THE EFFECTS OF TOTAL QUALITY MANAGEMENT ON FIRM PERFORMANCE: EVIDENCE FROM TAIWAN INFORMATION-RELATED INDUSTRIES

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ABSTRACT

Total quality management (TQM) has been proposed to improve firms operating performance, and received considerable attention in recent research. This study empirically examines the extent to which total quality management and firm performance are correlated and how total quality management impact various levels of firm performance. Based on a comprehensive literature review, the total quality management framework developed by this paper demonstrates the relationship between total quality management and firm performance by examining the direct and indirect effects of seven TQM constructs on three different levels of firm performance. The proposed research model and hypotheses are tested by using data collected from information-related small and medium size enterprises operating in Taiwan. The test of the structural model supports the proposed hypotheses. The implications of research findings for researchers and practitioners are discussed and the suggestions for further research are also provided.

Keywords: Total quality management, Performance, Information-related industries

INTRODUCTION

With the increasing competitive operating pressure and the development trend of customer-oriented business environment, total quality management (TQM) has been recognized as an important issue and generated a substantial amount of interest both among managers and researchers [1] [15]. Quality pioneers, such as Deming [4] and Juran [10], asserted that competitive advantage can be gained by providing quality products or services. Eng and Yusof [5] argued that quality holds the key competitiveness in today’s global market. In addition, TQM is widely considered as an effective management tool, which can provide business with stability, growth, and prosperity [9]. In order to achieve the requirement of quality, firms have to put the effort on the implementation of TQM. Therefore, firms will introduce quality management practice to integrate internal information communications with TQM philosophy effectively. In addition, the implementation of TQM can also be implemented to enhance the relationship between firms and their suppliers. Moreover, the implementation of TQM can also increase customer satisfaction by providing preeminent products or services.

LITERATURE REVIEW AND HYPOTHESES

Recent studies have examined the relationship between total quality management and various levels of firm performance [3] [11] [13]. However, the results of these studies have different mixed outcomes, probably resulting from the nature of the research designs used such as using TQM practices or firm performance as a single construct [11]. The benefits of an effective TQM implementation can be examined with three different perspectives. First, from the operating angel, the reason that TQM has become a hot topic in practice and academia is that it can be applied to improve global competitiveness [7] [14]. Firms with effective TQM implementation can achieve internal benefits such as improvements in quality and productivity, or outperform on operating income-based measures [2] [8]. From the
financial performance perspective, careful design and implementation of consistent and documented quality management systems can contribute significantly to superior financial performance [2]. Further, firms with effective TQM implementation can significantly outperform on the stock price performance [8]. From the knowledge management viewpoint, the implementation of TQM can also increase and create organizational knowledge, which helps more understand how quality management practices affect firm performance [12].

Based on the result of literature review, this study inducted seven factors that may be the key drivers of the effective implementation of TQM, namely customer focus, management leadership, human resource, quality data & reporting, supplier management, design management, and process management [6] [11] [14].

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<th>No.</th>
<th>Hypotheses</th>
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<tr>
<td>H1</td>
<td>Customer focus is positively related to Management Leadership</td>
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<td>H2a</td>
<td>Management Leadership is positively related to Human Resource</td>
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<tr>
<td>H2b</td>
<td>Management Leadership is positively related to Supplier Management</td>
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<td>H2c</td>
<td>Management Leadership is positively related to Design Management</td>
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<td>H3</td>
<td>Human Resource Management is positively related to Quality Data &amp; Reporting</td>
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<td>H4a</td>
<td>Quality Data &amp; Reporting is positively related to Supplier Management</td>
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<td>H4b</td>
<td>Quality Data &amp; Reporting is positively related to Design Management</td>
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<td>H4c</td>
<td>Quality Data &amp; Reporting is positively related to Process Management</td>
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<td>H5a</td>
<td>Supplier Management is positively related to Design Management</td>
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<td>H5b</td>
<td>Supplier Management is positively related to Process Management</td>
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<td>Supplier Management is positively related to Operating Performance</td>
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<td>H6a</td>
<td>Design Management is positively related to Process Management</td>
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<td>H6b</td>
<td>Design Management is positively related to Operating Performance</td>
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<td>H7</td>
<td>Process Management is positively related to Operating Performance</td>
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<td>H8a</td>
<td>Operating Performance is positively related to Customer Satisfaction</td>
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<td>H8b</td>
<td>Operating Performance is positively related to Financial Performance</td>
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<td>H8c</td>
<td>Customer Satisfaction is positively related to Financial Performance</td>
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**DATA AND RESULTS**

This study hypothesizes that firms with TQM practices should have better effects on various levels of firm performance. In order to examine the relationship between quality management and business performance, this study takes small and medium enterprises in the information-related industries to be the sampling target to investigate TQM implementation. A total of seven constructs which are considered important for effective TQM implementation are proposed to form a questionnaire. A five-point Likert scale was employed with a score of 1 relating to “strongly disagree” and 5 representing “strongly agree” to represent the attitude of respondents. A total 600 information-related companies were randomly selected from Information Service Industry Association of R.O.C. and Taiwan Electrical and Electronic Manufacturers; Association. The survey, through the mailed questionnaire, was carried out within one and half months. After eliminating incomplete survey, 95 questionnaires are kept with the 15.83% of valid returned rate.

This study first applies the descriptive statistics to explore the general profile of the respondents. Of 95 valid respondents, 52% were software-related companies and 48% were hardware-related companies. In addition, 67% reported that the lifetime of their companies were over 16 years. Corresponding to the company size, 30% of informants reported that the number of employees was over 200 people. Finally, we find that 40% of respondents have over 76% of products exported.

Second, in order to examine the motivation for companies to implement quality management, we classified the motivation of quality management into nine factors, such as increasing quality of products, improving goodwill, improving firm’s competitive advantage, the requirement of management, following the trend, facing the pressure of competitors, and expanding market share. It is worth to note that the top two strong motivations for companies to implement quality management are increasing quality of products and improving firm’s competitive advantage. The possible explanation is that one of characteristics of information-related industries is that, on average, the level of employee educational background is higher than other industries. Therefore, the employees know the importance of TQM. Beside, the export ratio of high-tech industry is also higher than other industries. In order to maintain and expand global market share, high-tech industries emphasize on the implementation of quality management. In addition, the
higher an employee’s educational background, the more understanding the meanings of quality management. It provides the continuous driving force to implement the TQM.

As for how long a firm has been introduced quality management practices, 33% respondents have implemented quality management over 16 years. However, 56% respondents implement quality management by themselves. In order to further investigate the actual implementations of quality management, we investigate the amount of quality management invested in 2003 and 2004. The results showed that, on average, 57% of respondents invested less than 16,129 dollars in implementing quality management activities. For 41% respondents, the employee number of quality management sector to total employee ratio is less than 5%. And for the installment of quality management scheme, 51% of respondents chose to install ISO 2000 version.

Figure 1 shows the relationship among TQM practices and various levels of firm performance. We divide the research model into three sections for detailed discussion. The first section is to examine the effects of essential key factors on effective implementation of TQM philosophy. We choose to examine the relationship between customer focus and management leadership, which is prerequisite for firms to implement TQM effectively. The second section is mainly to examine the relationship among six TQM constructs and operating performance. And the third section is to thoroughly examine the improvement effects of operating performance, which are resulted from the implementation of TQM, on customer satisfaction and financial performance, respectively.

**CONCLUSION**

This study contributes to the TQM literature by establishing comprehensive research model to examine the relationship among TQM practices and various levels of firm performance. The findings of this research show that an effective management leadership can positively influence human resource management, supplier management, and design management. In addition, our findings provide evidence that the influence of TQM practices on firm performance should be measured at different levels of performance. The findings state that TQM practices have direct effects on operating performance. Then improving operating performance brings in the rise of customer satisfaction and improvement of financial performance. However, this study only examines the effects of TQM on firm performance in Taiwan information-related industries. Further research can expand research scope to different industries or investigate the implementation situation in public companies rather than the small and medium size companies. However, quality management can integrate from internal and external processes with knowledge creation processes. Thus, future researchers can consider integrating TQM practices and knowledge management and measuring how the economic effects of knowledge integration on firm value added.

**REFERENCES**


