

# Analysis of Cost over run in construction Projects

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**Abstract** - Many projects experience cost overrun and there for exceed initial contract amount. The purpose of this research is to assess causes and effects of cost and time overruns in construction projects. The main aim of this paper is to identify the major reasons for cost overruns in construction projects in India as well as the critical success factors that are helping to avoid the cost overruns. Cost overruns occur in every construction project and the magnitude varies significantly from project to project. This leads to severe need of addressing the acute issue of construction cost overrun. The most common effects of cost overrun identified by this research were delay, and supplementary agreement or adversarial relations among stakeholders, and budget shortfall of project owners This paper describes the state of art of the research on cost overrun factors in the construction projects.

**Key Words:** cost overrun, time, Construction projects, cause, effect,

## 1. INTRODUCTION

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 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.

As with construction industry anywhere in the world, the Indian construction sector also face a lot of challenges from land acquisition issues, adverse political and structural changes, shortage of talent, design and constructability issues, and rising material and labour costs. As a result of the current levels of material and labour cost inflation and the buoyant market conditions, contractors are increasing their average margins by between 6% and 9%. These increases are reflected in higher tender prices, particularly on key landmark developments, although on smaller projects contractors are more likely to absorb the increased costs to remain competitive. Time and cost overruns have significant impact on the national economy. He argues that, if the completion of a project exceeds the planned schedule, the people as well as the economy have to wait for the

provisions of public goods and services longer than is necessary and hence delays limit the growth potential of the economy. Similarly, cost overruns in public sector projects seem to reduce competitiveness of the economy.

## 1.2 Cost overrun

It is the phenomenon in which the client has to spend more money for the completion of project than the originally estimated i.e. the project goes over the budget.

## 1.3 Schedule Overrun

It is the phenomenon in which the project gets delayed beyond its expected completion time due to certain difficulties i.e. more time is required to finish the project than initially planned.

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## 2.1 Time Overrun and Cost Overrun

### 2.1.1 2.1 Causes of Time Overrun

Majority of infrastructure projects in India are affected by time overruns. These overruns vary from few months to as high as five or more years placing

1. The project viability at risk. \ Delays in land acquisition and site handover is the primary reason for time overruns in pre-execution phase. Delays in land acquisition are driven by several factors.
2. Regulatory approvals from several agencies leading to delay in Construction.
3. Poor program management resulting in ineffective co-ordination with other projects and schedule delay. Insufficient management of Project design/scope change is widely prevalent in the infrastructure sector. Availability of resources for

infrastructure sector is limited plans, specifications, etc are not received by the contractor in time.

## 2.2 Causes of Cost Overrun –

- Availability of raw materials, allocation of sufficient time, cost of design phase, fraudulent prevention, bulk material purchase and by applying short term goals were marked as vital factors to be considered to overcome cost overrun.
- cost variation in owner originated project than contractor or designer originated category. The major factors are design changes, incorrect evaluation of projects time and cost, risk and uncertainty related with projects, non-performance of subcontractors, conflict between project parties, fluctuation of rates, low skilled manpower, financing and payment.
- unstable interest rate, complexity of works, lack of proper training and experience of project manager, disagreement in contract documentation, lack of appropriate software, inflation of prices, contract and specification interpretation disagreement, dependency on imported materials, unpredictable weather condition, projects fraud and corruption, weak regulation and control and unstable

## 3. METHODS TO AVOID COST OVERRUN-

### 3.1 The proactive strategy

Measures were those which should be added in planning stage of project. Planning strategy includes

1. Efficient planning of strategies and management of site.
2. Proper supervision of project site.
3. Appropriate planning and arrangement of project
4. Organized inventory mechanism

### 3.2 organizational strategy

1. Appropriate prominence on previous experience
2. Regular coordination between associate parties.
3. Increase human resource in industry
4. Complete administration of contract and regular meeting about development of project.

5. Employing Proficient subcontractor and suppliers  
Attributing less weight to price and more weight to abilities

By using channel for perfect information and communication is proactive and organizational strategy. Utilization of latest technology is a proactive and reactive strategy. Undertaking a preconstruction planning regarding the procedure.

However all above factors are not similar to every project, factors varies from project to project but though some are common in all projects so the study specific factors that lead to either good or poor performance individually can give more accurate results specially for small projects.

## 4. METHODOLOGY

For analysis of cost overrun I have done case study of MJM hospital, Pune extension of construction work for 3 floor above Existing building. As site was situated in crowded area of city there are many problems faced by contractor. following factors are factors with their nature which I have observed while analysis.

### 1. Delay in Progress payment-

It frequently happens. When contractor get the wind of financial crisis client is in, he may be induced to delay the construction work deliberately.

### 2. Inaccurate planning and scheduling of project by contractors –

Often fails to draw up practicable and user friendly “work programmer due to lack of knowledge in construction management technique. Tends to work programmer which is not accurate but just satisfies the requirements in condition of contracts.

### 3. Rainy whether

Prevails over longer periods of year. The planning process (designing, estimating, sanctioning and procurement work etc) starts after the provisional budget get approved in march so much. So project may starts in rainy season as half of year is spend on above.

### 4. Non availability of experienced technical staff of contractor –

At the binding stage, contractor claims to be having qualified staff. Do not employ adequate number of skilled technical staff. Also projects are handled by foreman not having adequate technical experience. Due to current demand, retention of technical staff is

difficult. Create a communication gap between consultant and contractor.

#### 5. Excessive work in hand s of Contractors-

Frequently happens. too many contracts can be awarded to same contractor by different client. As contractor tends to bid for as many contracts as possible, one may end up being awarded too many projects. No central unit receives contract awarding details.

#### 6. Poor liquidity of contractors-

Contractor having poor liquidity problem may win contract as financial status is not checked at tender evaluation, only go by bid price. No payment of mobilization advance makes matter worse. Delay in payment of progress payment aggravates the problem

#### 7. Shortage of labours-

Due to boom in construction industry demand has exceeded the supply. The potential labour force is not attracted to construction industry. Opportunities are available for skilled workers oversea at a much higher salary.

#### 8. Delay in approving extra work and variation-

The majority of engineers and contractors do not follow proper procedure and format for submission of extra work and variation for approval. Authority for approving extra work and variation is kept with the clients. Non delegation of authority for approving has made the process too long and tedious.

#### 9. Poor site management and supervision of contractors-

Many contractor are poor in planning , organizing , staffing, directing and controlling

#### 10. Ineffective time management of contractor-

Most of the projects are under-staff and contractor himself is handling planning, purchasing and supervision etc. contractors may be heavily burdened himself with internal and external communication conflict resolution , meeting and report preparation.

### 5. CONCLUSIONS

The most significant factors causing time overrun is identified in this research based on perception of all

three main parties to the contract namely client , consultant and contractor.

1. Delay in Progress payment.
2. Inaccurate planning and scheduling of project by contractors.
3. Rainy weather.
4. Non availability of experienced technical staff of contractor.
5. Excessive work in hand s of Contractors.
6. Poor liquidity of contractors.
7. Shortage of labours.
8. Delay in approving extra work and variation
9. Poor site management and supervision of contractors-
10. Ineffective time management of contractor-

### 6 Recommendation

- Project planning should be properly done at starting phase of project.
- Variation of material and labour rate must be considered while finalizing budget.
- Proper study of all details of project should be done before planning.
- Scope of project should be clear before Starting any project to avoid future cost overrun
- Proper resource management should be done at site to avoid Resources should be ideally available on site
- Sourcing of material should be technically and financially adequate..
- Increase the speed of construction
- Wastage of resource should be minimum
- Resources should be properly utilized.
- Proper Communication between all project participant should be there.

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