CHAPTER III

RESEARCH METHODOLOGY

this chapter describes the methodology that will be used in this research. This chapter contains sub-chapters including the focus of the research place, source research model, determination of research variables and indicators, research data sources used, data collection methods, step of research.

1.1 Research Focus

The focus of this research to analyse the relationship between the variables of eco-label toward brand trust. Ecolabel is one of supporting element in communication of green promotion in green marketing.

1.2 Research Place

This research was carried out on Starbucks Indonesia which is located in the city of Yogyakarta. The choice of this location is based on the highest number of shop visitors in buying green products that has an ecolabel slogan. This location selection is based on the promotion that has been carried out by the company which invites consumers to be more concerned about the environment.

1.3 Concept of 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 consumer

purchasing decisions in buying green products. In making purchasing decisions, there are several factors or variables that can be taken into consideration by consumers.

The state of one's knowledge about an issue impacts significantly upon his or her decision-making process. The importance of knowledge and the impact of lack of knowledge in the decision-making process have been demonstrated in numerous studies Laroche et al., (2001). The study of environmental knowledge has initially conceptualized consumer knowledge as having two dimensions, namely Knowledge of Environmental Issues and Knowledge of Green Product Features (Rashid, 2009). Based on the explanation, it can be proposed that environmental knowledge has an influence toward brand trust **(H_1).**

Eco-label awareness is a situation where the customer is aware of the existence of eco-labels when shopping (Nguyen & Du, 2010). If people aware about the ecolabel in a product, then people will trust the product itself. Based on the explanation, it can be proposed that eco-label awareness has an influence toward brand trust **(H_2).**

Ecolabel knowledge is Knowing that eco-label is a label that identifies environmental preferences for a product based on its life cycle, and knows the rules relating to eco-labels in Indonesia (Nguyen & Du, 2010). Based on the explanation, it can be proposed that ecolabel knowledge has an influence toward brand trust **(H_3).**

Belief in environmentally friendly buying is believing that by buying products that have eco-label is an environmental protection effort and believes that products that have eco-labels are safe for the environment (Nguyen & Du, 2010). Based on the explanation, it can be proposed that belief in environmentally friendly buying has an influence toward brand trust **(H_4).**

From the proposed hypothesis above, then in Figure 3.1 is a conceptual model of the research model that will be carried out.

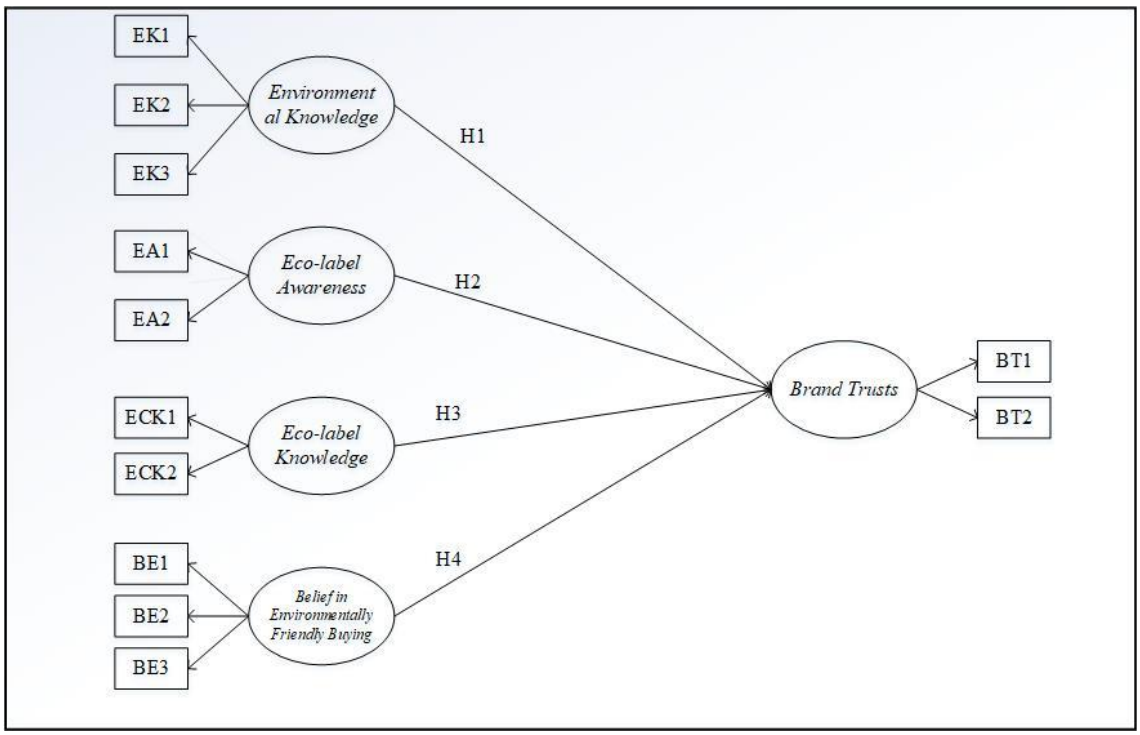

Figure 3. 1 Conceptual Model Research

3.3.1 Dimension and Variables of Research

In this sub-chapter, it will be explained the variables and also the definitions that will be used in this research listed in the Table 3.1.

Table 3. 1 Variable and variable dimension definitions

Variable	Definition of Variable Dimensions
Environmental Knowledge	Environmental knowledge is the amount of information individuals have concerning environmental issues and their ability to understand and evaluate its impact on society and the environment.

Variable	Definition of Variable Dimensions
Eco-label Awareness	Ecolabel awareness is a situation where the customer is aware of the existence of eco-labels when shopping.
Eco-label Knowledge	Ecolabel knowledge is Knowing that eco-label is a label that identifies environmental preferences for a product based on its life cycle.
Belief in Environmentally Friendly Buying	belief in environmentally friendly buying is believing that by buying products that have eco-label is an environmental protection effort and believes that products that have eco-labels are safe for the environment
Brand Trust	Brand trust is the perception of reliability from a consumer's point of view based on experience, or more on the order of transactions or interactions characterized by fulfilling expectations of product performance and satisfaction

3.3.2 Research Instrument

From the conceptual model that has been compiled, then Table 3.2 will explain the related variables and attributes in this study.

Table 3. 2 Research Instruments

No	Variable	Indicator	Code
1	Environmental Knowledge	a. The customer know about information on activities that are environmentally friendly	EK1

No	Variable	Indicator	Code
		b. The customer know that Starbucks sells tumblr and uses paper bags for environmental conservation needs.	EK2
		c. Aware of Starbucks Coffee contributions in environmental protection.	EK3
2	Eco-label Awareness	a. Be aware of the existence of eco-labels when shopping	EA1
		b. Support the ecolabel movement in Starbucks	EA2
3	Eco-label Knowledge	a. Knowing that Eco-labels are labels that identify environmental preferences for a product based on its life cycle	ECK1
		b. Knowing the rules regarding eco-labels in Indonesia	ECK2
4	Belief in Environmentally Friendly Buying	a. Believing that by buying products that have eco-labels is an environmental protection effort	BE1

No	Variable	Indicator	Code
		b. Believing that products that have eco-labels are safe for the environment	BE2
		c. Consider eco-labels in choosing a product	BE3
5	Brand Trust	a. consumer confidence that the brand of the product is environmentally friendly	BT1
		b. consumer confidence that the product is not harmful to nature	BT2

3.3.3 Formula

A. Validity Test Questionnaire

This test is done 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
Σxy	=	The number of multiplications between variables X and Y
Σx^2	=	The sum of the squares of the X value
Σy^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

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.

A. 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:

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

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

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

Information:

σ^2 = Instrument variance

Σx^2 = Number of X squares

Σx = Number of scores for each instrument

Therefore, the basis for making decisions on these measuring instruments whether it 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

There are two types of data which researcher used in this research. There are:

1. 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.

2. Secondary Data

The researcher gets secondary data from some literature such as journal, literature, and expression from the expert in determining the weight and activity related to the performance measurement in department that help the researcher to complete the research.

3.5 Data Collection method

3.5.1 Questionnaire

In this study, the method used in data retrieval is using survey method supported by a questionnaire. The questionnaire that used has a list of statements related to the research. The questionnaire that prepared has a choice of answers in the form of Likert scale.

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

Table 3. 3 Likert Scale

No	Explanation	Likert Scale
1.	Strongly Disagree	1
2.	Disagree	2
3.	Doubtful	3
4.	Agree	4
5.	Strongly Agree	5

3.5.2 Data Analysis Stage

Data analysis is used to determine the right test. Analysis testing is divided into 2, namely test questionnaire items, and test the results of questionnaires. The test questionnaire items were processed using SPSS software, while the results of the

questionnaire were processed using AMOS software. Below is a brief description of each stages that has been done to analyze the data.

1. Validity and Reliability Test (SPSS)
2. Model Test

   According to Hair et, al in Ghozali (2008) proposed the stages of modeling 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 multivariant 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

   Where the sample size that must be met is 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 look very 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 Suarenya chi value is low, the smaller is $\chi 2$ the better the model is the significant level (α) and accepted based on probability (p).

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

c) GFI (Goodness of Fit Index) is a non-statistical measure whose values range from 0 to 1. The higher the 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 regression. 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 porposed 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 between the influence or not between the research variables. This test is by analyzing the Regression Weight value, namely the Critical Ratio (CR_ and Probability (P) value. The required limits are yaitu 1.96 for the CR value and ≤ 0.05 for the Apabia value. , the proposed research hypothesis can be accepted.

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. Decrease in Chi-Square between the models before

modification with the model 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 data for questionnaire items.

6. AMOS software

   This tool is used to process data obtained based on the results of the questionnaire.