International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Impact of TQM Practices on Firm's Performance: Investigation of Spinning Mills

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Abstract
Manufacturing companies have redefined quality standards by implementing total quality management (TQM). The Indian textile sector contributes approximately 14% to industrial production, 4 % to GDP, and makes up approximately 13 % of the country's total exports. The spinning mill industry, one of the labour-intensive traditional sectors in India, plays an important role in absorbing the unskilled rural labour force. The present situation of this sector faces several problems both at the management and employment levels. The spinning industry is in crisis, moving from bad to worse, and spinners are making losses. Some of the previous research has indicated that TQM can act as a solution to the issues. Hence, it is proposed to investigate the effects of TQM in spinning mills of South India. Previous studies have indicated the limitations of adopting TQM in such industries. Such studies have not been undertaken in the context of spinning mills in Kerala, especially in the cooperative sector. This research attempts to fill this gap. Initially, a literature survey was carried out to find out the various factors influencing the implementation of TQM within this sector and the development of a framework and a research model to examine this.

Keywords: Total quality management, textiles, cooperative sector, spinning, quality

1. Introduction

The business condition has experienced changes and enhancement in quality, which has become one of the elemental techniques that might be actualized in any association so as to acknowledge the authoritative whip hand. Moreover, due to the constant increment in the worldwide market, associations must improve their item and administration quality. Any relationship in a line of business requires a high-quality administration programme sorted out from top administration directly to the absolute bottom degree of representation. To strengthen hierarchical execution and improve consumer loyalty, a couple of absolute quality administration rehearsals were actualised. Moreover, the administration is viewed as an embracive approach for overseeing venture quality. It incorporates ceaseless improvement, preparing and re-planning of staff, customer fulfilment, support of top organisations, imperfection-free products, revamping, and cost adequacy.

Furthermore, on account of the consistent increment in worldwide work advertise, associations must improve their item and administration quality so as to urge inside different contenders. Each dimension within an organisation requires quality process models. These individual quality processes should be

well structured and set up depending on the standard of the general quality administration (Talib & Kureshi, 2012). Different investigations were conducted to recognize the connection between aggregate quality management practices and organisational performance, which is the primary aim of our research. Talib and Rahman (2010) propose a TQM display, which is recognised as a "segment of TQM" display. They cleared up the elemental practice that would upgrade the organisation's execution. TQM practices incorporate a commitment to top-administration management, specialisation, training and education, and improvement of uninterrupted product and supplier management. The outputs are improved performance and quality, high-level client satisfaction, loyalty, and on-time delivery. Generally, all TQM models indicate that every managerial action consists of designing, implementing, and evaluating processes. There is an agreement that firms should be ready to follow various principles in an incorporated way for successful TQM implementation. Total quality management also engages all organisation staff members in the process of meeting customers' expectations by utilising problem-solving methods to reinforce the standard of all organisational products and services.

2. Literature Review

2.1 Textile Industry

The Indian textile industry is one of the most important industries in the world, with a huge staple and textile manufacturing base. Our economy is essentially hooked to textile manufacturing. The textile industry delivers one of individuals' foremost basic needs and, therefore, holds importance. Over time, the industry has witnessed and maintained, improving the quality of life of the people connected to it. It has an exclusive position as an independent industry, from the assembly of raw materials to the delivery of finished products, with a big value-addition at each processing stage; it is a serious aid to the country's economy. About 27% of the exchange earnings are due to the export of materials and clothing alone. The fabrics and clothing part accounts for about 14% of the economic production and thus for the country's gross domestic product.

The spinning milling industry is important in securing the bulk of unskilled rural labour power. However, it is one of the most labour-intensive sectors in Kerala, and it first transforms cotton processes, leading to real added value. Despite an excellent past, the present status of this industry is questionable, with many problems behind the scenes and a blurry future. This sector faces several problems both at the management and utilisation levels. Out of various traditional industries, the textile industry was Kerala's most important and oldest industry, the mother industry nurturing several other industries.

Handlooms, power looms and khadi are incorporated within the decentralised sector. Varghese and Salim (2015) critically evaluate the challenges and burning problems of the handloom sector of Kerala. The major challenges are the lack of professional technical knowledge and managerial skills of the management staff, shortage of capital, stiff competition from the power loom sector and neighbouring states, failure to suit the demand for diversified products, etc. This study proves that the development within the performance of those business enterprises in Kerala is feasible through effective utilisation of human resources and the social responsibility of management. Even though the textile mill industry offers a valuable contribution to the economy, it is not a booming industry in Kerala; rather, it has passed through a critical phase and is still faced with problems (Personal & Archive, 2018).

Several mills face the challenge of shutting down, and a few units have already become sick units. Both managerial problems and labour unrest make it a vulnerable industry. Since many industries run with limited technologies and semi-skilled labour force, the scope for advancement and diversification are

limited because it supports the livelihood of an outsized number of individuals. The development of this sector not only enhances the contribution to gross domestic product (GDP), but directly instills welfare in the lives of masses. Therefore, this study attempts to bridge the gap within the existing TQM literature by investigating the connection of TQM with organisational performance within a developing country, especially within the textile industry, wherein only very limited research has been done. This study will help practitioners and policy-makers extend their knowledge of effective applications of TQM. Thus, the research question posed initially is an investigation of the extent of implementation of TQM within the spinning sector and, later, whether the implemented TQM possesses any effect on organisational performance.

2.2 Total Quality Management

The total quality management notion was perceived early in Japan. After that, numerous firms within the economic sector focused on improving their quality and utilising tools that directly aim to manage quality at (Abuzaid, 2015). According to Deming (1986), quality is the major determinant of success in a competitive setting. The primary focus of the concept of TQM is accumulating an entire mix among organisational staff and their functions to improve, progress, and preserve product and service quality to understand customer satisfaction (Publications et al., 2013). Many works of literature provide various notions on TQM; however, they all have parallel basic elements (Talib & Qureshi, 2012). Feng et al. (2008) argued that corporations should target rising quality and originality in today's coincidental marketplace. TQM implementation typically has a strong positive relationship with quality performance (Brah et al., 2002; Prajago & Sohal, 2003; Zehir et al., 2012). Kaynak (2003) discovered that TQM is relevant to quality performance indicators. Similarly, Kumar et al. (2009) found improvement in process, product, and service quality from TQM practices. TQM practices have a big positive effect on quality performance, as shown in empirical studies (**Table 1**). All these studies have statistically vital results ($p < 0.01$) with a positive Pearson's correlation coefficient (r) starting from 0.420 to 0.559. Organisations instigate TQM to realise a competitive advantage over others, win customer allegiance, gain business resources, and obtain massive funding (Douglas & Judge 2001). Also, TQM parades high benefits of improved operational performance (Garcia & Ramirez, 2015; Tan, 2013) and financial performance (Dubey et al., 2015; Neil et al, 2016). Much of the TQM literature has investigated whether there is an association between TQM practices and organisational performance.

Table 1. Examining the Effect of TQM Practices on Performance

Study	Research Examining the Effect of TQM Practices on Quality and Business and Organisational Performance	Sig	Range
Vinuesa and Hoque	TQM practices are positively associated with quality performance.	P<0.01	0.42
Zehir et al. (2012)	TQM dimensions are positively associated with quality performance indicators.	P< 0.01	0.439to0.559
Prajogo (2005)	TQM model has a significant strong impact on quality performance in organisations.	P < 0.05	0.56* β value
Vinuesa & Hoque	TQM practices are positively associated with business performance.	P<0.01	0.35

Solis et al. (1998)	Business performance is highly correlated with TQM implementation.	P<0.01	n.a.
Gadenne and Sharma (2002)	TQM practices improve business performance.	< 0.05	0.013to0.572
Lagrosen & Lagrosen (2003)	TQM has a significant impact on improving business performance.	P<0.05	0.038

Empirical studies expose contradictory findings. For example, considerable research provides empirical evidence of a positive association between TQM implementation and organisational performance (Bou et al; 2009; Tarí et al; 2007; Douglas & Judge 2001; García & Ramírez, 2015). Instead, many studies indicate a weak or no relationship between TQM practices and organisational performance, especially financial results (Benner & Veloso, 2008; Corredor & Goñi, 2010; Publications et al., 2013). Numerous empirical studies claim that a country's social, cultural, and economic conditions may potentially affect TQM practices within an organisation (Anwar, 2006; Flynn & Saladi, 2006; Kull & Wacker, 2010) and propose that the connection between TQM and organisational performance must be scrutinised within the context of other countries.

Therefore, this study will contribute by providing empirical evidence about the effect of TQM practices on organisational performance from an under-researched developing country. However, studies like (Martínez et al., 2005; Bou et al., 2009) take financial and non-financial performance measures. This study uses financial and non-financial measures to research the effect of TQM practices on organisational performance.

2.3 Conceptual Theories

Several theories can be used to explain the link between TQM and organisational performance. Deming's theory rests upon fourteen identified points of management style, the system of profound knowledge, and the Stewart cycle. He is known for his ratio quality, which is adequate to the results of work efforts over the entire cost. He has an example: If a firm is to focus on costs alone, the problem is that cost will rise while quality being poor. The theory is based on system appreciation and is the understanding of how the company's processes and the system work. Crosby's theory: Philip Crosby stated that much like Deming's, if you spend money on production quality, it is money that is well spent.

2.4 Empirical Review

There are many articles, studies, and surveys that describe the roles of quality in enhancing organisational performance. It’s quite obvious that industrialized and service industries' performances have. been impacted by a positive association between TQM implementation and organizational performance. Sadikoglu and Olcay (2014) mention that different TQM practices significantly affect different performance outcomes. Therefore, the main obstacles he stated were a lack of employee involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of resources. For instance, some recent studies by Talib and Qurish (2013) reviewed a relationship between total quality management practice and quality performance in Indian services companies. The study found that TQM goes hand in hand with quality performance and that quality culture was perceived as the dominant TQM practice in achieving quality performance. Flynn et al. (1994) examined the importance of TQM practices on organisational performance and concluded that TQM practices can lead

to both negative and positive motivation outcomes for workers. In contrast, the study conducted by Sachdeva et al. (2007) on the impact of total quality management procedure on the operational performance of manufacturing and services firms

3. Objectives of the Current Research

Initially, it is proposed that the extent of implementation of TQM in the spinning sector be investigated. Subsequently, this research analyses the impact of total quality management in selected South Indian textile manufacturing industries and assesses their relevance for cooperative spinning mills in Kerala. The precise objectives would be the following:

- What is the level of adoption of quality management techniques by the textile industry of South India?
- How do quality management techniques interrelate in the work environment of the spinning industry of South India?
- How do the adopted quality management techniques link with the performance measures of the cotton yarn industry of South India?
- How is the implementation of all the quality management techniques linked with the performance measures of the cotton yarn industry of South India?
- To identify and bridge the gap that occurred in the spinning sector's work culture in terms of TQM practice in the pre-COVID and post-COVID scenarios.

It is required to develop a measuring instrument in the context of Indian textile manufacturing and to examine the effects of the TQMAA using empirical study.

4. Factors Influencing TQM Implementation

Based on the TQM literature, 16 constructs of TQM have been selected as the TQM practices for this study. These 16 constructs are listed: Top management role from an organisational perspective, teamwork approach among the employees, employee training in multidiscipline activities, communication quality, process orientation, employee involvement, employee empowerment, customer focus, customer relations, supplier management, use of quality management tools, and benchmarking, use of statistical process control, business process re-engineering, performance appraisal system, investment in quality management and work-culture factors such as supervisor support, task clarity, task orientation, innovation, maintenance of labour standards, harmonious labour relations.

4.1 Performance Measure Indicators

Various 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. A comprehensive review of TQM studies on organisational performance suggests that there are various performance measure indicators (Zehir & Sadikoglu, 2012; Sadikoglu & Zehir, 2010). Different indicators used for measuring organisational performance have been identified from the literature and summarised in **Table 2**. Moreover, the performance indicators taken for this study are operating performance, market and financial performance, employee performance, customer satisfaction, innovation performance, and society results.

Table 2. Literature Review on Performance Measures

Study	Performance measures	Data analysis technique	Study	Performance measures	Data analysis technique
Anderso-n et al.	Operating performanc-e	Path analysis	Easton and Jarrell	Financial Performanc-e	Wilcoxon rank-sum test, Wilcoxon signed-rank
					Test
Flynn et al.	Operating Performanc-e	Path analysis	Forza and Flippini	Operating Performanc-e	Structural equation modeling
Mohrman et al.	Financial performanc-e, Market performanc-e	Multiple regressio-n analysis, Hierarchi-al	Rungtusanatham et al.	Operating performanc-e	Path analysis
	Operating performance	regression analysis			
Powell	Financial performance Operating performance	Partial correlations	Sam and Terziovski	Operating performanc-e	Structural equation modelling,
					multiple regression analysis
Hendricks and Singhal	Financial performanc-e	Wilcoxon signed-rank test, Mann–Whitney	Dow et al.	Operating performanc-e	Structura-l equation modellin-g

5. Proposed Framework and Research Model

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 spinning mill performance by measuring multiple performance indicators. The proposed research framework is depicted in **Figure 1**. The research explores sixteen TQM constructs' influence on performance indicators and work culture factors. It also identifies whether each of the 16 TQM constructs has any connection with the work culture factors and performance indicators.

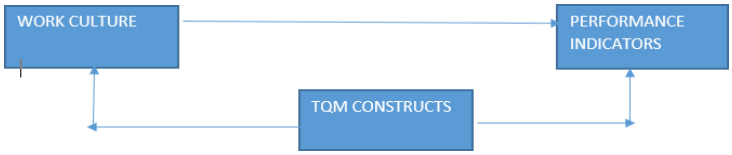

Figure 1. Conceptual Framework

Acknowledgment:
Gratitude goes to all textile firms' members for providing accurate information for the research work.

References

1. Abuzaid, A. N. (2015). Examination the impact of total quality management practices in achieving strategic agility: An applied study on the Jordanian private hospitals. *European Journal of Business and Management, 27,* 87–96.
2. Anwar. (2006). pdf. n.d
3. Benner, M. J. & Veloso, F. M. (2008). ISO 9000 practices and financial performance: A technology coherence perspective. *Journal of Operations Management,* 611–629.
4. Brah, S. A., Tee, S. S. L., & Rao, B. M. (2002). Relationship between TQM and performance of Singapore companies. *International Journal of Quality & Reliability Management,* 356–379.
5. Bou, L.J. C., Escrig, T. A. B., Roca P. V., & Beltrán M. I. (2009). An empirical assessment of the EFQM excellence model: Evaluation as a TQM framework relative to the MBNQA Model *Journal of Operations Management,* 1–22.
6. Corredor, P. & Goñi, S. (2010) Quality awards and performance: Is there a relationship? *TQM Journal* 529–538.
7. Douglas, T. J., & Judge, W. (2001). TQM implementation and competitive advantage structural control and exploration. *Academy of Management Journal,* 158–189.
8. Dubey, R., Gunasekaran, A. & Samar, A. S. (2015) Exploring the relationship between leadership, operational practices institutional pressures and environmental performance: A framework for green supply chain. *International Journal of Production Economics, 160,* Elsevier.
9. Feng, M., Terziovski, M. & Samson, D. (2008). Relationship of ISO 9001:2000 quality system certification with operational and business performance: A survey in Australia and New Zealand based manufacturing and service companies. *Journal of Manufacturing Technology Management. 19,* 22–37.
10. Flynn, B. B. & Saladin, B. (2006). Relevance of Baldrige constructs in an international context: A study of national culture. *Journal of Operations Management,* 583–603.
11. García, B. J., & Ramírez, A. M. (2015). Why and how TQM leads to performance improvements. *Quality Management Journal,* 23–37.
12. Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management,* 405–435.
13. Kull, T. J. & Wacker, J. G. (2010). Quality management effectiveness in Asia: The influence of culture. *Journal of Operations Management,* 223–239.
14. Kumar, V., Choisne. F., De Grosbois, D., & Kumar, U. (2009). Impact of TQM on company's performance. *International Journal of Quality and Reliability Management,* 23–37.
15. Neill, O. P., Sohal. A., & Teng, C. W. (2016). Quality management approaches and their impact on firms financial performance: An Australian study. *International Journal of Production Economics,*

171, 381–393.
16. Martínez, C. M., Choi, T. Y., Martínez, J. A. & Martínez, L. A. R. (2009) ISO 9000 1994 ISO 9001 2000 and TQM: The performance debate revisited. *Journal of Operations Management*, 495–511.
17. Personal, M. & Archive, R. (2018) Munich personal RePEc archive employment conditions in traditional sector: A study of spinning mill workers in Kozhikode, Kerala, 85266.
18. Publications C Article R Access O Talib F Section M E Muslim A and License A 2013 An overview of total quality management: understanding the fundamentals in service organisation *Browser Download This Paper* 1–20.
19. Prajogo, D. I., & Sohal, A. S. (2003). The relationship between TQM practices quality performance and innovation performance: An empirical examination International. *Journal of Quality and Reliability Management,* 901–918.
20. Sachdeva, A., Bhardwaj, A., & Sharma, V. S. (2007). Impact of ISO 9000 certification on the performance of SMEs: A study of Indian industry. *International Journal of Management Practice*, 226–239.
21. Sachdeva, A., Bhardwaj, A., & Sharma, V. S. (2007). Impact of ISO 9000 certification on the performance of SMEs: A study of Indian industry. *International Journal of Management Practice*, 226–239.
22. Sadikoglu, E. & Olcay, H. (2014). the effects of total quality management practices on performance. *Laboratory Management Information Systems: Current Requirements and Future Perspectives 2014*, 996–1027.
23. Sadikoglu, E., & Zehir, C. (2010). Investigating the effects of innovation and employee performance on the relationship between total quality management practices and firm performance: An empirical study of Turkish firms. *International Journal of Production Economics,* 13–26.
24. Talib, F. Z., & Qureshi, M. N. (2012). Total quality management in the service sector: A literature review. *International Journal of Business Innovation and Research, 6*3, 259–301.
25. Talib, F., & Rahman, Z. (2010). Studying the impact of total quality management in service industries. *International Journal of Productivity and Quality Management, 62,* 249.
26. Tan, B. I. (2013). TQM adoption and organisational performance of family-owned businesses: A literature review and proposed structural model. *International Journal of Modelling in Operations Management.*
27. Tarí, J. J., Molina, J. F. & Castejón, J. L. (2007). The relationship between quality management practices and their effects on quality outcomes. *European Journal of Operational Research*, 483–501.
28. Varghese, A., & Salim, M. H. (2015). handloom industry in Kerala: A study of the problems and challenges. *International Journal of Management and Social Science Research Review, 13*, 129–133.
29. Zehir, C., Ertosun, Ö. G., Zehir, S., & Müceldilli, B. (2012). Total quality management practices effects on quality performance and innovative performance *Procedia Social and Behavioral Sciences, 41*, 273–280.
30. Zehir, C. & Sadikoglu, E. (2012). Relationships among total quality management practices: An empirical study in Turkish Industry. *International Journal of Performability Engineering*, 667–678