

CHAPTER III

RESEARCH METHODOLOGY

3. Research Methodology

This chapter describes the study methods, procedures and company information. This chapter presents the techniques used for data collection and research methodology. In addition, it includes a discussion of the techniques used in data analysis and the tools used to acquire the data required.

3.1 Approach to Research

This research will use Quantitative approach because the survey and experiment design will be used in this study. Survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or makes claims about the population. The basic intent of an experimental design is to test the impact of a treatment (or an intervention) on an outcome, controlling for all other factors that might influence that outcome. (Creswell, 2012) Then, the questionnaires will fit in this study as a data collection method to obtain the data.

3.2 Research Site

This research will take place in PT. Madubaru PG-PS Madukismo which is located in Padokan Village, Tirtonirmolo Subdistrict, Kasihan Subdistrict, Bantul Regency, Special Province of Yogyakarta 55181 Indonesia.

3.3 Company Information

3.3.1 Vision of The Company

Vision of PT. Madubaru is to become a leading agro-industry company in Indonesia with farmers as true partners.

3.3.2 Mission of The Company

Mission of PT. Madubaru are:

- a) Producing quality sugar and ethanol to meet the demands of society and industry in Indonesia.
- b) Produce products by utilizing advanced technology that is environmentally friendly, managed professionally and innovatively, providing excellent service to customers and prioritizing farmer partnerships.
- c) Develop new products / businesses that support the core business.
- d) Placing employees and other stakeholders as the most important part of the process of creating corporate excellence and achieving share holder values.

3.3.3 Organizational Structure



Figure 3.1 Organizational Structure

3.3.4 Employees System

a) Permanent employees

This type of employee is divided into 2, namely leadership employees who have individual work agreements, as well as executive employees who constitute employees with collective employment agreements.

b) Non-permanent employees

Non-permanent employees are divided into 2 groups, namely groups of certain time contract employee (CTCE) and bulk employees. CTCE employees are employees who are works only on the production period, which consists of employees on duty as operator and manual labor. CTCE is divided into 2 groups, namely CTCE inside factories and outside factories. CTCE inside factories is directly related to the production, installation, and manufacturing processes of spirits, CTCE outside the

factory is related to plants, raw materials, transportation, administration and security guards. While bulk employees is an employee who works only if needed by the factory such as cleaning service.

3.4 Data Collection Method

In this study, the technique used to collect data is by using a questionnaire. According to Sugiyono (2014), the questionnaire is a technique of data collection carried out by giving a set of statements or written questions to the respondent to answer. The answers provided in each question or statement use a Likert scale. According to Sugiyono (2014) Likert Scale is used to measure attitudes, opinions, and perceptions of a person or group of people about social phenomena. For each question in this study provided 5 (five) alternative answers with scores:

1 = Strongly disagree

2 = Disagree

3 = Doubt / Neutral

4 = Agree

5 = Strongly agree

3.5 Population and Sample

The population for this study is the employee in PT Madubaru PG-PS Madukismo which is located in Padokan Village, Tirtonirmolo Subdistrict, Kasihan Subdistrict, Bantul Regency, Special Province of Yogyakarta. The sampling frame for this study comprised of the permanent employee within

the PT. Madubaru PG-PS Madukismo. The sample was 50 respondents distributed to all department. For the sampling, the author used a purposive sampling technique. According to Sekaran (2003), purposive sampling is confined to specific types of people who can provide the desired information.

3.6 Research Variable

A variable refers to a characteristics or attribute of an individual or an organization that can be measured or observed and that varies among the people or organization being studied (Creswell, 2009). Variable in this research are :

1. Independent Variable

According to Creswell (2009), Independent variables are those that (probably) cause, influence, or affect outcomes. The independent variables in this study consist of Compensation (X1) and Work Environment (X2).

2. Dependent Variable

According to Creswell (2009), Dependent variables are those that depend on the independent variables; they are the outcomes or results of the influence of the independent variables. The dependent variable in this study consist of Employee Performance (Z)

3. Intervening Variable

According to Creswell (2009), intervening variable stand between the independent and dependent variables, and they mediate the effects of

the independent variable on the dependent variable. The intervening variable in this study consist of Job Satisfaction (Y)

3.7 Operational Definition

3.7.1 Compensation (X1)

Compensation as independent variable referred to Snell & Bohlander (2012) study as a measurement. From the indicator of direct compensation includes salaries, incentives, bonuses, and commissions for employees. Indirect compensation includes the multiple benefits provided by employers. Non-financial compensation includes recognition programs for employees, rewarding jobs, organizational support, working conditions and flexible working hours to meet personal needs. From the indicator, there was 10 item of statements elaborated to put in the questionnaire. Measurement ranged from a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree. The 10 statements are :

- I feel the company has been fair in providing compensation
- I feel the company is on time to pay or pay
- I am satisfied with the additional compensation beyond salary and wages
- I am satisfied with giving a "reward" for additional work
- I am satisfied with the provision of health insurance from agencies/companies
- I am satisfied with the provision of counseling for employees

- I am satisfied with the provision of holidays for employees/employees borne by the company
- I feel that the facilities provided by the company support employee operations
- I feel that companies give awards for the work performance of employees.
- I feel that there are comfort and security at work.

3.7.2 Work Environment (X2)

Work environment as independent variable referred to McCoy & Evans (2005) study as a measurement. Air components, temperature factor, sound factor, light and color factor, and space factor. Air components such as carbon monoxide and unpleasant odors can have an impact on performance. Temperature factor, meaning that temperatures affect performance in the working environment. The sound factor that produces noise or disruptive sounds affects performance. Light and color factors include sunlight, light, windows and working environment views. Space structuring factor for a good working space affects good performance. From the indicator, there was 9 item of statements elaborated to put in the questionnaire. Measurement ranged from a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree. The 9 statements are :

- Good air circulation makes me feel comfortable
- The temperature at the work location is quite good
- The temperature at the work site affects my work

- I feel calm working here
- My work environment makes me calm
- Lighting at work sites is equipped with windows and lights that are sufficient and do not interfere with work activities.
- The color of the room where I work is good and does not interfere with the work I do
- Furniture in the workplace is flexible enough to be adjusted, arranged or rearranged
- The workplace layout supports work activities, accelerates task completion and encourages interaction between employees

3.7.3 Employee Performance (Z)

Employee performance as dependent variable referred to Robbins (2006) study as a measurement. These indicators are quality of work, which measured by employee perceptions of the quality of work produced and the perfection of tasks towards the skills and abilities of employees. The quantity, the amount generated is expressed in terms such as the number of units, number of cycles of activities completed. The third is a timeline, the activity level is completed at the beginning of the stated time, seen in terms of coordination with the output results and maximizing the time available for other activities. The fourth is effectiveness, the level of use of organizational resources (energy, money, technology, raw materials) is maximized in order to increase the yield of each unit in the

use of resources. The fifth is independent, level of independence of an employee who will later be able to carry out his work function. For the last one is work commitment, a level where employees have a work commitment to the agency and employee responsibilities to the office. From the indicator, there was 12 item of statements elaborated to put in the questionnaire. Measurement ranged from a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree. The 12 statements are :

- I feel that I have produced quality work
- I felt the results of the work produced did not disappoint the agency
- I can complete the work according to the target number
- I can complete additional work along with the main job
- I can solve work problems quickly
- I can complete the work according to the predetermined time target
- I can finish the job effectively
- I can finish the job efficiently
- I do individual tasks well
- I did my work without the help of other employees
- I try to come according to the specified work schedule
- I come and go home from work according to the working hours determined by the company

3.7.4 Job Satisfaction (Y)

Job satisfaction as intervening variable referred to Robbins (2003) study as a measurement which provides 4 indicators. These indicators are the work that is mentally challenging, which individuals prefer jobs that provide opportunities to use skills and abilities and provide a variety of tasks, freedom, and feedback about how good the work is. The second is appropriate rewards, employees want a payment system that is fair, unambiguous, and in line with employee expectations. The third is supporting working conditions, employees relate to their work environment for personal comfort and ease of doing good work. Which is included in working conditions such as spatial layout, cleanliness of the workspace, facilities, and tools, temperature, noise level. The fourth is supporting co-workers, individuals get something more than money or tangible achievements from work but employees also meet the needs of social interaction. From the indicator, there was 11 item of statements elaborated to put in the questionnaire. Measurement ranged from a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree. The 11 statements are :

- I feel satisfied with the work that is currently being done
- I feel the work given is in accordance with my abilities
- I feel that the salary provided is in accordance with the group
- I feel that the size and type of salary received in accordance with the workload borne

- I am satisfied with all types of compensation provided by the agency
- Facilities and equipment at my workplace are complete and adequate
- The room where I work is comfortable and is clean
- The boss has given direction to subordinates in every job
- Communication between superiors and subordinates is well established in solving work problems
- I feel that relationships with colleagues are well established
- I feel that I have no difficulty working with a cross or one work unit

3.8 Type of Data & Data Collection Method

According to Douglas (2015), there are different methods used to gather information, all of which fall into two categories, i.e. primary and secondary data.

1. Primary data

Primary data is one which is collected for the first time by the researcher, the most important difference is that primary data is factual and original. Primary data is collected with an aim for getting a solution to the problem at hand, term primary data refers to the data originated by the researcher for the first time. Primary data is a real-time data, also primary data is collected for addressing the problem at hand. Primary data collection is a very involved process, primary data sources include surveys, observations, experiments, questionnaire, personal interview etc. on the other contrary

2. Secondary data

Secondary data is the data that already collected or produced by others, secondary data is just the analysis and interpretation of the primary data. Secondary data is existing data collected by the investigator agencies and organizations earlier, also secondary data is collected for purposes other than the problem at hand. The secondary data collection process is rapid and easy, secondary data collection sources are government publications, websites, books, journal articles, internal records etc.

3.9 Data analysis

Data will be analyzed using multiple linear regression. According to Sugiyono (2007), multiple linear regressions are used to determine the direction of the influence and direction of the independent variable (X) to the dependent variable (Y).

3.9.1 Validity & Reliability

To establish the internal validity, internal consistency, and reliability of the instrument, Cronbach's Alpha Coefficient (α) was calculated and analyzed using data collected.

3.9.1.1 Validity Test

Validity test is used to measure the accuracy of a research instrument in measuring what you want to measure in the study (Siregar,

2014). The variables measured in this study are compensation, work environment, job satisfaction, and employee performance by comparing the value of r count with r_a table. If r count is greater than r table, the research instrument can be declared valid.

3.9.1.2 Reliability Test

Reliability test is used to determine the magnitude of the research instrument index from the compensation variable, work environment, job satisfaction, and employee performance. The purpose of the reliability test is to determine the extent to which the results of a measurement can be trusted and provide relatively the same results if re-research is conducted (Siregar, 2014). The method used to test the reliability of this research instrument is to use the Cronbach's alpha coefficient, that is, if the value of Cronbach's alpha is greater than 0.6, then an instrument can be declared reliable.

3.9.2 Descriptive

Descriptive analysis will be used for all independent and dependent variables in the study. This analysis should indicate the means, standard deviations, and range of scores for these variables. (Creswell, 2012)

3.9.3 Classic assumption test

The purpose of classical assumption test is to provide assurance that the obtained regression equation is precise in estimation, unbiased result and consistent.

3.9.3.1 Normality test

According to (Ghozali, 2007) the normality test aims to test whether in the regression model, the residual confounding variable has a normal distribution. It is known that the t and F tests assume that the residual value follows a normal distribution. If this assumption is violated, the statistical test becomes invalid for a small number of samples. There are two ways to detect whether residuals are normally distributed or not, namely graph analysis and statistical tests.

3.9.3.2 Multicollinearity test

According to (Ghozali, 2007) the multicollinearity test aims to test whether the regression model found a correlation between independent variables. A good regression model should not occur between the independent variables. If the independent variables correlate with each other, then these variables are not orthogonal. Orthogonal variables are independent variables whose correlation value between independent variables is zero.

3.9.3.3 Heteroscedasticity test

According to (Ghozali, 2007) heteroscedasticity aims to test whether in the regression model there is an inequality of variance from the residual one observation to another observation. If the residual variance

from one observation to another observation remains, then it is called homoscedasticity and if it is different it is called heteroscedasticity. A good regression model is homoscedasticity or heteroscedasticity does not occur. Most data crosssections contain heteroscedasticity test situations because this data collects data that has a variety of sizes (small, medium, and large).

3.9.4 Assumption

The researcher assumption will be included in this study after the data collected. Assumptions listed in the research paper may be good sources of the research topics. Assumption provides a basis to conduct the research study.

3.9.5 Multiple Linear Regression Analysis

According to Sugiyono (2007), regression analysis is used to determine the effect of the independent variable (X) on the dependent variable (Y). There will be 3 regression model: Regression Model I, Regression Model II, and Regression Model III.

1. Regression Model I

The model I regression analysis is used to determine the magnitude of the direct effect of compensation variables and work environment on the variable job satisfaction.

2. Regression Model II

Model II regression analysis is used to determine the magnitude of the direct effect of compensation variables and work environment on employee performance variables.

3. Regression Model III

Model III regression analysis is used to determine the magnitude of the direct effect of compensation variables, work environment, and job satisfaction on employee performance variables.

3.9.6 Path Analysis

To test the effect of intervening variables, Path Analysis method is used. Path analysis is an extension of multiple linear regression analysis, or path analysis is the use of regression analysis to estimate causality between variables (casual models) that have been predetermined based on theory.

Path analysis cannot determine causal relationships and also cannot be used as substitution for researchers to see causality relationships between variables. Relationships between variables have been formed with models based on theoretical foundations. What can be done by path analysis is to determine the pattern of relationships between three or more variables and cannot be used to confirm or reject the imaginary causality hypothesis (Ghozali, 2013). The path analysis model in this study is as follows:



Figure 3.2 Path Analysis

3.9.7 Hypotheses Test

Hypothesis testing is a method of decision making based on data analysis, both from controlled trials and from observation (uncontrolled). In statistics, a result can be said to be statistically significant if the event is almost impossible due to accidental factors, according to a predetermined probability limit (Fisher, 1925). In the hypothesis test, there will be 2 tests carried out, namely t-test and f-test.

3.9.7.1 t-Test

According to Ghozali (2013), the t-test statistic basically shows how far the influence of one explanatory variable / independent individually in explaining the variation of the dependent variable. The null hypothesis (H0) that is to be tested is $H_0: \beta_i = 0$, meaning that an independent variable is not a significant explanation for the dependent variable. The basic decision making used in the t-test is as follows:

1. If the significance probability value is > 0.05 , the hypothesis is rejected.
The rejected hypothesis means that the independent variable has no significant effect on the dependent variable.
2. If the value of probability is < 0.05 , then the hypothesis is accepted.
The irrevocable hypothesis means that the independent variable has a significant effect on independent variables.

3.9.7.2 f-Test

According to Ghozali (2013), F statistical test basically shows whether all independent variables or independent variables included in the model have a joint influence on the dependent variable. To test this hypothesis F statistics are used with the following decision-making criteria:

1. If the value of F is greater than 4 then H_0 is rejected at the 5% confidence level, in other words, we accept the alternative hypothesis, which states that all independent variables simultaneously and significantly affect the dependent variable.
2. Comparing the F value from the calculation with F according to the table. If the value of F count is greater than the value of F table, then H_0 is rejected and accepts H_1 .