

THE EFFECT OF PRICE, PRODUCTS QUALITY, SERVICE QUALITY, AND CUSTOMER TRUST ON CUSTOMER LOYALTY AT PT. BUMI ANDALAS BUILDING PEKANBARU**Aina¹, Astri Ayu Purwati^{2*}, Erima Rusilawati³, Anggrina Febriyanti Napitupulu⁴, Amirudin M Amin⁵**^{1,2,3,4,&5}Institut Bisnis dan Teknologi Pelita IndonesiaEmail: ainavip312@gmail.com² and astri.ayu@lecturer.pelitaindonesia.ac.id^{2*}

*correspondence author

ABSTRACT

The purpose of this study was to determine the effect of price, product quality, service quality, and customer trust on customer loyalty at PT. Bumi Andalas Pekanbaru Building. This study uses primary and secondary data. In this study, primary data were obtained directly from respondents by dividing questionnaires or lists of statements on a predetermined sample. Secondary data is generally in the form of evidence, historical records or reports arranged in published archives. The method used is multiple linear regression analysis with a sample of 100 respondents. The results of this study indicate that product quality, brand image, trust and product innovation have a significant positive effect on customer loyalty who have made purchases at PT. Bumi Andalas Building Pekanbaru.

Keywords : Price; Product Quality; Service Quality; Customer Trust

INTRODUCTION

Background

The increasingly fierce competition between fellow distributors of building materials in recent years is not only due to globalization. But it is more because customers are getting smarter, price-conscious, product quality, demanding, less forgiving, and approached by many distributors. Advances in communication technology also play an important role in increasing competition, as it gives customers access to more information about the wide range of products offered. In other words, customers have more choices in using the money they have.

This certainly triggers product provider institutions to compete to dominate the market by offering products that customers need. PT. Bumi Andalas Bangunan which was established in 2014 is one of the major distributors of building materials in Pekanbaru. Engaged in the field of building materials distributor, PT. Bumi Andalas Bangunan has customers who include building shops, property companies, panglong, including for personal use.

Table 1. Annual Sales of PT. Bumi Andalas Buildings in Pekanbaru

It	Year	Total Sales	Sales Target	Percentage
1	2017	IDR 6,300,540,000	IDR 6,900,000,000	91%
2	2018	IDR 6,100,980,000	IDR 7,000,000,000	87%
3	2019	IDR 6,300,546,000	IDR 7,100,000,000	89%
4	2020	IDR 6,250,700,000	IDR 7,150,000,000	87%
5	2021	IDR 6,125,350,000	IDR 7,200,000,000	85%

Source : Manager of PT. Bumi Andalas Pekanbaru Building

In Table 1.1, you can see the percentage of annual sales of PT. Bumi Andalas has built an average of 88% in the last five years. Sales that have not been maximized and there are changes such as increases and decreases caused by customer loyalty due to selling prices, product quality, delivery timeliness and customer trust that are not in accordance with the market and demand that is happening in the field. To find out the intensity of customer purchases of PT. Bumi Andalas Bangunan Pekanbaru, which makes purchases every month, conducted a temporary pre-survey of 30 respondents, to find out the loyalty of customers of PT. Bumi Andalas Bangunan Pekanbaru, the following are the results of the pre-survey that has been carried out:

Table 2. The results of the pre-survey to the subscription of PT. Bumi Andalas Building

It	Question	< 2 times	2-5 times	6-10 times	> 10 times
1	How often do you make purchases at this company in a month?	6	20%		
			12	40%	
				6	20%
					6

Source : Processed Data 2022

Based on the results of the pre-survey conducted by the researcher to the 30 respondents above with the question "how often do you make purchases in this company in a month?", 6 respondents or 20% stated to make purchases more than 10 times a month, 6 respondents or 20% stated to make purchases 6-10 times a month, 12 respondents or 40% stated to make purchases 6-10 times a month, and the remaining 6 respondents or 20% stated that they only made purchases more than 10 times a month. Because there are still subscriptions that make purchases <2 times a month, further studies are needed on customer loyalty.

Based on research (Thungasal & Siagian, 2019), (Anggraini & Budiarti, 2020) and (Farisi & Siregar, 2020) With the results of the study stating that price variables have a positively significant effect on customer loyalty. Meanwhile, in the research conducted by (Ayu et al., 2019) stated that price variables have a significant negative effect on customer loyalty.

Based on research (Hasanuddin et al., 2020) and (Kusumasasti & Hadiwidjojo, 2017) stated that the product quality variable had a significant negative effect on customer loyalty. Meanwhile, in the research conducted by (Rosalina et al., 2019) and (Chaniago & Khare, 2021) With the results of the study stating that the product quality variable has a positive and significant effect on customer loyalty.

Based on research (Aprilla & Amalia, 2019), (Anggraini & Budiarti, 2020) and (Annisa et al., 2020) With the results of the study stating that the service quality variable has a positive and significant effect on customer loyalty. Meanwhile, in the research conducted by (Octavia, 2019) stated that the service quality variable had a significant negative effect on customer loyalty.

Based on research (Nirawati et al., 2020) stated that the service quality variable had a significant negative effect on customer loyalty. Meanwhile, in the research conducted by (Fahmi et al., 2018) and (Nurdini &

Oktini, 2019), with the results of the study stating that the customer trust variable has a positive and significant effect on customer loyalty.

LITERATURE REVIEW

Customer Loyalty

According to (Kotler & Armstrong, 2016) Define Customer loyalty as a deeply held commitment to buy or re-endorse a product or service that you like in the future, even if the influence of the situation and marketing efforts has the potential to cause customers to switch. According to (Adhari, 2021) There are 5 indicators to measure customer loyalty, namely (1) making a purchase or re-transaction, (2) giving a reference to others, (3) rejection or no intention to move to a competitor's product. (4) not interested in products offered by competitors, (5) becoming more loyal.

Price

Price is the amount of money billed for a product on a certain amount of value that consumers exchange for the benefit of owning or using the product (Daryanto, 2013). There are 5 price indicators according to (Tjiptono, 2013), namely: (1) price affordability, (2) price compatibility with product quality, (3) price competitiveness, (4) price discounts, (5) price compatibility with product benefits.

Product Quality

The definition of product quality is a characteristic of a product or service that strengthens its ability to satisfy the wants and needs of customers, both implicit and (Kotler & Armstrong, 2018). There are 8 product quality indicators according to (Kotler & Keller, 2016a) namely: (1) Form, (2) Feature, (3) Performance quality, (4) Perceived quality, (5) Durability, (6) Reliability, (7) Repairability, (8) Design.

Quality of Service

Service quality is a priority given by a service company so that the service provided by the service company is assessed as quality and aims to satisfy customers by offering or providing services that meet consumer standards (Sulaeman, 2018). According to (Tjiptono, 2013) There are 5 indicators of service quality, namely: (1) Responsiveness, (2) Guarantee, (3) Physical or tangible evidence, (4) Empathy, (5) Reliability.

Customer Trust

Trust in a brand is formed from past experiences and previous interactions. A consumption experience can be defined as the awareness and feelings experienced by consumers during the use of a product or service (Fahmi et al., 2018). According to (Kotler & Keller, 2016) There are 3 indicators of customer trust, namely: (1) ability, (2) integrity, (3) benevolence.

Relationship between Variables

A hypothesis is a provisional answer to the formulation of the problem. Because of its temporary nature, it needs to be proven true through the data collected. Based on the background of the problem and the framework of thought that has been described earlier, the hypothesis in this study is: (1) the influence of price on customer loyalty. Kotler & Armstrong (2017) Price can be narrowly defined as the amount of money that must be paid for a product or service, or it can be defined outside price as the amount of money paid by consumers for the benefit of owning and using a product or service. Based on the definitions of the experts above, it is concluded that price is the value that must be paid to own or use a product or service. The more varied and affordable the price of the products offered, the higher the customer loyalty. This is in line with research conducted by (Thungasal & Siagian, 2019), (Anggraini & Budiarti, 2020) and (Farisi & Siregar, 2020), that price has a positive and significant effect on customer loyalty. But (Ayu et al., 2019) with the results stating that the price variable has a negative and insignificant effect on customer loyalty.

(2) the influence of product quality on customer loyalty. A product is everything that can be offered by a manufacturer to be considered, requested, sought, bought, used or consumed by the market as a fulfillment of the needs or desires of the relevant market (Tjiptono & Chandra, 2012). Products are part of the marketing mix used by manufacturers to achieve goals through satisfying consumer needs and desires. Regarding products, companies must be able to determine producers in accordance with their target market where there is a classification of goods, namely the variable of immediate satisfaction and long-term consumer welfare as well as goods based on the purpose of the user, including consumer goods and industrial goods (Qomariah, 2016). Based on the definitions of the experts above, it is concluded that product quality is the main element of a product that is considered very important by a consumer as the fulfillment of desired needs. The more diverse the products are in accordance with customer expectations, the higher the customer loyalty. This is in line with research conducted by (Hasanuddin et al., 2020) and (Kusumasasti & Hadiwidjojo, 2017), stating that the product quality

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

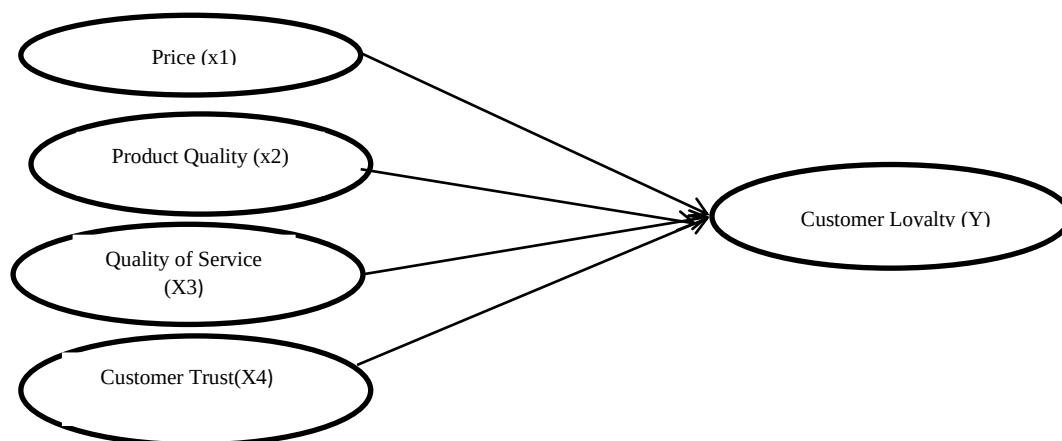
variable has a negative and insignificant effect on customer loyalty. But (Rosalina et al., 2019) and (Chaniago & Khare, 2021) With the results stating that the product quality variable has a positive and significant effect on customer loyalty.

(3) the effect of service quality on customer loyalty. According to (Tjiptono, 2014) that service quality is an effort to meet consumer needs both from products and services and the accuracy of its delivery to balance consumer expectations. Based on the definition of the expert above, it is concluded that service quality is a service that is carried out to meet customer needs based on the expectations or expectations of the customer. Service quality can also be interpreted as the expectation of service expected by customers. The faster the response and handling of complaints, the more loyal customers will be. This is in line with research conducted by (Hasanuddin et al., 2020) and (Kusumasasti & Hadiwidjojo, 2017), stating that the service quality variable has a negative and insignificant effect on customer loyalty. But (Rosalina et al., 2019) and (Chaniago & Khare, 2021) with the results stating that the service quality variable has a positive and significant effect on customer loyalty.

(4) the influence of customer trust on customer loyalty. Trust in a brand is formed from past experiences and previous interactions. A consumption experience can be defined as the awareness and feelings experienced by consumers during the use of a product or service (Fahmi et al., 2018). Based on the expert definition above, it is concluded that customer trust is one party's belief in reliability and integrity in relationships and beliefs with other parties. The fulfillment of agreements made with customers increases customer loyalty. This is in line with research conducted by (Nirawati et al., 2020) stated that the variable of customer trust had a negative and insignificant effect on customer loyalty. But (Fahmi et al., 2018) and (Nurdini & Oktini, 2019) with the results stating that the customer trust variable has a positive and significant effect on customer loyalty.

Framework of Thought

The research framework describes the relationship of independent variables, in this case Price Quality (X1), Product Quality (X2), Service Quality (X3), and customer trust (X4) to the dependent variable, namely Customer Loyalty (Y).



Source : Processed Data 2022

Figure 1. Framework of Thought

Hypothesis formulation

The hypothesis prepared in this study is as follows:

H₁ : Price has a positive effect on customer loyalty of PT. Bumi Andalas Building Pekanbaru.

H₂ : Product quality has a positive effect on customer loyalty of PT. Bumi Andalas Building Pekanbaru.

H₃ : Product quality has a positive effect on customer loyalty of PT. Bumi Andalas Building Pekanbaru.

H₄ : Customer trust has a positive effect on customer loyalty of PT. Bumi Andalas Building Pekanbaru.

RESEARCH METHODS

Time and Place of Research

The research was conducted from August 29, 2022 to completion, and this research was conducted at PT. Bumi Andalas Building Pekanbaru, Riau Province, Indonesia. This company is a company engaged in the distribution of building materials.

Population and Sample

The population of this study is customers of PT. Bumi Andalas Pekanbaru Building which totals 248. The sample used in this study was as many as 100 people. And the sampling technique uses slovin because the

population is known with certainty and is homogeneous.

Operational variables of the research

In this study, it consists of independent variables, namely Price (X1), Product Quality (X2), Service Quality (X3), Customer Trust (X4), and the bound variable is Customer Loyalty (Y1). Bound variables are variables that are influenced or consequential, because of the existence of independent variables.

Table 3. Operational variables of the research

Variable	Indicators	Source
Customer Loyalty (Y1)	1. Make purchases or re-transactions	(Adhari, 2021)
	2. Giving referrals to others	
	3. Refusal or non-intention to move to a competitor's product	
	4. Not interested in products offered by competitors	
	5. Become More Loyal	
Price (x1)	1. Affordability	(Tjiptono, 2012)
	2. Price conformity with product quality	
	3. Price Competitiveness	
	4. Discounts	
	5. Price Compatibility with Product Benefits	
Product Quality (x2)	1. Form	(Kotler, P., & Keller, 2015)
	2. Features	
	3. Performance quality	
	4. Perceived <i>quality</i>	
	5. Durability	
	6. Reliability (reability)	
	7. Repairability	
	8. Design	
Quality of Service (X3)	1. Responsiveness	(Tjiptono, 2013)
	2. Assurance	
	3. Tangibles (Physical or tangible evidence)	
	4. Empathy	
	5. Reliability	
Customer Trust (x4)	1. Ability	(Kotler, P., & Keller, 2015)
	2. Integrity	
	3. Benevolence (seriousness)	

Source : Processed Data 2022

Data Source

Data collected and processed by researchers obtained from respondents. The primary data used in this study is in the form of the results of respondents' questionnaire data on the influence of price, product quality, service quality, and customer trust on customer loyalty of PT. Bumi Andalas Building in Pekanbaru City. And secondary data is a type of data that comes from document sources or other secondary sources in a study obtained from reports from an institution, previous research journals, and magazines related to the phenomenon being studied.

Data Analysis Techniques

Descriptive Analysis

To find out the influence of price, product quality, service quality, and customer trust on customer loyalty of PT. Bumi Andalas Bnagunan Pekanbaru. The data comes from respondents' answers to the items contained in the questionnaire and will be processed by grouping and tabulating and then explained.

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

Preliminary Test**Validity Test**

Validity tests are used to measure the validity of a questionnaire or not. A questionnaire is said to be valid if the questionnaire is able to reveal something that will be measured by the 33 questionnaires. This validity test uses *Pearson Correlation*, which is by calculating the correlation between the values obtained from the questions. A question is said to be valid if the significance level is below 0.05

Reliability Test

A reliability test is actually a tool to measure a questionnaire that is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if a person's answers to questions are consistent or stable over time. The questionnaire item is said to be reliable (feasible) if Cronbach's alpha > 0.06 and is said to be unreliable if cronbach's alpha < 0.06 (Ghozali, 2012).

Classical Assumption Test**Simultaneous Test (Test F)**

The value used for simultaneous testing is the Fcalculus value. The significant F test shows that the value of the variation of the bound variable, namely the purchase decision, which is explained together by the independent variables, namely trust, convenience, and promotion, is really significant and occurs in real life and is not just a coincidence.

Determination Coefficient Test (R2)

According to (Ghozali, 2012) The determination coefficient (R2) is a tool to measure how far the model is able to explain the variation of dependent variables. The value of the determination coefficient is between zero or one. A small R2 value means that the ability of independent variables to explain the variation of dependent variables is very limited. Conversely, if a value close to 1 means that the independent variables provide almost all the information needed to predict those variables.

Multiple Regression Test

The analysis method in predicting the capital structure is carried out by the multiple regression analysis method. The multiple linear regression method was used to test the influence of more than a number of independent variables on dependent variables.

Hypothesis Test (t-test)

Hypothesis testing is needed to test whether the independent variable has an effect on the dependent variable. According to (Widarjono, 2013) The T-test is a procedure in which the results of the sample can be used to verify the truth or error of the null hypothesis.

RESEARCH RESULTS AND DISCUSSION**Characteristics of Respondents**

The respondents in this study are described in several characteristics, namely based on gender, age, education, marital status, and purchase:

Table 4. Characteristics of Research Respondents

Characteristic	Information	Frequency	%
Gender	Man	77	77%
	Woman	23	23%
Total		100	100%
Age	25-30 Years	3	3%
	31-35 Years	46	46%
	35-45 Years	28	28%
	> 45 years	23	23%
Total		100	100%
Education	High School	57	57%
	Diploma	12	12%

Characteristic	Information	Frequency	%
	Bachelor	31	31%
Total		100	100%
Marital Status	Marry	96	96%
	Unmarried	4	4%
Total		4	100%
Purchase	Company	92	92%
	P ribadi	8	8%
Total		100	100%

Source : Processed Data 2022

Based on the data in table 3 of the characteristics of the respondents above, it can be concluded that. The first, based on gender, is more dominant is male as many as 77 people (77%) and the least is female as many as 23 people (23%). This is because the level of need for building materials is more dominant to men. Second, based on age, the most dominated by customers 31-35 years old as many as 46 people (46%) and the least age 25-30 years old which amounted to 3 people (3%). Based on the results, it is known that the most consumers who buy building materials are at the age of 31-35 years, because at that age they are already married and have a fixed income and have a need for building materials.

The number of consumers who are respondents in this study is dominated by consumers with the last education at the high school level 57 people (57%) and at least 12 people (12%) with a diploma. Based on the known results, respondents who made purchases at PT. Bumi Andalas buildings are mostly educated at the high school level, due to the level of education of PT. Bumi Andalas The surrounding buildings are still few with Diploma/Bachelor education, and more customers are educated in high school.

The number of consumers who are respondents in this study is dominated by consumers with married marital status as many as 96 people (96%) and at least with unmarried marital status as many as 4 people (4%). This is because the respondents who have been married are over the age of 31 who already have a fixed income and have a need for building materials. There were 92 people (92%) respondents who made purchases from companies, while 8 people (8%) respondents made purchases from individuals. This is because the company that makes the purchase aims to resell.

Respondent's Response

Consumer Loyalty Variables

Using 10 (ten) items of statements about consumer loyalty, the average is 3.11, which means that the respondent's response to the variable is considered quite good by the respondent. The highest average score is found in statement number 2, namely I often repurchase at PT. Bumi Andalas Building Pekanbaru is 3.99. This is because the prices offered tend to be more affordable, so it is one of the considerations for customers to decide on a purchase. While the lowest score is found in statement number 10, namely, employees of PT. Bumi Andalas The building is friendly so that customers are comfortable shopping at 1.38. This is because the response to some problems is not quickly overcome.

Price Variables

Using 10 (ten) items of statements regarding product quality, it shows an average of 3.15 which means that the respondent's response about the variable is considered quite good by the respondents. The highest average score is found in statement number 5, namely the product offered by PT. Bumi andalas Bangunan Pekanbaru provides discounts to customers who buy in large *quantities* of 3.89. This is because the difference between the purchase of large parties is different from the acquisition of ordinary companies. While the lowest value is found in number 10, namely the selling price of PT. Bumi Andalas Bangunan Pekanbaru tends to be above competitors by 1.46. This is because consumers want a much cheaper price. Not all product quality of PT. Bumi Andalas is the same as other distributors, therefore there is a slight price difference with the same product but different quality.

Product Quality Variables

Using 16 (sixteen) items of statements regarding product quality, it shows an average of 3.18 which means that the respondent's response to the variable is considered quite good by the respondent. The highest average score is found in statement number 10, which is that the products offered are always in stock of new goods of 3.66. This is because PT. Bumi Andalas building is one of the major distributors of building materials in Pekanbaru, so it is not surprising that the products are obtained by customers who stock new goods. While the lowest score is found

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

in number 16, namely PT. Bumi Andalas Bangunan Pekanbaru provides a more famous product of 1.5. This is because some of the more well-known products have not yet collaborated with this company.

Service Quality Variables

Using 10 (ten) items of statements regarding the quality of service, it shows an average of 3.10 which means that the respondent's response about the variable is considered quite good by the respondent. The highest average score is found in statement number 4, namely employees have the ability to answer customer questions of 3.73. This is because the employees of PT. Bumi Andalas Bangunan Pekanbaru understands and understands the products distributed, it makes it easier to answer questions from customers about product information. While the lowest score is found in number 10, namely PT. Bumi Andalas Bangunan was quick to respond in handling the problems faced by customers by 1.36. This is because in some cases there must be permission from the authorized superior, because the superior is not always in place, therefore it takes a little time.

Customer Trust Variables

Using 6 (six) items of statements regarding customer trust, it shows an average of 3.04 which means that the respondent's response to the variable is considered quite good by the respondent. The highest average score is found in statement number 3, namely PT. Bumi Andalas Bangunan Pekanbaru maintains and fulfills the agreements that have been made with customers. by 3.19. This is because PT. Bumi Andalas Bangunan Pekanbaru always maintains and fulfills the agreements that have been made with customers. While the lowest score is found in number 2, namely PT. Bumi Andalas Bangunan Pekanbaru was able to provide a fairly long credit to customers of 2.77. This is because not all customers get this istimewa treatment, only customers who meet the criteria get it

Preliminary Test

Validity Test

From the results of the validity test, the results were obtained that each statement had a calculated r value $> r$ table 0.139 so that it can be said that the instrument used in this study is valid. The test results show the following information:

Table 5. Variable Validity Test Table

Variable	Statement	r calculate	r table	Information
Price (x1)	X1.1.1	0,615	0,197	Valid
	X1.1.2	0,692	0,197	Valid
	X1.2.1	0,605	0,197	Valid
	X1.2.2	0,637	0,197	Valid
	X1.3.1	0,626	0,197	Valid
	X1.3.2	0,579	0,197	Valid
	X1.4.1	0,708	0,197	Valid
	X1.4.2	0,664	0,197	Valid
	X1.5.1	0,712	0,197	Valid
	X1.5.2	0,639	0,197	Valid
Product Quality (x2)	X2.1.1	0,519	0,197	Valid
	X2.1.2	0,367	0,197	Valid
	X2.2.1	0,706	0,197	Valid
	X2.2.2	0,671	0,197	Valid
	X2.3.1	0,661	0,197	Valid
	X2.3.2	0,688	0,197	Valid
	X2.4.1	0,635	0,197	Valid
	X2.4.2	0,658	0,197	Valid

Variable	Statement	$r_{\text{calculate}}$	r_{table}	Information
	X2.5.1	0,659	0,197	Valid
	X2.5.2	0,715	0,197	Valid
	X2.6.1	0,684	0,197	Valid
	X2.6.2	0,716	0,197	Valid
	X2.7.1	0,708	0,197	Valid
	X2.7.2	0,730	0,197	Valid
	X2.8.1	0,776	0,197	Valid
	X2.8.2	0,715	0,197	Valid
Quality of Service (X3)	X3.1.1	0,561	0,197	Valid
	X3.1.2	0,662	0,197	Valid
	X3.2.1	0,693	0,197	Valid
	X3.2.2	0,639	0,197	Valid
	X3.3.1	0,674	0,197	Valid
	X3.3.2	0,629	0,197	Valid
	X3.4.1	0,524	0,197	Valid
	X3.4.2	0,598	0,197	Valid
	X3.5.1	0,569	0,197	Valid
	X3.5.2	0,750	0,197	Valid
Customer Trust (X4)	X4.1.1	0,553	0,179	Valid
	X4.1.2	0,693	0,179	Valid
	X4.2.1	0,732	0,179	Valid
	X4.2.2	0,753	0,179	Valid
	X4.3.1	0,784	0,179	Valid
	X4.3.2	0,649	0,179	Valid
Customer Loyalty (Y1)	Y.1.1	0,291	0,197	Valid
	Y.1.2	0,232	0,197	Valid
	Y.2.1	0,597	0,197	Valid
	Y.2.2	0,662	0,197	Valid
	Y.3.1	0,694	0,197	Valid
	Y.3.2	0,550	0,197	Valid
	Y.4.1	0,623	0,197	Valid
	Y.4.2	0,463	0,197	Valid
	Y.5.1	0,630	0,197	Valid
	Y.5.2	0,474	0,197	Valid

Source : Processed Data 2022

Based on Table 4.8 above, it can be seen that each statement item is valid, this can be identified if the correlation value is greater than r_{table} then the data is valid. So it can be concluded that all the variables of the statement used are declared valid and can be used.

Reliability Test

The reliability test aims to find out the extent to which the measurements that have been made in this study are reliable or reliable. Measurement consistency illustrates that the instrument can work well at different times and situations. The reliability test was carried out by calculating the *Cronbach's Alpha* value of each instrument in a

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

variable. The value for determining the reliability of an instrument is *Cronbach's Alpha* value > 0.600 . The results of the reliability test are shown in the table below:

Table 6. Instrument Reliability Test Results

Variable	Cronbach's Alpha	Decision
Price (x1)	0,899	Reliable
Product Quality (X ₂)	0,935	Reliable
Quality of Service (X ₃)	0,890	Reliable
Customer Trust (X)	0,883	Reliable
Customer Loyalty (Y)	0,833	Reliable

Source : Processed Data 2022

The high or low reliability is indicated by a number called the value of the reliability coefficient. In general, reliability is considered satisfactory enough if *Cronbach's alpha* has a $>$ value of 0.600. Based on Table 4.9 above, it shows that the values of *Cronbach's alpha* coefficients of all variables (variables x and y) have values of 0.899, 0.935, 0.890, 0.883, and 0.833. The value of *Cronbach's alpha* for variables X1, X2, X3, X4, and Y1 is greater than 0.600, so it can be concluded that all variable statements are valid and reliable.

Normality Test

The normality test aims to test whether in the regression model of the bound variable and the free variable has a normal distribution or not, the residual value has a normal distribution or not. The normality test used in this study is Kolmogorov Smirnov, which is with the criterion that if the significance of Kolmogorov Smirnov < 0.05 , then the data is not normal, on the contrary, if the significance of Kolmogorov Smirnov > 0.05 , then the data is normal. The results of the normality test can be seen in the image below:

**Table 7. Normality Test Results
One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	3,97590870
Most Extreme Differences	Absolute	,059
	Positive	,045
	Negative	-,059
Test Statistic		,059
Asymp. Sig. (2-tailed)		,200 ^{c,d}

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Source: 2022 processed data

Based on the results of the normality test presented in the table above, it can be seen that the significance value of each variable is greater than $\alpha = 0.05$. Thus, it can be concluded that all variables in this study are normally distributed.

Multicollinearity Test

The Multicollinearity Test aims to find out whether the relationship between independent variables has a multicorrelation problem or not. Multicorrelation is a very high or very low correlation that occurs in the relationship between independent variables. A multicorrelation test needs to be performed if the number of independent variables is more than one. One way to detect is by looking at the VIF (*Variance-Inflating Factor*) value. If the $VIF < 10$ and tolerance > 0.1 , then the level of multicollinearity can be tolerated.

Table 8. Multicollinearity Test Results

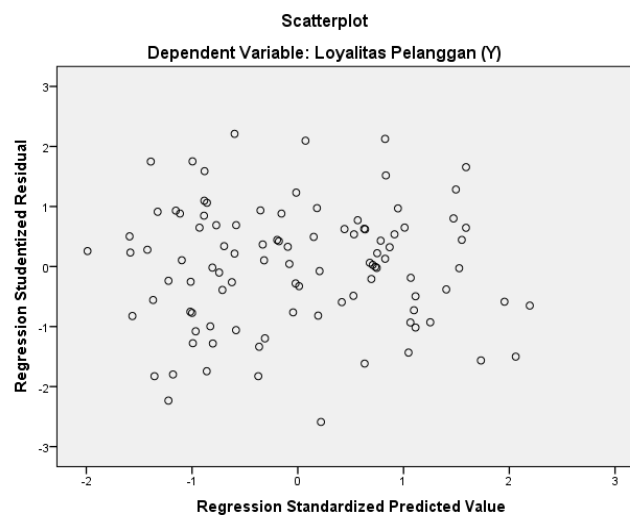
Variable	Collinearity Statistics		Information
	Tolerance	VIF	
Price (x1)	0,538	1,858	No Multicollinearity
Product Quality (x2)	0,362	2,766	
Quality of Service (X3)	0,330	3,028	
Customer Trust (x4)	0,545	1,834	

Variable	Collinearity Statistics		Information
	Tolerance	VIF	
Dependent Variable: Customer Loyalty (Y)			
Source: 2022 processed data			

Based on the results of the multicollinearity test in Table 4.11, it shows that the *tolerance* value of each is independent, namely Price (X1) = 0.538, Product Quality (X2) = 0.362, Service Quality (X3) 0.330, Customer Trust (X4) = 0.545. From the output above, it is also known that the VIF value of each independent variable is Price(X1) = 1.858, Product Quality (X2) = 2.766, Service Quality(X3) = 3.028, and Customer Trust(X4) = 1.834. Thus, it can be concluded that there is no multicollinearity among the independent variables in this study.

Heterocodesy Test

The heteroscedasticity test aims to test whether there is a variance inequality from the residual of one observation to another observation in the regression model. A good regression model is if *the variance* from the residual of one observation to another is different (heteroscedasticity). Heteroscedasticity can be seen through plot graphs between the predicted values of bound variables and their residuals. If the pattern in the figure is shown by randomly dispersed dots (without a clear pattern) and is spread above or below the number 0 on the Y axis, then it can be concluded that there is no heteroscedasticity in the regression model.



Source : Processed Data 2022

Figure 2. Heteroscedasticity Test

From the Scatterplot image above, it can be seen that the data is randomly spread above and below the 0 point on the Y axis, so there is no heteroscedasticity.

Multiple Linear Regression

The analysis method used to assess the wide variability of risk disclosure in this study is multiple *regression analysis*. Multiple regression analysis was used to test the influence of independent variables on dependent variables. The regression model developed to test the hypotheses formulated in this study is: $Y = a + B_1X_1 + B_2X_2 + B_3X_3$. Based on the results of calculations with the SPSS *for Windows* program version 24.0, the coefficients in the Multiple Linear Regression equation are obtained as shown in the following table:

Table 9. Multiple Linear Regression

Coefficientsa				
Type		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
100%	(Constant)	367000%	241000%	
	Price (x1)	0,216	0,083	0,222
	Product Quality (x2)	0,131	0,060	0,227

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

Quality of Service (X3)	0,220	0,106	0,226
Customer Trust (x4)	0,370	0,118	0,265

a. Dependent Variable: Customer Loyalty (Y)

Source : Processed Data 2022

Based on Table 4.14, it can be seen that the multiple linear regression equation in this analysis is, $Y = 3.670 + 0.216 X_1 + 0.131 X_2 + 0.220 X_3 + 0.370 X_4$. The meaning of the linear regression equation is: (1) The value of $a = 3.670$ indicates that if the value of price (X_1), security (X_2), Service Quality (X_3) and constant or fixed then customer loyalty (Y) will be worth 3,670. (2) The value of the price variabel beta coefficient (X_1) is 0.216 which is a positive value, which means that if the price variable increases, then loyalty also increases, and vice versa. (3) The value of the beta coefficient of the Product Quality variable (X_2) is 0.131 which is a positive value, which means that if the product quality variable increases, loyalty also increases. If the product quality variable decreases, then loyalty also decreases. (4) The value of the beta coefficient of the Service Quality variable (X_3) is 0.220 which has a positive value, which means that if the Service Quality variable increases, loyalty also increases and vice versa. The value of the beta coefficient of the Customer Trust variable (X_4) is 0.370 which is a positive value, which means that if the customer trust variable increases, loyalty also increases, and vice versa.

Test F

The statistical test F basically shows whether all the independent or independent variables included in the model have a joint effect on the dependent or bound variables (Ghozali, 2018). To test this hypothesis, the F statistic is used with the following decision-making criteria: Compare the F value of the calculation results with the F value according to the table. When the value of F_{count} greater than the value of F_{table} , then H_0 was rejected and accepted H_1 .

F_{table} is searched by the formula:

(k ; n-k)

Information: k = number of independent variables
n = number of data observations

k = 4, n = 100

$F_{\text{table}} = (4 ; 100-4)$

$F_{\text{table}} = (4 ; 96)$

$F_{\text{table}} = 2.47$

So the F value of this $F_{\text{research table}}$ is 2.47. The following is presented the analysis table of Test F:

Table 10. Test Result F (Simultaneous)

ANOVAa					
Type	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2,633,263	4	658,316	39,962	,000B
Residual	1,564,977	95	16,473		
Total	4,198,240	99			

a. Dependent Variable: Customer Loyalty (Y)

b. Predictors: (Constant), Customer Trust (X4), Price (X1), Product Quality (X2), Service Quality (X3)

Source: Processed Data 2022

Based on Table 4.15, it is known that $F_{\text{calculates}} 39.962 > F_{\text{table}} 2.47$, meaning that the independent variables (price (X_1), Product Quality (X_2), Service Quality (X_3) and Customer Trust (X_4)) simultaneously have a significant effect on the bound variable of customer loyalty (Y).

Coefficient of Determination

The Coefficient of Determination (R^2) is a coefficient that shows the percentage of influence of all independent variables on the dependent variable. The percentage shows how much the independent variable can explain the dependent variable. The larger the determination coefficient variable, the better the independent variables in explaining the dependent variable. Thus, the resulting regression equation is good for estimating the value of the dependent variable.

The value of the determination coefficient will range from 0 to 1. If the value of the determination coefficient is less than 1, it means that the ability of the independent variables to explain the variation of the variable is limited. On the other hand, if the value of the determination coefficient is close to 1, it means that the

independent variables provide all the information needed to predict the dependent variables. The R or R² values can be seen in the following table:

Table 11. Determination Coefficient Test Results

Type	Rr	R Square	Adjusted R Square	Std. Error of the Estimate
1	,792a	,627	,612	4,059

a. Predictors: (Constant), Customer Trust (X₄), Price (X₁), Product Quality (X₂), Service Quality (X₃)

b. Dependent Variable: Customer Loyalty (Y)

Source : Processed Data 2022

Based on Table 4.16, it can be seen that the value of the determination coefficient (*Adjusted R Square*) is 0.612, which means that this shows that price (X₁), Product Quality (X₂), Service Quality (X₃) and Customer Trust (X₄) together contribute to customer loyalty (Y) by 61.2%, and the rest (38.8%) are influenced by other factors that are not studied in the study. It can be concluded that there is a strong relationship (61.2%) between price (X₁), Product Quality (X₂), Service Quality (X₃) and Customer Trust (X₄) and customer loyalty (Y).

Test t (partial)

This test compares the t count with the t table, that is, when $t_{\text{is calculated}} > t_{\text{table}}$, it means that the independent variable is able to affect the dependent variable. On the other hand, if $t_{\text{is calculated}} < t_{\text{table}}$, it means that its independent variable is not able to affect the dependent variable. The t-test is used to determine the influence of independent variables on individually bound variables by measuring the relationship between independent variables and bound variables.

This hypothesis test is carried out by comparing the significance of $t_{\text{calculation}}$ with the following conditions:

- If the significance of $t_{\text{calculates}} < 0.05$ then H_0 is rejected, H_a is accepted
- If the significance of $t_{\text{calculates}} > 0.05$ then H_0 is accepted, H_a is rejected

The condition of the t test is that H_0 is acceptable if t_{counts} less than or equal to t_{table} and H_i is accepted if t_{counts} greater than t_{table} . Based on the t student distribution table, the following formula can be seen:

$$\begin{aligned} &= \alpha/2 && : n-k \\ &= 0.05/2 && : 100-5 \\ &= 0.025 && : 95 \\ &t_{\text{table}} = 1,985 \end{aligned}$$

Ket: n = number of respondents
 k = number of variables (free and bound)

In t_{table} the result is 1,985. The results of the partial test (t) on the independent variable are as follows:

Table 12. Test Results t (Partial)

Hypothesis	t	Sig.	Conclusion
Price against Customer loyalty	1,523	0,131	Significant Influence
Product Scalability to Customer Loyalty	2,599	0,011	Significant Influence
Quality of Service to Customer Loyalty	2,177	0,32	Significant Influence
Customer Trust in Customer Loyalty	2,074	0,02	Significant Influence

Source : Processed Data 2022

The following can be described about the relationship between the independent variable and the bound variable in this study: (1) In the price variable (X₁) the t-value is calculated 2.599 > the t-value of the table is 1.985 with a significance level of 0.011 < 0.05, meaning that the price (X₁) has a significant effect on customer loyalty (Y). (2) In the variable Product Quality (X₂) the t-value is calculated as 2.177 > the t-value of the table is 1.985 with a significance level of 0.032 < 0.05, meaning that Product Quality (X₂) has a significant effect on customer loyalty (Y). (3) In the variable Service Quality (X₃), the t-value is calculated at 2.074 > the t-value of the table is 1.985 with a significance level of 0.041 < 0.05, meaning that Service Quality (X₃) has a significant effect on customer loyalty (Y). (4) In the variable Customer Trust (X₄), the t-value is calculated as 3.128 > the t-value of the table is 1.985 with a significance level of 0.002 < 0.05, meaning that Customer Trust (X₄) has a significant effect on customer loyalty (Y).

The Effect of Price on Customer Loyalty

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

The results of the descriptive analysis above show that the price is considered good by the respondents to increase Customer Loyalty. The results of regression analysis and partial testing (t-test) for the Price variable have a positive and significant effect on the Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. The results of the study show that there is an influence between Price and Customer Loyalty. So that the hypothesis that there is an influence between the Price and Customer Loyalty is accepted. Price is one of the important considerations in making a purchase decision. The higher the price of a product, the better the quality is expected. Pricing that is too high can reduce customer interest in making purchases. Based on the data on the characteristics of the respondents above, the majority of respondents who made purchases were companies. The company makes purchases for resale with the aim of making a profit.

From the descriptive analysis above, the price is considered quite good in increasing customer loyalty. The lowest average value is found in the statement of the selling price of PT. Bumi Andalas Bangunan tends to be higher than competitors by 1.38. This result explains that not all products offered to customers are of the same quality as competitors, because customers want a much cheaper price. The products offered by competitors are the same, but with a comparison of product quality that is below the products offered by PT. Bumi Andalas Building. As for the highest average score, it is found in the statement of PT. Bumi Andalas Bangunan Pekanbaru provides discounts to customers who buy in large quantities. This is due to the large difference in the number. And it will be a consideration to establish cooperation with customers in the future.

The Influence of Product Quality on Customer Loyalty

The results of the descriptive analysis above show that Product Quality is considered good enough by respondents to increase Customer Loyalty. The results of regression analysis and partial testing (t-test) for Product Quality have a positive and significant effect on PT. Bumi Andalas Building Pekanbaru. The results of the study show that there is an influence of Product Quality on customer loyalty. Because the majority of customers are from the company. Followed by high purchasing power, product quality must be paid more attention to with the aim of improving a customer's decision to make a purchase. This means that good product quality will indirectly help the company's activities in promoting the next marketed product, and it will be a strength for the company in facing competition.

Companies can take advantage of this opportunity, there is a tendency that customers will choose a product that is already known both through the experience of buying a product and based on the information obtained by customers. When viewed from the respondents' answers to the product quality questionnaire in this study, the highest average value is found in statement number 10, namely the products offered are always in stock of new products of 3.66. Because PT. Bumi Andalas Bangunan is one of the major distributors of building materials in Pekanbaru, product stocks are rarely stockpiled. The available products will be distributed to customers immediately, before the stock of new products comes back. While the lowest score is found in the statement of PT. Bumi Andalas Bangunan provides more well-known products. This is because the more well-known product has not yet collaborated with this company.

The Influence of Service Quality on Customer Loyalty

The results of the descriptive analysis above show that the Service Quality is considered good enough by the respondents to increase Customer Loyalty. The results of regression analysis and partial testing (t-test) for the Service Quality variable have a positive and significant effect on the Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. The results of the study show that there is an influence between Service Quality and Customer Loyalty. So that the hypothesis that there is an influence between Service Quality and Customer loyalty is accepted. Based on data from the respondent response table, the highest score is found in the statement that employees have the ability to answer customer questions. This is because the employees of PT. Bumi Andalas Bangunan understands and understands the products offered. Customers can consult with PT. Bumi Andalas Bangunan related to information from the products needed.

While the lowest value is found in the statement of the employee of PT. Bumi Andalas Bangunan Pekanbaru is quick to respond in dealing with the problems that occur. This happens because to make a decision requires permission from the superior. For example, if a customer wants to buy goods on credit, after checking it turns out that it has exceeded the agreed receivables limit. This must be discussed and checked in advance of the debt payment flow. This is in line with research conducted by (Rosalina et al., 2019) and (Chaniago & Khare, 2021) with the results stating that the service quality variable has a positive and significant effect on customer loyalty.

The Effect of Customer Trust on Customer Loyalty

The results of the descriptive analysis above show that Customer Trust is considered good by respondents to increase Customer Loyalty. The results of regression analysis and partial testing (t-test) for the Customer Trust variable have a positive and significant effect on the Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. The results of the study show that there is an influence between customer trust and customer loyalty. So that the hypothesis that states that there is an influence between Customer Trust and Customer loyalty is accepted. Based on data from the respondent's response table, the highest score is found in the statement of PT. Bumi Andalas Bangunan Pekanbaru maintains and fulfills the agreement that has been made. This is because PT. Bumi Andalas Bangunan has established cooperation with several loyal customers as the main supplier.

This cooperation is mutually beneficial for both parties, where customers do not have to bother looking for products with *quantities* and prices that match their purchasing ability. For PT. Bumi Andalas Bangunan itself also indirectly gets regular customers. While the lowest score is found in the statement of PT. Bumi Andalas Bangunan Pekanbaru is able to provide decent credit to customers. This is because not all customers get this special treatment. There are several terms and conditions that must be fulfilled beforehand. This provision is enforced so that the company's financial turnover is not disrupted due to too long a credit term.

CONCLUSION

This study aims to determine the influence of Price, Product Quality, Service Quality, Customer Trust on Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. The conclusions of the research that have been carried out include the following: (1) There is a positive and significant influence between the Price variable (X1) on the Customer Loyalty of PT. Bumi Andalas Pekanbaru. The affordability offered by the company can attract customers in reducing uncertainty in choosing and using products. The price adjustment with the quality of goods makes the company able to compete with competitors. (2) There is a positive and significant influence between the Product Quality (X2) variable on Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. Then it can be concluded that good and positive Product Quality will increase customer loyalty. (3) There is a positive and significant influence between the Service Quality (X3) variable on Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. Good and responsive service quality can increase customer loyalty. The ease of transactions and uncomplicated procedures make customers comfortable. If customers are comfortable with the services provided, it can increase the level of customer loyalty to the company. (4) There is a positive and significant influence between the Customer Trust variable (X4) on Customer Loyalty of PT. Bumi Andalas Building Pekanbaru. Customers who believe in quality, price will make a repeat purchase, This proves that if customer trust has been created, customer loyalty will be created. Therefore, if customer trust increases, customer loyalty will also increase.

BIBLIOGRAPHY

- Adhari, I. Z. (2021). *Customer Satisfaction and Brand Trust Achievement*. East Java: CV. Qiara Media Publisher.
- Anggraini, F., & Budiarti, A. (2020). The Influence of Price, Promotion, and Service Quality on Customer Loyalty Mediated by Customer Satisfaction in Gojek Consumers. *Journal of Economic Education (JUPE)*, 8(3), 86–94. <https://doi.org/10.26740/jupe.v8n3.p86-94>
- Annisa, M., Alwie, A. F., & Pailis, E. A. (2020). *Procuratio : Scientific Journal of Management THE EFFECT OF SERVICE QUALITY ON INDIVIDUAL MSME TAXPAYERS SATISFACTION AND*. 8(4), 268–279.
- Aprilla, I. W., & Amalia, S. (2019). The Role of Service Quality in Customer Loyalty of Online Transportation Services. *Journal of Business and Investment Research*, 5(1), 1. <https://doi.org/10.35697/jrbi.v5i1.1611>
- Ayu, R., Mahfud, A., & Sasongko, T. (2019). The Effect of Product Quality and Price on Customer Loyalty on. *Journal of Management and Accounting Sciences*, 7(2), 130–136.
- Chaniago, H., & Khare. (2021). *Analysis of Service Quality, Product Quality, and The Price on Nano Store Consumers' Loy ... Available at https://ijabo.a3i.or.id Service Quality Analysis. February.*
- Daryanto. (2013). *Prosperous Conscience Tutorial Facilities (Print II)*.
- Fahmi, M., Prayogi, M. A., & Jufrizen. (2018). The role of customer trust in mediating the influence of website quality on online shop customer loyalty. *Journal of Management Science Research*, 2(3), 121–130. <https://doi.org/10.5281/zenodo.1477534>
- Farisi, S., & Siregar, Q. R. (2020). The Effect of Prices and Promotions on Customer Loyalty of Online Transportation Service Users in Medan City. *Maneggio: Scientific Journal of Masters in Management*, 3(1), 148–159. <https://doi.org/10.30596/maneggio.v3i1.4941>
- Ghozali. (2012). *"Multivariate Analysis Application with IBM SPSS Program. Yogyakarta: Diponegoro University."*
- Ghozali, I. (2018). *Multivariate Analysis Applications with IBM SPSS 25 Program*. Diponegoro University Publishing Board.
- Hasanuddin, M. R., Rachma, N., & Wahono, B. (2020). The Influence of Product Quality, Service Quality and

The Effect of Price, Products Quality, Service Quality, and Customer Trust on Customer Loyalty at PT. Bumi Andalas Building Pekanbaru (Aina, Astri Ayu Purwati, Erima Rusilawati, Anggrina Febriyanti Napitupulu, and Amirudin M Amin)

- Customer Trust on Customer Loyalty (For Customers of Mr. Beard Coffee Coffee Jl, Saxophone No. 47 Tunggal Wulung Lowokwaru Malang). *Scientific Journal of Management Research*, 9(11), 39–53.
- Kotler, P., & Armstrong, G. (2016). *Principles of Marketing* (ed., Bob Sabran) (13th J Edition). Jakarta Erlangga.
- Kotler, P., & Armstrong, G. (2018). Kotler, P., & Armstrong, G. (2018). *Marketing Principles* (Tth Edition). Salemba Empat, Jakarta. *Marketing Principles* (Tth Edition).
- Kotler, P., & Keller, Kevin L. (2016a). *Marketing Management* Edition 15th. London : Pearson Prentice P. *Marketing Management Edition 15th. London*.
- Kotler, P., & Keller, K. L. (2016b). *Marketing Insights (Electronic Version)*. In *Marketing Management*.
- Kusumasasti, I., & Hadiwidjojo, A. (2017). The Effect of Product and Service Quality on Coffee Shop Customer Loyalty. *ECOBYS (Business Economics)*, 22(2), 123–129.
- Nirawati, L., Pratiwi, A. D., Mutiahana, A., & Afida, E. A. (2020). Consumer Trust; Customer experience ; and customer loyalty. *Journal of Syntax Transformation*, 1(9), 624–631.
- Nurdini, S., & Oktini, D. R. (2019). The Effect of Customer Satisfaction and Trust on Customer Loyalty (Survey on Strawberry Jl . Sudirman No . 629 Bandung). *Management Proceedings*, 5(2), 1112–1117.
- Octavia, R. (2019). The Effect of Service Quality and Customer Satisfaction on Customer Loyalty of Pt. Bank Index Lampung. *Journal of Marketing Management*, 13(1), 35–39. <https://doi.org/10.9744/pemasaran.13.1.35-39>
- Qomariah, N. (2016). *Marketing Adactive Strategy*. Jember: *The Light of Science*. Retrieved from https://www.researchgate.net/publication/326623130_MARKETING_ADACTIVE_STRATEGY.
- Rosalina, M., Qomariah, N., & Sari, M. I. (2019). Impact of Promotion, Price and Product Quality on Oppo Smartphone Consumer Loyalty. *Science and Technology Research Journal*, 4(2), 161–174.
- Sulaeman, A. (2018). *Analysis of the Influence of Service and Product Quality on Customer Satisfaction at PT. Citramega Horizon*. *CREATIVE Journal*. 125–145.
- Thungasal, C., & Siagian, H. (2019). The Effect of Service Quality and Price on Customer Loyalty through Customer Satisfaction at Cassowary Hotels. *Agora*, 7(1), 287133.
- Tjiptono, F. (2013). *Service Marketing*. First Edition. First Print. Malang: Bayumedia Publishing.
- Tjiptono, F. (2014). *Drainage Strategy*. 2 Yogyakarta : Andi.
- Tjiptono, F., & Chandra, G. (2012). *Strategic Marketing*. Andi Publisher.
- Widarjono. (2013). "Introductory Econometrics and Its Applications. *Introductory Econometrics and Its Applications*.