

The influence of green supply chain management on SMEs' performance

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Abstract

This research examines the effect of green supply chain management on SMEs performance with competitive advantage as a mediating variable. Sampling used purposive sampling, with 344 culinary SME managers as respondents. The sample criteria are culinary SMEs in Magelang Regency who have a workforce of at least five people and their business is more than 2 years old. The analysis tool used is path analysis using Smart PLS 3.0 software. The research results show that green supply chain management and competitive advantage partially have a positive effect on company performance, green supply chain management has a positive impact on competitive advantage, and competitive advantage has an effect on SMEs performance and competitive advantage can mediate the relationship between green supply chain management and SMEs performance.

Keywords

Green Supply chain management, Competitive advantage, Company performance

Introduction

The era of globalization has brought about significant changes for SMEs. SMEs must keep up with the times, especially in the business world. The situation in SME competition is tight, requiring SMEs to use a good management system to improve business performance. In addition, the impact of suppliers for SMEs is influential in business sustainability and performance. Selection of suppliers with superior raw materials will increase competitive advantage by providing products and product innovation. Good quality SME products that meet consumer needs will gain a competitive advantage and improve SME performance. Therefore, supply chain management is an effort by SMEs to improve efficiency. A functional approach that integrates SME activities in a value chain is needed.

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The research conducted by Ilmiyati & Munawaroh [1] and J. Rachbini [2] suggests that supply chain management positively and significantly influences company performance. However, another study suggests that supply chain management does not have a direct impact on company performance [3]. Nonetheless, there's a discrepancy as other research indicates that supply chain management doesn't influence competitive advantage.

Regarding the impact of competitive advantage on company performance, Hinestroza [4] and Huda & Hartati [3] argue that competitive advantage positively affects company performance. However, the extent of this impact is debated, as some studies suggest that competitive advantage doesn't significantly affect company performance. Additionally, there's a discussion about competitive advantage serving as a mediating variable between supply chain management and company performance. While some researchers, like Siburian, propose competitive advantage as a potential mediating variable, others, such as Hidayati et al. (2022), disagree, asserting that competitive advantage doesn't mediate the relationship between supply chain management and company performance. Data from the BPS Magelang District shows fluctuations in the number of SME players in the Magelang District area in 2017-2021 as shown in Figure 1.

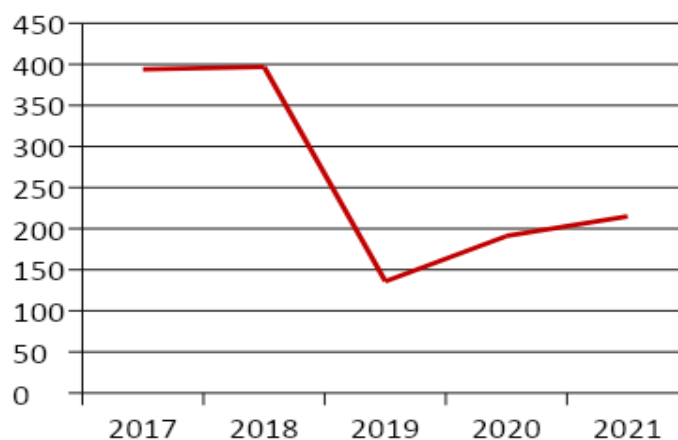


Figure 1. SME Data of Magelang District 2017-2021 (pusaka.magelangkab.go.id, 2022)

The impact of the COVID-19 pandemic requires SMEs to diversify their products to maintain their business. However, there was a significant increase in SMEs in 2020-2021. Therefore, it can be seen that SMEs can easily experience a decline but can survive and rise during the COVID-19 pandemic. The development of SMEs positively impacts the number of workers, reducing poverty, and increasing community income. SMEs face several obstacles. First is logistics management, where SMEs must understand logistics management to improve business competitiveness, branding, and product packaging. With an understanding of logistics management, consumers are expected to receive products in good condition. Second, it is difficult to distribute products because SMEs lack channels. Third, the limitations of SME marketing are due to the lack of SME capacity in online marketing.

Meanwhile, Company performance represents the overall state of the company within a given timeframe, reflecting its accomplishments and outcomes shaped by operational

endeavors and resource utilization. Performance evaluation involves gauging progress towards organizational objectives and goals, encompassing the efficiency and effectiveness of actions taken in managing human resources to deliver goods and services.

Researchers selected SMEs in the Magelang district as the focus of this study due to their significant role in the Indonesian economy. SMEs play a crucial part in influencing economic growth in Indonesia, and they are integral to the nation's independent economy, holding substantial potential for improving people's welfare. Here are some key roles of SMEs (61.97% of GDP, 97% of job opportunities, largest amount of credit, totaling approximately IDR 1 trillion). Based on this context, the study aims to achieve several objectives, including analyzing the impact of supply chain management on company performance and competitive advantage, as well as investigating the role of competitive advantage as a mediator between supply chain management and company performance.

Literature Review

Supply chain management and company performance

The supply chain encompasses the flow of products or services, involving sequences, functions, facilities, and activities aimed at producing and delivering goods or services. Various strategies can be employed to manage the supply chain effectively, such as managing delays or lead times, streamlining assembly lines, minimizing or halting shipments, adopting just-in-time ordering, implementing paperless transactions, utilizing electronic ordering and funds transfer systems, adopting inventory-free purchasing, standardizing processes, establishing lines of credit for suppliers, reducing banking delays, synchronizing production and delivery schedules with suppliers and distributors, participating in market research collaborations, and optimizing warehouse space utilization. As per the supply chain management theory, fostering relationships from suppliers to consumers adds value to customers while simultaneously reducing overall supply chain costs.

Implementing the concept of supply chain management within a company yields various benefits, such as enhanced customer satisfaction, increased revenue, reduced costs, improved asset utilization, heightened profits, and company growth. Moreover, adopting this concept leads to additional advantages like inventory reduction, ensuring seamless goods flow, and maintaining product quality. Utilizing the supply chain management concept enables companies to control their performance effectively while ensuring customer satisfaction. Previous research conducted by Ilmiyati & Munawaroh [1] and J. Rachbini [2] has shown that supply chain management positively influences company performance.

H₁: There is a positive effect of supply chain management on company performance

Supply chain management and competitive advantage

Competitive advantage stems from the value a company generates for its customers beyond the costs incurred in creating it. Value refers to something buyers are willing to pay for. Achieving superior value involves offering either a lower price than competitors with similar benefits or providing unique benefits that outweigh a higher price. Consequently, this results in the creation of goods or services with a higher value compared to the costs involved, prompting consumers to purchase them to obtain benefits exceeding the incurred sacrifices (costs).

Competitive environment necessitates attention from every organization, requiring them to devise strategies to excel amid competition. Competitive advantage can be attained by minimizing production costs while still fulfilling customer needs. Cost reduction can be achieved through innovation. Besides using competitive advantage to thrive in the business landscape, organizations can leverage it to accomplish their performance objectives. Research on the effect of supply chain management on competitive advantage, which state that supply chain management positively affects competitive advantage.

H₂: There is a positive influence of supply chain management on competitive advantage

Competitive advantage and company performance

Competitive advantage is an organization's ability to perform activities that competitors cannot do, considering lower prices or advantages that can outperform competitors' products. Competitive advantage also presents a good strategy.

H₃: There is a positive effect of competitive advantage on company performance

Supply chain management and company performance with competitive advantage as a mediating variable

Competitive advantage is an organization's ability to perform activities or activities that competitors cannot do and with lower price considerations or advantages that can outperform competitors' products. Competitive advantage presents a good strategy. Research on competitive advantage as a mediating variable, with results stating that competitive advantage can be a mediating variable.

H₄: Competitive advantage as a mediating variable between supply chain management and company performance

Methods

Applying the concept of supply chain management in a company will provide benefits, namely customer satisfaction, increased revenue, decreased costs, higher utilization of assets, increased profits, and the company will get bigger. In addition, the benefits of applying the concept of supply chain management include reducing inventory (overstock), ensuring the smooth flow of goods, and ensuring quality. Using the supply

chain management concept, the company's performance will be controlled, and satisfaction will be provided to customers.

This research is grounded in the theory of supply chain management, which asserts that it involves overseeing relationships from suppliers to consumers, aiming to enhance customer value and minimize overall supply chain costs. Implementing supply chain management in small and medium enterprises (SMEs) is expected to enhance their competitive edge and enhance company performance across financial, business, and operational aspects. The research model is depicted in Figure 2.

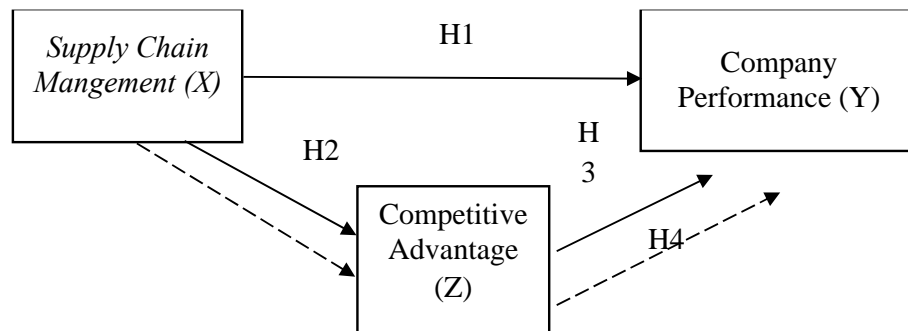


Figure 2. Research model

Population and sample

The sample selection was conducted using a purposive sampling technique, which involves specific considerations [5]. The criteria utilized for selecting samples in this study include Culinary SMEs located in the Magelang district with a minimum workforce of 5 individuals and businesses that have been operating for at least two years.

The total population of this study is 2,425 SMEs, and the percentage of standard error used is 5%. So, it can be determined that the sample in this study was 343.3, rounded up to 344 samples of culinary SMEs in Magelang Regency.

Operational definition and measurement of variables

1. Company performance. Company performance refers to how well the organization achieves its goal-oriented and financial goals. Variable indicators in this study were adopted from research [1], namely: financial performance and operational performance.
2. Supply chain management. The indicators of this variable namely Supplier Partnership Strategy, Customer Relationship, Information Sharing, and Information Sharing.
3. Competitive advantage. The indicators in this variable refer to previous research, Ilmiyati & Munawaroh [1], namely price, quality, delivery dependability, innovative products, and time to market.

Data Analysis Technique

The data analysis technique in this study uses path analysis using Smart PLS 3.0 software.

Results and Discussion

Respondent descriptive statistics provide an overview of the respondent's profile regarding gender, age, and type of work. In detail, the descriptive statistics of respondents can be explained as shown in [Table 1](#).

Table 1. Descriptive statistics of research

Description	Criteria	Total	Percentage %
Gender	Men	156	45%
	Women	188	55%
Age	< 20 years	4	1%
	20-30 years	65	19%
	31-40 years old	89	26%
	41-50 years old	108	31%
	> 50 years	78	23%
Education Level	Not in School	4	1%
	Elementary/Middle School	25	7%
	SMP/MTs	87	25%
	SMA/SMK/MA	166	48%
	D1	1	0%
	D2	1	0%
	D3	10	3%
	S1	50	15%
Total		344	100

Model analysis (inner model)

There are three tests for model analysis in this study, namely the F test (Goodness of fit), R-square, and Mediation effect (direct effect, indirect effect, and total effect):

1. F test (Goodness of fit)

The value of f^2 is the variable X_1 (Supply Chain Management) and X_2 (Competitive Advantage) to Y (Company Performance) has a value of f^2 0.124, hence the small effect of exogenous variables on endogenous.

2. R-Square

Testing the R-square value is 0.355, meaning that the variables X_1 (supply chain management) and X_2 (competitive advantage) in explaining Y (company performance) are 35.5%. Thus, the model is classified as weak.

3. Mediating Effect

In the mediating effect, three tests are used in this study: (a) direct effect, (b) indirect effect, and (c) total effect. Based on data processing using SmartPLS 3.0 software, the following fit model is obtained ([Figure 3](#)).

a. Direct Effect

The direct effect test results are based on the t count compared to the t table. The value of the competitive advantage is 0.299 with a t count of 5.635, and the value of supply chain management is 0.428 with a t value of 9.526. It can be concluded that the independent variable significantly affects the dependent variable.

b. Indirect Effect

The P-value of 0.000 (<0.05) is significant, meaning that competitive advantage can mediate the effect of supply chain management on company performance.

c. Total Effect

The total effect is the sum of the direct effect and the indirect effect. The actual impact of the correlation between supply chain management and company performance is 0.528, the total effect of the correlation between supply chain management and competitive advantage is 0.333, and the actual impact of the correlation between competitive advantage and company performance is 0.299.

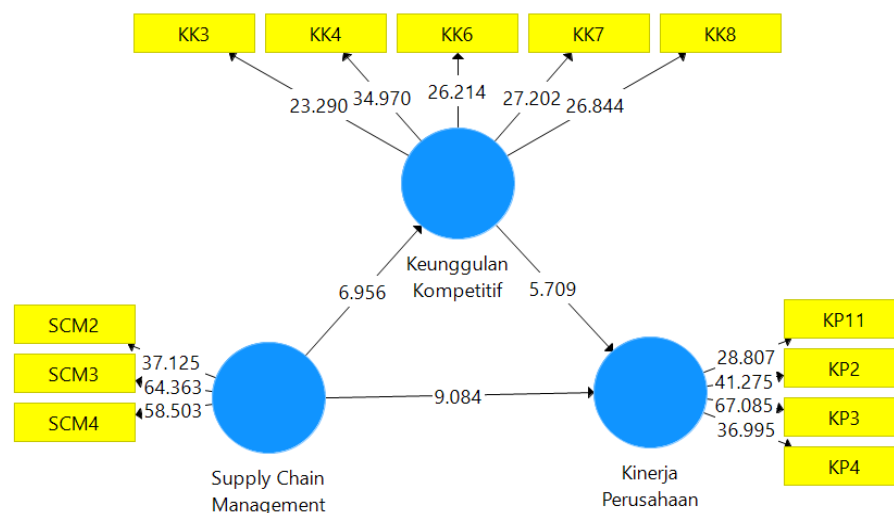


Figure 3. Model Fit (Source: Primary Data Processed, 2022)

Hypothesis test

Hypothesis testing in this study uses the bootstrapping method. The bootstrapping process can also see the structural path coefficient value. The bootstrapping test results are as follows:

1. The effect of supply chain management on company performance

The study's first hypothesis states that supply chain management has a positive effect on company performance. The test results support this idea, showing that supply chain management does have a positive impact on company performance. This means that when supply chain management gets better, the performance of culinary MSME companies in the Magelang Regency area also improves (see Table 2).

The study's proposed hypothesis aligns with the Supply Chain Management Theory. Establishing a customer-focused team can lead to mutual benefits in products and services through SCM customer collaboration. Enhancing supply chain management enhances the quality of company performance. Moreover, businesses will find more support in executing various activities such as coordination, scheduling, and control of product procurement, production, inventory, and delivery. Implementing an optimal supply chain management strategy tailored to the company's product categorization

holds significance. Striking the right balance between efficiency and responsiveness enhances supply chain management performance while concurrently reducing inventory and operating costs. These findings are corroborated by the research of Ilmiyati & Munawaroh [1] and J. Rachbini [2], which assert that supply chain management positively and significantly impacts company performance.

Table 2. Hypothesis testing 1 and 2

	Supply Chain Management	Company Performance	Competitive Advantage
Supply Chain Management	0.299	0.528	0.100

Source: Primary Data Processed (2022)

2. The effect of supply chain management on competitive advantage

The second hypothesis of this study states that supply chain management positively affects competitive advantage. The results from the hypothesis test support this idea, showing that supply chain management does have a positive impact on competitive advantage (see Table 2). This means that as supply chain management improves, competitive advantage also increases. Competitive advantage comes from the value an organization provides to its customers, surpassing the costs involved. This can be achieved by minimizing production costs while meeting customer needs. Innovation plays a crucial role in cost reduction. These results align with previous research, which also emphasizes the positive relationship between supply chain management and competitive advantage.

3. The effect of competitive advantage on company performance

The third hypothesis in this study suggests that competitive advantage positively affects company performance. The results of the hypothesis test confirm this, showing that competitive advantage indeed has a positive impact on company performance, thus accepting the third hypothesis (see Table 3). In essence, the stronger the competitive advantage, the better the company performs. Competitive advantage refers to an organization's ability to do things its competitors cannot, such as offering lower prices or superior products. Having a competitive advantage also indicates a sound strategy. These findings are consistent with previous research, which also highlights the positive correlation between competitive advantage and company performance.

Table 3. Hypothesis testing 3

	Supply Chain Management	Company Performance	Competitive Advantage
Supply Chain Management	0.333	0.299	0.100

Source: Primary Data Processed (2022)

Sobel test

The Sobel test was used to see if competitive advantage acts as a mediator between supply chain management and company performance. The test showed a value of 4.356, surpassing the threshold of 1.96, with a significance value below 0.05 (0.000). This

means that competitive advantage does indeed mediate the relationship between supply chain management and company performance, confirming the acceptance of the fourth hypothesis (H4).

According to the fourth hypothesis, competitive advantage mediates between supply chain management and company performance. The results support this, indicating that competitive advantage plays a mediating role in how supply chain management affects company performance. These findings are consistent with previous research highlighting competitive advantage's role as a mediator. Competitive strategy involves seeking a favorable position in the industry to establish a profitable and defensible stance against competitors. This study's results are in line with prior research, which also emphasizes the mediating role of competitive advantage.

Conclusion

This study aims to investigate the impact of supply chain management on company performance, with competitive advantage serving as a mediator. Testing and data analysis were conducted using SmartPLS 3.0. Based on the test results, supply chain management positively influences both company performance and competitive advantage. Competitive advantage also positively affects company performance and can act as a mediator in the relationship between supply chain management and company performance.

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