

Human Side of Total Quality Management: A Critical Review

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Abstract

Total quality management (TQM) becomes a famous approach since it has new methods to assure the successful for organizations in business environment. The spotlight on quality management in business environment urged the researchers to focus seriously on the improvement of quality management methods, which enhance the organization activities via the successful of total quality management implementation. Recently, many attempts have been made to identify the critical successful factors of total quality management from one side, and to discover the importance of these factors to the implementation of the TQM from the other side. On the other hand, some studies were interested in dividing the quality management practices. They divided the critical factors of quality management into two groups: either hard and soft factors or technical and human factors, respectively. This paper attempts to explore the human factors of TQM from one side, and their importance to total quality management implementation from the other side via deep concentration on literature of TQM.

Keywords: Human Side, Technical Factors, Total Quality Management

1. Introduction

Total quality management approaches were developed by quality gurus such as Deming, Grosby, Juran, Feigenbaum, and Ishikawa who made the main structure of TQM (Dale, 2001; Habtoor, 2016). In fact, TQM has known as a famous approach since it has new methods to ensure the successful of organizations in business environment.

The spotlight on quality management in business environment urged the researchers to focus seriously on the improvement of quality management methods which would enhance the organization activities via the successful TQM implementation. Recently, many attempts were made to identify the critical successful factors of TQM from one side, and also to discover the importance of these factors to the implementation of the TQM from the other side (e.g. Saraph et al., 1989; Ali et al., 2019; Flynn et al., 1994; Ali, 2022; Badri et al., 1995; Ahmed et al., 2022; Yusof and Aspinwall, 1998; Quazi et al., 1998; Zhang, 2000; Antony et al., 2002; Sharma and Kodali, 2008; Wahid and Corner, 2009; Fotopoulos et al., 2009; Saleh & Habtoor, 2015; Tabouli et al., 2016a; Habtoor, 2020, Ali et al., 2021, Almaamari, 2020, Almaamari, 2021).

Moreover, some studies were interested in dividing the quality management practices, which divided the critical factors of quality management into two groups; namely hard and soft factors or technical and human factors respectively (e.g. Wilkinson, 1992; Flynn et al., 1995; Louise, 1996; Rahman and Bullock, 2005; Ali et al., 2019; Tari, 2007; Abdullah et al., a, b 2008; Gadenne and Sharma, 2009; Fotopoulos and Psomas, 2009; Kumar et al., 2009; Habtoor, 2015; Tabouli et al., 2016 b; Ali et al., 2016; Salama et al., 2019; Alzoraiki, M. S. M. 2021). According to Wilkinson (1992), there are two aspects of quality management; one of whom is the hard aspect (technical factors) that focuses on tool and work process and the other is the soft aspect (human factors) that interests in the human side of quality management. Moreover, he suggested that the hard aspect has more preoccupation rather than the human aspect when the organizations implement TQM program.

Literature on quality management also suggested that human factors of quality management such as leadership, teamwork, employee involvement, training and education, customer focus, communication, supplier relations, and rewards and recognition have significant impact on the implementation of TQM (Saraph et al., 1989; Flynn et al., 1995; Ho et al., 2001; Rahman and Bullock, 2005; Abdullah et al., 2008 (a,b); Gadenne and Sharma, 2009; Fotopoulos and Psomas, 2009; and Kumar et al., 2009; Ali & Habtoor, 2015; Ali et al., 2015; Ismail et al., 2018 Habtoor, 2019; Tabouli et al., 2016 c; Salama et al., 2019). Thus, this conceptual paper attempts to explore the human factors of TQM and their importance to TQM implementation by reviewing the literature on TQM.

2. Literature Review

2.1. Critical Factors for Quality Management Implementation

In fact, it was claimed by Zairi (1994) that it is difficult to identify and measure the critical factors of quality management, even though, Saraph et al. (1989) had started to identify and measure these critical factors of quality management. Moreover, other studies attempted to recognize the critical successful factors of TQM implementation (such as Oprime et al., 2012; Guion, 2010; Fotopoulos et al., 2009; Wahid and Corner, 2009; Sharma and Kodali, 2008; Antony et al., 2002; Zhang, 2000; Hesan et al., 1998; Yusof and Aspinwall, 1998; Black and Porter, 1996; Saeed et al., 2022; Badri et al., 1995; Flynn et al., 1994; and Porter and Parker, 1993; Mohamed et al., 2016; Habtoor, 2016; Ismail et al., 2019; Al-Ali et al., 2019; Salama et al., 2020). However, all these studies were based on previous literature and approaches of the previously mentioned leaders of TQM. Also, some of them based on the standard of quality awards such as Deming Prize in Japan, the European Quality Award in Europe, and the Malcolm Baldrige National Quality Award in the United States of America.

According to Saraph et al. (1989), collecting quality data such as defect rate, error rate, rework cost, and scrap cost can be considered as a measure of quality performance not a measure of organization-wide quality management. In general, Saraph et al. (1989) had made the first attempt to identify and measure the critical factors of quality management; he claimed that this operational measurement would be useful to both decision makers and researchers, since it makes the decision makers enable to know the controllable status of the organization and make organization-wide improvement in quality management. Moreover, Saraph et al. (1989) identified and measured eight factors from the quality management literature as critical factors of quality management implementation in business unit, they are: top management leadership, role of the quality department, training, product design, supplier quality management, process management, quality data, and employees relations. They used questionnaire technique and factor analysis from 162 general managers and quality managers of 89 divisions to measure managers' perception of eight critical factors of quality management in 20 companies at the business level.

Furthermore, Tamimi and Gershon (1995) attempted to develop a tool for assessing TQM practices. They used Deming philosophy as a guide in developing a survey instrument for the purpose, and they used Deming's 14 points as critical factors. While Ahier et al. (1996) developed an instrument to measure the key quality management constructs by testing 371 automotive companies, they attempted to make a comprehensive approach in identifying and validating the critical success factors of TQM. In short, they identified 12 critical factors, respectively they are: top management commitment, customer focus, supplier quality management, product design quality management, benchmarking, statistical process control, sharing internal quality data, employee empowerment, employee involvement, employee training, product quality, and supplier performance.

Other attempt was done by Black & Porter (1996) to establish a research methodology in order to improve a self-assessment framework to better inform organizations in the development of total quality system. They used Baldrige award criteria to derive 10 critical factors to quality management implementation by questionnaire sent to over 200 managers in industries in USA and Europe. The ten critical factors are: people and customer management, supplier partnerships, communication of improvement information, customer satisfaction orientation, external interface management, strategic quality management, teamwork structures for improvement, operational quality planning, quality improvement measurement system, and corporate quality culture (Ghaleb et al., 2022).

Besides, in 1999, Yusof & Aspinwall attempted to review and analyze the critical success factors developed by previous authors in small and medium enterprises. They used questionnaire to meet the purpose of their study.

After that, Zhang in (2000) said "the implementation of TQM can't be successes without utilizing suitable quality management methods ". Zhang attempted to develop a model of quality management methods to assess the organization's strength and weaknesses, which utilizing to improve business performance. He focused on the effect of quality management methods on business performance through 212 manufacturing companies in China.

More recently, Guion (2010) suggested that critical success factors such as leadership, strategic planning, competitive benchmarking, process management, human resource development, education and training, quality tools, information and analysis, customer management, and supplier management have an important impact on TQM implementation.

Other attempts to identify the critical success factors were carried out in different environments such as Badri et al. 1995 in Middle East (UEA), Quazi et al. (1998) in Singapore, Antony et al. (2002) in Hong Kong, Wahid & Corner (2009) through case study on XYZ Limited in Malaysia, and Fotopoulos et al. (2009) in Greek.

2.2. Human Side of Quality Management

There is a lack of studies which emphasize on human factors of quality management while many studies were carried out to contribute the design development and application of the total quality system (Lau and Idris, 2001). In the implementation of TQM, there is little attention for the human factors of quality management such as leadership, communication, training and education, employee involvement, teamwork, reward and recognition, customer focus, and supplier relation due to the production orientation of the gurus of TQM (Hill, 1991; Wilkinson, 1992; Louise, 1996;

Habtoor, 2016; Salama et al, 2020). Thus, as a result of TQM orientation gurus, more attention was paid to the technical factors of quality management rather than to the human factors of quality management when the organization reworks their processes to implement TQM practices.

Based on message of quality "the quality is everyone", Wilkinson (1992) started to make a highlight emphasis on human factors of quality management. He divided quality management into two aspects: the first is the soft aspect, which interests on human side of quality management such as leadership, teamwork, employee involvement, training and education, customer focus, communication, supplier relations and rewards, and recognition. And the second aspect is the hard aspect that interests on work process such as process flow management, product design process and statistical, benchmarking, and just in-time principle (JIT) and control/feedback.

According to Louise (1996), the cultural change is a major reason for the reorientation of total quality toward the human factors of quality management. The changing culture becomes as a stumbling block for many companies involved in TQM implementation (Kearney, 1991; Louise, 1996)

Lau and Idris (2001) suggested that it is necessary to study the critical soft factors (human factors) of quality management due to their importance to TQM implementation in contributing to the changing thinking of managers and employees and permeating TQM throughout the entire organization. Yasuo (1980), said "To make good use of personnel is difficult, but it is an issue that is required and must be overcome". According to Tamimi & Sebastianelli (1998), 48 percent were identified as barriers to TQM due to the human factors of quality.

Recently, there is more emphasis from the researchers on the dimension of human factors of quality management and their influence and relations with the technical factors, besides to their impact on the implementation of TQM (e.g. Hill, 1991; Wilkinson, 1992; Motwani et al., 1994; Louise, 1996; Lau & Idris, 2001; Sila & Ebrahimour, 2002; Rahman & Bullock, 2005; Boon & Arumugam, 2005; Lewis et al., a, b, 2006; Abdullah et al., 2008a, 2008b; Gadenne & Sharma, 2009; Fotopoulos & Psomas, 2009; Mokhtar et al., 2017; Saleh & Habtoor, 2016; Saleh & Habtoor, 2020).

Controversial claims have been suggested by researches in regards to the more effective factors on TQM implementation, for example, Black and Porter (1995) claimed that hard factors concern with tools and systems that tend to support the implementation of human factors, while Samson and Terziovski (1999), found that human factors of quality management such as executive commitment, employee empowerment, and an open culture can make a competitive advantage more strongly than the technical factors such as process improvement, benchmarking, and information analysis. Thus, it is difficult for quality tools to contribute to quality improvement, customer satisfaction, and consolidation of its market position without support and guidance by the human factors of quality management such as top management commitment and employee and supplier support (Fotopoulos & Psomas, 2009; Mokhtar & Habtoor, 2015a).

On the other hand, Lewis et al. (2006) found that the hard criteria implementation has more attention than the soft in small and medium enterprises (SMEs). He identified the human factors of quality management which are largely related to the behavioural aspects of working life such as leadership, human resource management, supplier's relations, and customer focus. Hill (1991) suggested that there are lacunae in the implementation of the social factors when the organizations reengineering their systems and procedures.

Moreover, Lau & Idris (2001) found that human factors such as culture, trust, and teamwork have a strong influence on quality management. The importance of human factors of quality basis on their important role in the implementation of TQM as a program needed great and continues changing in the culture of organization. And Motwani et al. (1994) considered that human factors of quality management such as leadership, organizational skills, and culture as a key player acting to achieve quality performance.

Actually, it is easy to quantify the hard criteria (Louise, 1996). Despite of the fact that the soft criteria are more open to interpretation, they are more difficult to measure (Lewis, 2006). More specifically, Flynn et al. (1995) attempted to explore and investigate the relationship of quality management practices and their impact on performance and competitive advantage. They divided quality management practices into two groups; the first group named as the core quality management practices, and includes: process flow management, product design process and statistical and control/feedback. The second group named as the quality management infrastructure practices (human factors), which includes: customer relationship, supplier relationship, work attitudes, workforce management, and top management support. They found a positive relationship between quality management practices and performance; also, they found that the core quality management practices act as a mediator factor for the relationship between the human factors of quality management and the organization's performance, which supports the purpose of this study. Furthermore, Ho et al. (2001) divided the eight factors of quality management that were developed by Flynn at el. (1994) into two groups, namely the core quality management factors and the quality management infrastructure factors. They found a positive impact of quality management infrastructure factors on the core quality management factors; besides, it was found another impact of the quality management infrastructure factors on the performance through their impact on the core quality management factors.

Furthermore, Lewis et al. (2006) identified 13 soft factors (human factors) and 12 hard factors (technical factors) as critical factors of quality management based on Sila and Ebrahimpour (2002) study, which identified 25 elements as criteria factors of quality management.

Rahman & Bullock (2005) and Abdullah et al. (2008) suggested that the hard factors of quality management need the support of human factors of quality management to have a significant impact on organizational performance. They

provided evidence that human factors of quality management support the hard factors to impact on organization performance. Practically, they found a significant relationship between the human factors of quality management (such as e.g., workforce commitment, shared vision, customer focus, use of team, personnel training, and cooperative supplier relations) and the technical factors of quality management (e.g., use of JIT principles, technology utilization, and continuous improvement enablers). Abdullah et al. (2008 a, b) also found a significant positive relationship between the human factors of quality management (e.g., management commitment, employee involvement, training and education, and reward and recognition) and the organization's quality improvement practices.

Recently, Gadenne & Sharma (2009) suggested the favourably relationship between the technical factors (e.g. benchmarking and quality measurement, continuous improvement, and efficiency improvement) and the human factors (e.g. top management philosophy and supplier support, employee training and increased interaction with employee, and customer improve organizational performance).

From all what have been discussed above and based on the work that has been done by TQM gurus such as Deming, Grosby, Juran, Feigenbaum, and Ishikawa, in addition to the previous studies that interested on identifying the critical factors of the TQM implementation (e.g. Saraph et al., 1989; Porter and Parker, 1993; Flynn et al., 1994; Tamimi and Gorshon, 1995; Badri et al., 1995; Black and Porter, 1996; Yusof and Aspinwall, 1998; Quazi et al., 1998; Zhang, 2000; Antony et al., 2002; Sharma and Kodali, 2008; Wahid and Corner, 2009; Fotopoulos et al., 2009; Guion., 2010; Etlesh et al 2016 a & b; Al-Hammali et al., 2017a; Al-Hammali et al., 2017b; Mokhtar & Habtoor 2015b; Mohamed et al., 2015; Algwizi & Habtoor, 2020; Mansour et al., 2021) and the studies that concentrated on the human side of TQM (e.g. Wilkinson, 1992; Flynn et al., 1995; Louise, 1996; Rahman and Bullock, 2005; Demirbag et al., 2006; Tari, 2007; Abdullah et al., 2008a, 2008b; Gadenne and Sharma, 2009; Fotopoulos and Psomas, 2009; Kumar et al., 2009; Saleh & Habtoor, 2017; Saleh et al., 2018; Habtoor, 2018), this paper explores 17 factors as critical human factors for the successful of TQM implementation as shown in Table 1.

3. Discussion and Conclusion

This study explores 17 factors as the most critical human factors to the implementation of TQM. In fact, these human factors act to enhance the implementation of TQM through their support to quality improvement practices, which led to improve the organization performance. Further work can empirically evaluate the role of these factors for the competitive advantage of the companies.

Table 1. The human factors of total quality management

No	Human factors	No	Human factors
1.	Leadership	10.	Human resources management
2.	Customer focus	11.	Empowerment
3.	Supplier relations	12.	Quality culture
4.	Employee involvement	13.	Employee satisfaction
5.	Education and training	14.	Social responsibility
6.	Reward and recognition	15.	Open culture
7.	Teamwork	16.	Break of department barriers
8.	Communication	17.	Shared vision
9.	Role of quality department		

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