

Customer Satisfaction and Loyalty on Customer Delivered Value of Postal and Shipping Service

Nadya Khairunnisa¹, Jono M Munandar², Mukhammad Najib²

¹Graduate Student of Management Science, ²Lecturer, Department of Management, Faculty of Economics and Management, Bogor Agricultural University (IPB), Kampus IPB Darmaga, Bogor 16680, Indonesia

Corresponding Author: Nadya Khairunnisa

ABSTRACT

Postal and package services must be able to provide value that customers want in gaining competitive advantage. Where, the company provides benefits compared to the costs incurred for satisfaction, so that customers can be loyal to the service. This study aims to analyze the characteristics of respondents, analyze customer delivered value affect customer satisfaction, analyze customer delivered value affect customer loyalty, analyze customer satisfaction as an intervening variable affect loyalty, analyze customer delivered value affect customer satisfaction, analyze customer delivered value affect customer loyalty on service letters and packages to Indonesia. This type of research is causal research. The population is customers who have used mail and package services. The number of samples is 180 respondents. The characteristics of customers are people who have purchased postal services and goods packages and respondents are more than 17 years old. The analysis technique used is Structural Equation Modeling (SEM) with the help of AMOS 21.

Keywords: Customer delivered value, customer loyalty, customer satisfaction, postal and shipping service

INTRODUCTION

Statista e-Commerce (2018) has estimated in 2017 until 2022 that the number of online shopping in Indonesia would continue to increase by 5% annually. Indonesia ranked in number sixth as the country with the highest internet user in the world (e-Marketer, 2014). This opens an opportunity for Indonesia's postal and shipping service to expand its market share.

According to Law (*Undang-Undang*) Number 38 of 2009, postal and shipping service are goods delivery service that is paid based on address distance and goods weight guaranteed with damage and safety compensation. Indonesia's shipping

service received the award as the best management company (*Annual Report*, 2016). Customers often chose postal service due to its reliability, responsiveness, assurance, and empathy aspects (Wahyuningsih, 2013). However, postal service is obliged to survive and compete among 167 private shipping companies in Indonesia (Aspirindo, 2017). Furthermore, package and postal service products have been declining (*Annual Report*, 2016).

In general, a business product of standard postal service (*Suratpos*) has increased by 34% compared to realization in 2015. The highest growth was obtained from corporates shipments by 125% or

87,630 thousand pieces in contrast to production in 2015 which were 38,891 thousand pieces. Meanwhile, the biggest decline occurred in express postal service (*surat kilatkhusus*) with a 31% decline which only achieved 33,231 thousand pieces from 47,897 thousand pieces in 2015. But its achievement still fulfilled 110% of company's budget plan target (*Rencana Kerja Anggaran Perusahaan, RKAP*) of 30,000 thousand pieces despite its production decline.

Business production of standard package shipping service (*Paketpos*) in 2016 was 4,185 thousand pieces with decrease rate of 14% compared to realization in 2015. Business achievement of express package shipping service (*Paket Kilat Khusus*) had only reached 57% or equal to 1,447 thousand pieces from target which were 2,500 thousand pieces and has 30% declining during realization in 2015. In other hand, the standard package shipping service is able to obtain 72% realization or 2,738 thousand pieces from target of 3,800 thousand pieces. In contrast with 2015 realization, standard package shipping service was able to achieve improvement by 30% or equal to 2,099 thousand pieces.

Nowadays, postal organizations are faced with latest technological challenges and expected to operate in private company manners, understand profitable products, and has sustainable cooperation with company (Chan, 2006). Badudu (2015) studied that company needed to work on qualified service comprehensively, in terms of sold products and the distributive process of goods to be served in customers' hand. Thus, postal and shipping services are obliged to meet customer satisfaction.

According to Kotler dan Keller (2009) customer value is defined as the difference between total customer value and total customer cost. Total customer value is the set of benefits expected by the customer from a particular product or service. Total customer cost is the expenses that are expected by customer to obtain, evaluate, use, and discard product and service. Values

provided in postal and shipping services in Indonesia are being trustworthy and competent, and believed to be additional values to its services. PT Pos Logistik manages 37 units of warehouses spread across various provinces in Indonesia. Around 400 units of conveyance are prepared to meet transportation operational needs (Annual Report, 2016). The values given in postal and shipping services in Malaysia included:

1. Empathy which is the communication regarding customer necessities and their reason for necessities.
2. Decorum that is the way of employees wanted to be treated - with loyalty, honor, and respect;
3. Integrity which is an act of working in honest, sincere, and open manner, without insulting;
4. Accountability that is self-control, being responsible as individual and team in every organization level for their actions and decisions;
5. Innovation which is leading a new and better method to satisfy the customers, and courageous to be challenged.

Customer demands are not only in terms of affordable price and qualified service but also the values achieved in these services to fulfill the needs. These are the efforts shown to obtain a competitive advantage. The competitive advantage of a company can be reached by offering satisfying options compared to the competitors. These are invented and developed by the company for the customers. However, competitive advantage may only be attained if the company could offer higher value for the same cost or the equal value with lower cost (Logiawan, 2015).

Based on interviews conducted toward customer service employees, late shipping process causes a consecutive delay in departure from the home office to the transit office and to the destination office. Posts and packages have a processing period at the transit office before being sent to the next destination.

Musanto (2004) reported that customers felt satisfied if the result could meet the expectation and customers may dissatisfy if the result could not meet their expectations. Moreover, customer satisfaction may result in loyal customers. Customer satisfaction gives several benefits, such as harmonious company and customer relationship. Pleasant first experience leads to repetitive purchase, word of mouth recommendation to other customers, and higher profits (Solechah, 2015).

Each customer has their different customer delivered value. Furthermore, gender plays a unique role for men and women and their psychological quality differed (Kusuma, 2018). Hence, postal and shipping service should analyze customer delivered value and not making assumptions regarding the customer value.

Pos Indonesia developed a focus strategy in enhancing the added value for customers by reducing the cost, improving the service quality, executing a faster process, and being flexible for customers satisfaction (*Annual Report Pos Indonesia*, 2016). Public needs for post and package shipping service are increasing. Its service which was hold by Pos Indonesia and Pos Malaysia required development and innovation to achieve higher customer value. Hence, this study aimed to analyze the customer delivered value toward customer satisfaction and loyalty.

Formulation of the Problem

Based on the background, post and package service have prospect of service demand like others, so the problem can be formulated as follow:

1. How are respondents' characteristics of postal and shipping service?
2. How far does customer delivered value affect customers' satisfaction to postal and shipping service?
3. How far does customer delivered value affect customers' loyalty to postal and shipping service?

4. How far does customers' satisfaction affect customers' loyalty to postal and shipping service?

Research Objectives

Research objectives can be formulated as follow:

- 1) To identify respondents characteristics of postal and shipping service
- 2) To identify customer delivered value affect customers' satisfaction to postal and shipping service
- 3) To identify customer delivered value affect customers' loyalty to postal and shipping service
- 4) To identify customers' satisfaction affect customers' loyalty to postal and shipping service?

LITERVIEW VIEW

Post and Telecommunication Company

Kyriaki (2014) explained that post's invest in technology can currently give investment focus on optimization of sorting centers, network operational restructuring, implementation of corporate identity and restoration of new store, armada modernization, new integrated information system (open source or not), and data of delivering file electronically in two-way direction. Delivery and Servicing plans (DSP) to decrease delivery cost and decrease the trips (Dambly, 2016).

Post transformation according to Annual Report of PT. Pos Indonesia (2016) in many countries which are different such as Deutche Post is developing power in logistic though many acquisition, Japan Post transforms become giant financial institution with backbone service postal saving and insurance and Singapore Post transforms become e-commerce platform.

Customer Delivered Value

Kotler and Keller (2009) reveal that customer will buy product or service that give high value (customer delivered value). The concept is depicted as follow

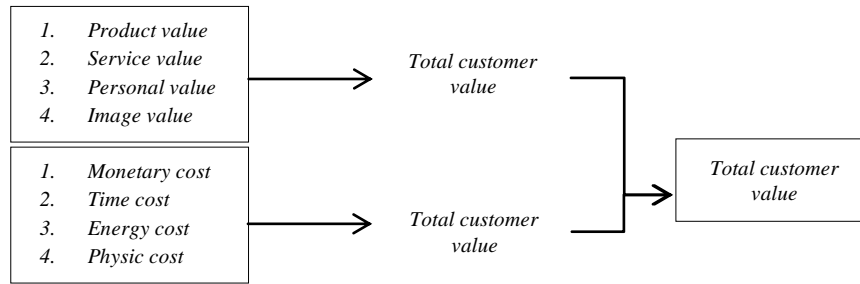


Figure 1. Determinant of Customer Delivered Value (Kotler, 2003)

Based on Tjiptono (2014) value is ratio or comparison between perception toward benefit (perceived benefit) with costs to get benefit product or total customer value including product value (reliability, durability, performance and resale value), service value (product delivery, training, maintaining, repairs and guarantee), personnel value (competition, friendliness, politeness, responsiveness, repairs and staff

empathy), and image value (product reputation, distributor, service provider). whereas total customer cost covers monetary price/cost (payed price), time price (time to wait and time for the interaction between service provider), price of energy (price of searching for information), psychic price (worries about uncertainty of service result).

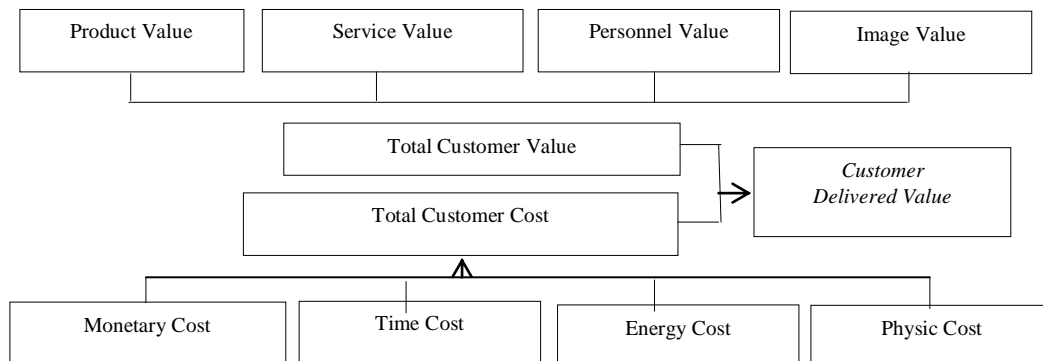


Figure 2. Customer Delivered Value (Tjiptono, 2014)

Customer Satisfaction

Rangkuti (2011) explains that customer satisfaction is respond or reaction toward incompatibility between initial importance level and actual performance perceived after using. Based on Giese & Cote (2000) may definitions of customer satisfaction, but in general it still leads to three main components as follow:

1) Respond: Type and Identity

Customer satisfaction is emotional and also cognitive responds. The intensity of the responds begin from very satisfied

and like the product until apathetic toward certain product.

2) Focus

Focus on object performance is adjusted in several standards. This Standards value directly related to product, consumption, decision to buy, sell and store.

3) Time of respond

Respond occur in certain time, such as: after consumption, after choosing the product or service based on accumulative experience. Satisfaction

duration leads to how long satisfaction responds ends.

Customer Loyalty

Griffin (2005) reveals that definition of customer loyalty is customers who buy repeatedly on a regular basis or buy product of the same brand. Customer loyalty can also be affected by various factors that can support or weaken forming of loyalty attitude. Based on Suryani (2008), factors that affect in forming customer loyalty as follow:

a) Cognitive aspect

In this case, elements of cognitive aspects that are thought and all process occurs, it includes *accessibility*, *confidence*, *centrality* and clearness about attitude toward a product that will affect toward customer loyalty. Customer who can remember easily the name of product and be sure that the product according to the system will tend to be more positive and it is very important in forming customer loyalty.

b) Affective Aspect

Emotional condition (feelings) of customer, which is component of attitude, will form customer loyalty. This feeling aspect includes mood emotion and satisfaction obtained after giving or using product. It will form customer loyalty.

c) Psychometric aspect

This condition is a trend that is in customer to do certain action. There are three factors affecting trend of customer behavior that shows loyalty. It is switching costs, expectation and suck cost.

Reference of Study

Various studies have been conducted to obtain customer values, customer satisfaction, and customer loyalty. According to Pujihastuti and Supandiyono (2008), most of Indosat-Mentari customers were dominated by product users. Satisfaction, performance, and product purchasing decision variables showed the highest performance. Variable of customer values influenced product purchasing decisions.

Agustina (2008) had done her study with the title "Customer Analysis Gives Values based on External Customer Perceptions in Eye Outpatient Clinic Haji Surabaya General Hospital". According to the study, the authors reported that the level of customer interest for product value was very important, while customers expressed customer value in Eye Outpatient Clinic Haji Surabaya General Hospital. Product values were also decreased. The average value of improvement ratio (IR) of product value, service value, personnel value, and image value was 1.21. These showed that overall service of Eye Outpatient Clinic Haji Surabaya General Hospital had not met the consumers' expected value. Rahmawati (2015) conducted study (case study on Kartika Sari Bandung customers) which titled "Customers give its Influence Value to Customer Loyalty". The result of the study revealed that customer delivered value had 61.7% influence on customer loyalty.

MATERIALS & METHODS

Research Site and Time

This research was conducted in Bandung, Indonesia in July until August 2018. Technique of choosing sample in respondent of customer delivered value and price with non-probably sampling method in which each population element doesn't have the same probability to be made as sample.

Research design

Technique of choosing sample in respondent of customer delivered value with non-probably sampling method in which each population element doesn't have the same probability to be made as sample. This method is conducted with purposive sampling technique. Customer characteristic are an individual who has bought post and goods package service and respondent who are more than 17 years old. Customer delivered value used Bentler and Chou that is total parameter is multiplied five (Latan, 2013). Total parameter used is 36 times, so that needed sample is 180 respondents. The measurement scale used this study is a Likert (1-5) scale. Response of respondents

can be given score that is adopted according to Sugiyono (2016).

Table 1: The Definitions of Operational Variable

Variable	Definition	Dimensi/Indicator	Source	Code	
Customer Delivered Value	Total Customer Value	Total customer benefit is functional collected monetary value and psychology that are expected by customers from the offer of market due to product, service, personnel and related image.	Nilai produk, nilai personal, nilai layanan, nilai citra	(Tjiptono, 2014), (Eng-Larson, 2012), (Viio, 2014), (Baykaso, 2007), (Santén, 2017), (Mason 2013), (Anaza, 2018), (Kohtamaki, 2012), (Goodwin, 1990), (Aleknonis, 2009), (Hinterhuber, 2008), (Nyman, 2014)	NP1, NP2, NP3, NP4, NP5, NL1, NL2, NL3, NL4, NPS1, NPS2, NPS3, NPS4, NPS5, NC1, NC2, NC3, NC4
	Total Customer Cost	Total customer cost is cost collected that is perceived or expected by customers to evaluate, obtain, use and waste market's offer including monetary cost, time, energy and psychology (Kotler and Keller, 2009	Biaya moneter, biaya waktu, biaya psikis, biaya energi	(Ha-Brookshire, 2011), (Goebel, 2012), (Fowler, 2008), (Wetering, 2010), (Thomas, 2015), (Ashley, 2010).	TCC1, TCC2, TCC3, TCC4, TCC5, TCC6, TCC7, TCC8, TCC9,
Customer Loyalty	Griffin (2005:13) finds definition of customer loyalty is customer who buys repeatedly on a regular basis with the same brand.	Attributes related to product, Attributes related to service, Attributes related to purchas	Dutka (2008), Griffin (2005)	CL1, CL2, CL3, CL4	
Kepuasan Pelanggan	Rangkuti (2011), explains that customer satisfaction is response or reaction toward incompatibility between previous importance level and actual performance after the usage	Kualitas pelayanan, tentang kepuasan pelanggan, dan atribut	(Dewi, 2017), (Ma'mun, 2014), (logiawan, 2014)	CS1, CS2, CS3, CS4, CS5	

Data Analysis and Processing Technique

Data analysis was carried out using descriptive analysis, and Structural Equation Modelling with AMOS as an alternative method. Descriptive analysis is used to explain the characteristics of consumers in choosing and using postal and shipping service, and SEM AMOS is used to determine the relationship between customer delivered value, customer satisfaction, customer loyalty. The initial research model can be seen in Figure 3.

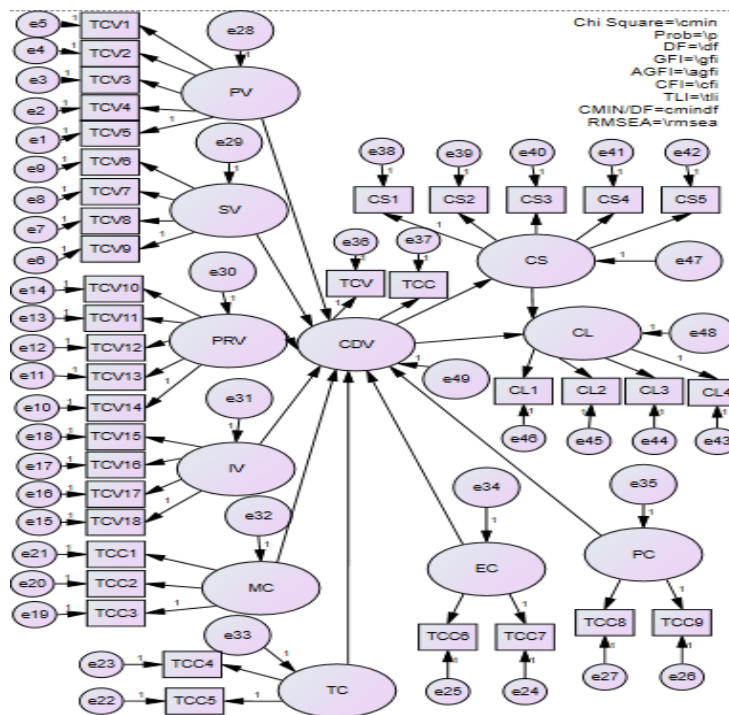


Figure 3. SEM AMOS

Based on Figure 3, the hypotheses in this study are:

- H₁ : Customer delivered value affects customer satisfaction.
- H₂ : Customer delivered value affects customer loyalty.
- H₃ : Customer satisfaction has significant g effect on customer loyalty.

RESULT

Characteristic of Respondent

There were 180 respondents participated in this study. They consist of respondents who are over 17 years old and have purchased postal and shipping services. The characteristics of respondents in this study can be seen in Table 2 below:

Table 2. Characteristic of Respondent

No	Characteristic and Category	Quantity	Percentage (%)
1	Gender		
	Male	97	53,8
	Female	83	46,2
2	Age		
	< 20 years old	15	8,33
	21 – 30 years old	95	52,78
	31 – 40 years old	36	20,00
	41 – 50 years old	23	12,78
	> 50 years old	11	6,11
No	Characteristic and Category	Quantity	Percentage (%)
4	Education		
	SD	2	1,11
	SMP/MTS/SMA/MA/SMK	84	46,67
	Diploma/ Certificate	19	10,56
	S1	60	33,33
	S2/S3	15	8,33
	Professional certificate	0	0,00
5	Job		
	- Entrepreneur	62	34,44
	- Private employees	64	35,56
	- Housewife /	12	6,67
	- Police / TNI / PNS	7	3,89
	- Student	33	18,33
	- Government staff	2	1,11
6	Income		
	Less than Rp. 1000.0001	29	16,11
	Rp. 1.000.0001 – Rp. 2.500.000	56	31,11
	Rp. 2.500.001 – Rp. 5.000.000	68	37,78
	Rp.5.000.0001 – Rp.10.00.000	24	13,33
	Rp.10.000.001 – Rp. 25.000.000	1	0,56
	Rp.25.000.0001 – Rp. 50.000.000	2	1,11
	More than Rp.50.000.000	0	0,00
7	Service usage intensity for 3 months		
	1 – 2 times	97	53,89
	3 – 4 times	40	22,22
	5 – 7 times	14	7,78
	8 – 10 kali	10	5,56
	More than 10 times	16	8,89
8	How to use the service		
	Directly to the counter	176	97,78
	Pick up	4	2,22

(Source : Processed Data on Primary Data, 2018)

Construction Validity Testing

Table 3. Construction Validity

	Estimate	Annotation		Estimate	Annotation		Estimate	Annotation
TCV5 <-- PV	0,772	Valid	TCV10 <-- PSV	0,679	Valid	CS2 <-- CS	0,716	Valid
TCV4 <-- PV	0,792	Valid	TCV18 <-- IV	0,815	Valid	CS3 <-- CS	0,705	Valid
TCV3 <-- PV	0,801	Valid	TCV17 <-- IV	0,761	Valid	CS4 <-- CS	0,543	Valid
TCV2 <-- PV	0,788	Valid	TCV16 <-- IV	0,890	Valid	CS5 <-- CS	0,550	Valid
TCV1 <-- PV	0,784	Valid	TCV15 <-- IV	0,786	Valid	CL4 <-- CL	0,832	Valid
TCV9 <-- SV	0,632	Valid	TCC3 <-- MC	0,759	Valid	CL3 <-- CL	0,851	Valid
TCV8 <-- SV	0,668	Valid	TCC2 <-- MC	0,734	Valid	CL2 <-- CL	0,845	Valid
TCV7 <-- SV	0,849	Valid	TCC1 <-- MC	0,691	Valid	CL1 <-- CL	0,728	Valid
	Estimate	Annotation		Estimate	Annotation		Estimate	Annotation
TCV6 <-- SV	0,760	Valid	TCC5 <-- TC	0,733	Valid	TCV <-- CDV	0,463	Valid
TCV14 <-- PSV	0,687	Valid	TCC4 <-- TC	0,903	Valid	TCC <-- CDV	0,398	Valid
TCV13 <-- PSV	0,827	Valid	TCC7 <-- EC	0,836	Valid	TCC8 <-- PC	0,746	Valid
TCV12 <-- PSV	0,899	Valid	TCC6 <-- EC	0,786	Valid	TCC9 <-- PC	0,720	Valid
TCV11 <-- PSV	0,746	Valid	CS1 <-- CS	0,707	Valid			

(Source : Processed Data on Primary Data, 2018)

Riduwan (2011) said that the coefficient of validity and interpretation of validity as follows: $0,800 \leq r_{xy} \leq 1,00$ is very high; $0,600 \leq r_{xy} \leq 0,799$ is high; $0,400 \leq r_{xy} \leq 0,599$ is quite high; $0,200 \leq r_{xy} \leq 0,399$ is low; and $0,000 \leq r_{xy} \leq 0,199$ is invalid. So the indicators in Table 3 are valid

Reliability Testing

Sugiyono (2016) said that the number of members conducted for testing was around 30 people. Moreover, an instrument is declared reliable if the reliability coefficient is at least 0.6. Therefore, the table below has reliable variables.

Table 4. Variable Reliability

Variable	Cronbach's Alpha	Annotation
Total customer value	0.821	Reliabel
Total customer cost	0.730	Reliabel
Customer satisfaction	0.747	Reliabel
Customer loyalty	0.914	Reliabel

(Source : Processed Data on Primary Data, 2018)

Data Normality

Estimation with Maximum Likelihood requires that the observed variable must meet the assumption of multivariate normality. This test is conducted to see the level of normality in a multivariate manner against the data used in this study. This test is to observe the value of data kurtosis used in the Assessment of Normality. Multivariate evaluation with AMOS 21.00 was performed using the criterion of critical ratio (c: r) of Multivariate on kurtosis, if it was in the range between ± 1.76 . The value of C.R Indonesian data is as follows. This means that the data is normally distributed multivariate, it can be concluded that the data are normally distributed if the critical ratio (c: r) value of Multivariate in kurtosis is below the absolute price of 1.76.

Table 5. Results of the CFA Indonesia Goodness of Fit Model Test

No	Goodness Of Fit Index	Cut Off Value	Result	Category
1	$\chi^2 - Chi Square$	< 28.869	2449.371	Bad Fit
2	Probability	≥ 0.05	0.000	
3	DF	>0	0.657	Over identified
4	GFI	≥ 0.90	0.539	Poor fit
5	AGFI	≥ 0.90	0.480	Poor fit
6	CFI	≥ 0.95	0.655	Poor fit
No	Goodness Of Fit Index	Cut Off Value	Result	Category
7	TLI	≥ 0.95	0.630	Poor fit
8	CMIN/DF	≤ 2.0	3.728	Poor fit
9	RMSEA	≥ 0.08	0.123	Poor fit

(Source : Processed Data on Primary Data, 2018)

The model must be modified to increase *goodness of fit*. Estimation is gotten by the result of modification indices. Modification is started from the highest grade until the lowest grade. Modification of models to minimize the value of Chi-Square needs to be done with the aim of the model to be fit by choosing covariance between indicators that have the greatest Modification Indices (M.I) values, as follows:

Table6. Modification Indices (M.I)

			M.I	Par Change				M.I	Par Change				M.I	Par Change
e45	<->	e46	49,776	0,276	e41	<->	e44	32,958	0,175	e39	<->	e43	51,895	0,260
e44	<->	e46	37,043	0,220	e41	<->	e43	44,000	0,213	e39	<->	e42	86,958	0,349
e44	<->	e45	90,367	0,341	e41	<->	e42	80,889	0,300	e39	<->	e41	83,356	0,288
e43	<->	e46	54,200	0,280	e40	<->	e46	12,661	0,112	e39	<->	e40	97,896	0,295
e43	<->	e45	80,440	0,339	e40	<->	e45	46,866	0,213	e47	<->	e45	4,197	0,059
e43	<->	e44	70,468	0,293	e40	<->	e44	29,716	0,157	e38	<->	e43	5,314	0,086
e42	<->	e46	23,213	0,190	e40	<->	e43	38,117	0,187	e38	<->	e42	6,928	0,102
e42	<->	e45	48,492	0,273	e40	<->	e42	75,240	0,273	e38	<->	e40	6,441	0,078
e42	<->	e44	29,699	0,197	e40	<->	e41	81,582	0,239	e38	<->	e49	4,280	-0,03
e42	<->	e43	44,847	0,255	e39	<->	e46	12,391	0,131	e37	<->	e45	30,428	0,204
e41	<->	e46	18,997	0,145	e39	<->	e45	56,361	0,278	e37	<->	e44	22,925	0,163
e41	<->	e45	40,545	0,210	e39	<->	e44	43,613	0,226	e37	<->	e43	22,357	0,170

(Source : Processed Data on Primary Data, 2018)

Model CFA has good goodness of fit even though the Chi-Square value is 475,745 and probability (P) <0.05 is 0,000. However, DF, CFI, TLI, CMIN / DF, RMSEA, GFI, and TLI have met the recommended ones. AGFI value is 0.826 which is marginal fit. The summary of the results of testing the Indonesian SEM model after being modified is:

Table 7. Test Results of Model CFA Indonesia after Model Modification

No	Goodness Of Fit Index	Cut Off Value	Result	Category
1	X ² – Chi Square	< 28.869	405.614	<i>Bad fit</i>
2	Probability	≥0.05	0.720	<i>Good fit</i>
3	DF	>0	0.423	<i>Good fit</i>
4	GFI	≥ 0.90	0.901	<i>Good fit</i>
5	AGFI	≥ 0.90	0.826	<i>Marjinal fit</i>
6	CFI	≥ 0.95	1.00	<i>Good fit</i>
7	TLI	≥ 0.95	1.006	<i>Good fit</i>
8	CMIN/DF	≤ 2.0	0.959	<i>Good fit</i>
9	RMSEA	≥ 0.08	1.000	<i>Good fit</i>

(Source : Processed Data on Primary Data, 2018)

Data Outliers

Outliers are the conditions of observation of a data that has unique characteristics that look very different from other observations and appear in the form of extreme values, both for single and combination variables. Detection of multivariate outliers is done by paying attention to the Mahalanobis distance value. Mahalanobis distance (Mahalanobis distance) for each observation that shows the distance of a data observation to the values (centroid) is considered an outlier and must be discarded from the analysis. The criteria used are based on the Chi-square value on the degree of freedom 2, namely the number of indicators in the fit of this research model at a significant level of $p < 0.000$. Mahalanobis Distance value or $X^2(180; 0.05)$ Indonesia = 18.99399. This means that all cases (observation number) which have Mahalanobis d-squared values that are greater than 18.99399, which means that the research data used has met the requirements of no multivariate outliers (Appendix 1.4 and Appendix 2.4).

Multicollinearity and Singularity

The next test is to see whether multicollinearity and singularity in a variable combination. Indications of multicollinearity and singularity can be known through the really small sample covariance matrix determinant values, or close to zero. The output of the calculation of the determinant of the sample covariance matrix by the AMOS 21 Program is as follows:

Determinant of sample Indonesian covariance matrix = .000

The calculation results are close to zero. Therefore, there is no multicollinearity and singularity, however it is still acceptable because other SEM assumption requirements are met.

Discriminant Validity

Discriminant Validity measures how far a construct is completely different from other constructs. The value of discriminant validity that provides evidence that a construct is unique and able to capture the measured phenomenon. The way to test it is to compare the square root value of Average Variance Extracted (AVE) or \sqrt{AVE} with the correlation value between constructs. The value of Variance Extracted (VE) for each construct in Indonesian data, as follows:

$$\begin{aligned} \text{Physic cost} &= \sqrt{AVE} = \sqrt{0.5280} = 0.726645 \\ \text{Energy cost} &= \sqrt{AVE} = \sqrt{0.6819} = 0.8258 \\ \text{Time cost} &= \sqrt{AVE} = \sqrt{0.9303} = 0.9645 \\ \text{Monetary cost} &= \sqrt{AVE} = \sqrt{0.5554} = 0.7452 \\ \text{Image value} &= \sqrt{AVE} = \sqrt{0.7149} = 0.8455 \\ \text{Personnel value} &= \sqrt{AVE} = \sqrt{0.6585} = 0.8115 \\ \text{Service value} &= \sqrt{AVE} = \sqrt{0.5962} = 0.7721 \\ \text{Product value} &= \sqrt{AVE} = \sqrt{0.6573} = 0.8107 \\ \text{Customer delivered value} &= \sqrt{AVE} = \sqrt{0.2729} = 0.5224 \\ \text{Customer satisfaction} &= \sqrt{AVE} = \sqrt{0.3972} = 0.6303 \\ \text{Customer loyalty} &= \sqrt{AVE} = \sqrt{0.6718} = 0.81967 \end{aligned}$$

The results of the calculation of the square root value of AVE construct or Implied (for all variable) Correlations (Group number 1 - Default model) Indonesia.

Table 8. Implied (for all variable) Correlations (Group number 1 – Default model)

	PC	EC	TC	MC	IV	PSV	SV	PV	CDV	CS	CL
PC	0,372										
EC	0,000	0,417									
TC	0,000	0,000	0,379								
MC	0,000	0,000	0,000	0,386							
IV	0,000	0,000	0,000	0,000	0,478						
PSV	0,000	0,000	0,000	0,000	,000	0,340					
SV	0,000	0,000	0,000	0,000	0,000	0,000	0,284				
PV	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,423			
CDV	0,048	0,062	0,086	0,077	0,136	0,070	0,055	0,078	0,067		
CS	0,033	0,042	0,059	0,053	0,094	0,048	0,038	0,054	0,046	0,248	
CL	0,024	0,031	0,043	0,038	0,068	0,035	0,028	0,039	0,034	0,247	0,431

(Source : Processed Data on Primary Data, 2018)

The above calculation results show that each latent construct has good discriminant validity because all the correlation values between constructs (which are not located on the diagonal table) are lower in value than the square root value of the AVE of each latent construct (located on the diagonal table) on. So that the overall latent construct in this study is quite unique and able to capture the measured phenomena.

Hypothesis Testing

Hypothesis testing was done using t-value with a significance level of 0.05. The t-value in AMOS 21 software was critical ratio (C.R.) in regression fit model (Group number 1-Default model). If critical ratio (C.R.) value ≥ 1.967 or probability (P) value ≤ 0.05 , then H_0 is rejected (study hypothesis is accepted). The result of AMOS 21 processing on the SEM Indonesia model as follows:

Table 9. Hypothesis Testing Results

			Estimate	S.E	C.R	P	Label
CS	<---	CDV	,690	,079	8,703	***	par_31
CL	<---	CS	1,037	,123	8,439	***	par_32
CL	<---	CDV	-,214	,090	-2,372	,018	par_33

(Source : Processed Data on Primary Data, 2018)

The table above was used as the main reference for hypothesis testing. The results of testing of all hypotheses proposed.

Hypothesis 1 was the effect of customer delivered value on the satisfaction of Indonesian customers. Hypothesis testing resulted in that customer delivered value had a very significant effect on customer satisfaction with t-value by $8.703 > 1.96$ and probability marked (***), then H_1 was

accepted. The higher customer delivered value felt by customer, thus customer satisfaction was also increased.

Product value relies on shipping indicators that the delivery of goods was appropriate with the time promised, the shipping office was able to provide accurate and reliable services, the calculation of bills was done fairly in regards to the goods' weight and purpose of delivery, and the goods were received in good condition. The service value was affected by goods sent (departure, transit, and arrival) that could be detected properly, the goods are received according to the scheduled arrival, the shipping office guarantees compensation for loss and damage of the goods.

The personnel value was influenced by employees who could answer questions, had a neat uniform, were responsive, accurate, and willing to interact with customers when there were problems. Employees were always smiling, greeting, being polite, and decent. The image value was influenced by postal companies' good reputation, generally reliable service of the shipping company, and several attractive promotional activities. Moreover, the cost was charged based on the specified service requirements and the queue time for the arrival of goods was in line with expectations.

Donoriyanto (2015) reported that some technical needed to be followed up immediately to provide satisfaction, namely the punctuality of goods delivery, various types of transportation for shipping goods, compensation, friendliness, and politeness of the employees in serving customers and

security of the office environment. Therefore, the higher the customer delivered value, the greater customer satisfaction will be.

Hypothesis 2 is the effect of customer delivered value on the loyalty of Indonesian customers. Based on the results of hypothesis testing showed that customer delivered value had a very significant effect on customer loyalty with t-value $-2,372 < 1.96$ or probability value of $0.018 < 0.05$ then H_2 was accepted. This research was supported by a study from Adil (2016) who reported that service quality had a significant influence on patient loyalty. This means that the customer delivered value had not met the expectations of Pos Indonesia's customers that aimed to produce loyal customers.

Customer delivered value still had not meet customer expectations. As for product value, service value, personnel value, image value, monetary costs, energy costs, and psychological costs had not been able to meet customer expectations to become loyal customers.

Hypothesis 3 was the effect of customer satisfaction on Indonesian customer loyalty. The output of hypothesis testing showed that customer satisfaction had a very significant effect on customer loyalty with t-value of $8.439 > 1.96$ and probability marked (***) then H_3 was accepted. This means that the greater customer satisfaction, the higher customer loyalty will be.

According to Hidayanti (2014), customer satisfaction directly had a positive and significant effect on customer loyalty. Product quality indirectly had a positive and significant effect on customer loyalty through customer satisfaction by being a regular customer, main choice, recommending to others, overall quality of service provided by the shipping office, various postal services and goods delivery were sold by the shipping office, the quickness and accuracy of the shipping process and goods arrival, and the price offered by the shipping office. So that, it

will make customers repurchase the services from this shipping service company, put the shipping service company as the first choice, and become a regular customer.

CONCLUSION

Respondents of postal and shipping services were dominated by men at 53.8%. The majority of respondents (52.78%) aged around 21-30 years old. The education level for the majority of respondents was middle school level (46.67%). The type of work was dominated by private employees at 35.562%. Respondent's income in the study was from IDR 2,500,001 until IDR 5,000,000 amounting to 37.78%. The intensity of service usage for 3 months is 1-2 times by going directly to the counter at 97.7%.

H_1 revealed that customer delivered value had a positive significant effect on customer satisfaction. H_2 revealed that customer delivered value had a significant negative effect on customer loyalty. H_2 revealed that customer satisfaction had a significant positive effect on customer loyalty. Because postal and shipping services need to pay attention to customer delivered value with the aim of making loyal customers.

Recommendation

Values need to be improved by postal and shipping service are the product value, service value, personnel value, image value, monetary cost, and time expense. Product values rely on shipping indicator that is appropriate with promised time, shipping office is able to give accurate and reliable service, bill calculation is fair in regards to its weight and shipping purpose, and the products are received in good condition.

The service value seen in the indicators of goods sent (departure, transit, and arrival) that can be detected properly, the goods are received according to the scheduled arrival, and the shipping office guarantees compensation for the loss and damage of the goods. Personnel values are shown on the indicator that employee can answer questions, have a neat uniform, are responsive, accurate, and willing to interact with customers when there are problems, and

employees always smile, greet, be polite, and decent.

The image value must be improved in the indicator aspects of having a good reputation, generally reliable service of the shipping company, and several attractive promotional activities from the office. Furthermore, the costs that must be improved through monetary cost are the costs indicators charged based on the specified service requirements. The time expense is shown in the queued time for the goods arrival to be appropriate with the expectations.

When customer delivered value is improved, it will result in customer satisfaction. Customers are satisfied with the quality of service provided by the office, various postal and shipping services, the quickness and accuracy of the delivery process, and the price offered by the shipping office. Satisfaction will create loyal customers with the following characteristics: customers will do repetitive purchase with the same service provider, put the company as the first choice, and become regular customer.

There need to be several improvements in the study indicators for further research. The indicators of customer delivered value include delivery receipts containing correct item details, the company allows customers to file complaints, provides security and comfort environment, costs used to search the address and telephone number, tracking of goods, transportation cost to the shipping office, service time and time travel to the shipping office in accordance with the expectations, efforts used to make transactions, the pressure that is felt when the information provided is wrong, as well as uncertainty and concern about the risk of lost items.

Ease of payment provided by the shipping office becomes indicators for customer satisfaction. Meanwhile, customer loyalty is indicated from customer recommendation of this shipping service company to other customers.

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How to cite this article: Khairunnisa N, Munandar JM, Najib M. Customer satisfaction and loyalty on customer delivered value of postal and shipping service. International Journal of Research and Review. 2018; 5(11):15-27.
