

The Quality Management Practices and Supply Chain Performance in Malaysian SMEs

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DOI: <https://dx.doi.org/10.47772/IJRISS.2024.814MG0039>

Received: 05 December 2024; Accepted: 09 December 2024; Published: 04 January 2024

ABSTRACT

Small and medium manufacturing businesses (SMEs) are now enhancing their operational performance by better managing their supply chains. To achieve better management, a firm must investigate several aspects, including supply chain management and quality management practices. The study aims to establish the relationship between various quality management practices, such as process management, continuous improvement, and leadership, and their impact on supply chain performance in selected SMEs in Malaysia. Primary sources, specifically questionnaires distributed to respondents via online Google Forms and printed copies, provided the data for this study. This study included a purposive sample of 40 respondents from specifically selected SMEs in Johor, Melaka, and Negeri Sembilan. The study found no statistically significant relationship between process management, continuous improvement, and leadership with regard to supply chain performance. This suggests that these aspects of quality management practices are not essential for enhancing supply chain performance. Further research is therefore suggested to look for other strategic management factors possible, such as business analytics, innovation, and talent management that might improve supply chain performance.

Keywords: Quality management practices, process management, continuous improvement, leadership, supply chain performance

INTRODUCTION

Small and medium manufacturing businesses (SMEs) are now enhancing their operational performance by better managing their supply chains. In both industrialized and emergent economies, the manufacturing industry plays a critical role. Firms should identify and evaluate the criteria that enhance their performance in the production industry, particularly those associated with operations performance (Tan and Wong, 2015). Small and medium-sized enterprises (SMEs) are an important element of economic growth in Malaysia. They are the key drivers of change to turn Malaysia into a well-grown, high-income country by 2020 (Abdul Wahab et al., 2016).

Currently, supply chain management plays a large role and is acknowledged as a crucial aspect in the performance of businesses and the competitiveness of commercial organizations. Supply chain management encompasses all activities related to sourcing and procurement, conversion, and logistics management (Kyeremeh & Dza 2018). According to Christopher, 2011, cited by Forry & Abdul (2018), the effective and efficient movement of material and information to and from the organization in handled goods and services is characterized as supply chain operational performance. The performance of a supply chain is typically measured in terms of dependability, responsiveness, flexibility, cost, and asset management, among other factors. According to Shradha et. al., (2019), quality, dependability, flexibility, and cost are all factors that

influence supply chain performance. Through efficient strategy, better tactics, and effective operational decisions, supply chain performance measurements help the organization achieve its vision and mission. Besides, Deloitte (2017) mentioned that supply chain performance management is a comprehensive approach to increasing the effectiveness and efficiency of all supply chain processes.

From the standpoint of quality management, the design supply chain can be defined as providing high-quality products and services to clients across all organisations in the supply chain. Improving the quality of all supply chain processes leads to cost reductions, improved resource utilization, and improved process efficiency. Moreover, quality management employs leadership, process management, and continuous improvement to boost the supply chain's operational performance and address its internal issues (Fernandes et al., 2014). Lee (2021) mentions that performance is affected by increasing organizational capabilities amongst firms in the supply chain, as well as improved operational efficiency for each firm. Thus, the purpose or objectives of this study is to examine the factors that influence operational performance, particularly in supply chain performances related to various quality management practices.

LITERATURE REVIEW

Supply Chain Performance

Supply chain performance (SCP) measurement supports a firm vision and mission for the organization through efficient strategy, better tactics, and effective operational decisions. An analysis of SCP is essential to solving issues and challenges before they impact the overall operations of the organization (Shradha et al., 2019). They also stated that there is a significant relationship between supply chain performance and organisational performance. Al-Shoubl et al. (2017) conducted a study by distributing questionnaires to 249 manufacturing firms in Jordan. Their study asserts that the implementation of high-level supply chain management practices will result in enhanced organisational or firm performance. This study also established a statistical relationship between the operational and manufacturing firm performances and supply chain performance dimensions such as customer responsiveness (delivery) and supply integration (inventory). In the same study, Halikas et al. (2020) stated that there is a statistically positive relation between supply chain performances (flexibility, resource efficiency, integration, costs, speed, delivery reliability and visibility) and business performance. An essential credential in supply performance is delivery performance, which comprises delivery channel, storage location, distribution method, and vehicle scheduling (Basheer et al., 2019). Andries (2013), as cited by Basheer et al. (2019), established a positive correlation between delivery performance and supply chain performance. They also examined the delivery to desired date, request fills delivery times, and delivery to commit date as key indicators of delivery performance that significantly impact supply chain performance.

Process Management

Process management is concerned with resolving the underlying reasons for disparities, not the end results. Gejdo & Rentková (2019) founded this style of management control on the premise that a company's poor performance stems from inefficient operation of its processes, which requires rationalisation and enhancement to generate a greater added value for the client. Process management technologies, such as statistical quality control systems, ensure error-free manufacturing and optimal asset utilization. Similarly, regular maintenance procedures help keep manufacturing operations running smoothly (Leyer et al., 2016). Dara (2018) conducted a study involving manufacturing firms across the United States, revealing a significant and positive correlation between process management (process innovation) and supply chain performance through quality management practices. Parast (2019), in his study involving logistics and supply chain managers in the USA, has stated that through quality management practices, process management has a significant and positive relation to supply chain performance. Erna et al. (2019) collected data from the employees of logistics companies in Indonesia for their study. They selected only those employees who had a direct relationship with innovation activities. Their study asserts a significant relationship between supply chain performance and process management through open innovations, which

combine radical and incremental innovations. Therefore, based on the foregoing discussion, the following hypothesis is developed:

H1: There is a significant relationship between the process management and supply chain performance.

Continuous Improvement

Continuous improvement has a huge positive impact on a company's performance. These findings are consistent with those of Asbari (2019) and Purwanto (2020), who discovered that leadership of the ISO 9001:2015 Quality Management System has a favourable and significant effect on company performance. Another study expressed the continuous improvement process as a set of scheduled, planned, and organized procedures that are constantly changing. These processes are interconnected throughout the organisation. The emphasis is on involving everyone in the organization to reach higher levels of productivity, value, well-being, ergonomics, and efficiency (Jurburg et al., 2017). Heavey et al. (2014) established a new paradigm for continuous improvements that addresses the primary factors at work. These forces include improved methodology, more experienced experts who understand employee performance, customer-centred strategic goals, and customer-driven co-leadership. They believe that their suggested framework provides more insight on process-based businesses, strengthens individuals' roles inside firms, and leads to positive effects.

Basheer et al. (2019) conducted a case study involving 248 textile firms in Pakistan, which revealed a positive and significant correlation between supply chain performance and continuous improvement through total quality management. Erboz et al. (2021) conducted a study on 212 manufacturing firms, revealing a significant relationship between continuous improvements and supply chain performance through the implementation and adoption of industry 4.0 and supply chain integration. As stated by Bastas and Liyanage (2018), the application of continuous improvement concepts and methodologies distributed across supply chain connections can improve the performance of a supply chain. As a result, evaluating the performance of the supply chain using performance metrics has become an important element of the management process. Therefore, the following hypothesis is developed:

H2: There is a significant relationship between continuous improvement and supply chain performance.

Leadership

Leadership is an individual ability to motivate and direct a group of people toward a common objective. Strategic leadership is the ability to persuade others to make daily decisions in the context of the company's short- and long-term development, as well as its existence; it is a hybrid of the two. Strategic leadership was defined in this study as providing strategic direction; utilizing and preserving core capabilities; developing human capital; sustaining an effective corporate culture; promoting ethical behavior; and establishing strategic control. Leadership has a huge positive impact on a company's performance. These findings are consistent with those of Asbari (2019) and Purwanto (2020), who discovered that leadership of the ISO 9001:2015 quality management system has a favorable and significant effect on company performance. Hameed et al. (2018) conducted a study where they collected data from audit department employees and other managerial staff who are closely involved in supply chain activities. This study reveals a direct relationship and positive significance between transformational, transactional, and top management styles and supply chain performance. Mokthar et al. (2019) conducted another study in which they employed structural equation modelling to analyse data collected from 190 manufacturing companies in Malaysia. The study concluded that both transformational and transactional factors significantly and positively influence supply chain performance. Nugraha et al. (2019) collected data from the operation managers of production firms operating in Indonesia for their study. In their study, they found that the risk management committee, which included managers and non-executive board members, had a direct and significant impact on the supply chain performance of the firm. This demonstrates that a firm maintains good governance to guarantee supply chain performance. Therefore, the following hypothesis is developed:

H3: There is a significant relationship between leadership and supply chain performance.

METHODOLOGY

The target population for this study consists of employees working in SMEs companies situated in the southern area of Malaysia. A total of 40 respondents were selected using purposive sampling method, ensuring representation across various levels of positions within their respective organizations. These people were also selected depending on their contribution and experience related to quality management and supply chain.

Table 1: Operationalization of Variables

Variable	Number of Items	Cronbach's Alpha
Process Management	8	0.876
Continuous Improvement	8	0.892
Leadership	8	0.876
Supply Chain Performance	8	0.791

The present study encompasses four primary variables (refer to Table 1), including process management, continuous improvement, leadership, and supply chain performance. The items utilized in this study were derived from prior research, with a particular emphasis on studies that closely align with the organizational environment. All variables were assessed using a five-point Likert scale. Then, this data was analyzed using statistical analysis to obtain its relationship between several variables in this study.

FINDINGS

Cronbach's alpha was carried out, and as shown in Table 2, the alpha value (α) for all items was above 0.7. Therefore, we can conclude that the items used in this study were both valid and reliable. The closeness of the value to 1 indicates a high level of reliability for the variables used. Next is the breakdown of the respondents by gender, age group, education level, designation, and years of working experience in the current organization. The majority of respondents were female, with 75% of them being between the ages of 26 and 35. In terms of education, 69.4% of respondents held a first degree, while only 5.6% had a postgraduate degree. Next, for departments in the organization, process and engineering indicated a high percentage with 25% and were followed by quality with 19.4%. Finally, based on their working experience, the majority of them have been involved in the current organization for less than 5 years with 97%.

Table 2: Reliability Analysis

Variable	Number of Items	Source
Process Management	8	(Purwanto et al, 2020)
Continuous Improvement	8	(Purwanto et al, 2020)
Leadership	8	(Purwanto et al, 2020)
Supply Chain Performance	8	Shradha A. et al. (2019)

CONCLUSION AND DISCUSSION

Table 3: Regression Analysis

Dependent variable: Supply chain performance		
Independent variables	Standardised Coefficient (BETA)	Sig.
(Constant)		
Process	0.329	0.188

Continuous improvement	0.248	0.204
Leadership	0.222	0.291
F value	12.391 (0.000)	
R square	0.537	

Based on Table 3, process management, continuous improvement, and leadership, the results turned out to be not significant at values of 0.188, 0.204, and 0.291, respectively, as they are not within $p < 0.01$ or even $p < 0.05$. This means that all variables did not significantly influence the dependent variable, supply chain performance, in this research.

Based on empirical evidence, this study demonstrates that quality management practices do not necessarily improve operational performances, particularly in the supply chain. A study from Phan (2019) supported this result by stating that internal quality management, including leadership, process management, and continuous improvement, has a less significant connection with the supply chain in Vietnamese manufacturing companies. Another study by Hong et al. (2019) also found a similar result, indicating that supply chain quality management practices (SCQMP), including leadership and process management factors, do not significantly influence the operational performance of manufacturing companies in China.

This result supported earlier research by Truong et al. (2017), which found that there is no direct link between support or leadership from top management and operational performance in the supply chain, as measured by reducing late delivery times. Furthermore, this result aligns with a study by Robinson et al. (2005), which posited that quality management, which encompasses leadership, process management, and continuous improvement, is disjointed throughout the supply chain and cannot be considered a significant aspect of supply chain management. Moreover, Chai et al. (2013) suggest that it is not easy for enterprises and their supply chain partners to execute an effective quality management system (which includes process management, continuous improvement, and leadership factors) to one that is supply chain-based and quality-centered to accomplish many objectives concurrently, for example, operational or economic benefits. Furthermore, this insignificant finding stems from the fact that quality management practices, such as leadership, process management, and continuous improvement, do not significantly impact supply chain performance. It is most likely because these factors are not relevant to apply as a determinant to improve the supply chain management in current demand.

RECOMMENDATIONS

Potential future factors could focus on talent management, innovation, and business analytics. The first strategy they might employ to replace process management is business analytics tools. Business analytics refers to the application of various advanced analytical techniques on data to address enquiries or resolve problems within supply chain management. Trkman et al. (2010) shown that business analytics markedly enhances supply chain performance in essential disciplines. Numerous companies have undertaken research in various fields. The company could also utilise insights from the research by Aziz et al. (2017) regarding the effects of open innovation and supply chain management on organisational success. This study indicates that integrating supply chain management with technology and innovation facilitates interaction across the value chains of various enterprises, yielding reciprocal advantages and enhanced supplier management. Aziz et al. (2017) emphasise that corporate investment in innovation, like wireless mobile barcode scanners and IT systems like MRP (material resource planning), can enhance logistics efficiency in the supply chain, depending upon the technology's alignment with the company's goals. Finally, additional factors, such as talent management, may be relevant and applicable to the present demand. Talent management includes all human resources processes designed to attract, develop, motivate, and retain high-performing individuals. Al-Aina & Atan (2020) assert that most organisations recognise the essential importance of executing talent management strategies and practices to enhance performance and create a sustainable competitive advantage that allows them to distinguish themselves in the

marketplace. Furthermore, Jena & Ghadge (2021) recognised the integration of human resource management, encompassing talent management, as a key strategy for improving supply chain performance.

ACKNOWLEDGEMENT

The authors would like to thank Universiti Teknologi MARA, Cawangan Melaka for supporting this article.

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