

Impact of Quality Management Practices on Firm Performance: The Research Evolution

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ABSTRACT

Quality management has been known as a method to improve the organizational performance. Several organization types have implemented quality management, i.e. manufacturing and service companies, educational institution, healthcare provider, and public administration. Many studies have been done in this area exploring the effects of quality management on firm performance. Those researches varies in terms of organizational background, quality management practices, performance measures, mediating/moderating factors, analysis tools used, and research models. Several authors have reviewed papers on this topic. Last journal review is done by Nair in 2006. No author has done elaborative effort to review papers published since 2006. The aim of this paper is to capture the development of research in this field and to offer further research direction. In this literature review, papers will be classified in terms of organizational background, quality management practices, performance measures, mediating/moderating factors, analysis tools, and their research models. Findings of review and recommendations for further research will be presented.

Keywords: quality management practices, performance, literature review

1. Introduction

[1], [2], and [3] describe the importance of quality on performance and success of companies. Many approaches to quality management have been suggested to improve the efficiency and competitiveness of enterprises. Total Quality Management (TQM) is one of the most popular and the most widely recommended approaches because TQM is an integrated approach which integrates the whole organizational functions to focus on meeting customer needs and organizational objectives[4].

The first literature review on quality management was done by [5], which reviewed articles from 1970 to 1993. [5] tried to provide theoretical framework classifying past efforts and guiding future research. The next review on quality management publications was done by [6], which tried to synthesize, organize, and structure knowledge and offer suggestions for future research. The last literature review was conducted by [7], which examined the relationship between quality management practices (QMPs) and firm performance by performing meta-analysis on the publications from 1995 to 2004.

More than 50 papers have been published in this area in the past five years. Papers were found by using “quality management” and “performance” as keywords in Science Direct, ProQuest, and EBSCO databases. Most of these publications were country specific. Country that was mostly discussed by authors was Australia as in [8-14], followed by Malaysia[15-20], US [21-25], and Taiwan [26-29]. Unfortunately, there was no publication about the implementation of TQM in Indonesia found in the above mentioned databases. This paper will discuss what has been researched in the past five years in terms company background, quality management practices, performance measures, mediating&moderating factors, research models, and analysis tools.

2. Company Background

Company background discussed in studies of impact of quality management practices on company performance is quite diverse. There are researches that focus solely on manufacturing firms, as in [4, 18, 30]. There were also researches that study companies in general, as were done by [11, 31-32]. Even some studies focused on very specific industry, such as hospitality services [29, 33], logistics companies [34], petroleum industry [35], healthcare services [36], and maquiladoracompany [37]. In addition to the types of company as mentioned above, there werestudies that limitedtheir objects to ISO 9001 certified companies as in [18, 38-41]. References[25, 32] used quality award winners or finalists as objects of their research.

In general there has been no study comparing the impact of implementation on the performance of quality management in manufacturing and service companies directly. The findings obtained from studies on manufacturing firms cannot be generalized to other industrial sectors. Reference [13] reported that QMPs of **measurement and process improvement** is more important for manufacturing companies than for construction companies. In addition, they mentioned that firms implementing TQM were more likely to emphasize aspects of **measurement** and **training** rather than companies that implemented ISO 9001 only or a combination of TQM and ISO 9001. Reference [39] also suggested future studies to include contextual factors such as firm size, types of company, scope of operations, level of competition, knowledge management, and ISO 9000 certification.

3. Quality Management Practices

Various quality management practices (QMPs) have been investigated. There were researchers who considered quality management as a single construct, such as [25, 28, 30, 32, 42-44]. But, most studies considered QMPs as a multiple construct, as were done by [4, 10-12, 18].

Leadership or top management commitment is the QMPS that is most used by researchers. Out of fifty one papers reviewed leadership or top management commitment were used thirty seven times, such as in [4, 10-12, 17-18, 33, 39, 41]. The next most used QMP was people management (34 times), followed by customer focus/satisfaction (29 times), information and analysis or quality data (25 times), process management (24 times), continuous improvement (19 times), employee involvement/relation (18 times), strategic or quality planning (18 times), and supplier relationship or supply chain management (16 times). There is no surprise with this result since most research models adopted the model of Malcolm Baldrige National Quality Award (MBNQA) such as done by [10-12, 17, 24, 31, 34-35, 45-48]. In addition to QMPs adopted from MBNQA, some researchers included unique QMPs such as supplier relationship or supply chain management [17, 24, 35, 46-47] and employee involvement [35, 46], and continuous improvement [31, 34]. It should be noted that employee involvement sometimes was considered as a part of people management as in [31]. Similar situation applied to continuous improvement but in the opposite direction. MBNQA emphasizes on continuous performance improvement, innovation, integrating processes, and results [49].

Reference [18] used the following criteria to choose QMPs:

- It has been identified as core practices for manufacturing and service companies
- Contains elements of soft and hard TQM
- Includes quality criteria most famous award that has been accepted by the practitioners and academics.

Reference [7] recommended research in the future to be designed so that results could be compared with results of other studies. Taking into consideration this recommendation, the selection criteria suggested by [18] is quite appropriate.

4. Performance Measures

Performance measures commonly used in this area are quite diverse. Most of recent publications included financial performance measures [4, 8-9, 17, 20, 23-25, 29, 32, 36, 38, 41-43, 50-53]. In addition to financial performance that were included 20 times in 50 papers, performance measures that were used more than 5 times are customer satisfaction (17 times), product/service quality (10 times), operational performance (8 times), business performance (9 times), employee satisfaction (7 times), and innovation performance (8 times). Researchers are often found to use different terms for the same things such as employee value factor [30] with employee satisfaction [4]. In addition, the researchers also used different groupings of performance measures, i.e. business performance often included many other performance categories such as financial performance and sales performance.

In measuring the impact of implementation of TQM on corporate performance it is important to have balanced performance measurement frameworks. Balanced scorecard (BSC) is a performance measurement framework is the most widely discussed in publications [54]. Using balanced scorecard allows executives to avoid improving one performance at the expense of another [55]. Reference [56] stated that the BSC scratched spread around the balance between short-term goals and long term, between financial measures and non-financial, between lagging and leading indicators and between internal and external performance perspective. [43] has evaluated the impact of JIT and TQM implementation in one hundred and seventeen Top 500 companies in Turkey with the use of performance measures according to the BSC concept.

5. Mediating & Moderating Factors

Reference [7] expressed in general the researchers reported a direct relationship between QMPs and performance. But increasing number of studies has measured the influence of mediating / moderating factors. Of the 51 publications that were carried out from 2006 to 2011, there were 20 publications that measured the influence of mediating / moderating

factors such as those conducted by [4, 9, 12, 20, 22-24, 26-27, 29, 37, 39-41, 44, 51, 53, 57-59]. Some articles used a group of QMPs as mediating factors such as done by [23, 37, 41, 57], while other papers used certain performance measures as mediating factors such as in [12, 24, 27, 39, 51, 53, 58]. The last group of papers used various factors as mediator such as time [4], culture [44], organizational learning [26], and strategic control systems [20].

The existence of mediating / moderating factors cannot be eliminated in the research model because the presence or absence of the influence of mediating factors can only be verified after data analysis. When impact of mediating factor was significant, QMPs impact on the performance of the company depends on its level of mediating factors.

6. Research Models

Most papers published in the last five years used perceptual research models. They used Likert scale models of 5-point, 5-point, 7-point, 10-point, or 100-point. [25, 44] used quantitative research models followed what has been done by [30] that measured the inventory performance of companies. While most studies in this field used the perceptual model with 5-point Likert scale, [18] identified weaknesses of this kind of research model. 5-point Likert scale model is said to be less sensitive to marginal difference in QMPs and performances. Use of a larger scale is recommended.

Perceptual models got some criticism because it is based on perception of respondents, rather than on real measures. Solution for this shortcoming was first proposed by [30], which developed a quantitative model. [25, 44] also used quantitative models in their studies. Unfortunately, models proposed by [25, 30, 44] cannot accommodate QMPs as multiple constructs. Till now a comprehensive solution to limitation of perceptual models has not been satisfactory as well. To overcome the limitations of a purely perceptual model, hybrid model that accommodates both quantitative and qualitative variables need to be done. Such a scenario has been used by [13, 33]. In their hybrid models, performance measures were evaluated using quantitative variables, whereas qualitative variables were used when objective measures were not available. To accommodate QMPs as multiple constructs, QMPs need to be treated as qualitative variables.

7. Analysis Tools

There were several analysis tools that were frequently used in this field, among which were the structural equations modeling (SEM), regression analysis, correlation analysis, ANOVA, discriminant analysis, and path analysis. In publications of the last five years, SEM is the most dominantly used, followed successively by regression analysis, correlation analysis, and ANOVA. In the studies of [13, 33] that used hybrid models, both studies used both regression analysis and ANOVA as their analysis tools. Selection of analysis tools should be done thoughtfully. The use of different methodologies could potentially result in different findings [7].

8. Conclusion and Recommendation for Future Research

The previous sections have discussed the differences and similarities identified in articles published in the last five years. Some findings from previous sections are as follows. First, company background should be made more homogeneous because different types of companies will result in different findings. Second, QMPs' selection criteria proposed by [18] are recommended so that findings can be compared with other research's findings. Third, performance measures that need to be included should reflect short-term goals and long term, financial and non-financial perspectives, lagging and leading indicators, and between balance between internal and external perspectives. Fourth, the research models need to accommodate relevant mediating/moderating factors because when these factors are excluded, the influence of these factors cannot be evaluated at all. Fifth, the existing models could not overcome the limitations of pure perceptual models. While use of quantitative variables for performance measures is widely accepted, there is no solution for inclusion of multiple constructs of QMPs using quantitative variables. The use of hybrid model is recommended, i.e. qualitative variables for QMPs and quantitative/qualitative variables for performance measures.

9. References

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