

ANALYSIS OF DELAY AND COST OVERRUN IN CONSTRUCTION PROJECT

MR. YASIN I. NADAF

PG Student, Civil Engineering Department, Dr. J. J. Magdum College of Engineering, Jaysingpur, Maharashtra, India.

DR. A. K. GUPTA

Professor & I/C Principal, Dr.J.J.Magdum College of Engineering, Jaysingpur, Maharashtra, India.

ABSTRACT:

The Construction division is one of the important economic and it is the important motivating force in Indian economy. It travels from a number of problems that affect time, cost and quality performances. Best management of construction projects is depends on three major factors which are time, cost and quality.

Time delay and Cost overruns has been a big matter in many Indian construction projects. The successful completion of construction projects within the given time has become the most valuable and challenging task. The good execution of construction site and keeping them in estimated cost and prescribed schedules depend on a method that requires sound engineering judgment. Delays are incidents that impact a project's speed and postpone project activities.

The actual date of completion is invariably different from the expected date. Construction delay is a major problem facing by the construction industry. In most construction projects, there are delays and their impact level varies from project to project ranging from a few days to years. Therefore the purpose of dissertation is to find the causes of delay and cost overrun.

To find out the most significant factors affecting Time and project Cost overruns and suggest guideline for minimum of effects of delays for construction projects.

INTRODUCTION:

Indian economy has been on a very positive development Curve for years now, posting impressive growth rate percentages. The 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 Construction industry is one of the key economic industries in India and is the main motivating force in Indian national economy. But, it suffers from a number of problems that affect time, cost and quality performances. Successful management of construction projects is based on three major factors i.e. time, cost and quality. Time and cost are the lifelines of any and every project. The success or failure of any project depends largely on these two factors apart from its quality. 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. Time overruns is defined as the extension of time beyond planned completion dates traceable to the contractors. Delays are incidents that impact a project's progress and postpone project activities, delay causing incidents may include weather delays, unavailability of resources, design delays etc. Cost overrun is defined as excess of actual cost over budget. The success or failure of any project depends largely on these two factors apart from its quality. 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 important to study the types which a delay divided into before analyzing construction delays. To initiate the further mitigation efforts and to convert it into a merit, a clear understanding of types of delays is necessary. The delays are classified or categorized into four basic ways:

- A) Critically or non-critically delays
- B) Excusable or non-excusable delays
- C) Concurrent delays
- D) Compensable or non-compensable delays

METHODOLOGY:

Research process consists of a series of steps necessary to carry out research and the desired sequencing of the actions to be undertaken. The research process is a simple way of effectively locating information for a research project.

The current research takes a qualitative approach and is conducted in the following stages, namely: problem identification, literature review, research design, data collection, data analysis and result interpretation and reporting. The approach entails researching to assess the dominant causes of cost and time overruns, identifying possible and practical measures that can minimize overruns in residential construction projects around Sangli, Kolhapur, Pune and Mumbai city. These objectives are achieved through the implementation of the research methodologies that are mainly literature review and

questionnaire survey. The literature review focuses on similar past research studies and helps in the identification of factors and categories, research methodology and analysis of data. Fifty nine causes of delay and time overrun are identified and categorized in 3 main groups according to their sources of delay and time overrun. These causes are compiled and structured into questions to evaluate the importance of the identified causes. In order to collect the necessary data, a questionnaire that consists of the following three major sections is carefully designed and tested in light of attaining high response rates from respondents. These are the general background information of the respondents and their organization, degree of impact of the identified variables/factors, and assessment of controlling mechanisms of time and cost overrun problems. The designed questionnaire is distributed to solicit perception of professionals in construction industries (clients, consultant and contractors) involved in residential construction projects in Sangli, Kolhapur, Pune and Mumbai city. Analysis of the data obtained from the questionnaire is undertaken through statistical methods (importance indices), visual examination, tabulating and categorizing. After the analysing the collected data, the findings and results are interpreted and discussed.

ANALYSIS OF DATA:

In this chapter the collected data from the questionnaires is presented, and presents the way the questionnaires are distributed, responses are retrieved and subsequent analysis of the data collected through the questionnaire survey from professionals working for clients, consultants and contractors who are involved in the residential building construction sector within the Mumbai, Pune, Sangli and Kolhapur districts. The principal purpose of the survey is to rank the already identified variables of construction projects delay and cost overruns and then to find out the critical factors that are required to be given due attention in order to substantially minimize delay and cost overrun problems in residential building construction projects within the study area.

RESULTS:

Respondents were asked total 59 questions regarding delay and cost overrun. These question are based on the various types of delays such as client related, consultant related, contractor related, material related, equipment related etc. With the help of five point scale the results are interpreted. The five point scale used for work is shown in table

Never	(0 projects)	1
Seldom	(1 or 2 projects in 10)	2
Sometimes	(2 - 5 projects in 10)	3
Mostly	(5 - 7 projects in 10)	4
Always	(7 - 10 projects in 10)	5

The table shows weightage given for severity of causes,

Sr.No	Category	Explanation	Weightage
1	Not Significant (N.S)	0% delay contributing factors.	1
2	Slightly Significant (S.S)	<35% delay contributing factors.	2
3	Moderately Significant (M.S)	35-60% delay contributing factors.	3
4	Very Significant (V.S)	60-75% delay contributing factors.	4
5	Extremely Significant (E.S)	>75% delay contributing factors.	5

CONCLUSION:

The overall result shows that most important of the causes of time and cost overrun in the residential building construction projects in Sangli, Kolhapur, Pune, and Mumbai Municipal area originate from poor management from contractor. In order to minimize these causes, owners should have pay in time to the contractors according to the agreement. On the other hand, contractors should have strong backing from financial institution and be financially sound.

The cost of individual construction projects needs to be accurately estimated and any potential project risks that can lead to cost and time overruns are to be adequately identified and managed accordingly. Moreover, human resources should have good training in managerial and technical aspects of the construction projects. These programs can update participants to have good practice in planning coordinating, controlling and monitoring of resources in scheduled time.

Finally, recommendations are made to substantially minimize the impacts of these critical factors causing delays and cost overruns. The outcome of the analysis indicates that all of the parties are deeply involved in causing the problems due to the overlapping nature of construction events and it is difficult to distinguish what proportion of the overall delay source is which party's responsibility. Blaming each other on who causes delay is not very helpful and a lot of work is expected to be done by

each of the parties in order to minimize the problems of time and cost overruns in residential building construction projects in Sangli, Kolhapur, Pune, and Mumbai.

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