The Asian Review of Civil Engineering
ISSN: 2249-6203 (P) Vol.6 No.2, 2017, pp.40-42

DOI: https://doi.org/10.51983/tarce-2017.6.2.2236

Effects of Risk Management on Project Performance

S. Senthamil Prabu[1] and C. Krishna[2]
[1]PG Student, [2]Assistant Professor,
Department of Civil Engineering, RVS Faculty of Engineering, Coimbatore, Tamil Nadu, India
E-Mail:Sntml123@gmail.com

Abstract **- Risks are very common in construction sector. Risk is the Possibility of suffering loss and the impact on the involved parties. All projects are inherently risky because they are unique, constrained, complex, based on assumptions, and performed by people. As a result, project risk management methods must be built into the management of projects and should be used throughout the project lifecycle. Many construction projects fail because organizations assume that all the projects would succeed and they therefore do not identify, analyze, and provide mitigation or contingencies for the risk elements involved in the project. Society desires that all projects should be performing and has become less tolerant of failure. Pressure is exerted on project managers to minimize the chance of project failure. This increasing pressure for performance which suggests that it is prudent for anyone involved in a project to be concerned about the associated risks and how they can be effectively managed. Traditionally, performance of a project is analyzed on the criteria of quality, budget and time of completion.**
Keywords: **Risk Management, Project Performance**

I. INTRODUCTION

The purpose of this project is to evaluate the effects of risk management methods and how are they being applied in multi storey buildings project towards the performance of a construction project and how the project manager is managing risks by using the appropriate methods in everyday operations. The theory of the risk management process will be compared to the actual methods in practice in order to investigate similarities and differences. In other words, the main idea is to see if the project is working with risk management approach as it is described in the literature regarding the methods and techniques. In order to examine how risks management problem lead to negative effect to construction project, all analysis are made based on a theoretical background regarding risk, risk management methods and project life cycle approach in multi storeyed buildings project. Based on conducted interviews, this report presents how risks change during a project life cycle and the effect of risk methods on the performance of the project.

II. OBJECTIVES OF THE STUDY

1. To study the effects of risk avoidance or prevention on the performance of construction project in the industry.
2. To assess the influence of risk control (loss control) on the project performance in construction industry.
3. To evaluate the effects of risk retention on the project performance.
4. To analyse the influence of risk transfer on the project performance in construction industry.

III. METHODOLOGY

The discussed methodology describes the discussed methods and techniques employed in the study. It includes discussed design, area of study and population or sample size. It includes sampling procedure, data collection methods, secondary data sources, validity and reliability of instruments, and data analysis as well as ethical considerations.

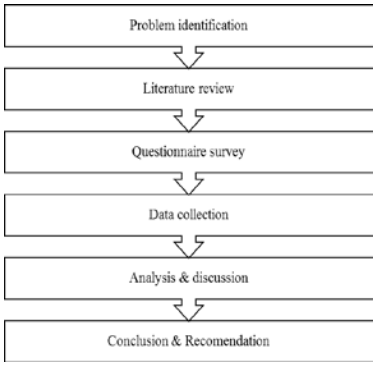

Fig. 1 Methodology

Questionnaires was elaborated and distributed to the target groups in order to obtain primary and reliable data from the respondents. Questionnaires are used to investigate attitudes, beliefs, feelings, opinions, knowledge and some aspects of behaviour. Using questionnaires to collect data is a relatively quick way of gathering such information with relatively good response rates. It consists of open-ended and closed questions. The open-ended questions are advantageous because they give the respondents the opportunity to answer adequately applying the detail they like to qualify and clarify issues as well as giving them an opportunity for self-expression. Objective responses have been obtained through closed questions while subjective responses were obtained through open-ended questions.

IV. RESULTS AND DISCUSSIONS

Totally for 40 companies the questionnaire were given, out of which 30 had an effective reply and five were rejected

due to improper answering. Thus the response rate is 60% which is considered as good response in this type of survey. All the questionnaire survey was done from project manager of a project or project engineer at the site. In some cases, consultant gave the answer on behalf of the clients, both from the owner and the contractor side. Even telephonic and email reply was accepted since it was difficult to get the direct one to one meeting with the project manager. The top 25 Sub Risk factors found in the survey are listed below.

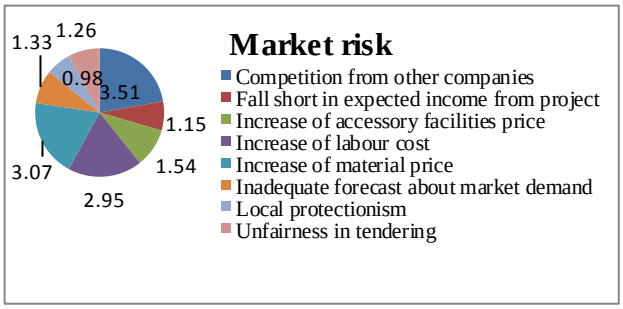

Fig. 2 Pie chart for market risk

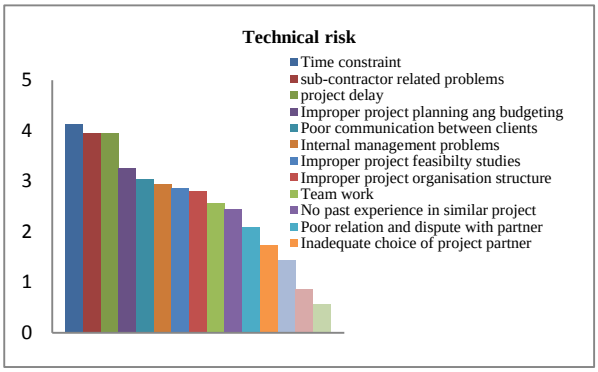

Fig. 3 Bar chart for technical risk

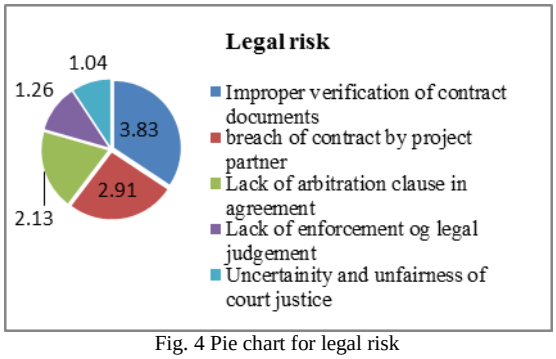

Fig. 4 Pie chart for legal risk

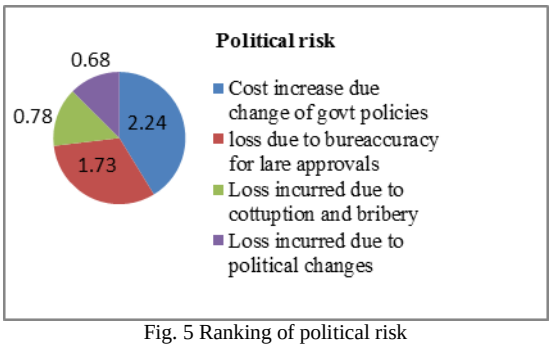

Fig. 5 Ranking of political risk

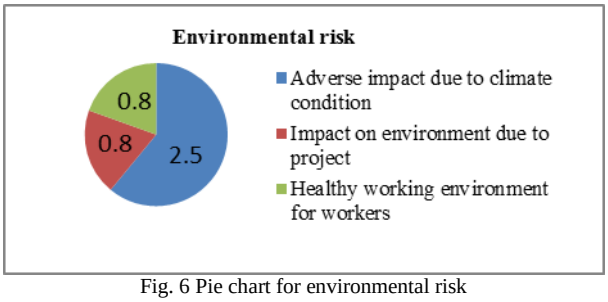

Fig. 6 Pie chart for environmental risk

TABLE I OVERALL RANKING OF SUB RISKS AND THEIR SD

S. No.	SUB RISK	MEAN	SD
1	Shortage of skill full Workers	4.58	3.61
2	Time Constraint	4.12	4.58
3	Sub contract related problems	3.94	5.72
4	Project Delay	3.94	6.39
5	Improper verification of contract documents	3.83	3.6
6	Competition from other companies	3.51	6.31
7	Improper project planning and budgeting	3.25	2.92
8	Increase of material price	3.07	4.73
9	Loss due to fluctuation of inflation rate	3.05	3.45
10	Poor communication between clients	3.03	4.47
11	Loss due to fluctuation of increase rate	2.99	6.17
12	Increase of labour cost	2.95	6.88
13	Material Shortage	2.94	4.82
14	Internal Management Problems	2.93	4.19
15	Breach of contract by project partners	2.91	1.99
16	Improper project feasibility study	2.86	5.07
17	Unknown site condition	2.83	2.32
18	Improper project organisation structure	2.79	3.99
19	Loss due to increase in fuel price	2.75	5.5
20	Design Changes	2.74	3.76
21	Site distance from urban areas	2.6	6.27
22	Team Work	2.56	3.52
23	Errors in design drawings	2.53	4.78
24	Any adverse impact on project due to climate conditions	2.5	4.24
25	No past experience in similar projects	2.45	2.97

A. Impact of risk retention on project performance

Going to risk transfer we noticed that risk retention method is the one that shifts the risk from the project to another party. The purchase of insurance on certain items is a risk transfer method. The risk is transferred from the project to the insurance company. Multi-storey project in RSSB has purchased storm and other natural hazards insurance that would cover the cost of a hurricane damaging the construction sites. The purchase of insurance was usually in areas outside the control of the project team. Weather, political unrest, and labor strikes are examples of events that can significantly impact the project and that are outside the control of the project team. To this point, respondents were asked how they found the usage of this approach directed the performance of the project. Their views and findings to the approach were positive.

V. CONCLUSION

According to project actors, risk management methods are strongly linked to the performance of the project in terms of quality, time and budget or cost. Most of risk management methods should be performed in the different phases and contractors tend to be the most active group with a large influence on the risk management process. Hence providing a basis for the management decision in the application of resources enables the management to take objective decision on the reduction of risk to an agreed level.

As far as India is concerned risk management is still a new word in the construction sector and this should be changed as soon as possible. Currently the Government of India has proposed a risk rating system will help the developers to develop a projects at a faster pace by taking quick decisions. Each rating agency will have its own methodology to rate projects. This system will help government to develop a strategy to mitigating risk. This will encourage more response from developers and investors for public-private partnerships projects. It could make the bidding projects more competitive. The system will enable bankers to take quick decisions for lending finances, which could lead to the financial closure of the project at a faster pace. Third party risk rating would certainly raise critical points, which are not normally raised during finalisation of project.

This study has created a list of risk and its impact on the construction industry using survey. This study should assist management in identifying activities where there is risk of injury or loss. Hence pride a basis for the management decision in the application of resources. This enables the management to take objective decision on the reduction of risk to an agreed level.

VI. RECOMMENDATION

Few suggestions to the companies:

1. Risk management should be considered a primary tool to assess the project. From the survey we can understand that risk management is not followed in most of the companies as such but if followed it is not done systematically. Immediate migration measures are not in place if a risk event happens.
2. During the planning stage itself a fully fledged risk assessment about the project should be made as effective measure to curb risks.
3. Financial part of the risk is a global phenomena and this risk should be handled carefully using financial consultants since this cannot be handled by engineers alone.
4. There is not a single company with a separate person in the manager level who handles the risk management within the company and takes decision on his own. Thus a risk management body within the company should formed and at least monthly once evaluation should be done.
5. Most of the company's management follow the top to down approach which is a traditional approach but down to top approach should be followed so that employees' voices are heard.
6. It is better to involve a risk consultant in a project who can both owner and the contractor in a better way.

Therefore, the one must come to the construction industry to market the concepts of risk assessment so that all owners recognize that the analysis of schedule risk in not just a cost but rather an investment, in terms of actual money saved, when resources are used more efficiently and delay the consequence can be avoided.

REFERENCES

[1] R.H. Abdel-Razek, "How Construction Managers would like their Performance to be evaluated", *Journal of Construction Engineering and Management, ASCE*, Vol. 123,No. 3, pp. 208-213, 1997.

[2] A.B. Abdulaziz, Member and H. A. Tawfiq, "ISO 9000 Quality standards in construction", *Journal of management in engineering*, 1999.

[3] Alberto and Timur, "Earned value – based performance monitoring of facility construction projects", *Journal of facilities Management*, Vol.11, No.1, pp. 69-80, 2013.

[4] S.N. Ali Kamuruzzaman, "Cost performance for building construction projects in Klang Valley", Faculty of Built environment, University of Malaya.asafab@um.edu.my, 2010.

[5] AmaniSuliman Bu-Q, "Risk assessment of International construction Projects using the analytic Network Process", School of natural and applied sciences. East Technical University, 2007.

[6] R.Atkinson, "Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria", *International Journal of Project Management*, Vol.17, No.6, pp. 337-342, 1999.

[7] U.S. Bititci, "Measuring your way to profit", *Management Accounting*, Vol. 32, Vol. 6, pp.16-24, 2008.

[8] G. Brenda, "The target population", *Sage discussed methods*, 1994.

[9] K.S.Cameron and D.A. Whetten, "Organisational Effectiveness: A Comparison of Multiple Models", 1983.

[10] A. P.C. Chan, D. Scott, and E.W.M. Lam, "Framework of Success Criteria for Design/Build Projects", *Journal of Management in Engineering, ASCE*, Vol.18,No.3, pp.120-128, 2002.

[11] D. Cleden, "Managing project uncertainty", Abingdon Ashgate Publishing Group, 2009.