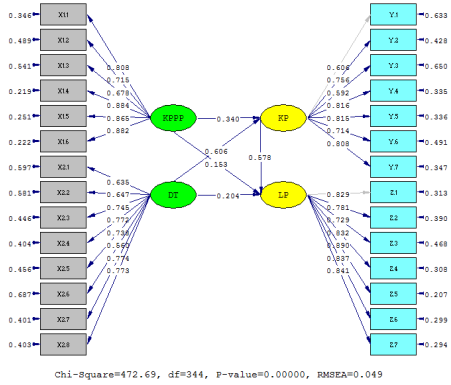


Figure 2.

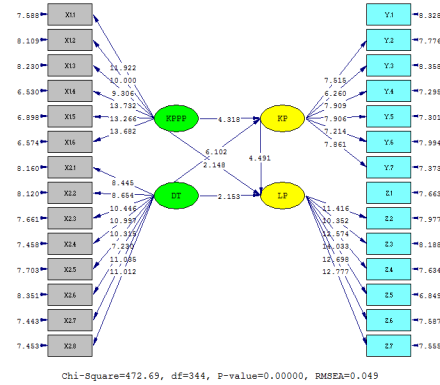


Figure 3.

Based on the figure above, the results of path coefficient testing and hypothesis testing with t count will be presented to determine whether the formulated hypothesis is accepted or rejected, namely the direct and indirect effects of exogenous variables on endogenous variables (through intervening variables).

### Estimated Result of Direct and Indirect Effect

Effect	Standardized Loading Factor	Tcount	Conclusion	R <sup>2</sup>
<b>Direct Effect</b>				
H1 : KPPP-> KP	0,340	4,318	Significant	0,678
H2 : DT -> KP	0,606	6,102	Significant	
H3 : KPPP -> LP	0,153	2,148	Significant	
H4 : DT -> LP	0,204	2,153	Significant	
H5 : KP -> LP	0,578	4,491	Significant	
<b>Indirect Effect</b>				
H6 : KPPP -> KP -> LP	0,119	3,113	Significant	
H7 : DT -> KP -> LP	0,212	3,617	Significant	

Table 3.

Notes:

- KPPP : Product delivery packaging quality
- DT : Delivery time
- KP : Customer satisfaction
- LP : Customer loyalty

The table above shows the results of hypothesis testing for direct and indirect effects. The significant test criteria in the SEM is based on the critical point value of 1.96 for an error of 5% where the t-value (t-value) which is greater than or equal to the critical point ( $t\text{-value} \geq 1.96$ ) indicates that the parameter value is statistically significant. While in column R2 contains the values of the coefficient of determination.



Before testing the hypothesis, the path coefficient equation is carried out based on the equation 1 model and the equation model 2. The results of equation 1 and equation 2 are presented below.

$$KP = 0.340 * KPPP + 0.606 * DT$$

From equation above, it can be explained that the variable quality of product delivery packaging affects customer satisfaction with a path coefficient value of 0.340, the delivery time variable affects customer satisfaction with a path coefficient value of 0.606. From these results, it can be seen that exogenous variables (quality of product delivery packaging and delivery time) have a positive effect. In other words, the better the quality of product delivery packaging and delivery time, the better customer satisfaction is. From the results of the equation above and Table 1, the coefficient of determination (R<sup>2</sup>) is 0.678 (67.8%), these results implied that 67.8% of customer satisfaction is influenced by the quality of product delivery packaging and delivery time, while the remaining 32.2% influenced by other factors not observed in this study.

Next, the equation of the second model is presented as follows.

$$LP = 0.154 * KPPP + 0.204 * DT + 0.578 * KP$$

Based on the model equation, it can be explained that the variable quality of product delivery packaging affects customer loyalty with a path coefficient value of 0.153. The delivery time variable has a positive effect on customer loyalty with a path coefficient value of 0.204, and customer satisfaction variable affects customer loyalty with a path coefficient value of 0.578. These results can be explained that by increasing the quality of product delivery packaging, delivery time, and customer satisfaction, the customer loyalty is getting better. From equation and Table 1, the coefficient of determination (R<sup>2</sup>) is 0.722 (72.2%). Thus, it can be explained that 72.2% of the customer loyalty variable is influenced by the quality of product delivery packaging, delivery time and customer satisfaction, while the rest is of 27.8% influenced by other factors not observed in this study.

## **Hypothesis test**

### **❖ Direct Effect Hypothesis Test**

This hypothesis test explains about the direct influence between exogenous variables on endogenous variables, namely the variable quality of product delivery packaging and delivery time on customer satisfaction and test the hypothesis of the effect of customer satisfaction on customer loyalty.

## 1. The Effect of Product Delivery Packaging Quality on Customer Satisfaction

That the direct influence of the variable quality of product delivery packaging has an effect on customer satisfaction of 0.340 and the t count value is 4.318 (Significant: t count > 1.96). From this result, it is confirmed that the quality of product delivery packaging has a significant effect on customer satisfaction.

## 2. Effect of Delivery Time on Customer Satisfaction

That the direct effect of the delivery time variable on customer satisfaction is 0.606 and the t count value is 6.102 (Significant: t count > 1.96). It means that delivery time has a significant effect on customer satisfaction.

## 3. The Effect of Product Delivery Packaging Quality on Customer Loyalty

That the direct influence of the variable quality of product delivery packaging has an effect on customer loyalty of 0.153 and the t count value is 2.148 (Significant: t count > 1.96). From the result, it is explained that the quality of product delivery packaging has a significant effect on customer loyalty.

## 4. Effect of Delivery Time on Customer Loyalty

That the direct influence of the delivery time variable on customer loyalty is 0.204 and the t count value is 2.153 (Significant: t count > 1.96). From the result, it is explained that delivery time has a significant effect on customer loyalty.

## 5. The Effect of Customer Satisfaction on Customer Loyalty

That the direct influence of the customer satisfaction variable on customer loyalty is 0.578 and the t-value is 4.491 (Significant: t count > 1.96). From the result, it is explained that customer satisfaction has a significant effect on customer loyalty.

### ❖ Indirect Effect Hypothesis Test

In this hypothesis test, it will explain about the indirect effect between exogenous variables (quality of product delivery packaging and delivery time) on endogenous variables (customer loyalty) mediated by customer satisfaction.

1. The Influence of Product Delivery Packaging Quality on Customer Loyalty with Customer Satisfaction Variables as Intervening Variables (Mediation).

That the indirect effect of the variable quality of product delivery packaging has an effect on customer loyalty, which is mediated by customer satisfaction of 0.197 and the t-value is 3.113 (Significant: t count > 1.96). From this result, it is explained that the quality of product delivery packaging has a significant effect on customer loyalty, which is mediated by customer satisfaction; or in other words, the customer satisfaction variable is able to be a mediating variable between the influence of product delivery packaging quality and customer loyalty.

2. Effect of Delivery Time on Customer Loyalty with Customer Satisfaction Variable as Intervening Variable (Mediation).

That the indirect effect of the delivery time variable on customer loyalty mediated by customer satisfaction is 0.350 and the t-value is 3.617 (Significant: t count > 1.96). From this result, it is explained that delivery time has a significant effect on customer loyalty, which is mediated by customer satisfaction; or in other words, the customer satisfaction variable is able to be a mediating variable between the effect of delivery time and customer loyalty.

## Conclusion

Based on the results of research and discussion conducted, delivery time has a higher direct effect than the quality of product packaging, which has a direct effect of 0.606 and a t-value of 6.102. This happens because the delivery of the product takes longer than the packaging of the product by the seller. And the packaging by seller is good enough, so the thing that needs to be considered is the speed of product delivery. So that, the value of the product received by the buyer when receiving the product is as expected. And on the customer satisfaction variable as an intervening variable (mediation), delivery time also has an indirect effect on customer loyalty of 0.606 and t count value of 6.102. This happens because when the customer is satisfied with the speed of product delivery, the customer will make repeat purchases at the store through Shopee because they have had a good experience before.

## References

- Gunarto, M. (2018). *Analisis Statistika dengan Model Persamaan Struktural (SEM), Teoritis dan Praktis*. Bandung : Alfabeta.
- Nisar, T. M., & Prabhakar, G. (2017). What factors determine e-satisfaction and consumer spending in e-commerce retailing? *Journal of Retailing and Consumer Services*, 39(July), 135–144. <https://doi.org/10.1016/j.jretconser.2017.07.010>

Peng, D. X., & Lu, G. (2017). Exploring the Impact of Delivery Performance on Customer Transaction Volume and Unit Price: Evidence from an Assembly Manufacturing Supply Chain. *Production and Operations Management*, 26(5), 880–902. <https://doi.org/10.1111/poms.12682>

Richa Agrawal, Sanjaya S. Gaur, & Archana Narayanan. (2012). *Determining customer loyalty: Review and model*. 13(2), 125–141. <https://www.ingentaconnect.com/content/westburn/tm>

Saghir, M. (2010). the Concept of Packaging Logistics. *Business*, September, 1–31.

Tjiptono, F. (2012). *Service Management Mewujudkan Layanan Prima*. Yogyakarta: CV. Andi Offset.