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Review Article

A REVIEW PAPER ON IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT (TQM) IN CONSTRUCTION INDUSTRY

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ABSTRACT

The philosophy TQM, Total – Made up of the whole, Quality – Degree of excellence a product or service provides., Management – Act, Art, or manner of handling, controlling, directing, etc. Total quality management (TQM) is majorly implemented in the manufacturing and other industries and has proved to improve the quality in these fields. The main focus of TQM is the involvement of stakeholders. It improves the customer satisfaction, the economy of an organization and superior management of workers within the companies. Adaption of new ideas, tools and techniques enlightenment that it can be employed in the construction industry also. The goal of this research is to review the latest studies which focused on improving quality through implementing TQM in the construction industry and its appropriate applications in the different phases of construction projects. The construction sector is an important business field for developing country. In India, the construction sector is second to the agriculture sector. Construction sector facing many problems in management and quality. Total quality management process is a modern system in the field of quality and the implementation of quality in construction sites. Total quality management includes Juan, Deming and Crosby techniques as well as ISO standard.

INTRODUCTION

TQM is a way of Planning, organizing and understanding each activity that depends on each individual at each level. The philosophy of TQM is one of prevention rather than defect detection.

India is the second fastest growing economy in the world. The construction industry is an important part of the Indian economy. The various industries are dependent on construction development investment, is poised for growth on account of industrialization, urbanization, economic development and people's rising expectations for improved quality of living. So, that quality is important in the construction industry.

The main problem of TQM is till today not widely implemented in the construction industry in India. Some large construction company are using TQM and implementing. TQM has been adopted by a good number of large-scale industries for the achieve their goal and mission of the company. Small and medium scale construction industries are neglecting TQM. Especially in developing countries like India, small and medium scale construction industry play an important role in the economic growth of the country and the mind of the growing population. Continuous quality improvement is also called Total quality management that focuses on making good thing better.

LITERATURE REVIEW

In the construction industry quality is the backbone of construction, to maintain the quality of work is a tough job. implementation total quality is very important part of the construction industry. There is great potential for quality improvement in the construction industry by (Arditi and Gunaydin 1997**)** [1] and surveys conducted in the USA indicated that management commitment to quality and to continuous quality improvement is very important; construction industry professionals are well aware of the importance of quality training. Theo C**.**(Haupt and Whiteman 2004)[2] Discuss the implementation of TQM which is done by all the employee of an organization. Implementing TQM on construction sites will only succeed if the top or senior management commit and involve themselves in the TQM process with workers. (Pheng and Teo 2004**)** [3] A framework design for implementing TQM in the construction industry and recommended. Tarek Elghamrawy and Tomoya Shibayama (2008)[4] Total quality management (TQM) has been recognized as a successful management philosophy that can be

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successfully implemented in the construction industry, the paper presents some features of the Japanese construction industry that could be implemented in the Egyptian field in addition to a new model for TQM implementation that appropriates the Egyptian construction industry.

Gul Polat *et.al*, (2011)[5] The paper aims to investigate the potential benefits derived from implementing TQM and barriers to the extensive implementation of TQM in the construction industry**.** Abu Hassan Bin Abu Bakar, Khalid Bin Ali and Eziaku Onyeizu (2011)[6] Total quality management (TQM) is a modern system in the field of quality, after quality assurance, quality control and ISO in the Construction sector. Aims of this paper to identify the level of effectiveness of the implementation of TQM principles by the construction contractors, internal customers (the staff) of these companies in the Sultanate of Oman.

H. James Harrington, Frank Voehl, Hal Wiggin, (2012) [7] It concludes that there has been a slow change over from quality control (QC) to total quality management TQM. The ten elements of TQ are still applicable and essential to the implementation of a successful quality system in construction organizations as part of the ongoing "war on waste." Specifically, facilitative leadership and training are essential and a renewed focus on meeting customer requirements is long overdue. As per David Arditi etc. 1997[8]**,** the construction industry has great potential for quality improvement in the construction process and also reveals that the continuous quality improvement is very necessary for construction. As per Ilias Said & Nuruddeen Usman – (2013) [9]the item 'design' in quality management practices leads to the achievement of innovation more than the other items of quality management practices. The author show that quality management practices not only support innovation, but they also lead to the development of innovations that are strategic to the organization. Davood Gharakhani, Hossein Rahmati, Mohammad Reza Farrokhi3, Arshad Farahmandian1-(2013)[10] Total quality management (TQM) is considered a very important factor for the long-term success of an organization. TQM implementation has been an important aspect of improving organizational efficiency. TQM focuses on continuous process improvement within organizations to provide superior customer value and meet customer needs. Ms.Aiswarya. K.Lalaji, Ms.Sivagami.M (2014)[11] This paper aims to identify the TQM practices in construction companies, the level of effectiveness of TQM in construction companies, and problems in relation to the implementation of TQM in construction companies. But most of the companies find it difficult to plan and implement the Total Quality Management concepts. As per Anantha Subramaniam, - (2014)[12] most of the small size companies not implementing TQM due to their lack of knowledge and support from the management.

The medium and large size companies, however, implement TQM they didn't use them properly because of Lack of knowledge about TQM. The training is a must for improving the knowledge about total quality management in construction projects, which will result in a profit of cost and time. Saurin Kakkad, Pratik Ahuja - (2014)[13] In this paper, the author discusses that Total Quality Management is practiced by many business organizations around the world. It is a proven method used for implementing a quality all across the world the vertical and horizontal layers of the company. Implementing TQM will help the firm to achieve; Improves Business Efficiency and Effectiveness, Provides Long-Term Competitiveness, produce desired outcomes to satisfy customers, the Improved productivity of a process compared the resources.

Umair Mazher *et.al*, (2015) [14] In this paper assesses the effectiveness of total quality management in construction industries. this study is aimed to investigate the four dimensions and fundamental of the total quality management construction industry. These dimensions are quality management, quality control, quality assurance, and quality inspection. P.P. Mane, J.R. Patil - (2015) [15]**:** Paper includes an important aspect of TQM like quality, time and cost for successful construction projects which fulfils the main goal of construction. The quality management system in construction industry refers to quality planning, quality assurance and quality control**.** Priyanka Hirave, Rahul S. Patil - (2016) [16] The construction sector in India gives a huge contribution to the development of the country. The construction sector in India is the second largest employer, next only to agriculture. In order to comprehend the need for overall improvement in the construction industry, and to better manage construction projects, there is need of implementing TQM in the Indian construction industry.

REVIEW METHODOLOGY

Study and search literature review from authentic journals and conferences from the online library database IUL, Lucknow, science direct on related to the implementation of TQM. Implementation of total quality management and various other relevant sources. The web search is done by using many journals like "implementation of TQM in the construction industry", "A Study on Challenges In implementing TQM in construction firms", "Needs of TQM in construction industry", "Applying TQM in construction industry", "Implementation Of TQM For Improving Organizational Effectiveness" etc. Prepared questionnaire Survey online (e-mail or Google form) or offline (personal interview) to manager and engineer Identified and analyze information which is collected by survey. Formulation of a result by the Weighted average method, RII method.

CONCLUSION

The paper will summarize the research of the TQM, that it is a way of Planning, organizing and understanding each activity that depends on each individual at each level. The philosophy of TQM is one of the prevention rather than customer satisfaction. The manufacturing industry is using TQM & implementing TQM to get the satisfactory result. Construction being different from manufacturing and other industries, has many unique problems that cause hindrances in the adoption of TQM. The adoption of TQM by construction companies will result in higher customer satisfaction, better quality product and higher market share and stakeholder's satisfaction.

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