

Risk Assessment of Construction Project Cost in Banda Aceh, Indonesia

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Abstract

Construction in Indonesia, especially in Aceh, is growing rapidly with the fulfillment of basic human needs. A construction plan that is a specification and structure that is converted into physical structures and facilities. Successful implementation of construction projects, timely with appropriate budget plans, and good quality are the goals and expectations of project owners and contractors. In practice, many parties are involved in construction projects. The larger the size of the project, the more risks it will have to face, which will have an impact on cost overruns.

Keywords : *cost, overruns, project, construction, contractor.*

1. INTRODUCTION

The construction project is a plan or design process, and the specifications of the planners are converted into physical structures and facilities. The larger the size of the project, the more risks it will have to face, which will have an impact on cost overruns.

In the implementation of the project, often encountered projects that incurred cost overruns. Therefore the project financing is a primary consideration, because it usually involves a large number and vulnerable to the risk of project failure. Therefore, every construction project implementation requires a good project management, which aims to avoid or minimize any potential project risks. Thus, it is necessary to have high levels of expertise, knowledge, and experience in estimating project costs to manage the project's cash flows during the implementation phase, expertise in coordinating project resources, and good project control, so that no cost overrun will result in a loss to the contractor. Based on the background that has been described, then the problem in this research is what factors cause the occurrence of cost overrun in the project in Banda Aceh.

2. PROJECT MANAGEMENT

According to Suharto (2001), project management is planning, organizing, leading, controlling corporate resources to achieve short-term goals that have been determined. The project targets consist of cost, quality, and time elements. The three project objectives are three obstacles that are as follows.

1. Cost, the project must be completed at a cost not exceeding the budget.
2. The quality, product or outcome of the project activity must meet the required specifications and criteria.
3. Time, the project must be done in accordance with the time period and end date that has been determined.

According to Ervianto (2004), the construction project is a series of activities that are only one time and generally short term. In the series of activities, there is an activity to process the project resources into a result of activities in the form of buildings. Besides the construction project has three characteristics that are unique, in need of resources (money, machines, methods, and materials), and requires the organization.

2.1 Budget Plan

The Project Budget Plan is the calculation of the budget for the cost of a building and wages, as well as other costs associated with the implementation of the project. Budget costs in the same building will differ in each region, due to differences in the price of building materials, and labor wages (Ibrahim (1995).

2.2 Cost Overrun

argues that the cost swelling is a condition in which the actual cost is higher than the planned cost. In general, in the implementation of construction projects found many projects that experienced cost overrun or delay in completion. It can occur at the planning stage, as well as at the implementation stage, it is necessary to control / controls (Rizal 1996).

3. MATERIALS AND METHODS

Data is a collection of information obtained from the results of an observation either in the form of oral, and writing, which is useful in terms of supporting research writing. In this case there are two types of data, namely primary data and secondary data that can be explained as follows.

3.1 Primary data

Primary data is the original data obtained from the field, to answer the problem of research in particular. Primary data used in this research are interview data and questionnaire data.

3.2 Secondary data

Secondary data is data collected from other parties to complete the primary data. The secondary data used in this research are the Aceh Province map, Banda Aceh map and the list of contractor companies, obtained from the Aceh Construction Services Development Agency.

3.3 Sampling Technique

According to Arikunto (2006), that the population is the whole subject of research, while the sample is part or representative of the population studied. According to Noor (2012), the determination of the number of samples is determined by using the Slovin formula is as follows.

$$n = \frac{N}{1 + (N \times e^2)}$$

Where :

- n = Number of samples;
- N = Population;
- e = Error level(1%, 5%, and 10%)

3.4 Descriptive statistics

According Narbuko (2004), descriptive research is research based on data, and also presents data, analyze, and interpret. Descriptive analysis gives the mean value, and the rank of each parameter discussed, and presented in tabular form.

According Sugiyono (2010), descriptive statistics is to calculate the average value of each variable X and Y. Sudjana (2005) argue that descriptive analysis method, percentage is used to study research variables. Descriptive percentages can be formulated as follows.

$$P = \frac{F}{N} \times 100\%$$

Where :

- P = percentage
- F = Frequency value of all items
- N = Number of respondents

4. RESULTS AND DISCUSSION

Based on calculating the mean values of all indicators, the recapitulation of mean values can be seen in Table 1.1.

Table 1.1 Level of influence of Cost Overrun Factors

No.	Variables	Mean
X ₁	Estimation	4,656
X ₂	Implementation and working relationship	4,543
X ₃	Project document	4,437
X ₄	Material	4,997
X ₅	Labor	4,223
X ₆	Equipment	4,222
X ₇	Finance project	4,177
X ₈	Execution time	4,164
X ₉	Economics / politics	4,121

The results showed that the dominant factor causing the cost overrun of projects in Banda Aceh was caused by material factors, with a mean value of 4.997. According to Fahira 2005, factors affecting the rising cost of the project are the increase of material prices, late / lack of materials, poor quality control of the material, the use of wrong materials, the use of imported materials, theft of materials, material damage, material production outside the project site. Material is one of the instruments of direct cost for project implementation which is the largest part of the total project cost. Percentage of material use is the largest composition of the total project cost

5. CONCLUSION

The results showed that the dominant factor that causing the cost overrun of project in Banda Aceh was caused by material factor, with mean value 4,997.

The benefits of this research is to provide a reference for contractors to pay attention to the factors that causing cost overruns, as well as the dominant factor causes of cost overrun on the project. Material factors very affect the cost overrun because if there is inflation there will be an increase in material prices in the field (Rauzana, 2015). Cost overruns also occurs due to a mistake in arranging the storage material (Wattymury 2015), and poor quality control of materials (Fahirah, 2005).

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