

CHAPTER III

RESEARCH METHODS

3.1. Population and Sample

Population is the generalization region consisting of objects or subjects that have certain qualities and characteristics promulgated by researchers to learn and then drawn conclusions. The population is a collection of individuals the research that have quality and characteristics which have been set. This study population is all consumers who are customers of CV Vapor City amounted 150 customers (end users). The reason for choosing 150 respondents was because they often visited CV Vapor City and have minimum 3 repeat orders. The sample is part of a number of characteristics possessed by this population (Blaxter et al, 2010). The sample of the study is the customers of CV Vapor City that are 150 respondents. The study uses 'census'.

3.2. Type of Data

Type of data in this research is primary data. Primary data is data that directly available from the original source (Blaxter et al, 2010). Primary data in this study are the respondents' answers on the questionnaire relationship marketing program, customer retention, customer satisfaction that will be distributed to customers CV Vapor City. Type of questionnaires is closed ended questionnaires and distributed by google form.

3.3. Data Collection Methods

Data collection methods in this that will be distributed to customers CV Vapor City by the questionnaire. A questionnaire is a technique of data collection is done by giving a set of questions or a written statement to the respondent to answer (Blaxter et al, 2010). The questionnaire in this study was distributed to all a number of CV Vapor City. Likert scales used: 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree).

3.4. Validity and Reliability

Validity is an important issue in both qualitative and quantitative research. The author could obtain certainty that the question was valid or not, based on the test of validity. The validity testing in this research uses the validity-supporting evidence type. The author tested the validity of each questionnaire based on the result of the respondents' answers. According to Ghozali (2013) the test of validity is used to measure how valid a questionnaire is. A questionnaire can be said to be valid if the questions can reveal something which will be measured. Test of validity can be counted from correlated coefficients of each item with total score variable.

The formula is used:

$$r_{xy} = \frac{N \cdot \Sigma XY - (\Sigma X \cdot \Sigma Y)}{\sqrt{\{(N \cdot \Sigma X^2) - (\Sigma X)^2\} \{(N \cdot Y^2) - (\Sigma Y)^2\}}} \quad (4.1)$$

Whereas:

r xy = correlation number

N = the number of questions

X = the value of the item

Y = the total value of the item

In criterion validity testing using SPSS (Ghozali, 2013), if the count $r(r_{xy}) > r$ critical (table), then the questionnaire is valid. If the count $r(r_{xy}) < r$ critical (table), the questionnaire is not valid.

If a construct or variable has a value of $\alpha > 0.6$, it can be said that these variables or constructs are reliable. The following is a table that shows the results of the validity and reliability tests in this study:

Seen from table 3.1. it is known that the value of r count $> r$ table so that all question items for the Customer Retention variable can be said to be valid.

Table 3.1. Customer Retention Variable Validity Test

No. Question items	Code	r count	r table	Description
I will convey the positive things to others I feel while I'm shopping at Vapor City	CR1	0,847	0,159	Valid
I would make recommend Vapor City to be my choice.	CR2	0,822	0,159	Valid
I will purchase products at Vapor City	CR3	0,826	0,159	Valid
I will be provided different special services for each consumer purchase	CR4	0,802	0,159	Valid
I will give lucky draw points for each repeat purchase	CR5	0,769	0,159	Valid

Source: Primary Data Processed (2022)

Then next are the results of validity testing for Customer Satisfaction. Seen from table 3.2. it is known that the value of r arithmetic $> r$ table so that all question items for this Customer Satisfaction variable can be said to be valid.

Table 3.2. Customer Satisfaction Variable Validity Test

No. Question items	Code	r count	r table	Description
There is follow up from Vapor City after sales services activity.	CS1	0,656	0,159	Valid
Vapor City give the member additional benefit such as discount, etc	CS2	0,733	0,159	Valid
Employees and staff look good	CS3	0,739	0,159	Valid

Source: Primary Data Processed (2022)

Then next are the results of validity testing for Relationship Marketing Program. Seen from table 3.3. It is known that the value of r arithmetic $>$ r table so that all question items for Relationship Marketing Program variable can be said to be valid.

Table 3.3. Test the Validity of Relationship Marketing Program Variables

No. Question items	Code	r count	r table	Description
Vapor City employees serve friendly and politely	RM1	0,776	0,159	Valid
The products' quality of Vapor City is precisely as my expectation	RM2	0,762	0,159	Valid
Vapor City has the ability to create good relationships with consumers	RM3	0,773	0,159	Valid
Vapor City employees handle my complaints quickly	RM4	0,775	0,159	Valid

Source: Primary Data Processed (2022)

Reliability is also an important issue in both qualitative and quantitative research. The author obtained certainty that the questions were reliable or not, based on reliability testing. Ghazali (2013) has said that the questions are reliable if the respondents' answers are consistent from time to time. Based on this theory, the respondents' answers can be said to be reliable if each question is answered consistently. Thus, reliability testing is an important thing to do. Ghazali (2013)

has said that reliability is an index, which shows how far a measurer is used to count the same things twice. In this research, the author used Cronbach Alpha. According to Ghozali (2013), Cronbach Alpha is one of the ways to measure reliability.

$$\alpha = \frac{k \cdot r}{1 + k(-1)r} \dots\dots\dots(4.2)$$

Whereas:

α = coefficient alpha

k = number of items

r = average correlation between items

Seen from table 3.4. it can be seen that for each variable in this study has a value greater than 0.6 so it is said to be reliable.

Table 3.4. Reliability Test Results

Variable	Alpha Cronbach	Description
<i>Customer Retention</i>	0,929	Reliabel
<i>Customer Satisfaction</i>	0,843	Reliabel
<i>Relationship Marketing</i>	0,897	Reliabel

Source: Primary Data Processed (2022)

Seen from table 3.4. it can be seen that for each variable in this study has a value greater than 0.6 so it is said to be reliable.

3.5. Data Analysis

Data that has been processed either by processing using computer assistance, will not have any meaning without being analyzed. Data analysis in this study includes:

1. Descriptive Analysis

Descriptive analysis is a form of analysis using average, frequency tables and tabulations. In detail the respondent's answers can be grouped into one category using a scale range. Purpose of the descriptive analysis is to identify of relationship marketing program on customer satisfactin and to identify the effect of customer retention on customer satisfaction. According to Umar (2007), the calculation of scores for each question item is as follows:

$$RS = \frac{\text{The biggest value} - \text{the smallest value}}{\text{number of class}}$$

$$RS = \frac{5-1}{3} = 1.33$$

Range Scale	Category
1.00 – 2.33	Disagree
2.34 – 3.66	Neutral
3.67 – 5.00	Agree

3.6. Multiple Regression Methods

In this study to process the results of the research data used multiple regression methods. This analysis is used to determine the effect of independent variables on the dependent variable, namely the influence of relationship Marketing Program (X1) and customer retention (Z) on customer satisfaction (Y). Testing of the hypotheses in this study was done by multiple regression analysis with the following statistical equation:

Model 1:

$$Z = a + b_1X + e \dots\dots\dots(H1)$$

Model 2:

$$Y = a + b_2Z + e \dots\dots\dots(H2)$$

Whereas:

Y = Customer retention

α = constant

β = coefficient beta regression

X = Customer Relationship Marketing (CRM)

Z = Customer Satisfaction

e = error

The criteria to accepted or rejected the hypothesis are:

1. If the p-value (sig.) < 0.05 so the hypothesis accepted.
2. If the p-value (sig.) > 0.05 so the hypothesis rejected.

3.7. Coefficient of Determination (*Adjusted R²*)

The coefficient of determination (R^2) essentially measures how far the model's ability to explain variations in the dependent variable is. The value of the coefficient of determination is between zero and one. A small value of R^2 means that the ability of the independent variables in explaining the variation of the dependent variables is very limited. A value close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. The basic weakness of using the coefficient of

determination is the bias towards the number of independent variables included in the research model (Ghozali, 2018). A value close to 1 (one) means that the independent variables provide almost all the information needed to predict the variation of the dependent variable.

3.8. F Test (Model Fit Test)

The F statistic test aims to test whether all independent variables (in this study profitability, leverage, managerial ownership, independent commissioners, and audit committees) in the regression model simultaneously or jointly affect the dependent variable (in this study is the disclosure of corporate social responsibility). (Ghozali, 2018). The decision-making criteria are as follows:

- If the significance value of F (sig) < 0.05 then reject H_0 and accept H_a , meaning that the regression model is significant or the independent variables jointly affect the dependent variable.
- If the significance value of F (sig) > 0.05 then accept H_0 and reject H_a , meaning that the regression model is not significant or the independent variables together have no effect on the dependent variable.

3.9. Hypothesis testing

3.9.1. Partial Test (t Test)

The t-test is used to find out how significant the influence of each independent variable (partially) is in explaining the variance of the dependent variable (Ghozali, 2018). The test uses a significance value of $= 0.05$ or 5%. With the following stages:

a. Determining the Hypothesis of each group

H0 = Independent Variable partially has no effect on the dependent variable

H1 = The independent variable partially affects the dependent variable

b. Comparing the value of t arithmetic with t table with the following criteria:

1. If $t_{\text{count}} < t_{\text{table}}$, then the independent variable partially has no effect on the dependent variable (H0 is accepted)

2. If $t_{\text{count}} > t_{\text{table}}$, then the independent variable partially affects the dependent variable (H0 is rejected)

c. Determine the level of significance, namely = 0.05

d. This study saw a significance level value of 0.05, with the test criteria:

1. If the significance level is > 0.05 , then H0 is rejected and H1 is accepted, meaning that there is no influence between the independent variable and the dependent variable.

2. If the significance level is < 0.05 , then H0 is accepted and H1 is rejected, meaning that there is an influence between the independent variable and the dependent variable.

3.9.2. Sobel Test

Testing the mediation hypothesis can be carried out using the procedure developed by the sobel test. The Sobel test is carried out by testing the strength of the indirect influence of the independent variable (X) on the dependent variable (Z) through the Intervening variable (Y), which in this study is the mediating

effect of Customer Satisfaction on the influence of the Customer Relationship Marketing Program on Customer Retention.

$$Sab = \sqrt{b^2sa^2 + a^2sb^2 + sa^2 \cdot sb^2}$$

Information:

Sa = standard error coefficient a

Sb = standard error coefficient b

b = coefficient of the mediating variable

a = coefficient of independent variable

To test the significance of the indirect effect, it is necessary to calculate the t value of the ab coefficient with the following formula:

$$t = \frac{ab}{Sab}$$

The tcount value is compared to the ttable value, if the tcount value > ttable value, it can be concluded that there is a mediation effect (Herlina & Diputra, 2018).