

A Review on Assessment of Cost Overrun For Construction Projects

Miss Komal R. Kaushik¹, Prof. Dr.P. P.Bhangale²

¹Dept of Civil Engineering

²Associate Professor, HOD, NMU, Dept of Civil Engineering

^{1,2}SSGBCOET, Bhusawal - 425201, India

Abstract- Many projects experience cost overrun and thereby exceed initial contract amount. In India the number of building construction projects is increasing. However, it becomes difficult to complete projects in the allocated cost and time. Taking into account the scarce financial resources of the country, cost overrun is one of the major problems in this research was carried out to dig-out information on the factors that cause cost, overrun during construction and their effects on building construction projects. The major causes and effects of cost overrun were studied and the assessment was done in order to get the specific factors leading to cost overrun. Also, the solution to overcome from the situation of cost overrun was discussed. The most common effects of cost overrun identified by this research Delay in construction, Design changes, Labor cost increased, Delays due to Local regulations, Materials cost increased were some of the most critical factors affecting cost overrun. Hence, to avoid the problem of cost overrun the construction should be completed in the proper time frame, also design changes shouldn't be made during construction. The problem of cost overrun can be overcome by proper management at each and every stage of construction.

Keywords- Cost Overrun, Construction projects, Causes, Effects of cost overrun

I. INTRODUCTION

The Construction industry throughout the world is growing rapidly. India is one of the developing countries in the world which has agriculture as primary source of income and it is followed by the construction industry sector which provides the second highest number of employment. The Indian government has been continuously targeting for a high scale of economy growth in every five year plan by being reliable on the construction sector. The infrastructure development is the major cause of the growing world economy. Hence every construction project should be monitored correctly as finance is involved in it especially for the developing country like India. For each construction project where cost is involved 'Cost Escalation' is a phenomenon which comes in to existence. Every Construction

project is planned and scheduled and hence a budgeted cost is developed, this cost does not remain the same throughout the project lifecycle and hence an 'Actual Cost' comes in to existence which is always higher than the budgeted cost and this difference is called the project cost overrun.

Construction projects experiencing cost overrun have the potential to become defaulted projects, with a resultant significant impact on all the projects' parties. For example: clients will be unable to use the facility, as the projects have not finished yet, and consultation and designing fees might increase. For contractors the impact could include loss of reputation and being "trapped" in only one project for long time. It is common to see a construction project failing to reach its objectives within the predicted cost. Cost overrun is a very common phenomenon that almost associated with nearly most of the projects in construction industry. It is more severe in developing countries.

II. LITERATURE SURVEY

Mr. Altamash A. Shaikh, et.al (2017) have studied the construction scenario in today's world is rapidly moving with a good pace in the developing countries. On the other hand cost differences due to escalation and overrun has been a problem for the success of construction projects. The project life cycle of any construction project is mastered by monitoring of various engineering and management techniques but somehow are not capable of achieving success up to the expected limit. Cost is hence an important aspect of these projects as it is the backbone on which the success of a project depends and hence it needs to be studied in detail and a proper track of control should be established for obtaining optimistic output. This study deals with various factors which are the root of various reasons of cost escalation and overrun. His research explores the review of methodologies of various statistical and project management techniques which are used for the assessment of cost escalation and overrun in various construction projects. [1]

Urmila A Mahadik, et.al (2015) have said that construction industry the aim of project control is to ensure the

projects finish on time, within budget and achieving other project activities. Time and cost are two main concerns which increase importance of cost reduction techniques. Reduction of cost of construction is a constant goal for construction industry. One way of reducing construction cost is to implement value engineering and sustainable analysis within the construction industry. Her study covers role of value engineering as a cost reduction technique as well as stages of value engineering in correlation of sustainable construction. [2]

Construction industries have a poor reputation in terms of finishing projects on budgetis studie by Abdulelah Aljohani, et.al (2017). Nine out of ten projects normally experience cost overrun. Different causes for cost overrun have been identified. His study critically reviews the literature concerning cost overrun in construction projects in different countries to identify the main potential causes. Main potential causes being: frequent design change, contractors' financing, payment delay for completed work, lack of contractor experience, poor cost estimation, poor tendering documentation, and poor material management. [3]

T.Subramani, et.al, (2014) have studied that Indian construction industry is an integral part of country's economy and its growth and a conduit for a substantial part of India's development investment. The industry plays a pivotal role in developing the country's infrastructure, a pre-requisite for high levels of economic growth. Most construction projects experience cost overrun and it put massive financial burden on the client or owner. Therefore his research was carried out to identify the causes leading to cost overrun in construction projects. Desk study along with questionnaire survey was used to identify the causes of cost overrun. A total of 30 filled questionnaires were collected from clients, consultants and contractors. The respondents were asked to rate the listed causes on the basis of probability of occurrence and severity of impact. Importance of each cause was calculated on the basis of cumulative effect of occurrence and impact. Spearman rank order correlation analysis was used to evaluate whether consensus of opinions exists between groups of respondents. The results showed that, slow decision making, poor schedule management, increase in material/machine prices, poor contract management, poor design/ delay in providing design, rework due to wrong work, problems in land acquisition, wrong estimation/ estimation method, and long period between design and time of bidding/tendering are the major causes of cost overrun. [4]

Changiz Ahabab, et.al (2012) have said that success of construction projects is highly dependent on meeting the aim of project and objectives within the specified time and

budget. Management plays a big role in construction projects. Most important problems that management faces in the projects are methods of execution, management of workers, equipment, scheduling and money. Delay and cost overrun are two of the important defects in construction industry. These failures can lead to various types of negative affections like disputes between contractor and client, decrease quality of work and health and safety accidents. Therefore, there is a high necessity for further investigation on delay and cost overrun factors as well as quality and health & safety and suggesting right actions to minimize these kinds of defects. [5] The primary objective of this study is to attempt to identify the major cost overrun factors in the construction sector of the Free State Province of South Africa is said by M.S.Ramabodu, et.al, (2010) which can serve as the way forward for future projects in dealing with these cost overruns. His study is based on a literature review investigating factors which have a significant influence on cost overruns and also a survey, consisting of a questionnaire and personal interviews, was conducted among professionals of the construction industry. The survey investigated factors that have significant influence in construction cost overruns of public sector projects. This includes misinterpretation of the client's brief, incomplete design at tender stage, procurement strategies and contractual claims such as contract instructions. The results were analyzed and compared against the literature review. Results indicated that the factors that has an influence in cost overruns of construction projects can be grouped into three categories i.e. very critical factors, moderately critical factors and less critical factors. It is important all these factors collectively as they all contribute to cost overruns of construction projects. This paper recommends that there is a significant need to identify factors that may influence construction cost overruns and to address these factors as early as the inception of the project. [6]

Olusola Adekunle, et.al, (2015) has studied that delay in building construction project is a universal phenomenon that is not peculiar to Osun alone. In fact, all countries of the world are faced with this global issue. These delays are usually considered as costly to all parties concerned in the projects and very often results in total abandonment thereby slowing down the growth of the construction sector. The purpose of this study was to assess the causative factors of delays and their effects on building construction projects in Osun. The research categorized the causes of delay under four main groups of client client related, consultant related, contractor related and engineer related their effects assessed using relative importance index (RII) as a basis for analysis. The RII for all delay factors and group of categories was computed so as to rank the factors. A total of 260 questionnaires were distributed among the respondents from

different building construction firm in Osun state. Out of 260 questionnaires distributed, 234 valid questionnaires were retrieved back from the respondents. [7]

The first part of his article presents a new framework for analyzing cost overruns. Fredrik Brunes, et.al , (2014), research has a descriptive part in two dimensions: when during the process that the cost overrun arose and what part of the cost function was responsible. The explanatory part identifies four possible explanations: political/strategic aspects, psychological aspects, competence related and bad luck. It is argued that the empirical part of the paper uses this framework to analyze cost overruns in infrastructure projects in Sweden, primarily based on a questionnaire to experienced project managers. The results is that most of the cost overruns occur in the planning stages up to the final design and are related to design changes and to increases in the amount of inputs needed because of technical and administrative problems. Of the explanatory factors there is most support for lack of competence and optimism bias. [8]

Savita Sharma, et.al, (2014) suggests Construction industry is considered as one of the most dynamic and risky industrial sector. Due to risks and uncertainties associated with the projects, project objectives are not achieved as desired as has been stipulated. Project failure takes place in terms of project delay, cost over runs and poor quality. The cost is considered as one of the most important success parameter of any project. The cost overrun factors are identified based on literature review and expert opinion which is ranked using Relative Important Index (RII) scale. Graphs showing the variation of cost overrun for different combination of cost overrun factors are obtained. [9]

III. METHODOLOGY OF WORK

The following are the steps involve in this paper

- Extensive literature surveys has been carried out by referring books, technical research papers, journals etc. to understand the basic concepts about the topic.
- Next step is to identify the need of the research or fulfillment of research gap.
- Collection of data required to identify various causes of cost overrun has been done using questionnaire survey.
- Analytical work is to be done. It means that analysis of data collected above is carried out i.e. details obtained from the above work are formulated and then results are to be drawn.
- Finally interpretation of results is to be done and conclusions are to be made.

IV. DISCUSSION

This paper aimed at presenting literature relevant to assessment of cost overrun for construction projects. According to Mr. Altamash A. Shaikh his research explores the review of methodologies of various statistical and project management techniques which are used for the assessment of cost escalation and overrun in various construction projects. Traditional method of scheduling is uneconomical and tedious and take more time. Urmila A Mahadik, et.al (2015) her study covers role of value engineering as a cost reduction technique as well as stages of value engineering in correlation of sustainable construction. Main potential causes being: frequent design change, contractors' financing, payment delay for completed work, lack of contractor experience, poor cost estimation, poor tendering documentation, and poor material management has been said by Abdulelah Aljohani, et.al. Slow decision making, poor schedule management, increase in material/machine prices, poor contract management, poor design/ delay in providing design, rework due to wrong work, problems in land acquisition, wrong estimation/ estimation method, and long period between design and time of bidding/tendering are the major causes of cost overrun was said by T. Subramani, et.al. M.S. Ramoddu, et.al said that misinterpretation of the client's brief, incomplete design at tender stage, procurement strategies and contractual claims are major causes of cost overrun. Most of the cost overruns occur in the planning stages up to the final design and are related to design changes and to increases in the amount of inputs needed because of technical and administrative problems was said by Fredrick Brunes, et.al.

V. CONCLUSION

From the above review it is concluded that lot of research have been carried out on the Assessment of cost overrun for Construction projects. For the analysis purpose, the basic information and data is to be collected by using questionnaire survey and in-depth interviews with the various industry stakeholders. The main objective is to provide a system and resources to deal the problem of cost overrun faced by construction projects. The guidance is relevant to all construction projects, small and large, and aimed at all with a role in developing, managing and applying proper project management standards on site. Cost overrun needs to be managed from the earliest stages of design and procurement. Proper project management at each stage of construction can help to eliminate the problem of cost overrun in construction projects.

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