

## **A CRITICAL LITERATURE REVIEW ON FACTORS AFFECTING PERFORMANCE OF CONTRACTORS IN BUILDING CONSTRUCTION**

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*Abstract: Construction industry has complexity in its nature because it contains large number of parties as clients, contractors, consultants, stakeholders, shareholders, regulators and others. Construction projects in the Anand suffer from some problems and complex issues in performance such as cost, time and safety. So that it is nesessaryto identify performace of contractor. However, past research has been done on performance of cotractors are mostly qualitative and there is a lack of quantitative research. Due to this lack of quantitative research, there is no good-developed framework for factors affecting performance of contractors in the construction industry. This paper deals with identification of factors affecting the performance contractors and developing a framework for assessing the factors affecting the performance of contractors. In the end, a framework has been developed which can be used for the future research in this area.*

**Key Words:** Building Contractor, Construction, Performance, Factors.

### **I. INTRODUCTION**

Contractor is nothing but the person or organization who contracts with another organization or individual (the owner) for the construction of a building, road or other facility. Construction industry plays a major role in development and achievement the goals of society. Construction industry has complexity in its nature because it contains large number of parties as clients, contractors, consultants, stakeholders, shareholders and regulators.<sup>[7]</sup>

The construction industry is one of the most unstable sectors within the economy of world. It faces fluctuating demand cycles, project-specific demands, uncertain conditions, and it combines with long list of factors.<sup>[12]</sup>

In construction industry contractor plays a very important role and success of project is mainly dependent on contractor. Performance of contractor is most important thing in construction field, as they are not mostly permanent like other industries. They may change from project to project, place to place, time to time and also with respect to the type of work. Therefore, factors influencing performance of contractors are very much critical for any construction firms.

## II. PREVIOUS RESEARCH REVIEW BASED ON IDENTIFYING FACTORS AFFECTING PERFORMANCE OF CONTRACTORS IN BUILDING CONSTRUCTION

**Stretton et al. (1984)** noted that the success of small indigenous contractors is dependent on the type of contract used lump sum contracts requiring contractors to have sufficient finances for purchasing materials and paying workers. <sup>[22]</sup>

**Mattila et al. (1994)** identified the connections between good construction site management practice and safety. They surveyed the top 100 large U.S.A. construction firms to study their attitude toward risk management. The survey results showed that contractors assigned safety risk the highest importance rating and recommended that construction contractors continuously measure and control their safety performance. <sup>[13]</sup>

**Jannadi et al. (1995)** found that an effective use of human relations would improve safety programs and make safe behaviour a habit for workers. It was also found that safety performance of each worker was very much related to his attitude towards his fellow employees, foreman, and employer. The study also showed that competition among workers, fatigue, and working under pressure had a tremendous impact on safety. <sup>[8]</sup>

**Koehn et al. (1995)** concluded in their research that in developing countries laws to protect labourers may not be strictly enforced. Also contractors and their employees tend to ignore basic safety rules and regulations. Typically labourers are not trained in safe work practices, and there tends to be a lack of management commitment to safety programs and various safety procedures. <sup>[10]</sup>

**Hatush et al. (1997)** concluded about the contractor's capability prediction. Finally, the model was tested using data from the UAE and is shown to be applicable to the construction industry in that country. <sup>[6]</sup>

**Smith et al. (1999)** argued that a common definition of performance contracting can be found, there are a considerable variety of uses and forms for contractual arrangements. In this paper performance contracting is used as a management tool to help public sector executives and policy makers to define responsibilities and expectations between the contracting parties to achieve common mutually agreed goals. <sup>[18]</sup>

**Bubshaitr and et al. (2000)** evaluated the quality systems of 15 construction contractors were. The quality system complexity varied from an informal inspection and test system to a registered ISO 9002 quality system. The most appealing reasons for registration were top managements interest in improving project quality and current or expected demand from customers. <sup>[1]</sup>

**Palaneeswaran et al. (2000)** focused on developing a model for contractor prequalification and bid evaluation in design/build projects. They presented a comparative overview of some international practices in the design/build contractor selection process. <sup>[17]</sup>

**Alarco'n et al. (2002)** proposed a contractor selection system that incorporates the contractor's performance prediction. In their research, a modeling framework developed in previous researches was used to develop a conceptual model of a project that depicts a causal structure of the variables, risks, and interactions that affect a contractor's performance for a specific project from the owner's point of view. <sup>[11]</sup>

**Shen et al. (2003)** investigated the contractor key competitiveness indicators. They used the AHP approach to determine the key competitiveness indicators of contractors in the Chinese Construction Market. They developed a contractor performance prediction Model for the United Kingdom construction contractors. The researchers used the Logistic Regression approach to predict contractor effectiveness in the U.K market. <sup>[20]</sup>

**Neely et al. (2005)** told that performance measurement is the process of quantifying the efficiency and effectiveness of actions. For a performance measurement system to be regarded as a useful management process, it should act as a mechanism that enables assessment to be made, provides useful information and detects problems, allowing judgment against certain predetermined criteria to be performed. More importantly, the system should be reviewed and updated as an ongoing process. <sup>[4]</sup>

**Waara et al. (2006)** investigated price and nonprice criteria for contractor selection. The purpose of their research was to describe and explain how public owners use multiple criteria for the award of construction contracts. They showed that it is likely that the non price criteria support the alignment of owner and contractor interests, and that bidder behavior should be affected by the likelihood of repeated contracts, and by the transparency of owners' evaluation procedures. <sup>[23]</sup>

**Singh et al. (2006)** studied the contractor selection criteria for the Singapore construction industry. They conducted a local study that aimed to develop a computer-interactive multi-criteria decision system for contractor selection involving identification of contractor selection criteria for inclusion in a contractor performance assessment system and also developed a fuzzy decision framework for contractor selection. <sup>[21]</sup>

**Kwame et al. (2012)** concluded that access to credit, a lack of capacity to compete with foreign contractors, low technology, poor project preparation and contracts awarded based on political considerations had the greatest effects on the performance of Ghanaian contractors. They recommended that the capacities of Ghanaian contractors be developed through the use of new technologies and by developing the capacities of project personnel to enhance their competitiveness whilst improving access to finance for Ghanaian contractors. <sup>[9]</sup>

## CONCLUSION:

The following 40 factors have been identified and classified in 9 different groups as follows:

1. For cost factors, eight factors were identified from the previous work as: cash flow of project, profit rate of project, material and equipment cost, project labour cost, cost of rework, cost of variation orders, waste rate of materials, material price. <sup>[7,10,11,19]</sup>
2. For time, five factors were identified from the previous work as: planned time for project construction, time needed to implement variation orders, delay in payment from owner to contractor, availability of resources as planned through project duration, delay because of closures and materials shortage. <sup>[19]</sup>
3. For quality, three factors were identified from the previous work as: persons with high experience & qualification, quality of equipments and raw material in project, quality training/meeting. <sup>[7,15]</sup>
4. For productivity, five factors were identified from the previous work as: project complexity, no. of new projects per year, management-labour relationship, health and safety standards, assurance rate of project. <sup>[19,15,10,11]</sup>
5. For client satisfaction, four factors were identified from the previous work as: information coordination between owner and project parties, leadership skill for project manager, speed and reliability of service to owner, number of reworks. <sup>[19,10,11]</sup>

6. For people, three factors were identified from the previous work as: employee's attitude in project, recruitment of employees, employee motivation. <sup>[19,20,21]</sup>
7. For health and safety, two factors were identified as: Application of health and safety factors, accident rate in project. <sup>[19]</sup>
8. For innovation and learning, five factors were identified from the previous work as: Learning from own experience and past history, Learning from best practice and experience of others, Training the human resources, Work group, Review of failures and solve them. <sup>[19,10,11]</sup>
9. Other external factors were introduced by authors as: Air quality, Noise level, Climate condition, Waste around the site, Easiness to reach the site.

After identifying these factors, an integrated framework for assessing the factors affecting performance of contractors is developed, which contains main 9 groups containing different 40 factors. This framework, shown in figure 1 (See Annexure), shall be used for future research work.

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