CHAPTER III

RESEARCH METHODOLOGY

In this chapter 3 describes the methodology that will be used in this study. In this chapter contains sub-chapters 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. In this chapter will be presented focus of study are:

3.1 Research Focus

Focus of this research is information credibility toward brand trust in green marketing scope in Starbucks Coffee.

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 promotion done by company to persuade customer 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 brand trust green products. Determine brand trust, there are several factors or variables that can be taken into consideration by consumers. The concept of a research model is made to facilitate research, and to find out what will be examined. Conceptual research models are obtained

based on various studies that have been conducted. Conceptual model that will be made is about information credibility toward brand trust. In determine brand trust, there are several factors or variables that can be taken into consideration by consumers. Brand communication is the main integrative element in managing brand relationships with customers and causes customers' evaluation of brand and creates attitude toward the brand in customer's mind (Sahin et al, 2012).

Accuracy refers to the degree to which a website or other source is error free and whether the information can be verified offline. People use the information that they have to make practical decisions (Fallis, 2004). Then people will tend to found the information deeper. The more specialized and reputable a brand is in selling or recognizing the product or the service, the more highly will its brand trust be perceived. Similar finding were obtained by an earlier study on brand name familiarity (Hoyer and Brown, 1990) demonstrating that when in-experienced decision makers are faced with a choice in which a known brand competes with unknown brands, they are considerably more likely to choose the familiar brand. Based on the explanation above, the hypothesis can be familiar brand information have a significant influence on Brand trust **(H1**).

Credible information may come from credible source. Credible source would have impact in behaviour, attitudes and opinion (Johnson, et al.). Moreover, brand and its product tend to have more positive response if it comes from credible source (Pornpitakan, 2004)

Based on the explanation above, the hypothesis can be credible source have a significant influence on Brand trust (**H2**).

Website interactivity allows visitors to control any information which is accessed and bring through communication in two-way to others or website host (Nan, 2013) Website interactivity has function facilitate users, website sponsor and member to do agreement or engagement (Liu & L, 2002). Interactivity in certain period of time will lead to degree of involvement and website experience (Kim & Stout, 2010) then it will lead to

interactivity attitudes and trust toward website, website sponsor and impacted to its featured product (Chena et al, 2013). So sponsor has opportunity to build their brand trust through share information. Based on the explanation above, the hypothesis can be website interactivity have a significant influence on Brand trust (**H3**).

People will tend to rely on first impression and determine whether website is credible when there is no other information found (Giffin, 1967). Perceived credibility is more based on emotional feeling than logical and is influenced by cues and appearance (Giffin, 1967). This leads to information credibility then become factor to explore the information more, perceived the reputation and quality of source or website. Based on the explanation above, the hypothesis can be initial perception have a significant influence on Brand trust (**H4**).

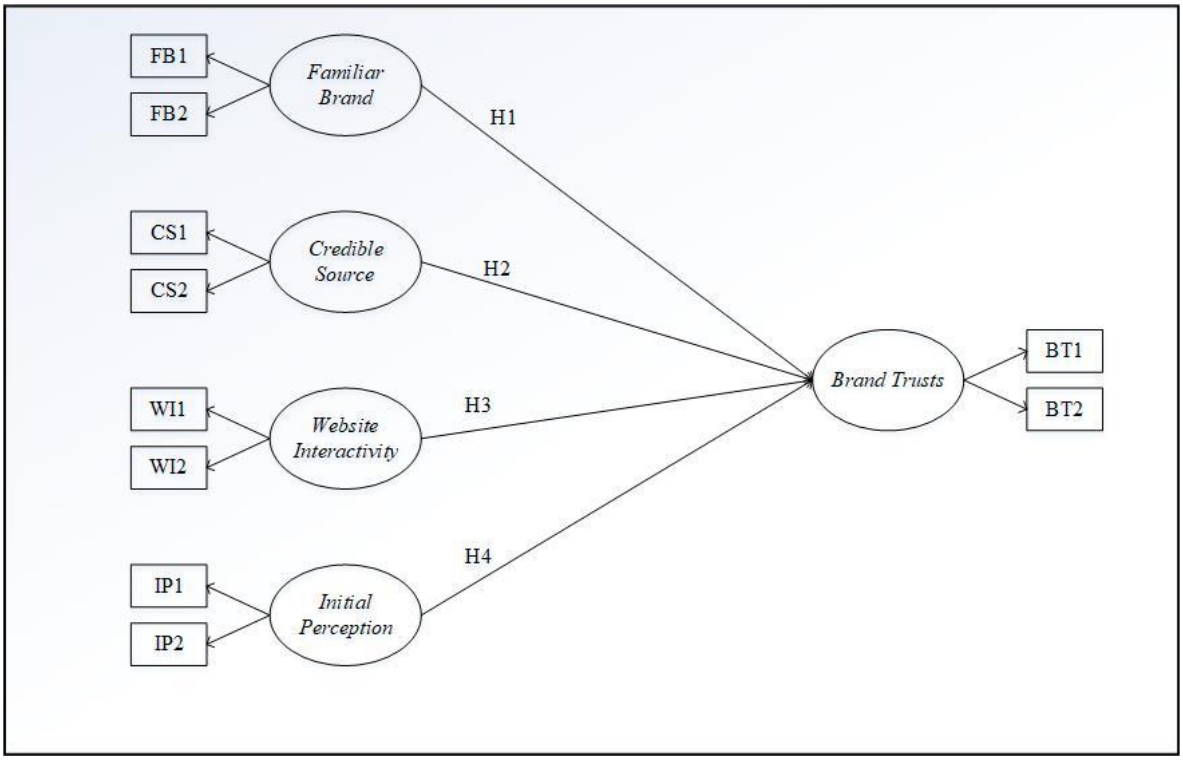

Figure 3. 1 Conceptual Model

1.3.1 Variable and Research Indicators and Instruments

Following are variables and definitions will be used in research.

Table 3.1 Variables and Dimension

Variable	Dimension
Familiar brand	Well known and often mentioned
Credible Source	Perceived expertise and trustworthiness of the source.
Website Interactivity	Features of websites that allow participation by visitors such that they can actively control what information to access and and/or engage in two-way communication with the website host or other visitors.
Initial Perception	First impression when hear or read the information.
Brand Trust	The willingness of the average consumer to rely on the ability of the brand to perform its stated function.

Table 3.2 Tables of Indicators

Variable	Indicator	Instrument Number
Familiar Brand	Well known	FB1
	Often mentioned	FB2
Credible Source	The depth of coverage of the information	CS1
	Currency	CS2
Website Interactivity	Two-ways interaction	WI1
	Information sharing	WI2
Initial Perception	Information as what looking for	IP 1
	Information is attractive	IP 2
Brand Trust	Confidence that is adhered to by information credibility in green marketing scope	BT 1
	Recommend products to others	BT 2

1.3.2 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:

$$r_{xy} = \frac{N(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{\{N\Sigma x^2 - (\Sigma x)^2\}\{N\Sigma y^2 - (\Sigma y)^2\}}} \quad (1)$$

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.

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:

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

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 determine the number of variance items, the formula that can be used is as follows:

$$\sigma^2 = \frac{\Sigma x^2 - \frac{(\Sigma x)^2}{N}}{N} \quad (3)$$

Information:

σ^2		
Σx^2	=	Instrument variance
Σx	=	Number of X squares
	=	Number of scores for each instrument

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.

1.4 Data Source

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

a. Primary data

Primary data are 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 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).

1.5 Data Requirement

Data are collected by using questionnaire and will be processed using SPSS to identify whether proper or not.

1.5.1 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. The questionnaire prepared has a choice of answers in the form of a Likert scale.

Likert scale is one method 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 give a statement to the respondent and then asked to give an answer. The scale used in this study is to use level 5 (1,2,3,4,5) as described in Table 3.3.

Table 3.3 Likert Scale

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

1.5.2 Stage of Analysis

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 results of the questionnaire were processed using AMOS software.

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. 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

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 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 Square 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 defined as the Minimum Sample Discrepancy Function, which is derived from 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 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 research variables. This test is conducted 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.

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 between the models before modification with the model after modification is expected to be more than 3.84.

1.6 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.

7. AMOS software

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