

IMPACT OF QUALITY MANAGEMENT PRACTICES ON BUSINESS PERFORMANCE: A RESEARCH MODEL DEVELOPMENT

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Abstract

Many papers have been published on the impact of quality management practices on firm performance. But very few papers have been published about the implementation of total quality management in Indonesia. Hofstede et al. [1] describes Indonesia has special characteristics, i.e. the highest power distance index in the world, one of the lowest world rankings for individualism, and high uncertainty avoidance index. Some papers have reported that the effectiveness of quality management implementation is significantly influenced by organizational culture stemming from national culture. The next thing, Calingo [2] states that companies that use product quality as their competitive attribute have higher profit margins and bigger market share. So, whether product quality as a competitive attributes influences the relationship between quality management practices and firm performance or not needs to be proven. The aim of this paper is to develop a research model on the implementation of quality management in Indonesia and its impact on firm performance. In this research model, the authors will specifically include organizational culture and product quality as a competitive attribute. This paper will present a literature review of the model development, the identified research gap and research questions, the research hypotheses, and the resulted research model.

Keywords: organizational culture, competitive attributiveness of product quality, quality management practices, firm performance, research model.

1. Introduction

The emergence of total quality management (TQM) can be traced back to the 1970s in which companies in the United States was challenged by competitors from Germany and Japan [3]. At the end of 1980s thru the beginning of 1990s, TQM received significant increase in awareness as reported by Porter and Parker [4]. Since then TQM has been considered as a part of strategy implementation as reported by Dean and Bowen [5]. Some other studies assert that TQM helps managing organizations to improve its overall effectiveness and performance towards achieving world-class status [6-7]. Prajogo and Sohal [8] claims that TQM has been a widely accepted management model providing a competitive advantage through quality. Kumar et al. [9] declares that TQM is one of the most popular and most often recommended approaches to help companies improve efficiency and competitiveness. Furthermore, Kumar et al. [9] reports the positive correlation of quality management practices with company performance, i.e. employee relations, operating procedures, customer satisfaction, and financial results.

Many studies have been published on the implementation of TQM and its impact on firm performance as reported by Ahire et al.[10], Prajogo and Sohal [11], Sousa and Voss [12], Nair [13], and Wahjudi et al. [14]. While most studies report strong and positive correlation between implementation of quality management practices (QMPs) and firm performance, some studies report different results. Harari [15] claims that only about one-fifth—at best one-third-of TQM programs in US and Europe have achieved significant improvement in performance. Furthermore, Harari states that TQM is only one of many possible tools to accomplish quality [15]. Samson and Terziovski [16] reports that there are mixed results from TQM implementation. Some companies have experienced significant performance improvements such as those which win various quality awards. On the contrary, there are many companies which have failed to improve their operational or business performance through TQM implementation [16]. Prajogo and Brown [17] warns us that adopting TQM program does not necessarily improve the performance of an organization. They suggest that it is the adoption of quality management practices that matters rather than formal TQM programs [17].

As TQM or similar scheme has been deployed in Japan, US, Europe, and Australia [16], many studies about the implementation of TQM or quality management practices and their impact on firm performance have been done in those countries. Wahjudi et al. [14] reports that most countries that have been studied in the past five years are Australia, Malaysia, US, and Taiwan. Unfortunately, there is no publication found on the impact of QMPs on firm performance in Indonesia [14]. Jung [18] states that the effectiveness of TQM practices are significantly influenced by the organizational culture stemmed from national culture. Furthermore, Kull and Wacker [19] claims there are differences in effectiveness of quality management implementation in China, South Korea, and Taiwan. In addition, previous studies do not evaluate the effect of product quality as a competitive attribute in the relationship of quality management practices and firm performance. Prajogo and Sohal [20] claims that differentiation strategy drives the adoption of quality management practices, but cost leadership strategy does not. In another way, it can be hypothesized that the effectiveness of TQM implementation is affected by competitive attributiveness of product quality.

This paper tries to develop a research framework on the impact of TQM implementation on business performance in Indonesian manufacturing companies. There are two mediating factors that will be evaluated, i.e. organizational culture and competitive attributiveness of product quality. The remaining of this paper is structured as follows: in the second and third section, literature review on quality management practices and firm performance will be discussed. The following section will explore the inclusion of

mediating factors, i.e. organizational culture and competitive attributiveness of product quality. In the last section, the research model development will be described in detail.

2. Quality Management Practices

Many quality management practices (QMPs) have been studied in the last two decades. While some studies consider quality management practices as a single construct, most studies treat them as a multiple construct [14]. Review over papers published in the past 6 years reveals that quality management practices that are widely utilized are leadership or top management commitment, people management, customer focus, information and analysis, process management, continuous improvement, employee involvement, strategic or quality planning, and supplier relationship or supply chain management [14].

Nair [13] recommends that future research in this field should be designed such that the results can be compared. Moreover, Arumugam et al. [21] provides criteria to choose QMPs, i.e. adaptability to both manufacturing and service industries, containing elements of soft and hard TQM, and including quality criteria most famous quality award. Among the most famous quality awards, there are the European Quality Award in Europe [22], and the Malcolm Baldrige National Quality Award in the US [23]. Malcolm Baldrige Award has seven criteria; those are six criteria to measure quality management practices and one criterion to measure the result. European Quality Award includes five QMPs, i.e. leadership, people, policy and strategy, partnerships and resources, processes, and four result criteria, i.e. people results, customer results, society results, and key performance results [22]. Since European Quality Award and MBNQA are applicable to manufacturing and service sectors, adopting quality management practices of those awards guarantees the adaptability to both manufacturing and service industries.

Lewis et al. [24] affirms that soft QMPs deal with behavioral or human factors, while hard QMS, according to Black and Porter [25], are concerned with tools and systems that are necessary to support the implementation of soft factors. Using the aforementioned definition, the most widely used QMPs in the last six years, which are identified by Wahjudi et al. [14], can be classified as follows. Soft QMPs are represented by top management leadership, people management, employee involvement, customer focus, and supplier partnership, while we have strategic planning, information & analysis, process management, and continuous improvement as hard QMPs. It is very common to include employee involvement into people management such as done by Samson and Terziovski [16] and Prajogo and Sohal [26] because people management captures the combined impact of TQM training, communication, and involvement programs [16]. In this case, we have only eight most widely used QMPs.

Using these eight most widely used quality management practices in our proposed model, we can satisfy the recommendation of Nair [13] and Arumugam et al. [21]. Our proposed model utilizes soft and hard QMPs that are adaptable to both manufacturing and service industries. Furthermore, it includes quality criteria of the most famous quality award, i.e. European Quality Award and MBNQA. Since QMPs used in our proposed model are the most widely used, the result of our research can be compared to results of existing studies. Table 1 describes how QMPs of our proposed model cover all QMPs used in European

Quality Award (EQA) and MBNQA.

Table 1: Comparison of QMPs used in EQA, MBNQA, and Our Proposed Model

EQA	MBNQA	Proposed model
Leadership	Leadership	Leadership
Strategy	Strategic Planning	Strategic Planning
Customer Focus	Customer Focus	Customer Focus
	Information & Analysis	Information & Analysis
Processes, Products & Services	Process Management	Process Management
People	Human-Resources Focus	People Management
Partnerships & Resources		Supplier Relationship
		Continuous Improvement

3. Performance Measures

Wahjudi et al. [14] lists some frequently used performance measures. Those performance measures are financial performance, customer satisfaction, product/service quality, operational performance, business performance, employee satisfaction, and innovation performance. Furthermore, Wahjudi et al. [14] states that researchers often use different groupings of performance measures, i.e. business performance frequently includes financial performance and sales performance.

There are some criticism about the use of perceptual model such as done by Davidson et al. [27]. Furthermore, many authors list their purely perceptual model as their research limitation such as reported by Brah and Lim [28], Demirbag et al. [29], and Jayaram et al. [30]. Because it is difficult to get objective performance data and that the performance of one industry cannot be compared to the performance of another industry, an improved perceptual scheme has been used by Tari et al. [31] and Agus et al. [32]. In their study, Tari et al. [31] uses competitive measures in the scale of 1 to 7, where 1 means “much worse than competitors” and 7 means “much better than competitors”. In this scenario, the respondents are compelled to compare their performance relative to their competitors. Having this in mind, it is important to consider the data availability of the selected performance measures. While it is impossible to get data on customer satisfaction, product/service quality, operational performance, employee satisfaction, and innovation performance in Indonesia, the data on sales performance and financial performance are usually available, especially for some specific industries. That is why we propose the use of financial performance and sales performance.

Awan et al. [33] uses net profit margin, return on asset and sales growth rate to measure financial performance, while Aydin et al. [34] employs operating income, sales growth, and return-on-investment. Demirbag [29] utilizes revenue growth over the last three years, net profits, profit to revenue ratio, and return on assets. Madu et al. [35] recommends profitability, sales growth, competitiveness, productivity, profit growth, cost and market share as measures of organizational performance. Which measures that is feasible to be included in the proposed model need to be checked with the availability of public data in Indonesia. In this

way, the respondent can have a more objective estimate about their firm performance.

4. National Culture

Jung et al. [18] finds that the effectiveness of quality management practices are affected by the organizational culture stemmed from national culture. Kull and Wacker [19] finds differences in quality management effectiveness among East Asian countries; China, South Korea, and Taiwan. This situation occurs because specific cultural dimensions influence quality management effectiveness in different ways [19]. Lagrosen [36] reminds us that successful implementation of TQM requires the values of the organization to be changed so as to harmonize with the values of TQM. This is in line with what Deming [37], one of the quality guru, believes. He believes that implementation of TQM should be accompanied by cultural transformation. It can be inferred that the success of TQM implementation depends much on the existing organizational culture.

There are a few cultural frameworks have been proposed in relation with quality management. Among the most cited frameworks are Hofstede's cultural model [1] and the global leadership and organizational behavior effectiveness (GLOBE) model as in [19] and [38]. Cagliano et al. [39] claims that Hofstede's framework is the most cited model. In the beginning, there were only four cultural dimension in Hofstede's model [39]. Starting from 1991 Hofstede introduced the fifth dimension, i.e. long-term orientation (LTO) [1]. The five dimensions of Hofstede's cultural model are power distance, individualism, masculinity, uncertainty avoidance, and long-term orientation. The definition of those five dimensions are as follows:

- Power distance: the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally
- Individualism: the characteristic that pertains to societies in which the ties between individuals are loose: everyone is expected to look after him- or herself and his or her immediate family
- Masculinity: the degree of difference in the social role between different genders
- Uncertainty avoidance: the extent to which the members of a culture feel threatened by ambiguous or unknown situations
- Long-term orientation: the fostering of virtues oriented toward future rewards—in particular, perseverance and thrift

On the other hand, GLOBE model has nine cultural dimensions, i.e. performance orientation, future orientation, assertiveness, uncertainty avoidance, power distance, collectivism, family collectivism, gender differentiation, and humane orientation [39]. Vecchi and Brennan [38] claims that GLOBE captures more comprehensively and less ambiguously the elements of national culture. Hofstede's cultural model receives some criticisms because:

- It lacks of generalizability that comes from its sampling approach, the level of analysis, the comparisons of

political boundaries to culture, and the validity of the constructs [40-41]

- It assumes homogeneity in each of the studied cultures [42-43]
- Most critically, the respondents came from one company and was taken more than 20 years ago [41],

However, Wiengarten et al. [41] claims that Hofstede's cultural model is more favorable than GLOBE. First, Hofstede's cultural model has much stronger convergent validity than GLOBE [40]. Second, the popularity of Hofstede's model confirms its usefulness and importance for management research [41].

According to Hofstede et al. [1], Indonesia has some unique characteristics, i.e. highest power distance index (78), one of the lowest individualism (14), and quite high uncertainty avoidance index (48). How this cultural characteristics influence the effectiveness of TQM implementation needs to be studied.

5. Competitive Attributiveness of Product Quality

Competitive attributiveness of product quality has been known for more than two decades. Shetty [44] reports that product quality increases competitiveness, productivity and profitability while lowering cost and increasing sales. Calingo [2] declares product quality is more effective in increasing market share compared to price. Kroll et al. [45] claims that superior product quality increases market share and returns, while lowering systematic variance and unexplained variance in returns. Prajogo [46] finds that differentiation strategy predicts product quality, but cost leadership does not. This means companies that implement higher level of differentiation strategy produce better product quality. Furthermore, Prajogo [46] identifies that this relationship is moderated by cost leadership strategy. It explains why companies that are willing to pay higher cost gain benefit from better product quality. From quality cost perspective it can be described that higher prevention and appraisal cost will result in better products.

Garvin [47] identifies eight dimensions of quality, i.e. performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. Taking product quality as a single construct, it is argued that the effect of product quality as a competitive attribute will be different among industries. This knowledge will encourage companies in industry with strong competitive attributiveness of product quality to implement quality management practices in higher level, which will result in a better firm performance. On the other hand, a company that competes in an industry that does not emphasize on product quality will not have such a big pressure, like the aforementioned company.

Thru this variable, respondents will indicate how strong product quality affect the competitiveness of their product/service. If product quality has a very strong competitive attributiveness, then the company may want to embrace differentiation strategy. On the other side, when the product quality does not have strong competitive attributiveness, the company most likely follow cost leadership strategy. In this situation the company will not be motivated to apply quality management practices, which in turn will not experience improved firm performance.

6. Development of Research Model

Reflecting on the above literature review, there are two identified research gaps. First, it is found that there is no research on the effect of Indonesian culture on the relationship between quality management practices and corporate performance. With the unique composition of Indonesian cultural dimensions identified by Hofstede et al. [1], it is worth to be studied how Indonesian culture influence the relationship between quality management practices and performance of manufacturing companies. Second, there is no study on the effect of competitive attributiveness of product quality on the relationship between quality management practices and corporate performance. While it is hypothesized that competitive attributiveness of product quality is different among industries, how competitive attributiveness of product quality influences the relationship between quality management practices and corporate performance needs to be investigated.

In essence, the research framework that will be studied can be described in Figure 1. We have eight quality management practices to be studied, i.e. leadership, customer focus, process management, people management, supplier relationship, information and analysis, strategic planning, and continuous improvement. There are two mediating factors that are included; organizational culture and competitive attributiveness of product quality. The organizational culture consists of five cultural dimensions of Hofstede's model, i.e. power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance index (UAI), and long-term orientation (LTO). Finally, business performance will capture the financial performance and sales performance of those companies compared to the best companies in their corresponding industries.

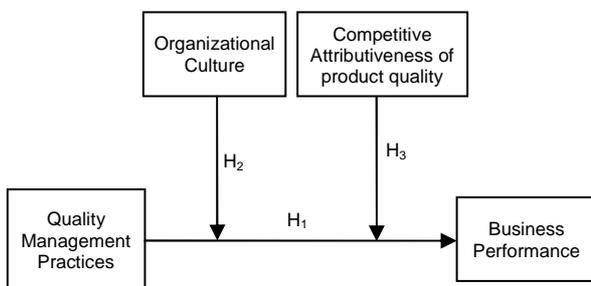


Fig. 1 Proposed Research Framework

There are three main hypotheses that we want to test. The first one is to confirm the direct effect of quality management practices on business performance. The hypothesis is:

- H1: Quality management practices are positively and highly correlated with superior business performance

The second main hypothesis deals with organizational culture as mediating factor of the relationship between quality management practices and business performance. Here the hypothesis becomes:

- H2: Organizational culture mediates the relationship between quality management practices and business performance

Since there are five cultural dimensions of Hofstede's model, the second main hypothesis can be broken down into five secondary hypotheses. The five secondary hypotheses are:

- H2a: Power distance index in Indonesian manufacturing organization negatively mediates the relationship between quality management practices and business performance
- H2b: Individualism in Indonesian manufacturing organization negatively mediates the relationship between quality management practices and business performance
- H2c: Uncertainty avoidance index in Indonesian manufacturing organization positively mediates the relationship between quality management practices and business performance
- H2d: Long-term orientation in Indonesian manufacturing organization positively mediates the relationship between quality management practices and business performance
- H2e: Masculinity in Indonesian manufacturing organization negatively mediates the relationship between quality management practices and business performance

The third main hypothesis tries to validate the presence of product quality as a competitive attribute. Then, the hypothesis that needs to be proven is:

- H3: Competitive attributiveness of product quality mediates the relationship between quality management practices and business performance

7. Conclusions

There are two research gaps that will be addressed in this study. First gap is that there is no research on the effect of Indonesian culture on the effectiveness of quality management implementation. Second, there is no study on the effect of competitive attributiveness of product quality on the effectiveness of quality management implementation. Of those two research gaps, we can have the following research questions, i.e. how organizational culture and competitive attributiveness of product quality influence the relationship between QMPs and performance of Indonesia manufacturing companies. Literature review on quality management practices, firm performance, organizational culture, and competitive attributiveness of product quality has been conducted. The arguments for inclusion of the eight quality management practices and selection of financial and sales performance have been described. Furthermore, theoretical concepts for organizational culture and competitive attributiveness of product quality have also been provided. In our proposed model, we use Hofstede's cultural model instead of GLOBE framework. The argument is that because it has stronger convergent validity and more popularity than GLOBE, which guarantees its usefulness and importance. In the last section, the development of proposed model is described in detail accompanied by our research hypotheses.

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