CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This research used quantitative approach. According to Creswell (2010), quantitative approach is a method to test the theory of a particular theory by examining the relationship among variables. These variables were measured normally with research instruments. Thus, data consisting of numbers can be analyzed based on statistical procedures.

The method used in this research was survey research method. Surveys are a measurement process used to gather information in a well-structured interview (Cooper & Schindler, 2006). The survey was conducted by spreading questionnaires consisting of questions relating to research connected to members of the Instagram-based brand community.

3.2 Operational and Measurement Definition

This research used seven variables that consisted of one independent variable, four dependent variables in one minor of level one, and one major dependent. Those variables can be defined as follow:

3.2.1 Instagram based brand community

Instagram based brand community refers to a perception of customer to the interconnected group of individual and on the brand that has an oriented to one togetherness in the Instagram account of a brand. The indicators used on social

media based brand community (Laroche et al., 2012) were as follow:

a. Group member from Instagram-based brand community got the advantage from the community

b. The community member share the same bond to the community

c. The community member strongly affiliate to others

3.2.2   Customer relations to the product

Customer relation to the product refers to the perception and personal identification of a customer that joined brand community toward a product. The indicators of customer relations to the product (Laroche et al., 2012) were as follow:

a. I love the product of the brand that I follow on Instagram.

b. I am proud with the product of the brand that I follow on Instagram.

c. The product of brand that I follow on Instagram is the valuable product for me.

d. The product of brand that I follow on Instagram is fun to use.

3.2.3 Customer relations to the brand

The customer relations to the brand refer to the perception and personal identification from the customer that joined brand community toward its brand name. The indicators of customer relations to the brand (Laroche et al., 2012) were as follow:

a. I think the brand that I follow on Instagram is valuable.

b. If I want to change the product, I want to change with the different product but the same brand.

c. The brand that I follow on Instagram has a high quality.

3.2.4 Customer relations to the company

The customer relations to the company refer to the perception and personal identification from the customer that joined brand community toward marketer who created and promote that brand. The indicators of customer relations to the company (Laroche et al., 2012), were as follow:

a. The brand that I follow on Instagram understands my need.

b. The brand that I follow on Instagram appreciates my opinion.

c. The brand that I follow on Instagram responds my question.

3.2.5 Customer relations to other customers

The customer relations to the company refer to the perception and personal identification from the customer that joined brand community toward other customers who use that brand. The indicators of customer relations to other customers (Laroche et al., 2012) were as follow:

a. I meet awesome people in Instagram community of the brand that I follow.

b. I have the sense of kinship to the other community member.

c. I have an interest to the community because of other members.

3.2.6 Brand Trust

Brand trust is identified as a desire from the average customers to join to ….. at the ability of the product in term of conducting the listed function (Chaudhuri & Holbrook, 2001). The indicators of brand trust used (Laroche et al., 2012), were as follow:

a. The brand that I follow on Instagram fulfill my expectations.

b. I rely on the brand that I follow on Instagram.

c. The brand that I follow on Instagram never disappointed me.

3.2.7 Brand loyalty

Brand Loyalty is defined as the customer positive attitude toward brand purchase and the commitment to continue that brand purchase in the long term (Mowen & Minor, 2001). The indicators of brand loyalty used (Laroche et al., 2012) were as follow:

a. I consider myself loyal to the brand that I follow on Instagram.

b. If the product of brand that I follow on Instagram is not available in the store, I will buy the product of that brand at other shop.

c. I will pay more from the usual price for the brand that I follow on Instagram.

3.2.8 Measurement

The measurement scale that was used in this research was Likert scale that was modified and consisted of 7 points with the following explanations:

1: strongly disagree

2: disagree

3: more or less disagree

4: undecided

5: more or less agree

6: agree

7: strongly agree

Likert scale is used to measure the opinion, perception and either positive or negative response from an individual or group toward the case or social symptom. By using Likert scale, the variable that will be measured can be described and become sub variable dimension, then sub variable is described again to become some indicators that can be measured. Finally, those measurable indicators can be the starting point to make instrument item that consist of questions or statements that should be answered by respondents (Riduwan & Sunarto, 2010)

3.3 Sampling design

3.3.1 Sampling method

Sampling design that was used in this research was nonprobability sampling which used the judgment sampling from purpose sampling design type. This design could decrease the generalization. It was because the information was directly obtained from the very specific person, needed fact, and could give the needed information (Sekaran, 2003)

3.3.2 Sampling Unit

3.3.2.1 Population

Population refers to the overall group of people, events, or things that researchers want to investigate (Sekaran, 2003). The populations in this research were all members who follow the official account of a brand.

3.2.2.2 Sample

Sample is a part of the population. Sample consists of some members that were

chosen from the population. In other word, some, but it is not all, the element of population will make a sample (Sekaran, 2003). Unit sample in this research was the member of brand community on Instagram with the minimum age of 18, which used the product with one year minimum usage and had become the member community for at least six months. Population does not always represent a research. Even only using sample for the research can have a trusted result (Sekaran, 2003). This happens because most of them were fatigue diminishes and had fewer mistakes in data gathering, especially when big element involved.

3.3.3 Sample Size

Roscoe in Wibisono (2000) gave the general rules to decide sample size.

1. Sample size for every research should in between 30 and 500.

2. If sample will be separated into some parts, the minimum sample size is 30 for every needed part.

3. For many factors research, the sample size should be taken several times (at least more than 9 times) from the existing factors.

4. For ordinary research with rigorous research control, good research is possible if the sample is between 10 and 20

This research took around 200 members of brand community on Instagram as the respondent. This number was already appropriate with the rules of Janti (2014) that stated the number of respondents used is usually 10% of the total research sample.

3.3.4 Research location

This research was conducted within the scope of the Republic of Indonesia. It was because this questionnaire was shared through internet. Thus, it can cover all respondents that had internet connection in Indonesia. This questionnaire was shared to the member of brand community on Instagram. Researcher used the facility of google form in data sharing and gathering.

3.4 Respondent Profile

The respondent selection in this research used the non-probability sampling method by doing sampling based on some considerations (judgment sampling) from the purposive sampling. The respondent in this research was the member of brand community on Instagram who was at least 18 years old and had been a member of the community for at least 6 months.

3.5 Data gathering method

The gathering of the data is divided by two types of data, such as:

3.5.1 Primary Data

According to (Sekaran, 2003), primary data refers to the information that directly obtained from the first hand of the researcher. The method used to obtain primary data in this research was questionnaire method in the form of a number of questions that must be answered honestly by the respondent. This questionnaire was distributed through internet to the member of brand community on Instagram. The

questionnaire would be the effective data gathering method if the researcher understand what needed things and how to measure those variables (Sekaran, 2003).

3.5.2 Secondary Data

Whereas, secondary data refers to the gathered information from someone, it is not from the researcher (Sekaran, 2003). In this kind of research, secondary data is gathered from the journals accessed from the internet and literature study that was related to this research.

3.6 Research Instrument

This research used connected questionnaire as an instrument for collecting research data. Questionnaire is the question lists that previously formulated and will be answered by respondents, usually with clearly defined alternatives. Questionnaire is the efficient data collecting mechanism if researcher understand exactly the need and how to measure the research variable (Sekaran, 2003).

Questionnaire in this research consisted of seven variables that were adapted from the previous research questionnaire from Laroche et al. (2012) such as (1) Social media based brand community, 3 item of questions. (2) Customer relationship to the product, 4 item of questions. (3) Customer relationship to the brand, 3 item of questions. (4) Customer relationship to the company, 3 item of question. (5) Customer relationship to other customers, 3 item of questions. (6) Brand trust, 3 item of questions, and (7) Brand loyalty, 3 item of questions. All

responds will be measured by Likert seven point's scale (Scale 1-Strongly disagree until scale 7-strongly agree).

The following are the parts of the questionnaire that was distributed though Internet:

1.   Background

This part was consisted of researcher identity and short explanation about the research and its purpose.

2.   Respondent Profile

In this part, respondent asked to fill the respondent identity such as name, age, gender, last education degree, occupation, and others.

3.   Question about research variable

In this part, Respondent will be asked to answer all questions that was related to the needed information for the research.

4.   Closing

Consist of the thank-you note to the respondents for the time and willingness to fill out the questionnaire in truth.

3.7 Result of Instrument testing

Validity test is conducted to measure questionnaire whether it is valid or not. Whereas, reliability test is conducted to measure a questionnaire which is an indicator of a variable or construct.

3.7.1 Validity Testing Method and Result

A questionnaire is categorized as valid if the questions in that questionnaire can

prove something that will be measured by that questionnaire. To measure instrument validity, this research used Confirmatory Factor Analysis (CFA). Confirmatory Factor Analysis was conducted to test whether a construct has undimensionality or whether indicators used can confirm a construct or variable. Bartlett's test of sphericity is the statistics test to find whether or not there is correlation among those variables. Other test tools were used to measure the level of intercorrelation among variables and whether or not factor analysis can be done by Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy (KMO MSA). To be able to do factor analysis , the value that must be desired is more than 0.50 (Ghozali, 2013).

The following is the testing result of KMO and Bartlett

Table 3.1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's Test of Sphericity	Approx. Chi-Square	1030.490
	df	231
	Sig.	.000

Source: Primary Data Processed, 2019

Based on table 3.1, KMO Measure of Sampling Adequacy had the value of 0.757. Whereas, the value of Bartlett's Test of Sphericity was 1030.490 with 0.00 significance. Because the value of KMO Measure of Sampling Adequancy was

more than 0.50, the existing whole variables and samples can be analyzed further, in this case was analysis factor.

The next testing method used was the extraction of 7 factors as the research variable and rotation method with varimax (Ghozali, 2013). The following is the result of validity testing with rotated component matrix:

Table 3.2 Validity Test: Rotated Component Matrix

Variable	Measurement	$r_{counted}$	r_{table}	Description
Instagram Based Brand Community	Item 1 (BC1)	0.767	0.2480	Valid
	Item 2 (BC2)	0.869	0.2480	Valid
	Item 3 (BC3)	0.934	0.2480	Valid
Customer Relations to the Product	Item 1 (P1)	0.817	0.2480	Valid
	Item 2 (P2)	0.834	0.2480	Valid
	Item 3 (P3)	0.820	0.2480	Valid
	Item 4 (P4)	0.813	0.2480	Valid
Customer Relations to the Brand	Item 1 (B1)	0.827	0.2480	Valid
	Item 2 (B2)	0.845	0.2480	Valid
	Item 3 (B3)	0.871	0.2480	Valid
	Item 1 (C1)	0.779	0.2480	Valid

Customer Relations to the Company	Item 2 (C2)	0.832	0.2480	Valid
	Item 3 (C3)	0.860	0.2480	Valid
Customer Relations to the Other Customers	Item 1 (OC1)	0.827	0.2480	Valid
	Item 2 (OC2)	0.904	0.2480	Valid
	Item 3 (OC3)	0.899	0.2480	Valid
Customer Relations to the Brand Loyalty	Item 1 (BL1)	0.770	0.2480	Valid
	Item 2 (BL2)	0.786	0.2480	Valid
	Item 3 (BL3)	0.867	0.2480	Valid
Customer Relations to the Brand Trust	Item 1 (BT1)	0.873	0.2480	Valid
	Item 2 (BT2)	0.875	0.2480	Valid
	Item 3 (BT3)	0.859	0.2480	Valid

Source: Primary Data Processed, 2019

Table 3.2 shows that all 22 questionnaire questions had successfully extracted. The correlation number from all items was more than the r table (0.248), as a result all question items can be declared valid. The grouping of 22 questions into 7 factors was also successfully conducted. It indicates that the questionnaire has been able to explain something measured by that questionnaire.

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3.7.2 Reliability Testing Method and Result

Reliability in a measurement shows the measurement of bias because it guarantees the consistent cross time measurement and cross various items in a measurement. In other words, the obstacle of a measurement is the indication to the stability and consistency where the instrument measures the concept and help to assess "accuracy" of a measurement (Sekaran & Bougie, 2009).

Reliability consistency among items is a test of the consistency of respondents' answers to all items measured. To the level of items that have free size from the same concept, they will correlate with each other. This research used the Alfa Crombach coefficient as a reliability measurement test among items. Alfa Crombach is the reliability that shows how good the item in the group that positively correlated one to others. If the Alfa Crombach coefficient score is more than 0.6, the instrument can be categorized as reliable. Getting closer to 1, the higher the internal consistency (Sekaran & Bougie, 2009).

Reliability consistency between items is a test of the respondent consistency in answering to all measured items. To the extent that items were free size from the same concept, they will correlate each other. This research used Alfa Cronbach coefficient as a reliability measurement test between items. Alfa Cronbach is a reliability coefficient that shows how well items in a collection are positively correlated to each other. If the Alfa Cronbach coefficient value was more than 0.6, that instrument can be classified as reliable. The closer Alfa Cronbach to 1, the higher the reliability of internal consistency (Sekaran & Bougie, 2009). The following is the result of reliability test:

Table 3.3 Reliability Test

Variable	Cronbach's Alpha	Status
Instagram based Brand Community	0.844	Reliable
Customer Relations to the Product	0.893	Reliable
Customer Relations to the Brand	0.891	Reliable
Customer Relations to the Company	0.902	Reliable
Customer Relations to the Other Customers	0.903	Reliable
Brand Trust	0.928	Reliable
Brand Loyalty	0.859	Reliable

Source: Primary Data Processed, 2019

Based on table 3.3 it can be stated that all variables were reliable. It was proven by the value of Alfa Cronbach from all variables which was more than 0.6, hence all question items in this research can be categorized as reliable and can be used for the next analysis.

3.8 Data Analysis

3.8.1 Data Analysis Method

The data analysis method conducted in this research was quantitative. The

method that use is the simple regression and multiple regression analysis.

3.8.1.1 Regression

Regression is the process of systematically estimating what was most likely to happen in the future based on past and present information that is owned. Thus, this mistakes can be minimized. One of the uses of regression in research is to predict the dependent variable (Y) if the independent variable (X) is known (Riduwan & Sunarto, 2010)

3.8.1.1.1 Simple Regression

Simple regression can be analyzed because it is based on functional relationship or causal relationship between independent variable (X) and the dependent variable (Y)

$Y = \alpha + \beta x$

X is called the independent variable and Y is called the dependent variable. α is the intercept of the Y axis and β is the addition of the value Y if the value of X increases by 1 unit (Subiyakto, 1995)

3.8.1.1.2 Multiple regression

Multiple regression analysis is the development of simple regression analysis. The purpose is to predict the value of the dependent variable (Y) if the independent variable is at least two or more. Multiple regression analysis is a forecasting analysis tool to the value of the influence of two or more independent variables on the dependent variable to prove the presence or absence of a relationship of function or casual relationship among two or more independent variables $(X_1),(X_2),(X_3), \dots,$

(X_n) with one dependent variable (Riduwan & Sunarto, 2010)

3.8.1.2 Classic Assumption Test

In conducting multiple linear regression analysis, it must meet certain basic assumptions. The assumptions in question are as follows:

3.8.1.2.1 Normality test

The purpose of normality test is to test whether in the regression model, the confounding or residual variables have a normal distribution. The statistic test will not be valid for the small number of sample if the assumption that a residual value follows a normal distribution which is violated (Ghozali, 2013).

This research used the Kolmogorov-Smirnov non-parametric statistical test to test residual normality. The hypothesis for the K-S test is as follows:

H0: Normally distributed residual data.

HA: Non-normally distributed residual data.

The regression model is considered to fulfill the assumption of normality if the significance is > 0.005. It means that H0 is accepted where data is normally distributed

3.8.1.2.2 Multicollinearity test

Multicollinearity test aims to test whether the regression model found a correlation among independent variables. A good regression model should not have a correlation among independent variables. If the independent variables are correlated with each other, then these variables are not orthogonal. Orthogonal

variables are independent variables whose correlation values among independent variables are zero (Ghozali, 2013).

This research used the value of tolerance and variance inflation factor (VIF) to detect multicollinearity. Tolerance measures the variability of selected independent variables that are not explained by other independent variables. As a result, the low tolerance value is equal to the high VIF value (Because VIF = 1/Tolerance). If the Tolerance $\geq$ 0.10 or same with VIF $\geq$ 10, there is a high multicollinearity symptom.

3.9.2 Development of Basic Formulations

3.9.2.1 Development of a Simple Regression Analysis Formulation

The following are simple regression equations used in this research:

1. The first formulation of simple linear regression analysis is as follows:

   $Y = \alpha + \beta X1 + e$

   Notes:

   Y= Level 1 minor dependent variable, customer relationship to the brand.

   α= Constants

   β= Independent variable regression coefficient

   X1= Independent variable, brand community on Instagram

   e = Error rate

2. The second formulation of simple linear regression analysis is as follows:

   $Y = \alpha + \beta X1 + e$

   Notes:

   Y= Level 1 minor dependent variable, customer relationship to the product.

   α= Constants

β= Independent variable regression coefficient

X1= Independent variable, brand community on Instagram

e = Error rate

3. The third formulation of simple linear regression analysis is as follows:

Y=α+βX1 +e

Notes:

Y= Level 1 minor dependent variable, customer relationship to the company.

α= Constants

β= Independent variable regression coefficient

X1= Independent variable, brand community on Instagram

e = Error rate

4. The fourth formulation of simple linear regression analysis is as follows:

Y=α+βX1 +e

Notes:

Y= Level 1 minor dependent variable, customer relationship to other customers.

α= Constants

β= Independent variable regression coefficient

X1= Independent variable, brand community on Instagram

e = Error rate

5. The fifth formulation of simple linear regression analysis is as follows:

Y=α+βX1 +e

Notes:

Y= Dependent variable, Brand Loyalty.

α= Constants

β= Regression coefficient

X1= Level 2 minor dependent variable, brand trust

e = Error rate

3.9.2.2 Development of the Formulation of Multiple Regression Analysis

The formulation of multiple regression analysis in this research is as follows:

$$Y = \alpha + \beta x1 + \beta x2 + \beta x3 + \beta x4 + e$$

Notes:

Y= Level 2 minor dependent variable, brand trust

α= Constants

X1= Level 1 minor dependent variable, customer relationship to the brand.

X2= Level 1 minor dependent variable, customer relationship to the product.

X3= Level 1 minor dependent variable, customer relationship to the company.

X4= Level 1 minor dependent variable, customer relationship to the other customers.

e = Error rate

3.9.3 Goodnes of Fit Research Model

The purpose of Goodnes of fit testing is to measure the accuracy of the sample regression function in estimating the actual value. It can be measured from the coefficient of determination, the F and t statistical value. Statistical calculations are considered statistically significant if the statistical test value is in a critical area (the area where Ho is rejected) and is considered insignificant if the statistical test value is in the area where Ho is accepted (Ghozali, 2013).

3.9.3.1 t Test

The t test is conducted to show the influence of one independent variable individually in explaining the variation of the dependent variable. This test is conducted by comparing the t value of the calculation with the value of t table. If the value of t count is greater than the value of t table, the alternative hypothesis which stated that an independent variable individually affects the dependent variable is acceptable (Ghozali, 2013)

3.9.3.2 F test

The F statistical test aims to show whether an independent variable included in the model has a joint effect on the dependent variable. This test is conducted by comparing the F value of the calculation results with the value of F table. If the value of F count is greater than the value of F table, Ho is rejected and accepts the alternative hypothesis (Ghozali, 2013).

3.9.3.3 Determination Coefficient Test (R^2)

Coefficient of determination aims to measure how far the ability of the

model in determining the variation of the dependent variable. A small R² value means the ability of independent variables to explain variable variations dependent which is very limited. Values close to one mean variables independent provides almost all information needed to predict variations in the dependent variable (Ghozali, 2013).

This research used the adjusted R^2 value in evaluating the best regression model because it used R^2 which was biased toward the number of independent variables that entered into the model. Unlike R^2 which definitely increases, it does not matter whether the variable has a significant effect on the dependent variable, the adjusted R^2 value can go up or down if one independent variable is added to the model (Ghozali, 2013).

3.9.4 Level of significance

The level of significance used in this research was 5%. Thus, if the significance test results is <0.05, it can be interpreted that the relationship between the dependent variable and the independent variable is significant.

3.9.5 Hypothesis Testing Method

This research used two regression analyzes, namely simple regression and multiple regression. Simple regression analysis was used to test the hypothesis of the effect of Instagram based brand communities on brand community customer centric models and the effect of brand trust on brand loyalty.

While multiple regression analysis was used to test the hypothesis of the influence of brand community customer-centric models on brand trust. The hypothesis was

tested using SPSS 17 software for Windows.