Analysis of Construction Cost Overrun Causes - Contractor’s View

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Abstract: Construction can be considered as a dynamic industry which is constantly facing uncertainties. Cost-overrun have become an integral part of construction projects worldwide. A construction project is usually considered successful if it is completed within its time, budget & quality targets. The high risk nature of construction projects has led to many cost overruns in history of construction. Therefore, experts should use a systematic approach to manage risks on a project. This paper identifies the root causes of construction cost overrun in Ichalkaranji city & analysis on the basis of discussion carried out with experts in locality. The expand-focus principles & techniques were applied for gathering the various causes from professional literature & also from local experts. The analysis helps to trace responsibility & improve the work process. With the categorized reasons, the contractors can have understanding of cost & schedule change so the change order can be issued & settled with fewer disputes. After analyzing causes of construction cost overrun it will be easy to manage the project effectively so as to minimize the possibilities of cost overrun. This study will provide a solution for management of construction project cost by minimizing the cost overrun possibilities.

1. Introduction

Construction industry is considered as one of the most complicated and uncertain industry. Historically, construction performance is measured by the percentage of achieving client’s satisfaction in terms of cost, time and quality. Cost & time overrun, followed by various claims, have become an integral part of construction projects worldwide. A construction project is usually considered successful if it is completed within its time, budget & quality targets. However, severe cost overruns usually occur in the construction projects due to many factors. This study has been carried out in Ichalkaranji city and all the responses were taken from the contractors working in the locality. Ichalkaranji is developing day by day in fields like industrial, educational, construction etc. As there is increase in housing facilities, it requires construction of high quality in budgeted cost and time. Identifying the reasons is usually the first step when addressing a problem & then corrective action can be taken. Traditional control systems detect project cost & schedule overruns, but we have to further identify the reasons causing this result. The main objective if this study is to identify and study the root causes of construction cost overrun by using contractor’s response to the given questionnaire.

1.1 Cost Overrun

Cost overrun, also known as a cost increase or budget overrun, involves unexpected costs incurred in excess of budgeted amounts due to an underestimation of the actual cost during budgeting.

1.2 Construction Cost Overrun

Cost overruns in construction are a worldwide phenomenon. Construction cost overrun is defined as the difference between forecasted and actual construction costs. Every construction company can be affected by cost overrun if it happens in their projects. However, the most affected company type is micro-scaled construction companies because they have limited capitals and they are more vulnerable to risks.

2. Research Method

In order to present clear ideas about construction cost overrun in Ichalkaranji city, it was decided to conduct two stages of study. The first is a comprehensive review of relevant literature, starting with an overview of the literature concerned in this research, and then shedding light on all significant
aspects of construction cost covered by previous work in the field. The second stage is to prepare questionnaire which is used to highlight and compare the main causes of construction cost overrun in Ichalkaranji city.

Expand-focus approach is used to collect and analyze the data. Causes are collected from two sources-

1. International literature survey
2. Discussion with experts in Ichalkaranji

After literature survey and discussion total 94 causes were collected. Applying expand focus theory those 94 causes reduced to 67 independent universal causes. These 67 causes were arranged according to the project life cycle into 3 stages and questionnaire is formed. Five scale questionnaires was prepared and circulated among 20 contractors out of which 18 were returned with response.

Relative importance index for each cause was then calculated by using weightage given by respondents, no. of respondents and highest weightage. All 67 causes were ranked according to their Relative importance index (RII) and top 5 causes are studied.

2.1 Top 5 Cost Overrun Causes

After carrying survey among contractors the results were analyzed and ranking was done according to RII. The cause with highest RII is ranks at first position. Among these total 67 causes of cost overrun top 5 causes are considered for study.

Table -1: Ranking of Top 5 Cost Overrun Causes

<table>
<thead>
<tr>
<th>Cause No.</th>
<th>Construction Cost Overrun Causes</th>
<th>RII</th>
<th>Overall Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Changes in material types &amp; specification during construction by client</td>
<td>0.622</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>Changes in design by client during construction</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>37</td>
<td>Delay in progress payments by clients</td>
<td>0.589</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>Frequent changes in material prices</td>
<td>0.567</td>
<td>4</td>
</tr>
<tr>
<td>48</td>
<td>Reworks due to the errors during construction by contractor</td>
<td>0.556</td>
<td>5</td>
</tr>
</tbody>
</table>

From table-1 it can be seen that, according to contractors in Ichalkaranji, changes in material types and specification during construction by client causes most of the construction cost overrun in projects. This cause then followed by changes in design by client during construction. Also delay in progress payments by clients, frequent changes in material prices and reworks due to the errors during construction by contractor affects total cost of the projects in Ichalkaranji in large amount.

Figure-1 shows the graphical presentation of these top 5 causes that are responsible for construction cost overrun in Ichalkaranji as per contractor’s response.

As per the discussion with contractors, client is a major factor that is responsible for cost overrun in any project in Ichalkaranji. First three causes of cost overrun obtained after survey of contractors are related to clients. Frequent changes in material prices are a universal cause of cost overrun that comes at 4th rank in this list of causes. Contractor itself is another factor that causes cost overrun due to reworks to correct faulty work. It is seen from the results that contractors are agreed that their faulty work leads to cost overrun and ranks 5th in this list. This is due to inexperience or poor supervision of contractors.

3. Conclusion

This research shows that, client is the main factor causing cost overrun in Ichalkaranji according to the contractors working in construction industry of the city. “Changes in material types and specification during construction by client” is ranks first among all 67 causes which is followed by “changes in design by client during construction” with RII 0.6 as analyzed from the response of contractors. So that it is necessary for clients to study the market conditions prior to starting the project and discusses all the possibilities with the consultant and contractors so as to avoid future cost overrun in the projects. Also, contractors must take into account the client’s requirement and must aware the client regarding cost overrun before starting any project. This can be to avoid the conflicts between the parties involved in construction.

4. References


