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ScienceDirect

Procedia Technology 24 (2016) 554 – 561

Procedia Technology

International Conference on Emerging Trends in Engineering, Science and Technology (ICETEST - 2015)

# Investigating the relationship between TQM practices and Firm's performance: A conceptual framework for Indian organizations

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**Abstract**

Previous TQM studies have been inconclusive in resolving the validity of the universalistic standard for TQM implementation in the organization. The past TQM literature reported mixed and ambiguous relationship between TQM practices and organization's performance. The purpose of this study is to develop and propose the conceptual framework and research model of TQM implementation in relation to organization performance particularly in Indian context. This paper investigates impacts of TQM practices on multiple performance measures as well as the obstacles confronted by Indian organizations. To examine the link more closely the relationship between individual TQM practices and various performance measures were investigated explicitly. A comprehensive review of literature on TQM and quality performance was carried out to accomplish the objectives of this study .The adoption of such a conceptual model on TQM and organization's performance would help managers, decision makers, and practitioners of TQM in better understanding of the TQM practices and to focus on the identified practices while implementing TQM in their companies. Further, the scope for future study is to test and validate this model by collecting the primary data from Indian organizations by using Structural Equation Modeling (SEM) approach for hypotheses testing and to find out the effect of mediators in between TQM practices and organization performance.



Peer-review under responsibility of the organizing committee of ICETEST – 2015

*Keywords:* Total Quality Management ; Performance measure indicators ;Conceptual framework.

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Peer-review under responsibility of the organizing committee of ICETEST – 2015
doi:10.1016/j.protcy.2016.05.103

## 1. INTRODUCTION

Total quality management (TQM) is an integrated management philosophy aimed at continuously improving the quality of products and process to achieve better customer satisfaction. TQM has been well accepted by managers and quality practitioners as a change management quality approach [4].It plays a vital role in the development of management practices [15]. Many researchers asserted TQM as an approach to improve effectiveness, flexibility, and competitiveness of a business to meet customers' requirements [12], as the source of sustainable competitive advantage for business organizations [26], as a source of attaining excellence, creating a right first-time attitude, acquiring efficient business solutions, delighting customers and suppliers etc. [9] and above all as a source of enhancing organizational performance through continuous improvement in organization's activities [5,25].

In recent decades, the level of awareness towards TQM has increased drastically and has gone to its peak to become a well-established field of research [4] due to intense global competition, increasing consumer consciousness of quality, rapid technology transfer, and towards achieving world-class status. There are mixed results about the relationship between TQM practices and organization's performance. Some of the results are positive, negative and non significant. There are differences in those studies because there is no universalistic approach for TQM implementation in organizations. The studies were conducted in different context such as in different countries, in different industries, by using different TQM practices and by measuring different performance indicators. Though there is considerable literature available that have evolved to examine the link between TQM and quality performance across the globe, but still little is known about the effect of TQM practices on firm's performance particularly in Indian context. Thus, studying the relationships between TQM and organization performance is necessary to provide a theoretical as well as a practical platform to the organizations in the efforts to gain sustainable competitive advantage. In order to bridge the gap and provide organizations with practical assistance in correctly managing and implementing the TQM practices to achieve firm performance, this study proposes a conceptual model of TQM implementation in relation to company performance particularly for Indian sector to examine whether the implementation of TQM practices result in an improvement of firm's performance. Thus, the scope of this study is in finding out the association between the TQM practices and organization performance more precisely, the Indian context.

The main objective of this study is to identify the critical factors required for TQM implementation in the organization. The past literature about the link between TQM practices and organization performance gives contradictory results. So the purpose of this study is to develop a conceptual framework and a research model showing the relationship between TQM implementation and performance measures of organization. Most of the previous works show that TQM has significant relationship with firm's performance. However, the examining of moderators is less given in previous work, which mediators are known generally as general tools and techniques without specific focus on types of improvement. And also to determine the effects of moderators TPM, SPC, Lean such as which improve the relationship between TQM practices and firm's performance.

The paper is organized as follows:

- An investigation of factors impelling effective and continuous improvement of Indian organization's quality management system.
- Reviews the TQM practices and summarizes of the results of previous studies on the link between the TQM practices and organization performance measures.
- Propose the conceptual research framework and the hypothesis related to TQM practices and multiple performance measures
- And finally presents discussions, results and further research implications.

## 2. Literature review

### *2.1 Critical factors of TQM*

An extensive literature review of the previous studies on TQM have examined what is TQM and what are the critical factors required for the successful implementation of TQM in organizations [20,22,23]. Thus, various studies have been carried out for the identification of those critical factors ensuring its success, as a way to develop a theory of quality management from three different areas: contributions from quality leaders (Crosby, 1979; Deming, 1982; Ishikawa,1985; Juran, 1988; Feigenbaum, 1991), formal evaluation models (European Quality Award, Malcolm Baldrige National Quality Award, The Deming Award) and empirical research (Saraph, Benson and Schroeder, 1989; Flynn, Schroeder and Sakakibaru, 1994; Badri, Davis and Davis, 1995; Ahire,Golhar and Waller, 1996; Black and Porter, 1996; Grandzol and Gershon, 1998; Quazi et al ., 1998).

These studies provide different sets of quality practices essential for successful TQM implementation. This leads to reach an inconclusive approach for implementing TQM [13]. As such no study has identified a universalistic set of practices for successful implementation of TQM. Though there are some Quality Award models such as Malcolm Baldrige National Quality Award (MBNQA, 2005); European Quality Award (EQA, 1994); The Deming Prize (1996); Kanji Business Excellence Model, which provide a useful benchmark framework for industries and help in implementing TQM as well as evaluating their business performance results. The critical factors identified in the past TQM literature are given Table 1. The past TQM literature is summarized below in Table 2. Through the comprehensive review of the TQM literature, the present study identified a set of 18 TQM practices and it is shown in Table 3.

Table 1 : Critical factors identified in the past TQM literature

| SL NO | Critical factors identified in past TQM literature | SL NO | Critical factors identified in past TQM literature | SL NO | Critical factors identified in past TQM literature |
|---|---|---|---|---|---|
| 1 | Leadership and top management commitment | 11 | Rewards and recognition | 21 | Quality improvement systems |
| 2 | Continuous improvement | 12 | Education and training | 22 | Role of quality department |
| 3 | Supplier quality | 13 | Strategic quality planning | 23 | Quality policy |
| 4 | Supplier performance | 14 | Strategic quality management | 24 | Corporate quality culture |
| 5 | Customer focus | 15 | SPC usage | 25 | Quality management environment |
| 6 | Team work | 16 | Quality information and analysis | 26 | Operational quality planning |
| 7 | Communication | 17 | Quality assurance | 27 | Benchmarking |
| 8 | Measurement and feedback | 18 | Quality citizenship | 28 | Process and product design |
| 9 | Employees empowerment | 19 | Quality information availability | 29 | Product quality and innovation |
| 10 | Employees involvement | 20 | Quality information usage | 30 | Process management |

### *2.2 Performance measure indicators*

Numerous studies have been carried out to determine the positive and negative (or non-significant) relationships or correlations between TQM practices and various performance measures. This section presents an overview of different performance measures indicators. An comprehensive review of TQM studies on organizational performance suggests that there are various performance measures indicators [17,28]. Different indicators used for measuring organizational performance have been identified from the literature and summarized in Table 4. [4] measured organizational performance from quality performance (example quality of product and service, customer relations, customer satisfaction with products quality, and level of quality performance relative to industry norms).[28] in their study measured organizational performance through two categories which are satisfaction level (example employee satisfaction and customer satisfaction) and business results (example productivity, number of successful new products, cost performance and profitability).

In this study, organization performance will be measured through quality performance, operating performance, market and financial performance, employees performance, customer satisfaction, innovation performance and society results.

## 3. Proposed research model and research questions

Based on the above literature review, a conceptual framework is developed and a research model has been proposed to explore the relationships between identified TQM practices and company's performance by measuring multiple performance indicators. The proposed research framework is depicted in Fig.1 as below. This research

model suggests that the greater the extent to which these TQM practices are present, the organization's performance of Indian companies will be higher. In this conceptual research framework TQM practices act as independent variable, and performance measures as dependent variable respectively. The main objective of the study is to develop a universalistic model for TQM implementation.

Table 2 : TQM literature

| Authors | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Juran | x | - | x | x | x | - | - | - | x | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | x |
| Crosby | | - | x | x | - | - | - | - | x | - | - | x | - | x | x | - | - | - | - | - | - | - | - | - | - | - | - | x | - | x |
| Feigenbaum | x | - | - | - | - | - | - | - | x | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x |
| Garvin | x | - | x | x | x | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | - |
| Saraph | x | - | x | - | - | - | - | - | - | x | - | | x | - | - | - | - | x | x | x | - | - | x | - | - | - | - | x | - | x |
| Lu & Sohal | x | - | - | - | - | - | - | - | - | - | - | x | - | x | x | - | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| Oakland | - | - | x | x | x | - | - | - | x | - | - | - | - | x | x | x | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| Flynn | x | - | x | - | x | - | - | - | - | x | - | - | - | - | - | - | - | - | x | - | - | - | - | - | - | - | - | x | - | x |
| Babbar | x | - | - | - | x | - | - | - | x | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Powell | x | - | x | x | x | - | - | - | - | - | - | x | - | x | x | x | - | x | - | - | - | - | - | - | - | - | x | x | - | x |
| Ahire | x | - | x | x | x | - | - | - | x | x | - | x | - | - | x | - | - | - | - | x | - | - | - | - | - | | x | x | x | - |
| Black & Porter | - | - | x | - | x | - | - | - | - | x | - | - | - | x | - | - | - | - | x | - | x | - | - | x | - | x | - | - | - | x |
| Low & Wei | - | - | x | x | x | - | - | - | - | - | - | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | x | - | - | x |
| Zeitz | x | - | x | - | x | - | - | - | - | x | - | - | - | - | - | - | - | - | - | x | x | - | - | - | - | - | - | - | - | - |
| Tamimi | x | - | x | x | x | - | - | - | x | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Quazi et al | x | - | - | - | - | - | - | - | x | x | - | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | x |
| Rao et al | x | - | x | x | - | - | - | - | x | x | - | - | - | - | - | x | - | - | - | - | - | - | x | x | - | - | - | x | - | x |
| Joseph | x | - | x | - | - | - | - | - | - | x | - | x | - | - | - | - | - | - | x | x | - | x | x | - | - | x | - | x | - | - |
| Ang et al | - | - | x | x | x | - | - | - | x | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| Zhang et al | x | - | x | x | x | - | - | - | x | - | - | x | - | - | - | x | - | x | - | - | - | - | - | - | - | - | - | x | - | x |
| Nwabueze | - | - | x | x | x | - | - | - | x | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| Thiagarajan et al | - | - | x | x | - | - | - | - | x | - | - | - | - | x | - | x | - | - | - | - | - | - | - | - | - | - | - | x | - | - |
| Motwani | x | - | x | x | x | - | - | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | - | - |
| Antony et al | x | - | - | - | x | - | - | - | - | - | - | x | - | - | - | x | - | - | - | - | - | - | x | - | - | - | - | - | - | - |
| Deming prize | - | - | x | x | - | - | - | - | x | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| MBNQA | - | - | x | x | x | - | - | - | x | - | - | x | - | x | - | x | - | - | - | - | - | - | - | - | - | - | x | x | - | x |
| EQA | - | - | x | x | x | - | - | - | x | - | - | - | - | x | x | x | - | x | - | - | - | - | - | - | - | - | x | x | - | x |
| Das et al | x | - | x | x | - | - | - | - | x | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | - | x |
| Gadenne & Sharma | x | - | - | - | - | - | - | - | x | x | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | - | - |
| Fotopoulos et al | x | - | x | x | x | - | - | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | x |
| Koh & Low | x | - | x | x | - | - | - | - | x | x | - | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | x |
| Ariful & Anwarul | - | x | x | - | x | - | - | - | - | x | - | - | - | - | - | - | - | - | - | - | - | - | - | - | x | - | x | - | - | - |
| Frequency | 22 | 1 | 26 | 20 | 20 | 0 | 0 | 0 | 20 | 11 | 0 | 20 | 1 | 13 | 6 | 11 | 0 | 4 | 4 | 4 | 2 | 1 | 4 | 2 | 1 | 2 | 14 | 19 | 1 | 22 |

Table 3 : Critical factors selected for the present study

| SL NO | Critical factors selected for the present study | SL NO | Critical factors selected for the present study | SL NO | Critical factors selected for the present study |
|---|---|---|---|---|---|
| 1 | Leadership and top management commitment LTMC | 7 | Education and training ET | 13 | Quality culture QC |
| 2 | Continuous improvement CI | 8 | Strategic management SM | 14 | Benchmarking BM |
| 3 | Supplier quality management SQM | 9 | SPC usage SPC | 15 | Process and product design PPD |
| 4 | Customer focus CF | 10 | Quality information analysis QIA | 16 | Process management PM |
| 5 | Employees involvement EI | 11 | Quality assurance QA | 17 | Product innovation PI |
| 6 | Employees empowerment EE | 12 | Quality citizenship QCZ | 18 | Knowledge management KM |

In short, comprehensive studies trying to identify the direct and indirect effects of TQM practices on performance at multiple levels are rather limited and fail to respond conclusively to the following research questions:

• Which TQM practices are directly related to firm's performance?

• Which TQM practices are indirectly related to firm's performance?

With the help of this model showing the relationship between TQM factors and organization performance managers and decision makers can introduce or implement TQM with empirical evidence. The research questions are:

•Is there is a significant relationship between identified TQM practices and firm's performance?

To examine the link more closely the relationship between individual TQM practices and various performance measures are investigated explicitly.

Based on the extensive review of literature presented in previous section on the relationships between TQM practices and organization performance, the research framework is developed as shown in Fig.1.

Null hypothesis Ho: There is no significant relationship between TQM practices and aggregate firm performance.

Alternate hypothesis H1: There is a significant positive relationship between identified TQM practices and aggregate firm performance of Indian companies.

To examine the link more closely the relationship between individual TQM practices and various performance measures were investigated explicitly

The hypotheses that study these relationships are:

H2: The individual TQM practices are positively correlated with aggregate firm performance.

H3: The individual TQM practices are positively correlated with multiple performance measures.

Table 4 : Literature review on performance measures

| Study | Performance measures | Data analysis technique | Study | Performance measures | Data analysis technique |
|---|---|---|---|---|---|
| Anderson et al. | Operating performance | Path analysis | Easton and Jarrell | Financial performance | Wilcoxon rank-sum test, Wilcoxon signed-rank test |
| Flynn et al. | Operating performance | Path analysis | Forza and Flippini | Operating performance | Structural equation modelling |
| Mohrman et al. | Financial performance, Market performance Operating performance | Multiple regression analysis, hierarchical regression analysis | Rungtusanatham et al. | Operating performance | Path analysis |
| Powell | Financial performance Operating performance | Partial correlations | Samsonand Terziovski | Operating performance | Structural equation modeling, multiple regression analysis |
| Hendricks and Singhal | Financial performance | Wilcoxon signed-rank test, Mann–Whitney test | Dow et al. | Operating performance | Structural equation modelling |
| Adam et al. | Financial performance Operating performance | Stepwise regression | Das et al. | Financial performance, Operating performance | Structural equation modelling |
| Chenhall | Financial performance | Regression,ANOVA | Wilson and Collier | Financial performance | Structural equation modelling |
| Grandzol and Gershon | Financial performance Operating performance | Structural equation modelling | Douglas and Judge | Financial performance | Hierarchical regression analysis |
| Choi and Eboch | Operating performance | Structural equation modelling | Ho et al. | Operating performance | Hierarchical regression analysis |
| Ahire and O'Shaughnessy | Operating performance | Stepwise regression, t-tests | | | |

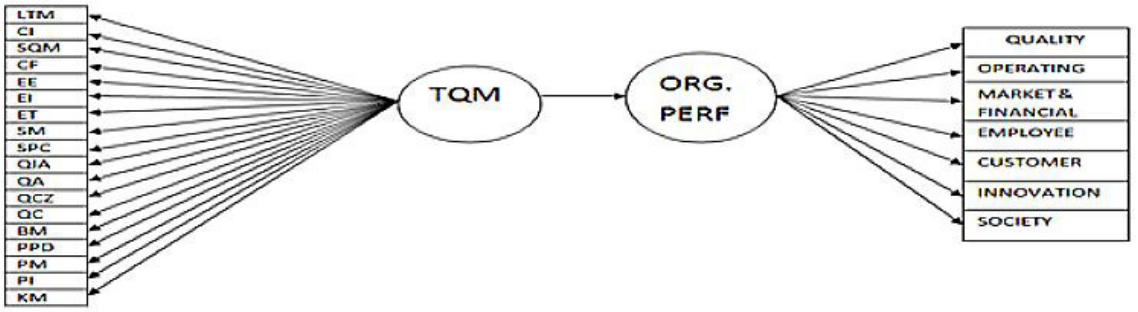


Fig.1 Conceptual framework showing the relationship

### *3.1 Leadership and top-management commitment*

The driving role of leadership and top management commitment for TQM implementation in the organizations is emphasized in the previous literature [6,25,28]. Further, studies showed that top-management commitment significantly affects the quality performance [4,14]. Accordingly, it is proposed that: H21: Leadership and top-management commitment for TQM practices is positively correlated with aggregate firm performance.

To identify the link between leadership and top management commitment and multiple performance measures, the proposed hypotheses are

H31a,b,c,d,e,f,g: Leadership and top-management commitment for TQM practices is positively correlated with quality , operating ,financial , employee , customer satisfaction , innovation and society results.

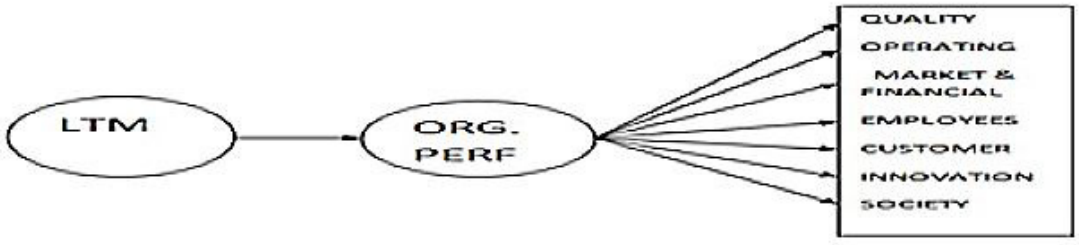


Fig.2 Individual TQM practice relationship with multiple performance measure eg: Leadership and top management commitment

Table 5 : Explanation for choosing critical factors for the present study

| N | Critical factors | Explanation |
|---|---|---|
| 2 | Continuous improvement CI | In TQM practices the best way to improve the organizational performance is to continuously improve the performance activities.[18] asserted that continuous improvement helps to convert inputs into useful outputs. Thus, the following hypothesis is proposed: H22: Continuous improvement is positively correlated with aggregate firm performance. Similarly to explore the link between continuous improvement and performance measures 7 hypotheses were proposed. |
| 3 | Supplier quality management SQM | [28] asserted that effective supplier quality management can be achieved by cooperation and long term relationship with the suppliers. The organization competitiveness and performance can be improved by developing supplier partnership and long-term relationships. Therefore, a hypothesis to test this relationship is as follows: H23: Supplier quality management is positively correlated with aggregate firm performance. Similarly to explore the link between supplier quality management and performance measures 7 hypotheses were proposed. |
| 4 | Customer focus CF | The organization should be aware about the customer requirements and responsive to the customer feedbacks and measure the customer satisfaction for TQM implementation [28].Customer focus which plays a vital role in improving the organization performance. The hypothesis which relates the customer focus and aggregate firm performance as follows: H24: Customer focus is positively correlated with aggregate firm performance. To examine the relationships between customer focus and multiple performance measures 7 hypotheses were proposed. |
| 5 | Employees involvement EI | Employees involvement is one of main factors affects the organizational performance and outcomes of business [28]. They argue that the contribution and involvement of the employees in the process of TQM implementation boosts their, commitment, self-sufficiency and inventiveness which lead to the organization innovation. This leads to propose next hypothesis H25: Employee involvement is positively correlated with aggregate firm performance. Similarly to examine the link between employee's involvement and multiple performance measures hypotheses are proposed. |
| 6 | Employees empowerment EE | Empowerment mainly rewards and recognition motivates employees to perform well which finally helps to improve customer satisfaction [28].Employees empowerment is positively related with organization performance and employees performance.Thus the following hypothesis is proposed : H26 : Employee empowerment is positively correlated with aggregate firm performance and similarly to examine the relationships between employees empowerment and multiple performance measures 7 hypotheses were proposed. |
| 7 | Education and training ET | [24] summarized the importance of education and training in maintaining high quality level within the service industry. Further, the research on TQM also found a positive relationship between training and education, and organization performance .Therefore, the next hypothesis shows the relationship between education and training and aggregate firm performance. H27: Education and training is positively correlated with aggregate firm performance .Similarly there are 7 hypotheses to investigate the relationship between education and training and multiple performance measures. |
| 8 | Strategic management SM | Strategic management consolidates the development and deployment of plans which improve the relationships with customers, suppliers, and business partners and also helps in achieving long and short term goals through participative planning [25]. Indeed, a significant link is found between strategic planning and quality performance [14], knowledge management behavior [13], role conflict [25], and customer satisfaction . Therefore, the next hypothesis attempts to find a relationship strategic management and organization performance. H28: Strategic management is positively correlated with aggregate firm performance. And to examine its relationships with multiple performances measure 7 hypotheses are proposed. |
| 9 | SPC usage SPC | Control charts are used to monitor the supplier interface and the results could potentially be used to monitor and manage the supplier performance effectively.There is a positive relationship between SPC and business performance. Information provided by the SPC system enhances the ability of top management to make decisions based on SPC data. Therefore, SPC leads to increase productivity by reducing waste and improving quality for short and long term benefits, H29: SPC practices is positively correlated with aggregate firm performance. Likewise hypotheses are proposed to examine the link with multiple performance measures. |
| 10 | Quality information analysis QIA | Gathering information and data from customers and about competitors and analyzing them presents useful results can be utilized to increase services and products quality [22].Quality information and analysis is one of the main criteria leads to the hypothesis H210:Quality information and analysis is positively correlated with aggregate firm performance. Indeed there are 7 hypotheses to examine the link between quality information and analysis and multiple performance measures. |
| 11 | Quality assurance QA | Quality assurance is significantly related with supplier selection strategy where it could improve the management supply chain networks performance. There is a s relationship between use of statistical quality techniques and organizational performance. Therefore, the next hypothesis attempts to find the relationship between quality assurance and organization performance. H211: Quality assurance is positively correlated with aggregate firm performance and to examine the relationships with multiple performance measures hypotheses are proposed. |
| 12 | Quality citizenship QCZ | Quality citizenship plays a major role in implementing TQM in organization [20]. To explore the relationship between quality citizenship and organization performance hypothesis is proposed.H212: Quality citizenship is positively correlated with aggregate firm performance. Hypotheses are proposed to examine the cross link between quality citizenship and multiple performance measures. |

| | | |
|---|---|---|
| 13 | Quality culture QC | The quality culture of an organization is the strong basis for enhancing organization's success. Beside this, quality culture significantly helps in improving the performance of the organization as well as influencing the interaction among members of the organization. Thus, quality culture is linked to the organization performance and a hypothesis is formed. H213: Quality culture for is positively correlated with aggregate firm performance. Similarly hypotheses are proposed to identify the link between quality culture and multiple performance measures. |
| 14 | Benchmarking BM | Benchmarking aims to measure organization's operations or processes against the best-in-class performers from inside or outside its industry . The usefulness of benchmarking for improving the performance of the organization and to achieve competitive advantage. help in continuous service improvements and establishment of customer satisfaction. Accordingly, the next hypothesis relates to benchmarking and organization performance. H214: Benchmarking is positively correlated with aggregate firm performance. To explore the relationships between benchmarking and multiple performance measures hypotheses are proposed. |
| 15 | Process and product design PPD | The product and service innovation is positively related with business advantages beside the two factors like IT infrastructure and customer responsiveness. Therefore, the next hypothesis attempts to find a relationship between product and service design and organization performance. H215: Process and product design is positively correlated with aggregate firm performance. |
| 16 | Process management PM | Process management is a systematic approach in which all the resources of an organization are used in most efficient and effective manner to achieve desired performance.[10] commented that process management stresses the value adding to a process, increasing the productivity of every employee and improving the quality of the organization. In many empirical studies, [6,15] systematically investigated the relationships between process management and quality performance. The results of these studies showed positive correlation between them. Hence, the following hypothesis is proposed: H216: Process management is positively correlated with aggregate firm performance. |
| 17 | Product innovation PI | Product innovation as a TQM practice which plays a major role for improving the innovation performance and quality performance [14] .The next hypothesis which shows the relationship between product innovation and organization innovation is as follows : H217 : Product innovation is positively correlated with aggregate firm performance. Indeed supporting 7 hypotheses are proposed to examine the crosslink between multiple performance measures. |
| 18 | Knowledge management KM | Specific framework to capture, acquire, organize, and communicate both tacit and explicit knowledge of employees so that other employees may utilize them to be more effective and productive in their work and maximize organization's knowledge. But there is a research gap in this area. To bridge this gap following hypothesis is proposed. H218: Knowledge management is positively correlated with aggregate firm performance. Similarly to explore the relationships with multiple performance measures 7 supporting hypotheses are proposed. |

## 4. Failures and obstacles of adopting TQM

A comprehensive review of TQM literature helps to determine following obstacles.1.No universal best practices exist ie applicable to all organizations 2.Fear and resistance to change 3.Costly and long-term study 4.Lack of government commitment 5.Lack of consistent top management commitment 6.Lack of competent management 7. Lack of qualified quality consultants 8.Inadequate knowledge about TQM 9.Inadequate planning 10. Difficulty in developing company specific model 11.TQM takes a long time to implement as it requires large organizational changes 12.Resource limitations 13.Lack of training 14.Reluctance of workers to involve in decision making 15.Employee apathy 16. Lack of co-ordination between departments. Organizations can however benefit from drawing on general experience from earlier discovered obstacles associated with the employment of TQM. A common obstacle associated with the implementation of TQM is the fact that TQM is far from an overnight project. It is generally accepted that TQM takes a long time to implement as it requires large organizational changes. In extension hereof, Ahire et al. (1995) stress that often cited reasons for TQM failures among others encompass unrealistic expectations regarding the time-frame and costs associated with TQM implementation, lack of top management commitment, or under-reliance on statistical methods, and failure to build and sustain a quality-oriented culture.

## 5. Conclusions

The purpose of this study is to develop and propose the conceptual framework and research model of TQM implementation in relation to organization performance particularly in Indian context. Although previous studies on TQM implementation and organization performance have undertaken but it report mixed and ambiguous relationships. The developed conceptual and research model helps to bridge the gap showing the relationship between TQM practices and organization performance. The comprehensive review of literature helps to identify the TQM practices required for successful implementation, performance measures and barriers in TQM implementation. The conceptual framework helps to determine the relationship between TQM practices and organization performance .To be more precise for exploring the cross links between individual TQM practices and multiple performance measures hypotheses are proposed. Finally, the study will provide a significant contribution in developing a better understanding of the TQM practices and organization performance in Indian industries.

Future research involves data collection and empirical analysis where the hypotheses about the extent of implementation and relationships will be tested in the Indian companies. The study investigates how far TQM

practices are positively or negatively contributing towards organization performance. Further, the scope for future study is to test and validate this model by collecting the primary data from Indian organizations by using Structural Equation Modeling (SEM) approach for hypotheses testing based on the comprehensive review of TQM literature and Most of the previous works show that TQM has significant relationship with firm's performance. However, the examining of moderators is less given in previous work, which mediators are known generally as general tools and techniques without specific focus on types of improvement. And also to determine the effects of moderators TPM, SPC, Lean such as which improve the relationship between TQM practices and firm's performance.

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