



Key Success factors of TQM (Total Quality Management) in Self Financing Technical Educational Institutions in India

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DOI: [10.5281/zenodo.8025559](https://doi.org/10.5281/zenodo.8025559)

Submission Date: 30 May 2023 | Published Date: 10 June 2023

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Abstract

Total Quality Management (TQM) is inevitably common factor that will shape the strategies of educational institutions in their attempt to satisfy various stakeholders including students, parents, industry and society as a whole. The paper is a theoretical attempt to explain the application of TQM in educational institutions. It deals with issues pertaining quality in education and moves on to identify variables influencing quality of technical educational institutions.

Total Quality Management (TQM) refers to management methods used to enhance quality and productivity in organizations, particularly businesses. TQM is a comprehensive system approach that works horizontally across an organization, involving all departments and employees and extending backward and forward to include both suppliers and clients/customers.

Application of TQM concepts is one of such measures, which will go a long way in revolutionizing the educational system. The paper attempts to theoretically conceptualize TQM and determine the critical success factors in Self Financing technical educational institutions in India.

Keywords: Implementation, TQM, Educational, Institutions, quality, Financing

1. INTRODUCTION

Total Quality Management is a management approach that originated in the 1950's and has steadily become more popular since the early 1980's. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

Total Quality Management, TQM, is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives.

TQM views an organization as a collection of processes. It maintains that organizations must strive to continuously improve these processes by incorporating the knowledge and experiences of workers. The simple objective of TQM is "Do the right things, right the first time, every time". TQM is infinitely variable and adaptable. Although originally applied to manufacturing operations, and for a number of years only used in that area, TQM is now becoming recognized as a generic management tool, just as applicable in service and public sector organizations. There are a number of evolutionary strands, with different sectors creating their own versions from the common ancestor. TQM is the foundation for activities, which include:

- Commitment by senior management and all employees
- Meeting customer requirements
- Reducing development cycle times
- Just In Time/Demand Flow Manufacturing
- Improvement teams
- Reducing product and service costs
- Systems to facilitate improvement
- Line Management ownership
- Employee involvement and empowerment
- Recognition and celebration
- Challenging quantified goals and benchmarking
- Focus on processes / improvement plans
- Specific incorporation in strategic planning

This shows that TQM must be practiced in all activities, by all personnel, in Manufacturing, Marketing, Engineering, R&D, Sales, Purchasing, HR, etc.

1.2 Implementation Principles and Processes

A preliminary step in TQM implementation is to assess the organization's current reality. Relevant preconditions have to do with the organization's history, its current needs, precipitating events leading to TQM, and the existing employee quality of working life. If the current reality does not include important preconditions, TQM implementation should be delayed until the organization is in a state in which TQM is likely to succeed.

If an organization has a track record of effective responsiveness to the environment, and if it has been able to successfully change the way it operates when needed, TQM will be easier to implement. If an organization has been historically reactive and has no skill at improving its operating systems, there will be both employee skepticism and a lack of skilled change agents. If this condition prevails, a comprehensive program of management and leadership development may be instituted. A management audit is a good assessment tool to identify current levels of organizational functioning and areas in need of change. An organization should be basically healthy before beginning TQM. If it has significant problems such as a very unstable funding base, weak administrative systems, lack of managerial skill, or poor employee morale, TQM would not be appropriate.

However, a certain level of stress is probably desirable to initiate TQM. People need to feel a need for a change. Kanter (1983) addresses this phenomenon by describing building blocks which are present in effective organizational change. These forces include departures from tradition, a crisis or galvanizing event, strategic decisions, individual "prime movers," and action vehicles. Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve a problem. A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act. In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision. Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go. Finally, action vehicles are needed and mechanisms or structures to enable the change to occur and become institutionalized.

2. SELECTION AND ANALYSIS OF TQM FRAMEWORKS

An extensive literature survey has been carried out to select TQM frameworks for this study. The relevant literature has revealed that different countries have adopted similar TQM frameworks in the form of quality awards with a different title. Today, there are more than a hundred quality awards existing in different countries. However, all these quality awards are basically derived from three basic and prestigious awards: the Malcolm Baldrige National Quality Award (MBNQA), the European Quality Award (EQA) and the Deming Prize. This study, therefore, includes only these three basic awards as TQM frameworks along with other frameworks developed by scholars. Furthermore, through the study of TQM literature, eleven TQM frameworks developed by researchers have been selected. In total, fourteen important TQM frameworks viz. Deming prize, MBNQA, EQA, Saraph et al., Oakland, Flynn et al., Babbar and Aspelin, Ahire et al., Black and Porter, Pheng and Teo, Ang et al., Zhang et al., Nwabueze and Thiagarajan et al., were chosen from the TQM literature for the purpose of establishing TQM CSFs for the Indian manufacturing industry. A detailed analysis of the frameworks with respect to CSFs is carried out and presented in Table 1.

Table_1: List of KSFs as recommended by various authors

Source: Wali, Deshmukh and Gupta, 2003

Table_1: Analysis of TQM Frameworks

	Juran 1974	Ishikawa 1976	Crosby 1979	Feigen-Baum 1983	Deming 1986	Garvin 1987	Saraph et.al. 1989	Lu & Sohal 1993	Porter &Parker 1993	Motwani et.al.	Powel 1995	Black & Porter 1995	Total
1	x	x	x	X	x	x	x	x	x	x	x	x	12
2	x		x	X	x		x	x	x	x	x	x	10
3	x		x	x	x	x	x	x	x	x	x		10
4	x	x	x		x	x	x	x		x	x	x	10
5	x	x	x	x	x		x	x	x	x	x		10
6	x	x	x		x	x			x	x	x		8
7	x				x	x	x			x	x	x	7
8	x		x	x		x	x			x		x	7
9	x	x	x		x		x			x	x		7
10								x	x		x	x	4
11								x			x	x	3
12								x	x			x	3
13									x		x	x	3
14								x			x		2
15			x										1
16									x				1

*Note: 1 - Top management commitment; 2 - Strategic quality management; 3 - Process quality management; 4 - Design quality management; 5 - Education and Training; 6 - Supplier quality management; 7 - Customer satisfaction; 8 - Employee empowerment and involvement; 9 - Business results; 10 - Information and Analysis; 11 - Benchmarking; 12 - Resources; 13 - Impact on society and environment; 14 - Statistical process control; 15 - Culture.

Thus, the examination of TQM frameworks has revealed that not all the frameworks are comprehensive, but in many respects these frameworks complement one another. Therefore, a blending salient feature of these frameworks is the best approach for the establishment of critical factors for construction quality management.

Therefore, the following ten KSFs have emerged out of the above analysis:

- i. Leadership, Creativity and quality strategy: Successful quality performance requires that the leadership is dedicated to quality. It must also provide initiative and resource support. It must enable creativity to be nurtured and accordingly chalk out the strategy. Given the importance of leadership, it is not surprising to find that, in all quality awards, leadership issues are placed at the top of the list of criteria. Such leadership will drive quality strategy in an organisation and nurture creativity.
- ii. Worker – Manager Interaction: This means that healthy interaction between worker and manager is important from quality point of view. The manager provides the direction for improvement and accordingly, workers are motivated to take initiative. In case of any difficulty, the worker interacts with the manager to improve the situation.
- iii. Results and Recognition: Crosby (1979) considers recognition as one of the most important steps of the quality improvement process. The organisation should reward their employees for their contribution to quality. There should be a quick recognition system for outstanding performance by the employees. These rewards may not be purely financial.
- iv. (iv)Work culture: The work culture must be very conducive. There should be an active interaction amongst the peers and support from supervisors. The critical importance of the employee’s involvement in the quality process of an organisation should be based on the belief that the best process innovation idea comes from the people actually doing the job.
- v. Information and Data management: Information is the critical enabler of TQM. This factor emphasises that the key processes are regularly measured and quantified. There should be focus on benchmarking which provides a stimulus for improvement. The facts and information should be made available to all. This is mainly relevant for managing quality costs.
- vi. Customer Focus: Quality should be customer driven. ... Employees should be well aware of the concept of internal and external customers. They should care about meeting and exceeding the customer expectations. There must be a focus on customer feedback and accordingly the process should be driven.
- vii. Value and ethics: It is important for the people in an organisation to live up to the highest ethical standards. There should be perception of fair treatment to all. The organization must be guided by the value and ethical standards.
- viii. Communication across the organization: Effective communication channels must exist in the organization between various work units. With the help of information technology, communication can be made effective. Effective communication is vital in aligning the workforce towards corporate expectations.

- ix. Team working: According to Crosby (1979), team work is a critical element of TQM. Teamwork delivers synergistic enhancement of quality efforts. Employees must demonstrate cooperative behaviour and positive attitude towards working in a team.
- x. Congenial inter – personal relations: The atmosphere in the organisation must be highly congenial to promote active interaction. There must be mutual respect and faith among employees.
- xi. Delegation and empowerment: In a TQM setting, both delegation and empowerment are required. People must share responsibility for the success or failure of their work.
- xii. Process improvement: Employees must identify opportunities for continuous improvement. If employee involvement is key to the attainment of customer satisfaction, managing the process is key to engaging an organisation's employees to take responsibilities for what they are doing in relation to satisfying the customers.

3. Research Methodology

There were four main steps in the methodology used in our research study:

1. Choosing the appropriate performance measures.
2. Gathering a sample of organizations that have effectively implemented TQM.
3. Developing a questionnaire and distributing it to the selected self-financed technical institutions.
4. Empirical analysis of data obtained, to find the impact of TQM on self-financing technical institutions.

Any attempt to establish the link between TQM and organizational performance must focus on firms that have implemented TQM effectively. This is important because while most firms will claim that they have implemented TQM, few are doing it effectively. Including non-effective implementers will obscure the impact of TQM. Effectively implementation means that the key principles of TQM such as focus on customer satisfaction, employee involvement, and continuous improvement are well accepted, practiced, and deployed within the firm.

We used the ISO 9000:2000 certified institutions as a proxy for effective implementation of TQM. A review of ISO 9000:2000 criteria confirmed that the core concepts and values emphasized are those that are widely considered to be the building blocks of effective TQM implementations. ISO 9000:2000 certifications are given after the applicant goes through a multi-level evaluation process where internal or external experts judge the applicant.

A questionnaire survey was developed and distributed. The empirical data were obtained from a survey of award winning self-financing technical institutions. The responses of questionnaire survey were analyzed using a multiple regression technique. The reliability and validity (construct, content, criterion) of the practice and performance measures were evaluated. Confirmatory factor analysis is used to test the psychometric properties of the measurement scales and the hypothesized relationship between TQM practices and firm's performance are examined using structural equation modeling.

Also we present evidence on the financial results that publicly traded organizations have achieved from implementing TQM effectively. Financial results are measured using variables such as stock returns, operating income, sales and costs.

4. Analysis

4.1. Reliability Analysis

Cronbach alpha is a measure for the internal consistency of the items that together covers the specific (new and underlying) factor. In general, a value of 0.60 is acceptable.

Table 4.1

S. No.	Item	Cronbach Alpha
1.	Customer Focus	0.62
2.	Communication	0.63
3.	Delegation	0.69
4.	Continuous Improvement	0.64
5.	Results & recognition	0.63
6.	Leadership	0.64
7.	Process Improvement	0.67
8.	Supplier Focus	0.64
9.	Team Work	0.65
10.	Value & Ethics	0.67
11.	Work Culture	0.64
12.	Strategy	0.66

All our factors have Cronbach alpha value above 0.60 which shows the internal consistency of items.

4.2 Correlation Analysis

4.2 .1 Correlation between TQM Constructs and Results (Peoples')

Table 4.2

S. No.	Item	(Correlations)
1.	Customer Focus	0.74***
2.	Communication	0.24*
3.	Delegation	0.74***
4.	Continuous Improvement	0.49***
5.	Results & recognition	0.84***
6.	Leadership	0.62***
7.	Process Improvement	0.43**
8.	Supplier Focus	0.92***
9.	Team Work	0.34**
10.	Value & Ethics	0.57***
11.	Work Culture	0.61***
12.	Strategy	0.51***

*p < 0.05, **p < 0.01, ***p < 0.001

5. CONCLUSION

The research findings have some practical implications. First, TQM implementation has positive effects on overall performance in terms of student's placement & results. Implementing TQM does payoff. Second, leadership is the decisive factor in determining the success of organizational overall performance. In other words, without strong leadership, it is impossible for a firm to achieve good overall performance. Third, the research findings can imply that it is not necessary for all the TQM elements to be present to ensure the success of the TQM programs and overall performance. In other words, even if a few of the elements are not present, it is possible to obtain the required level of overall performance. In this paper, we have briefly examined the various factors which affect the effectiveness of technical education and have categorized them into twelve major heads. The proposed factor can be used to quantify the effectiveness of a technical institution with very good accuracy.

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CITE AS

Dr. UC Jha. (2023). Key Success factors of TQM (Total Quality Management) in Self Financing Technical Educational Institutions in India. *Global Journal of Research in Business Management*, 3(3), 60–64. <https://doi.org/10.5281/zenodo.8025559>