

OVERVIEW OF CONSTRUCTION MANAGEMENT TECHNIQUES AND ECONOMICS-A REVIEW

Renuka Mandlik

M.Tech Scholar, Department of Construction Management, Swami Vivekanand Subharti University, Meerut, U.P., India

Rutuja Rajput

M.Tech Scholar, Department of Construction Management, Swami Vivekanand Subharti University, Meerut, U.P., India

ABSTRACT:

Observations of many times, for expanding a knowledge of research for any particular topic or while gathering information of particular research many people searches paper and many books that task has been simplified in this paper by reviewing all the latest summary of construction management techniques, which will allow researchers of all ongoing research in construction management techniques and concerned areas and very importantly economics related to it. In this last decade the overhead expenses while running the construction is one of the major issue. The labor are very expensive almost 30-40% of the total cost is been consumed by the labor. It gives simple indication of only 60-70% cost is of material cost. Another issue that must be addressed here is the labor cost remains constant irrespective of the type of material used.

KEYWORDS: Factors of cost overrun, Construction projects, Relative important index, Construction, ProKnow-C etc.

INTRODUCTION:

The major challenge in the construction area is risk management has become very challenging activity. Based on a global survey, only 13% of the members are involved in this study. This situation is also well noted in the construction areas. Any new launched project is to be considered a bet on a future as any construction site takes 3-4 years for completion. And for young entrepreneurs the risk period is too high for such huge investment as future of the project is very uncertain. While discussing various aspects of the cost overrun is defined of actual cost over budget. Cost overrun is major deciding factor while discussing construction management area it is been observed that some researchers also rename cost overrun as "cost increase or cost escalation or may be also "budget overrun". The major areas where cost overruns or the budget overrun is associated with roads, bridges and building as mentioned in many cited papers. The major deciding factors are availability of competent staff, unavailability

or late delivery of material, civil construction equipment unavailability, escalation or fluctuation of material prices, quality of raw material, delay in progress payment, cast flow of project, cost of rework, and differentiation of current prices.

LITERATURE REVIEW:

Rogério Cabral de Azevedo, Leonardo Ensslin, Antônio Edésio Jungles:

While keeping in mind interest of identifying and while analyzing different available valuation models and risk management applicable to the construction industry. Utilization of process constructivist (pro-know-C) total article listed in this area is around 13000 by various researchers and academicians. Summary of methodological framework is also mentioned here.

View of knowledge	Constructivist
Nature of articles	Practical: case studies and experiments
Logical research	Deductive
Nature of the research object	Descriptive research
Research process	Collecting data from secondary sources Qualitative and quantitative approach
Research results	Applied research
Intervention instrument	ProKnow-C
Technical procedures	Bibliographic research Action research

Table no. 1 Summary of the methodological framework.

In this paper various research lenses are used based on following criteria

1. Risk management
2. Performance measurement criteria
3. Research vision.

Finally author has concluded that the importance of academicians are based on the building knowledge in the researcher, author has concluded that the academicians produces the good concept of new innovations as compared to industry persons.

Conceptual theoretical framework presented in this paper is based on the Pro-Know-C. The advantage of this paper, it ensures the creation comprehensive, representative, and relevant papers on risk management models developed for construction. The procedures mentioned highlights the current level of academic knowledge, which was used for support and identification of journals and authors where they want to their publication and by applying pro-know-c we get statistical analysis of authors, journals and relevant topics.

Dhanashree S Tejale, Dr. S D Khandekar:

In today scenario cost overruns have been a major issue in many Indian construction projects. In day by day competition the successful execution of construction projects and keeping them within prescribed schedule and cost is very important for effective cost performance. In practical world most of the construction projects suffer from cost overruns due to a multiplicity of factors. That why we have to present some method to overcome that particular program & because of that the present work is carried out on studying significant factors causing cost overruns in construction projects. For this project have to contribute the different authority that why A questionnaire for the survey has been prepared by Authors based on 45 common factors for cost overruns identified from literature review and discussion with experts. In this survey must have to involve the different faculty for different point of view. These factors are related with owner, contractor, consultant, management, and material, equipment labor and external. The cost overrun method present in this study offer the statistical method which is very useful in the different construction sector for calculating the different type of impact of project cost overrun.

Table no. 2. Factors of cost overrun

Sr. No	Factors of cost overrun	Overall (RII and Rank)	
1	Material shortage	0.678	1
2	Skilled labor shortage	0.631	2
3	Late delivery of materials and equipment	0.595	3
4	Unavailability of competent staff	0.566	4
5	Low productivity level of labors	0.541	5
6	Quality of equipment and raw material	0.541	5
7	Delay in progress payment	0.538	6
8	Financial difficulties by contractor	0.533	7

9	Poor site management	0.526	8
10	Escalation and fluctuation of material prices	0.523	9
11	Poor communication and coordination by owner and other parties	0.520	10

The finding of the paper will help the project manager to act on critical causes and further try to reduce cost overrun of project. The present study identified and analyzed causes of cost overrun in construction industry in Pune region. It was observed the factors for cost overrun are the Material shortage, Shortage of labor, Late delivery of materials and equipment, Unavailability of competent staff , Low productivity level of labors, Quality of equipment and raw material. For effective and efficient cost control of construction projects the Authors recommends that material management, resource planning and management, and proper financial management may be adopted. An attempt is made to capture the variables that best explain the occurrence and non-occurrence of cost overrun in construction projects. Statistical method could assist the decision makers in identifying factor causing cost overrun for better project development to avoid the delays and complete the project on planed schedule time.

Elisa Atália Daniel Muianga, Arioaldo Denis Granja, and Joyce Andrade Ruiz:

In today world cost and time overruns are typical problems in many construction projects. In Mozambique, the underlying causes related to this issue are not well understood. So basic study is required to carry out for this problem .This study is a first attempt to determine the influence factors of cost and time overruns in this context. This ongoing research aims to categorize the influence factors that contribute to the occurrence of cost and time overruns, and to establish their criticality in Mozambican construction projects. A survey has been designed to collect preliminary data from construction managers in Mozambique, seeking to find out the critical influence factors related to cost and time overruns. Results will provide perceptions and guidance into the managerial needs of practitioners to overcome typical cost and time overruns in Mozambicans construction projects.



Fig. No.1. Grouping category of construction

According to the evidences, avoiding cost and time overruns still poses a huge challenge in Construction projects worldwide. This research contributes to better organize evidences of Primary research by means of a SLR effort, identifying and categorizing factors that trigger cost and time overruns. Furthermore, this framework further helps to identify the most relevant factors accountable in different situations. This initial data collection effort was mainly intended for validating the data collection Instrument. For the sequence of this research, a larger sample will be devised for finding's generalization purposes.

CONCLUSION:

In this paper various methods related to construction risk management and overall economic is been discussed in the view of the construction management from young entrepreneurs. This review paper also helped in finding the RII and ranks associated with risk factors is been discussed. Material shortage and skilled labor is the major issues to be addressed while discussing the ranks in construction risk management.

REFERENCES:

i. Rogério cabral de azevedo, leonardo ensslin, antônio edésio jungles, "A Review of Risk Management in Construction: Opportunities for Improvement", *Modern Economy*, 2014, 5, 367-383.

ii. Xu, Y., et al. (2010) Developing a Risk Assessment Model for PPP Projects in China—A Fuzzy Synthetic Evaluation Approach. *Automation in Construction*,

19, 929-943.
<http://dx.doi.org/10.1016/j.autcon.2010.06.006>

iii. Dey, P.K. (2010) Managing Project Risk Using Combined Analytic Hierarchy Process and Risk Map. *Applied Soft Computing Journal (Compendex)*, 10, 990-1000.

iv. Xiang, Y., Liu, C., Zhang, K. and Wu, Q.Q. (2010) Risk Analysis and Management of Submerged Floating Tunnel and Its Application. *Procedia Engineering*, 4, 107-116.
<http://dx.doi.org/10.1016/j.proeng.2010.08.013>

v. Tang, L.C.M., Leung, A.Y.T. and Wong, C.W.Y. (2010) Entropic Risk Analysis by a High Level Decision Support System for Construction SMEs. *Journal of Computing in Civil Engineering (Compendex)*, 24, 81-94.

vi. Tah, J.H.M. and Carr, V. (2001) Towards a Framework for Project Risk Knowledge Management in the Construction Supply Chain. *Advances in Engineering Software (Compendex)*, 32, 835-846.

vii. Choi, H.H. and Mahadevan, S. (2008) Construction Project Risk Assessment Using Existing Database and Project-Specific Information. *Journal of Construction Engineering and Management (Compendex)*, 134, 894-903.

viii. Dikmen, I., Birgonul, M.T. and Han, S. (2007) Using Fuzzy Risk Assessment to Rate Cost Overrun Risk in International construction projects. *International Journal of Project Management (Compendex)*, 25, 494-505.

ix. Abdelgawad, M. and Fayek, A.R. (2011) Fuzzy reliability analyzer: Quantitative assessment of risk events in the construction Industry Using Fuzzy Fault-Tree Analysis. *Journal of Construction Engineering and Management (Compendex)*, 137, 294-302.

x. S. Mahmood, N.I. Kureshi, "A literature review of the quantification of hidden cost of poor quality in the historical perspective", *Journal of Quality and Technology Management. Volume XI, Issue I, June 2015, Page 01-24.*

xi. Olawale, Y. A.; Sun, M., 2010. Cost and time control of construction projects: Inhibiting factors and mitigating measures in practice. *Construction Management and Economics*, v. 28, n. 5, p. 509–526.

xii. Orangi, A.; Palaneeswaran, E.; Wilson, J., 2011. Exploring Delays in Victoria-Based Australian Pipeline Projects. *Procedia Engineering*, v. 14, p. 874–881.

xiii. Potty, N. S.; Irdus, A. B.; Ramanathan, C., 2011. Case study and survey on time and cost overrun of

- multiple D&B projects. *National Postgraduate Conference (NPC)*, 2011. Proceedings. p.1-6.
- xiv. Pourrostam, T.; Ismail, A., 2012. Causes and Effects of Delay in Iranian Construction Projects. *International Journal of Engineering and Technology*, v. 4, n. 5.
- xv. Rahman, I. A.; Memon, A. H.; Karim, A. T. A., 2013a. Significant factors causing cost overruns in large construction projects in Malaysia. *Journal of Applied Sciences*, v. 13, n. 2, p. 286-293.

IJRPET