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TO STUDY THE FACTORS AFFECTING CONTRACTORS PERSPECTIVE IN RISK MANAGEMENT

Mohak Patel[1], Dr. Jayeshkumar Pitroda[2], Prof. J.J.Bhavshar[3]
Student of Final Year, M.E, B.V.M. Engineering College, V. V. Nagar, Gujarat, India[1]
Assistant Prof., Civil Engg. Dept., B.V.M. Engineering College, V. V. Nagar, Gujarat, India[2]
Associate Prof., Civil Engg. Dept., B.V.M. Engg. College, New V. V. Nagar, Gujarat, India[3]

Abstract: ***The construction industry is often considered as a risky business due to its complexity, strategic nature, and the nature of its business activities, processes, environment, and organization. As the most common and typical project types, construction projects have several characteristics such as time limit, specific objects, financial constraints and economic requirements, special organizational and legal conditions, complexity and systematic characteristics. For that each construction project itself is a complex system. Risk in construction has been the object of attention because of time and cost overruns associated with construction projects. The various risk factors will cause different severity of the consequences. The study aims also to investigate the effectiveness of risk preventive and reductive methods. Moreover, the usage of risk analysis techniques is addressed. This thesis deals with identification of risk factors and compares the attitudes and perceptions of Indian construction practitioners i.e., contractors, project managers and Engineers on the importance of various construction risks. A framework has been developed, which may be useful for the future research in this area. This framework contains factors affecting risk management of construction firms: (A) Site related risk, (B) Technical Risk, (C) Customer related risk, (D) Management Related Risk, (E) Financial Risk, (F) Unavoidable Risks, (G) Contractor related risk, (H) Socio-Political Risks. Often, construction projects fail to achieve their time, budget, and quality goals. This is frequently due to the failure of the contractor to analyse and assess unanticipated risks. The analytic hierarchy process (AHP) is a new approach that can be used to analyse and assess project risks during the bidding stage of a construction project and to overcome the limitations of the traditional approaches currently used by contractors. The AHP presents a flexible, easily understood way to assist the decision-maker in formulating his problem in a logical and rational manner. Analytical Hierarchy Process (AHP) method can help in analysis of factors, which are able to cause more severe damage relative to others, so damages can be mitigated or avoided before occurrences. The reason to choose AHP method is that it facilitates multi-criteria decision-making process and factors influencing risk management are more.***

Key Words: ***Identification risk, risk management factors, AHP method, reduces risk.***

INTRODUCTION

The construction industry is often considered as a risky business due to its complexity, strategic nature, and the nature of its business activities, processes, environment, and

organization. Risk in construction has been the object of attention because of time and cost overruns associated with construction projects. The construction industry is very poor in terms of coping with risks in projects, resulting in the affection of project objectives like time, cost, quality, and scope. The execution of risk management /analysis techniques is very less in the construction industries compare to other industries due to lack of knowledge.

LITERATURE REVIEW BASED ON RISK MANAGEMENT

This literature review deals with the survey work carried out by researchers in risk management for construction industry.

Mustafa et al. (1991) applied Analytic Hierarchy Process (AHP) method to analyse and assess project risks during the bidding stage of a construction project and to overcome the limitations of the traditional approaches used by contractors. [10]

Akintoye et al. (1996) perceived that construction risk influences project objectives of cost, time, and quality. [2]

Al-Harbi et al. (2001) suggested using the Analytical Hierarchy Process (AHP) as a potential decision making method in project management. [3]

Anagnostopoulos et al. (2006) proposes an Analytical Hierarchy Process (AHP) based model for contractor prequalification. [4]

Banaitienė et al. (2006) analysed the criteria for prequalification of contractor. Based on analysis they advised some suggestion which can contribute to successful completion of construction project. [5]

Abudayyeh et al. (2007) presented the application of three innovative contracting methods to prequalify the contractors to reduce the risk of the project: design-build, cost-plus-time, and warranty. [1]

Huang et al. (2011) analysed that construction contractors have big influences upon projects and their successes. [8]

Zaini et al. (2011) analysed contractors' strategic approaches to risk assessment techniques at project planning stage. [13]

Gohar et al. (2012) identified a quantitative method based on the fuzzy Analytic Hierarchy Process (AHP) approach to manage the risk of construction projects in the uncertain environment. [7]

Elsayah et al. (2013) recommended two multiple attribute decision-making methods Analytical Hierarchy Process (AHP) and Technique for the Order Preference by Similarity to the Ideal Solution (TOPSIS) for choosing the best contractor from among the available alternatives. [6]

Pawar et al. (2015) examined the major risks related to the infrastructure projects and how to manage them in construction projects. [11]

Li-Jeng et al. (2015) proposed a simple and convenient technique for risk assessment of construction project of new factory for high technology based on Analytical Hierarchy Process (AHP). [9]

Vichare et al. (2015) elaborated the Analytical Hierarchy Process (AHP) method by working out its applications. [12]

Following figure 1 and Table 1 shows development in the area of Risk management:

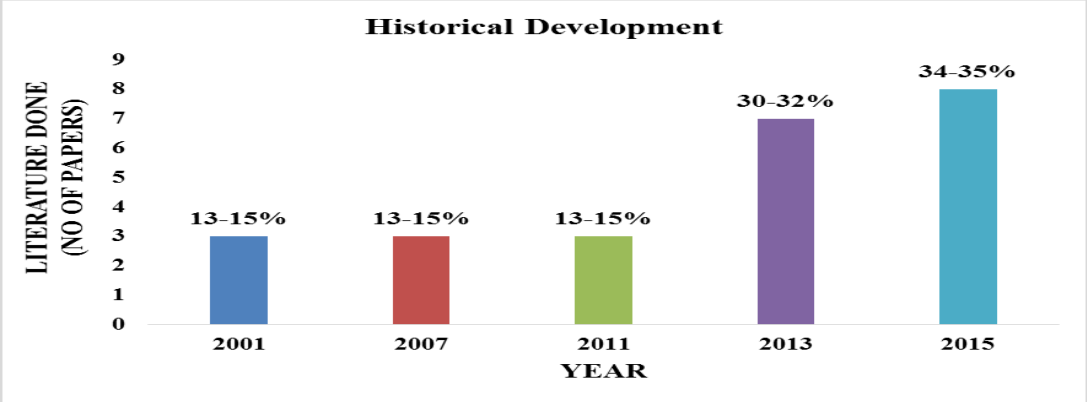

Figure 1: Historical Development Risk Management

Table 1: Development of methodology

Year	Historical Development
2001	Risk Assessment and analysis using AHP
2007	Contractors' prequalification using AHP
2011	Contractors' Strategic Approaches to Risk Assessment Techniques
2013	Integration of AHP and various method to increase accuracy of result
2015	Comparison of AHP and Fuzzy AHP

CONCLUSION

1. Analytical Hierarchy Process (AHP) can be used in the risk analysis and assessment stage of the project's risk management process and evaluating alternative responses to risk. [10,3,4,9]
2. Construction industry is aware of risks and their importance and they also believe that risk assessment could improve the performance of a construction project in terms of time, cost, and quality. [2,13]
3. In selection of contractor for construction project, prequalification can be proved important tool for appropriate selection of contractor. [1,5]
4. Fusion of two methods AHP and TOPSIS can be used to for selection of contractor as multi-criteria decision-making methodology. [6]
5. To reduce or manage risks throughout the projects life solutions are provided: establishing risk management policy and evaluating at proper interval, use contract document for management of risk, using a proactive approach for risk prevention at planning stage. [11,13]

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