CHAPTER III

RESEARCH METHODOLOGY

3.1 Population and Sample

This research's populations are hospitality industries in the period 2012-2015. Sampling was conducted using a purposive sampling, a certain number of samples drawn from populations with particular considerations (Indriantoro & Supormo, 1999). Research sampling criteria are described as follows:

- 1. Hotel companies and hospital companies that published annual report in 2012-2015.
- 2. Hotel companies and hospital companies listed in IDX.
- 3. Hospitality industries and hospitals companies that participated in PROPER 2012 2015.

3.2 Data Collection Method

The data used in this research are secondary data in the form of quantitative and qualitative. The data are also gained through documentation and review variety of sources, such as: financial data from company's annual report and PROPER report from the website of the ministry of the environment. The sources of the data in this study originate from:

- 1. Official website of IDX <u>www.idx.co.id</u> to obtain data of financial statements and annual reports of corporate during the period 2012-2015.
- 2. Official website of Minister of Environment, the web address is <u>www.menlh.go.id/proper/</u> to obtain data about the corporate ranked in PROPER in 2012-2015.
- 3. Official website of each company to obtain extensive data on environmental disclosure.

3.3 Operational Definitions and Variable Measurement

Financial performance is a dependent variable that is affected by environmental performance and environmental disclosures. Financial performance can be interpreted as an achievement that has been established through the work that has been performed and set forth in the financial statements, and can serve as standards to assess the success of the company within a certain period (Suratno et al, 2006). The standard that is used to measure financial performance is return on equity (ROE). This ratio is used to measure a company's ability to generate profits with their own capital (Soediyono, 1991). ROE is very close to the investor as ROE connects directly to earnings, growth and dividends of the company.

 $ROE = \frac{Net Income}{Capital Owner}$

Where;

Capital Owner: Total Equity.

There are two independent variables which are environmental disclosure (X_1) and environmental performance (X_2) . Environmental disclosure is the disclosure of information which is related to the environment in corporate financial reporting. Parameter that is used in this study is the field of environmental performance indicators based on the GRI (Global Reporting Initiatives).

Environmental performance is an independent variable. Variable that is used in this study is the performance of the environment performance measured by using the program of assessing company's performance in environmental management (PROPER). Corporate structuring performance ranking criteria are grouped into five categories color rank, namely gold, green, blue, red, and black. Black rank is for the worst refineries of environmental performance.

3.4 Data Analysis Method

In this study, the data are analyzed by the following steps:

1. Collecting financial data to measure the financial performance variables. The benchmark used to measure financial performance is return on equity (ROE) in 2012 until 2015. The formula used to measure the ROE is as follows:

$$ROE = \frac{Net Income}{Capital Owner}$$

- 2. Collecting data and creating a checklist to measure the environmental disclosure by GRI environmental performance indicators. Extensive environmental disclosure is to be assessed in 2012 to see the impact on financial performance in the following years until 2015.
- 3. Measuring the environmental performance of the company's achievements in hospitality industries with PROPER. Assessment scale for ranking results (range 1-5). The following criteria:

Table 3.1

Scale Color Ratio 1 Gold 5 4 0,8 Green Blue 3 0,75 2 Red 0,4 Black 1 0,2

PROPER assessment scale

3.4.1 Descriptive Statistic

Descriptive statistical analysis is a descriptive technique that provides information about the data held and is not meant to test hypothesis. This analysis is only used to present and analyze the data with calculations in order to clarify the circumstances or characteristics of the data concerned. Measurement using descriptive statistics includes the number of samples, the minimum value, maximum value, average value (mean) and standard deviation.

The minimum value is used to determine the smallest number of pertinent data and it varies from the average. The maximum is used to determine the amount of data that is the most relevant. Mean is used to determine the average data. Standard deviation is used to determine how much data vary from the average.

3.4.2 Classical Assumption

The classical assumption made in this study functions to test whether the data meet the classical assumptions. This is to avoid biased estimates that cannot be applied in regression. The test of classical assumption consists of normality test, multicollinearity test, heteroscedasticity test and autocorrelation test.

3.4.2.1 Normality Test

Normality test aims at testing whether the dependent variable and independent variables in the model regression have a normal distribution or not (Ghozali, 2006). Normality test in this research uses P-Plot Test. Testing for normality can be detected by examining the spread of the data (dots) on the diagonal axis of the normal graph. The basis to make a decision based on the graph is: If the data is spread around the diagonal line and follow the direction of the diagonal line, then the regression model meet the assumption of normality and conversely. If the data is spread away from the diagonal line and / or does not follow the direction of the diagonal line, then the regression model does not meet the assumption of normality.

3.4.2.2 Multicollinearity Test

Multicollinearity is a frequently encountered statistical phenomenon in which two or more independent variables in a multiple regression model are highly correlated. The test detects multicollinearity to check the correlation matrix for independent variables. The presence of high correlation is a first sign of sizeable multicolinearity. Measurement for identifying multicolinearity is the tolerance value and the variance inflation factor (VIF-the inverse of the tolerance value). These measures indicate the degree to which one independent variable is explained by the other independent variables. A common cutoff value is a tolerance value of 0.10, which corresponds to a VIF of 10. Hypothesis formulations are:

- Ho: There is no multicollinearity,
- Ha: There is multicollinearity

If VIF <10, then Ho is accepted (there is no multicollinearity) and otherwise.

3.4.2.3 Heteroscedasticity Test

Heteroscedasticity test aims to test whether inequality of variance occurs in regression model from one residual observation to other observations (Ghozali, 2006). If the variance of the residuals of the observations to other observations is stable, then it is called homoscedasticity and if it is different, then it is called heteroscedasticity. Regression model is good, if it is homoscedasticity and heteroscedasticity does not occur. In this research heteroscedasticity is tested using Scatter Plot. The result of scatter plot can be seen by checking the image plot between the predicted value of the independent variable (ZPRED) with residual (SRESID). If there is no certain regular patterns in the graphs and the data are randomly distributed above and below the number 0 on the Y axis, then there is no heteroscedasticity identified.

3.4.2.4 Autocorrelation Test

Autocorrelation indicates that there is a correlation between errors in the previous period. In the classical assumptions, this condition should not occur (Ghozali, 2006). Autocorrelation test is conducted by using Durbin Watson (dw) test. The hypothesis formulations are:

-Ho: there is no autocorrelation

-Ha: there is autocorrelation

The decision making on auto-correlation test are as follows:

1. When the value of dw is located between the upper limit or upper bound (du) and (4-du), then the autocorrelation coefficients equal to zero, means there is no autocorrelation.

2. When the value of dw is lower than the lower limit or lower bound (dl), the autocorrelation coefficient is greater than zero, means there is positive autocorrelation.

3. If the value is greater than dw (4-dl), the autocorrelation coefficient is smaller than zero, means there is negative autocorrelation.

4. When dw negative value between the upper limit or upper bound (du) and the lower limit or lower bound (dl) or dw lies between (4-du) and (4-dl), the results are inconclusive.

3.4.3 Hypothesis Testing

In hypotheses testing, the data gathered are analyzed using multiple regression analysis, t-test, F test and coefficient of determination test.

3.4.3.1 Regression Analysis

In this research, hypothesis test is conducted by using multiple regression analysis method. Multiple regression analysis is multivariate technique that provides a means of objectively assessing the degree and the character of the relationship between dependent and independent variables. This research uses multiple regression analysis to examine the relationship between environmental performance and financial performance and relationship between environmental disclosure and financial performance. Here is regression equation model of the research:

FINPERFORMANCE (ROE) = $\beta o + \beta_1 PROPER + \beta_2 GRI + \epsilon$

Where;

FINPERFORMANCE = Net Income/Capital Owner of Companies

PROPER = *Environmental Performance measured by PROPER rank*

GRI = *Environmental Disclosure measured by indicator based on GRI*

 $\varepsilon = \text{Errors}$

3.4.3.2 t-Test

T-test is used to test whether the independent variables are partial related to the dependent variable. The hypotheses are tested using a confident level of 95% or significance level (α) of 5 percent or 0.05. The hypothesis formulations are:

- a) The hypothesis is accepted if the significance is less than 0.05 (sig. $t < \alpha$). This means there is a significant relationship between independent and dependent variable.
- b) The hypothesis is rejected if the significance is greater than 0.05 (sig. $t > \alpha$). This means there is no significant relationship between independent and dependent variable.

Criteria for acceptance or rejection of the hypothesis are based on the significance of p-value and t-count. If the p-value < 0.05 or t-count > t-table, then Ho is accepted and Ha is rejected. It means there is no significant relation between independent variable and dependent variable.

3.4.3.3 Coefficient of Determination Test (**R**²)

The coefficient of determination (R^2), provides information about the goodness of fit of the regression model: it is statistical measure of how well the regression line approximates the real data points. The coefficient of determination (R^2) can be seen from the result of multiple regression analysis between the independent variables, which are environmental performance and environmental disclosure toward the dependent variable of financial performance using the computer program of SPSS. In this research, the researcher uses the value of Adjusted R Square (Adj R^2) because this research involves two independent variables.