

(Review Article)

# Importance of TQM Pillars Implementation in Indian SMEs for its Strategic Success: A Questionnaire Survey

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## Abstract

The word quality in the manufacturing field has been included all aspects that affect quality as a product, quality as customer satisfy, and quality as an organizational structure and performance. Hence, all activities of engineering, manufacturing and marketing are included in the term quality. In addition, quality and reliability of the product itself as well as the impact on the environment and society is part of the broad meaning of quality. Moreover, the organization structure & performance is an essential component of quality as well. Finally, Quality as an output must be continuously satisfying to the customer. The purpose of this paper is to find the importance of total quality management (TQM) Pillars implementation in Indian SMEs to improve organizational performance. The outcome of this research is to find the benefits of TQM Pillars implementations in Indian SMEs through questionnaire survey from various organizations. The authors have analyzed the collected questionnaires and identify importance of TQM Pillars in productivity improvement, organizational performance improvement, product quality improvement etc.

**Keywords:** TQM, SMEs, Pillars, Organizations.

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## 1. Total Quality Management (TQM)

TQM can be defined as a set of techniques and procedures used to reduce or eliminate variation from a production process or service-delivery system in order to improve efficiency, reliability, and quality by three principles as customer focus, continuous improvement, and teamwork. Each principle is implemented through a set of practices, and these practices, in turn, are supported by a broad set of techniques. TQM consist organization-wide efforts to make permanent climate in which an organization continuously improves its ability to deliver high-quality products and services to customers. Quality has been identified as an important business driver in today's international market. In this context, TQM has received global attention from both practitioners and researchers. TQM is the result of a long line of developments to evaluate and improve the quality of manufactured goods. TQM is the art of managing the whole to achieve excellence over product or service [1]. In fact, TQM is enriched to the traditional way of doing business. It can be described as a philosophy to involve everyone for achieving best quality. It extends to suppliers as well as to customers.

In TQM, the customer is the backbone of any business, so customer satisfaction is the main driving force for any success. The implementation of TQM in practice is not straight forward. It takes a long time to build the appropriate emphasis and techniques into the culture. Indeed, it takes time and patience to complete the process. The results may not see for a long period of time. Some experts say that it takes up to ten years to fully realize the results of implementing quality management. The results revealed that TQM positively influences the innovation speed and operational performance of small and medium-sized manufacturing firms in Nigeria [2].

## 2. SMEs - TQM Involvement Scenario

Small and Medium Enterprises play a vital role in Indian GDP and contribute to provide a large scope for the opportunity of employment in developing countries. Also share a major part in global business and will contribute to more than 50% of global GDP [3,4]. Entrepreneurship and innovation will start from a small business. Success of any country is basically depends on the success of their SMEs to create or provide employment opportunities also depends on wealth, social and economic development of the country [5, 6]. Therefore, it is clear that the classification of SMEs can be defined the economy of that country [7].

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There are a number of definitions of MSME (micro, small, medium enterprises) given by different countries on the basis of different criteria as the number of employees, value of assets, the value of sales and size of capital as well as turnover of the plant. Thus, above information reveals that there is a vast degree of inconsistency in the size and turnover of SMEs operating in different countries. The limit for investment in plant and machinery / equipment for manufacturing / service enterprises, as notified, vide S.O. 1642(E) dtd.29-09-2006 is given in table 1:

**Table 1.** MSME classification

| Manufacturing Sector |                                                  |
|----------------------|--------------------------------------------------|
| Enterprise           | Investment in plant machinery                    |
| Micro enterprise     | Does not exceed 12 lakhs.                        |
| Small enterprise     | More than 12 lakhs but does not exceed 5 crores  |
| Medium enterprise    | More than 5 crore but does not exceeds 10 crores |
| Service sector       |                                                  |
| Micro enterprise     | Does not exceed 10 lakhs.                        |
| Small enterprise     | More than 10 lakhs but does not exceed 2 crores  |
| Medium enterprise    | More than 2 crore but does not exceeds 5 crores  |

### 3. Literature Review

The concept, TQM, was largely influenced by the experience of high-quality products from Japanese manufacturers [8]. Researchers explored the impact of TQM and market competition on organizational performance by studying filled acceptable questionnaires from 89 managers from manufacturing firms. Results showed that there is a positive correlation between market competition and TQM practices of customer focus, product design and organizational performance. In this empirical study resulted in an example of the involvement of employees and management towards the fulfillment of TQM. Although the study was restricted only to a narrow sector of the manufacturing world, but still it was successfully carried out. For the researchers of TQM, this study provides a novel approach for implementation aspects. One more researcher studied the Pillars of TQM in the industries of Britain and Singapore.

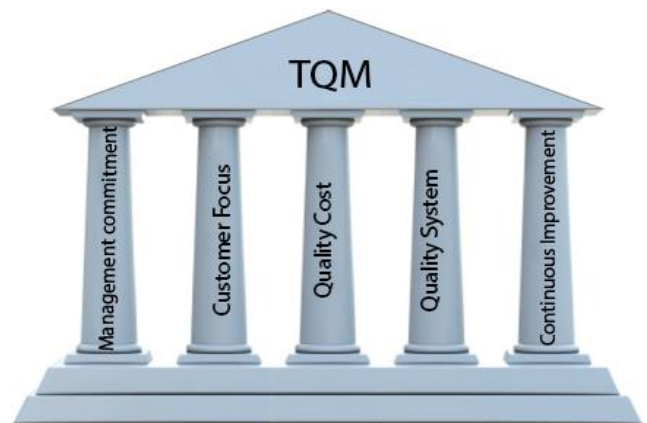
In his study, he focused on SMEs of Sheffield and carried out a survey with nearly 30 SMEs from Sheffield and nearly the same number of industries from Singapore. After his survey He found that the SMEs were ignorant towards the implication and advantages laid by the concept of TQM. The author carried out a personal interview with managers of many organizations and concluded with the model that could help the SMEs to gain TQM implementation. On top of a solid foundation, four pillars are constructed that include process management,

quality measurement & control, employee training, and customer focus. Many manufacturing firms implement TQM with the aim of delivering high-quality products to their customers. Some of them become successful and some are not. TQM is considered as guiding principles for the continuously improvement in the organization [1]. TQM applications vary widely by product category, organizational settings, management philosophies and practices and so on [9].

SMEs have to strategically adopt mechanisms that will facilitate them to overcome the specific challenges limiting their business performance regardless of empirical studies by various researches emphasize implementing TQM widely in many SMEs across different sectors maintains stability, improves business performance, and achieve competitive advantage [10, 11, 12 and 13] and improves customer and employee satisfaction [14]. The results emphasize that TQM implementation in SMEs is an additional instrument to enhance and catalyze the organizations' efforts to plan, prepare and execute the practices functional to sustainability [15]. Oke et al. [16] discovered that small and medium-sized enterprises (SMEs) pay greater attention to incremental and radical innovations.

### 4. Pillars of TQM and Data Collection

What characterizes TQM is the focus on identifying root causes of quality problems and correcting them at the source, as opposed to inspecting the product after it has been made. TQM attempts to embed quality in every aspect of the organization. It is concerned with technical aspects of quality as well as the involvement of people in quality, such as customers, company employees, and suppliers. Here we look at the specific concepts that make up the philosophy of TQM. The pillars of TQM are as shown in figure 1.



**Figure 1.** Pillars of TQM (Source: [www.emeraldinsight.com](http://www.emeraldinsight.com))

This paper is based on questionnaire developed for collecting data from different organizations. As far as the methodology is concerned, there is no separate methodology was adopted for this research. The questionnaire is based on the famous 5

Pillars of the TQM. The questions are laid out in such a way that it analyzes the very essence of TQM in the organization and also gives us an insight about the involvement of the employees in its implications. There are 33 questions in the questionnaire. The questions have a multiple choice response and in some questions more than one response is needed. The questionnaire also tries to give us an idea of the pre and post scenario of the organization. A team of two academicians from an engineering colleges and one production engineer from an medium size organization was made to design this questionnaire. The questionnaire first tries to get the perspective of the respondent by asking questions about the definition of TQM as perceived by him/her. Then the later set of questions, analyzes the extent up to which TQM is followed in that organization. The questionnaire also gives us an idea of the data acquisition methods that the organization employs. The layout of the questionnaire is simple and is easily understood by the respondent. Along with the parent questionnaire a small set of questionnaire was developed, based on the same parent questionnaire, that was verbally filled by the member of our group after interviewing some random labor force of the organization. This helped us in understanding the role and involvement of the skilled and unskilled labor force of the organizations.

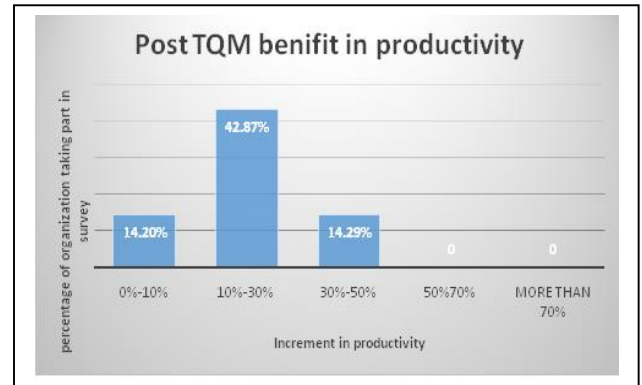
A hand full of manufacturing industries was selected that were fitting the objective of this study. Some of the industries were large scale industries and the others were small or medium scale industries. The focus of the study is to analyze the extent of implementation of TQM. So, the type of product manufactured by the industry was not an issue. The questionnaire was carried to the industries by a member of our team. The objective and purpose of the survey were explained to the head of the departments. The survey was conducted on-site via an interview with either the Manager or deputy manager of the targeted concerned departments.

Face to face interview made it a simpler and eliminated any miscommunication or misinterpretation of the questions presented in the questionnaire. The respondents were cooperative and helpful in their path. Verbal questioning was done to the labor class of the industry and their responses were recorded.

## 5. Statistical Analysis of the Responses from the Questionnaire

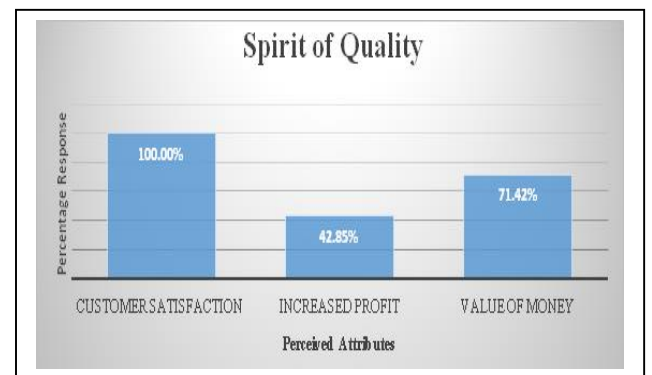
In an effort to understand the importance of the pillars of TQM on its implementation, we surveyed some industries where TQM formed the backbone of their functioning. In this study, the authors found out a number of factors. It was found that 42.87% respondent said that after incorporation of TQM in their organization they had an increment of 10% to 30% in their productivity. 14.29% respondent said their organization had an increment of 30% to 50% in their organization due to incorporation of TQM. Another 14.20% of respondents thought their organization had an increment of productivity

under the range of 10%. Statistical analysis of this data is as shown in figure 2.



**Figure 2.** Post TQM benefit in productivity or profit of the organization

Some of the organizations who had no model of TQM installed, had void responses to this part of the survey. In our study, the authors have found that majority of the companies was having an ISO 9000 or further certifications. Nearly 71% of the companies participating in our survey were ISO certified and had a quality maintenance department with full-fledged TQM structure or some similar model of TQM. At the same time almost 100% of the respondents believed that TQM program would work smoothly and would be beneficial to their organization.



**Figure 3.** The spirit of quality as perceived by the organizations

According to the responses it was found that almost 100% of the respondent felt that customer satisfaction is one of the most important attribute to access quality. However, nearly 43% of the same respondents said increased profit is also an attribute to judge quality and 71.42% thought the same for the value of the money factor. Figure 3 shows the quality as perceived by the organizations.

## 6. Conclusions

In this study, an attempt has been made to understand the relationship and the dependency of each of the 5 Pillars of Total Quality Management on each other and how the same affects the implementation of TQM in any organizations. It was found that each pillar of the TQM is equally important for the successful implementation of the same. The study of TQM implementation in TATA Sponge Iron Ltd backs this fact by showing a very consistent dependency in their method of TQM implementation. All the organizations that had a positive effort towards the development of TQM had some common grounds of strategies, like they all had a sound training system, they had a customer feedback system, and they had an empowered work force, and last but not the least- a dedicated management towards its success.

However, in this study it was seen that despite of all the efforts made by the organizations to control and maintain the quality of their products, there were failure in the quality maintenance process. When we compared the situation of such organizations to that of other organizations where quality management was not a very rigorous issue, then following two key issues were found. Firstly, it was found that even when the management is totally vigilant and active there are some miscommunication among the regular workforce. Although a substantial amount of training is provided to the employees still there was a sense of indifference among the regular workforce of the organizations. As a result of this, the implement of TQM becomes a much bigger problem during the early period of time.

Secondly, it was seen that there were some deviation of ideas from the set target of the organization. Due to this there is chaos in the implementation of TQM and the management involvement was restricted. In lieu of these problems and based on the study that was carried out we concluded that these problems could be eliminated by modifying the pillars of TQM. For that, The Pillar "Management Commitment" should be broken into another pillar namely "Employee Recognition" the main objective of this pillar would be to provide training to the regular workforce and includes the possibility of recognizing and rewarding the employees when they follow the spirit of quality management. This would remove the possibilities of any indifferent attitude within the employees as everyone would try to make their mark in their respective departments.

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