



STUDY OF TIME AND COST MANAGERMENTS IN HIGHWAY PROJECTS

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Abstract: Effective cost and time management play a crucial role to attain the project success within the industry. Various cost and time management techniques which help to regulate cost and time overrun within the construction project. It is commonly accepted that construction cost, time and quality performance has been considered the key success factors for a construction project. With the increasing use of innovative contracts in highway construction, the connection between construction cost and time has become more crucial than ever. This study explores the functional relationship between highway construction cost and time. This study is to analyze the factors that will cause overrun of the planned cost, allocated resources and scheduled time of infrastructure engineering projects.

Index Terms - Scheduling, Contracting, Highway Construction, Construction Time, Construction Cost formatting.

I. INTRODUCTION

In every industry, the successful completion of the project is that the main goal. to attain this, aim the development industry is to manage the value performance and time. Without proper control of your time the costs overruns within the construction project. time and value estimation for infrastructure projects especially associated with construction often face challenges thanks to several factors included in it. Therefore, it's a tedious task to estimate the ultimate project time, cost including contingencies especially at the pre feasibility evaluation stage of the highway project in developing countries. In this, a groundwork has been conducted to check and analyze various construction related projects to boost the standard of estimation at the pre feasibility stage cost and time performances of highway projects specifically just in case study of India.

II. PROBLEM STATEMENT

Acknowledged as having low-productivity, the development industry is declining progressively and can continue the decline if traditional processes remain unchanged. Therefore, rework must be considered a big factor affecting cost performance within the industry. the development industry consists of the many separate layers, and therefore the amount of data a construction project contains is tremendous. Project time and price are the 2 main elements that concerns all stakeholders. These elements are vital to the project, and that they is the fundamental foundation for decision-making, collaboration, procurement, etc. The accuracy of the data source determines where the project goes.

III. STUDY AREA OF PROJECT:

The good thing about this study will educate project engineer the important of surrounding these delay factors to supply the completion of Highways construction project on time. This study is a trial to fill the gap by concluding research on the delay analysis of infrastructure projects with attention on examining the factors that influence delays and their effects on project time, cost, and quality. The target respondents were engineers from contractor and consultant firms involved in construction projects. Cost management and time management techniques are important to succeed the project within the housing industry. Time management software helps to manage and monitor the project whether the project goes in right path or not. Based upon this research cost management technique like cost flow forecasting and price planning control is that the important one to manage the price. Time management technique CPM and PERT are the effective time management technique within the construction and Primavera, Microsoft Project and Microsoft Excel are the foremost common and effective software packages utilized in industry.

IV. LITERATURE REVIEW

The studies and practices adopted by many researchers for effective time and value management are reviewed, a literature survey of varied projects published within the construction planning has been discussed. Literature from all the stages are considered for review. An analysis has been conducted to investigate the efficiency of assorted risk factors involved within the construction projects

SHANMUGANATHAN N, DR. G.BASKAR, “Effective cost and time management techniques In construction industry”.(2016): the foremost of the factors were identified through questionnaire survey from the professional working within the various construction industries. This survey was made through questioner distributed to different construction professionals. These professionals include engineers, contractors and clients. Moreover, all of the professionals are selected supported their experience and special care should be taken for his or her educational qualification. All the respondents participated during this survey their minimum educational qualification is (D.C.E) most of the respondent are completed (B.E) and few respondent completed (M.E).

JIN-FANG AND WEI-TONG CHEN, “Functional model of cost and time for highway construction projects,”.(2016): This study compiles projects completed by the FDOT to ascertain a model to demonstrate the functional relationship between construction cost and time for the collected highway construction projects. This proposed model not only can give SHAs and contractors increased control and understanding of the continuance of highway construction projects, but can also enable contractors to regulate construction time and cost more flexibly, making it easier for them to win a bid. The model introduced during this study can provide a foundation for:

(1) Determining the most days of incentive in an I/ D project, and an affordable range of your time duration in an A + B contract for SHAs; and

(2) Developing an improved strategy for determining the terms for the I/D and A + B + I/D projects

JAWAD A. ALSULIMAN, “Causes of delay in Saudi public construction projects”, College of Engineering, Ucontractors interested in such projects. niversity of Business & Technology (UBT), Jeddah, Asian country Received 3 March 2019; revised 7 May 2019; accepted 6 July 2019 Available online 24 July 2019: This paper contributed the study results and showed that the highest influential factors of projects completion are: that specialize in financial analysis and awarding all-time low bidder, awarding contractors projects beyond their financial and technical potential, selecting contractors who produce other, faltering projects, ministries aren't inquisitive about the event of the engineering sector, government entities are late in giving financial rights to contractors, the weakness of economic and technical capabilities of some contractors, and government entities don't withdraw the delayed projects from the faltering contractor. so as to place the questionnaires' results into perspective, it absolutely was decided that a public sector construction project would be analyzed by a method that was suggested.

SHREYASH RAUT, S S PIMPLIKAR, KARAN SAWANT, “Effect of project cost and time monitoring on progress of construction project”.(2013): As project grows in size and complexity, the power to plan , monitor and control the project has become a key project management function. like all other business, builders, contractors and developers should plan and organize their day to day activities so as to manage effectively. The task of project monitoring and control is to grant a good indication of the existence and therefore the extent of problems related to a project. therefore project should have an effect cycle as follows with the aim of completing project within acceptable time and budge. Monitoring and control cycle consists- • Make an idea • Implement the plan • Monitor the particular output and record it. • Report the particular, the planned parameters and their variations.

HANBIN LUOB HUAZHONG, “Analysis of Delay Impact on Construction Project supported RII and Correlation Coefficient: Empirical Study Tsegay Gebrehiweta”,University of Science and Technology, Wuhan, 1037, China: The results of the analysis show as time overrun and value overrun were the 2 most typical effects of delays in Ethiopian construction projects. Although this research conducted to spot the foremost causes and effects of delays within the Ethiopia construction projects supported the development process, but the research can apply in another country with the **IDENTICAL** situation and further study.

V. DATA COLLECTION AND OBSERVATIONS

The Construction industry incorporates a great influence on the economy of all countries. it's one amongst the parts that provide vital factors for the event of any economy. in keeping with IBRD, the share of housing industry in developing countries is approximately between 6-9% of the Gross Domestic Product (GDP). Construction time for any kind of project is said to a good range of variables including construction cost. Time and price are typically used as important criteria for determining project performance globally. A relationship exists between the time taken for construction of a project and therefore the cost incurred to finish it. In general, the longer it takes to finish an activity, the more human resources need to be engaged for the task, leading to the next project cost. A critical issue in building that affect project delivery, experienced almost worldwide, is cost. It generally results from factors that occur during various stages of life-cycle of a project. Studies on highway projects are conducted by quite few researchers to hunt the extent of this particular problem. Findings by several authors indicate that it's related to project design, project environment, and project size; project size, of course, is directly associated with overall construction time. Construction procurement is that the process of obtaining services and supplies for efficient and timely delivery of the tip product. the key project delivery methods include

- (1) Design Bid-Build,
- (2) Design-Build, and
- (3) Construction Management in danger.

Studies indicate that project performance is littered with project delivery method. The trend within the use of project delivery system is changing rapidly. Project delivery system has evolved over the years. The medieval master builder was hired by an owner to style, engineer, and construct a whole facility. this method was common until the first 20th century. With changing technologies, it had been necessary to alter the kind of delivery system that gave thanks to the Design-Bid-Build method. Eventually, it had been found necessary for owners to resort to one source Design-Build contracting. there's an increasing trend toward the employment of the Design-Build delivery method within the public sector. It is thus possible that project delivery method could play a job in

construction performance time. Without proper control of your time within the c the price overruns within the construction project. during this paper is to spot the foremost value able various cost and time management techniques and time management software's utilized in the development industry and therefore the data are formed structured questionnaires and send this question to the varied professionals like engineers, contractors, and clients. Time management is that the vital techniques to verify the completion of projects within stipulated time. Without a correct time, management, many problems will occur like an extension of your time or time overrun within the construction project. The important time management technique is Gantt chart, milestone chart, critical path method, programmer evaluation and review technique, precedence network diagram Gantt chart technique is widely used for project scheduling and control .it is the straightforward technique for preparing a schedule and also, it is a graphical representation technique. The judgement is predicated on construction experience and knowledge. the connection between judgement and alternative techniques could also be summarized as technique and judgment are termed recommendation. Cost management and time management techniques are important to succeed the project within the industry. Time management software helps to manage and monitor the project whether the project goes in right path or not. Based upon this research cost management technique like cost flow forecasting and price planning control is that the important one to control the worth. Time management technique CPM and PERT are the effective time management technique within the development and Primavera, Microsoft Project and Microsoft Excel are the foremost common and effective software.

VI. CONCLUSION

- i. The review highlighted the foremost causes of delay and price overrun within the industry.
- ii. It is generally acknowledged that the tip results of delays and value overrun is pricey and risky, leading to many disputes and claims that end in lawsuits.
- iii. Most of the causes of delay and price overrun as stated by previous researchers could also be classified into four categories. These are contractor's responsibility, consultant's responsibility, owner's responsibility and external factors.
- iv. In order to successfully address problems with time over, cost escalation, and quality shortfalls, the causal factors must be understood. On the alternative hand, it is important to form sure that project delivery and client satisfactory enhancement factors are optimized.
- v. The first reason for delay found in each study is: poor financial control of the project, delay in honoring payment certificates by contractor, owner financial problems, delay in payment to contractor by owner, land acquisition, rain effect of construction activities, terrain conditions, political situation and absence of fuel.

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