

IDENTIFICATION OF LACK OF AWARENESS AND LIMITATIONS OF CONSTRUCTION PRACTICES IN DELAYED RESIDENTIAL PROJECTS IN RATNAGIRI CITY

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Abstract : Construction delay is one of the most recurring problems in the construction industry and it has an adverse effect on project success in terms of cost, time, quality, and safety. There are several factors that cause a delay in construction. The integrated project plan is the outcome and it consists of effectiveness of construction practices. Construction projects are going delay in their scheduled time due to lack of awareness and limitation of construction practices. The aim of this study is to Investigating the effectiveness of construction practices in delayed residential projects.

Index Terms – Effectiveness, Awareness, Limitations.

I. INTRODUCTION

Construction delay is one of the most recurring problems in the construction industry and it has an adverse effect on project success in terms of cost, time, quality, and safety. Delays in a construction project can be such a problem and a very serious issue for the parties involved such as client, consultants, and contractors. There are many adverse effects that can occur as the results of the delays. Delay could be defined as the time overrun either beyond completion date specified in a contract or beyond the date that the parties agree upon for delivery of a project. It is slipping over its planned schedule and is considered the common problem in construction projects. Delay in a construction project is considered one of the most common problems causing a multitude negative effect on the project and its participating parties. Therefore, it is essential to identify the actual reasons of delay to minimize and avoid the delays and their corresponding expenses.

II. SCOPE OF RESEARCH

The scope of the project is to investigate the effectiveness of construction practices in delayed residential projects and finding the reasons for ineffectiveness of the construction projects. It is based on minimization of the actual reasons for delay of the future construction of residential projects by implementing effective solutions on limitations of the construction projects. The residential construction projects are growing rapidly due to the development of the city. Hence it is necessary to the adoption of the effective solution of the construction practices. Cost, time, and quality have proven their importance as the prime measures for project success.

III. THE STATEMENT OF THE RESEARCH PROBLEM

Many construction projects in Ratnagiri city are often running into troubles and time completion failures. So, it may result in an increase in time and cost overrun of that project. That studies show that what are the critical factors of causing a delay in construction projects. Many a Previous case studies had been shown the various factors and methods to minimize delays in construction projects but still these projects are going delay in their time and cost due to various reasons. It indicates that there is either lack of awareness of the suggested construction practices or there are limitations for the effective adoption of their suggestion. It may vary from case to case to the construction projects. The construction project is unique in nature. It is necessary to find the actual reasons for the delay to those projects and to find awareness and limitation of those solutions for achieving effectiveness in construction practices. Therefore, it is necessary to focus on the effectiveness of construction practices and applied during each phase of a project's lifecycle.

IV. OBJECTIVES

The research is aimed at identification of lack of awareness and limitations. To achieve aims, objectives have been identified as follows:

1. To study the reasons for delaying the construction projects.
2. To find the awareness and limitations of the effectiveness of current construction practices.

V. METHODOLOGY

Initially, a literature review was made in order to find out the delay causing factors in a construction project which assisted in making a questionnaire survey with the professional experts and other participants of Ratnagiri construction projects in order to find out the relative importance of those found causes with respect to the Indian context. The research methodology will explain how the objectives of this study can be achieved. This study was carried out based on literature review and questionnaire survey. Subsequently, data collection from the questionnaire survey being analysed using the statistical methods and their results are presented. It follows by some discussions, conclusions, and recommendation. To find out the awareness and limitations of the effectiveness and identification of the construction practices which are not adopted effectively, these construction projects are classified into the practices which are related reasons responsible for the delay in each construction practices.

VI. ANALYSIS OF RESULTS

The objective of conducting the analysis for this section is to establish the factors under the groups of causes identified from the literature review and the ranking according to their significant influence towards construction project delays. A ranking method was used to achieve this objective and the significance of using these methods is it can reveal the most influential factors within each category of causes. Relative Importance Index method is adapted to determine the relative importance of the various causes of delays. In this case, the five-point Likert scale was adopted which ranges from 1 (very low contributing) to 5 (very high contributing). These transformed to relative importance index (RII) for each factors using the formula shown below:

Relative Importance Index, $RII = \sum W / (A \times N)$

Relative importance index ranges b/w 0 to 1 i.e. ($0 \leq RII \leq 1$), a higher value indicates more importance for that cause of the delay. where W = weighting given to each factor by the respondents which ranges from 1 to 5 where '1' is 'very low contributing' and '5' is 'very high contributing', A = highest weight (i.e. 5 in this case), and N = total number of respondents (i.e. 15 in this case).

Ranking of the top fifteen reasons for causes delays are as follows:

Reasons for delay	Consultant	Contractor	Overall	
	Index	Index	Mean	Rank
Unavailability of resources	4.35	4.27	4.31	1
Lack of Use of appropriate construction methods	4.15	4.07	4.11	2
Competent Project Manager	4.41	4.29	4.35	3
Ensure adequate and available source of Finance	4.37	4.38	4.37	4
Fail to Frequent progress meeting	4.30	4.24	4.27	5
Not Awarding bids to the right/experience consultant and contractor	4.33	4.22	4.27	6
Lack of experienced subcontractors and Suppliers	4.28	4.20	4.24	6
Unavailability Multidisciplinary/incompetent project team	4.22	4.11	4.16	7
Inaccurate initial cost estimates	4.07	4.18	4.12	7

Incompetent and incapable of client's Representative	4.11	4.13	4.12	8
Fail to Perform a preconstruction planning of project task and resources needs	4.17	4.02	4.10	9
Lack of Project management assistance	4.09	4.09	4.09	10
Fails to Adopt new approaches to contracting such as Design-Build and Construction Management (CM) type of contract	4.20	3.91	4.05	11
Fails to Acceleration of site clearance	3.91	4.16	4.03	12
Lack of Allocation of sufficient time and money at the design phase.	4.13	3.89	4.01	13
Improper Site Management and Supervision	4.04	3.96	4.00	14
Incomplete and inaccurate project feasibility study & site investigation	3.93	4.04	3.99	15

Construction projects are classified into several construction phases like Excavation work, Concreting work, Wall work, Plastering work, etc. To find out the awareness and limitations of the effectiveness and identification of the construction practices which are not adopted effectively, these construction projects are classified into the practices which are related reasons responsible for the delay in each construction practices. Following factors were studied to find out awareness and limitations through its construction practices in its project cycle. After studying the all the factors which are liable to delay on construction project site, effectiveness in the construction practises are checked through its method of adoption and factors which causes delay on that project site. To check lack of awareness and limitations, above case studies are classified into reasons of construction practices as excavation, concreting work, masonry wall work and plastering work etc. Factors which are liable to delay through its construction phases are checked through all case studies. Effectiveness of these construction practises are checked through lack of awareness and limitation respectively.

Analysis of results of lack of awareness and limitations for the above case studies as given below:

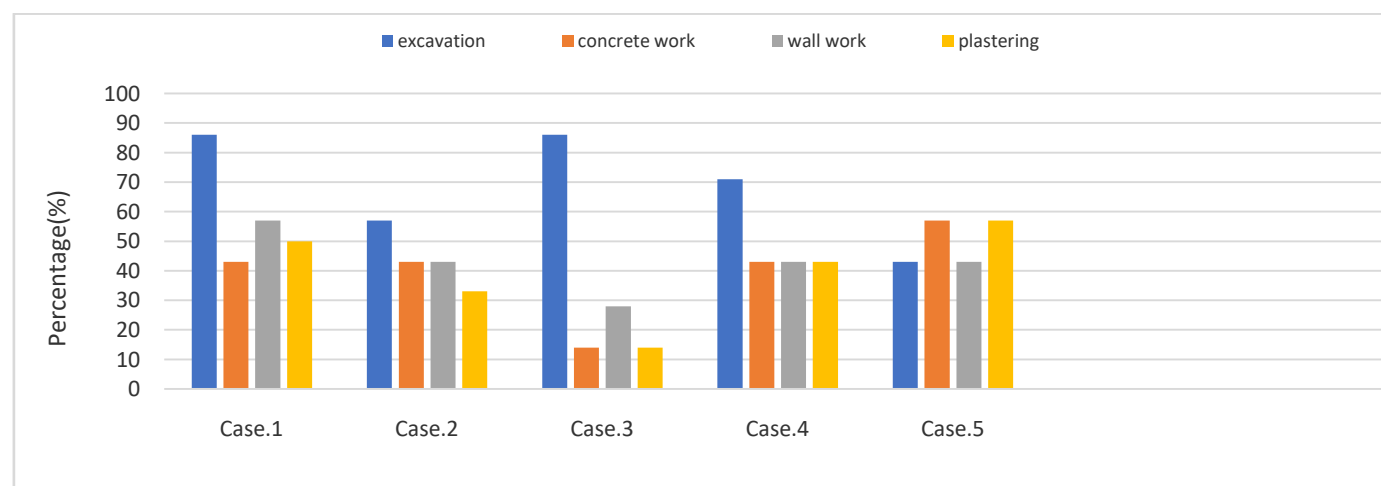


Fig.no.4.2 Analysis of results for Lack of Awareness

In the above Figure chart shows the five case studies with respect to the percentage of the lack of awareness through their construction phases. From above fig., we get the information for case study 1 as excavation activity is done by lack of awareness of 87%, in concrete work as a 40%, in wall work 68% and for plastering work lack of awareness is 50% and so on for further case studies. From overall conclusion from that fig. is that excavation activity is mostly done with large percentage of with lack of awareness

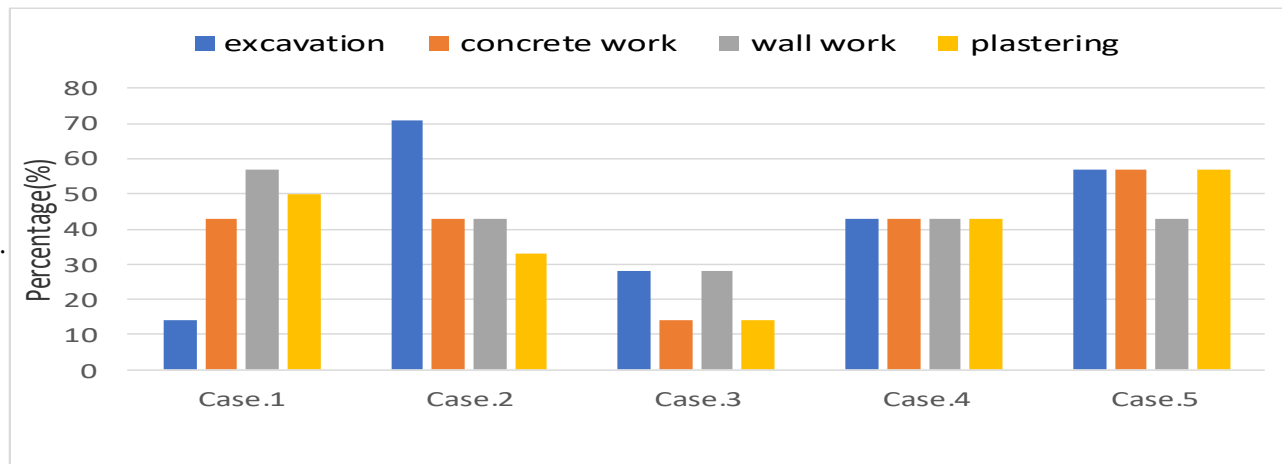


Fig.no.4.3 Analysis of results for Limitations

In the above Fig. chart shows the five case studies to the respective percentage of limitations according to their construction phases. From above fig., we get the information for case study 1 as excavation activity is done by limitations of 13%, in concrete work as a 40%, in wall work 58% and for plastering work limitations is 50% and so on for further case studies. From overall conclusion from that fig. is that wall work and plastering activity are mostly done with greater percentage of with limitations.

VII. CONCLUSION AND DISCUSSION

Overall percentage analysis for lack of awareness and limitations are indentified as follows:

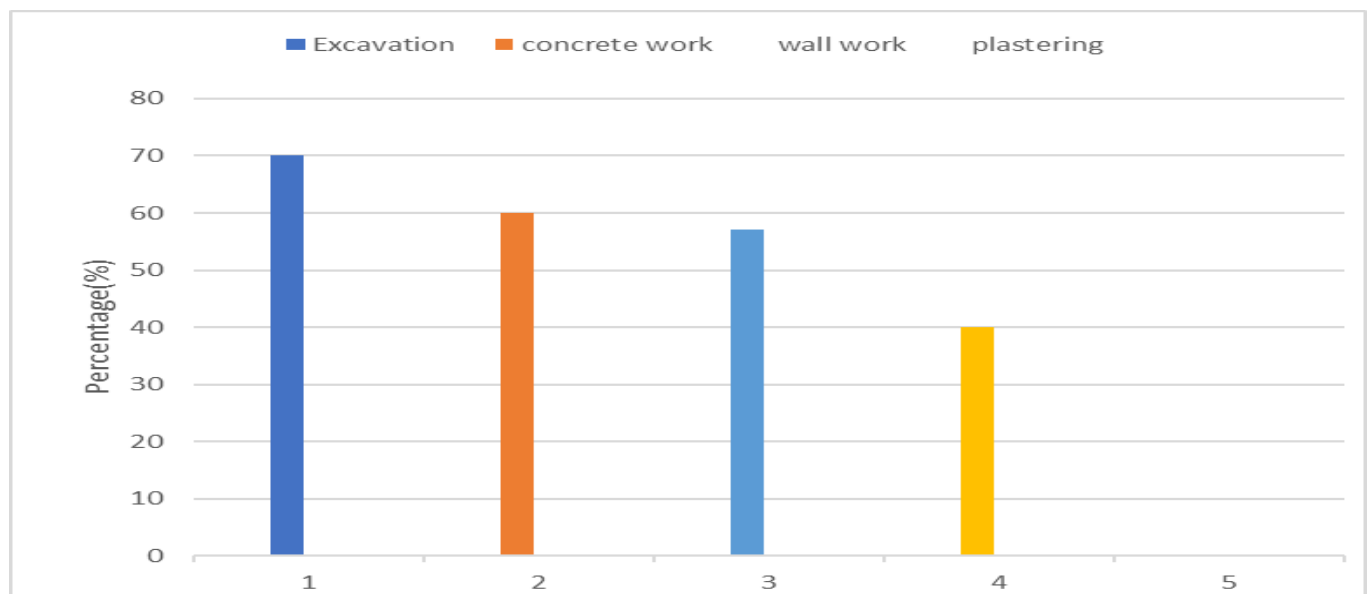


Fig no.4.4 Overall percentage analysis for lack of Awareness

Above fig. shows that in Excavation activity is mostly done with to lack of awareness with 70% and further activities such as concreting is 60%, wall work 56% and plastering as a 40%. General reasons for lack of awareness are lack of experienced subcontractors and suppliers, Fail to Perform a preconstruction planning of project task and resources needs, Lack of adaption of new modern techniques, Insufficient Numbers of Equipment's, Inadequate modern Equipment.

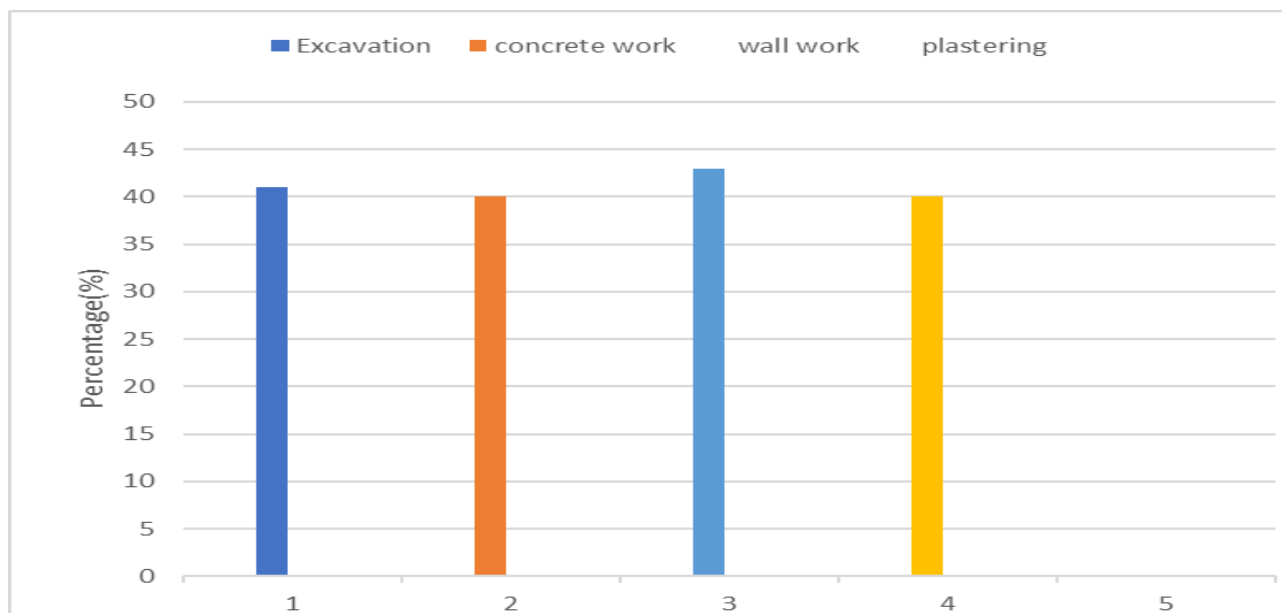


Fig no.4.5 Overall percentage analysis for Limitations

Above fig. shows that in wall work activity is mostly done with to limitations with 43% and further activities such as excavation is 41%, concreting work is 40% and plastering as a 40%. General reasons for limitations are slow mobilization of labor, Less labor productivity, Strike, Weather conditions problem After studying all the reasons and factors which are responsible for delay in construction project, the final summary of the reasons obtained for awareness and limitations are as follows:

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