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Total Quality Management in Indian Manufacturing SMEs

Saumyaranjan Sahoo^a*, Sudhir Yadav^a

^a*School of Petroleum Management, Pandit Deendayal Petroleum University, Gandhinagar 382007, India*

Abstract

In operation literature, the effect of total quality management on firm performance has been investigated in many studies. Compared to large manufacturing firms, most small and medium sized firms are slow and often reluctant to adopt quality management practices. This paper aims to examine the relationship between quality management dimensions and firm performance, considering manufacturing SMEs as focal point of research. Furthermore, the intention is to identify the major barriers to adoption of quality management practices in manufacturing SMEs. Empirical data were drawn from a sample of 127 manufacturing SMEs in India to address the research objective. The test of the structural model supports the proposed hypotheses, that total quality management is positively related to manufacturing performance.

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Keywords: Total quality management; SMEs; firm performance.

1. Introduction

Small and medium-sized manufacturing firms nowadays, are under severe competitive pressure due to increased global competition and customer requirement. These challenges along with higher materials and energy costs in recent years have forced many small-medium manufacturing firms to continuously modify and optimize their operations both at the strategic and tactical levels [1]. Quality has been considered as significant driver for success for manufacturing SMEs in the era of global competition [2]. The majority of successful manufacturing companies have embraced total quality management (TQM) strategy and realized its invaluable contribution [3, 4, 5, 6, 7]. TQM philosophy is mainly dominated by large firms [8] but the fear of losing contracts from large manufacturing firms prompt SMEs to bring quality into their system [9], to enhance firm's efficiency and competitiveness. Compared to large organizations, manufacturing SMEs in India have been slow to adopt TQM [10], without sufficient conviction, as they consider implementation of the quality management practices to be a daunting and expensive prospect, with high on-going operational costs. However, based upon current production system of manufacturing SME, implementation of a quality management system could be low cost and low maintenance with little documentation needed [11]. Also, owners-managers of Indian SMEs often do not have enough managerial insights and organizational capabilities resulting in misapplication of TQM practices [10], which may result in product quality failure and increased expenditure. According to a research study considering manufacturing SMEs in United Kingdom as sample, the success rate of quality management implementation in SMEs was found to be low since it reaches only 10% [12]. Quality management practices in SMEs has been fairly discussed by very few

* Corresponding author. Tel.: +91-79-23275128.

E-mail address: saumya.sphd15@spm.pdpu.ac.in

researchers in the context of Indian small and medium sized manufacturing sector, and lot of important issues and areas are largely untouched in academic research [1]. With more and more manufacturing firms striving to remain competitive, it is being more difficult for a small-medium manufacturing unit to exceed their rivals and outperform. With ever increasing demand on manufacturing small and medium sized firms on quality, price and delivery, the most effective way to enhance the confidence of customers is through a structured certified quality management system [11]. Many SMEs in India have become important players in large manufacturing supply chain networks and they either voluntarily or have been forced to apply quality management practices to gain and sustain competitive advantage. Given the importance of quality management practices, more exploration into the relationship between TQM and firm performance in context of manufacturing SMEs is needed to provide further theoretical insights and practical guidance. Also, the adoption and implementation of TQM strategy in any firm, like any other productivity improvement program, is believed to harbor enormous difficulties [13]. Naturally, manufacturing SMEs by virtue of their size are likely to struggle with financial, technical and time constraints which are further amplified by a number of obstacles such as lack of technical and managerial expertise as well as human resources deficiencies [14]. Hence motivated by the research gap, the research paper makes an empirical attempt to examine the relationship between TQM and SMEs performance. Also, the paper provides evidences regarding major TQM implementation barriers that are encountered by SMEs in India. The practical implications of this study will be important for lean practitioners and entrepreneurs of small and medium sized enterprises. Such insights on quality management practices and issues reported here could start as a starting point and may be crucial, so as to facilitate strong entrepreneurial culture in SMEs, by enabling them better understand the technical-management aspect of superior grade manufacturing and benchmark their progress to sustain themselves in a long run in such competitive manufacturing environment.

2. Literature review

In developing economies, SMEs play an important role as they represent a major source of employment and generate significant revenue and export earnings. On a paper on SMEs, it is essential to understand how SMEs are defined. SMEs in both developed and developing economies are defined by a number of factors and criteria, such as location, size, age, structure, organization, number of employees, sales volume, worth of assets, ownership through innovation and technology etc. [15]. Indian manufacturing sector are classified by worth of assets, based on their investment in plant and machinery (original cost excluding land and building and the items specified by the ministry of small scale industries). Enterprises with investment between twenty-five lakh rupees and five crore rupees are categorized as small enterprises, while the enterprises with investment between five crore and ten crore rupees are categorized as medium enterprises. Indian SMEs contribution to GDP is about 17 percent, with a share of almost 40-45 percent manufactured output and exports. [16]. After the globalization of market in early 1980s, Indian SMEs have got many opportunities to work in integration with large scale MNCs. Hence SMEs are important in the setting of most developing economies like India, as they are highly flexible and responsive suppliers to large firms, customers of large firms and suppliers to end-user customers in their own right [17, 18]. Any compromise in quality by SMEs could jeopardize the whole manufacturing supply chain, resulting in raising costs because of poor quality [17, 19, 18]. TQM practices in SMEs have a relatively short history, and a lot of important issues and areas are largely undebated in academic research [1]. There are less research assessing the impact of TQM implementation on SMEs performance, considering developing economies like India as focal point of research. Also, there has been paucity of research that reports evidence regarding major TQM impeding factors that are encountered by SMEs in India.

Based on the objective of the paper, a literature review was conducted aiming to collect and analyze all relevant papers in the operation research field by means of structured search for literature. The same is presented under various focused themes. The first section deals with relationship between TQM and firm performance. As we seek to understand the TQM-performance relationship, we also review literature that have reported major barriers to adoption and implementation of TQM in SMEs, that has been extensively discussed in second section.

2.1. Total quality management and firm performance

TQM is a management approach which started in Japan in the early 1980s, that seeks to enhance quality and productivity in business firms. In 1990s, TQM gained popularity among firms, who started adopting this management philosophy which focuses upon customer satisfaction and improves firm's performance [20]. In TQM research literature, most firms claim positive relationship between TQM and performance [21, 22, 23, 24, 25] and yet some firms also report less than optimal results [26, 27, 28, 29]. Very few researchers have conducted empirical studies to understand TQM-performance relationship in the context of SMEs. Some studies found that TQM could be adopted by SMEs with considerable success [6, 5, 30, 31, 15]. However other studies have also reported adverse impact of TQM on SMEs performance [32, 33]. These inconsistent findings in literature calls for further scholarly examination of the relationship between TQM and SMEs performance, which leads to the hypothesis "TQM positively affects firm performance".

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