

A Study on Lack of Time And Cost Overrun In Construction Projects

M.Gayathridevi¹, T.Sathieshkumar²

¹Dept of civil Engineering

²Asst.Proff., Dept of civil Engineering

^{1,2} Gnanamani College of Technology, Namakkal, Tamilnadu. India

Abstract- *The Construction industry has a greater impact the economy of all countries. It is one of the sectors that provide crucial ingredients for the development of economy. Due to poor cost and time management these days, the construction industry is facing a huge amount of cost overrun. This has become quite a problem for the construction industry. Cost overrun is common in infrastructure, building and technology projects. Many major construction projects have incurred cost overrun; cost estimates used to decide whether important transportation infrastructure should be built can mislead grossly and systematically. The study of this paper is to identify the major reasons for cost overrun in construction projects in India as well as the critical success factors that are helping to avoid the cost overruns. The study is important as it sheds light on how construction professionals can implement cost control measures in place to avoid recurrence of these problems. The attainment of effective cost control measures for development projects is a prerequisite for the successful completion of such projects, which are vital for the country's socio-economic advancement. Here, we have provided the literature review and that will be used to obtain data from various practitioners. This data will be used to find out the major reasons causing cost overruns. The present study deals with the problem identification, factors and main causes of cost overrun in construction projects. The remedies and solution of cost increase in construction site were discussed by collection and analysis of data.*

I. INTRODUCTION

The Construction industry has a greater impact the economy of all countries. It is one of the sectors that provide crucial ingredients for the development of economy. Due to poor cost and time management these days, the construction industry is facing a huge amount of cost overrun. This has become quite a problem for the construction industry. Poor cost management and overrun are huge problem and very serious issue when it comes to project cost in both developed and emerging countries. The increasing complexity of infrastructure projects and the environment within which they are constructed place greater demand on construction managers to deliver projects on time within the planned

budget and with high quality. It is known fact that a larger number of infrastructure projects in India have been delayed due to various issues. Infrastructure plays a paramount role in the economic growth of our country. Today, India is one of the leading outsourcing hubs in the world.

Cost overrun is considered as one of the most important problems that affect construction projects progress, since it reduces the profit leading to enormous losses, and leaving the project in great troubles. Construction cost is one of the peak criteria of success of a project throughout its lifecycle and is of high concern to those who are involved in the construction industry. Cost overrun is common in infrastructure, building, and technology projects all over world. Cost overrun should be distinguished from cost escalation, which is used to express an anticipated growth in a budgeted cost due to factors such as inflation. The increasing complexity of infrastructure projects and the environment within which they are constructed place greater demand on construction manager to deliver projects on time within the planned budget.

QUESTIONNAIRE SURVEY

After carrying out the study of various literatures we got know about various reasons leading to cost overruns. After getting to know about the Likert Scale we decided to carry on the research based on the scale. We have proposed the following questionnaire which will be presented to site engineers, consultants and contractors and to get a theoretical view to the various faculty members. The questionnaire is listed below

II. ANALYSIS OF DATA

Various methods are used for analysing the factors as per the previous studies mentioned. The questionnaires were collected and analysed using various methods to find the most significant factors influencing the cost overrun. Following are the various data analysis methods, Frequency Index, Severity Index, Importance Index Method

Frequency index: This index states occurrence frequency of factor responsible for delay and cost overruns. It is computed as per following formula:

$$\text{Frequency Index (F.I.) (\%)} = \sum a(n/N) * 100/4$$

Severity index: This index articulates severity of factor that caused delay and cost overruns. It is calculated as per following formula:

$$\text{Severity Index (S.I.) (\%)} = \sum a(n/N) * 100/4$$

Importance index: This index states the overview of factors based on both their frequency and severity. Importance index is computed as per following formula:

$$\text{Importance Index (IMP.I.) (\%)} = [\text{F.I. (\%)} * \text{S.I. (\%)}] / 100$$

RANKING OF FACTORS :

Hierarchal assessment of factors was carried out to determine ranking of the factors based on level of significance. It was assessed based on Relative important index (RII) value and calculated for each group of respondent's i.e. contractor, consultant, site engineer and owners and also the overall respondents as presented. It shows that top 10 most significant factors of overall respondents.

S.NO	FACTORS	RII	RANK
1	In appropriate use of material	0.86	1
2	Improper planning	0.84	2
3	Increase the material price	0.82	3
4	Shortage of labour	0.81	4
5	Additional work	0.79	5
6	Material shortage	0.78	6
7	Lack of experience	0.77	7
8	Poor supervisor	0.76	8
9	Complicated design	0.75	9
10	Lack of skilled labour	0.74	10

REASON AND SOLUTION OF THE COST OVERRUN EARTH WORK EXCAVATION

In case of earth work excavation, the cost is increased by two main factors labour cost & type of soil. The type of soil determines the cost. Hard soil rock takes much time for excavation than the loose soil. Thus it's also increases the labour cost and the fuel cost of the equipment. Hence type of soil directly affects the labour cost. So the earth work excavation cost gets increased than the estimated amount.

Solution Earth work excavation should be done with proper planning from the initial step. Earth work excavation should be completed within short span of time with greater worker's strength. Delaying of work may lead to cost overrun, climate may not support the excavation work. Proper communication is required to complete the work without any careless work which may lead to excessive amount than the estimated cost. The excavation work should be in an organized manner, that helps to complete the work in a faster and perfect manner.

WOODWORK

The taxes on the wood material get increased due to the raise of fuel and transport cost.

And also the demand of the material increases the rate of wood.

SOLUTION

Only solution to avoid cost overrun due to wood is to reduce the wood work. The alternatives such as aluminum framed window, upvc framed window, fiber window and the reuse of old woods with good quality can reduce the cost overrun of wood works.

PLASTERING

Increases of sand and cement materials may result in the cost overrun in the project. The main factor in raise of plastering work is increase in the rate of sand. The sand rate is increased due to the unavailability which leads to the greater demand. As the demand increase the price also get increased automatically. The other factor is workmanship. The proper workmanship is needed for the perfect finishing of plastering. If it's not, then the cost of plastering gets increased.

Solution:

Brick work is the most important factor of the cost overrun at plastering.

Bricks should be layed in a proper manner and finishing should be neat to avoid cost overrun of plastering.

Increasing of plastering thickness may result in cost overrun than the estimated cost.

SAND FILLING

REASON

Demand in sand increases the rate of sand filling. Transportation of material from the distant place also

increases the cost of sand filling. Usage of labour in greater strength increases the cost of sand filling.

Solution:

Usage of jcb, Hitachi instead of labours can decrease the cost overrun. Quarry dust is the best filling material and also economically cheaper Comparing river sand

DESIGN WORK

Reason:

Unwanted client confusion of architecture design & structural design. It makes the design cost in to double.

Solution:

Proper clarification before the execution result in clearance of design work. Proper communication with the client can reduce the cost.

III. CONCLUSION

Cost overrun is one of the critical problems faced in the construction industry. The basic goal is to achieve the completion of project within stipulated time and cost budget. In this study, various factors causing cost overrun were identified and the most significant factors influencing the cost overruns were analyzed. The three parties (client, consultant and contractors) are responsible for the cost overrun in the construction projects. Also the rank levels of cost overrun are not different from the views of the three parties. They generally share the same opinion. Financial difficulties could also occur from the owner side where there is a delay payment of monthly valuation to the contractors. □ Mostly, projects are awarded to the lowest bidder with lack of supervision skills. In such cases, less consideration is paid to contractor's plan, cost control, resource allocation (labor, material and finance). Cost overrun can be identified by using two methods, one is ranking method and another one is comparison of estimated cost with the actual cost. Major causes of cost overrun found to be improper planning, unavailability of material, increase the material and machinery prices, weather condition and lack of experience in site can yield cost overruns.

REFERENCES

- [1] T.Subramani, (2014), "Causes of Cost Overrun in Construction" published in IOSRjournalofengineeringvol.04,issue06 June2014

- [2] Ram Singh (2009), "Delays and Cost Overruns in Infrastructure Projects: An Enquiry into Extents, Causes and Remedies" Published in- Economic and Political Weekly (22ndMay2010).