CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the researcher will elaborate the methodology of the measurements. This chapter emphasize about the research methodology, data source, population and sampling, data collection, data measurement method, operational definition, analysis method.

3.1. Research Methodology

3.1.1. Research Purpose

Based on the purpose of the study, this research is a hypothesis testing research. According to Sekaran and Bougie (2013), the definition of hypothesis testing is a means of testing if-then- statements generated from the theoretical framework hold true when subjected to rigous examination. This kind of research explains a particular relationship between the dependent and the independent variable, or other factor that influence one variable to another.

3.1.2. Research Type

Based on the purpose of the study, this research type is concluded to be a causal research. According to Sekaran and Bougie (2013), causal research is a type of research that design to elaborate one factor or more is some problem. This causal research will explain that X variable is the cause of Y variable (Sekaran and Bougie, 2013). However, based on the time

horizon, this research also classified to be a one shot or a cross-sectional study. The definition of a cross-sectional study is a research that conducted only within one time through a period of time to answer the research question (Sekaran and Bougie, 2013). This research is conducted by using a quantitative data.

3.2.   Operational Definition

Peer evaluation will act as the dependent variable. The result of peer evaluation will be the researcher's primary objectives. The peer evaluation systems will be the tool and also the primary source to determine the social loafing behavior and self-monitoring. Self-monitoring will be act as a moderating variables, because it has a strong contingent effect on independent variable and dependent variable relationship.   In this case social loafing will act as the independent variable because it influences the dependent variable in either a positive or negative. The control variables that will be included are gender and age.

3.3.   Data Source

3.3.1. Primary Data

The data that will be used to in this research is a primary data source. Sekaran and Bougie (2013) stated that a primary data is a type of data that focus on the information that taken from the primary source (first hand) through survey, interview, or an observation. In this research the primary data will be collected by questionnaire that will be distributed to the capable

respondent to give accurate information about the variable that being observed by the researcher. The data that the researcher use for further research come from the student who participate in certain subject that involving Peer Evaluation Systems in the class. Genuinely, the researcher collecting the data from the questionnaire that distributed to selected class.

3.4. Population and Sampling

3.4.1. Population

According to Sekaran and Bougie (2013), population refers to the entire group of people, events, or things of interest for which the researcher wants to make inferences. The populations of this research are students that involve in group project from selected class and under the supervision of Peer Evaluation Systems to determine the performance in the class. In total of 221 undergraduate students from faculty of economics in Universitas Atma Jaya Yogyakarta become the population for this study.

3.4.2. Sampling

This research is using total population sampling. According to Sekaran and Bougie (2013), total population sampling is a type of purposive sampling technique that involves examining the entire that have a particular set of characteristics. In this case, all of 221 students is act as the sample for this research. Those 221 students are participating in group project that involve Peer Evaluation Systems (PES).

3.5.   Data Collection

The data of the research will be conducted by questionnaire. The questionnaire will consist of four parts. The first and the second part will consist of list of questions regarding the Peer evaluation systems (PES). The third part is a questionnaire to measure self-monitoring. The forth part of the questionnaire will be consist of a list of questions to measure overall social loafing behavior within the group. The scale that used in the first and second is 5-point Likert scale. The data will be collected during the last week of class before the final exam. The researcher will contact the lecture to give time for approximately 20 minutes before the class had ended. The choice of course that the researcher will be selecting is a course that involve group process. The student will have a brief introduction about the research and the questionnaire that they will be answered.

3.6.   Data Measurement Method

In this research, questionnaire is the main tool to collect the data. According to Sekaran and Bougie (2013) Likert scale is an interval scale that specifically uses the 5 point scale.

1. Section A

    Section A will consist of the demographic information of the respondent;

    1. Gender,

    2. Batch year.

2. Section B

The questionnaire is adapted from the Concordia University. The questionnaire consists of that consist of twelve six questions. The questions consist of four parts. The first and second part is a questionnaire to measure Peer Evaluation systems (PES). The first parts will consist of the Peer Evaluation Systems first dimension which is the Awareness of Peer Evaluation Systems. The second parts will consist of the second dimension which is the Perceive Importance of Peer Evaluation Systems. The forth part of the questionnaire will fill with the questions regarding of social loafing. The third parts of the questionnaire consist of question regarding self-monitoring. Thirteen questions are put in the questionnaire to measure self-monitoring. The forth part of the questionnaire consist of seven questions that focus on the judgment by the group members about the degree of social loafing in their group.

The entire questionnaire is using 5-point Likert scale. The first, the second, and the third questionnaire are using 5-point Likert scale that labeled:

1. Strongly Disagree = 1

2. Disagree = 2

3. Neutral = 3

4. Agree = 4

5. Strongly Agree   = 5

As for the scale in social loafing part, the questionnaire also uses 5-point Likert scale that labeled;

1. Certainly, always false   = 1

2. Generally false   = 2

3. Neutral   = 3

4. Generally true   = 4

5. Certainly, always true   = 5

After the questionnaire is spread and collected for further analysis, coding the questionnaire is the first step to make the analysis. The result of the coding will be the primary source to make further analysis. According to Sekaran and Bougie (2013), data coding involves assigning a number of the participant's responses so they can be entered into the database. The questionnaire is consisting of a positive and negative statement. In order to make the coding more easy, the researcher will use reverse-coding. The reverse-coding is use at the forth part of questionnaire (social loafing), at the questions number 2 and 4. After all of the coding finish, the questionnaire can be tested for reliability and validity test. The tool of analysis that will be use is SPSS 23 software.

3.7.   Analysis Method

3.7.1. Demographic Profile and Descriptive Statistic

Descriptive analysis is done to describe the data that will be used to analyze. In the descriptive analysis included the diagram of means, Standard deviation, maximum and minimum point, also the demographic statistic of the whole respondent (Sekaran and Bougie, 2013). By looking at the maximum and the minimum point, the interval that will be used as a scale (Lind, Marchal, and Wathen, 2015):

i.   Questionnaire Scales

Maximum score   = 5

Minimum score   = 1

$$Interval \; \frac{maximum - minumum}{total} = \frac{5-1}{5} = 0.80$$

The scale that become the limitations of this research:

1, 0 – 1, 79   = very low

1, 80 – 2, 59   = low

2, 60 – 3, 39   = fair

3, 40 – 4, 19   = high

4, 20 – 5, 00   = very high

3.7.2. Validity Analysis

In order to test the goodness of the data, some test must be conducting before conducting a research. The questionnaire must first be testing for validity and reliability. Pre-test should be conducted in order to know the error that the questionnaire has. According Sekaran and Bougie

(2013), the test of validity is the test to prove the accuracy of an instrument in this study a questionnaire, techniques, and processes that are used in research, whether in accordance with the concept already used or not. In this case to test the instruments, the researcher will used SPSS software to help find the validity. The validity score to determine the error is 0, 05.

3.7.3. Reliability Analysis

Whereas, reliability testing is a test that is destined for test how consistent and stable a measuring instrument or tool (Sekaran and Bougie, 2013). The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument (Sekaran and Bougie, 2013). In the reliability testing, the researcher will use Cronbach's Alpha that proves to be the most accurate method. The scale of the Cronbach's Alpha are:

1. 0,0 – 0,20   = Not Reliable
2. 0,20 – 0,40   = Slightly Reliable
3. 0,40 – 0,60   = Reliable enough
4. 0,60 – 0,80   = Reliable
5. 0,80 – 1,00   = Very Reliable

3.7.4. Multiple Regression Analysis

Multiple regression analysis is used to measure the impact of social loafing with the Peer Evaluation Systems (PES) dimension. According to

Sekaran and Bougie (2013) multiple regression analysis is use if the independent variable is more than one.

Below is the regression formula of the variable:

$$Y = a + b_1X_1 + b_2X_2 + e$$

Y   = Dependent Variable

a   = Constanta

$b_{1,2,3}$ = Coefficient Determination

$X_{1,2,3}$ = Independent Variable

e   = Error

By computing all of the independent variable at the same time along with dependent variable. The dependent variable in this case is social loafing behavior (Y). As for the independent variable consist of two, they are the Perceive Importance of Peer Evaluation Systems (X1) and the Awareness of Peer Evaluation Systems (X2). The hypothesis testing also uses multiple regression analysis with t-test and f-test.

1. **t-Test**

According to Sekaran and Bougie (2013), one sample t-test is used to test the hypothesis that the mean of the population from which a sample is drawn is equal to a comparison standard. It show how far the impact of the independent variable in explaining the dependent variable.

$$t = \frac{\widehat{\beta_1} - \beta_1^*}{se(\hat{\beta}_1)}$$

The level of significance is 5% with the explanation:

i.   If the t-count > t-table (>0,05) then Ha is accepted. It can be explain that statistically, the independent variable (perceive importance of peer evaluation systems and the awareness of peer evaluation systems) give impact on the dependent variable (social laofing behaviour).

ii.   If the t-count<t-table (<0,05) then Ha is rejected. It can be expalin that the independent variable fails to give impact on the dependent variable. Hence, the hypothesis is rejected.

2. F-Test

F-statistic shows whether two sample variances differ from each other or are the same population. The F distribution is a probability distribution of sample variances and the family of distribution changes in the sample size (Sekaran and Bougie, 2013). According to Lind, Marchal, and Wathen (2015) the F distribution is used to test the assumption that the variances of two normal; populations are equal.

F Test is a method to compare variance of two different sets of values. F test is applied on F distribution under null hypothesis. Formula to determine the F-test can be shown as:

$$F \; value = \frac{\dfrac{R^2}{(k-1)}}{\dfrac{1-R^2}{(n-k)}}$$

F$\quad\quad\quad\quad$ = the score for the F-value

$R^2$$\quad\quad\quad$ = coefficient of determination

$k$$\quad\quad\quad\quad$ = the degree of parameter including Constanta

n$\quad\quad\quad\quad$ = number of sample

With level of significances' 5%, the assumptions for determining the decision are;

i. If the f-count > f-table (<0,05) then Ha is accepted. It can be explained that all of the independent variable simultaneously give a significant impact to the dependent variable.

ii. If the f-count < f-table (>0,05) then Ha is rejected. It can be explain that all of the independent variable simultaneously gives no significant impact to the dependent variable.

3.7.5.   Moderating Regression Analysis (MRA)

The tool to analyze the variable will used Moderating Regression analysis. The method is selected because the research use moderating variable between the dependent the independent variable. Chen and Ding (2003) stated that moderating regression analysis (MRA) has long been applied for evaluating the moderating effects. According to Baron and Kenny (1986), in general terms, a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variables.
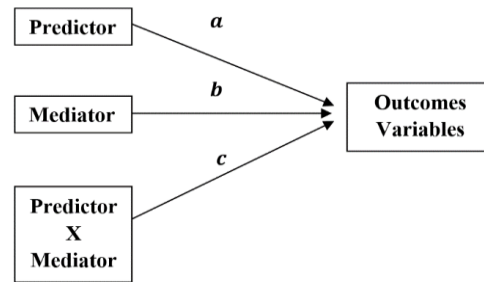
Figure 3.1: Model of Moderating Variable (Baron and Kenny, 1986)

According to Baron and Kenny (1986), these are the basic model of the moderator model. The diagram explains about the three causal paths of moderating model. Baron and Kenny (1986) explain that the impact of the noise intensity as a predictor (Path a), the impact of contrability as a moderator (Path b), and the interaction or product of these two (Path) are the basic consideration of this model. In short, the role of moderating variable will influence the outcomes variables by seeing the interaction between predictor and dependent variable (criterion).

The formula to determine a Moderating regression analysis (MRA) can be shown as;

$$Y = a + b_1X + b_2Z + b_2XZ + e$$

Y   = Dependent Variable

X   = Independent Variable

Z   = Moderating Variable

a   = Constanta

E   = Error

bX   = The beta of X and Y

bM   = The beta of X,Z to Y

bXM   = The beta of the interaction between independent with moderating variable

       In order to see whether the moderation is fully interact with the dependent variable and the independent variable, there are several key points that need to be compare:

i.   The value of adjusted r-square of the independent variable (X), the independent variable (X) with the moderating variable (Z), and the interaction between the independent variable and self-monitoring (X*Z) have to increase.

$$X > XZ > X*Z$$

ii.   The value the Sig. F of the of the independent variable (X), the independent variable (X) with the moderating variable (Z), and the interaction between the independent variable and self-monitoring (X*Z) have to decrease.

$$X < XZ < X*$$