International Journal of Management, Accounting, Governance and Education
2021, Volume 1, Issue 2

Soft TQM practices & organizational performance in the manufacturing and service sector

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Abstract
The main aim of this paper is to examine the role of various total quality management practices (customer feedback, human resource, relationship management, quality culture) on organizational performance. A survey interview is conducted to gather the necessary information with regards to the soft TQM practices. The empirical results reveal that customer feedback is rated as excellent (rating 5) which means the selected companies pay attention to customers' need and their satisfaction. Similarly human resource aspects are utilized properly in all organization as it is rated as very good (rating 4) and excellent (rating 5). However, companies are not paying attention to relationship management with partners and quality culture. Most of the ratings for these two aspects are fair (rating 2) and good (rating 3).

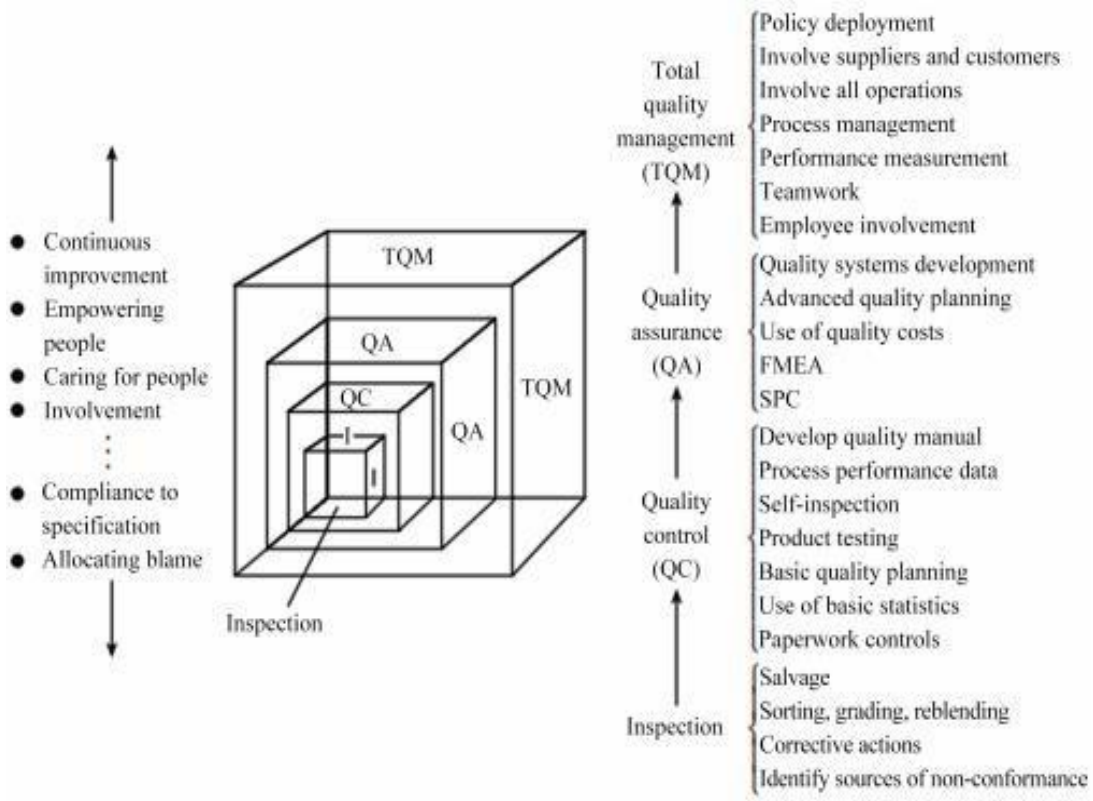
Introduction
Total Quality Management (TQM) is a management philosophy which highlights the need to improve the quality of goods and services for better utilize the resources of organizations [6]. Or it can be defined as TQM is an approach for continuously improving the quality of goods and services delivered through the participation of individuals at all levels and functions of an organization [7]. In past years, large amount of research has been conducted on TQM. Especially, most of research was based examining the relation between TQM practice and organizational performance. This study will investigate the relation between the soft TQM practice and organizational performance in manufacturing sector by using qualitative research and with one short survey. According to research [8], TQM can be viewed in two ways. The first approach conceptualizes TQM as a limited set of technical tools (such as statistical process control and Pareto analysis) while the second approach views TQM as part of broader changes to human resource (HR) practices. First approach is based on quality control, quality assurance of process, product, or service. However, the second approach focuses on human resources practice like commitment, teamwork, training etc. The successful implementation of TQM practice is the combination of hard TQM and soft TQM. However, hard, and soft TQM has direct impact on organizational performance. For this, in most of the investigations, they examined the impact each dimension of TQM on organizational performance individually. Therefore, the study regarding exploring relation of soft TQM (considering most of elements) with organizational performance. Analysis of data is conducted by using graphical method. Also, in this study, through short survey, with objective to investigate degree to which extend soft TQM practice is implemented and used in service and manufacturing sector.

Literature review
The purpose of this section is to provide theoretical information related to the given topic, which is as follows: Quality management which is also kwon as Total Quality Management. Quality management is concept which is use for goods and service to maintain or improve their quality to meet customer's needs. Roots of quality are made by Japan [9] which at the beginning highlighted on product and performance and then later they started considering customer satisfaction. Afterwards, quality improvement was introduced by US and then practiced by Japanese. Later, by W. Edwards Deming fixation of quality [10] was introduced. Instead of inspecting quality of product or service after it is manufactured or completed, it focuses on doing correct job at the first time. Implementation of this organization is very difficult. Changes occurs in firm's takes time to implement and practice it. According to [9] some experts say that adopting QM changes may require ten years in an organization. [4]
Total Quality Management (TQM) has changed the management practice over past decades. As most of the principles of TQM are introduced by people who were working in operation management area [11]. Therefore, this bring us to aspects of TQM – "hard" TQM which is production-oriented aspect and "soft" TQM which is

related to human resource management (HRM) aspect. Organizations has been less focused on HRM issues like payment system, teamwork, etc. Half of corporate respondents as well as one third of managers think that techniques and managerial changes which are suggested will have big impact on future of TQM. There are many problems arise which are related to human resource (HR) issues such as management style, culture. Reason behind this are organizations only focuses on "hard" measurable aspects like cost, production performance and neglected "soft" aspect. In this way, the restrictions of TQM can be unquestionably somewhat ascribed to the disregard of HR approaches in the association and an inability to adjust the HR strategies to TQM to guarantee coordination. [4]

From past decades till now, organizations have witnessed the evolution of quality in main four stages which are inspection, quality control, quality assurance and total quality management. Inspection is based on confirming the characteristics of products, service, or activities to it set standards. Quality control is based on quality of product and quality assurance focus on products and process whereas total quality management tends to focus on whole organization as one single unit. TQM is widely used in various organization to increase the performance of product and services. In this soft TQM is also a vital part which was not previously considered. Therefore, many organizations failed to implement TQM practice due to lack of understanding and attention to soft TQM. [1]

Figure 1. Evolution of TQM [1]



To understand the TQM, we need to go through the definitions. There are many definitions of TQM that exists, "Total Quality Management may be defined as managing the entire organization so that it excels in all dimensions of products and services that are important to the customer" [12]. As per the definition, evolvement of every employee in producing quality and value for product and service to meet and increase the expectations and need of the customers. According to the research, [13] defined the abbreviated term TQM, "Total indicates that quality is the responsibility of all employees of the organization and the various activities in it. Quality: refers to achieving and exceeding customer's expectations. Management: refers to planning, organizing, leading, motivating and controlling resources with the aim of continuous improvement" [1]

Basically, TQM is management philosophy and set of guiding principle which are defined by ISO9000 (2000) [14]. First is customer focus, firms are dependent on customers and therefore it is important to understand their current and future needs and requirements and company should strive to exceed customer expectations.

Second principle is leadership, leaders create unity and give direction to internal environment of organization, so that they can participate fully and contribute with their abilities for organization's benefits. Third principle is process approach Involvement of people, full participation of all employees will result in organization's benefit. fourth principle is regarding process approach. Desired result can be achieved more efficiently if activities and resources are managed as process. Next principle is system approach to management. As system is contributing to organization's effectiveness and efficiency to fulfill its goal, therefore identifying, understanding, and managing interconnect process of system is important factor. Continual improvement should be permanent goal of the firms. Next is factual approach to decision making, as decision making depends on analysis of data and information. Last principle is mutually beneficial supplier relationship. Every organization is highly dependent on suppliers, partners. Therefore, mutual beneficial relationship will improve ability of to make value to customers. [1]

Following table shows all dimensions of soft and hard TQM.

Key dimensions	*Dimensions*	*Author (yrs)*
Soft dimensions	• Leadership commitment • Customer perspectives • Total customer satisfaction external cooperation employees perspectives • Workforce focus • Employee involvement • Training and education • Reward and recognition, teamwork • External cooperation • Learning employee fulfilment culture • Adoption and communication of TQM • Communication • Partnership and resources • People results • Society results	Saylor (1992), Wilkinson et al. (1992), Anderson et al. (1994), Oschman (2002) and EFQM criteria (2003)
Hard dimensions	• Tool and techniques • Reduction of variability • Ensuring conformance to performance standards • Key performance results • Flexible manufacturing strategic planning • Continuous improvement • Zero defects mentality • Measurement analysis and knowledge management	Saylor (1992) Wilkinson et al. (1992), Anderson et al. (1994), Oschman (2002) and EFQM criteria (2003)

Figure 2. Dimension of soft and hard TQM [4]

Relation between soft, hard TQM and organizational performance [15]. There are many research articles were published relationship among Total Quality Management (TQM) and organizational performance. Most of study is based on impact of one element of TQM on performance separately. The result of the studies shows only few soft TQM elements (Human Resource – commitment, teamwork) have impact on organizational performance [22], [23], [24]. According to the [15], soft TQM plays an important and various role in organizations. One way is form environment in organization where seamless diffusion and implementation of hard TQM is possible and other is to directly affect performance of organization similarly as soft (human resource management practice). According to [2] TQM has two aspects one which is includes limited set of technical tools (like statistical process control, pareto charts) and other aspect includes human resource practice. After thorough examination of various sectors, it is found that hard TQM is mostly adopted in those companies which adopts strategies to increase stakeholder commitment and integrate employee's reviews in decision making processes.

Therefore, there is one research based on 6 elements of soft TQM investigated and some 5 elements of hard TQM examined and several variables of organizational performance by [16] [17] [18] This research includes detail study of following aspects:

Relation between Soft TQM and Organizational performance [6]. According to [19], executive commitment, open organization an employee empowerment, (soft TQM elements) are more correlated to corporate performance. For this study Powell used various elements to measure organizational performance. Whereas in [16] [20] considered limited set of quality focused elements to measure the performance. As per [16] also conducted investigation of Australian manufacturing companies it is found that out of nine elements only three elements have positive significance with quality and performance of organization. These three elements were workforce commitment, share vision, customer focus. Similarly, [20] also conducted study in automotive manufacturing and component manufacturing companies and reached to same result that performance in terms of product quality was highly significant to soft TQM elements such as employee training, employee involvement and employee empowerment.

All these studies showed that there is direct relation between soft TQM and organizational performance.

Relation between Hard TQM and organizational performance [6]. According to [21], hard TQM includes guiding principles like continuous improvement and considering organization as one system. As soft TQM has direct relation with organizational performance then it is important to examine role of hard TQM. Therefore, as per examination conducted by [16] [20] [17] Statistical process control (SPC), benchmarking, flexible manufacturing systems shows no direct relation with performance. However, there are many managements literature suggested that hard TQM elements has direct impact on organizational performance. For example, effect of six sigma process at Motorola company and other organizations, QFD in Toyota, seven simple tools in Honda, SPC in Motorola, etc. As per these studies hard TQM elements shows direct impact on organizational performance.

Relation between Soft TQM and Hard TQM [6]. Companies accomplishes excellent organizational performance by considering quality factor into products and services, assuring quality in whole process by using various tools to prevent defects and continuous improvement as well as other quality information by customer feedbacks, benchmarking, and charts. Thus, for successful implementation of TQM, organization should be customer focused, have reliable and flexible supplier relationship, and have motivated atmosphere and active participation of all employees in decision making process. Only upgrading technology and focusing on hard TQM does not always increase competitive advantage. Attention to process, product and technology will help to improve quality but at the end it is achieved by people. Thus, employee motivation, education and organizational culture plays vital role in improving quality. There are many studies suggested that successful organization performance can be achieved if organization implement hard and soft TQM polices in combined form, whereas underperforming organization only focuses on new technologies to improve operational outcomes instead of considering customer satisfaction. According to [8], quality is not only about set of technical engineering changes but also broader strategy of organizational change. Also,[8] found that best quality system is the engage employee and are embedded within team-based HR system. Therefore, these studies suggested that there is direct impact of soft TQM due to adoption and utilization of hard TQM elements and practice. Positive impact of soft TQM on performance can be achieved by connecting them with hard TQM elements. Additionally, these studies found that Soft TQM impact indirectly to organizational performance through its effect on hard TQM elements.

Survey

After extensive literature review on four main elements of soft TQM- Leadership, HR focus, relationship management with partners, and quality culture. This was followed by one small survey. The objective of this survey is to understand degree to what extend organizations use soft and hard TQM. For this survey, set of

questions related to main elements of soft TQM were finalized and survey was conducted. In total, there were 22 questions and are referred from one research paper [4]. Six questions were based on leadership, five items were based on HR and similarly six questions related to relationship management with partners and five question related to quality culture. In this respondent asked to mark degree to which extend soft and hard TQM practice is implemented and used. Questions are provided with rating from 'very weak' (1) and till 'excellent' (5).

Targeted company

I approached several managers through my connections. In this survey I have considered manufacturing as well as service sector. I have collected data from 4 companies – Amazon, Bosch, BSH and QIMA. I approached these companies as these all are leading industries in service and manufacturing sector.

Amazon: Amazon is multinational technology company with major focused on online business and cloud computing company, AI and digital streaming. It is largest retailer which majorly focuses on customer experience and provide vast variety of products and services to the customers. The survey was conducted in sortation center of Amazon in Berlin.

Link: https://www.amazon.com/amazonprime

Bosch: Bosch is leading global supplier of technology and services. It has 4 major business sectors: mobility solutions, Industrial Technology, consumer goods, energy and building technology. The survey was conducted in Nashik, India. This plant manufacturers the nozzles and injectors for classical and Euro series. It is continuously taking efforts for customer satisfaction in area of quality, cost and delivery.

Link: https://www.bosch.com/company/

BSH: BSH is a leading manufacturer of the home appliance and no. 1 in Europe. BSH deals with worlds class brands like Bosch, Siemens, Gaggenau, Neff and other 17 local brands. BSH has 38 factories worldwide. We majorly focus on purchasing, logistics and demand and supply chain management. BSH is solely working on customer satisfaction and delivery of smart solutions to the home care.

Link: https://www.bsh-group.com/

QIMA: QIMA which stands for Quality Inspection Management, it is leading provider of supply chain compliance solution and provide quality management services to partners, retailers, importers and brands to secure and improve quality. It has on- ground experts in 85 countries for quality inspection , audits, certification, lab testing etc.

Link: https://www.qima.com

Targeted group and sample size

Targeted audience are more experienced people and designated at high level in those organizations. This includes managers from various departments like supply chain, logistics, production, and operations, change management, etc. Due to data protection, I cannot enclose the name of the respondents. Total sample size is 11.

In leadership aspect, questions were based on vision and mission of alignment towards TQM, quality practice, some questions were based on characteristics of leaders and employee participation. In this most of respondent rated the soft TQM elements from 'good' (rating 3) till 'excellent' (rating 5). In this, top executive involvement in quality management practice is rated as good with 18.2% out of 100% of respondents. Similarly, vision mission alignment to TQM and organization focuses on quality excellence is rated as good with 9.1% out of 100%. Other all elements are rated as good (rating 3) and very good (rating 4).

Human Resource

In Human resource aspect, questions were related to flexibility system for employee, employee recognition, compensations, employee education and training. In this, all respondents rated very good (rating 4) and excellent (rating 5) only in employee adequate compensation, good was rated which has 9.1% out of total.

Relationship Management with partners

In relation management with partners aspect of soft TQM shows different percentage rate as compared to other aspects. For, partners involvement in decision making process, 54.5% of respondents gave good (rating 3) rating . Similarly, performance evaluation has fair (rating 2) and good (rating 3) rating with each 9.1%. Partners and associate's participation for managing system has good (rating 3) rating which is 27.3%. Customer feedback and suggestions have 90.9% of excellent rating (rating 5), that means all companies focuses on customer satisfaction.

Quality culture

Quality culture aspect of soft TQM shows similar response as relation management with partners. Rating for External and internal information related to TQM collection and maintenance has good (rating 3) rating by 50% of respondents. Similarly, statistical tools and techniques usage has good (rating 3) rating by 27.3% of respondents. Formal information sharing has fair (rating 2) rating by 9.1% of respondents.

Result

The SCP objective was to investigate how soft TQM helps to improve organizational performance. For these three hypotheses were considered and it gives result as follows:

Soft TQM elements have direct impact on organizational performance.

Hard TQM elements and soft TQM are interconnect with each other.

Soft TQM elements have direct impact on hard TQM through its adaptation and utilization

Therefore, for successful implementation, organizations should pay more attention to soft TQM as well as hard TQM.

Another survey to investigate current soft TQM usage in leading organization shows that companies are more focusing on human resource and leadership aspect of soft TQM. These companies are customer focused and pay attention to customer need and satisfaction. However leading organizations are not concentrating on relationship with partners and quality culture. These the area where companies need to improve to achieve their goals and objectives of organization.

Future Scope

Due to lack of time, proper survey was not conducted to study the hypothesis with new data from manufacturing sector and its analysis. Also, short survey gave an overview about future survey. In future survey, performance can be measured by financial and non-financial aspects. That survey will include detail analysis of data by using various tools and formation of questionnaires by referring to previous study, will help to conduct effective survey. This type of survey will help to provide one implantation model for TQM to manufacturing companies.

Conclusion

As per survey, it is observed that organizations are less focused towards some of the soft TQM elements. As per the survey customer feedback and suggestions system is rated as excellent (rating 5) means these companies pay attention to customers need their satisfaction. Similarly human resource aspects are utilized properly in all organization as it was rated as very good (rating 4) and excellent (rating 5). However, companies are not paying attention to relationship management with partners and quality culture. Most of rating for these two aspects are fair (rating 2) and good (rating 3). To implement TQM in organization, organization must pay attention to all aspect of soft TQM as well as hard TQM to achieve the organizational goals.

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