

Product Quality and After-Sales Service in Improving Customer Satisfaction and Loyalty

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Abstract

In this globalization era, companies are always required to show excellent performance and be able to adapt in changes and current business competitiveness. The aim of this research was to analyze the effect of product quality and after-sales service on customer satisfaction and loyalty in one of distributor companies in Pekanbaru Riau namely PT Oscarmas Pekanbaru. The sampling technique used in this study was probability sampling with the total of 82 customers as respondents. Data analysis technique was Structural Equation Model (SEM) using Smart PLS. The results of this research showed that the product quality had no significant effect on customer satisfaction but had significant effect on customer loyalty, after-sales services had significant effect on both customer satisfaction and customer loyalty and satisfaction had no effect on customer loyalty. Thus, study proved that between product quality and after-sales service had no indirect effect on customer loyalty through satisfaction.

Keywords: product quality, after-sales service, customer satisfaction, customer loyalty

Kualitas Produk dan Layanan Purna Jual dalam Meningkatkan Kepuasan dan Loyalitas Pelanggan

Abstrak

Di era globalisasi ini, perusahaan selalu dituntut untuk menunjukkan kinerja yang sangat baik dan mampu beradaptasi dalam perubahan dan daya saing bisnis saat ini. Tujuan dari penelitian ini adalah untuk menganalisis dampak kualitas produk dan layanan purna jual terhadap kepuasan dan loyalitas pelanggan di salah satu perusahaan distributor di Pekanbaru Riau yaitu PT Oscarmas Pekanbaru. Teknik pengambilan sampel yang digunakan dalam penelitian ini adalah probability sampling dengan total 82 pelanggan sebagai responden. Teknik analisis data adalah Structural Equation Model (SEM) menggunakan Smart PLS. Hasil penelitian ini menunjukkan bahwa kualitas produk tidak memiliki pengaruh signifikan terhadap kepuasan pelanggan tetapi memiliki pengaruh signifikan terhadap loyalitas pelanggan, setelah layanan penjualan memiliki pengaruh signifikan terhadap kepuasan pelanggan dan loyalitas pelanggan dan kepuasan tidak berpengaruh pada loyalitas pelanggan. Dengan demikian penelitian membuktikan bahwa antara kualitas produk dan layanan purna jual tidak memiliki efek tidak langsung pada loyalitas pelanggan melalui kepuasan.

Kata kunci: kualitas produk, layanan purna jual, kepuasan pelanggan, loyalitas pelanggan

INTRODUCTION

In this globalization era, the increase of business competitiveness requires companies to show excellent performance and be able to adapt in that competition. The rapid growth of Indonesian business is balanced with its growth, making this country a destination for investment by investors, both domestic and foreign. When competition in the business sector is getting tougher, companies must have a defense strategy to retain customers

through quality products or services, namely faster delivery times, better service than competitors, and high empathy for customers to participate in the competition.

PT. Oscarmas was founded in 2007 and is trusted by Sumitomo S.H.I. Construction Machinery as a distributor of Sumitomo heavy equipment and the supply of spare parts in Southeast Asia. In its activities as a distributor of heavy equipment, PT Oscarmas has customers consisting of various companies engaged in property, plantations, etc. These companies have strategies and consideration in making purchases of heavy equipment products/services. For this reason, it is very important for PT Oscarmas to keep their customers. From the data reported by PT. Sumitomo in 2015 to 2018, the target and realization of sales of Sumitomo's excavator and spare part units did not reach the company's annual target and tends to decrease every year (Sumitomo's Financial Reports 2019).

Table 1. PT. Sumitomo Sale's Report for year 2015 to 2018

Year	Total Sales of <i>Excavator & Sparepart</i> Sumitomo (in Units)		% Achievement
	Target	Realization	
2015	32.000.000.000	31.953.061.950	99,85%
2016	42.500.000.000	35.586.875.520	83,73%
2017	53.500.000.000	34.125.878.528	63,78%
2018	64.500.000.000	50.189.913.482	77,81%

Source : *Sumitomo's Financial Reports (2019)*.

Loyalty reflects the purchase of the same specific brand repeatedly because it is indeed the only brand available, the cheapest brand and so on (Murali et al., 2016). Loyalty is when a customer makes repeat purchases regularly. They also buy other products not just one product offered by the manufacturer, they give recommendation to their friends to also buy the same product to the same place, and they are not easy to switch to rival products. Loyalty is the commitment of customers to stay in depth to re-subscribe or make purchases of selected products or services consistently in the future, even though the effect of the situation and marketing efforts have the potential to cause behavior changes (Chandra et al., 2019). On the other hand, loyalty that causes failure to achieve sales targets is also caused by satisfaction.

Customer satisfaction is a feeling that arises as a result of evaluating the experience of using products or services (Baloglu, 2002). Some of the previous studies showed that customer satisfaction had a positive and significant effect on customer loyalty, which means the higher customer satisfaction, the more increase the customer loyalty in a product or services (Chang & Fong, 2010; Chang et al., 2009; Tsai et al., 2010). Therefore another research studied by Faullant et al. (2008) showed that customer satisfaction had a negative significant effect on customer loyalty. His study more focused on another factor that affected the customer loyalty such as customer trust on a product/company's image.

To maintain customer satisfaction, PT. Sumitomo provides services to get feedback or complain from customers. In the last few years, PT. Sumitomo had several complaints from customers regarding experiencing damage on Sumitomo excavator while carrying out

operational activities in the field, inadequate availability of spare parts when consumers want to buy their parts, the process of issuing old letters of goods and delays in sending parts.

Among the several factors that affect customer loyalty and satisfaction, this study focused on two factors affected them, there are product quality and after-sales service. Product quality is the ability of a product to perform various functions including durability, reliability, accuracy and ease of use. Product quality is carried out by a company to offer products that are different from other competitors (Devaraj et al., 2001). Research about product quality showed that product quality had a positive and significant effect on customer loyalty (Chang & Wang, 2011). However, another research about product quality of traditional restaurant in East Java, Indonesia showed that product quality had a negative effect on customer loyalty (Susanti, 2014). In addition to having an effect on loyalty, good product quality will also be able to increase customer satisfaction. The ability of a product to carry out its functions, including reliability, durability, ease of operation, and product improvement, indicates the higher the quality of the product, the more consumer will feel satisfied using the product (Susanti, 2014; Ishaq et al., 2014)

In order to maintain the quality of the products provided by PT Sumitomo to customers, one of the important roles is the services provided to the product after the purchase of the product, or commonly called after-sales service. After-sales service is all forms of services provided by the company to the customers after the purchase including services maintenance and repair (Adusei, 2019). After-sales service is the delivery of products to customers upon a purchase, which is valid as long as the customers still have a service bond or an ongoing relationship such as services in the form of warranties, parts, maintenance and equipment (Adusei, 2019). Previous research showed that after-sales service had a positive and significant effect on customer loyalty (Alireza et al., 2011). Another research also showed that after-sales service also had a positive and significant effect on customer satisfaction (Kurata & Nam, 2013). However, it contradicted by the research about after-sales service for automotive industries, where the results showed that after-sales service had no significant effect on customer satisfaction (Shahrouzi & Hosseini, 2015)

The different results from the previous researchers as mentioned above were considered as research gap. In order to fill the gap in the previously research and to answer the research problem about customer loyalty and satisfaction, this study focused on how product quality and after sales service improve customer satisfaction and improve customer loyalty, this study used customer satisfaction to filling gap between product quality and after sales service on customer loyalty. The following is the conceptual framework of this research (Figure 1):

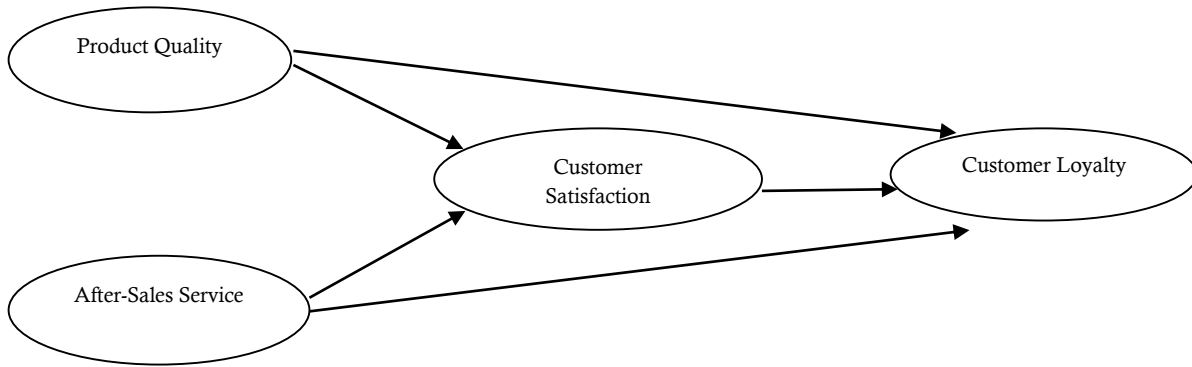


Figure 1. Conceptual framework

Based on the background of the business phenomenon and some previous research related to the relationship between product quality, after-sales service, as well as customer satisfaction and loyalty which are also reflected in the conceptual framework in Figure 1 above, the following hypotheses can be formulated:

- H1. Product Quality has significant effect on customer satisfaction
- H2. Product Quality has significant effect on customer loyalty
- H3. After-sales service has significant effect on customer satisfaction
- H4. After-sales service has significant effect on customer loyalty
- H5. Customer satisfaction has significant effect on customer loyalty

METHOD

Population and Sample

Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and drawn conclusions. The population in this study was all customers of PT. Oscarmas Pekanbaru in 2019 with the total of 82 customers. The sample in this study was taken using total sampling method, where all 82 populations/customers were sampled.

Measurement

This research was quantitative research using data from respondents as primary data. The variables in this study consisted of exogenous and endogenous variables. Endogenous variables are variables that are classified as independent or dependent variables if in relation to other variables, in other words these variables are considered to be affected by independent variables. In this case, the dependent variables were customer satisfaction (CS) and customer loyalty (CL). Meanwhile, Exogenous Variable is a variable that explain or affect the dependent variable or the variable that is considered to have the most effect among other variables. In this case, the independent variables were product quality (PQ) and after-sales service (ASS).

The questionnaire in this study consisted of total 20 statements. Product quality consisted of 8 statements, they were performance, durability, fitness of specification, features, reliability, aesthetic, perceived quality and serviceability (Shaharudin et al., 2012).

After-sales service consisted of 4 statements, they were warranty, spare part, maintenance and repair, facility and equipment (Murali et al., 2016). Customer satisfaction consisted of 5 statements, repurchase, creating Word of mouth (WoM), creating brand image and creating decision to purchase ((Shahrouzi Fard & Hosseini, 2015); (Gustafsson et al., 2005). Finally, the customer loyalty variable also consisted of 4 statements, they were repurchase of the product/services, make purchases outside the product/ service line, recommend product/services to colleague or other people, demonstrate immunity from the attractiveness of similar products from competitors (Baloglu 2002).

Analysis with Structural Equation Model Partial Least Square (SEM-PLS)

This study used SmartPLS software version 3.2.8 to analyze the data. The PLS or Partial Least Square test is a variant-based structural equation approach (Structural Equation Modeling/SEM). The PLS test has two main testing models, namely the measurement model and the structural model. The measurement model is to test the validity and reliability, while the structural model is to examine causality (hypothesis testing with predictive models).

Measurement Model Analysis (*Outer Model*), this analysis contained 1) Convergent Validity assessed based on the correlation between item score or component score; individual reflexive measure is high if they correlated more than 0.70 compared to the measured variable, and 2) Discriminant Validity Test calculated according to the cross-loading value of the manifest variable against each latent variable. If the correlation between latent variables and each indicator (manifest variable) is greater than the correlation with the other latent variables, the indicator is better than other latent variables. The other was 3) construction Reliability Test to see the value of AVE with composite reliability. AVE in reliability testing is the tool to measure the true value of the reliability of a construct (Hair et al., 2012).

Structural Model Analysis (*Inner Model*). this analysis contained 1) *Coefficient of Determination (R^2)*, The coefficient of determination or R Square is useful to predict and see how much the contribution of the effect given by variable X simultaneously (together) to the variable Y (Hair et al., 2012). 2) *Predictive Relevance (Q^2)*, Q-square measures the observed values generated from the model and the estimated parameters if the values are 0.02 (small), 0.15 (medium) and 0.35 (large) (Hair et al., 2012). 3) *Effect Size (f^2)*, the analysis was to discover the goodness of the model. The f^2 value of 0.02 is categorized as a weak effect of latent variables. The f^2 value of 0.15 is classified as sufficient effect. The f^2 value of 0.35 is a strong attraction (Hair et al., 2012). 4) *Hypothesis testing*, the testing utilized t-test. If p-value ≤ 0.05 (alpha 5%), ≤ 0.1 (alpha 10%), and ≤ 0.01 (alpha 1%), it is considered significant, and vice versa.

FINDING AND DISCUSSION

Measurement Model Analysis (Outer Model)

a. Convergent Validity Test

The results of convergent validity testing of data collection instruments in this study can be seen from the Table 2:

Table 2. Loading Factor

Variable	Statement	Loading Factor
PQ	X1.1	0.745
	X1.2	0.718
	X1.3	0.705
	X1.4	0.845
	X1.5	0.624
	X1.6	0.741
	X1.7	0.608
ASS	X2.1	0.758
	X2.2	0.696
	X2.3	0.788
	X2.4	0.609
CS	Y1.1	0.707
	Y1.2	0.618
	Y1.3	0.725
	Y1.4	0.780
	Y1.5	0.702
CL	Y2.1	0.634
	Y2.2	0.729
	Y2.3	0.745
	Y2.4	0.732

Based on the convergent validity test results in table 2, if a factor loading value <0.5 , it had to be excluded from the model and applied a re-estimation of the factor loading value. By issuing some loading factors <0.5 , the estimated loading factor values, all indicators used to continue the analysis to the next stage, met convergent validity because all loading factors were <0.5 . Hence, the convergent validity of all both exogenous and endogenous construct groups were valid.

b. Discriminant Validity Test

The results of convergent validity testing of data collection instruments in this study can be seen from the tables below:

Table 3. Discriminant Validity

Variable	Statement	PQ	ASS	CS	CL
PQ	PQ1	0.745	0.419	0.490	0.352
	PQ2	0.718	0.532	0.345	0.520
	PQ3	0.705	0.359	0.320	0.454
	PQ4	0.845	0.416	0.368	0.530
	PQ5	0.624	0.486	0.305	0.745
	PQ6	0.741	0.262	0.265	0.369
	PQ7	0.608	0.397	0.302	0.357
ASS	ASS1	0.465	0.758	0.390	0.364
	ASS2	0.581	0.696	0.367	0.423
	ASS3	0.418	0.788	0.580	0.745
	ASS4	0.209	0.609	0.275	0.732
CS	CS1	0.407	0.335	0.707	0.249
	CS2	0.467	0.399	0.618	0.182
	CS3	0.356	0.477	0.725	0.283
	CS4	0.257	0.468	0.780	0.248
	CS5	0.217	0.366	0.702	0.320
CL	CL1	0.364	0.383	0.241	0.634
	CL2	0.444	0.327	0.196	0.729
	CL3	0.624	0.486	0.305	0.745
	CL4	0.503	0.609	0.273	0.732

From the table 2 above, the model had good discriminant validity if each loading indicator value of a latent variable was greater than other correlated variables. The cross-loading value in this study for each indicator was greater than any other latent variable. It indicated each variable held good discriminant validity.

c. Construct Reliability Test

Average Variance Extracted (AVE) and Composite Reliability (CR Composite Reliability (CR) were considered in good condition if they had a value > 0.70. The Average Variance Extracted (AVE) was good if it had a value > 0.5.

Table 4. Construct Reliability

Variable	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>
PQ	0.879	0.513
ASS	0.807	0.513
CS	0.834	0.502
CL	0.803	0.506

According to the Constructive Reliability test of the measurement model, all variables were valid. The latent variables and the reliability of the measurement model were fine too. It showed the indicator was reliable in constructing exogenous constructs.

Measurement Model Analysis (Inner Model)

a. Coefficient of Determination (R2)

Table 5. R Square

Variable	R Square	R Square Adjusted
CS	0.374	0.358
CL	0.544	0.527

Based on Table 5, the R-square Adjusted value for the Satisfaction variable (Y1) was 0.358. This means that the percentage effect of the variable Quality of Product and After-Sales Service to Satisfaction was 35.8%. while the remaining 64.2% was affected by other factors. Furthermore, the R-Square Adjusted value for the Customer Loyalty (Y2) variable was 0.527. This means that the percentage effect of the variable quality of the Product, After-Sales Service and Satisfaction to Customer Loyalty was 52.4%, while the remaining 47.6% was affected by other factors.

b. Predictive Relevance (Q2)

Q2 value had the same meaning as the coefficient of determination (R-Square). A large Q-Square (Q2) value of 0 indicated the model has Predictive relevance; conversely if a value (Q2) less than 0, it indicates the model has less Predictive relevance; or in other words, where all the higher Q2 values, the model can be considered to be more fit with the data. Q2 value considerations can be made as follows:

$$Q^2 = 1-(1-R_1^2)(1-R_2^2)...(1-R_n^2)$$

$$Q^2 = 1-(1-0.358)(1-0.527)$$

$$Q^2 = 1-(0.642) (0.473)$$

$$Q^2 = 1-0.303$$

$$Q^2 = 0.697$$

The calculation result shows that the Q2 value of 0.697 means that the magnitude of the saltiness of the research data is explained by the structural model developed in this study and 0.303 is caused by other factors not included in this study.

c. Effect Size (F2)

Effect Size (f2) is to know the goodness of the model. It is to know whether the predictor of the variable have a weak, sufficient or strong effect on the structural level.

Table 6. Effect Size (F2) test

	CS	CL
PQ	0.045	0.419
ASS	0.225	0.112
CS		0.012

Based on Table 6, Effect Size f^2 Product Quality had a weak effect on Satisfaction and a strong effect on Customer Loyalty. After-Sales Service had a strong effect on Satisfaction and sufficient effect on Customer Loyalty. In addition, Satisfaction had a weak effect on Customer Loyalty.

d. Hypothesis Test

Table 7. Hypothesis Test

Hypothesis	Original Sample (O)	Average (M)	(STDEV)	T Statistics (O/STDEV)	P Values	Conclusion
Hypothesis 1	0.208	0.219	0.131	1.594	0.111	Rejected
Hypothesis 2	0.553	0.564	0.094	5.879	0.000	Accepted
Hypothesis 3	0.465	0.480	0.135	3.456	0.001	Accepted
Hypothesis 4	0.323	0.326	0.122	2.645	0.008	Accepted
Hypothesis 5	-0.095	-0.101	0.111	0.855	0.393	Rejected

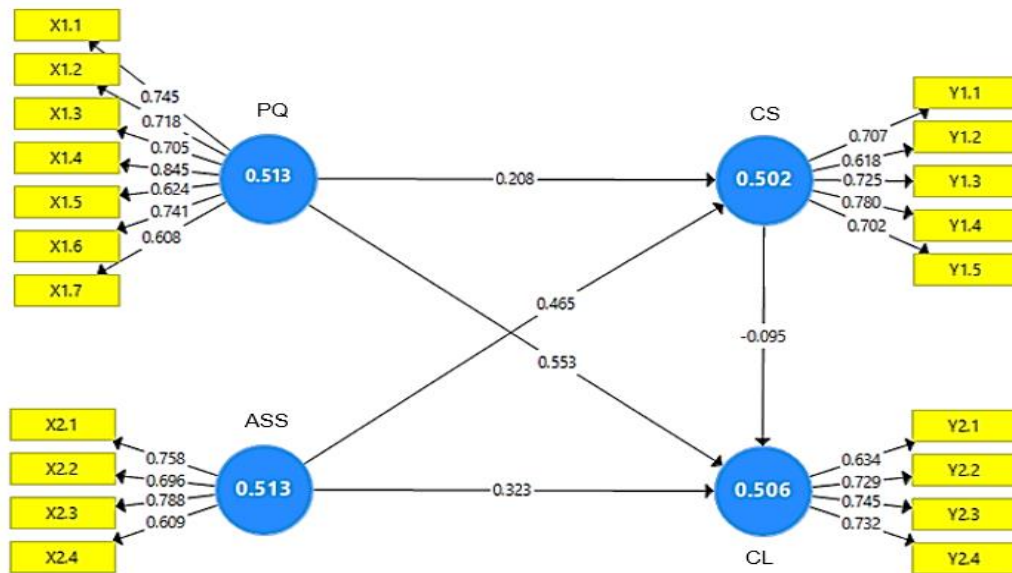


Figure 2. Path Model

Product quality on customer satisfaction and customer loyalty

Hypothesis test results at table 7 above showed that H1 was rejected because P Value was higher than alpha 0.05, which means Product Quality had no significant effect on customer satisfaction. Customer satisfaction of the product or company depends on the quality of the company's products, the higher of product quality, the higher the customer satisfaction produced (Tsotsou, 2006; Ishaq et al., 2014). This result of this research contradicted with the previous research which stated that product quality had significant effect on customer satisfaction (Ishaq et al., 2014; Chang & Wang, 2011; Jahanshahi et al., 2011).

Furthermore, the hypothesis test results showed that H2 was accepted because P Value was lower than alpha value 0.05. Although product quality has no effect on customer satisfaction, in this study also found that product quality had significant effect on customer loyalty which means product quality is still important in order to improve customer loyalty. This hypothesis 2 was supported by previous research which found that product quality had a significant effect on customer loyalty (Chang & Fong, 2010; Razak et al., 2016). Several previous research projects also found that to generate customer loyalty, product quality can play a role directly or indirectly. Asmayadi & Hartini (2015) found that product quality will increase customer loyalty through emotional and functional values of the product. Another research conducted by (Halim et al., 2014) found that customer trust was mediating variable in relationship between product quality and customer loyalty.

The existence of customer loyalty to the products produced by the company, has the meaning that the company's products are very good product quality. So customers will make repetitive purchases more than once and will recommend it to friends or family (Hallak, 2010). The result of this study on hypothesis 2 and 3 showed that product quality had no significant effect on customer satisfaction, but had significant effect on customer loyalty, which means that customer satisfaction had no rules as intervening/mediating variable between product quality and customer loyalty. The study conducted by Ishaq et al., (2014) also presented that customer satisfaction only participated as partial mediation in relationship between product satisfaction and customer loyalty.

After-sales service on customer satisfaction and customer loyalty

From the hypothesis test above, H3 was accepted because P Value of the PLS results was lower than alpha 0.05. After-Sales Service occurs after the purchase transaction of a product or service. If a company has a policy to provide after-sales service facilities to its customers, the service can be in the form of a guarantee which is a factor supporting perfection for customer satisfaction. The result of this research is in line with the research found that after-sales service has a significant effect on customer satisfaction (Chang & Fong, 2010).

The same result found in hypothesis 4 where P value was also lower than alpha 0.05 which means after-sales service had significant effect on customer loyalty, this supported by the result from previous research which also found that after-sales service had significant effect in improving customer loyalty (Alireza et al., 2011; Kurata & Nam, 2013). PT. Sumitomo provides after-sales services as all forms of services provided by the company to customers after the sale, such as maintenance and repair services of heavy equipment. In this study, the responses of respondents to the research questions given in this study were the highest response is related to the availability of service equipment to facilitate officers to solve problems that occur in products. Through this after-sales service, customers can feel that they are truly valued, because the service is not only provided when they make a purchase, but after the purchase, customers also receive good service, so they feel truly served (Alireza et al., 2011).

Customer satisfaction on customer loyalty

Table 7 above showed hypothesis 5 was rejected because P value was higher than alpha 0.05, which means customer satisfaction had no effect on customer loyalty. Loyalty refers more to the manifestation of the behavior of decision-making units to make continuous purchases of goods or services from a selected company. In this company, customer satisfaction is not a determining factor for customers to be loyal or not to be with the company. This research also found that beside customer satisfaction, product quality and after-sales service have important role in improving customer loyalty. This result contradicted with the previous research which found customer satisfaction had significant effect on customer loyalty (Chang & Fong, 2010; Tsai et al., 2010). The result of this hypothesis 5 also showed that this study only proved some direct relationship or effect between both product quality and after-sales service on customer loyalty, but there were no indirect effect between both of them through mediation of satisfaction.

CONCLUSION

Based on the results of research, the following conclusions can be drawn: (1) Product quality has no effect on customer satisfaction at PT Oscarmas Pekanbaru. (2) Product quality has significant effect on customer loyalty at PT. Oscarmas Pekanbaru. (3) After-sales service has significant effect on customer satisfaction on PT. Oscarmas Pekanbaru. (4) After-sales service has significant effect on customer loyalty at PT Oscarmas Pekanbaru. (5) Customer satisfaction has no significant effect on customer loyalty at PT. Oscarmas Pekanbaru.

Through this research, company should be able to continuously improve product quality and after-sales service in order to be able to increase customer loyalty. Improved after-sales service can be done through making a quick warranty claim, availability of complete spare parts, providing facilities and accommodation for mechanics in dealing with problems with Sumitomo products and improving the ability of the mechanics through various specialized training. Further research is suggested to be able to examine and find another mediating or moderating variable in fill the gap between product quality and after-sales service in relations to customer loyalty.

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