

A STUDY ON CRITICAL SUCCESS FACTORS OF TOTAL QUALITY MANAGEMENT IN CONSTRUCTION COMPANIES

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Abstract

The construction industry has long tended to equate quality with excellence at any price. This is at least changing, and like most other industries, construction has started to accept that quality should be seen more in terms of fitness for purpose. A survey was carried out to evaluate the experiences of a range of organizations against the identified critical factors. Questionnaire survey and semi-structured interview were employed to achieve aim of this paper. The finding of this research revealed that critical success factors for implementing total quality management in construction companies are: supplier partnership, customer management, customer satisfaction orientation, communication of improvement information, strategic quality management.

Key words: Total quality management, quality standards, customers' satisfaction, construction companies, etc.

1. Introduction

Quality is in its essence a way of management of the organization. Quality is conformance to customer requirements. The requirements have many dimensions. The concept of total quality management (TQM) was developed by an American W. Edwards Deming. He introduced this concept for improving the quality of various products and services. Earlier it was just related with the quality of products which a organization is producing but now other concepts like marketing, finance design, customer service has also joined the area. TQM is now a day called as total productivity management and an organization needs to consider ABCD for the effective application of TQM where A stands for accident cure, B stands for breakdown, C stands for cost reduction and D stands for damage. This article examines the key elements of TQM and the critical factors that influence the TQM implementation process. A survey was carried out to evaluate the experiences of a range of organizations against the identified critical factors.

2. Critical factors of TQM

TABLE 1
Critical Factors of TQM

S. No	Critical Factors	Meaning	Outcome
1.	Top management commitment	<p>Top management is committed to quality it conveys the philosophy that quality matters through several actions:</p> <ul style="list-style-type: none"> · Assigning a higher priority to quality over cost or schedule. · Providing adequate resources to the implementation of quality management efforts. · Investing in human and financial resources. · Making quality a dimension in performance evaluation for every one in the organization. 	Customer focus and satisfaction
2.	Customer focus	<p>Customer focus including customer satisfaction and orientation is the essence for the success of business dealing with intangible services. Organizations that understand what customers really want and provide a product or service to meet these requirements can gain competitive advantage and profit.</p>	Feed back, customer orientation, quick response.
3.	Training and development	<p>Many research results reveal that education and training are one of the vital elements for the successful implementation of quality management. Investment in education and training is very important for the quality management success. Employees should be regarded as valuable, long-term resources worthy of receiving education and training throughout their career. Quality awareness education and quality management methods education should be taught to all management personnel, supervisors and employees. Participation of employees and managers in training session will improve the quality of the immediate session and will help to lessen the gap among the gap in order to create an atmosphere for team work and involvement in the quality system implementation.</p>	Improving skills and ability and empowerment
4.	Continuous improvement	<p>Continuous improvement, evaluation of current process and total quality management practice</p>	Never ending advancement in

	and innovation	<p>is very necessary. A formal evaluation of quality provides a starting point by providing an understanding of the size of the quality issue and the areas of demanding attention. For evaluation the performance of process and quality management practices companies need to collect various pieces of quality related information of the internal operations and different cost quality. Quality information can be used to ensure the process capability to meet the production requirement.</p> <p>Product innovation should be aimed at meeting and exceeding the requirements and expectations of customers better than the competitors. Customer requirements should thoroughly be considered for product innovation</p>	quality and Technological upgradation, optimum utilisation
5.	Supplier management	<p>Superior quality of incoming material from technically competent, reliable and flexible supplier is a pre requisite to superior quality of the finished product. In manufacturing organizations, where the main focus is on quality product, the objective of purchasing department is to maintain the quality rather than cost minimization. Because poor quality of supplier product result in extra costs for the purchaser and reduce the quality image of the ultimate products.</p>	supplier relationship, supplier quality, and supplier partnership
6.	Employee involvement	<p>It assists employees to improve their personal capabilities, increase their self-respect, commit themselves to the success of their organizations and/or change certain personality. That is why a company must develop formal system to encourage, track and reward employee involvement. Otherwise, the extent and quality in participation declines, leading to dissatisfied work force. Employee involvement may also alter employees' negative attitudes and encourage them a better understanding of the importance of product quality.</p>	Cooperation and team work
7.	Employee encouragement	<p>Employee motivation is the level of energy, commitment, and creativity that a company's workers bring to their jobs. Whether the economy is growing or shrinking, finding ways to motivate employees is always a management concern. Competing theories stress either incentives or employee involvement.</p>	Motivation, financial and non financial incentives, rewards, and recognition
8.	Quality information and	<p>Quality management is a critical component in the successful management of construction</p>	

	performance measurement	projects. ISO 9000 certification is the most successful quality management system for many construction companies. Performance measurement helps to bring more scientific analysis into a decision-making process. It underlines the change towards management by information and knowledge, instead of primarily relying on experiences and judgment.	
9.	Benchmarking	Benchmarking is the process of comparing and measuring an organization’s operations or its internal processes against those of a best-in-class performer from inside or outside its industry. For continuous improvement, companies need to benchmark their product and process by analyzing their leading competitors in the same industry, or leading companies in other industries using the similar processes. The rapid changes in the environment and hence in organizations such as changing nature of work; increased competition; specific improvement initiatives; national and international quality awards; changing internal and external demand; accelerated technological advancement, changing organizational roles and acceleration of globalization led to changes in benchmarking of products and processes.	

FIGURE 1
Critical Factors of TQM

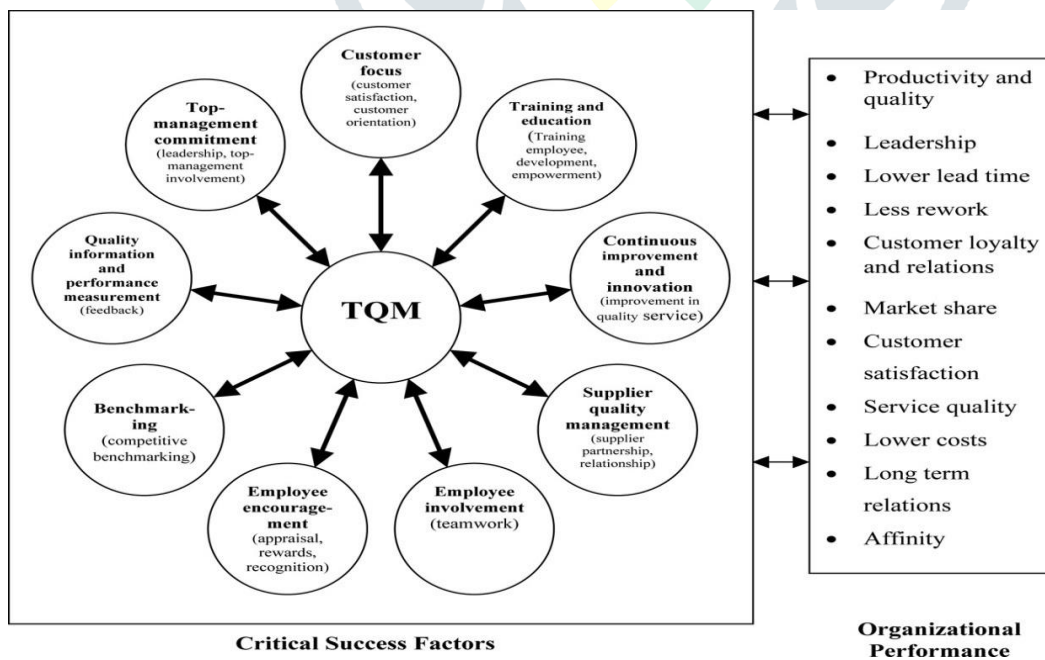


Figure 1 shows how the critical success factors plays major role at organisational performance in total quality management in constructions industry.

3. Objectives of the study

1. To determine role of TQM in construction industry.
2. To find the relationship between various variables of TQM.
3. To study the relationship among the all dimensions to establish and interpret the status and relation of these dimensions.
4. To find the critical factors in the implementation of TQM program.

4. Testing of hypothesis

The study is dependent upon the following null hypothesis. H_{01} : There is no significant relationship among the satisfaction level of the users belonging to different socio-economic profiles towards constructions companies in south Kerala.

5. Sampling design

By adopting quota sampling, 100 construction companies are selected for this study.

6. Tools for data collection

This study is empirical in nature based on survey method. Questionnaire method has been applied to achieve the aim of this paper. As an essential part of the study, the primary data were collected from 100 construction companies with the help of questionnaire. The secondary data were gathered mostly from diaries, reports, books and records. The data so collected have been entered a master table and tabulated to arrive at useful conclusions.

7. Results and discussions

TABLE 2

Demographic Profile of the Respondents

Demographic Profile		No. of Respondents	Percentage
Gender	Male	62	62.00
	Female	38	38.00
Age (Years)	Up to 30	9	09.00
	31-40	26	26.00
	41-50	44	44.00
	Above 50	21	21.00
Educational	Up to H.Sc	11	11.00

Status	Diploma/ITI	21	21.00
	Degree	55	55.00
	Postgraduation and above	13	13.00
Occupation	Employed	44	44.00
	Business	30	30.00
	Profession	11	11.00
	Students	15	15.00
Monthly Income (Rs.)	Upto 15000	30	30.00
	15001-25000	46	46.00
	25001-35000	13	13.00
	Above 35000	11	11.00

TABLE 3

Gender and Variations in the Satisfaction

Gender	No.of Respondents	Average Attitude	Standard Deviation	Co-variation
Male	62	2.16	0.78	36.42
Female	38	2.13	0.80	37.57
Total	100	2.15	0.79	36.81

Source: Primary Data

Table 3 shows the variations in the satisfaction level of male and female respondents towards construction companies in South Kerala. The variation in the satisfaction is high among the female respondents, followed by the male respondents. It implies that there exists consistency among the satisfaction level of the female respondents towards construction companies.

TABLE 4

Age and Variations in the Satisfaction

Age (Years)	No. of Respondents	Average Attitude	Standard Deviation	Co-variation
Up to 30	9	2.11	0.8736	41.40
31-40	26	2.11	0.8458	40.08
41-50	44	2.27	0.6842	30.14
Above 50	21	1.95	0.8426	43.21
Total	100	2.15	0.7914	36.81

Source: Primary Data

Table 4 shows the variations in the satisfaction level of respondents belonging to different age groups towards construction companies. It is inferred that the variations in the satisfaction level was high among the respondents belonging to above 50 years, followed by the age group up to 30 years and 31-40 years.

TABLE 5
Education and Variations in the Satisfaction

Educational Status	No. of Respondents	Average Attitude	Standard Deviation	Co-variation
Up to H.Sc	11	1.81	0.8327	46.07
Diploma/ITI	21	2.28	0.7643	33.52
Degree	55	2.10	0.7786	37.08
PG and above	13	2.38	0.4772	20.05
Total	100	2.15	0.7914	36.81

Source: Primary Data

Table 5 shows the variations in the satisfaction level of respondents belonging to different educational status towards construction companies in South Kerala. It is inferred that variations in the satisfaction level was high among the respondents belonging to upto H.Sc qualification, followed by degree qualification.

8. Conclusion

TQM implementation and overall benefits as recommended by today's leading researchers and practitioners. Based on these nine critical factors, a model was proposed for TQM implementation. The study was observed and felt that there exists a critical need to develop a comprehensive action plan to institutionalize and operationalize TQM. In this context, it was very necessary to assess the major problem areas and bottlenecks to the introduction of TQM in the construction companies. Varieties of dimensions that contributed to these bottlenecks were found.

9. Reference

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