Abstract: Road construction is the important division in the construction industry and the most predominant part of a society. The roadway defines the development of a country or a state and brings in the economic development of the same. The reasons for choosing a project on the roadways are its vast scope of day to day development and progress in this area.

Thus it is clearly seen that roadways is the most essential in today’s world without which progress and development cannot take place at full fledge. Therefore any delay in completion of a road constructing project may have its impact in degrading of a society. Also at the same time the budget overrun or cost overrun of such project is highly unbearable.

Key Word: Roadway, Cost Over Run

I. INTRODUCTION

Deferral as alluded in development is delayed development period and interruptions of occasions that exasperate the development program. Deferrals and Cost overwhelm are among the difficulties looked throughout executing development ventures. Postponements just as cost invade are wellsprings of potential dangers that present examinations are investigating approaches to oversee. Development postponement is characterized as “the time overwhelm either past fulfillment date indicated in an agreement, or past the date that the gatherings settled upon for conveyance of a venture.” Delay is likewise characterized as a “demonstration or occasion which stretches out expected time to perform or finish work of the agreement shows itself as extra long stretches of work”

II. METHODOLOGY

The Data are collected through two methods namely questionnaire and case study. Questionnaires are conducted from few concerned persons. This survey helps in finding the Relative Importance Index (RII), later this value is used in determining cost variation that occurs in project that are concerned under case study.

Likewise, for the finding out time delay process, time schedules and activity schedules are collected from the case study of specified projects.

Finally, factors leading for both cost overrun and time delay are displayed in charts, so that the intensity of the factors and its performance to hinder the actual cost budget and time schedule of the project are clearly studied.

III. RESULTS AND DATA ANALYSIS

A. Data Collection

Simple questionnaire survey were conducted to individuals concerned in the highway projects. The result of the survey was the input to determine the Relative Importance Index (RII). Relative Importance Index (RII) calculation is used to determine relative significance and ranking of cost and overrun factors.

B. Data Analysis

The data received through the survey had 16 respondents and they are categorised in the fig.1

Figure 1. Data Analysis
C. Cost Overrun And Time Delay Factors (Expressed In Charts)

The Various surveys are conducted as mentioned and the results are expressed using charts for convenient purpose. These charts shows the ranking positions of each factor which is numbered then using the mean value obtained from the survey conducted. The result of the survey are processed and analysed in the SPSS software tool.

D. Factors Related To Financial Groups

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 6.2 and they are denoted by,

Ca1 - Market demand
Ca2 - Increase in tax
Ca3 - Poor financial control in site
Ca4 - Delay in payment to supplier/sub-contractor
Ca5 - Bureaucracy in tendering method

E. Factors Related To Construction Parties

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in Figure 5.5 and they are denoted by,

Cb1 - Lack of information flow between parties
Cb2 - Lack of co-ordination between projects
Cb3 - Lack of communication between parties
Cb4 - Lack of qualified project manager
Cb5 - Lack of experience in line of work

F. Factors Related To Construction Items

Use In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.6 and they are denoted by,

Cc1 - Incomplete design and drawing
Cc2 - Slow inspection of completed work
Cc3 - Wastage of materials in the site
Cc4 - Inadequate review of contract documents and specifications
Cc5 - Inadequate quantity takeoff

Then the sample was fused with 0.1 N of NaOH with the removal of iron and tested for CEC which yielded a value of 20meq/L.

Then the sample was fused with sodium aluminate without the addition of NaOH and tested for CEC which yielded a value of 20 meq/L.

From the above tests the effect of removal of iron and addition of NaOHa was understood. Moreover when the sample was dried and then ground a paste like substance was formed which was dried and then the various parameters like temperature and time were tried out. There are a lot of other possibilities which can be tried out by varying the Molarity of
NaoH and the concentration of Sodium Aluminate.

<table>
<thead>
<tr>
<th>Sl no</th>
<th>Description</th>
<th>Value in %</th>
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</tr>
<tr>
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<td>Al₂O₃</td>
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<td>Fe₂O₃</td>
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<tr>
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</tr>
<tr>
<td>5</td>
<td>MgO</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Figure 4. Factors related to construction items

G. Factors Related To Environmental Group
In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.7 and they are denoted by,

Cd1 - Weather condition  
Cd2 - Geological condition of project site  
Cd3 - Social and cultural impacts  
Cd4 - Law and regulations  
Cd5 - Location of project

Figure 5. Factors related to environmental

H. Factors Related To External Group
In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.8 and they are denoted by,

Ce1 - Exclusive control of certain group of material suppliers  
Ce2 - Difficulty in importing materials and equipments  
Ce3 - Political situation  
Ce4 - Dealing with suppliers and traders  
Ce5 - Permits or Approvals for land procurement and acquisition

Figure 6. Factors related to external group

I. Factors Related To Materials
In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.9 and they are denoted by,

Cf1 - Shortage of material  
Cf2 - Late delivery of materials  
Cf3 - Escalation of material price  
Cf4 - Change in material specification  
Cf5 - Wastage of materials

Figure 7. Factors related to materials

J. Factors Related To Labor And Equipment
In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.10 and they are denoted by,

Cg1 - Lack of availability of equipment  
Cg2 - Inadequate labour productivity  
Cg3 - High cost of machinery and labour  
Cg4 - Frequent breakdown of construction plant and equipment  
Cg5 - High transportation cost
K. Factors Related To Owners

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.11 and they are denoted by,

Ch1 - Additional work at owner’s request
Ch2 - Owner’s unwillingness to help
Ch3 - Delay in progress payment by owner
Ch4 - Owner’s emphasis on high quality
Ch5 - Delay in decision making

L. Factors Related To Project Delays

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.12 and they are denoted by,

Ta1 - Inconvenient site access
Ta2 - Disturbance to public activities
Ta3 - Limited construction area
Ta4 - Poor terrain condition
Ta5 - Poor soil drillability and laying suitability

M. Factors Related To Internal Delay Factors

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.13 and they are denoted by,

Tb1 - Change orders by the owner during construction
Tb2 - Delay in progressing payments
Tb3 - Ineffective planning and scheduling by the contractor
Tb4 - Poor site management by the contractor
Tb5 - Shortage of labours
Tb6 - Difficulties in financing the project by the contractor

N. Factors Related To Managerial Group

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.14 and they are denoted by,

Tc1 - Poor communication between construction parties
Tc2 - Delays in decision making
Tc3 - Unreasonable project time frame
Tc4 - Improper construction method
Tc5 - Late issuing of approval documents and late land hand over
O. Factors Related To Consultant Group

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.15 and they are denoted by,

Td1 - Mistakes in design
Td2 - Design changes & inappropriate design
Td3 - Late inspection and late approval
Td4 - Insufficient and incapable inspectors

K. Factors Related To Financial Group

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.16 and they are denoted by,

Te1 - Payments delay by the owner
Te2 - Financial status of contractor
Te3 - Financial status of contractor
Te4 - Exchange rate fluctuation
Te5 - Inflation
Te6 - Monopoly

L. Factors Related To External Group

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.17 and they are denoted by,

Tf2 - Segmentation of West bank
Tf3 - Weather condition
Tf4 - Natural disaster

K. Factors Related To Construction Item Group

In this chart, factors are ranked from very high influencing factors to very low influence factors as shown in figure 5.18 and they are denoted by,

Tg1 - Insufficient labours
Tg2 - Rework from poor workmanship
Tg3 - Lack of Equipment efficiency
Tg4 - Unavailable construction material
Tg5 - Rework from poor material quality
Road construction is the important division in the construction industry and the most predominant part of a society. The delay in completion of a road constructing project may have its impact in degrading of a society. Delays are insidious often resulting in time overrun, cost overrun, disputes, litigation, and complete abandonment of projects. The factors analyzed in this project are evitable practically if the correct source starts repairing the root cause. The rectification cost overrun and time delay can be done only by the cooperation of all the groups associated with the construction industry. This project does not mean if things are done as per stated in this paper would rectify all the problems and difficulties faced in the industry, but a considerable amount of changes can be brought which may save a lot of amount and time.

**REFERENCES**


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