IMPLEMENTATION OF QUALITY MANAGEMENT PRACTICES IN MALAYSIAN AUTOMOTIVE INDUSTRIES: A REVIEW

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ABSTRACT

The automotive industry in various countries around the world is in different stages of their quality movements. The importance of Quality Management (QM) practices in the achievement of organizational performance has been highlighted in many studies. The purpose of this paper is to examine the relationship of QM practices and organizational performance between Malaysia and Thailand automotive industry. A conceptual model using Structural Equation Modeling (SEM) has been proposed. This model will be used to study the relationship between QM practices and organizational performance for Malaysia and Thailand automotive industries. Based on the proposed conceptual model and reviewed, research hypotheses are being developed. The paper culminates with suggested future research work.

Keywords: Quality Management, automotive industries, hypothesis, Malaysia, Thailand

INTRODUCTION

In a competitive market, the demand for quality is emerging as the single most critical factor for companies to survive in the ever-expanding global market place. Quality is vital in determining the economic success of manufacturing companies (Garvin, 1988, Curkovic et al., 2000). World-class manufacturing companies gain competitive edge and greater market share through extraordinary levels of performance by providing a quality product with a competitive price as required by demanding customers.

The concept of Quality Management (QM) has been developed as the result of intense global competition. Companies with international trade and global competition have paid considerable attention to QM philosophies, procedures, tools and techniques. A growing number of companies use QM practices as strategic foundation for generating a competitive advantage (Reed et al., 2000) and improving organizational performance (Samson and Terziovski, 1999). However, the implementation of QM has not occurred at the same pace in different regions of the world especially in automotive industries.
CURRENT SCENARIO OF MALAYSIAN AUTOMOTIVE INDUSTRY

Recently, Malaysian automotive industry really feels the threat of this external pressure. Malaysian Rating Corporation Bhd. (2006) has placed the automotive industry on slightly negative outlook following lower sales. Since the realization of ASEAN Free Trade Area (AFTA) in 2005, it shows the impact on Malaysia’s car manufacturer sales. Prior to AFTA, most of Malaysian automotive market is protected by the government with instruments such as tariffs, refunds schemes and investment control in order to compete with their overseas competitors. From a positive perspective AFTA would actually drive regional manufacturing integration and cost competitiveness amongst ASEAN countries rather being a threat to them. Based on analysis for the world vehicles market for the year 2000 and projected 2010 by The Malaysian Automotive Association report (2006), as shown in FIGURE 1, ASEAN is the 5th largest market in the world and Malaysia is far behind when compared to Thailand by the year 2010.

FIGURE 1 The world vehicle market for year 2000 and projected for 2010(The Malaysian Automotive Association, 2006)

Thus, to survive in a competitive market place, QM practices are one of the key issues that can help align organization’s to stay competitive. Besides that, based on current situation, comparative study amongst ASEAN countries, especially Thailand, is believed to be useful and good approach to provide an overall perspective and understanding of the main differences and similarities.

LITERATURE REVIEW

The importance of QM in business organizations has increased significantly over the past 20 years. International quality management aims at understanding quality management in global context. The concept of international serves as the motivation for developing a global QM standard for evaluating QM practices within countries (Rao et al., 1999). The practice of QM also affects from the national level to the international level (Kim and Chang, 1995), which helps organizations to compete internationally and gain a competitive edge in the global market (Liu and Kleiner, 2001).
QUALITY MANAGEMENT CONSTRUCTS

Quality management constructs have been investigated extensively (Saraph et al., 1989). To generate distinct generic construct, first defined a list of others constructs proposed in a large set of articles. Then, each construct was analyzed whether it was different or similar to the constructs previously analyzed. This process resulted with the eight following constructs: quality leadership, customer focus and satisfaction, quality information and analysis, human resource development, strategic planning management, quality results, and quality assurance. Table 1 presents, for each generic construct, a list of similar practices proposed by other authors.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Related constructs</th>
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<tbody>
<tr>
<td>Quality leadership (QL)</td>
<td>The role of top management leadership (Saraph et al., 1989), top management support (Flynn et al., 1994), top management commitment (Ahire et al., 1996), management leadership (Yusof and Aspinwall, 2000), leadership (Sila, 2007)</td>
</tr>
<tr>
<td>Customer focus and satisfaction (CFS)</td>
<td>The role of quality department (Saraph et al., 1989), customer involvement (Flynn et al., 1994), customer focus (Ahire et al., 1996), customer orientation (Rao et al., 1999)</td>
</tr>
<tr>
<td>Quality information and analysis (QIA)</td>
<td>Quality data and reporting (Saraph et al., 1989), quality information (Flynn et al., 1994), quality information and availability (Ahire et al., 1996), information and analysis (Sila, 2007).</td>
</tr>
<tr>
<td>Human resource development (HRD)</td>
<td>Workforce management (Flynn et al., 1994), employee training (Ahire et al., 1996), education and training (Reed et al., 2000), support for human resource development (Sila, 2007), human resource management (Parast et al., 2006).</td>
</tr>
<tr>
<td>Strategic planning management (SPM)</td>
<td>Process design management (Saraph et al., 1989), process management (Flynn et al., 1994), design quality management (Ahire et al., 1996), strategic planning process of quality management (Parast et al., 2006).</td>
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<tr>
<td>Supplier quality management (SQM)</td>
<td>Supplier involvement (Flynn et al., 1994), supplier quality management (Ahire et al., 1996), supplier quality (Rao et al., 1999, Parast et al., 2006), supplier quality assurance (Yusof and Aspinwall, 2000), supplier management (Sila, 2007).</td>
</tr>
<tr>
<td>Quality results (QR)</td>
<td>Product quality (Ahire et al., 1996), internal quality results (Rao et al., 1999), quality results (Parast et al., 2006), organizational effectiveness (Sila, 2007).</td>
</tr>
<tr>
<td>Quality assurance (QQA)</td>
<td>Quality assurance of products and service Rao et al., 1999).</td>
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The list above illustrates the foundation of this study constructs, and has strongly inspired the definition of each construct and will be analyzed further.

A PROPOSED CONCEPTUAL MODEL

Based on comprehensive review of previous study, a conceptual model has been proposed to model the relationship between QM practices and organizational performance as presented in Figure 2. This proposed model has adapted the conceptual model proposed by Lin et al. (2005), as their successful model in conducting comparison between two countries. However, some amendments especially on QM practices constructs have been made.

FIGURE 2 A proposed conceptual of QM practices for Malaysian and Thailand automotive industry

Two performance variables will be used to measure organizational performance which are the satisfaction level and business result. For the satisfaction level component items, it includes employee satisfaction, customer satisfaction and supplier satisfaction. A finding from Yoo et al. (2006) indicates that higher levels of employee empowerment lead to higher level of organizational performance. A case study conducted by McAdam and Bannister (2001) suggested that the implementation of TQM in a company contributed to a positive working environment and resulted in reductions in employee absenteeism. Jun et al. (2006), had found that employee satisfaction have a positive influence on organizational performance.

QM practices have been shown to enhance organizational performance through customer satisfaction. Edvardsson et al. (2000) reported the growing body of research on organization performance between products and services on external customer practices. By gaining a better understanding of customer needs and the use of this knowledge to produce a better product, a customer satisfaction has a direct impact on organizational performance (Johnson and Gustafsson, 2000). However, Johnson and Nilsson (2000) argued that concerning customer
satisfaction, no direct customer measures were available. They suggest it is important to incorporate measures from different sources.

The relationship between buyer and supplier is an important factor in organizational performance. The need to improve supplier's quality and delivery performance while at the same time, reducing the costs of supplied materials and parts has motivated buyers to engage in supplier development activities which is has a direct impact on organizational performance (Krause et al., 1998). Empirical studies demonstrates that evaluating supplier performance and providing feedback, result in improved buyer supplier performance (Humphreys et al., 2004) and enhanced product/service quality of the buying firm (Krause et al., 2000).

For the business results component items for organizational effectiveness which include productivity, number of successful new product, cost performance and profitability. QM practices also help to improve in reducing scrap, rework and stable the production process. These in turn minimize the production cost and increase productivity (Ahmad and Schroeder, 2002). Through continuous improvement, not only errors and defects can be prevented but also product cycle's times can be reduced, thereby improving productivity and organizational performance (Huang and Lin, 2002).

According to Buzzel and Gale (1987), financial performance or profitability is an important measure of QM outcomes. This was support with Deming's (1986) argument that quality improvement leads to elimination of waste, reduction of cost and will increase profitability. Recent study by Hoang et al. (2006), noted that TQM has a positive impact on the firm's innovation performance. These findings have important implications at improving company's business performance.

**RESEARCH HYPOTHESES**

To understand the relationship of QM practices on organizational performance in Malaysian and Thailand automotive industries, the following hypotheses will be used and tested. According to the culture free approach in cross-country comparative study, differences in cultural practices do not affect the practice of QM in organizations. Thus, these hypotheses have been developed based on the proposed conceptual model and previous research mainly from Parast et al. (2006).

**Quality leadership**

Previous research in QM practices emphasizes the critical role of leadership in driving overall TQM implementation in the organizations (Flynn et al., 1994). Raghunathan et al. (1997) noted that leaders play an important role in how QM practices are projected in a consistent manner where it affects organizational performance and profitability. Accordingly, it is proposed that:

$\text{H}_0$: Quality leadership for QM practices is positively correlated with organizational performance.
H1a: There is no significant difference in quality leadership for QM practices between Malaysia and Thailand automotive industry.

Customer focus and satisfaction

Organization must be knowledgeable in customer requirement and responsive customer needs and measure customer satisfaction through TQM implementation (Raghunathan et al., 1997). Nilsson et al. (2001) indicate that customer satisfactions have a greater impact on business results through quality practices. This was support with Lee et al. (2003) argument that customer satisfaction positively related to process improvement. Therefore:
H1b: Customer focus and satisfaction for QM practices is positively correlated with organizational performance.
H2b: There is no significant difference in customer focus and satisfaction for QM practices between Malaysia and Thailand automotive industry.

Quality information and analysis

The study conducted by Woon (2004) among Singaporean companies found that the service organizations generally showed a lower level of TQM implementation than the manufacturing organizations in the elements quality information and analysis. Projogo (2005) in his study examines that the significant impact of quality information and analysis of TQM on quality performance. This also support by Lee et al. (2003) showed that from empirical study quality information and analysis have a significant effect on process management. Therefore:
H2a: Quality information and analysis for QM practices is positively correlated with organizational performance.
H3b: There is no significant difference in quality information and analysis for QM practices between Malaysia and Thailand automotive industry.

Human resource development

Deros et al. (2006) noted that human resource development is one of the critical success factors in benchmarking practice which will drive in improving business and management process. Sanchez-Rodriguez et al. (2006) noted that people management were significantly and positively correlated with purchasing operational performance (POP). Accordingly:
H4a: Human resource development for QM practices is positively correlated with organizational performance.
H4b: There is no significant difference in human resource development for QM practices between Malaysia and Thailand automotive industry.
Strategic planning management

Curkovic et al. (2000) in his study show that there is indeed a strong relationship between strategic planning in TQM with environmentally responsible manufacturing. While Feng et al. (2006) in his comparative study found that there is significant impact on strategic planning in TQM practice with organizational performance, however the impact is the same for both Singaporean and Australian firms. Therefore:

H₅a: Strategic planning management for QM practices is positively correlated with organizational performance.

H₅b: There is no significant difference in strategic planning management for QM practices between Malaysia and Thailand automotive industry.

Supplier quality management

Effective supplier quality management is facilitated by a corporative relationship with suppliers. Lee (2004) addressed that by adoption supplier management in TQM programs can help Chinese small manufacturers to achieve competitive advantages in both domestic and international markets. This argument also supported by Temtine and Solomon (2002) study, found that SMEs should be assisted in the use of systematic supplier management programs as this will consequently lead to the consideration of TQM as a means of achieving competitive advantage in long run. Accordingly:

H₆a: Supplier quality management for QM practices is positively correlated with organizational performance.

H₆b: There is no significant difference in supplier quality management for QM practices between Malaysia and Thailand automotive industry.

Quality results

In the MBNQA, it has been shown that improving internal quality management practices lead to improvement in internal and external quality result (2003). Adam et al. (1997) noted that quality improvement positively correlates with financial performance which is significantly related to business performance. Therefore:

H₇a: A quality result for QM practices is positively correlated with organizational performance.

H₇b: There is no significant difference in quality result for QM practices between Malaysia and Thailand automotive industry.

Quality assurance

Lin et al. (2005) noted that quality assurance is significantly related with supplier selection strategy where it could improve the management supply chain networks performance. Lakhal et al. (2006) reported that there is a significant relationship
between use of statistical quality techniques and organizational performance. Therefore:

H_{0a}: Quality assurance for QM practices is positively correlated with organizational performance.

H_{0b}: There is no significant difference in quality assurance for QM practice between Malaysia and Thailand automotive industry.

Based on the above hypotheses, Fig. 3 shows a summary of the hypotheses for the proposed conceptual model.

FIGURE 3 Research hypotheses

CONCLUSIONS AND FUTURE RESEARCH

Many studies have been performed to identify critical success factors for successful implementation QM practices. However, no previous study had tried to investigate the relationships between QM practices and organizational performance, especially amongst ASEAN countries. A conceptual model has been proposed to examine the relationships between QM practices and organizational performance for Malaysia and Thailand automotive industry. Based on proposed model and a previous studied, research hypotheses are being developed. The next step of this study is to design a questionnaire, which will be used for pilot study data collection in Malaysia and Thailand automotive industry.

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