

## CHAPTER III

### RESEARCH METHODOLOGY

#### 3.1 Data Collection

To complete the primary data collection, writer conducts a direct observation by distributing some questionnaires to several construction projects in Yogyakarta. Kamane and Mahadik (n.d.) stated that questionnaires are usually drawn up from a combination of previous experience and specific project criteria. There are two forms of questionnaire, one is a very general form with non-specific prompts or questions and the other can be detailed as is required by the particular project. Questionnaires also facilitate consistently presented answers from different team members which allow less time consuming and more meaningful comparisons.

The questionnaires are distributed either to contractor or consultant in the construction projects. Data obtained from the questionnaires are analyzed in order to obtain the current risks and uncertainties in Yogyakarta construction industry. Secondary data obtained from the literature study with variety of library books, articles, and journals to know the basic theories and support this research data analysis.

### 3.2 Respondents

This research will be conducted in several ongoing construction projects in Yogyakarta and will focus on the large construction project. Respondent for this research will be either contractors or consultants that work in that construction project.

### 3.3 Questionnaire Composition

The questions in the questionnaire are referring to the journal of Risk management in construction industry (Mehmod et al., 2010). The questionnaire is divided into four different parts.

1. First Part

Contains the respondent information

2. Second part

Contains the factors that influence risks in the construction project based on the type of risk

3. Third part

Common source of risks in the construction project

4. Fourth part

Response to risks

### **3.4 Data Collection and Analysis**

#### **3.4.1 Data Collection**

The processes of collecting the data are as follows:

1. Collecting data on risk management in construction industry from literature study to make the questionnaire.
2. The questionnaire distributed to several construction projects in Yogyakarta. After the questionnaire fulfilled by the respondent, the questionnaire must be checked first in order to get the right data and anticipate the misunderstanding toward some statements in the questionnaire.
3. The data were collected using Microsoft Excel 2013. The data were collected based on the four part that already categorized in this research questionnaire.

#### **3.4.2 Data Analysis**

After the data collection is complete, writer would identify the data obtained from the questionnaire. The data will be input in the Microsoft Excel 2013 to make the identification process become easier. The analysis method that will be used in this research are percentage method, mean method, and standard deviation method.

### 3.4.2.1 Percentage

The percentage method will be used to determine the percentage of the respondent information. The formula of the percentage method is:

$$P = \frac{X_i}{n} \times 100\%$$

Note:

P = Percentage

X<sub>i</sub> = Number of X variable

N = Number of respondent

### 3.4.2.2 Mean

Mean method will be used to obtain the mean of a certain data. The mean value will show the number of the dominant factor toward the other. The formula of mean method is:

$$\bar{X} = \frac{\sum_{i=1}^{i=n} x_i}{n}$$

Note:

$\bar{X}$  = Mean

n = Number of respondent

X<sub>i</sub> = Number of value given by the respondent

### 3.4.2.3 Standard Deviation

The standard deviation method is used in order to obtain an accurate result.

The standard deviation method will express the different amount of data that already calculated with the mean method. The formula of standard deviation method is:

$$SD = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

Note:

SD = Standard deviation

X<sub>i</sub> = Value of respondent i

X = Mean value