# CHAPTER III

# RESEARCH METHODOLOGY

In this chapter, the methodology that will be used in this research will be described. There are several sub-chapters in this chapter including the focus of the research place, conceptual research model, determination of research variables and indicators, research data sources used, data collection methods, and data processing analysis tools.

## 3.1. Research Focus

This research would like to focus the problem first. This is intended in order to prevent the expansion of problems which will not be in accordance with this study. This research has limitation that only focusses on the green marketing promotion issue. This research will also focus more on the sub issue of green promotion, namely the impact of consumer engagement toward the brand trust.

## 3.2. Research Place

This research was conducted at Starbucks Coffee located in the city of Yogyakarta. The choice of this location is based on the green marketing promotion applied to the store.

### 3.3. Conceptual Research Model

The concept of the research model is made to facilitate research, and to find out what will be studied. Conceptual research models are obtained based on various studies that have been conducted. Conceptual model that will be made is about brand trust through consumer engagement in green promotion. In making trusting the brand, there are several factors or variables that can be taken into consideration by consumers. In order to get fluency in conducting research and to find out what will be examined in the research, a research model concept is needed. Conceptual research models are made based on several studies conducted first. In this research, the conceptual model that will be made is about consumer engagement toward the consumer's brand trust. In getting brand trust through consumer engagement, there are several factors or variables that can be taken into consideration by consumers.

Attention represents an invisible material resource that a person can allocate in multiple ways (So, King, & Sparks, 2012). Individuals who are highly engaged tend to focus a great deal of attention, consciously or unconsciously, on the object of engagement (So, King, & Sparks, 2012). A customer who is engaged with a brand is attracted to information related to the brand (So, King, & Sparks, 2012). The notion of attention is consistent with the construct of conscious participation (Vivek, 2009), which captures a consumer's level of attention toward a brand. Therefore, attention, representing a consumer's attentiveness and focus on the brand (So, King, & Sparks, 2012). Based on this explanation, the researcher would like to propose the hypothesis that consumer's attention has an influence on brand trust ($\mathbf{H_1}$).

Interaction refers to a customer's online and off-line participation with the brand or other customers outside of purchase (So, King, & Sparks, 2012). Interaction involves sharing and exchanging ideas, thoughts, and feelings about experiences with the brand (Vivek, 2009) and constitutes an important part of the conceptualization of costumer engagement. Therefore, interaction constitutes an important dimension of CE, representing the behavioural manifestation of a consumer's relationship with the brand beyond traditional consumptive behaviour (So, King, & Sparks, 2012). Based on this explanation, the researcher would like to propose the hypothesis that consumer's interaction has an influence on brand trust (**$H_2$**).

Clemes et al (2011) stated that consumer satisfaction as a subjective process of a consumption experience through time. Bitner & Hubbert (1994) viewed overall customer satisfaction as a function of multiple transaction-specific satisfactions, and thus overall customer satisfaction is a post-choice evaluation of a specific purchase occasion. More specifically, Anderson et al (1994) argued that overall customer satisfaction is considered superior when it is compared with transaction-specific satisfaction because customer satisfaction is more fundamental and useful in predicting a consumer's behavioural intentions. Based on this explanation, the researcher would like to propose the hypothesis that customer satisfaction has an influence on brand trust (**$H_3$**). The conceptual research model is described in the Figure 3.1 below.

Furthermore, this model will develop by simulate each indicators. The significance indicator will be used in the next method.

### 3.3.1. Research Variables and Indicator

The following is an explanation of the research variable. In the Table 3.1 will be explained the definition of each variable dimension.

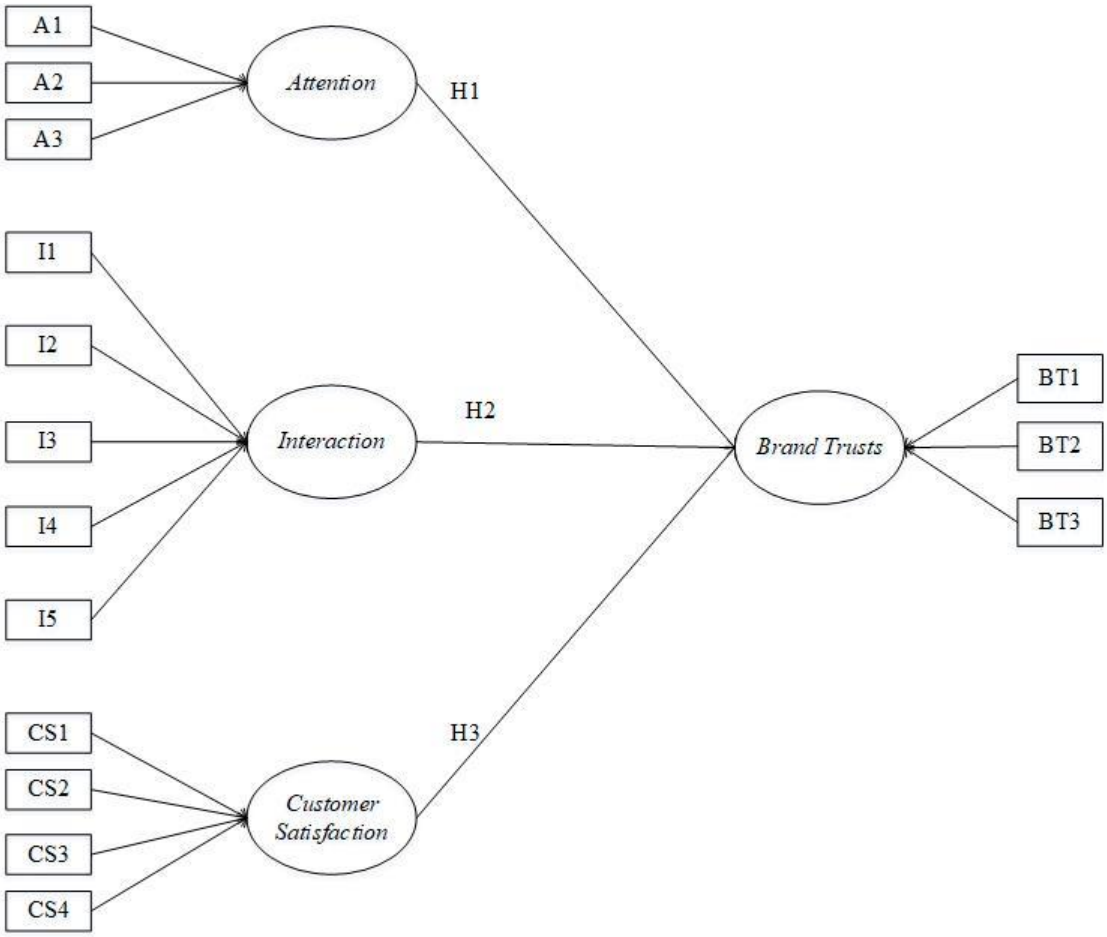


Figure 3.1 Conceptual Model Research

Table 3.1 Variables Definition

| Variables | Definition of Variable Dimensions |
|---|---|
| Attention | Attention from consumers to find out about information from a product / service offered from a brand |
| Interaction | Interaction from customers to exchange ideas, thoughts and feelings about experience with a brand. |
| Customer Satisfaction | Customer satisfaction can be seen from the post choice process so that customers can evaluate based on the satisfaction and experience received by customers from a brand. |

Furthermore, in Table 3.2 there are several indicators of conceptual models that have been prepared which will explain the related variables and attributes in this study.

Table 3.2 Variables Attributes

| No | Variable | Attribute | Instrument Number |
|---|---|---|---|
| 1 | Attention | The consumer like to learn more about environmentally friendly promotion that is offered by this brand | A1 |
| 2 | | The consumer pays a lot of attention to any environmentally friendly promotion from this brand | A2 |
| 3 | | The consumer spends a lot of my time searching about environmentally friendly promotion on this brand | A3 |
| 4 | Interaction | The consumer like to get involved in brand community discussions to discuss about environmentally friendly promotion activity on this brand | I1 |
| 5 | | The consumer enjoys interacting with like-minded others in this | I2 |

| No | Variable | Attribute | Instrument Number |
|---|---|---|---|
| | | brand community | |
| 6 | | The consumer likes actively participating in brand community discussions to discuss environmentally friendly promotion about this product | I3 |
| 7 | | The consumer thoroughly enjoys exchanging ideas with other people in the brand community | I4 |
| 8 | | The consumer often participates in any environmentally friendly promotion activities of this brand community | I5 |
| 9 | Customer Satisfaction | The consumer rate the level of service quality you receive from this brand based on their experience | CS1 |
| 10 | | The consumer rate the level the price that is offered by this brand based on their experience | CS2 |
| 11 | | The consumer rate the level for the time you spent in making a purchase of this brand's product based on their experience | CS3 |
| 12 | | The consumer rate overall experience in purchasing this brand's product based on their experience | CS4 |
| 13 | Brand Trust | The consumer confidence that the brand of the product is environmentally friendly | BT1 |
| 14 | | The consumer confidence that the product is not harmful to nature | BT2 |
| 15 | | The consumer believe that green promotion gives good influence to the environment | BT3 |

### 3.3.2. Formulation

There are several formulations that used in this research. Below is the explanation of the formulation.

A. Validity Test Questionnaire

This test is carried out to find out the validity of the statement. A valid statement will then be distributed to the respondent. While those that are not yet valid need to be repaired in the form of changes or omissions. The formula for testing the validity of the questionnaire is:

$$r_{xy} = \frac{N(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{\{N\Sigma x^2 - (\Sigma x)^2\}\{N\Sigma y^2 - (\Sigma y)^2\}}}$$

Information:

| | | |
|---|---|---|
| N | = | The total of instrument |
| X | = | Respondent score on the instrument (question) |
| Y | = | Total score all of the instrument (question) on every respondent |
| $r_{xy}$ | = | Correlation coefficient between variables X and variable Y |
| $\Sigma xy$ | = | The number of multiplications between variables X and Y |
| $\Sigma x^2$ | = | The sum of the squares of the X value |
| $\Sigma y^2$ | = | The sum of the squares of the Y value |
| $(\Sigma x)^2$ | = | The number of X values is then squared |
| $(\Sigma y)^2$ | = | The number of Y values is then squared |

Figure 3.2 Variability Test Formulation Information

The basis used in making decisions on each of the questions said to be valid or not is as follows:

- If r counts ≥ r table, then the question or statement can be said to be valid.
- If r count <r table, then the question or statement can be said to be invalid.

B. Reliability Test Questionnaire

Reliability is an indicator that shows the suitability of the measuring instrument with what is measured. The formula used to determine the

reliability of a research instrument can be calculated using the following Cronbach alpha formula:

$$\alpha = \left[\frac{k}{(k-1)}\right]\left[1 - \frac{\Sigma{\sigma_j}^2}{\sigma^2}\right]$$

Information:

| | | |
|---|---|---|
| $\alpha$ | = | Instrument reliability |
| k | = | Total question item that testing |
| $\Sigma{\sigma_j}^2$ | = | Value of the variance of the j-th question |
| $\sigma^2$ | = | Total variance |

Figure 3.3 Reliability Test Formulation Information

Before using the Cronbach alpha formula, first is to determine the number of variance items, it can be formulated as follows:

$$\sigma^2 = \frac{\Sigma x^2 - \frac{(\Sigma x)^2}{N}}{N}$$

Information:

| | | |
|---|---|---|
| $\sigma^2$ | = | Instrument variance |
| $\Sigma x^2$ | = | Number of X squares |
| $\Sigma x$ | = | Number of scores for each instrument |

Figure 3.4Number of Variance Formulation Information

Therefore, the basis for making decisions on these measuring instruments is reliable or not as follows:

- If r alpha ≥ r table, then the variable can be said to be reliable.
- If r alpha <r table, then the variable cannot be said to be reliable.

### 3.4. Data Source

The source of data used in this study consisted of primary data and secondary data.

a. Primary data

Primary data is data obtained directly from the object of research. The primary data of this study were obtained from questionnaires filled out by respondents, including identity, and respondent's responses according to the results of filling out the questionnaire.

b. Secondary data

Secondary data are the data obtained indirectly or through other parties. Secondary data of this study were obtained from literature studies, papers, literature relating to problems and information obtained through online systems (internet).

### 3.5. Collecting Data Method

#### 3.5.1. Questionnaire

In this study, the method used in data retrieval is to use a survey method supported by a questionnaire. The questionnaire used has a list of statements related to the research. There are 115 respondents who have provided answers to existing statements. In this questionnaire there are also no specific specifications for filling out questionnaires,

only the respondents must be customers of Starbucks. The questionnaire prepared has a choice of answers in the form of a Likert scale.

Likert scale is one methods used to measure opinions, perceptions, and also a person's attitude about social phenomena that occur. The questionnaire distributed consists of various statements relating to research variables and indicators. The method of measurement in this questionnaire is to provide a statement to the respondent and then asked to give an answer. The scale used in this study is level 5 (1,2,3,4,5) as described in Table 3.3.

Table 3.3 Likert Scale Table

| No | Explanation | *Likert Scale* |
|---|---|---|
| 1 | Extremely not agree | 1 |
| 2 | Not agree | 2 |
| 3 | Doubtful | 3 |
| 4 | Agree | 4 |
| 5 | Extremely agree | 5 |

### 3.5.2. Data Analysis Stage

Data analysis is used to determine the right test. Analysis test is divided into 2, namely test questionnaire items, and test the results of the questionnaire. The questionnaire grain test was processed using SPSS software, while the SEM method was processed using AMOS software. Below is a brief description of each stage that has been done to analyse the data.

1. Model Test

According to Hair et, al in Ghozali (2008) proposed the stages of modelling and structural equation analysis into 7 steps, namely:

1) Theory-Based Model Development

   The structural equation model is based on causality relationships, where a variable change is assumed to result in changes in other variables. The strong causality relationship between the two variables assumed by the researcher does not lie in the analytical method he chose, but lies in theoretical justification to support the analysis.

2) Compile Path Diagrams (Path Diagrams)

   The next step is to compile a causality relationship with a path diagram. The path diagram will make it easier for researchers to see the causality relationships tested. Causal relationships are usually expressed in the form of equations, but in SEM the causality relationship is sufficiently depicted in a path diagram and then the program language will convert the image into an equation and an equation into an estimate.

3) Conversion of Path Diagram into Structural Equations and Measurement Models

   The next step is to convert the flow diagram into the equation, both structural equations and measurement model equations. Actually this step has been done automatically by the available SEM program. The following are examples of general structural equations:

Endogenous Variable = Exogenous Variable + Estimated Error

4) Select the Type of Input Matrix

The difference between SEM and other multi-variant techniques is in the input data which is used by variant / covariant matrix input to test the theory. However, if the researcher only wants to see the relationship pattern and does not see the total explanation needed in the theory test, then the user of the correlation matrix can be accepted.

The type of input matrix that is entered is input data in the form of a variant or covariance matrix or correlation matrix. Observational raw data will be changed automatically by the program into a covariance matrix or correlation matrix. Covariance matrices have advantages over correlation matrices in providing comparative validity between different populations or different samples. But the covariance matrix is more complicated because the coefficient value must be interpreted on the basis of the construct measurement unit.

The estimation of the proposed model depends on the number of research samples, with the following criteria: (Ferdinand, 2006)

- Between 100 - 200: Maximum Likelihood (ML)
- Between 200 - 500: Maximum Likelihood or Generalized Least Square (GLS)

- Between 500 - 2500: Unweighted Least Square (ULS) or Scale Free Least Square (SLS)
- Above 2500: Asymptotically Distribution Free (ADF)

5) Measurement Model Testing

Measurement model testing often also called Confirmatory Factor Analysis (CFA). That is by calculating a research model diagram by giving a two-way arrow between each construct. This step is to see whether the sample covariance matrix studied has a significant difference or not with the estimated population matrix. It is expected that there is no significant difference so that the significance value in Chi-Square is above 0.05.

6) Structural Model Evaluation Testing

Structural model evaluation testing often also called Full model, which is running a program with a research model. This step is to see the various assumptions that are needed, as well as to see whether it needs to be modified or not and ultimately is to test the research hypothesis.

a. Evaluate the Goodness of Fit Criteria

The first step in the model that has been generated in SEM analysis is to pay attention to the assumption of assumptions in SEM, namely:

a) Sample Size

The sample size must meet a minimum of 100 samples.

b) Normalization and Linearity

Where normalization is tested by looking at the image histogram data and tested by statistical methods. While, the linearity test can be done by observing scatterplots from the data and seeing the pattern of their spread.

c) Outliers

Observations that appear with extreme values are those that arise because of unique combinations of characteristics and considered as different from other observations.

Description of the Goodness of Fit Index (Ghozali, 2008):

a) X2 Chi Square statistics are a fundamental measure of overall fit. The fundamental measure of overall fit is likeness-ratio chi-square ($\chi 2$). The model being tested is seen as good or satisfying if the Square chi value is low, the smaller $\chi 2$ is, the better the model will be as indicated by the significant level ($\alpha$) and accepted based on probability (p).

b) CMIN / DF is defined as the Minimum Sample Discrepancy Function that is derived from the chi-square value divided by the degree of freedom. Value ratio of 5 or < 5 includes reasonable size. Then the ratio value < 2 is developed, including a fit size.

c) GFI (Goodness of Fit Index) is a non-statistical measure which values ranged from 0 to 1. The higher value shows better fit. The GFI value > 0.90 indicates that the tested model has good suitability.

d) RMSEA (The Root Mean Square Error of Approximation) is a measure that attempts to improve the tendency of chi square statistics to reject models with large samples. The RMSEA value between 0.05 and 0.08 indicates a good index to accept the suitability of a model.

e) AGFI (Adjusted Goodness of Fit Index) is a development of Goodness of Fit Index (GFI) that has been adjusted with the ratio of degree of freedom. Analogous to R2 in multiple regressions. The recommended value is AFGI ≥ 0.90. The greater the AFGI value, the better the suitability of the model.

f) TLI (Turker Lewis Index) is an incremental index that compares a model that is tested against a baseline model, where the value recommended as a reference for receiving a model is 90 0.90 and the value close to 1 indicates a very good fit.

g) NFI (Normed Fit Index), is a comparison between proposed models and null models. The NFI value ranges from 0 to 1 and the recommended value is ≥ 0.90.

b. Reliability Test and Variance Extracted

Reliability is a measure of internal consistency of indicators of a formed variable that shows the degree to which each indicator indicates a common form (Ghozali, 2008). There are two ways that can be used, namely construct reliability and variance extracted. To construct reliability the cut-off value required ≥ 0.70 while for variance extracted the cut-off value required ≥ 0.50 (Ghozali, 2008).

c. Hypothesis Test

Hypothesis testing is carried out to determine the relationship among the influence or not between the research variables. This test is by analysing the Regression Weight value, namely the Critical Ratio (CR) and Probability (P) value. The required limits are 1.96 for the CR value and ≤ 0.05 for the Probability value. , the proposed research hypothesis can be accepted.

In this research each variable will have $H_0$ and $H_1$ to be tested using AMOS software, below is the explanation:

a) Attention

$H_0$ : The independent variable "Attention" does not have a relationship with the dependent variable "Brand Trust".

$H_1$ : The independent variable "Attention" does have a relationship with the dependent variable "Brand Trust".

b) Interaction

$H_0$ : The independent variable "Interaction" does not have a relationship with the dependent variable "Brand Trust".

$H_1$ : The independent variable "Interaction" does have a relationship with the dependent variable "Brand Trust".

c) Customer Satisfaction

$H_0$ : The independent variable "Customer Satisfaction" does not have a relationship with the dependent variable "Brand Trust".

$H_1$ : The independent variable "Customer Satisfaction" does not have a relationship with the dependent variable "Brand Trust".

7) Modification Model

Researchers can modify the model to improve the model that has been compiled, with an important note, namely that each model change must be supported by a strong theoretical justification. There should be no modification of the model without strong theoretical support. Model modification can be done by adding arrows between constructs (can also be additional hypotheses) or adding two arrows between indicators, which must also be supported by a strong theory. The feasibility assessment of the modification model can be compared with the model before the

modification. The decrease in Chi-Square among the models before and after modification is expected to be more than 3.84.

### 3.6. Tools Used

This study uses several tools to perform data processing as follows:

1. Microsoft Word

   This tool is used for preparing reports in research.

2. Microsoft Visio

   This tool is used for the preparation of research k-charts.

3. Google Form

   This tool is used for compiling and distributing questionnaires

4. Microsoft Excel

   This tool is used to process data obtained from questionnaires, and supporting data in the study.

5. SPSS software

   This tool is used to process test validity and reliability data for questionnaire items.

6. AMOS software

   This tool is used to process SEM for the conceptual model.