

DELAY MANAGEMENT IN CONSTRUCTION SECTOR USING MICROSOFT PROJECT**Sachin Nalawade^{*1}, Jay Rajaram Divate^{*2}, Madhavi Vijay Gaikwad^{*3},****Mitesh Manohar Shinde^{*4}, Reenu Raju Issac^{*5}**

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ABSTRACT

Delays in construction projects are found to be a serious issue. It results in cost overrun, disputes, termination of contract etc. In order to mitigate this issue it is necessary to find out the main cause of delay. Using a questionnaire survey the causes of delay can be found. The questionnaire can be prepared using score, weightage and probability approach. This study is concerned with the method of finding the cause of delay in terms of time contingency index. This index is the buffer time for the delays which can be added up in the schedule using Microsoft Project. This will ensure in the timely delivery of the project. Thus the issue of delay can be minimized.

KEYWORDS: Construction Delays, Score, Weightage, Probability.

I. INTRODUCTION

The efficient management of a project manager leads to the successful completion of a project. The successful completion of project indicates the timely delivery of project and achieving the quality mark. Lack of management leads to delays in project. This paper deals with the method of minimizing the effects of delays on the construction projects. Delays can be classified into:

CRITICAL OR NON-CRITICAL DELAYS: A delay which results in the extension of a project is called as a critical delay, whereas a delay which does not affect the project duration is called as the non-critical delay.

EXCUSABLE OR NON EXCUSABLE DELAYS: When the contractor is not responsible for the delay in project, is called as excusable delay. Excusable delay can be further divided into compensable and non-compensable delays. Compensable delay is which is caused due to the owner or owner's agents while non-compensable delay is caused due to a natural calamity, epidemics, strikes, etc. But if the delay caused is due to contractor then it is non-excusable delay.

CONCURRENT DELAYS: When the timely completion of a project is affected by more than one delay events occurring at the same time and also affecting multiple activities at the same time is concurrent delay.

In order to find out the main cause of delay a scientific approach i.e. score, weightage and probability method can be used. By analyzing the values obtained, time contingency index will be obtained.

II. METHODOLOGY**a) Questionnaire Survey**

The questionnaire is to be framed using the most important factors causing delay. The survey should be based on the score, weightage & probability approach. The objective of the study is to find the causes of delays in construction projects. The prepared questionnaire is to be distributed to different engineers and contractors.

Score, Weightage And Probability Method:

Score: It refers to the accomplishment of a team or an individual. According to one's evaluation score value is to be assigned based on a scale ranging from 1-9.

Probability: It predicts the possibility of how strongly the events are to happen. The probability is also assigned based on a scale of 1-9.

Table-1: Scale for score and probability

Numerical Scale	Verbal judgment	Value
9	Very high	0.9
8	High to very high	0.8
7	High	0.7
6	Medium to High	0.6
5	Medium	0.5
4	Low to Medium	0.4
3	Low	0.3
2	Very low to low	0.2
1	Very Low	0.1

Weightage: It is the relative importance of one factor with another based on a scale as show below:

Table-2: Scale for weightage

Pairwise comparison scale	
Scale	Preferences
1	Equally Effective
2	Equally to moderately
3	Moderately Effective
4	Moderately to strongly
5	Strongly Effective
6	Strongly to very strongly
7	Very strongly Effective
8	Very strongly to Extremely
9	Extremely Effective

a) Analysis And Calculation:

The data is to be analyzed to calculate time contingency index-

- 1) Score and Probability can be calculated using simple average method.
- 2) Weightage is obtained using a pair wise comparison matrix.
- 3) The time contingency is calculated as the product of score, weightage and probability value.

b) Scheduling Using Microsoft Project:

Microsoft Project is a project management software product, developed and sold by Microsoft. It is designed to assist a project manager in developing a schedule, assigning resources to tasks, tracking progress, etc. Microsoft Project is easy to use.

The time contingency index is to be added while preparing the schedule of construction projects. This will help to know the approximate estimation of project including the time taken by the factors causing delay.

III. EXPECTED OUTCOME

1. To mitigate the issues causing delays in construction work.
2. To make use of Microsoft Project as a key tool to manage the problem related to delays in construction project.
3. To give a realistic view towards scheduling of project using Microsoft Project.
4. Apply project management techniques to ensure project delivery on scheduled time and reducing cost overrun.
5. Improving the quality and efficiency of construction project

IV. REFERENCES

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