

# Elements Deal With Time & Cost Overruns with Remedial Measures in Construction Sector

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***Abstract- The Construction industry is one of the key economic industry 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. They are vital, still they are neglected.***

***India is the tenth largest country in the World and yet her record of implementing major projects has been far from satisfactory. It has been observed very frequently that most of the projects in India ended with extra involvement of time, money and resources. It's a rare scene in construction industry, that a project is completed well within the estimated budget and time and with desired quality.***

***Our GDP factor cost in year of 2014 is 4.7% and construction sector 1.1% acquired, Time and cost overruns have significant implications from an economic. In general, time overruns and cost overruns reduce the G.D.P. (Gross Domestic Product) or productivity of available economic resources, edge the development potential and diminish the effectiveness of the economy.***

***Indexed Terms- Time, Cost, Indirect & Direct Costs, Variable cost, Fixed Cost.***

## I. INTRODUCTION

Successful management of construction projects is based on major factors i.e. time and cost. The successful completion of construction projects within

the specified program has become the most valuable and challenging task for the Managers, Architects and Engineers. How to achieve this task is a problem, which should be solved.

The subject of project cost and time over-run has presently dragged a widespread attention of project managers and the other project related personnel. It is noticed that the period of completion of a project is decided at lower level of technical hierarchy. Also, it is usually seen that time is underestimated initially; several case histories would show that the engineering authority succumbs to pressure and underestimate the completion period. In large construction projects, undue haste imposed by administration has led to disasters. The aspect of optimized completion time is not given the attention it deserves.

A life of a construction project is generally more than a year. Hence, it gets difficult to complete the work under estimated cost, since the market is very sensitive now a days and the construction price rise even faster than the rise in the consumer price index.

## II. OBJECTIVE THE PAPER

The main objective of this study is to identify the major causes of delays of building a construction projects in Pune using an opinion survey. The primary aim is to identify the perceptions of the three main parties regarding the causes of delays and to suggest possible ways of eradicating or minimizing them. Despite the importance and the significance of the construction sector in Pune, it is noted that the clients, consultants, and contractors don't give its importance to evaluate the time and cost overruns at the end of project. It is therefore essential to identify actual causes of time overruns to minimize and avoid delays

and increasing cost in any construction project. Also research and studies in this field in Pune are few compared to worthy expected results.

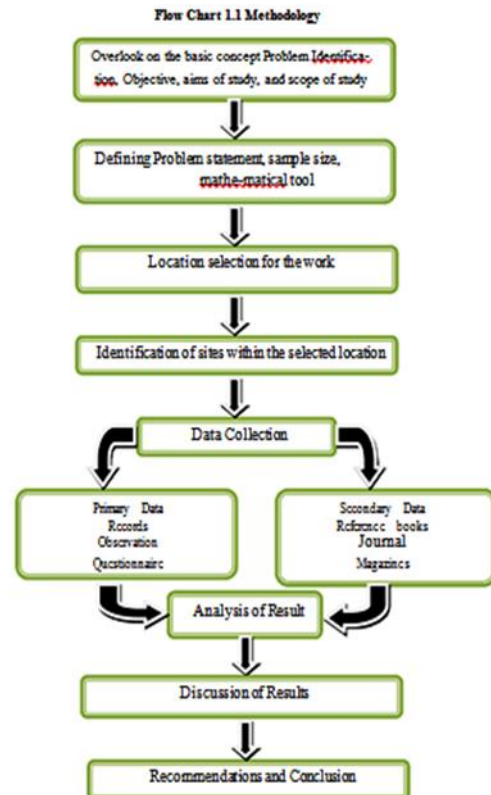
The overall objective of the study is to identify the factors responsible for the over-runs of time and cost in a construction project and suggest suitable remedial solutions. The specific objectives of the study are as follows:

- To find causes of time & cost overruns in construction projects in Pune.
- To rank these causes according to their relative importance.
- Study the trend followed by organizations of good repute, by conducting surveys.

### III. METHODOLOGY

The study required both primary and secondary data. The secondary data has been collected by interviewing the officials of the construction industry. The study has been broadly undertaken as follows:

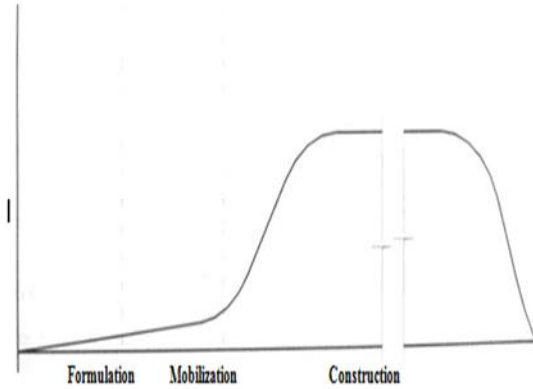
1. Identified the projects, which has undergone time and cost over-runs.
2. Studied all the available plans, estimates, schedules and work procedures in detail and collected all the relevant data about the project.
3. Analyse the data obtained and compared the estimated and actual schedules and budget to understand the causes and implications of overruns.
4. Examined the reasons for the over-runs through either personal interviews or questionnaires.
5. Listed out all the shortcomings.



### IV. CLASSIFICATION OF CONSTRUCTION COST

Construction cost planning encompasses planning judgment, costing techniques and accounting discipline for developing standard costs, financial forecasts, project budget and cost control measures with the ultimate goal of achieving project profit/ cost objectives. The cost of a work unit, which may be an activity, a work-item or a work pack-age, is composed of one or more cost elements. These cost elements include labor costs, material costs, plant and machinery costs, administration costs and other expenses.

Typical Construction Project Life Cycle is shown below in figure

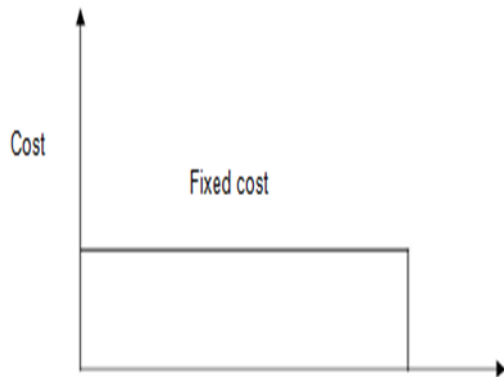


V. INDIRECT COSTS BEHAVIOUR

The sum of the direct and the indirect cost gives the final production cost. But this is not adequate for planning, budgeting and controlling costs. In order to analyze the cost behavior the items of indirect can be further split into following broad categories

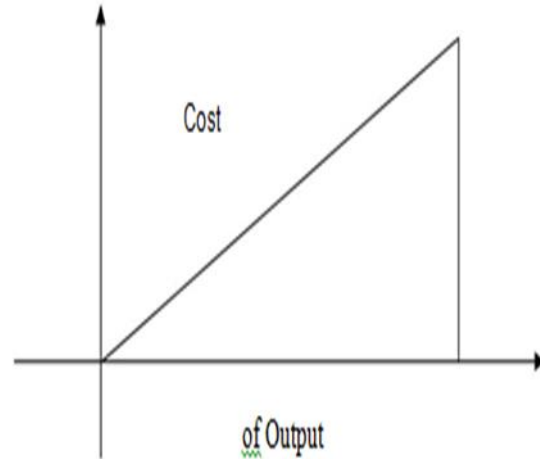
5.1 Fixed Costs

Fixed costs are those, which do not vary with such a factor. It is important to note that such so called fixed costs are fixed within a range of variation in the base factor and therefore are fixed only in relation to that range of base factor e.g. tax, insurance, ownership costs. Refer below fig.



5.2 Variable Costs

In terms of unit or amount in rupees e.g. fuel, oils, greases, servicing, repair cost Variable costs are those, which vary, in direct proportion (or approximately direct) to a base factor, which may be measured in terms of units of direct labour hours etc., or sale etc. Refer below figure

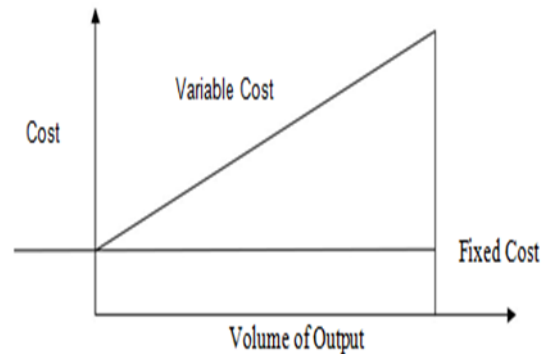


5.3 Semi-Variable Costs

Semi-variable costs are those, which fall between the two categories in the sense that they are neither proportionately variable nor absolutely fixed in the relevant range of the base factor e.g. depreciation.

5.4 Supportive Costs

These are of two types, namely the servicing costs and programmed costs. In the case of servicing costs, e.g. order filing costs, sales or orders are independent variable while the costs are dependent variable. In the case of programmed costs, e.g. order getting costs, the relationship is reversed. Refer below figure.



VI. NEED TO CONTROL COST

We all know that business can only survive if it makes profit. There is a noting one can do to guarantee that profit is going to be made, but certainly factors can go a long way towards making a profit a near certainty. Foremost among these is cost control.

VII. RANKING OF TOP TEN CAUSES OF COST & TIME OVERRUN (BASED ON OVERALL)

S. No.	INFLUENCING	Weight (1-4)				N	RII	OVERALL RANK	RELATED	
		1	2	3	4					
1	Irregular Flow of Finance (C & T)	7	24	24	37	92	275	0.747	1	CLIENT
2	Improper Labour Management (T)	2	30	29	31	92	273	0.742	2	CON T
3	Faulty designs (C & T)	15	15	22	40	92	271	0.736	3	CONS
4	Inaccurate estimate of cost and time (C & T)	8	25	24	35	92	270	0.734	4	CLIENT
5	Delay in Decision by Architect (I)	0	27	47	18	92	267	0.726	5	CONS
6	Improper Material Management (T)	3	28	38	23	92	265	0.720	6	CON T
7	Poor quality of work/ Rework (C & T)	8	22	37	25	92	263	0.715	7	CON T
8	Land acquisition problem (I)	12	17	36	27	92	262	0.712	8	CLIENT
9	Improper site plan-ning (I)	10	22	39	21	92	255	0.693	9	CONS
10	Delay in Procurement/ Supply of Equipment's (T)	3	29	50	10	92	251	0.682	10	CLIENT

CONCLUSION

This study conducted through questionnaire survey for finding factors caused for cost and time overruns in construction projects in Pune. Out of 160 sets of questionnaire survey, 92 (57.5%) sets were received back; data were analyzed by RII method and finding most important factors overrun by giving ranking to them. Two samples of case studies were studied in detail for finding the same. This study identified 10 most important factors caused for time and cost overrun in construction projects in Pune from questionnaire survey were:

- Irregular Flow of Finance
- Improper Labor Management
- Faulty designs
- Inaccurate estimate of cost and time
- Delay in Decision by Architect
- Improper Material Management
- Poor quality of work/ Rework
- Land acquisition problem
- Improper site planning

Time & Cost are the lifelines of every construction project. The successful completion of construction projects within the specified time has become the most valuable and challenging task for the Managers, Architects, Engineers and Contractors. This study provides most influencing factors caused for time & cost overruns. The relative importance index (RII) can be used as an effective tool for analysis on time & cost overruns.

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