

Review on Implementation of Total Quality Management in Offshore Construction

Swetha Kanakaraj¹ and Aruna Mohan²

¹ PG Student -Infrastructure Engineering and Management, Thiagarajar College of Engineering, Madurai-625015.

² Assistant Professor, Department of Civil Engineering, Thiagarajar College of Engineering, Madurai-625015.

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ABSTRACT

Companies must internationalize and locate all over the world in order to get a competitive advantage. Companies, on the other hand, encounter challenges when they expand internationally. One of the biggest challenges is achieving the same high quality in their commercial facilities all over the world. More than a third of all building projects have severe flaws. The purpose of this small project is to learn how companies employ Quality Management in offshore construction projects, as well as to identify the most common issues and how to address them. The study's theoretical foundation was obtained from academic literature. This mini project's case study looks into how a multinational corporation operates. After the data has been analyzed, the company's Quality Management processes are compared to suggested practices in the academic literature. The findings show that when companies make offshore selections, the quality of their contractor relationships and the reputation of their partners should be the most significant elements to consider. During the bidding process for contractors, many organizations do not place enough emphasis on quality. Rather, they tend to make judgments entirely on the basis of cost and speed, despite the fact that poor quality work leads to higher costs and complexity in construction projects.

Keywords: Quality Management, Offshore Construction Project, Construction Quality, Off shoring Challenges.

I. INTRODUCTION

Total Quality Management is defined as "the execution of duties that guarantee that construction is completed in accordance with scope of work, on schedule, within a specified budget, and in a safe and healthy work environment. TQM covers a wide range of topics, including leadership, decision-making, staff management, supply chain management, customer service, constant improvement and so on. Total Quality Management is defined as "the performance of activities that ensure that construction is finished in accordance with the proposed of work, on time, on budget, and in a safe and healthy work environment. Leadership, decision-making, employee management, supply chain management, customer service, and continuous improvement are just a few of the themes covered by TQM. TQM concepts should be extended to employees on building sites in addition to management levels. Only if top or senior management commits to and participates in the TQM process will it be successful. Factors that make it difficult to use TQM concepts at a construction site's field activities. For a successful building process, the TQM concept is critical. They have studied many models and studied what these model focuses on the betterment like process, efficiency, leadership, commitment, and so on. Contractors have the major role in achieving a quality system in an organization^[5].



FIG 1.1-TQM ELEMENTS

Aim and Objective

The aim of this literature review is to implement TQM in offshore construction and find the challenges faced for the implementation process, know the benefits of quality management.

1. To study the quality parameters in offshore construction and practices for sustaining the quality
2. To learn about the difficulties encountered on the building site, as well as to investigate Quality Management issues that are typical in offshore construction projects.

II. ANALYSIS OF PUBLICATIONS

The four elements of offshoring management competence are coordination competency, relationship building, relationship design, and organisational identification. Offshoring growth mentality, adaptive monitoring of offshoring performance, offshoring reflexivity, and methods for storing and distributing offshoring best practise are all important components of a high-quality project end. Employees on both the

onshore and offshore sides should learn to adjust and maintain positive relationships^[8]. Meeting the requirements of the owners, completion of the project within stipulated time and budget. The specific factors that involves are Quality of standards and codes, Specifications and drawings, Analysis of constructability. The training is given to all the levels of the company for to increase the efficiency and productivity of construction industries^[12]. The desire for development constantly creates space for creativity and innovation, allowing the company to maintain a strong position in the market. Organizations and suppliers must collaborate to serve customers by increasing product quality, maintaining relationships, and communicating effectively. TQM satisfies consumers, allowing workers to feel more confident^[13]. The most noteworthy feature of a good Quality Management application in an offshoring construction project is seems to be having good contractors that are able to deliver high quality work^[2].

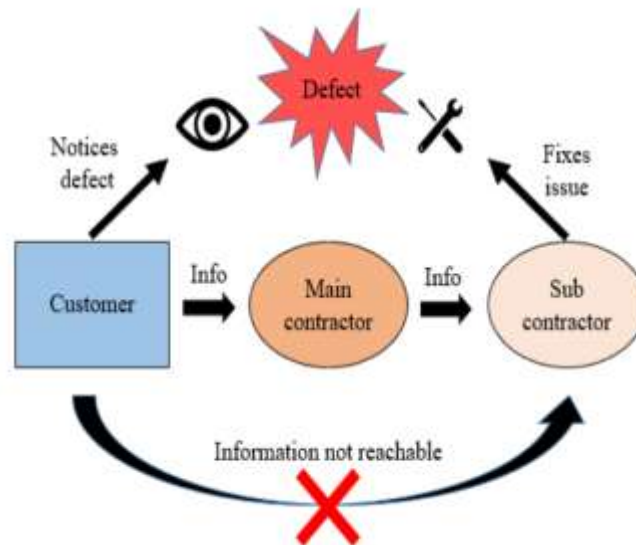


FIG 2.1 CONTRACTOR'S COMMUNICATION

Investigate the elements that influence total quality management modelling for a sub-district municipality, and develop a total quality management model that is appropriate for a sub-district municipality. To get representative viewpoints from a range of provinces, survey a variety of government officials based on their province of residence. To discover the finest source for TQM, many sectors were applied in much management. Staff training was shown to be essential in moulding their behaviour in terms of learning in their duties and commitment to their company. The emotional engagement and participation of team members demonstrated the value of teamwork in driving the organization's success^[3].

To ensure a successful project conclusion, offshore projects must include creativity, adaptability, and strategic considerations. This necessitates a complete framework that includes a better knowledge of connections, how they are evaluated, and how culture impacts this process^[9]. Customer service, product design, personnel management, and leadership are all examples of quality management objectives. All offshore structures must be assessed before to installation to avoid quality difficulties, to explain variances in degrees of quality risk that may exist, and to avoid quality concerns associated with the offshore site of production operations. Good communication between the onshore and offshore construction phases of a project will ensure that the project's quality is maintained until the finish^[7].

Contractors exporting construction services to East Asian nations face five types of

challenges, including business environment risk, regulatory constraints, contractual arrangements, and variations in norms and culture. Identified potential cost growth implications, as well as important cost growth drivers, cost growth components, and international building techniques. The main reason for cost growth is business environment risk, Contractual arrangements, Differences in culture and so on^[6]. To improve the quality of the project and ensure its success, good collaboration must be maintained in all areas. Collaboration with the organisation will boost project performance while also promoting innovation and learning at the organisational level. By encouraging employees to come up with new ideas, emphasising team development, and sharing project risks and rewards, the partnership model has helped to encourage innovation^[10].

III. BENEFITS OF TQM IN OFFSHORE CONSTRUCTIONS

- 1) TQM influences the quality management in both off shore and on shore projects, many research found that this quality management may improve the organization's status and helps them to stay uplift in this competitive sector
- 2) TQM has been proposed as a mediator and technique for assessing the impact of corporate culture on performance, as culture varies depending on the surrounding environment.
- 3) In terms of TQM, Greek organisations have two aspects: soft and hard elements. It has been established that a soft element is more effective than a hard element. Both inside and

outside the firm, TQM has played a key role in reaping advantages from quality management systems

- 4) Turkish quality associations were more likely to acquire ISO certification and excel in TQM procedures. Training is used by the organization in order to attain a high level of TQM
- 5) TQM makes more successful project which motivates the employee and reduces to intention to quit

IV. CASE STUDY

IRAN

TQM has been proposed as a mediator and technique for assessing the impact of corporate culture on performance, as culture varies depending on the surrounding environment.^[13]

JOURDAN

To increase customer happiness and loyalty, TQM is used. Despite the fact that Jourdan began implementing good TQM principles, the implementation of the plans was poor, thus TQM's effect is still limited, particularly in the oil business.^[13]

GREEK

In terms of TQM, Greek organisations have two aspects: soft and hard elements. It has been established that a soft element is more effective than a hard element.^[4]

TURKEY

- TQM has played an important role in getting advantages from quality management systems both within and outside the organization.
- TQM makes more successful project which motivates the employee and reduces to intention to quit.

V. IMPROVISATION TO BE MADE IN TQM

- To minimise quality risk, increasing the number of inspections would be ineffective; instead, they should enhance their quality processes and reduce quality risk through individual inspections. Maintaining standards is challenging due to the constraints of day-to-day operations, and executives must have expertise managing both low cost demands and quality concerns.
- Gives cultural impacts of both onshore and offshore employees for better understanding of cultural differences within the organization , It have only looked through only Dutch industry and the quantitative approach is tedious

- Deconstructing the present focus on cultural distance to include both cultural friction and positive advantages, as well as disaggregating particular aspects according to task conditions, leads to significant gain in construct clarity. Choosing a culturally based relationship isn't always ideal or ethical, and it may also stifle development and create confusion.
- Discuss the positive approach of partnering, to enhance collaboration between organizations, had delivered significant performance benefits at both the project and organizational levels, Its hard to match up the innovation technique and consumer's satisfaction eventually
- Helps to survive and sustain in the changing business environment, Implementation of QUALITY MANAGEMENT PRACTICE can create organization to bring up more opportunities by effective, Promotes a systematic development and better management , Organization fails to implementation as imbalance of TQM knowledge and adapt with environment
- Effective implementation of all elements will lead to success of an construction industry, Deals with both internal and external customer satisfaction , There is no uniform and clear evaluation processes for construction industries, owner influences the construction activity
- Case study were made for live problem solving. This is only applicable with large construction industry, TQM practices may vary with one another industry , where no stable solution for implementation
- Various aspects of Total Quality Management system which can be followed for execution of an Onshore/Offshore construction project. Quality Management plan vary form one project to another, there is no standard procedure for Quality Management Practice preparation in which many organization fails to implement TQM
- Artificial Neural Network (ANN) applications aid in the adoption of TQM in the construction sector, assisting developing nations in adopting TQM principles
- This research will raise quality management knowledge among all levels of construction organisations, particularly small businesses. This improves client happiness and the company's image.

VI. DISCUSSION AND CONCLUSION

In this study, the usage of a standard project plan manual vs a quality management plan in offshoring construction was examined. Many features of Quality Management from the offshore construction site in the case study may be applied to other comparable projects. Construction sites vary across the world, but the need of vetting subcontractors to ensure quality is constant. It is important to remember that construction sites and projects are always unique, and the working environment varies across the world. This is due to a variety of factors including laws, regulations, culture, worker education, construction materials, the environment, and many more. As a result, some of the problems raised in the case may not apply to other building projects throughout the world. However, further researches on the extent use of Virtual Reality in the execution stage of the projects, development gaps in the technology and cost benefit analysis are needed to be done to enable Virtual Reality to become more common in the construction field in the future years.

The goal was to provide answers to problems that arose on the building site in question, as well as to investigate Quality Management concerns that are typical in offshore construction projects. From the start of the study, it was obvious that quality is a big concern in offshore building projects, with the majority of projects reporting serious flaws. The most important component of a successful Quality Management implementation in an offshore construction project appears to be having good contractors who can produce high-quality work. The simplest approach to avoid poor quality workmanship in the project is to hire the proper contractors and suppliers from the start. Contractors that perform on time and on budget are encouraged for long-term relationships. Many clients do not participate in the selection of subcontractors because this is generally handled by the primary contractors. Contractors should be subjected to a rigorous screening procedure as part of the customer's Quality Management Plan. During the tendering process, it's critical to avoid putting too much focus on price and haste at the expense of quality. Having a low-cost main contractor might wind up costing more in the long run owing to poor quality rework. The project client must verify that the primary contractor has a rigorous subcontractor screening procedure in place. In order to have veto power over the contract, the customer should control it in the contract.

Understanding the working context and culture of the target location is the second critical

component of successful offshore construction Quality Management. For many multinational corporations looking to grow into new areas, this is a significant issue. In Europe, what works might not work in Asia, and vice versa. Cultural awareness is critical to the success of offshore projects. Depending on a person's cultural and educational background, what they consider to be a good product might differ. As a result, it's critical that a global corporation knows the culture of its target market and selects individuals with the required knowledge to provide high-quality products. Future study in the field might concentrate on determining how quality is viewed in various cultures and determining whether this knowledge can be utilized to improve Quality Management in multinational corporations.

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