ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

Study of Construction Delays Causing Risk on Time and Cost over Runs

M.Devaraj
M.E. Infrastructure Engineering and Management,
Thiagarajar College of Engineering,
Madurai -625015.

Dr.R.Velkennedy
M.E. Infrastructure Engineering and Management,
Thiagarajar College of Engineering,
Madurai -625015.

Abstract:
The construction industry is one of the main sectors that provide important ingredients for the development of an economy and socio-economic the construction industry plays a central role in driving both of these. However, many projects experience extensive delays and thereby exceed initial time and cost estimates. Construction delay is considered to be one of the most recurring problems in the construction industry and it has an adverse effect on project success in terms of time, cost, quality, and safety. This study is conducted to investigate the time performance of construction projects in Tamil Nadu. The field survey included 34 contractors and 30 consultants. A total of 52 causes of delay were identified during the research. The identified causes of delay and their severity according to contractors and consultants through a questionnaire survey. The general situation observed currently in building construction in a developing country such as India is that the output of a construction company is usually characterised by poor quality work, cost and time overruns. These characteristics originate because a number of risk factors have not been properly taken into consideration in the project planning and implementation stage. Therefore, a focus on risk management is necessary to improve the current project's poor performance. This paper aims to establish an exclusive and comprehensible risk management framework which will improve the performance of building construction projects in developing countries. The improved performance will be in the form of achieving successful project delivery within the time frame, minimising cost overruns and optimising project quality.

Key words:
Risk Management, Time And Cost Over-run, Risk analysis.

I. INTRODUCTION:

The construction industry has a great impact on the economy of all countries. It is one of the sectors that provide crucial ingredients for the development of an economy. Population growth and economic development have led to a steady increase in demand, successfully delivery of public and private sector buildings facilities requires the application of a broad set of program and project management tools. However, it is becoming more complex because of the sophistications of the construction process itself and the large number of parties involved in the construction process, i.e., clients, users, designers, regulators, contractors, suppliers, subcontractors, consultants and labours. Cost, time, and quality have their proven importance as the prime measures for project success objective, risks on construction projects are a universal phenomenon. They are usually accompanied by cost overruns. Risk associated delays has a negative effect on clients, contractors, and consultants in terms of growth in adversarial relationships, mistrust, litigation, arbitration, cash-flow problems, and a general feeling of trepidation toward one other. Some of these problems

- Large number of workers in comparison to the number of projects;
- Land Disputes and shortage of materials in markets materials;
- Continued increase in material prices;
- Dependency on donor countries to get the fund of implemented

ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

Projects in India;

- Unstable economic situation one and Unstable political situation.
- Poor quality of materials available on sites

This problem, are no previous studies that investigated time overrun in construction projects, but the general observations indicate that time overrun is a common phenomenon in construction projects. This study presents the findings of a survey aimed to identify some of the most severe delay causes in construction project by developing a Delphi synthetic evaluation model for assessing the risk level of a particular delays and the overall risk level associated with Construction Projects in Tamil Nadu.

II. LITERATURE REVIEW:

Alfredo Federico Serpella et.al., in Risk management in construction projects who addresses the problems of risk management in construction projects using a knowledge-based approach, and proposes a methodology based on a three-fold arrangement that includes the modelling of the risk management function, its evaluation, and the availability of a best practices model. This approach is part of a research effort that is underway. A major preliminary conclusion of this research is the fact that risk management in construction projects is still very ineffective and that the main cause of this situation is the lack of knowledge. Usama Hamed Issa in Implementation of lean construction techniques for minimizing the risks effect on project construction time that the construction projects involve various risk factors which have various impacts on time objective that may lead to time-overrun. This study suggests and applies a new technique for minimizing risk factors effect on time using lean construction principles. The lean construction is implemented in this study using the last planner system through execution of an industrial project in Egypt. Evaluating the effect of using the new tool is described in terms of two measurements: Percent Expected Time-overrun (PET) and Percent Plan Completed (PPC).

The most important risk factors are identified and assessed, while PET is quantified at the project start and during the project execution using a model for time-overrun quantification. The results showed that total project time is reduced by 15.57% due to decreasing PET values, while PPC values improved. This is due to minimizing and mitigating the effect of most of the risk factors in this project due to implementing lean construction techniques. Aurelija Peckieneet.al., in Overview of Risk Allocation between Construction Parties Certain risks are inherent that risks are faced by all parties involved in a project – owners, contractors, designers, suppliers, etc.

However, the more important role the parties play in the development and successful completion of the project, the greater risks they have to carry. Such parties are the owner and the contractor who conclude a contract to carry out construction works. Shifting the risk onto one of the parties to a construction contract agreement is inequitable and unreasonable. Equitable allocation of risks among parties is very important. R Kathiravan et.al., Assessment of labour Risk in High-Rise Building This paper aims to identify and analyze the risks associated with the development of construction projects from project stakeholder and life cycle perspectives in terms of human safety and its effect on time and cost. This can be done by calculating the productivity rate of the labors and also analyzing the organization needs from the work force. This research found that these risks are mainly related to contractors, labors who directly take part in the construction process.

Among them, tight project schedule is recognized to have high influence on all project objectives maximally. In this study the survey has to be conducted with in various construction industries in Tamil Nadu and the opinion at various levels of management through the standard questionnaires are to be collected and the result are to be analyzed and aims at providing recommendations to overcome those risk mitigations.

ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

Saleh Alawi Ahmad et.al., in Evaluation of Risk Factors Affecting Time And Cost of Construction Projects in Yemen, the study is carried out to identify and assess the critical risk factors that are influencing time and cost of construction projects in Yemen. Through a comprehensive review for related literatures, 54 common risk factors are identified and categorized into ten groups. The study is further guided by interview sessions as well as a questionnaire survey to professionals and practitioners of construction projects in Yemen, in order to collect the required data. Analyzing the data is statistically accomplished using SPSS software. Results show a significant frequency of time and cost overruns of construction projects in Yemen. Delay in delivery of materials to site and Political instability are located at the top-ranked risk factors that cause projects delay. While, on the other side, the risk factors of Increase of Inflation rates and Fluctuations in the material's prices have the most significant impact on project's budget.

III. METHODOLOGY:

The present study focuses on consideration of risks in construction that causes delay the time and cost over-run. The estimation of the proposed construction has to be worked out. Work break down structure (WBS) has to be framed with consideration of various activities involved, durations of each activity, resources such as labours, equipment and wages. Scheduling techniques such as critical path method is to be processed using Microsoft office project and Microsoft Excel. The evaluation of risk analysis is performed by Delphi Method which establish the most risk occur at the improper time management that makes cost over-run the construction project. During this analysis we should know when the project duration increases or decreases that makes cost over-run of the project.

IV. CONCLUSION:

From the study it is concluded that the proper management must be given important consideration in risk factors that are time and cost overrun of the project.

If Proper Management is taken into account excess cost can be minimised in most cases. The study can be extended with risks in construction project that makes the optimum solution can be find in future.

REFERENCES:

1.Risk management in construction projects: a knowledge-based approach - Alfredo Federico Serpellaa* Ximena Ferradaa, Rodolfo Howarda, Larissa Rubioa (2014)

2.The risk assessment model of BT construction engineering project financing - Luo Fu-zhoua, Gao Hong-yuanb (2011)

3.Dilesh Pardhi AnandKumar Patil,; "Risk Management In BOT Projects",; Thesis (2008)

4.Dr. M. J. Kolhatkar, Er. Amit Bijon Dutta,; "Study of Risk in Construction Projects", ;GRA (2013)

5.Ekaterina Osipova,;"Risk management in construction projects: a comparative study of the different procurement options in Sweden",; Thesis (2008)

6.Kinnaresh Patel M.E. (C.E.M.)*,; A study on risk assessment and its management in India,; AJCE (2013)

7.Mehmood Alam, Dr. Nadeem Ehsan, Ebtisam Mirza, Azam Ishaque,;"Risk Management in construction industry",;(2010)

8.Prof. Shakil S. Malek, Nazneen I. Pathan, Haaris Mal,; "Risk Management in Construction Industry",; IJAR (2013)

9.Tsung-ChiehTsai, Min-LanYang,; "Risk assessment of Design-Bid-Build and Design-Build Building projects"; Journal of the Operations Research Society of Japan (2010)

ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

10.Zenghua Kuang,; "Risk Management in Construction Projects"; (2011)

11.Al-Ghassani, A., Kamara, J., Anumba, C., & Carrillo, P. (2006). Prototype system for knowledge problem definition. Journal of Construction Engineering and Management, 132(5), 516-524.

12.Anderson, S. (2009). Risk Identification and Assessment. PMI Virtual Library.

13.Anumba, J. C., Egbu, C. & Carrillo, P. (2005). Knowledge Management in Construction. First Edition, Blackwell Publishing Ltd.

14.Baloi, P. & Price, A. (2003). Modelling global risk factors affecting construction cost performance. International Journal of Project Management, 21(4), 261–269.

15.Bourdreau, A. & Couillard, G. (1999). System integration and knowledge management. Information System Management, 16(4), 1-9.

16.Brookes, N & Clark, R. (2009). Using Maturity Models to Improve Project Management Practice. POMS 20th Annual Conference. POMS, May 1-4, Orlando, Florida USA.

17.Bride, D., & Volm, J. (2009). Perceptions of Owners in German Construction Projects: Congruence with project risk theory. Construction Management and Economics, 27(11), 1059-1071.

18.Carrillo, P., & Chinowsky, P. (2006). Exploiting knowledge management: The engineering and construction perspective. Journal of Management in Engineering, 22(1), 2-10.

19.Carrillo, P., Robinson, H., Al-Ghassani, A. & Anumba, C. (2004). Knowledge Management in UK Construction: Strategies, Resources and Barriers. Project Management Journal, 35(1), 46-56.

20.Davenport, T., & Prusak, L. (2001). Conocimiento en acción: Cómo las organizaciones manejan lo que saben (Knowledge in action: how organizations manage what they know). Prentice Hall, Buenos Aires.

21.Del Caño A., & De la Cruz, M. P. (2002). Integrated methodology for project risk management. Journal of Construction Engineering and Management ASCE 128(6):473-485.

22.Demir, C and I. Kocabas, (2010). Project Management Maturity Model (PMMM) in educational organizations in Procedia - Social and Behavioral Sciences. Vol. 9, pp. 1641-1645.

23.El-Sayegh, S. (2008). Risk Management and Allocation in the UAE Construction Industry. International. Journal of Project Management, 26(4), 431-438.

24.Egbu, C., Hayles, C, Anumba, A., Ruikar, K., & Quintas, P. (2004). Getting Started in Knowledge management: Concise Guidance for Construction Consultants and Contractors. Partners in Innovation Project (CI 39/3/709), UK.