

# Quality Management in Construction Projects

Syed Shiraz Anas Quadri<sup>1</sup>, Mohammed Shaz<sup>2</sup>, Mohammed Arshad Khan<sup>3</sup>

<sup>1</sup>Student, Dept of Civil Engineering, ISL Engineering College, Telangana, India

<sup>2</sup>Student, Dept of Civil Engineering, ISL Engineering College, Telangana, India

<sup>3</sup>Student, Dept of Civil Engineering, ISL Engineering College, Telangana, India

\*\*\*

**Abstract** - In the building and construction sector, the Performance Management System (PMS) refers to planning phase, product testing, and control and improvement of the quality. The primary goal of the building sector is that construction projects are completed successfully within the constraints of good standard, specified time frame, and cost involved. According to the QMS research, construction companies should create a flexible and conducive overall organizational environment that encourages the advancement of quality management in all facets of the business. In the latest research, a survey is conducted by interviewing people with involved parties. The project's people who participated have included the investor, a project financial analyst, a construction company, as well as various contractors and supply chain partners. Authors created questionnaires regarding quality facets in infrastructure projects for builders/contractors, advisors, and buyers of buildings. This article involves collection of data gathered during builder / contractor survey interview.

## 1. INTRODUCTION

Companies across the globe are trying to obtain globally recognized production standards in order to secure their place in the arising global markets, particularly that are from emerging countries. Regrettably, the construction sector has fallen short behind many other businesses in terms of establishing Total Quality Management (TQM), which offers expertise in customer experience through constant innovation to commodities, procedures, or offerings. The interpretation that TQM is just for the industrial and service sectors, instead of the construction projects, has always been the primary problem in the delay. The focus of this thesis is to investigate the successful implementation of building activities in Telangana State, India. Because of the advancement in building projects that is taking position in the broad sense and in Telangana State in particular, the real estate market is viewed as an important sector in current marketplace. A survey of general contractors was analyzed to investigate existing quality management practices and supervisors' perceptions of aspects necessary for the successful Quality management.

This study investigates preliminary quality management techniques, organizational constant improvement planning, and excellence in organizational development issues in infrastructure projects in the development of the Indian construction sector. The study used is a moderately

questionnaire method with project management practitioners. The report's study found that the condition of quality management in Building projects has to be enhanced, and that there are issues with quality management execution that deserve consideration and more investigation. The document gives information on the current condition of quality.

## 2. LITERATURE REVIEW

**Raji Al-Ani et al. (2011)** advocated for a Quality Management System (QMS) for Construction Site to enhance quality control and interaction among professionals at different Organizational levels. According to the analysis, there have been two key causes for worse efficiency of the construction sector: non-use of wood products and bad fabrication methods. He remarked that there is indeed a misinterpretation about Total quality management implementation.[1]

**H. James Harrington et al. (2012)** characterized the performance and efficiency issues, and the major focus of this research is that quality management is most needed to counter the losses in the construction project. According to the writer, there was not enough study on improved approaches to quality management.[2]

**According to Abukar Warsame et al. (2013)**, performance management is the process of providing the highest level of standard for a building project. The primary focus was on identifying variables impacting quality control for professionals in building projects. Techniques of procuring used is the construction of major transit projects.[3]

**Mohamad Kamal et al. (2013)** concentrated on the application of the quality management work flow in the ship construction field, and the qualitative methodology was chosen as the most relevant research method among those applicable for this study. The key goal was to be successful in the adoption of management system in the ships construction site.[4]

**According to Mr. Amit A. Mahadik et al. (2014)**, quality management is a managerial technique that focuses on key goals of the work which is to preserve and enhance performance standards and to satisfy customers. Through a questionnaire survey, this study explored the requirement and advantages of widespread adoption of quality assurance in the construction project.[5]

*Teena Joy et al. (2014)* emphasized how the construction sector plays the much more vital role both financially and culturally for obtaining excellence in building. Quality is essential for long-term success and client pleasure. Performance is measured as "meeting the customer prospect." The focus of this thesis is to provide customers, project teams, engineers, and construction firms with the knowledge they really ought to properly manage the efficiency of construction building projects by recognizing and ranking the factors that determine the quality of construction projects. The comparative index was used to identify factors, and solutions were made to improve their effectiveness for construction.[6]

*D. Ashok Kumar et al. (2014)* concentrated on the elements that influence project quality administration. They resolve the outcomes using quality control and assurance documents and discussions. Field personnel are well-versed in the aspects that have a significant impact on quality. This document assists in exposing the primary aspects that impact building quality and is also effective in decreasing waste production, skill waste, cost of time, and indirect waste.[7]

*Elvis Attakora-Amaniampong et al. (2014)* discovered a link connecting Total quality management (TQM) and the level of client satisfaction engagement in project management practices at each of Ghana's construction industry. The research included both hypothetical evaluations of 50 appellants depending on content analysis and an inquiry employing quizzes.[8]

*Moza T. Al Nahyan et al. (2014)* provided a clear example of a major capital construction on the topic of project management methods and their influence on parties involved. In the UAE, an examination of big highway building was conducted. Data was gathered through a variety of approaches, including standard of validity, interviews with key stakeholders, a field study, and a constructive debate. The outcome emphasizes the need of improving coordination, interaction, and judgement call abilities, as well as exchanging ideas with all participants.[9]

*Anup W.S. et al. (2015)* recognized the problems that arise with the implementation of Quality Management Systems. A prime example wherein the interview is completed which carried out utilizing the qualitative content analysis. They have used content analysis approach to accurately record all of the sources, procedures, and outputs.[10]

*P.P. Mane et al. (2015)* discussed the importance of quality control in a building project. The author stated that a Quality Management System (QMS) may be used regardless of the size of the business or the size of the project. The significance of a five-point scales is discussed in detail regarding grading qualities. Following that, in the following stage, discussions with persons working on the project were conducted.[11]

### 3. AIM & OBJECTIVES

The primary objective of Quality Management is to ensure the measures are being taken to achieve the high-quality standards for very well organized and structured product lines.

#### The quality in construction relates to the following objectives

1. Service agreement Standardization Contentment
2. Construction duration moment.
3. Improving Client Gratification
4. Work Attitudes and Enfranchisement
5. Preventing Issues and Conflicts
6. Purpose-driven results.

### 4. METHODOLOGY

This analysis will also include in-depth semi-structured questions with executives representing construction businesses. Identical methodologies would be used in additional studies on the deployment and usefulness of quality management systems in the building and construction industry. Such a strategy is seen to be appropriate for the study's goals, which are mainly focused on determining the perspectives and experiences of professionals in the business. The specimen will be chosen using a convenient sampling procedure, in which team members obtained the sample elements at their leisure through close relations and recommendations from relatives. Nonetheless, specific criteria have been established in order to improve the trustworthiness. Initially, the collection should be drawn from building projects recognized with the Construction Industry Development Council (CIDC), and secondly, the respondents must have been presently working in construction projects. Despite difficulties in obtaining approval from contractors to be questioned, we managed to get a large number of participants. Each conversation lasted between about one and one and a half hours.

### 5. CONCLUSIONS

**The report's evaluation and suggestions were completed for the enhancement of productivity in building projects, and various things may be deduced:**

- 1) For variables causing construction project delays: Mysterious dirt in the need of site administrative functions, Judgement call capability is limited under certain circumstances

2) To have an impact on the cost performance of selected building projects: Lack of experience was recognized as one of criteria, as well as lack of expertise; the occurrence of a needed project that is strong and resistant to socio-political and meteorological conditions, intense competition during the tendering stage would help.

3) For location factors: Manage resources during raw material consumption, lack of site storage capacity, organization established limitations, thieving on site, unplanned site conditions, and the presence of unneeded stuff.

4) For incorrect material handling in project factors: Improper material supply research and its origin, exaggerated requirement of an item exceeding prescribed norms, and unsuitable pre - development analysis on the component.

5) For lack of leadership: ineffective site system for monitoring, insufficient distribution and logistics, ineffective design standards, ineffective budgeting and blunders during implementation, and dishonest subcontractor activities.

6) For manpower and machinery aspects: outdated or inappropriate development tools, incorrect palletizing on the work place, and hiring workers with insufficient expertise.

7) For quality element misunderstanding among internal stakeholders: lack of decent management, lack of transparency, misunderstandings among both subcontractor and human labor.

## REFERENCES

- [1] Raji Al-Ani and Firas I. Al-Adhmawi (2011), "Implementation of Quality Management Concepts in Managing Engineering Project Site", Jordan Journal of Civil Engineering, Volume 5, Issue 1, PP: 89-106
- [2] H. James Harrington, Frank Voehl, Hal Wiggin (2012), "Applying TQM to the construction industry", The TQM Journal, Vol. 24, Issue 4, PP: 352 - 362
- [3] AbukarWarsame (2013), "Framework for Quality Improvement of Infrastructure Projects", Journal of Civil Engineering and Architecture, ISSN 1934-7359, Volume 7, Issue 12, PP: 1529-1539
- [4] Mohamad Kamal MohamadDasuki, Dr. Rizal Razalli (2013), "The Research Study in Quality Management for a Ship Construction Company", International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064, Volume 4, Issue 4, PP: 995-998
- [5] Mr. Amit A. Mahadik, Mr. Prasad R. Kashid, Miss. Reshma U. Bhoir, Prof. U. J. Phatak (2014), "Necessity of Quality Control in Construction Industry", INDIAN JOURNAL OF RESEARCH, ISSN - 2250-1991, Volume 3, Issue 4, PP: 106-107
- [6] Teena Joy (2014), "A Study on Factors Influencing Quality of Construction Projects", International Journal of Innovative Research & Development, ISSN 2278 - 0211 (Online), Vol. 3, Issue 5, PP: 384-387
- [7] D.Ashok kumar(2014),"Study of Quality Management in Construction Industry", International Journal of Innovative Research in Science, Engineering and Technology, ISSN: 2319-8753, Volume 3, Issue 1, PP: 36-43
- [8] Elvis Attakora-Amaniampong, Andrews Salakpi, Freda Bonye (2014), "Total Quality Management and its Impact on the Level of Customer Focus within Construction Project Management in Ghana", International Journal of Business and Management Invention, ISSN (Online): 2319 - 8028, ISSN (Print): 2319 - 801, Volume 3, Issue 7, PP: 36-48
- [9] Moza T. Al Nahyana, Amrik S. Sohalb, Yaser E. Hawasc, Brian Fildesd (2014), "Project Management, Infrastructure Development and Stakeholder Engagement: A Case Study from the UAE", Procedia Technology, vol. 16, PP: 988 - 991
- [10] AnupWS, Arun Kumar H, SNA Saqhi (2015), "Study of Quality Management System in Construction", International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395 -0056, Volume 02, Issue 02, PP: 462-467
- [11] P.P.Mane, J.R.Patil (2015), "Quality Management System at Construction Project: A Questionnaire Survey", Journal of Engineering Research and Applications, ISSN: 2248-9622, Vol. 5, Issue 3, PP: 126-130