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Causes of reluctance of Indian manufacturing SMEs to implement 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 essential business culture and a key survival tool, both for manufacturing and service industries, from large scale to small scale, for achieving the business competitiveness. TQM has been adopted by a good number of large scale industries. 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, SMEs are still reluctant 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. As such, understanding the causes behind their reluctance 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 reluctance of the SME in adopting TQM. The result will encourage and guide the future research to remove or reduce the difficulties of SMEs in implementing TQM to achieve the business excellence.

Keywords: Total Quality Management; TQM; Small and Medium Enterprise; SME; Quality Management System; Quality Assurance.

1. Introduction

During the past few decades, both the large scale manufacturing industries and SMEs are facing dramatic changes in the business environment, like increase of consumer awareness regarding quality and cost, rapid advancement of technology, globalization of business, etc. As a result, the major challenges faced by the manufacturing industry is 'quality improvement' in addition to the inherent 'cost competitiveness' and 'in-time delivery' (Arumugam *et al.*, 2009) [4]. To address the challenges being faced by the industries in today's highly competitive business scenario, TQM has become the key survival tool and an essential business culture 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 reluctant to adopt TQM, though SMEs play a vital role in the economic growth of the country, particularly in all developing countries like India (Singh, 2011) [42].

A good number of manufacturing SMEs are working as the supplier of the large scale manufacturing industries. So, they are becoming the part of bigger supply chains and the quality of their products also becomes significantly important and they will not be able to achieve competitive success if they do not become quality conscious. They should have suitable Statistical Quality Control (SQC) system at the first stage, then effective Quality Management System (QMS) for Quality Assurance at the second stage and Total Quality Management (TQM) at the final stage for continuous Quality Improvement to improve the customer satisfaction, leading to increased competitiveness and improved business performance of the organization (Singh *et al.*, 2010) [43].

Many manufacturing SME have implemented the Quality Management System (QMS) for Quality Assurance, in ISO 9001 certification, but very few of them have so far adopted TQM. They are also not fully aware that QMS as established in having ISO 9001 certification can be an effective step towards TQM implementation (Mo and Chan, 1997; Yusof and Aspinwall, 2000) [34, 56].

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2. Methodology

In this review paper, detailed review of articles on TQM, SME in India, QMS, Critical Success Factors of TQM implementation, Barriers of implementing TQM in SMEs have been thoroughly reviewed.

3. Literature Review

3.1. Small and Medium Enterprises (SME)

Defining SME is a well-debated issue and it differs from country to country. In different countries SME or more precisely MSME (Micro, Small and Medium Enterprises) have been defined differently, based on the country’s policies and depending on its economic condition and industrial growth. The criteria of defining MSME in few countries are:

- ‘investment in Plant and Machineries’ in India, as shown in Table-1,
- ‘number of employees’ as well as ‘annual turn-over’ in European Union, as shown in Table-2,
- ‘Number of employees’ in Canada, as shown in Table-2.

Small and Medium Enterprises (SME) in India

The Ministry of Small Scale Industries, Govt. of India, vide its notification number S.O. 722(E), dated October 5, 2006, has defined SME based only on the criteria of their “Investment in Plant and Machinery”, as indicated below,

- **Manufacturing industries**
 - **Micro** scale Enterprise : upto Rs.25 lakh (USD 62,500)
 - **Small** scale Enterprise : above Rs.25 lakh (USD 62,500) and upto Rs.5 crore(USD 1.25 million)
 - **Medium** scale Enterprise: above Rs. 5 crore (USD 1.25 million) and upto Rs.10 crore (USD 2.5 million)
- **Service industries**
 - **Micro** scale Enterprise: upto Rs. 10 lakh (USD 25,000)
 - **Small** scale Enterprise : above Rs.10 lakh (USD 25,000) and upto Rs.2 crore (USD 0.5 million)
 - **Medium** scale Enterprise : above Rs. 2 crore (USD 0.5 million) and upto Rs.5 crore (USD 1.25 million)

Table 1: SME as defined in India [Based on the ‘investment in Plant and Machineries’]

Category	INR	Equivalent USD(\$)
Micro Enterprises - Manufacturing - Service	Upto Rs. 25 Lakhs Upto Rs. 10 Lakhs	upto \$ 62,500 upto \$ 25,000
Small Enterprises - Manufacturing - Service	above Rs. 25 Lakhs & upto Rs. 5 Crores above Rs. 10Lakhs & upto Rs. 2 Crores	above \$ 62,500 & upto \$ 1.25 million above \$ 25,000 & upto \$ 0.5 million
Medium Enterprises - Manufacturing - Service	above Rs. 5 Crores & upto Rs. 10 Crores above Rs. 2 Crores & upto Rs. 5 Crores	above \$ 1.25 million & upto \$ 2.5 million above \$ 0.5 million & upto \$ 1.25 million

Table 2: SME as defined in few different countries

Category	Based on Number of Employees		Based on Cost of Plant & Machineries	Based on Annual Turn- Over
	Europe	Canada	India	Europe
MEDIUM :	50 – 249	–	–	–
- Manufacturing	–	100 – 499	Rs. 5 – 10 Crore	€10 – 50 million
- Service	–	50 – 499	Rs. 2 – 5 Crore	–
SMALL :	10 – 49	5 – 99	–	–
- Manufacturing	–	–	Rs. 25 Lakh – 5 Cr	€2 – 10 million
- Service	–	–	Rs. 10 Lakh – 2 Cr	–
MICRO :	< 10	< 5	–	–
- Manufacturing	–	–	<Rs 25 Lakh	Upto €2 million
- Service	–	–	<Rs 10 Lakh	–

[Source: http://www.eisbc.org/Definition_of_Indian_SMEs.aspx. 18 January, 2016]

3.2. Importance of SMEs

Research findings concluded that the success of SMEs has a direct impact on the economic development of the country, both in the case of developed countries and developing countries (Demirbag *et al.*, 2006) [13]. They have the ability to generate employment with minimum cost, they are pioneer in innovation realm and have high flexibility which allows them to meet the needs and expectations of the customers (Brock and Evans, 1986; Acs and Audretsch, 1990) [8, 2].

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) [44]. Europe-India SME 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.

[Source: http://www.eisbc.org/Definition_of_Indian_SMEs.aspx. 18 January, 2016]

There are several factors that have contributed towards the growth of Indian SMEs. Few of them are : (i) funding of SMEs by local and foreign investors, (ii) the new technology being used in the market is assisting SMEs to add considerable value to their business, (iii) strong Government support and (iv) various trade directories and trade portals’ help facilitate trade between buyer and supplier and thus reducing the barrier to trade.

With this huge potential, backed up by strong government support; Indian SMEs continue to improve their growth rate. Despite this high growth, huge potential amongst the Indian

SMEs still remains untapped. Once this untapped potential is effectively utilized for the growth of the sector, there is no doubt that India would post a GDP higher than that of many developed countries.

[Source: http://www.eisbc.org/Definition_of_Indian_SMEs.aspx. 18 January, 2016]

3.3. Total Quality Management (TQM)

Among the numerous approaches for improvement of quality, in order to help the organization to improve productivity, efficiency and competitiveness, the most popular and the most often recommended approach is TQM implementation (Berry, 1991) [7]. Researches have confirmed that adoption of TQM contribute to (i) greater market share and return on investment (Philips *et al.*, 1983), (ii) lower manufacturing costs and improved productivity, (iii) improve the organizational performance (Zhang, 1999) [58]. TQM is recommended for improving the competitiveness in the market and the customer satisfaction leading to improved business performance, of the organization (Fotopoulos and Psomas, 2010; Wali and Boujelbene, 2010; Valmohammadi, 2011; Bellah *et al.*, 2013; Al-Refaie and Hanayneh, 2014) [16, 53, 51, 6, 3]. Thus, TQM has become the key survival tool and an essential business culture for any business organization – manufacturing or rendering service.

Yang *et al.* (2003) [55], Malik *et al.* (2013) [29], Gupta and Sharma (2013) [20] defined TQM as the approach capitalizing the involvement of all of management, workforce, suppliers, and also customers, in order to not only meet but also to exceed the customer expectations. TQM process focuses on not only meeting but exceeding customers' expectations and significantly reduces costs resulting in poor quality generation and quality rejection, by adopting a suitable Quality Management System (QMS). TQM is strategically and tactically important for gaining a competitive advantage. Yang (2005) [54] described TQM as an integrated management philosophy and a set of practices that emphasizes (i) continuous improvement, (ii) meeting customers' requirements and exceeding customers' expectation, (iii) productivity improvement by reducing rework, (iv) increased involvement of employees, (v) improved teamwork and team-based problem solving, process redesign, (vi) continuous self-assessment and Benchmarking, and (vii) closer relationships with suppliers.

Goh and Ridgway (1994) [19], Hackman and Wageman (1995) [21], Bellah *et al.* (2013) [6] consider TQM as a tool for "continuous improvement". TQM is the culture of an organization committed to customer satisfaction through continuous improvement. TQM can be defined as a holistic management philosophy integrating all organizational functions aiming at continuous improvement to produce and deliver commodities or services in line with the need and requirement of the customer by efficient, cheaper, faster, safer and easier process/system with the all-out active participation of employees of all departments or work-centers under the leadership and commitment of top management, focusing on organizational objectives (Demirbag. *et al.*, 2006; Kumar *et al.*, 2009;) [13, 25]. The main features of TQM concept include (Talib, 2012) [49]:

(i) all out involvement, participation & commitment – of all persons in the organization from the top management to workforce,

- (ii) close communication among all the departments/areas in the organization with suppliers, customers and stakeholders,
- (iii) well-knit Quality Management System (QMS) to ensure Quality Assurance, Continuous Improvement
- (iv) Common Tools & Techniques in TQM implementation include (Ramesh and Ravi, 2013; Gupta and Sharma, 2013; Majumdar and Murali Manohar, 2014) [38, 20, 27]:
 - (i) Quality Circle, (ii) Total Productive Maintenance (TPM), (iii) Root Cause Analysis, (iv) Quality Function Deployment (QFD), (v) Fault Tree Analysis (FTA), (vi) Failure Mode & Effect Analysis (FMEA), (vii) 5-Why, (viii) Poka Yoke, (ix) Deming Wheel (PDCA) for continuous improvement, (x) Six Sigma, etc.

TQM Framework: Dubey and Singh (2012) [14], Talib (2012) [49] elaborated the framework required for successful implementation of TQM as:

- 1) Quality Awareness at all levels,
- 2) Management Commitment & Support,
- 3) Management Leadership,
- 4) Good collaborative relation with suppliers / vendors,
- 5) Involvement of the Customer as well as the Supplier in quality drive,
- 6) Statistical quality control,
- 7) TQM tools and techniques like Quality Circle, TPM, Root Cause Analysis, QFD, FTA, FMEA, 5-Why, Poka Yoke, PDCA Cycle, Six Sigma, etc.,
- 8) Training & Development at all levels, especially for employees,
- 9) Quality culture,
- 10) Involvement & participation of all employees at all levels,
- 11) Teamwork (cross functional as well as within the functional area),
- 12) Communication System (supported by information & Feed-back system),
- 13) Quality Management System (QMS) leading to Quality Assurance,
- 14) Continuous Improvement,
- 15) Continuous self-performance assessment and Benchmarking

ReVelle (2003) [39] pointed out three major aspects of TQM and felt that it is only when all such three aspects are employed together that we have a complete TQM effort. These aspects of TQM are: (i) the cultural aspect, (ii) the technical aspect, and (iii) the managerial aspect.

Nine common TQM practices as identified, are (i) cross-functional product-design, (ii) process management, (iii) supplier quality management, (iv) customer involvement, (v) information and feedback, (vi) committed leadership, (vii) strategic planning, (viii) cross-functional training, and (ix) employee involvement (Cua *et al.*, 2001) [11].

Salaheldin Ismail (2009) [40] identified the critical success factors for TQM implementation in SMEs as (i) top management commitment, (ii) continuous improvement systems, (iii) performance measurement and feedback, (iv) improvement tools and techniques, (v) supplier quality assurance, (vi) human resource development, (vii) systems and processes, (viii) resources, (ix) education and training, and (x) work environment and culture.

TQM approach contains both soft and hard elements. The soft elements of TQM are associated with management concepts and principles, such as management's leadership

and commitment, employees' empowerment and quality-culture, skill and experience. The hard elements of TQM include mainly quality improvement tools and techniques (Fotopoulos and Psomas, 2009; Vouzas and Psychogios, 2007) ^[15, 52].

3.4 Relation of SME with TQM and ISO 9001 Certification

3.4.1. Need of TQM in SMEs

In today's highly competitive business world, the manufacturing industries are facing the following challenges:

- quality and reliability of product,
- continuous improvement of the product and the process,
- meeting and exceeding customers' needs and expectations, where customers' expectations are fast changing
- cost reduction,
- productivity improvement,
- rapid development technology,
- continuous change in business environment

To meet the above challenges, implementation of TQM has become an "essential business culture" as well as a "key survival tool" for all manufacturing industries, with the aim of achieving greater customer satisfaction, improved productivity and also continuous quality improvement (Singh and Ahuja, 2012) ^[46]. Many researchers have concluded that for manufacturing industries – both large ones and SMEs, the TQM implementation have commendable impact on the appreciable improvement of their organizational performance and business efficiency (Valmohammadi, 2011; Al-Refaei and Hanayneh, 2014) ^[51, 3]. This is not only to meet but to exceed the customers' needs and expectations. TQM is a way of managing an enterprise towards achieving business excellence (Ghobadian and Gallear, 1996; Dahlgaard *et al.*, 1998; Raj and Attri, 2011) ^[18, 12, 37].

3.4.2. TQM and ISO 9001 Certification for SME

Strong debate is still continuing on the issue whether ISO 9001 and TQM are complement or contradict each other (Neergard, 2002; Martinez-Lorente and Martinez-Costa, 2004; Sun *et al.*, 2004) ^[35, 30, 48]. Yusof and Aspinwall (2001) ^[57], Seth and Tripathi (2005) ^[41] pointed out that TQM implementation in SMEs is scarce and found that larger organizations have greater interest in adopting TQM.

SMEs, particularly in India, are getting the impetus to go for ISO 9001 certification not from the desire for continuous improvement, but from the pressure of large companies, from whom they get or expect the order. In fact, the fear of losing the contracts prompted most of the SMEs to go for ISO 9001 certification, rather than actually understanding that their established QMS in the process of getting ISO 9001 certification is one of the vital tools of TQM implementation. It is true that in the process of getting ISO 9001 certification their employees are much better trained, committed, organized and responsible for the Quality Management System leading to Quality Assurance, and QMS provides a better organizational structure and an improved understanding of the strengths and weaknesses of their business. Any SME without having any existing Quality System can be greatly benefited when they have to apply the disciplined and properly structured Quality System in QMS as prescribed in the ISO 9001 standard, as this is an important step and a part of the quality drive in the way to implementing TQM (McTeer and Dale, 1996) ^[32].

ISO 9001 certified companies have the documented quality assurance system of the product that complies to the prescribed requirements (Yusof and Aspinwall, 2000) ^[56]. It is revealed that though most of the manufacturing SMEs in India go for ISO 9001 certification, they are not truly implementing TQM with an intention of continuous improvement. Attaining ISO 9001 certification, ensures that the company's products meet the customers' specifications and it also improves job-responsibilities through the streamlined and well documented procedures. So, ISO 9001 certified companies would probably have stopped their quality initiative at that level where they get ISO 9001 certificate. Thus, ISO 9001 certification becomes the end point or destination in their quality drive. However, TQM is a quality 'journey' and not a 'quality destination' (Goh and Ridgway, 1994; Meegan and Taylor, 1997; Majumdar and MuraliManohar, 2014) ^[19, 33, 27].

3.4.3 TQM in SMEs

Though TQM is the Essential Business Culture and Key Survival Tool of the industry, implementation of TQM is still not common in SMEs, and at the same time, the study of the causes behind their reluctance in adopting TQM, is also very little. (Cua *et al.*, 2001; ReVelle, 2003; Demirbag. *et al.*, 2006; Vouzas and Psychogios, 2007; Kumar *et al.*, 2009; Fotopoulos and Psomas, 2009; Cocca and Alberti, 2010; Yang T. *et al.*, 2014) ^[11, 39, 13, 52, 25, 15, 10] Cua *et al.*, 2001 ^[11] found nine essential practices required for TQM implementation, as (i) cross-functional product-design, (ii) process management, (iii) supplier quality management, (iv) customer involvement, (v) information and feedback, (vi) committed leadership, (vii) strategic planning, (viii) cross-functional training, and (ix) employee involvement.

ReVelle, J.B. (2003) ^[39] pointed out three major aspects of TQM and felt that it is only when all such three aspects are employed together that we have a complete TQM effort. These aspects of TQM are: (i) the cultural aspect, (ii) the technical aspect, and (iii) the managerial aspect.

4. Critical Success Factors for TQM Implementation

Majority of the researchers studied on the 'Critical Success Factors' for TQM implementation i.e. influential factors for successful implementation of TQM in SMEs. In a number of research studies the authors have identified different Critical Influencing Factors, which are to be carefully considered with the objective of successful implementation of TQM (Thiagaragan *et al.*, 2001; Samir Baidoun, 2003; Choong Y. Lee, 2004; Yang, 2005; Lakhali *et al.*, 2006; Salaheldin Ismail, 2009; Gadenne and Sharma, 2009; Fotopoulos and Psomas, 2010; Abdolshah. and Abdolshah, 2011; Singh, 2011; Valmohammadi, 2011; Khanna *et al.*, 2011; Haffar *et al.* 2013) ^[50, 5, 9, 54, 26, 40, 17, 16, 1, 42, 51, 24, 22]. However, though such influencing 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.

4.1 Thiagaragan *et al.* (2001) ^[50], in their empirical study identified some Critical Quality Factors (CQF) for successful implementation of TQM in Malaysian industry and grouped them in three stages – (i) before, (ii) during & (iii) after, TQM implementation process.

4.2. Samir Baidoun (2003) ^[5] identified 12 Critical Quality Factors (CQF) for implementation of TQM in Palestinian industries. The CQF are:

(i) Top Management Commitment & Leadership, (ii) Top Management Involvement, (iii) Employees Empowerment, (iv) Employees Involvement, (v) Employees Quality Culture, (vi) Employees Motivation, (vii) Continuous Process Improvement, (viii) Customer Focus, (ix) Suppliers Quality Commitment, (x) Quality improvement Tools and Techniques, (xi) QMS, (xii) Employees Training & Development.

4.3. Choong Y. Lee (2004) ^[9] identified 25 Critical Factors for successful implementation of TQM in Chinese SMEs and classified them in three categories as (1) Strategic, (2) Tactical, and (3) Operational, as follow

Strategic Factors: (i) top management commitment, (ii) organizational culture, (iii) leadership, (iv) continuous improvement, (v) quality goals and policy, (vi) resources value addition process, and (vii) benchmarking.

Tactical Factors: (viii) employee empowerment, (ix) employee involvement, (x) employee training, (xi) team building and problem solving, (xii) use of information technology to collect and analyze quality data, (xiii) supplier quality, (xiv) supplier relationships, (xv) integration with other systems and (xvi) assessment of performance of suppliers.

Operational Factors: (xvii) product and service design, (xviii) process control, (xix) management of customer relationships, (xx) customer orientation, (xxi) customer and market knowledge, (xxii) realistic TQM implementation schedule, (xxiii) resources conservation and utilization, (xxiv) inspection and checking work and (xxv) enterprise performance metrics for TQM.

4.4. Yang (2005) ^[54] identified seven factors for implementing TQM in Korean industries:

(i) continuous improvement, (ii) meeting customers' requirements and exceeding customers' expectation, (iii) productivity improvement by reducing rework, (iv) increased involvement of employees, (v) improved teamwork and team-based problem solving, process redesign, (vi) continuous self-assessment and benchmarking, and (vii) closer relationships with suppliers.

4.5. Lakhali *et al.* (2006) ^[26] in their empirical study among Tunisian SMEs, identified ten Critical Factors for TQM implementation and classified them in 3 categories:

(1) Management, (2) Infrastructure, and (3) Core practices. The factors are:

(i) Top management commitment and support, (ii) Organization for quality, (iii) Employee training, (iv) Employee participation, (v) Supplier quality management, (vi) Customer focus, (vii) Continuous support, (viii) Quality system improvement, (ix) Information and analysis, (x) Statistical quality control technique.

4.6. Salaheldin Ismail (2009) ^[40] classified the 18 Critical Success Factors (CSF) for TQM implementation, applicable in Qatar, in 3 categories – (1) Strategic, (2) Tactical, and (3) operational. The factors are:

(i) Leadership of Top Management, (ii) Top Management Support, (iii) Organization Culture, (iv) Continuous Improvement, (v) Benchmarking, (vi) Quality Goal &

Policy, (vii) Team Building & Problem Solving, (viii) Employees Empowerment, (ix) Employees Involvement, (x) Employees Training, (xi) Use of Information Technology, (xii) Suppliers Quality, (xiii) Relationship with Suppliers, (xiv) Suppliers' performance Assessment, (xv) Product Design, (xvi) Process Control, (xvii) Inspection & Checking, (xviii) Managing Customer Relationship.

4.7. Gadenne and Sharma (2009) ^[17] found 6 factors to be associated with TQM implementation in Australian SMEs :

(i) benchmarking and quality measurement, (ii) continuous improvement, (iii) top management philosophy & supplier support, (iv) employee & customer involvement, (v) employees training, (vi) efficiency - improvement

4.8. Fotopoulos and Psomas (2010) ^[16] found that 5 Critical Factors (i) the quality practices of the top management, (ii) employees involvement in the quality management system, (iii) customer focus, (iv) process and data quality management, and (v) quality tools and techniques, are important for implementation of TQM in Greek industries. These factors significantly affect the competitive advantage and improvement of organizational performance with respect to their internal procedures, customers, market share and the natural and social environment.

4.9. Abdolshah. and Abdolshah (2011) ^[1] through their descriptive research study in Iran, identified mainly 3 factors responsible for the unsuccessful implementation of TQM, which are (i) lack of management commitment, (ii) resource problem, and (iii) failure to use the right framework for TQM. They also identified these factors as barriers to TQM implementation.

4.10. Singh (2011) ^[42] considered in his research a total of 11 factors for successful implementation of TQM in SMEs. The author found that 4 influencing Factors (i) Top management commitment, (ii) employees' training and empowerment, (iii) supplier development, and (iv) coordination between departments, are the major success factors for implementing TQM, whereas 4 Factors (1) process management, (2) product/service design, (3) product quality and (4) customer satisfaction, are the dependent variables.

4.11. Valmohammadi (2011) ^[51] revealed in his study that TQM concept has high impact on the improvement of the organizational performance of Iranian manufacturing SMEs. He identified eight Factors to be considered to adopt TQM successfully:

(i) Management leadership, (ii) process management, (iii) control over suppliers' quality, (iv) customer feedback, (v) employee management, (vi) internal & external communication, (vii) quality information system, and (viii) knowledge of tools and techniques of TQM.

4.12. Khanna *et al.* (2011) ^[24] found 13 Factors to be considered to achieve the success of TQM implementation in Indian Industries. Such 13 Factors are:

(i) Top management leadership, (ii) Role of quality department, (iii) Process management, (iv) Product/service design, (v) Training of employees, (vi) Supplier quality management, (vii) Customer satisfaction, (viii) Employee empowerment and involvement, (ix) Business impact & quality results, (x) Quality information system, (xi)

Benchmarking, (xii) Quality citizenship, (xiii) Quality culture.

4.13. Haffar *et al.* (2013) ^[22] in their research study revealed that Organizational Culture is the main factor influencing the success of TQM implementation in Syrian manufacturing industries.

5. Common Difficulties of SMEs in TQM Implementation

Many authors highlighted the “scarcity of resources”, which is a typical characteristic of SMEs, as one of the main problems (Huang and Brown, 1999; Singh *et al.*, 2008) ^[23, 45]. Yusof and Aspinwall (2000) ^[56] revealed that two major hurdles generally faced by most of the SMEs in implementing TQM are (a) Financial Constraint and (b) Resource Constraint, which in a broad sense include manpower, time, technical expertise and managerial expertise.

From their research studies, Raj and Attri (2011) ^[37], Singh and Ahuja (2013) ^[47], Majumdar and Murali Manohar (2016) ^[28] observed the major obstacles/problems of manufacturing SMEs in India which commonly come in the path of TQM implementation, are:

1. Financial Constraint,
2. Human Resource problems,
3. Lack of TQM Awareness and knowledge,
4. Attitude and Culture of the management and employees,
5. Lack of Commitment, Leadership and Support of Management for TQM implementation
6. Lack of Skill and Experience of employees
7. Shorter length of employment of the employees in the organization
8. Unfavourable Industrial Relation,
9. Lack of Knowledge Management and Information Management system.
10. Lack of control on quality of supplies and work of suppliers/contractors
11. Lack of continuous Self-assessment and Benchmarking
12. Poor customer relationship and customer-survey
13. Some of such obstacles/difficulties in the way of implementing TQM by manufacturing SMEs in India, are discussed below:

(1) Financial Constraint

It is true that TQM implementation needs good additional investment which manufacturing SME may not afford due to their fund constraint. Additional fund may be required in the following areas,

- Improvement on equipment, tools, materials and components,
- Advanced Technology and Process improvement,
- Improvement of infrastructural support,
- Elaborate and intensive Training of employees on Quality Awareness, TQM concept, Tools & Techniques of TQM, Impact of TQM on organizational performance, Identification & tackling of quality problems, continuous improvement,
- System improvement: data & information management, documentation and data processing.

(2) Human Resource problem

In several research studies, the authors revealed that another hurdle of SMEs is ‘human resource constraint’ to implement

TQM, which includes inadequate (no extra) manpower, and employees’ skill, education and length of employment in the organization. Small scale units usually have less number of employees to substitute those employees, who are absent from their normal working duties for undergoing training programs or participating in ‘quality improvement’ work.

(3) Lack of TQM Awareness and knowledge

Lack of TQM knowledge and business experience of the managers or owners-cum-managers of SMEs are also a barrier to adopting TQM (Pansiri and Temtime, 2008) ^[36]. The managers of SME are generally weak in forming business strategies. TQM knowledge includes the followings

- TQM concept
- Tools and techniques of TQM,
- ways of implementing TQM,
- Impact of TQM implementation on organizational performance.

Lack of TQM knowledge is a cause of the reluctance of adoption of TQM by Indian manufacturing SMEs.

(4) Attitude and Culture of the management and employees

- The benefit of TQM on the improvement of the business performance is not fully realized immediate after TQM adoption, but is usually realized gradually during a considerable period. The owners/managers of SME generally have interest only of the “short-term gain” rather than of the “long-term goal”, which results in their reluctance for adopting TQM.
- Without the Team spirit, quality culture and attitude of participation & involvement of the employees, TQM successful implementation of TQM becomes difficult.
- In SME, employees’ inherent resistance to change the existing “quality culture” in the organization also acts as a barrier in the path of going for adopting TQM.

(5) Lack in Management’s Commitment, Leadership & Support for TQM implementation

Management’s Commitment, Leadership & Support are essential for the successful implementation of TQM. But very often, the owners-cum-managers of SMEs lack in commitment, business experience, managerial leadership and support in implementing TQM.

(6) Lack of skill & experience of employees

Operator’s skill and experience are essentially needed for solving quality problems and quality improvement, which are obviously required for the success of TQM implementation. However, the operator’s skill, experience and education level are generally lower in SMEs, compared to large scale units (Huang and Brown, 1999; McAdam, 2000; Singh *et al.*, 2008) ^[23, 31, 45].

(7) Shorter length of employment of the employees in the organization

Longer employment-period of the employees in the organization is another important requirement which helps successful implementation of TQM, because of the increase of employee’s feeling of ‘ownership’ with the organization. However, generally in SMEs employment-period of the employees in the organization is shorter, which fact imposes difficulties in TQM implementation (Singh *et al.*, 2008) ^[45].

(8) Unfavourable Industrial Relation in the organization
'Industrial Relation' i.e. relation among the employees and management in the organization, can not be ignored for success full implementation of TQM.

(9) Lack of Knowledge-Management and Information-Management System

Poor knowledge Management as well as Information Management System in the SMEs may be the hurdles in the way for adopting TQM (Pansiri and Temtime, 2008) [36]. They are generally weak in forming business strategies also.

(10) Lack of control on quality of supplies and work

Collaborative relation with the suppliers/contractors are required for quality management through TQM, which results in a good control over the qualities of the supplies as well as work.

(11) Lack of continuous Self-assessment and Benchmarking

Generally SMEs lack in continuous Self-assessment and Benchmarking, which is a vital tool for TQM.

(12) Poor Customer Relationship and lack in continuous Customer-Survey

Poor 'customer relationship' and lack in 'continuous customer-survey', are often found in many SMEs, which pose difficulty in the effective implementation of TQM.

6. Discussions

The influencing Success Factors for TQM implementation, as available in literature review, are not same as or do not directly lead to the causes of reluctance of Indian manufacturing SMEs to implement TQM. However, to identify the causes of reluctance of Indian manufacturing SMEs to implement TQM, extensive research survey can be conducted based on the perception/opinion of the management level of the Indian manufacturing SMEs, who have not implemented TQM, on their difficulties/barriers to implement TQM.

The survey questionnaire for this opinion survey should consider the 12 items as discussed here earlier. Such items (difficulties/ causes of reluctance) to be considered are : (1) Financial Constraint, (2) Human Resource problems, (3) Lack of TQM Awareness and knowledge, (4) Attitude and Culture of the management and employees, (5) Lack of Commitment, Leadership and Support of Management for TQM implementation, (6) Lack of Skill and Experience of employees, (7) Shorter length of employment of the employees in the organization, (8) Unfavourable Industrial Relation, (9) Lack of Knowledge Management and Information Management system, (10) Lack of control on quality of supplies and work of suppliers/contractors, (11) Lack of continuous Self-assessment and Benchmarking, (12) Poor customer relationship and customer-survey.

7. Conclusion

In the present scenario of high competitiveness in both the domestic and global market, implementation of TQM becomes an essential business culture as well as a key survival strategy for all the manufacturing industries –large and small. Despite the fact that TQM approach has been successfully adopted by all most all large manufacturing industries in India, it is also true that Indian manufacturing

SMEs are still reluctant to adopt TQM, though the manufacturing SMEs are considered as the backbone of Indian economy.

SMEs generally have a flat organizational structure with lack of bureaucracy and this has a positive impact on flexibility, adaptability and rapidity in responding to the changing environment.

Therefore, by overcoming their weaknesses for TQM implementation, as identified in this study, along with effective utilization of their inherent strengths, as also pointed out in this study, there is wide possibility of adopting TQM by Indian manufacturing SMEs effectively to address the business challenges ahead.

8. References

1. Abdolshah M, Abdolshah S. Barriers to and success factors for the successful implementation of TQM in Iranian manufacturing organizations, *International Journal of Productivity and Quality Management*. 2011; 7(3):358-373.
2. Acs Z, Audretsch D. *The Economics of Small Firms: A European Challenge*, Kluwer Academic Publishers, Norwall, MA, 1990.
3. Al-Refaie A, Hanayneh B. Influences of TPM, TQM, Six Sigma practices on firms performance in Jordan, *International Journal of Productivity and Quality Management*. 2014; 13(2):219-234.
4. Arumugam V, Chang HW, Ooi KB, The PL. Self-assessment of TQM practices: a case analysis, *The TQM Journal*. 2009; 21(1):46-58.
5. Baidoun S. An empirical study of critical factors of TQM in Palestinian organizations, *Logistics Information Management*, 2003; 16(2):156 -171.
6. Bellah J, Zelbst PJ, Green Jr KW. Unique TQM practices and logistics performance, *International Journal of Productivity and Quality Management*. 2013; 12(1):61-76.
7. Berry TH. *Managing the Total Quality Transformation*, McGraw-Hill, New York, NY, 1991.
8. Brock W, Evans D. *The Economics of Small Business: Their Roles and Regulations in US Economy*, Holmes & Meier Publishers, Teaneck, NJ, 1986.
9. Choong Lee Y. TQM in small manufacturers: an exploratory study in China, *International Journal of Quality & Reliability Management*, 2004; 21(2):175-197.
10. Cocca P, Alberti M. A framework to assess performance measurement systems in SMEs, *International Journal of Productivity and Performance Management*. 2010; 59(2):186-200.
11. Cua KO, McKone KE, Schroeder RG. Relationships between implementation of TQM, JIT, and TPM and manufacturing performance, *Journal of Operations Management*. 2001; 19(6):675-694.
12. Dahlgard JJ, Kristensen K, Kanji GK. *Fundamentals of Total Quality Management*, Chapman & Hall, London, 1998.
13. Demirbag M, Tatoglu E, Tekinkus M, Zaim S. An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs, *Journal of Manufacturing Technology Management*. 2006; 17(6):829-847.
14. Dubey R, Singh T. A theoretical framework of soft TQM in successful implementation. *International*

- Journal of Advanced Operations Management. 2012; 4(3):195-218.
15. Fotopoulos CV, Psomas EL. The impact of 'soft' and 'hard' TQM elements on quality management results", *International Journal of Quality & Reliability Management*. 2009; 26(2):150-63.
 16. Fotopoulos CV, Psomas EL. The structural relationships between TQM factors and organisational performance, *The TQM Journal*. 2010; 22(5):539-552.
 17. Gadenne D, Sharma B. An investigation of the hard and soft quality management factors of Australian SMEs and their association with firm performance, *International Journal of Quality & Reliability Management*. 2009; 26(9):865-880.
 18. Ghobadian A, Gallear DN. Total quality management in SMEs, *OMEGA*, 1996; 24(2):83-106.
 19. Goh PL, Ridgway K. The implementation of total quality management in small- and medium-sized manufacturing companies, *TQM Magazine*, 1994; 6(2):54-60.
 20. Gupta S, Sharma M. TOC-based TQM implementation: a case study of automotive supplier, *International Journal of Intercultural Information Management*. 2013; 3(4):344-359.
 21. Hackman JR, Wageman R. Total quality management: empirical, conceptual and practical issues, *Administrative Science Quarterly*, 1995; 40(2):310-342.
 22. Haffar M, Al-Karaghoul W, Ghoneim A. An analysis of the influence of organisational culture on TQM implementation in an era of global marketing: the case of Syrian manufacturing organisations, *International Journal of Productivity and Quality Management*. 2013; 11(1):96-115.
 23. Huang X, Brown A. An analysis and classification of problems in small business, *International Small Business Journal*. 1999; 18(1):73-85.
 24. Khanna HK, Sharma DD, Laroiya SC. Identifying and ranking critical success factors for implementation of total quality management in the Indian manufacturing industry using TOPSIS, *Asian Journal on Quality*. 2011; 12(1):124-138.
 25. Kumar V, Choisine F, de Grosbois D, Kumar U. Impact of TQM on company's performance, *International Journal of Quality & Reliability Management*. 2009; 26(1):23-37.
 26. Lakhali L, Pasin F, Limam M. Quality management practices and their impact on performance, *International Journal of Quality & Reliability Management*. 2006; 23(6):625-646.
 27. Majumdar JP, MuraliManohar B. Strengths and Weakness of Indian manufacturing SMEs for adopting TQM, *CBS Journal of Management Practices*. 2014; 1(2):33-44.
 28. Majumdar JP, MuraliManohar B. Why Indian manufacturing SMEs are still reluctant in adopting TQM, *International Journal of Productivity and Quality Management*. 2016; 17(1):16-35.
 29. Malik SA, Nasim K, Iqbal MZ. TQM practices in electric fan manufacturing industry of Pakistan, *International Journal of Productivity and Quality Management*. 2013; 12(4):361-378.
 30. Martinez-Lorente AR, Martinez-Costa M. ISO 9001 and TQM: substitutes or complementaries: an empirical study in industrial companies, *International Journal of Quality & Reliability Management*. 2004; 21(3):260-276.
 31. McAdam R. The implementation of re-engineering in SMEs: a grounded study, *International Small Business Journal*. 2000; 18(4):29-45.
 32. McTeer MM, Dale BG. The attitude of small companies to the ISO 9000 series, *Proceedings of the Institute Mechanical Engineering*, 1996; 21(5):397-403.
 33. Meegan ST, Taylor WA. Factors influencing a successful transition from ISO 9000 to TQM, *International Journal of Quality & Reliability Management*. 1997; 14(2):100-117.
 34. Mo JPT, Chan AMS. Strategy for the successful implementation of ISO 9000 in small and medium manufacturers, *TQM Magazine*, 1997; 9(2):135-45.
 35. Neergard P. Configurations in quality management, *Scandinavian Journal of Management*. 2002; 18(2):173-195.
 36. Pansiri J, Temtime ZT. Assessing managerial skills in SMEs for capacity building, *Journal of Management Development*. 2008; 27(2):251-60.
 37. Raj T, Attri R. Identification and modelling of barriers in the implementation of TQM, *International Journal of Productivity and Quality Management*. 2011; 8(2):153-179.
 38. Ramesh N, Ravi A. TQM tools and techniques in promoting team working culture in the manufacturing organizations, *International Journal of Productivity and Quality Management*. 2013; 12(4):466-479.
 39. ReVelle JB. TQM tools & tool kits, Retrieved, 2003, 2004. from <http://www.qualityamerica.com/knowledgecenter/articles/revelletqmttools.htm>
 40. Salaheldin Ismail S. Critical success factors for TQM implementation and their impact on performance of SMEs, *International Journal of Productivity and Performance Management*. 2009; 58(3):215-237.
 41. Seth D, Tripathi D. Relationship between TQM and TPM implementation factors and business performance of manufacturing industry in an Indian context", *International Journal of Quality & Reliability Management*. 2005; 22(3):256-77.
 42. Singh RK. Analyzing the interaction of factors for success of total quality management in SMEs, *Asian Journal on Quality*. 2011; 12(1):6-19.
 43. Singh RK, Garg SK, Deshmukh SG. Competitiveness of SMEs in globalised economy: observations from China and India, *Management Research Review*, 2010; 33(1):54-65.
 44. Singh RK, Garg SK, Deshmukh SG. Strategy development by Indian SMEs in plastic sector: an empirical study, *Singapore Management Review*, 2006; 28(2):65-83.
 45. Singh RK, Garg SK, Deshmukh SG. Strategy development by SMEs for competitiveness: a review, *Benchmarking: An International Journal*. 2008; 15(5):525-547.
 46. Singh K, Ahuja IS. Justification of TQM-TPM implementations in manufacturing organisations using analytical hierarchy process: a decision-making approach under uncertainty, *International Journal of Productivity and Quality Management*. 2012; 10(1):69-84.

47. Singh K, Ahuja IS. Implementing TQM and TPM paradigms in Indian context: critical success factors and barriers, *International Journal of Technology, Policy and Management*. 2013; 13(3):226-244.
48. Sun H, Li S, Karis H, Gertsen F, Hansen P, Rick J. The trajectory of implementing ISO 9001 standards versus total quality management in Western Europe, *International Journal of Quality & Reliability Management*. 2004; 21(2):131-153.
49. Talib F, Rahman Z. Total quality management practices in manufacturing and service industries: a comparative study, *International Journal of Advanced Operations Management*. 2012; 4(3):155-176.
50. Thiagaragan T, Zairi M, Dale BG. A proposed model of TQM Implementation based on an empirical study of Malaysian industry, *International Journal of Quality & Reliability Management*, 2001; 18(3):289-306.
51. Valmohammadi C. The impact of TQM implementation on the organizational performance of Iranian manufacturing SMEs, *The TQM Journal*. 2011; 23(5):496-509.
52. Vouzas F, Psychogios AG. Assessing managers awareness of TQM, *The TQM Magazine*, 2007; 19(1):62-75.
53. Wali S, Boujelbene Y. The effect of TQM implementation on firm performance in the Tunisian context, *International Journal of Productivity and Quality Management*. 2010; 5(1):60-74.
54. Yang CC. An integrated model of TQM and GE-Six Sigma, *International Journal of Six Sigma and Competitive Advantage*, 2005; 1(1):97-105.
55. Yang T, Chen M, Su C. Quality management practice in semiconductor manufacturing industries—empirical studies in Taiwan, *International Manufacturing Systems*. 2003; 10(1):153-159.
56. Yusof SM, Aspinwall E. TQM implementation issues: review and case study, *International Journal of Operations & Production Management*. 2000; 20(6):634-655.
57. Yusof SM, Aspinwall E. Case studies on the implementation of TQM in the UK automotive SMEs, *International Journal of Quality & Reliability Management*. 2001; 18(7):722-743.
58. Zhang ZH. Developing an instrument for measuring TQM implementation in a Chinese Context, *SOM Research Report*, 99A48, University of Groningen, 1999.