

A Comparative Study of Success Factors of Total Quality Management in Manufacturing VS Service Industry

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Abstract

Total Quality Management is a management philosophy that aims at continuously improving the performance of products, processes and services to achieve and surpass customer expectations.

The main objective of TQM is "Do the right things, right the first time, every time". Although originally applied to manufacturing operations, and for a number of years only used in that area, TQM is now gaining momentum with respect to its recognition and importance in service sector.

Critical Success Factors (CSFs) are internal or external factors that can seriously affect the firm for better or worse. They provide an early warning system for management and a way to avoid surprises or missed opportunities.

The purpose of this research is to understand the concept of TQM in both industry sectors and to identify the significant differences (if any) in TQM practices in Indian service and manufacturing organizations based on critical success factors. There are seven critical factors (Customer focus, Continuous Improvement, Team work and Involvement, Top management Commitment and Recognition, Training and Development, Communication, Measurement and feedback) that influence the TQM success in industry used in this study. The findings suggest that there is a significant difference in the ranking of critical factors of TQM in manufacturing and service industries. The manufacturing sector gives higher importance to the continuous improvement while the service sector gives higher importance to focusing on customers and fulfilling their demands.

KEYWORDS: Quality, critical success factors, Customer focus, continuous improvement

INTRODUCTION

TQM is a comprehensive and structured approach of integrating processes, people, tools and techniques in a way to get the right things done in the right manner in the first attempt.

It involves mutual cooperation of everyone in an organization in order to produce products and services to meet and hopefully exceed the needs and desires of customers. It leads to establishing a new culture which will enable growth and longevity.

This approach makes the organization more flexible, efficient and eventually leads to success of the organization in the competitive world.

Focussing on fulfilling the needs and expectations of customers, improving continuously, working in team, Employee involvement, participation and empowerment form the foundation of TQM.

Critical factors for the success of TQM-

1. **Customer focus-** foremost aim of TQM is winning and keeping customers delighted.
2. **Continuous improvement-**Continuously improvising the system, processes and continuous monitoring the employee performance are part of this factor. Moreover, the review on the quality issues and identification of opportunities for improvement are also included in this factor.
3. **Teamwork and involvement-** people are assets of the organization. Their involvement in the activities enables their abilities to be used for the benefit of the organization.
4. **Top management commitment and recognition-** without the support and guidance of top management efficiency cannot be attained. The recognition of quality improvement and employees contribution is also covered in this factor.
5. **Training and development-** this factor is related to training of employees for the development of the skills required for TQM. Training programs include the statistical improvement techniques, quality related matters and teamwork. Furthermore, the education for the suppliers and subcontractors are also covered.
6. **Communication within the company-** Communication acts as a vital link in the organization. Sharing of right and correct information is necessary for the success of TQM. The cooperation between various departments or units within a company is covered in this factor.
7. **Measurement and feedback-** The organizations should track and monitor the performance of processes and people. They should keep an eye on the deviations from the goals. Reports should be generated to keep a check. Time to time feedback should be provided to remove the drawbacks.

Total quality management (TQM) has become an important part of the corporate management. The pressure set in due to decreased profits, inability to penetrate into new markets, intensifying competition, and above all quality conscious customers demanding better and improved services from the companies are several reasons that have pressurized organizations to adopt TQM.

LITERATURE REVIEW

Literature review is the major source for assessing the position of TQM. Feigenbaum and Ishikawa are perhaps the greatest contributors to the development of the term. However, the prominent quality gurus such as Deming, Juran and Crosby were those who have shaped the dimensions, practices and mechanisms which strengthen the concept.

- **Deming** is best known for developing a system of statistical quality control, although his contribution goes substantially beyond those techniques.
- **Juran**, like Deming was invited to Japan in 1954 by the Union of Japanese Scientists and Engineers (JUSE). His lecture introduced the managerial dimensions of planning, organizing,

and controlling and focused on the responsibility of management to achieve quality and the need for setting goal.

- **Crosby (1979)** stresses motivation and planning and does not dwell much on statistical process control and the problem-solving techniques of Deming and Juran. Like Deming, Crosby has his own fourteen points that he believes to be good quality practices for a company to adopt
- **Armand Feigenbaum** also achieves visibility through his work with the Japanese. Unlike Deming and Juran, he used a total quality control (TQC) approach that may very well be the forerunner of today's TQM.

To determine critical factors of total quality management, various studies have been carried out and different instruments were developed by individual researchers and institutions such as Malcolm Baldrige Award, EFQM (European Foundation for Quality Management), and the Deming Prize Criteria. Based on these studies, a wide range of management issue, techniques, approaches, and systematic empirical investigation have been generated.

Flynn, Schroeder & Sakakibara, (1994) developed another instrument to determine critical factors of total quality management. Flynn et al. identified seven quality factors. These are top management support, quality information, process management, product design, workforce management, supplier involvement, and customer involvement

Accordingly, Saraph, Benson & Schroder, (1989) developed 78 items, which were classified into eight critical factors to measure the performance of total quality management in an organization. These critical factors are: Role of divisional top management and quality policy, role of the quality department, training, product and service design, supplier quality management, process management, quality data and reporting, and employee relations.

- In another noteworthy study, Anderson, Rungtusanatham & Schroeder, (1994) developed the theoretical foundation of quality management practice by examining Deming's 14 points. They reduced the number of concepts from 37 to 7 using the Delphi Method. These are visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfillment, and customer satisfaction.

OBJECTIVES OF STUDY-

1. To find out which TQM factors are given more importance in Manufacturing and Service industry and which factors are least attended.
2. To find out the significant difference if any in importance of various TQM success factors in Manufacturing and Service organizations.

RESEARCH METHODOLOGY-

DATA USED IN STUDY

The data collected for the purpose of the study has been collected from two main Sources; they are primary data and secondary data.

(a) Primary data:

The primary data is collected by survey method using questionnaire which is based on the seven critical factors identified from case study, conceptual and survey articles. The method used for gathering data is postal survey. This method was chosen due to the advantage that the designed questionnaire could be sent to a large number of organizations in a limited time.

MANUFACTURING SECTOR

-50 QUESTIONNAIRES collected from manufacturing companies, Namely-Tata steels, Luxottica India Eyewear Pvt Ltd, Shree cements, Jindal Steels, Ranbaxy, Asian Paints, Mother dairy, Dabur, LG

SERVICE SECTOR

-50 QUESTIONNAIRES collected from service companies, Namely-Axis Bank, HDFC SLIC, ICICI Bank, APPOLO Hospital, PNB, AIRTEL, IDEA, BIG BAZAR, Reliance Fresh, Shopper's Stop, Infosys, ITC Maratha and FORTIS Hospital. Top level employees were approached.

Sample Size: 100 employees. 50 each of Manufacturing and Service Industry.

Research Design: Exploratory Research cum descriptive.

Sampling Technique: convenience sampling.

Research Instrument: The research instrument for the study is survey through questionnaire. The questionnaire is divided into two parts. First part deals with questions regarding what the employees think about the importance of success factors in their industry, which factor should be considered most important and which the least. The second part deals with what the employees think the current positioning of the factors is in their organization.

Independent two sample T TEST was used. For significance testing, the degrees of freedom for this test are $2n - 2$ where n is the number of participants in each group.

If the p-value is less than .05 then the null hypothesis (there is no difference in the mean score for a critical factor between manufacturing & service industries) shall be rejected.

(b) Secondary Data:

Published work of leading academics in TQM research and the various articles given by researchers

DATA ANALYSIS AND INTERPRETATION

TABLE 1: *Ranking of factors according to employee perception as to which factor should be given more importance in their industry as compared to others.*

S.NO	FACTOR	MEAN	RANK	MEAN	RANK
		MANUFACTURING		SERVICE	
1.	Customer Focus	3.627	2nd	3.744	1st
2.	Continuous improvement	3.880	1st	3.464	4th
3.	Teamwork and Involvement	3.512	3rd	3.200	7th
4.	Top management commitment and Recognition	3.476	4th	3.592	2nd
5.	Training and development	3.412	5th	3.396	5th
6	Communication In the company	3.220	7th	3.584	3rd

- ✓ In case of manufacturing organizations continuous improvement is holding the first rank which means this factor is considered to be most important in comparison to others in manufacturing industry.
While in case of service organizations customer focus is holding the first.
- ✓ It is surprising to note from table-1 that communication in company seems to be unimportant in Indian manufacturing & service industries.

TABLE 2: Total of ranks of factors as per employee perception regarding current status of success factors in their industry.

Sr. No.	Factor	Total of Ranks Manufacturing	Total of Ranks Service	Position as per total of ranks in Manufacturing Industry	Position as per total of ranks in Service Industry
1.	Customer Focus	108	62	2	1
2.	Continuous Improvement	63	131	1	3
3.	Teamwork & Involvement	147	116	3	2
4.	Top Management Commitment Recognition	195	210	4	4
5.	Training & Development	296	247	5	5
6.	Communication in Company	335	331	7	7
7.	Measurement & Feedback	256	303	6	6

- ✓ The ranks obtained for factors in manufacturing industry match with that obtained through mean values, while in case of service industry this is not the case. This shows that employees still are not satisfied with the practices and there is a lot of scope for improvement in service industry for TQM practices.
- ✓ This finding is consistent to the research of Jiju Antony and Craig Fergusson (2004). According to Jiju Antony, most service firms were not ready to digest and understand some of the factors of quality management.
- ✓ This observation and finding also explains why some service managers or respondents thought that some of the TQM success factors do not apply to them.

TABLE 3: Testing the hypothesis- *whether there is any significant difference in the critical success factors in manufacturing and service industry.*

S.NO.	PARAMETERS	DEFINITION OF HYPOTHESIS	VALUE OF P	STATUS OF HYPOTHESIS
1.	Customer Focus	H0: There is no significant difference between importance of customer focus in manufacturing and service industry.	.024	Ho is not accepted
2.	Continuous Improvement	H0: There is no significant difference between importance of continuous improvement in manufacturing and service industry	.000	Ho is not accepted
3.	Teamwork & Involvement	H0: There is no significant difference between importance of in teamwork & Involvement in manufacturing and service industry	.003	Ho is not accepted
4.	Top Management Commitment & Recognition	H0: There is no significant difference between importance of top management commitment and recognition in manufacturing and service industry	.046	Ho is not accepted
5.	Training & Development	H0: There is no significant difference between importance of training and development in manufacturing and service industry	.808	Ho is accepted
6.	Communication in Company	H0: There is no significant difference between importance of communication in company in manufacturing and service industry	.000	Ho is not accepted
7.	Measurement & Feedback	H0: There is no significant difference between importance of measurement and feedback in manufacturing and service industry	.150	Ho is accepted

- From the table -3, P values indicate that there is difference between importance of customer focus, top management and recognition, Continuous improvement Teamwork and involvement, and Communication in service and manufacturing industry.
- But there is no significant difference in training and development and measurement and feedback in both the industries because these factors are given almost same importance in both the industries.

CONCLUSION

- TQM is a long term investment thus before making decision to jump into it a complete research should be done. Management should clear their vision mission and goals towards the employees in the organization.
- Employees' survey should be conducted to find employee needs and they should be included in improvement projects.
- Management should involve the workers' representatives in managerial activities so that the transparency could be maintained and through this they can win the confidence of the employees It is very important to provide the opportunity to the employees of the organization to express their ideas.
- Modern methods of training should be used and fundamentals of TQM should be taught from top to bottom. Role clarity of each position should be defined and based on that individuals can plan their work accordingly.
- In **SERVICE INDUSTRY**- complaint resolution must be spontaneous. New ideas may face opposition therefore HR machinery must counsel on importance of TQM and communication.

Top management commitment should be increased through quality circles and other procedures. Service industry must focus more on customer satisfaction. For this they must-keep the customer updated, Create surveys to capture customer needs ,Constantly improve lead times, Quickly respond to customer questions and Provide detailed information on company website to avoid confusion and queries.

In **MANUFACTURING INDUSTRY**-There should be regular review and comparison of current & past performance to detect gradual deterioration in the strategy. There should be effective feedback system for the product. Customer feedback about quality of product should be taken and institutionalized system should be there for corrective and preventive action.

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