

Customer Satisfaction Analysis Seen from Brand Image, Price, and Product Quality on Vivo Smartphones

Riama Novita Simatupang¹, Ingrid Wahyuni Sinaga²

{riamanovita98@gmail.com¹, inggrid@polibatam.ac.id²}

Politeknik Negeri Batam, Business and Management Department, Batam City, Indonesia¹²³

Abstract. This research aims to analyze customer satisfaction using independent variable indicators of brand image, price and product quality on vivo smartphones. In this study using quantitative methods means research on the relationship of 2 or more variables, and using data collection techniques through questionnaires and sampling techniques using purposive sampling techniques with a sample of 97 respondents. Test the instrument using validity tests and reliability tests. Data analysis used: classical assumption test, multiple linear regression analysis, coefficient of determination, hypothesis test using t test and F test. The results of the study showed that the variables of brand image and product quality had a significant effect on satisfaction on vivo smartphones, while price did not have a significant effect on customer satisfaction on vivo smartphones.

Keywords: Brand Image, Price, Quality Product, Customer Satisfaction

1. Introduction

The development of the current era of globalization, both in the field of information technology, especially communication, has become a basic need needed by everyone and smartphones have become the lifestyle of everyone, both upper and middle class because smartphones continue to develop following developments according to everyone's needs and become one of the supports for communication or even to provide information or receive information. The presence of various types of smartphones with different features, quality, and unique and affordable prices in the community that can influence the attitude of someone to make a decision and satisfaction with the use of smartphones that are felt to be in sync with what customers need and expect.

Technological developments also form increasingly fierce business competition between companies. Intense competition occurs in almost every field of industry and services. Companies are also required which will improve the quality in their product origin and continue to innovate to be able to build a lot of product innovations that are able to meet all kinds of needs and dream hopes of the community or customers. The use of smartphones today has increased rapidly. The number of smartphone subscribers based on Katadata in 20220 that has increased from year to year in Indonesia has reached 63.3% of Indonesia's population.

Vivo is a smartphone brand founded in 2009. Vivo is a subsidiary of BKK Electronics located in Dongguan, China and expanded its business to more than 100 countries in 2011. Vivo

smartphones are also still considered less widespread than other competing brands, because sometimes buyers do not know vivo smartphones well, as a result buyers consider vivo still equivalent to other brand smartphones whose quality is still fairly standard. This shows that Vivo's brand image has not been good locally. When compared, Vivo's brand image is still not good, so it is viewed badly by most people in general. With the various problems facing smartphones, vivo does not stop there, vivo continues to work on its representative nature and form creative new items to compete with other competing brands. With the nature of the products offered, vivo must have better marketing capabilities than that and also be consistent and in sync with the focus of the agreement set and in sync with the needs and satisfaction desired by customers or the community or citizens. From the explanation of the background of the research, it made the researcher interested in conducting a study on "Analysis of Customer Satisfaction Seen from Brand Image, Price, and Product Quality on Vivo Smartphones".

2. Theoretical Studies, Literature Review and Hypothesis

Customer Satisfaction

Customers are part of a company's business, so customer loyalty and satisfaction must be maintained properly so that customers do not switch to other competing products that pose a threat to the company. According to [1] said that customer satisfaction is a happy or happy behavior that comes from a customer that he shows after comparing the performance (results) of what has been felt or received with expectations. If it is felt that the performance received or obtained is smaller than his expectations, then the customer will not feel the expectation and vice versa, if the perceived performance exceeds expectations, the customer will be satisfied with the performance.

Brand Image

According to [12] Brand image is something that is felt by every consumer for subjective reasons and personal emotions, so that the perception of consumers becomes important. A good brand image can make customers influenced in marketing because of the attractiveness that makes consumers interested in buying. Based on the understanding according to the expert experts above, researchers can understand the conclusion that brand image is a view or assessment of an item or product of a company where the view or assessment occurs because it is based on customer experience.

Price

Price is a medium of exchange that can be used as money or other goods to obtain uses for goods and services for customers or groups of people at certain times and also in certain places according to [14]. Price is also not just a number attached to a price tag or attached only to the product, nor is it just a list of price notes. In addition, the price is also the total amount of money that must be paid to receive permission to use the goods or services. Customer understanding of price will also have a very crucial effect on pricing policy because customers are able to have an expectation of price relationships using a quality of goods.

Product Quality

Based on that point of view of the producer or marketer to meet the needs or desires of the

market the producer or supplier must consider all things that can be seen, requested, sought, bought, used, and consumed in the market. According to [8] Based on the view that comes from product users is everything that has been received or obtained by the customer from an exchange with a marketer. Product excellence results from product effectiveness and includes a collection of qualities including durability, dependability, stability, ease of maintenance, and other characteristics.

Literature Review

Literature review is research obtained from the results of an observation or research. This literature review contains the results of previous research that presents several theoretical studies and concepts that are significant for this research. The following is information about the results of past research on which this research is based.

Research that has been researched by [1] looks at how products, prices, and quality affect the level of consumer satisfaction when using Samsung smartphones. The findings show that product quality has a significant impact but price does now not have a significant effect on the extent of consumer satisfaction, and image does now not has a significance impact on customer satisfaction.

Research conducted by researchers [4] is the impact of product quality, brand image, and price on consumer satisfaction in a cosmetic, the conclusions that can be made from this study are the impact to product quality, price, and logo images of consumer satisfaction in wardah cosmetic products.

Research according to [6], namely on research of the effects of quality, price, and logo images on customer satisfaction (Study of Converse Shoes Surabaya) by using multiple linear regression analysis methods, the effect acquired from the research done may be concluded that product quality, price, and logo image have a great impact as well as significance on customer satisfaction.

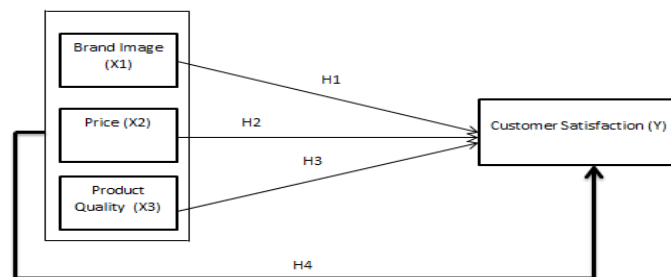


Figure 1. Framework

H1: There is a positive influence and significance between brand images on subscription satisfaction on vivo smartphones.

H2: There is a positive impact and price significance on customer satisfaction on vivo smartphones.

H3: There is a positive impact and significance of product quality on customer satisfaction on vivo smartphones.

H4: There is a positive impact and significance of brand image, price, and product quality simultaneously on customer satisfaction on vivo smartphones.

3. Research Methods

Research that has been researched by researchers is Quantitative research, quantitative is the type of research that has been done by the subject in particular, it includes the collection and analysis of data with a focus on statistics to make hypotheses. The population in this study is focusing on Batam State Polytechnic students with all majors and who are active from 2022 – now. The process of data collection is made using surveys with the distribution of questionnaires assisted by Google Form application software. This study used purposive sampling techniques, which means sampling techniques using certain considerations. The determination of the number of samples to be carried out is also by using the Lemeshow formula from [3] By using the Lemeshow formula, the number of samples is 97 respondents.

Table 1. Operational Variable Definition

Variable	Variable Operational Definition	Indications
Brand Image(X1)	A set of brand associations that are formed and stick in the minds of consumers [20]	<ol style="list-style-type: none"> 1. Practical brand is easy to remember 2. Easily recognizable brands 3. A trusted Brand
Product Quality (X2)	Product quality is a characteristic of a product in its ability to meet predetermined needs and is latent [21]	<ol style="list-style-type: none"> 1. Shape 2. Feature 3. Conformity 4. Durability 5. Beauty
Price (X3)	Price is the amount of money charged for a product or service, or the sum of all value provided by a customer to benefit from owning or using a product or service [21]	<ol style="list-style-type: none"> 1. Affordability 2. Pricing in sync with capabilities 3. Price in sync with quality 4. Price match with benefits
Customer Satisfaction (Y)	Customer satisfaction is a feeling of pleasure or disappointment that arises after comparing the performance (results) of the product in thought against the expected performance (or results) [21]	<ol style="list-style-type: none"> 1. Match expectations 2. Interest in revisiting 3. Willingness Recommend

4. Results and Discussion

Validity Test

Instrument validity tests are used to assess the reliability of research questions (questionnaires) used in data collection. The instrument can be considered valid if it can show that the measuring instrument used to obtain accurate data or can measure what should be measured. The validity

test is to analyze $r_{\text{calculate}}$ (coefficient) and r_{table} , if $t_{\text{calculate}} >$ from t_{table} . The sample of this study was 97 people who were used for effectiveness testing. Therefore, the r_{table} value for $n = (N - 2) = (97 - 2)$ is 0.1975. Then it can be obtained that the sum of the relationships between the calculated values of all calculated items used to measure all variables is more than r_{table} ($t_{\text{calculate}} > t_{\text{table}}$). It can be declared valid.

Table 2. Validity Test Result

Variable	Statement Item	R calculate	r table	Remaks
Brand Image (X1)	X1.1	0,788	0,1975	Valid
	X1.2	0,760		Valid
	X1.3	0,810		Valid
	X1.4	0,864		Valid
	X1.5	0,739		Valid
Price (X2)	X2.1	0,844	0,1975	Valid
	X2.2	0,772		Valid
	X2.3	0,872		Valid
	X2.4	0,852		Valid
	X2.5	0,724		Valid
Product Quality (X3)	X3.1	0,817	0,1975	Valid
	X3.2	0,835		Valid
	X3.3	0,739		Valid
	X3.4	0,767		Valid
	X3.5	0,825		Valid
Customer Satisfaction (Y)	X4.1	0,799	0,1975	Valid
	X4.2	0,881		Valid
	X4.3	0,878		Valid
	X4.4	0,850		Valid
	X4.5	0,802		Valid

Reliability Test

Reliability tests are used to decide the suitability and stability of the data used in the study, even if two or more measurements were made with similar measuring instruments and symptoms. The results of research measurements are considered reliable if they get a Cronbach alpha value greater than 0.60.

Table 3. reliability Test Result

No.	Variable	Cronbach' Alpha Value	Criterion	Result
1	Brand Image	0,852	0,60	Reliable
2	Price	0,872	0,60	Reliable
3	Product Quality	0,854	0,60	Reliable
4	Customer Satisfaction	0,896	0,60	Reliable

Table 3 shows alpha coefficient values > 0.60 for all variables. In accordance with the reliable testing above, it can be indicated that the variables in this study can carry the mandate or can be trusted. This variable is also worth using to be measured in statistical tests.

Table 4. T Test Result

Model		Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,279	1,183		,236	,814		
	CM	,484	,080	,443	6,083	,000	,572	1,750
	HA	-,033	,081	-,028	-,406	,686	,622	1,608
	KP	,534	,085	,508	6,247	,000	,459	2,178

In desk 4. The effect of the t test above provide an explanation for the significance score of the effect of the impact brand image variable (X1) on customer satisfaction (Y) is $0.000 < 0.05$ and $t_{\text{calculate}} 6.083 > t_{\text{table}} 1.661$ received in table 4. As a result, the variables of brand image have a significant and positive influence on customer satisfaction.

In desk 4 explains that the significance cost of the effect of price (X2) on customer satisfaction (Y) means $0.686 > 0.05$ and $t_{\text{calculate}} -0.406 < t_{\text{table}} 1.661$. Therefore, the price variable is not positively correlated and has no significance on customer satisfaction on vivo smartphones.

In accordance inside the table 4, it is stated that the significance value of the impact of product quality (X3) on customer satisfaction (Y) is $0.000 < 0.05$ and $t_{\text{calculate}} 6.247 > t_{\text{table}} 1.661$. So the variables derived from product quality are said to have a positive and significant effect on customer satisfaction on vivo smartphones.

Simultaneous test

Table 5. Simultaneous Test Result

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	399,889	3	133,296	78,888	,000 ^b
	Residual	157,142	93	1,690		
	Total	557,031	96			

a. Dependent Variable: KPE

b. Predictors: (Constant), KP, HA, CM

In table 5, the F value of the table can be viewed from df 1 and df 2. The value of df 1 and the value of df 2 is $= n - k$. With the amount of samples ($n = 97$), the amount of independent and bound variables ($k = 3$). As a result, the value of $df\ 1 = 3 - 1 = 2$ and the value of $df\ 2 = 97 - 2 = 95$ Based on table 5, the result is the value of $df\ 1 = 2$ and the value of $df\ 2 = 95$ the value of F_{table} is 3.09.

In table 5, the F test are known, the value of $F_{\text{calculate}} = 78.888$ using a sign value of 0.000. Because the sign value in this study is $0.000 < 0.05$ and the $F_{\text{calculate}}$ value is $78.888 > F_{\text{table}} 3.09$,

simultaneously the variables of brand image, price, and product quality have an influence on customer satisfaction on vivo smartphones.

Coefficient of Determination

Table 6. Test Result of Coefficient of Determination

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	,847 ^a	,718	,709	1,29988	2,095	

a. Predictors: (Constant), KP, HA, CM
b. Dependent Variable: KPE

Based on table 6, it can be determined that the value of R² is 0.847 or 84.7%. It is explained that 84.7% of variables in customer satisfaction can be explained by variables of brand image, price, and product quality. The remaining 15.3% was explained by other variables not studied in the study.

Multiple Linear Regression Analysis

Table 7. Multiple Linear Regression Analysis Test Result

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	,279	1,183		,236	,814		
	CM	,484	,080	,443	6,083	,000	,572	1,750
	HA	-,033	,081	-,028	-,406	,686	,622	1,608
	KP	,534	,085	,508	6,247	,000	,459	2,178

a. Dependent Variable: KPE

In table 7, there are result multiple linear regression calculation results, namely.

$$Y = 0,279 + 0,484 X1 - 0,033 X2 + 0,534 X3$$

Based on table 7, can be explain about multiple problems, namely: Constant (a) = 0.279 If the constant value is 0.279, brand image, product quality, price is 0 (zero), and customer satisfaction is 0.279. Brand Image Variable = 0.484, Regression of the brand image variable is a value of 0.484, and if the brand image variable changes by 1 point or 1%, the customer satisfaction value can be increased by 0.484. Price Variable = 0.033, the regression of the price variable is a value of 0.033, and if the change in the price variable is 1 point or 1%, the customer satisfaction value can be increased by 0.033. Product Quality variable = 0.534, Regression for this product quality variable is a value of 0.534, and if the place variable change is 1 point or 1%, the customer satisfaction value can be increased by 0.262.

Recapitulation of Hypothesis Test

Table 8. Results of Hypothesis Test Recapitulation

Hypothesis	P Value/ T Value	Result
Brand Image affects customer satisfaction	0.000 < 0.05	Accepted
Price has no effect on customer satisfaction	0.686 > 0.05	Rejected
Product Quality affects customer satisfaction	0.000 < 0.05	Accepted
Brand Image, Price, and Product Quality simultaneously affect customer satisfaction	0.000 < 0.05	Accepted

The basis of the above tests, it proves that:

1. Brand Image. Based on the results of the t test in table 4, H1 can be accepted, which means that brand image has a positive impact. This is because the significant value of brand image is smaller by $0.000 < 0.05$ and this is also supported by research conducted by research [19] with the title of the effect of brand image and product quality on customer satisfaction which states that brand image has a significant effect on customer satisfaction.
2. Price. According with the results of the t test in table 4, it is able to be explained that H2 is rejected and which means that in this study, the price variable does not have a positive influence and no significance on customer satisfaction. This is due to the significant value of the variable being greater $0.686 > 0.05$ and the $t_{\text{calculated}}$ value of $-0.406 < t_{\text{table}} 1.661$. This is also supported by research that has been conducted by researchers [1] namely the Influence of Product Quality, Price and Brand Image on Customer Satisfaction in Samsung Mobile Users who stated the results of their research that price has no significant effect on customer satisfaction.
3. Product Quality. Based on the results of the t test in table 4 of this study, it can be stated that H3 is acceptable, this means that product quality variables have a positive impact and significance. This is because the significance value of product quality is smaller than $0.000 < 0.05$ and the $t_{\text{calculation}}$ is $6.247 > t_{\text{table}} 1.661$. This is supported by research that has been researched by researchers [6] entitled The Impact of Product Quality, Price, and Brand Image on Customer Satisfaction (Converse Shoe Study in Surabaya) which states that the results of product quality variables have a positive influence and significance on customer satisfaction.
4. Based on the results of the t test, it can be stated that H4 is accepted because the research carried out simultaneously in this study, namely brand image, price, and product quality variables simultaneously have a positive and significant effect. This is because the result of the significance value is $0.000 < 0.05$ from the calculated

$F_{\text{calculate}}$ value is greater than $78.888 > F_{\text{table}} 3.093$, This is supported by a study conducted by the researcher [2] entitled the impact of the effects of Price, Brand Image, and Product Quality on Emina Consumer Satisfaction at Kota Kasablanka Mall which states that price, brand image and product quality simultaneously and have a positive impact and Significance on Consumer Satisfaction.

5. Conclusion and Suggestions

According to the results of research that has been researched by researchers, a conclusion can be made from the analysis of this study, namely; The results of the hypothesis test state that brand image and product quality have a positive influence on customer satisfaction on vivo smartphones. The results of the hypothesis test state that price does not has a positive influence on customer satisfaction on vivo smartphones. The results of the hypothesis test stated that the variables of brand image, price, and product quality had a simultaneous influence on customer satisfaction on vivo smartphones, from the results of the analysis obtained from brand image, price, and product quality had a simultaneous influence of 84.7% while the remaining 15.3% were influenced by other factors not contained in this research model.

After concluding the results of the data analysis, the author can determine suggestions that may be useful for the company and subsequent research, as follows. For vivo smartphone companies, it is expected to continue to be able to increase innovation in vivo smartphone products that are useful in supporting activities or activities and more modern needs. According to vivo customers that the price of vivo smartphones is not cheaper than other smartphone brands, this means that customers can switch to other smartphone brands by getting the quality of the products obtained equal to or better than vivo at an equivalent price. In other terms, vivo must be able to maintain a relatively affordable price for each customer and further improve the quality of each product obtained and the suitability of the benefits or functions of vivo smartphones that are expected so as to increase customer satisfaction. The next benefit for researchers is expected to be able to use this research as a reference to develop the variables that have been described in this study.

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