The role of supply chain management and competitive advantage on the performance of Indonesian SMEs

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ABSTRACT

The purpose of this study is to analyze the effect of supply chain management on competitive advantage, the effect of supply chain management on performance and the effect of competitive advantage on performance of small and medium enterprises (SMEs). The object of this research includes all SMEs in Tangerang, the population in this study also covers all 680 Small and Medium Enterprises in Tangerang, Indonesia. The research method uses quantitative methods and the technique used for data collection is by using an online questionnaire. Questionnaires are given to 210 owners or managers of Small and Medium Enterprises who were selected using the simple random sampling method. Data analysis used Structural Equation Modeling (SEM) with data processing tools using SmartPLS software. The results of data analysis show that supply chain management has a positive and significant effect on the performance of SMEs. Supply chain management has a positive and significant effect on competitive advantage. Finally, competitive advantage has a positive and significant effect on performance.

Keywords: Supply Chain Management
Competitive Advantage
SMEs Performance

1. Introduction

Currently SMEs operate in an environment of intense uncertainty and competition. One way to deal with this situation is to implement Supply Chain Management. Many organizations choose to work closely with suppliers, customers and competitors in a supply chain collaboration. According to Del Giudice et al. (2020), supply chain collaboration is demonstrated by information technology-based SMEs. Business forecasting plans can be sent to suppliers according to their capabilities. Information technology-based SMEs are constantly adopting new network technologies to enhance Supply Chain Management capabilities. The previous supply chain management literature has tended to focus on the manufacturing industry and less on the service industry. According to Basu et al. (2017) and Del Giudice et al. (2020) Supply Chain Management in developed countries is different from developing countries which tend to use low-cost strategies. Developed countries realize that low-cost strategies will not last long, instead they should focus more on being more productive (implementation of Supply Chain Management) and place more emphasis on more innovative services.

The increasingly rapid economic development in Indonesia makes the competition between SMEs increasingly tight. The current competitive conditions show very fast changes, starting from technological advances, the globalization trading system, and the stability of the world's political economy. According to Aisjah et al. (2021), the current competition is not only domestic but also occurs among SMEs from various countries. The increasingly fierce business competition among SMEs encourages SMEs to produce the best performance. SMEs must be able to create a competitive advantage in order to generate economic value for SMEs that is better than competitors. SMEs need to implement optimal supply chain management. According to Aisjah et al. (2021), Al-Douri et al. (2018), the application of supply chain management is able to reduce the effects of competition in the market because supply chain management can generate a competitive advantage.
for SMEs. SMEs can achieve competitive advantage by performing optimal and good supply chain management. According to Anantadjaya et al. (2021) and Arabshahi et al. (2020), SMEs produce better performance than competitors because supply chain management can minimize the overall cost of meeting and serving consumer needs. Supply chain management is all parties involved, either directly or indirectly, in fulfilling consumer orders and requests. All parties involved do not only consist of producers or suppliers, but also involve distributors, storage places, sellers, and consumers.

According to Aisjah et al. (2021), Al-Douri et al. (2018), Alghababsheh et al. (2020) and Anantadjaya et al. (2021), the implementation of supply chain management is very necessary for SMEs to increase industry competitiveness which has an impact on SMEs performance. SMEs need to consider supply chain issues to ensure that supply chain management supports SMEs' strategies. SMEs strategy is used in the operational development of SMEs to compete and dominate the existing position in the market. According to Aisjah et al. (2021) and Al-Douri et al. (2018), the competitive advantage strategy for SMEs is expected to be able to maintain their competitive position in the face of competitors and be able to improve the performance of SMEs in accordance with the target. Previous research identified that various dimensions of supply chain management such as strategic supplier partnerships, information quality, and customer relations have an influence on several aspects of SMEs performance. Effective and optimal supply chain management can increase productivity, market share and customer growth. Aisjah et al. (2021), Al-Douri et al. (2018), Alghababsheh et al. (2020) and Del Giudice et al. (2020) stated that effective supply chain management has the potential to improve the performance of SMEs by using five supply chain dimensions, namely supplier relationship, customer relationship, level of information sharing, level of information and postponement.

Supply chain management is the coordination of the entire supply chain activity, starting with raw materials and ending with satisfied customers. Supply chain management includes suppliers, SMEs manufacturing or service providers, SMEs distributors, wholesalers or retailers who deliver products or services to end consumers. According to Aisjah et al. (2021), Al-Douri et al. (2018), Alghababsheh et al. (2020) and Anantadjaya et al. (2021), supply chain management is a set of approaches to streamline the integration of suppliers, manufacturers, warehouses and shops, so that goods are produced and distributed in the right amount of time, at the right time and at the right location to minimize costs and provide service satisfaction to customers. Consumer. Supply chain management is the management of relationships from upstream to downstream or from suppliers to consumers to provide more value to customers and reduce supply chain costs.

According to Aisjah et al. (2021), Al-Douri et al. (2018), Alghababsheh et al. (2020), Anantadjaya et al. (2021) and Arabshahi et al. (2020) Competitive advantage is the ability of SMEs to meet customer needs effectively and efficiently with products or services that have more value or at lower costs. The ability of an SMEs to achieve economic benefits above those of competitors in the market in the same industry. SMEs that have a competitive advantage always can understand changing market structures and able to choose effective marketing strategies. Competitive strategy is intended to maintain the level of advantage and position when facing competition.

2. Hypothesis Development

2.1 The effect of supply chain relationship on SMEs performance

The implementation of good supply chain management may improve the performance of SMEs. Research on SMEs according to Aisjah et al. (2021) and Al-Douri et al. (2018) shows that many SMEs pay less attention to supply chain management aspects in terms of strategic partnerships for continuous improvement involving suppliers. According to Narimissa et al. (2020), Rudyanto et al. (2021), Saragih et al. (2020) and Thongrawd et al. (2019), SMEs should carry out continuous improvement with suppliers so that the quality and quality produced by suppliers. The quality and quality produced by suppliers affects SMEs in their performance both in production and sales. From the description above, the researchers formulated the following hypothesis:

H1: Supply chain management has a significant influence on the performance of SMEs.

2.2 The effect of supply chain management relationship on competitive advantage

Lisda Rahmasari (2011) in her research concludes that effective supply chain management has a positive and significant effect on competitive advantage. Effective supply chain management is influenced by product development, supplier relationship strategy, planning and control, production and distribution, information quality, and purchasing. Research by Arabshahi et al. (2020), Basu et al. (2017) and Del Giudice et al. (2020) stated that effective supply chain management has the potential to increase competitive advantage. It is proven by integrated supply chain management starting from relationships with suppliers and customers, delays and quality can maintain and strengthen its competitiveness in winning the competition in the market. Aisjah et al. (2021), Al-Douri et al. (2018) and Alghababsheh et al. (2020) stated that the implementation of good supply chain management in SMEs will be able to increase competitive advantage. According to Wei et al. (2021), Zhang et al. (2017), Narimissa (2020a,b) and Zambujal-Oliveira et al. (2019), supply chain management
by establishing the relationships with suppliers and consumers will increase competitive advantage. From this description, the researcher formulated the following hypothesis:

**H2:** Supply chain management has a significant influence on competitive advantage.

### 2.3 The effects of competitive advantage on SMEs performance

Arabshahi et al. (2020), Basu et al. (2017), Del Giudice et al. (2020) concluded that competitive advantage has a positive and significant effect on the performance of SMEs. According to Tseng et al. (2019), Wang et al. (2018), Wei et al. (2021), Zhang et al. (2017) and Zambujal-Oliveira et al. (2019), lower prices, high quality, speed of delivery and continuous product innovation are proven to increase product sales and dominate market share. Product sales and market share control are benchmarks for SMEs to achieve their market-oriented SMEs performance and financial goals. According to Aisjah et al. (2021) and Al-Douri et al. (2018), competitive advantage develops from the value that SMEs can create for customers or buyers using competitive advantage dimensions consisting of price, quality, delivery dependability, time to market, and product innovation. From the description above, the researchers formulated the following hypothesis:

**H3:** Competitive advantage has a significant effect on SMEs performance.

### 3. Method

The object of this research is all SMEs in Tangerang, the population in this study is all Small and Medium Enterprises in Tangerang as many as 680 SMEs. This research method uses quantitative methods and the technique used for data collection is by using an online questionnaire. Questionnaires were given to owners or managers of Small and Medium Enterprises as many as 210 respondents who were selected using the simple random sampling method. Data analysis using Structural Equation Modeling (SEM) with data processing tools using SmartPLS software.

![Fig. 1. Research Model](image1)

### 4. Result and Discussion

Data quality test includes reliability and validity test. The reliability test was carried out by looking at the composite reliability value generated by the PLS calculation for each construct. The value of a construct is said to be reliable if it provides a composite reliability value > 0.70

![Fig. 2. Validity and Reliability](image2)
Furthermore, the validity test is carried out by using the evaluation of the measurement model (outer), namely by using convergent validity. Convergent validity of the measurement model with reflexive indicators can be seen from the correlation between each indicator score and its construct score (Ghozali, 2006). The individual reflective measure is said to be high if it has a correlation of more than (0.70) with the construct to be studied. From the table above, it can be seen that all indicators used to measure all constructs in this study have a correlation range greater than the suggested figure (0.500), this is shows that the statement about all constructs in the study can be said to be valid.

### Table 1
**Items Loadings, Cronbach’s Alpha, Composite Reliability, and Average Variance Extracted (AVE)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
<th>Rho_A</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Mgmt</td>
<td>0.858</td>
<td>0.878</td>
<td>0.887</td>
<td>0.676</td>
</tr>
<tr>
<td>Competitive Advantage</td>
<td>0.866</td>
<td>0.866</td>
<td>0.812</td>
<td>0.654</td>
</tr>
<tr>
<td>Performance</td>
<td>0.871</td>
<td>0.887</td>
<td>0.862</td>
<td>0.743</td>
</tr>
</tbody>
</table>

The assessment of the model with PLS begins by looking at the R-square for each dependent latent construct. Changes in the R-square value can be used to assess the effect of certain independent latent constructs on the dependent latent construct whether it has a substantive effect.

### Table 2
**R Square**

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
<th>R Square Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage</td>
<td>0.591</td>
<td>0.567</td>
</tr>
<tr>
<td>Performance</td>
<td>0.700</td>
<td>0.689</td>
</tr>
</tbody>
</table>

The table above shows that the $R^2$ value of the performance construct is 0.700. The higher the $R^2$ value, the greater the exogenous construct can explain the endogenous construct, so the better the structural equation. The $R^2$ value of the performance construct is 0.700, which means that 70% of the performance variance is explained by competitive advantage and Supply Chain Management, the remaining 30% is explained by other constructs outside of this study. The table above shows that the $R^2$ value of the Competitive Advantage construct is 0.591. The higher the $R^2$ value, the greater the exogenous construct can explain the endogenous construct, so the better the structural equation. The $R^2$ value of the performance construct is 0.591, which means that 59.1% of the performance variance is explained by Supply Chain Management, the remaining 40.9% is explained by other constructs outside of this study.

![Fig. 3. Hypothesis Testing](image)

### Table 3
**Hypotheses Testing**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Relationship</th>
<th>$f^2$</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Supply Chain Management $\rightarrow$ Performance</td>
<td>0.002</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Supply Chain Management $\rightarrow$ Competitive Advantage</td>
<td>0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Competitive Advantage $\rightarrow$ Performance</td>
<td>0.000</td>
<td>Supported</td>
</tr>
</tbody>
</table>

$^f$ **Effect Sizes Evaluation**

According to Hair (2017) explains that the guidelines for assessing $f^2$ are that values of 0.02 (= small), 0.15 (= moderate), and 0.35 (= large), respectively, represent small, medium, and low effects. large (Hair et al. 2020).
Table 4

<table>
<thead>
<tr>
<th>Effect Sizes Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
</tr>
<tr>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>Competitive Advantage</td>
</tr>
</tbody>
</table>

For the Supply Chain Management variable, the $f^2$ value of 0.21 represents a small effect, for the Competitive Advantage variable, the $f^2$ value of 0.28 represents a large effect.

Q$^2$ Evaluation

Q$^2$ value is greater than 0 indicates that the model has predictive relevance for certain endogenous constructs. Conversely, values of 0 and below indicate a lack of predictive relevance (Hair et al. 2017).

Table 5

<table>
<thead>
<tr>
<th>Q$^2$ Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct</td>
</tr>
<tr>
<td>Competitive Advantage</td>
</tr>
<tr>
<td>Performance</td>
</tr>
</tbody>
</table>

The value of Q$^2$ for the Competitive Advantage variable is 0.521 > 0.000, meaning that this variable has predictive relevance. The Q$^2$ value of the Performance variable is 0.543 > 0.000, meaning that this variable has predictive relevance.

5. Discussion

5.1 The Effect of Supply Chain Management on SMEs Performance

Based on the partial test results, it was obtained that the p value of 0.002 < 0.050 means that the supply chain management variable has a positive and significant influence on the performance of SMEs. So the higher the supply chain management, the better the performance of SMEs. Because of its significant effect, the supply chain management variable is important for SMEs to consider in improving the performance of its SMEs both financially and operationally. The results of this study are in accordance with the research of Fatorachian et al. (2021), Hahn et al. (2020) which shows that supply chain management has a significant positive effect on the performance of SMEs. So the conclusion is that the hypothesis is proven. Supply chain management is the coordination of the entire supply chain activity, starting with raw materials and ending with satisfied customers. According to Wijayaa et al. (2021) and Purba et al. (2022), supply chain management includes suppliers, SMEs manufacturing or service providers, SMEs distributors, wholesalers or retailers who deliver products or services to end consumers. SMES has implemented supply chain management in maintaining good supplier relations which can improve its performance in achieving lower costs and production levels. According to Yuliantoro et al. (2019) and Haudi et al. (2021), SMES supply chain management focuses on customer satisfaction and finding out what customers want so that SMES can achieve the performance of SMEs in providing products that match customer perceptions and are able to cover the entire scope of the market. The results of this study are in accordance with previous research conducted by Hong et al. (2018), Jimenez-Jimenez et al. (2019) which states that supply chain management has a positive and significant impact on the performance of SMEs.

5.2 The Effect of Supply Chain Management on Competitive Advantage

Based on the partial test results obtained that p value 0.001 < 0.050 supply chain management variables have a positive and insignificant effect on competitive advantage. So the better the implementation of supply chain management can increase competitive advantage. According to Wijayaa et al. (2021), Purba et al. (2022) and Purwanto and Juliana (2021), SMES implements supply chain management by maintaining good relationships with suppliers will strengthen bargaining power and obtain cheaper production materials and can produce cheaper and more competitive products than competitors, thereby increasing their competitive advantage. According to Narimisa et al. (2020) and Rudyanto et al. (2021), SMES performs supply chain management in producing goods with a modular system or can be assembled into several product variations so as to increase competitive advantage in meeting product changes according to customer desires and can meet customer demands regarding new features. According to Zhang et al. (2017) and Zambujal-Oliveira et al. (2019), good supply chain management by maintaining supplier relationships can improve the distribution of goods or services on time and maintain quality. If there is an error in sharing information and distributing goods or services, the quality of goods and services will decrease and result in decreased competitive advantage. So that the implementation of supply chain management is very influential on the competitive advantage of SMEs. So, the higher the supply chain management, the higher the competitive advantage of SMES. The results of this study are in accordance with previous research conducted by Wei et al. (2021), Zhang et al. (2017) and Zambujal-Oliveira et al. (2019) which states that supply chain management has a positive and significant effect on competitive advantage. So, the conclusion is that the second hypothesis is proven.
5.3 The Effect of Competitive Advantage on the Performance of SMEs

Based on the partial test results obtained that p value 0.001 < 0.050 competitive advantage variable has a positive and significant effect on the performance of SMEs. So the higher the competitive advantage, the higher the performance of SMEs. Because of its significant effect, it is important to increase and maintain the competitive advantage variable in order to dominate the market and improve the performance of SMEs. SMEs need to pay attention to the quality and price of products or services to match customer perceptions and can achieve sales and profit targets so that SMEs' performance can increase. According to Narimisa et al. (2020), Rudyanto et al. (2021), Saragih et al. (2020), Thongrawd et al. (2019), Tseng et al. (2019) and Wang et al. (2018), SMEs provides customized products and can change offerings according to the client's wishes to improve the performance of its SMEs so that they are able to provide products or services according to customer perceptions. So that by increasing the competitive advantage SMEs can achieve sales, profits, production and costs. So the higher the competitive advantage, the higher the SMEs performance. The results of this study are in accordance with previous research conducted by Narimisa et al. (2020), Rudyanto et al. (2021), Saragih et al. (2020), Thongrawd et al. (2019), which states that supply chain management has a positive and significant effect on competitive advantage. So the conclusion is the third hypothesis is proven.

The results of this study are in accordance with the research of Zhang et al. (2017), Zambujal-Oliveira et al. (2019) which states that competitive advantage can mediate the influence of supply chain management. Yongky (2015) concludes that supply chain management has a greater influence on SMEs performance if it is through the competitive advantage of SMEs. Narimisa et al. (2020), Rudyanto et al. (2021), Saragih et al. (2020), Thongrawd et al. (2019), Tseng et al. (2019), Wang et al. (2018), Wei et al. (2021), Zhang et al. (2017), Zambujal-Oliveira et al. (2019) showed that a greater indirect effect is supported by managers' understanding of SMEs regarding the application of supply chain management that is guided by increasing competitive advantage. The implication of this study shows that supply chain management has a greater role in improving the performance of SMEs. This is because SMEs provides a neutral price or the same as competitors, the same quality and most SMES introduces new products at the same time, so the influence through mediation is smaller than direct influence.

6. Conclusion

The results of data analysis have shown that supply chain management has maintained a positive and significant effect on the performance of SMEs. Supply chain management has had a positive and significant effect on competitive advantage. Finally, competitive advantage has had a positive and significant effect on job satisfaction. Competitive advantage can mediate in the influence of supply chain management practices on performance. SMEs need to improve supply chain management in terms of sharing information about financial conditions with business partners so that business partners can help in thought or physical form until the problem is resolved. SMEs need to improve the performance of SMEs by always introducing new products. SMEs in Tangerang are advised to improve supply chain management guided by improving the performance of SMEs. This study has not been able to fully disclose the factors that can affect supply chain management, competitive advantage and SMEs performance.

References


