

# Literature Review on Implementation of Total Quality Management

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**Abstract** - In the present scenario of highly competitive business environment in domestic as well as global market, implementation of Total Quality Management (TQM) concept has become an important business style and a key survival tool, both for manufacturing and service industries, from large scale to small scale, for achieving the business goal and market value. TQM has been adopted by a good number of large scale industries for the achieve there goal and mission of the company. However, negligible units of Small and Medium Enterprises (SME) has adopted TQM. Especially in developing countries like India, though SMEs play an important role in the economic growth of the country and the demand of the growing population, SMEs are still resistant to adopt TQM. Many Indian SMEs, under the pressure from the customer, have set up suitable QMS (Quality Management System) for getting ISO 9001 certification leading to Quality Assurance, but have not adopted TQM due to the lack of the awareness about it. As such, understanding the causes behind their resistant in TQM implementation has become very important. In this review paper a number of literatures on the study on the Critical Factors for successful implementation of TQM and the causes responsible for resistant of the SME in adopting TQM. The result will motivate and help them in future research to remove or minimized the barriers of SMEs in implementing TQM to achieve the business excellence.

**Key Words:** Total Quality Management TQM, Small and Medium Enterprise SME, Quality Management System QMS, Quality Assurance QA.

## 1. INTRODUCTION

During the last few decades, both the large scale manufacturing industries and SMEs are facing considerable changes in the business environment, like increase of consumer awareness about to the quality, cost and the design and other parameters of the product, rapid growth advancement of technology, globalization of business is achieved by the organization, etc. As a result, the major challenges faced by the manufacturing industry is 'quality improvement and the continuous development of the new product and it efficiency' in addition to the innate 'cost competitiveness' and 'on-time delivery of the product'

(Arumugam et al., 2009). To address the challenges being faced by the industries in today's highly competitive business situation, TQM has become the key survival tool and vital business requirement for all the industries – both large industries and SMEs. TQM philosophy has been successfully adopted by all most all large manufacturing industries. However, it is also true that SMEs are still lacking behind to adopt TQM, though SMEs play a vital role in the economic growth of the country, particularly in all developing countries like India for the employment growing population of the developing country.

A most of manufacturing SMEs are working as the supplier of the large scale manufacturing industries. So, they are becoming the part of larger supply chains management and the quality of their products also becomes remarkably important and they will not be able to achieve competitive success, if they do not become quality aware and on time supply of their products and services. They should have suitable Statistical Quality Control system at the first Phase, then effective Quality Management System for Quality Assurance at the second Phase and Total Quality Management at the final Phase for continuous Quality Improvement and the development of the new product or innovation to improve the customer satisfaction, leading to increased competitiveness and improved business performance of the organization but also gain the profit on it.

Many manufacturing SME have implemented the Quality Management System for Quality Assurance, in ISO 9001 certification, but few of them have implemented the TQM.

**Table -1:** The Characteristics of Small and Big Industrial Enterprises

Big Enterprises	Small Enterprises
Resources, personnel, financing, knowledge of markets, economical experience.	Simple and efficient organization, strong motivation for development.
Planning & strategies	Flexibility when markets and techniques are

	changing.
Demanding development projects.	Quick reaction towards the changes in markets and new possibilities.
Connections to institutes and other outsiders.	Lack of bureaucracy. Managers are willing to take risks.
Independent of one person	Dependent of one person
The government regulations are well known.	Inside information is informal and efficient.
Qualified technical staff.	Not such Qualified technical staff in the organization.
Smaller and incremental innovations	Considerable innovations.

## 2. Literature Review

There are many studies are done on the impact of TQM implementation in SMEs. Many of the researchers have done the various researches on implementation of the TQM in the SMEs and the following Reviews of the various research papers had been study to understand the various method of the Implementation and challenges of it in SMEs during the implementation of TQM.

### 2.1 Small and Medium enterprises

Defining SMEs is a well understanding the different factor of the SMEs which are various from country to country and their economics. In other countries SME or more focused on the development of SMEs; so its play an important role the economic development of the country or the GDP of the country.

MSME (Micro, Small and Medium Enterprises) have been defined that SMEs of the different and different countries according to the rules and regulation and it's also depend upon the economic condition and industrial growth of the country. The factors for defining the SMEs by the MSME in various countries are given below:

1. 'Investment in Plant and Machineries' in India, as given in Table-2,
2. 'Number of Employees' and 'Annual turn-over' in European Union, as given in Fig.-1.
3. 'Number of Employees', Canada, as given in Fig-1.

4. 'Number of Employees' and 'Number of company', Japan.
5. 'Number of Employees' and 'Annual Turn-over' in Turkey, given in the Fig-1.

According to the Micro, Small and Medium Enterprises in India Report 2016 the SMEs is defined on the basis of investment in Plant & Machinery and equipment's under the MSME Act, 2006. The present investment limit for MSMEs is as under which enterprises will classified:

#### 2.1.1 Manufacturing Enterprises

- a. Micro enterprise: investment in plant and machinery up-to Rs. 25 lac.
- b. Small enterprise: investment in plant and machinery from Rs. 25 lac to Rs. 5 Cr.
- c. Medium enterprise: Investment in plant and machinery from Rs. 5 Cr to Rs. 10 Cr.

#### 2.1.2 Service Enterprises

- a. Micro enterprise: investment in equipment's up-to Rs. 10 lac.
- b. Small enterprise: investment in equipment's from Rs. 10 lac to Rs. 2 Cr.
- c. Medium enterprise: investment in equipment's from Rs. 2 Cr to Rs. 5 Cr.

Table-02: SME as defined in India

Manufacturing Enterprises – Investment in Plant & Machinery		
Description	INR	USD(\$)
Micro Enterprises	Up-to Rs. 25Lac	Up-to \$ 62,500
Small Enterprises	Above Rs. 25 Lac & Up-to Rs. 5 Cr	Above \$ 62,500 & Up-to \$ 1.25 million
Medium Enterprises	Above Rs. 5 Cr & Up-to Rs. 10 Cr	Above \$ 1.25 million & Up-to \$ 2.5 million

## 2.2 Importance of SMEs

In this research we are aim to finding the tools and techniques used in Total quality Management and understand the importance of the Total quality management in the SMEs. Because of the globalization of the market with a higher opposition environment, rapid technological changes and shorter product and technology lifecycles, many firms, especially the small and medium enterprises, are focusing on making innovation which is the key driver for the sustainable competitive advantage (Dadfar et al., 2013). The role of SMEs is vital for the economic growth of all the developing as well as developed countries across the world. In India, SMEs are considered as the backbone of Indian economy (Singh et al., 2006). Europe-India SMEs Business Council describes that Indian SMEs are contributing to around 45% of the country’s industrial output, around 40% of India’s exports, nearly 6.3 percent to the GDP of the country and employing around 60 million people (second highest after agriculture sector in India) and producing around 8000 different products for the domestic as well as international markets The sector is growing at a rate of about 8% per year.

There are various factors which contribute the development of the SMEs of the India. The following factors are:

1. Technology opportunities provide to the SMEs
2. Education & Training to the employee to developed the various soft skills so to improve the quality of the product.
3. Government must provide the various helps to the SMEs entrepreneur, such as the technical, providing the fund/ lone at minimum rate for the SMEs so they can easy developed them.
4. Providing the investors to SMEs in local market as well as in International market.

## 2.3 Total Quality Management & Its Framework

Total Quality Management has broadly adopted by many firms. At first, TQM was developed in japan; it was originated from the work of the quality gurus, Juran, Deming, Crosby, Feigenbaum and Ishikawa and on the rise of the manufacturing industry of japan in the world. TQM implementation in the organization helps from many way for improvement of the total organization quality and performance, and novel standard in management. TQM has

been analyzed in the respect to manufacturing firm and services firm.

Category	Based on Number of Employee			Based on C <sub>st</sub> of Plant & Machineries	Based on Annual Turn-Over	
	Europe	Turkey	Canada	India	Turkey	Europe
Medium	50 - 249	50-249	NIL	NIL	05 < and ≤ 25 million	€ 10 - 50 million
Manufacturing	NIL	NIL	100 - 499	Rs. 5 - 10 Cr		
Services	NIL	NIL	50 - 499	Rs. 2 - 5 Cr		
Small	10 - 49	10 - 49	5 - 99	NIL	01 < and ≤ 05 million	€ 2 - 10 million
Manufacturing	NIL	NIL	NIL	Rs. 25 Lac - 5 Cr		
Services	NIL	NIL	NIL	Rs. 10 Lac - 2 Cr		
Micro	< 10	1 - 9	< 5	NIL	00 < and ≤ 01 million	Up-to € 2 million
Manufacturing	NIL	NIL	NIL	<Rs 25 Lac		
Services	NIL	NIL	NIL	<Rs 10 Lac		

Fig-01: SME as defined in few different countries

### 2.3.1 Total Quality Management Framework

Adnan Kalkan, Ozlem Cetinkaya Bozkurt, 2013 elaborated the framework required for successful implementation of TQM tool and techniques as Strategic Planning, Human Resource Analysis, Total quality Management, Customer Relationship Management, Outsourcing, Financial Analysis for firm owners, Politics, Economics, Social and Technology Analysis, Financial Analysis for the competitors, Innovation for the new product, Value chain analysis, Communication, Team work and Supply Chain Management. These factors are study to understand the implementation for the better improvement in the organization.

Rajesh Kumar Jain, Abhimanyu Samrat, 2015 understand the Quality Management System on the real Quality practices based in manufacturing industries. On the bases of it they have divided them in two basic parts A. “Organization” Own QMS practices B. “Organization” Supplies QMS Practices. Then the common practices are understand by them such factors are Quality Plan, Testing and recording, Suppliers Assessments & Evaluation, Consultants & Certifications Practices, Customer satisfactions and Documentation than the various methods is developed to understand the effect and importance of it in SMEs.

Devendra Kumar Dewangan, Rajat Agrawal, Vinay Sharma, 2015 In the study identifying the critical factor for the implementation of TQM in SMEs and the importance of it.

The Study enables the 11 Enables for the promotion of innovation in the Indian manufacturing sectors. Then this 11 Enables are used to analyze the vital role in manufacturing industries in India. The following Enables are used to understand the Innovation in the manufacturing industries are New Product development, Development capabilities, Technological opportunities, Competitive pressure, Continuous Improvement, Research and development, Top Management, Information Sharing, Supply Chain Management, Long term strategic goal and Financial Performance and their relationship between them to understand the influence and the impact on the innovation of the new product in SMEs.

Total Quality Management approach develops the soft skills as well as the hard skill of the organization. Implementation of the TQM in the Small and large industries it develop the performance of the organization and quality of the product at the minimum cost. It also helps to maintain the position of the organization in the competition world. It also helps for the innovation and the development of the new product and understands the emergence of the technology for the betterment of the organization.

### 3. Critical Success Factors for TQM Implementation

Main of the researchers studied on the 'Critical Success Factors' for TQM implementation i.e. Factors affecting for successful implementation of TQM in SMEs. In a number of research studies the authors have identified different Critical affecting factors, which are to be carefully considered with the objective of successful implementation of Total Quality Management. However, though such affecting factors are responsible for the successful implementation of TQM, they are not truly the difficulties faced by SMEs in the way of adopting TQM, for which they lose their interest/drive for TQM implementation.

Ebru Beyza Bayarcelik, Fulya Tasel, Sinan Apak, 2014. The important element of the economy which is responsible for the driving innovation and competition in the many economic sector. The problem could be in decision according to the market conditions with many external and internal factors are considers. The factors of the considerations in SMEs are:

1. Financial Factor
2. Firm Size
3. Institutional factor

4. Technological Factor
5. Consumer Preference
6. Economic factor
7. Culture factor
8. Market Orientation
9. Competitive Advantages
10. Learning capability

This are the above factor are studied to understand the Successful Implementation of the TQM in SMEs.

Wali, Deshmukh, and Gupta, in recent study of critical factors of quality practices defined top management support as main driver for Quality Management implementation for creating the values, defining the organizational goals to satisfy the customers. In studies, customer satisfaction is consented as second most important factor which provides the measures for organizational efforts and effectiveness. For the Implementation of TQM; they have selected the factor for the better implementation and successful results of the TQM.

1. Development of the new product
2. Financial factor
3. Innovation
4. Team Work
5. Human Management System
6. Technology Adopted
7. Method of the Quality Assurance

The models are formed to understanding relation of factor and the influence of the TQM model.

Samuel K.M. Ho (100, pp.16), There is natural skepticism among managers towards quality initiatives, and not without reason. Many organizations each year commit vast amount of time and effort to improving business performance, without any lasting or measurable results. Quality Gurus' ideas are result of their life-time understanding and experience about quality that could be used by every individual and organization, and their values are tremendous.

Hodgetts et al. (1994) (158, pp.768), Depicted modern organizations as those which made a fundamental shift from a Total Quality (TQ) paradigm towards a Learning Organization (LO) and later extended this theme, suggesting that organizations must sustain major improvements, maintains high performance and aim towards being an 'Excellent-Sustainable organization.

Srivastava Lakhe, and Mohanty, that recent stage, related to QM, emphasizes the importance of the flexible organization, responsive and able to adapt quickly to changes, responding

to customer feedback and benchmarking against competitors.

Cole (1990) (32, pp.47), Quality disappeared as a major topic in the media and was less and less a focus of top management's attention. This is a natural process manifested in the growing normalization of quality improvement as a management activity. In this process, simplified versions of the more formal and often complex quality methodologies gradually evolved.

#### 4. Common Difficulties of SMEs in TQM Implementation

In the Literature base study we determine affecting common factor to innovation and the implementation of the TQM in the SMEs. Those critical factor are given below

1. Financial Factor
2. Technology Factor
3. Consumer Factor
4. Economic Factor
5. Communication Factor
6. Top Management Skill
7. Teamwork
8. Competitive Advantage
9. Market Orientation
10. Government Policy

Based on the above discussion, there are several factors which affect during the successful implementation of the TQM in the SMEs. For the effective implementation Of the TQM will improve the performance of the organization with improving the quality of the product due to the continuous improvement process.

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