CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the stages of this research will be explained. It is needed to carry out the important characteristics of the research so that the research runs accurately and comprehensively.

3.1   Research Object

This research will be conducted at a property industry named as Real Estate Indonesia in the Yogyakarta area. This research will be focused on the green product that offered by the company. The data will be collected by spreading the questionnaire to the company's customers who have ever bought the products or familiar with Real Estate Indonesia in the Yogyakarta area.

This research will be focused on customer engagement. There are sereveral variables that will be used. The sample that will be used in this research is in the range of 400 sample data out of about 750 population data.

3.2   Types of Data

There are two types of the data that will be used on this research including:

a. Primary Data

Primary data are obtained directly from the object of research. The primary data in this research were obtained from questionnaire filled out by

respondents and also directed to interview. The questionnaire contains of the identity and repondent's responses based on the questionnaire's question and it will be spreaded to the customer of Property Industry which incorporated to Real Estate Indonesia chapter Yogyakarta. The primary data that needed in this research are:

1. Profile data of repondents.
2. Company profile.
3. Green products or services that provided by the property industry.

b. Secondary Data

Secondary data are obtained indirectly or through other parties. This data were obtained from literature studies, journals and textbook. The secondary data are used to compile the information related to the topic that discussed in this study to complete the research. The secondary data that needed in the research are:

1. Additional variables to fulfill the simulation data.
2. Causal loop in the previous study.

3.3 Use of Tools

This research uses some tools in synthesizing and analyzing the relevant papers, which are mentioned as follows:

1. Google Form.

   This tool is used to distribute the questionnaire to the customer.

2. Microsoft Excel®

   This tool is used to summarize the sources on the chapter II. Also, this tool is used to process the data that generated by google form.

3. SPSS Software

This tool is used to test of validity and realibility on the questionnaire item test.

4. AMOS 22$^{®}$ Software

This tool is used to process the result of data from the questionnaire and perform SEM calculation.

5. Powersim 9$^{®}$ Software

This tool is used to build the model and find out the result of simulation.

3.4 Data Collection Method

In this research, the data were collected by using a survey method with questionnaire and also expert judgement.

1. Questionnaire

Questionnaire is a list of questions that given to respondents to obtain the data. The questionnaire used in this research has been tested with twenty one questions based on the number of indicator that will be used on this research.

The questionnaire contains the list of statement related to research. The questionnaire consists of several choices in the form of a Likert scale. Likert scale usually used in the research as the measurement of a person's perceptions, opinions, and attitudes regarding occurred phenomenom. Likert scale use a score as the respondents' answer, the score consists of five levels such as 1 to 5. The table 3.1 below will be explained about the score in this research.

Table 3. 1 Likert Scale

No	Information	Likert Scale
1.	Strongly Disagree	1
2.	Disagree	2
3.	Not Sure	3
4.	Agree	4
5.	Strongly Agree	5

The questionnaire that already spreaded by using google form contains about twenty two question from eight exogenous variables. The question can be shown in the table below.

Table 3. 2 List of Question on the Questionnaire

No	Variable	Attributes
1.	Ethusiasm	The customer really like the eco-friendly products offered by Industrial Property Yogyakarta.
		In choosing an environmentally friendly brand, the customer is enthusiastic about Industrial Property Yogyakarta.
		The customer feel excited about environmentally friendly products offered by Industrial Property Yogyakarta.
	Attention	The customer is interested in finding out about eco-friendly promotions offered by Industrial Property Yogyakarta.
2		The customer gives more attention to the eco-friendly promotions offered by Industrial Property

No	Variable	Attributes
		Yogyakarta.
		The customer took the time to look for eco-friendly promotions offered by Industrial Property Yogyakarta.
	Absorption	When the customer interacts with Industrial Property Yogyakarta, I forget about other brands.
3.		When the customer interacts with Industrial Property Yogyakarta, I feel happy.
4	Interanction	The customer likes to participate in the brand community to discuss eco-friendly promotions from Industrial Property Yogyakarta.
.		The customer likes to interact with other people who think the same in the Community Industrial Property Yogyakarta.
.		The customer often participates in all the eco-friendly promotions offered by Industrial Property Yogyakarta.
5	Identification	When someone criticizes this brand about its campaigning for the environment, the customer feels like a personal insult.
		The success of Industrial Property Yogyakarta is the customer's success.
6	Irritation	Sometimes I get irritated by some costomers moralistic or argumentative behaviour
		Sometimes i am getting disturbed of other customers' discussion
7.	Customer Satisfaction	As a customer, as a whole, how do you rate Industrial Property Yogyakarta in implementing environmentally friendly programs /

No	Variable	Attributes
		products?
		Very dissatisfied - Very satisfied
8		Very unpleasant - very pleasant
	Service Quality	As a customer, what is the rating for environmentally friendly products offered by the Industrial Property Yogyakarta?
		Poor – Excellent
		Low Standards – High Standards
9	Customer Engagement	The customer would say positive things about the property brand to other people.
		The customer would recommend the property brand to someone who seeks their advice.
		The customer would encourage friends and relatives to do business with this tourism site.

2. Expert Judgement

This study is required to have about three expert judgements to validate the data. After the data have been collected, they be turned into geomean calculation by using Microsoft Excel.

3.5 Data Processing

This research will be conducted by using a method called as Strcutural Equation Modeling with AMOS Software. In the end of the research, the model will be the result of the research, those model will show the relationship between the variables of

customer engagement toward brand trust. Before processing the data, the researcher

needs to collect the data by using questionnaire that related into the variables and

indicators of customer engagement. The questionnaire will be done by using google

form and will be distrributed directly to the customers of Property industry which

incorporated with REI Yogyakarta.

Based on the Kline (2011) in making the structural equation modeling, the

researcher have to follow several step. The figure 3.1. below will show about the

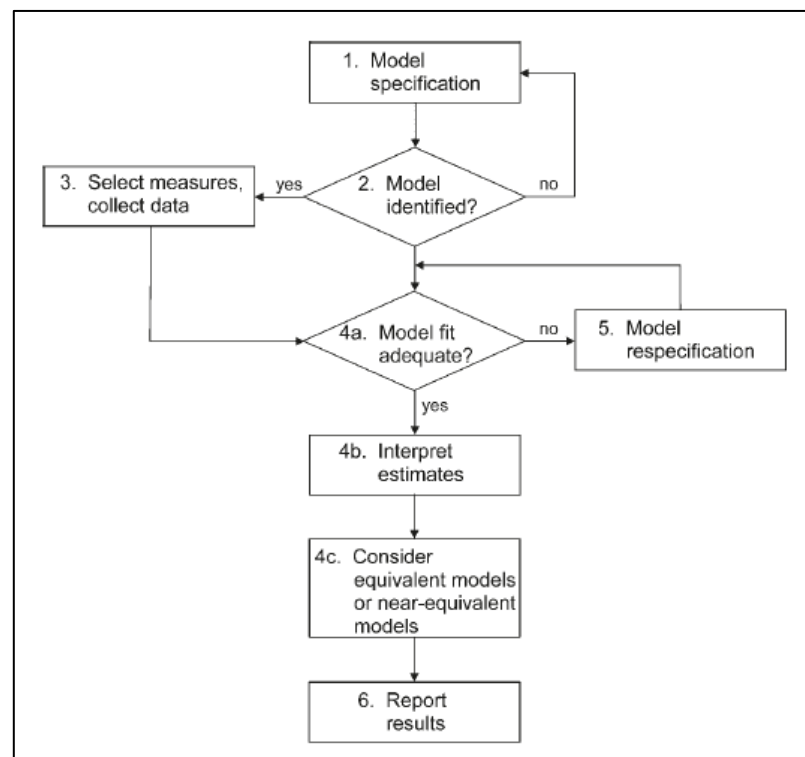following step of structural equation modeling :

Figure 3. 1 Flowchart of the basic step of SEM

(Kline, 2011)

1. Model specification

2. Model identification (if the model is rejected, go back to step 1)

3. Measurement selection (operationalize the constructs) and collect, prepare and screen the data.

4. Model estimation :

    a. Evaluate model fit (if it is poor, skip to step 5)

    b. Interpret parameter estimates.

    c. Consider equivalent or near-equavalent models (skip to step 6)

5. Model re-specification (return to step 4).

6. Report the result.

3.5.1. Specification

Specification means the hypothesis in the form of strutural equation modeling in a research. The researchers usually begin the process of specification by drawing the model diagram using the graphical symbols, but the model can be described by a series of equation. These equations define the parameter's model, which suitable with the presumed relationship among the observation result and latent variable that the computer estimates with sample data. This step is very important because the later result will be assuming the model as the valid model. It also suggested making a list of possible changes to the initial model that would be justified according to theory or empirical results. This is because the model respecifying is important, re-specification should has the same principles as specification.

3.5.2. Identification

The identification can be the problem for the model analyis. If it is theoritically possible for the computer to processing the unique estimates for every parameter, it can be said that the model is identified. Otherwise, the model is not identified. The

"theoritically" in this step emphasizes the identification as a model not as the data. For instance, if the model is not identified, it is not affect to the number of sample (N = 100, 1000 etc). That is why, the unidentified model should be returned to step 1.

3.5.3. Measure Selection and Data Collection

The research will employ AMOS software version 22, since most of the calculations will be done by AMOS software version 22. The data will be collected by using questionnaires that are directly distributed by google form to the customer of REI Yogyakarta. The number of data that will be collected is in the range of 200-500 samples. The estimation of the proposed model depends on the number of research sample, with the following criteria (Ferdinand, 2006) :

1. Between 100 - 200: Maximum Likelihood (ML).

2. Between 200 - 500: Maximum Likelihood or Generalized Least Square (GLS).

3. Between 500 - 2500: Unweighted Least Square (ULS) or Scale Free Least Square (SLS).

4. Above 2500: Asymptotically Distribution Free (ADF).

Maximum likelihood becomes one of the crucial approaches to estimation in all of statistical inference. The function of likelihood is best illutrated by the use of an example with descrete and a single parameter (Walpole, Myers, Myers, & Ye, 2011).

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. This also will calculate Construct reliability and Average Extracted with the minimum value of 0.07 and 0.05.

3.5.4. Estimation

In this step, the data processing was used the AMOS software. Several things take place at this step:

1. Evaluate the model fitness, where the model will be evaluated whether it explains the data well or not. If it is not, then the researcher needs to skip the rest step and go to the next step, respecification, and then the reanalyze the respecified model using the same data.

2. Interpret the parameter estimates

3. Consider equivalent or near-equivalent models. An equivalent model explains the data just as well as the researcher's preferred model but with a different configuration of hypothesized relations among the same variables. This may also be near-equivalent models that fit the same data just about as well as the researcher's preferred model, but not exactly so.

3.5.5. Respecification

This step will be used if the initial model is poor. The point of this discussion is to make sure that the respecification should be guided more by rational considerations than purely statistical ones. If the model is not respecified, the researcher will be stuck at this step. The variables that have significant value will be called as the fixed variables.

3.5.6. System Dynamics Model

Fixed variable that is obtained by the SEM result then will be processed by the powersim. First of all, the researcher has to build the model in the form of causal loop diagram. Causal loop diagram aims to determine the positive and negative relation between the variable. The aims of the powersim application are to identify the factor that affected customer engagement value and to find out the pattern in terms of affect the customer engagement value in the REI Yogyakarta to increase their customer engagement value.

3.6   Result Analysis

The result analysis in this research will be about design model of the conceptual model of customer engagement value. This research also aims to identify the customer engagement value.

3.7   Conclusion and Recommendation

On the stage of conclusion, the researcher will answer the questions on the problem formulation. In addition, the recomendation stage will give the recommendation for further   research   and   also   suggestion   for   the   company.