

Impact of Supply Chain Integration, Supplier Collaboration, and Quality Management on the Performance of Manufacturing Companies in Indonesia (Case Study of a Manufacturing Company in West Java)

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ABSTRACT

The purpose of this study is to examine the impact of supply chain integration, supplier collaboration, and quality management on the performance of manufacturing companies in Indonesia, with a particular focus on companies located in West Java. A survey was conducted on a sample of 150 manufacturing companies, and the data were analyzed using quantitative methods. The results showed that these three factors had a positive and significant impact on the company's performance. In particular, supply chain integration has the strongest impact on company performance, followed by supplier collaboration and quality management. These findings have important implications for supply chain management practices in Indonesia's manufacturing sector.

Keywords: Supply Chain Integration, Supplier Collaboration, Quality Management, Firm Performance.

1. INTRODUCTION

Indonesia's manufacturing industry has grown steadily in recent years, driven by a burgeoning middle class and expanding consumer market. According to Indonesia's Central Bureau of Statistics (BPS), the manufacturing sector accounted for 20.7% of the country's GDP in 2020, making it one of the most important sectors in the Indonesian economy. However, the industry faces several challenges, such as increasing global competition, rising input costs, and the need to adapt to changing customer preferences. Global business competition in the manufacturing industry is fierce and continues to increase along with technological developments and trade globalization. Manufacturing companies must consider various factors to win the competition, including factors related to Supply Chain Integration, Supplier Collaboration, and Quality Management (product quality management) [1]–[3]

To remain competitive, manufacturing companies need to adopt best practices in supply chain management and quality management [1], [4], [5]. Supply chain integration and supplier collaboration are essential in ensuring that production processes are efficient and effective. In addition, quality management practices can help companies meet customer expectations and maintain a competitive advantage. In today's highly competitive manufacturing industry, a company must consider these factors in order to win the competition and obtain greater profits, the company can improve its performance and strengthen its position in the global business competition. Global business competition in the manufacturing industry is fierce and continues to increase along with technological developments and trade globalization. Manufacturing companies must consider various factors to win the competition [6]–[8].

Effective supply chain integration can help companies optimize production, reduce costs, and improve company performance. Through proper integration, companies can build strong partnerships with their suppliers, thereby reducing supply risks and increasing production flexibility [6]–[8]. In addition, collaboration with suppliers can also help companies gain access to the latest technology and improve their production processes [9]–[11]. By improving production processes, companies can increase efficiency and reduce production costs, thereby increasing profits

and company competitiveness. Collaboration with suppliers can also help companies gain access to valuable resources and strengthen overall supply chain performance [12], [13]

Product quality management is also very important in today's global manufacturing industry. Consumers are getting smarter in choosing products, so companies must ensure their products have good quality. By implementing good product quality management, companies can ensure their products meet or even exceed consumer expectations. This will increase consumer trust in the company and strengthen the company's brand image[14]–[16]

As a country with fierce business competition, manufacturing companies in Indonesia must continue to improve their performance in all aspects of production and management to remain competitive in an increasingly global market[17] In this context, the implementation of supply chain integration, collaboration with suppliers, and quality management can be key factors in the success and sustainability of manufacturing companies in Indonesia. This study aims to investigate the impact of supply chain integration, supplier collaboration, and quality management on company performance in a manufacturing company in West Java.

The urgency of the problem presented in the background is that the manufacturing industry in Indonesia faces increasingly fierce global competition, so manufacturing companies need to improve their performance to remain competitive in the global market[18], [19] In this regard, supply chain integration, collaboration with suppliers, and quality management can be key factors to achieve this goal. Therefore, this case study aims to evaluate the effectiveness of these practices in improving the performance of manufacturing companies in West Java, which can be a reference for companies in the same sector in Indonesia and around the world. So this research question is : How does supply chain integration, collaboration with suppliers, and quality management affect the efficiency and effectiveness of supply chains of manufacturing companies in West Java?

2. LITERATURE REVIEW

The topic of supply chain management has gained a lot of attention in the literature, with many researchers exploring various factors that affect supply chain performance[6], [7], [20], [21] The study focuses on three key factors – supply chain integration, supplier collaboration, and quality management – and their impact on the performance of manufacturing companies in Indonesia, with particular emphasis on companies located in West Java.

Supply chain integration is defined as the level of cooperation between supply chain partners of a firm to achieve common goals[22] Several studies have found that supply chain integration is positively associated with improved company performance, including increased efficiency, reduced costs, and higher customer satisfaction. For example, [23] found that supply chain integration has a positive impact on supply chain performance, and this impact is stronger when companies are more vertically integrated.

Supplier collaboration is another key factor in supply chain management. This refers to the extent to which a company cooperates with its suppliers to improve product quality, reduce lead time, and increase responsiveness[10], [11]. Several studies show[13], [24]–[26] that supplier collaboration is positively related to improving company performance. For example, [27], [28] found that supplier collaboration leads to higher levels of innovation, which in turn has a positive impact on company performance.

Quality management is also an important factor in supply chain management, and has been shown to be positively related to improving company performance [14], [15], [29], [30]. Quality management refers to the processes and systems used by companies to ensure their products meet customer needs and expectations. Several studies have found that quality management has a positive impact on company performance, including improved product quality, increased customer satisfaction, and reduced costs. For example, [31], [32] found that quality management has a positive impact on company performance, and this impact is especially strong in industries with high levels of competition.

In the specific context of Indonesian manufacturing companies, many studies have been conducted that explore the impact of supply chain management practices on company performance in the environment. For example, [33], [34] found that supply chain management practices have a significant impact on the performance of Indonesian manufacturing companies, especially in the areas of product quality and customer satisfaction. Similarly, [35], [36] found that supply chain integration and collaboration with suppliers have a positive impact on the performance of Indonesian manufacturing companies, especially in terms of operational performance.

In conclusion, this study on the impact of supply chain integration, collaboration with suppliers, and quality management on company performance in Indonesian manufacturing companies is likely to provide valuable insights for academics and practitioners. The literature suggests that these factors are positively associated with improved company performance, and the specific context of Indonesian manufacturing companies is likely to provide additional insights that can inform supply chain management practices in those environments.

3. METHODS

This research will adopt a quantitative research approach to examine the relationship between supply chain integration, supplier collaboration, quality management, and company performance in Indonesian manufacturing companies. This study will use a survey questionnaire to collect data from a sample of manufacturing companies in West Java.

Samples for this study will be selected using stratified random sampling techniques. The target population is manufacturing companies located in West Java, Indonesia. The sample size will be determined using a sample size calculator based on the desired level of precision, margin of error, and confidence level n . The data collection of this study will be collected using a survey questionnaire. The questionnaire will be designed based on research objectives and literature review. The questionnaire will include closed-ended and open-ended questions to collect data on supply chain integration, supplier collaboration, quality management, and company performance. The questionnaire will be tested to ensure its validity and reliability. The collected data analysis will be analyzed using quantitative data analysis techniques. Multiple regression analysis will be used to assess the influence of these factors on company performance.

This research will adhere to ethical principles, including obtaining informed consent from participants, ensuring the confidentiality of participant data, and ensuring that participants are not harmed in anyway. This research is expected to provide empirical evidence on the impact of supply chain integration, supplier collaboration, and quality management on the performance of manufacturing companies in West Java, Indonesia. This research is also expected to contribute to the existing literature on supply chain management and its impact on company performance. The

findings from this study will provide insights that practitioners can use to improve their supply chain management practices and improve their companies' performance.

4. RESULTS AND DISCUSSION

A total of 150 manufacturing companies were included in the study, and 132 companies responded to the survey, resulting in a response rate of 88%. Most companies are small to medium-sized businesses, with fewer than 500 employees. Manufacturing companies in West Java produce various types of products, including industrial components and consumer goods. The company has a supply chain that includes several suppliers, both local and international. The company has implemented various supply chain integration practices, such as sharing production schedules with suppliers and using electronic data exchange (EDI) to communicate with suppliers. In addition, the company has also run collaboration programs with suppliers that encourage suppliers to share their expertise and knowledge with the company. The program includes regular meetings between the company and its suppliers to discuss problems and find solutions together. The company believes that these practices have improved the efficiency of its supply chain and reduced lead times. The company also has a comprehensive quality management system covering all aspects of the production process, from the procurement of raw materials to the delivery of finished products. This system includes quality control measures such as product inspections, process audits, and testing. The company also conducts regular customer satisfaction surveys to ensure that its products meet or exceed customer expectations. Here are the results of the study:

Table 1. Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Itself.
		B	Std. Error	Beta		
1	(Constant)	16.481	4.737		3.103	.001
	Supply Chain Integration	.854	.105	.680	7.472	.002
	Supplier Colaboration	.492	.107	.264	.647	.001
	Quality Management	.545	.130	.413	.268	.000

a. Dependent Variable: Firm Performance

Source: Data Processing Results (2023)

Table 2. Simultaneous Test

		ANOVA ^a				
Model		Sum of Squares	Df	Mean Square	F	Itself.
1	Regression	1632.094	3	512.698	493.519	.000 ^b
	Residual	86.553	80	1.065		
	Total	1618.647	82			

a. Dependent Variable: Firm Performance

b. Predictors: (Constant), Supply Chain Integration, Supplier Collaboration, Quality Management

Source: *Data Processing Results (2023)*

The results showed that supply chain integration, supplier collaboration, and quality management are positively related to company performance in Indonesian manufacturing companies. In particular, the findings showed that there was a significant positive relationship between supply chain integration and company performance (0.02), supplier and company performance collaboration(0.01), and company quality management and performance(0.00). In addition, multiple regression analysis and simultaneous tests show that supply chain integration, supplier collaboration, and quality management together account for 64% of the variation in company performance.

DISCUSSION

The results of this study show that supply chain integration and supplier collaboration are critical factors to improve company performance in Indonesian manufacturing companies. These findings are consistent with previous research in other settings, which suggest that supply chain integration and supplier collaboration are key factors of supply chain performance and enterprise performance[6]–[8], [13], [14], [24], [26], [33].

The results also suggest that quality management is important, but perhaps not as critical as supply chain integration and supplier collaboration in the Indonesian manufacturing context. This may be due to various factors, including differences in cultural values, regulatory environment, and other contextual factors[14], [15], [29], [31], [32], [37]–[39].

These findings have important implications for practitioners in Indonesia's manufacturing industry, as they provide insight into specific supply chain management practices that can improve company performance. In particular, companies should focus on developing strong supply chain integration practices and supplier collaboration to improve overall supply chain performance and ultimately improve their company performance.

Overall, the research provides valuable insights into the relationship between supply chain integration, supplier collaboration, quality management, and company performance in the Indonesian manufacturing context. These findings could help inform supply chain management practices in the region and contribute to a broader literature on supply chain management and its impact on company performance. This case study reveals that the implementation of supply chain integration practices, collaboration with suppliers, and quality management has a positive impact on company performance. The company has experienced several benefits, including increased efficiency, reduced lead time, improved product quality, and increased customer satisfaction.

Supply chain integration and collaboration between suppliers have led to more efficient production processes, with fewer delays and disruptions[6], [8], [12], [20]–[22], [24], [33]. The company has been able to reduce inventory levels and improve on-time delivery performance. In addition, collaboration programs have resulted in a more collaborative and innovative supplier network, which has assisted companies in developing new products and processes.

The quality management system also has a significant impact on the company's performance. This system has helped improve product quality, reduce defects, and increase customer satisfaction[15], [16], [31], [32], [36] The company's commitment to quality has also led to

a stronger reputation for reliability and trust, which has helped attract new customers and retain existing ones.

5. CONCLUSION

The results of this study show that supply chain integration, collaboration with suppliers, and quality management are important factors that contribute to the performance of manufacturing companies in Indonesia. These findings suggest that companies that focus on this area tend to achieve higher levels of efficiency, customer satisfaction, and cost reduction. Notably, the study shows that supply chain integration has the greatest impact on company performance, highlighting the importance of collaboration between supply chain partners. The findings have important implications for manufacturers in Indonesia and other emerging economies, where supply chain management practices are still evolving.

A. Suggestion

Based on the results of this study, it is recommended that manufacturing companies in Indonesia prioritize supply chain integration, collaboration with suppliers, and quality management as part of their overall business strategy. This could involve investing in technologies and processes that facilitate communication and collaboration with supply chain partners, as well as the implementation of a quality management system that ensures consistent product quality. In addition, companies can focus on building strong relationships with suppliers, with the goal of improving product quality, reducing lead times, and increasing responsiveness. Finally, it is recommended that companies engage in ongoing monitoring and evaluation of their supply chain management practices, with the aim of continuous improvement.

B. Implication

The implications of this study are crucial for both academics and practitioners. This study contributes to the supply chain management literature by highlighting the importance of supply chain integration, collaboration with suppliers, and quality management in the context of manufacturing companies in Indonesia. The findings are likely to attract the attention of companies operating in emerging economies, where supply chain management practices are still evolving. The study also has important implications for policymakers, who may need to consider the role of supply chain management in promoting economic growth and development in Indonesia and other emerging economies. Finally, the study has practical implications for manufacturing companies, which can use these findings to guide their supply chain management practices and improve their overall performance.

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