

# An Investigation of Risk Factors Affecting Building Construction Projects

Kirubha Sankar R<sup>[1]</sup>

Department of Civil Engineering  
PSR Engineering College, Sivakasi.  
Tamil Nadu, India

Manikandan S<sup>[1]</sup>

Department of Civil Engineering  
PSR Engineering College, Sivakasi.  
Tamil Nadu, India

T.Vairamuni<sup>[2]</sup>

Assistant Professor  
Department of Civil Engineering  
PSR Engineering College, Sivakasi  
Tamil Nadu, India

*Abstract— Construction industry in India is rapidly increasing day by day with lots of innovative techniques being added for the rapid construction of the projects. But at the same time construction industry is highly risk prone, with complex and dynamic project environments creating an atmosphere of high uncertainty and risk. Management of risk is an important step in project success. It is the process of identifying, classifying, analyzing and assessing of risks in a project. Risk management is an activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources various technical, socio-political and business risks affect the industry at various stages. As a result, the people working in the industry bear various failures, such as, failure of abiding by quality and operational requirements, cost overruns and uncertain delays in project completion. The aim of our work is to identify and evaluate current risks and uncertainties in the building construction industry through literature survey and finding the possible measures to the building construction in order to avoid the identified factors in the future projects.*

**Keywords:- Risk Management, Construction industry, Risk assessment**

## I. INTRODUCTION

Numbers of various projects at various scales are being implemented in India with involvement of various experts team for proper execution so that the progress of work at various stages should be executed as per the planned line of action so as to avoid the risk and the uncertainty in the working phase of the projects. All the above can be done only if the project management team along with other works together on a common platform, and hence project management is said to be the science which applies skills, tools and techniques to fulfill the project activities in a way that the expectations and

requirements can be fulfilled without any risk and uncertainty.

Risk management is an integral part of the various process and stages for identifying the different risk associated with a project. In its broader manner it can be said to look for more positive events in the project thus by reducing or minimizing the impact of negative or unwanted events so as to reduce the probable risk. No project or industry is risk free, all of them bears risk at various stages at different amount and varies from one activity to other.

Every construction project involve various risk factors which have various impacts on projects right from the start of the project till its completion. Construction Industry in India is one of the most important sector involving with various stages involved right from the starting phase till the completion phase and even after successful completion of the project.

## II. OBJECTIVE

The main objective of this project is to identify the key risk factor which affects the building construction projects.

## III. LITERATURE REVIEW

To determine the risk factors, a number of studies has been carried out which are as follows:-

A Study of Risk Factors Affecting Building Construction Projects. P.Patel krishan (Vol.3 Issue 12, Dec 2014)

Critical Factors Influencing to Management Risk in Construction Projects V.Sathishkumar, P.N.Raghnath. (Vol.4 Issue 1, Jan 2015)

Risk Assessment Methods and Application in the Construction Projects. Dr.R.K.Kansal, K. Manoj Sharma(Vol.2 Issue 3, June 2012)

Management of Risk in Construction Projects in Maharashtra. M.G.Bhandari, Dr. P.G.Gayakwad (Vol.3 Issue 1, Jan 2014)

An Investigation into Risk Factors and Preventive Measures in Building Construction Projects in Abuja FCT, Nigeria. Ibrahim, Abdul (Vol.4 Issue 7, July 2014)

Risk Management in Construction Projects, Seyed Hossein Abedian Kalkhoran. (Vol.10 Issue 3, April 2014)

An Assessment of Risk Identification in Large Construction Projects in Iran, Mehdi Tadayon, Mastura Jaafar. (Vol.1 Issue 5, 2012)

Identification and Evaluation of Risk Factors Affecting the Supply Chain Environment of Construction Industry, S.B. Khattak, M. Abas. (Vol.20 Issue 2, 2015)

#### IV. RISK MANAGEMENT PROCESS

Risk management process consists of following steps:



Fig 1:- Risk Management Process.

**Risk Identification:**

Risk identification is the first step of risk management process, in which potential risks associated with a construction projects are, identified. Determination of most likely risks affecting the project and documentation of characteristics of each risk is the main task in risk identification. As per my knowledge risk identification is nothing but to accept the risk which would occur at any phase of the project. It helps to understand the risk, its consequences and probability of occurrence. The project team or the risk manager will react to the risk in case of occurrence.

**Risk analysis:**

Assessment of risks and the possible interactions of risks with project activities to evaluate the possible outcomes of the project. Actually risk can be avoided by not doing part of the project which contains risk or otherwise changing the strategy so as to minimize the risk which would likely to come into the project phase.

**Risk response:**

It can be defined as response steps for opportunities and threats associated with risks. Risk can be monitored by employing a predictive indicator to watch the project as it approaches a risky point. The risk strategy is to monitor the risk by being part of the test team.

**Risk response control:**

Response to the changes implemented to remove risks throughout the project duration by transferring the risk by means of insurance.

#### V.IMPORTANCE OF RISK MANAGEMENT

Any Construction project related risk management delivers the following importance:

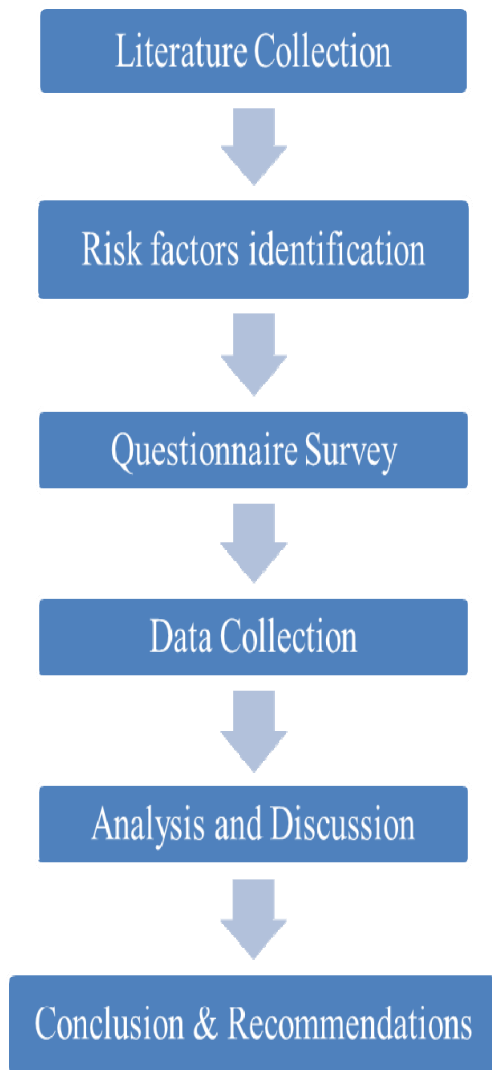
- Helps and Contributes to project success
- Recognizes uncertainty in the project stages and provides forecasts of possible outcomes
- Produces better business outcomes through more informed decision making Positive influence on creative thinking and innovating project future
- Offers better control on less overhead and less time wasted, greater focus on benefits.

#### VI.ADVANTAGES OF RISK MANAGEMENT

Following are advantages of risk management:

- To achieve the desired objectives
- Reduction of capital cost of the project by minimizing risk in time
- Less uncertainty.

#### VII.WORK METHODOLOGY



VIII.RISK RESPONSE

In this study Questionnaire survey was developed based on 10 factors in building construction. For each factor the respondent’s scale of importance rate using five point scale of 1 to 5 is adopted. It is rated as follows 5=very high; 4=high; 3=medium; 2=low; and 1=very low. From questionnaire survey, a field study was carried out to get feedback from experts in construction industry on the factors identified from literature reviews

S.NO	PARAMETERS	MEAN
1.	Unmanaged cash flow	4.25
2.	Difficulty to get permit	3.58
3.	Poor relation and dispute with partner	3.20
4.	Defective design	3.18
5.	Unavailability of Resources	3.43
6.	Inaccurate Quantities	3.47

7.	Fluctuation in Prices	3.33
8.	Supply of Defective materials	3.66
9.	Improper Security	3.56
10.	Poor Safety Procedures	3.39
11.	Improper Site Investigation	3.79
12.	Lack of Leadership& Technical Staff	3.35
13.	Improper Communication	3.43
14.	Sudden Strikes	3.35
15.	Adverse Weather Conditions	3.14
16.	Disaster Factors	3.33
17.	Higher Staff Turnover	3.25

IX.CONCLUSION

The success of every project depends on how efficiently and effectively them. Risk management will not remove all risks from the projects. Its main objective is to ensure that risks are managed most effectively. The evaluation of critical factor by analyzing and finding the possible measures to the building construction in order to avoid the identified factors in the future projects. The control of risk and risk management is most useful method in construction industry. This kind of study will help the construction industry to work on certain important and most critical factors so that risk can be properly managed.

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