

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Preliminary Research

Preliminary research was conducted first to find the problem occur in the company, and that the problem found will be discussed and solved in this final project. The observation was done at PT. DAP (Duta Arya Pratama). This preliminary research was started by interviewing the manager of the company. By having the interview, the manager of the company can go into detail about the business process of the company, the business activities performed by the company, the condition of the company and also the general problem that occurs in the company. Then from the interview be able to formulate the root problem that will be solved in this project.

3.2. Problem Identification

The second step is problem identification. After collecting the information in preliminary research about the problems occur in the company, this step will formulate the main problem that affects much to the company. The existing problem in the company that will be solved in this final project is about the risk that causes of project completion delay handle by the company. After the discussion, the company suggested a project that ever handles by the company as a study case, which according to the company could represent the problems that the company ever faced related to the project delay.

3.3. Literature Review

The Literature review conducted by using printed books, journals and previous researches which have a similar problem with the current research. The purpose of this step is to gather many references related to the topic of the final project and learn how the previous researches solved a similar problem to this final project. The project that was suggested by the company as a study case was Teleperformance Office Project in Jogja City Mall.

3.4. Data Collection

The data collection step was done to gather all the data and information needed within the company to support and manage the existing problem. There are two types of data sources obtained for the research, such as primary data and secondary data. The primary data was acquired from the interview with the

member of the project team, and the secondary data was acquired from the company's documents and also other sources such as books, journals, and previous thesis.

3.5. Data Analysis and Discussion

This research will be done using Qualitative Analysis due to the a few circumstances that are, the company does not have yet a method to deal with the risks, the numerical data are not inadequate for numerical or quantitative analysis and as the company have not ever conduct the risk management process, this qualitative analysis used first to obtain general indication of the level of risk and to reveal the major risks issues that cause project delays.

After collecting the data, the researcher will make an analysis and discussion of the data collected. Data Analysis and discussion will covers:

a. Risk Identification

Risk identification was conducted to identify the types of risk and also the sources of risk that affected the project completion delay of the Teleperformance Office project. This step was conducted by interviewing the member of the project team. The data will be presented on a risk register with the details about risk category, risk source, and also the type and effect of the delay to the project.

b. Risk Analysis and Evaluation

The tool will be used to analyze the risk are risk probability and Impact assessment and probability Impact matrix used to evaluate the value identifying risk against the evaluation criteria that have been decided known as probability impact scales, and shown in table 5.2.

The Probability Impact Scale used to determine the value of probability, impact and risk score of each identified risk is shown in table 5.2., which determined based on figure 2.2. as reference from Project Management of Book Knowledge (2013). As illustrated in figure 2.2. the matrix can be used to calculate either threats (known also as negative risk) or opportunities(known as positive impact). In this research, the problem faced by company is project completion delay which mean it is can be defined as threat or negative risk, therefore for risk assessment will consider the threats that happen to the project to be assessed.

In risk analysis and evaluation Step will conduct risk assessment towards the identifying risk.

The Risk assessment steps covers:

i. Determine the risk value of each risk

In this step, the team member determine the value of the risk that have been identified in risk identification. The value that will be determined in this step is the value of probability and impact. Each identifying risk was assessed by the team member during the interview. The assumptions justifying the probability and impact scale value assigned are also determined during the interview.

ii. Calculate the value of risk

This step is done to determine the risk score of each risk by calculating the value of the probability and impact of each identifying risk. Risk score helps assign the category of risk ratings that will guide risk response actions. The result of this steps will be updated in the risk register.

$$\text{Risk Score} = \text{Probability} \times \text{Impact} \quad (3.1)$$

iii. Construct the Probability and Impact Matrix

After calculating the risk score of each identifying risk, construct a risk matrix that assigns risk ratings (very low, low, moderate, high and very high) to each risk based on the combination of probability and impact scales. The risk rating scales assigned during the interview with the team, which combination of probability and impact result of each risk classifying as high risk (red condition), moderate risk (yellow condition) and low risk (green condition). The identifying risk that classifies in high risk condition to the project needs more attention to take response action. The result of this steps will be shown in a risk matrix map.

3.6. Risk Response

After the risk assessment steps, a response strategy conducted to reduce the probability of occurrence or impact of a risk. This risk response was done by doing the interview using the expert judgment method. Whereas, an expert in the construction area or the company were interviewed on how the company would respond when the identifying risk occurs. The risk response strategy used to respond to the threats or negative risk is divided into four categories, such as accept risk, transfer risk, reduce risk and avoid risk.

3.7. Risk Control

In this step, the risk control will be done by doing reassessment to the probability and impact of the risk, which is expected after conducted the risk response strategy could help minimize the probability of occurrence and also impact of the risk to the project, and the new risk matrix map will be constructed after applied the response strategy. The result of this step will be presented risk register.

3.8. Conclusion and Recommendation

The last step of the research is conclusion and recommendation. The conclusion will describe the result of the research and suggest the alternative solution that could be done by the company or/and next research could be done by the other researchers in the future.

The flow diagram of the research methodology of the research can be seen in following figure 3.1:

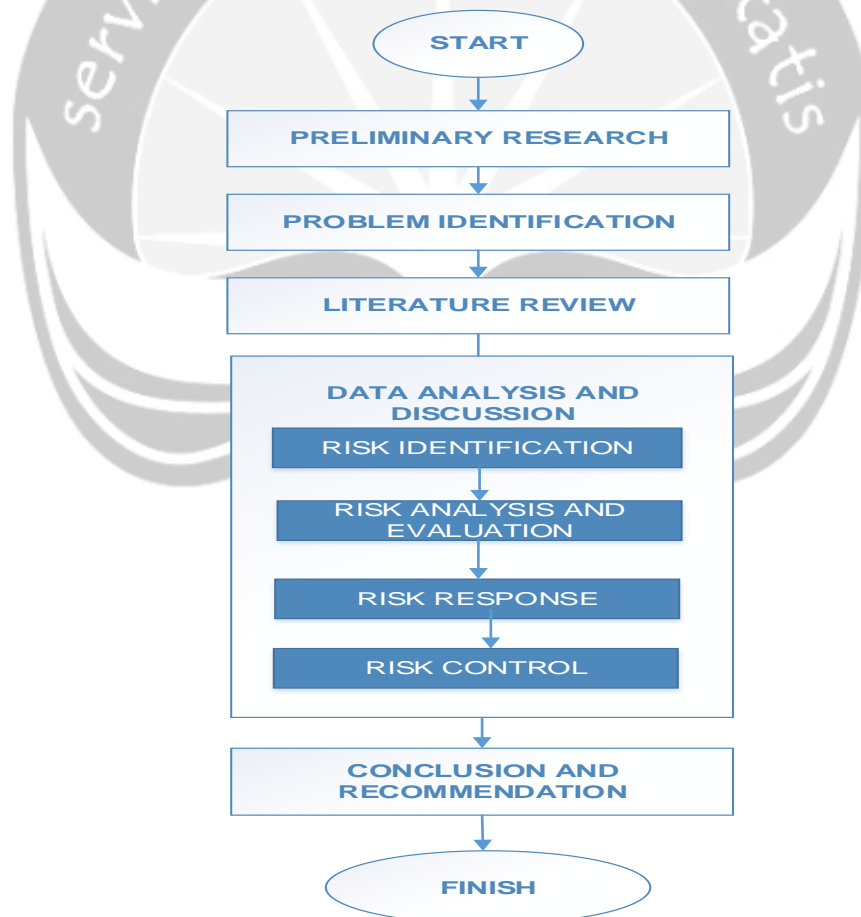


Figure 3. 1. Research Methodology Flow Diagram