A Review On Cost Effective In Construction Industry

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Abstract

The level of investment requirement in the Indian building construction industry, the poor response in successful implementation of government infrastructure projects and the lack of adequate research in the area of cost escalation management have been the motivation for the current research. Most significant cost overrun factor categories are contractor-related and are external. Most significant cost overrun factors are price escalation, slow decision making, site conditions, low bid, no availability of sufficient number of skilled labours, number of changes and variation orders by the client. Most significant cost overrun factor categories are Steel, Cement and Brick. Most significant cost overrun factors are raw material input cost, demand and supply, power tariff, transportation cost, inflation, taxes, exchange rates and government policies.

Keyword- *construction industry, cost overrun, investment*

Introduction

In India, the performance record of successful implementation of infrastructure large and small projects. Cost overruns are part and parcel of the construction projects. The lack of a research on cost overrun in a building construction industry in india brought description about the need for this study. Some research scientific and systematic studies have been carried out on cost overruns in a building construction projects. Improper site management and supervision, unforeseen ground conditions, less speed of decision making involving all project teams, client-initiated for variations and necessary variations of works have been identified as causes of time overruns in india construction project.

Objectives and Scope

The present study was carried out with the following objectives:

1. To identify and evaluate the factors affecting cost overrun in building construction projects in India

Literature Review

The performance of Government construction projects are not found satisfactory. Cost overruns and cost escalation are part and parcel of the construction projects in India. In India, all central and state government sponsored mega projects and welfare schemes on an average annually face cost escalation of about Rs. 400000 - 500000 Millions. The Infrastructure Monitoring Division (IMD) in the Programmed Implementation Wing is entrusted with the monitoring of performance of the country's eleven key infrastructure sectors viz. Power, Coal, Steel, Railways, Telecommunications, Ports, Fertilisers, Cement, Petroleum and Natural Gas, Roads and Civil Aviation. Project Monitoring Division (PMD) monitors all Central sectors projects of the Government costing Rs.200 millions and above. As on March 2008, out of 909 projects costing Rs.200 millions and above, 346 projects were running behind schedule with respect to the latest approved schedule.

The Cost escalation in 346 delayed projects is Rs.246890 millions which is 13.33 percent of the latest approved cost of Rs.1850890 millions. Out of 515 projects, each costing Rs. 1000 millions and above, have delayed in the range of 1-96 months in respect of road, Steel, Power, Petroleum, Road Transport, Railways, Port and Shipping projects. The total cost of implementation of 515 projects when sanctioned, was of the order of Rs.3534830 millions but this was subsequently revised to Rs.390640 millions implying a cost overrun of 10.5 per

cent (Ministry of Statistics and Programmed Implementation, Government of India). The central government-funded infrastructure projects of over Rs. 1000 millions is expected to rise by another Rs. 460000 millions by the time they are completed. Railways' projects have reported biggest percentage spike in their anticipated costs. For a total of 138 projects, the cost is expected to almost double from Rs. 37,8630 millions to Rs. 70,2370 millions by the time they are completed (Ashtashil Bhambulkar et al.,2013). A single infrastructure project under ministry of health and family welfare reported maximum cost escalation of over 500%. About 250 projects of railways have reported cost escalation by about 88%. The situation is same with projects under ministry of water resources and ministry of information technology where cost of projects has escalated by 119% and 34% respectively. As on January 1, 2009 the cost escalation has gone up by 41% from Rs. 918410 millions to Rs. 1295600 millions. It is unfortunate that despite repeated concern expressed by the government, the position instead of improving has rather worsened further and the escalation is increasing with the passage of each year (Ashtashil Bhambulkar et al.,2013,2019,2020). The cost escalation in projects is due to various reasons such as tardy progress by the contractor, termination of contracts, law and order situation in the region, late award of contract, fund constraints, delays in acquiring lands, problems in procuring equipment, litigation in award of contracts and law and order problems lack of infrastructure facilities, change in scope during implementation, faulty design, high cost of environmental safeguards, high cost of land and rehabilitation, under estimation, exchange rate variation, fund constraints, general price rise, delays in implementation due to inadequate planning. The main root cause of most of the cost escalation is general price rise..

Methodology

In India, Construction Industry has a key role to play in both economic growth and poverty reduction**.** This industry consumes about 40 to 50% of the national five year plan outlay and contributes to nearly 20% of GDP. The construction Industry in India is the second largest industry, next to agriculture in terms of employment. Constructed facilities often take a long time, some times a few years, to complete. Continuous increases in the cost of materials and cost of labour have raised serious problems on the efficacy of works contracts. In India, the performance record in successful implementing of infrastructure projects in India has not been encouraging. Cost escalation is part and parcel of the construction projects in India. Hence, thus identification and evaluation of factors affecting cost escalation in building construction projects in India becomes necessary for undertaking a systematic study. Literature review pertaining to cost overrun in construction projects in India highlighted various issues and causes of cost overrun problem in construction projects. The review indicated the need for greater scientific and also a rigorous study in this area. This chapter presents an outline of the methodology used to achieve the research objectives stated in chapter 1. The justification for selecting the questionnaire survey approach for data collection is also discussed. The questionnaire was administered across the country covering the length and breadth of the country. The questionnaire was designed and formulated based on extensive literature survey and expert consultations. Based on the survey results, causes for cost overrun in building construction projects in India were identified and evaluated.

Questionnaire Survey Approach Due to non availability of information about the completed projects, the questionnaire survey approach was considered for data exploration/ collection. This approach is well recognised and widely used in the area of construction management. The scope of study was limited to Government building construction project in particular to CPWD, PWD building construction contract in
India. The reliability of the survey results is expected to be high because all the respondents are top-level experienced management officials in their organisations. The questionnaire survey acted as the most important data collection tool to analysis the cost overruns in building construction projects.

Conclusion

1. Based on the perception analysis, ranking of relative weight of twenty nine significant cost overrun factors causing cost overrun in building construction projects. The most significant cost overrun factors are
- Price escalation
- Slow decision making by the client
- Site conditions
- Low bid by the contractor
- Non-availability of sufficient amount of skilled labour
- by the contractor
    - Number of change and variation order by the client
2. There is a high degree of agreement on relative weightage of ranking among cost overrun factors and cost overrun categories in Indian building construction projects.

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