How Supply Chain Management (SCM) Affects SME's Performance in the Digital Era

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Abstract. Increased demand for a desired product results from the industrial world's expanding economy. Companies, as one of players in the industrial sector, are necessary to maintain products in the market and continue to innovate in strategies and good sectoral integration. We wanted to know how Supply Chain Management (SCM) affected the performance of small and medium enterprises (SMEs). We had 320 SME owners who were selected by simple random sampling method as our respondents. Data were analyzed using SEM-PLS by evaluating the measurement and the structural model. Based on the results of hypothesis testing using SEM-PLS, information sharing positively and significantly affects company performance, the long-term relationship neither significantly nor positively affects company performance, cooperation neither significantly nor positively affects, and integration neither significantly nor positively affects company performance.

Keywords: Supply chain management, company performance, SME, SEM-PLS, information sharing, long-term relationship, cooperation, process integration

1. Introduction

The culinary industry is one SME that has implemented supply chain systmes. Based on data from the Central Statistics Agency (BPS), in 2020, the food industry was the largest among other businesses, with a total of 1.5 million business units. The proportion of the food industry reaches 36% of the total industry in the country, with a total of 4.21 million business units. The food and beverage industry is a significant contributor to the success of the non-oil and gas economy. [1], [2] SMEs are one of the biggest contributors to the solution to unemployment and improving the quality of society in Indonesia. This is reinforced by data from the Central Statistics Agency in 2020 that the number of SMEs is around 99% of the population of business units and accommodates more than 92% of the workforce, and contributes to a growth rate of around 3.0% from 5.0% of the national economic growth rate. This shows a higher rate of business growth compared to large businesses The development of the industrial world today is experiencing fairly rapid growth. Increased market demand for a desired product results from the industrial world's expanding economy [2], [3]. With the increasing market demand for the products or goods needed, the company, as one of the actors in the industrial sector, is required to be able to maintain products on the market and continue to innovate in forming strategies and good integration of each sector in terms of planning or production. One of the good aspects that can help improve company

LePALISSHE 2022, October 29, Malang, Indonesia

DOI 10.4108/eai.29-10-2022.2334022

performance is the existence of a relationship between SCM and competitive advantage and performance [3], [4].

The short-term challenge is to prepare a supply chain, internal and external logistics supporting the industry 4.0 era to meet the demand [4], currently known as Supply Chain and Logistics 4.0. The presence of the 4th era is unavoidable, and Indonesia must immediately adapt to its associated technology. It has been proven that supply chain and logistics management 4.0 technology disrupts quickly, forcing established businesses to step outside their comfort zone. The next step is being open to new technologies so that humans can further develop the role of strategic intelligence and work with artificial intelligence (AI) and the Internet of Things (IoT) to get a high production scale (scale-up) and fulfill the goal of increasing SME productivity. According to [1], management of cooperation in the supply chain requires coordination and integration within and between companies to achieve effective SCM, service quality and optimal company profits through efficiency with the right strategy. Regarding the small business strategy, [4], [5] concluded that the strategy that can be applied is a horizontal integration strategy, which aims to expand the business by increasing production and adding services. This goal is expected to be achieved. Short-term decisions and the local environment should support the organization or supply chain towards these strategic goals. Destination strategy is used to win in market competition. The supply chain must deliver affordable, high-quality, timely, and diverse items to compete in the market.

Many previous studies examined how SCM affects competitive advantage [3]. There are also many previous studies regarding the effect of SCM on organizational performance and the effect of competitive advantage and organizational performance, and vice versa. This indicates a relationship between SCM with a competitive advantage and organizational performance, where fostering competition is a good thing to boost organizational effectiveness, which SMEs can also apply [3]. A competitive advantage is the capacity to give a company the required basis to set it apart from its rivals. [1], [4], [5] suggest that competitive advantage is demonstrated by the ability to offer competitive prices, a wide range of product options, and strong customer relationships. Companies must effectively support internal operations and information sharing with supply chain partners to increase competitive advantage. [2]–[4] show that SCM positively impacts competitive advantage. [1], [6] also supports that numerous companies are now beginning to understand that SCM is crucial to giving their products and/or services a durable competitive advantage in a market that is getting more crowded and competitive.. Numerous studies show a connection between an organization's competitive advantage and SCM practices.

2. Literature Review

2.1 Supply Chain Management (SCM)

SCM is a collection of strategies to simplify the integration of manufacturers, warehouses, and storage so that products are manufactured and supplied at the right time, place, and quantity to reduce costs and satisfy customers [7], [8]. SCM is the coordination of the processes for purchasing goods and services, turning them into finished products and semi-finished ones, and shipping them to clients. [9] states that SCM is a strategy used to effectively bring together

vendors, business owners, warehouses, and other storage facilities (distributors, wholesalers, and retailers) so that goods can be produced and distributed in the appropriate quantities, at the appropriate locations, and at the appropriate times to reduce costs and satisfy customer needs. The definition is supported by a number of factors. (1) SCM must consider that all business activities, including those of suppliers, manufacturers, warehouses, distributors, and retailers, impact the price of goods produced to meet client demands. (2) SCM aims to lower costs by increasing the effectiveness and efficiency of all components, including transportation and distribution of raw material inventory, work in progress, and finished goods. (3) With regard to all business activities, from the strategic level to the tactical, and operational level, SCM is centered on effectively integrating suppliers, manufacturers, warehouses, distributors, and retailers. Typically, three sorts of flows need to be handled in the supply chain. There are typically three sorts of flows that need to be handled in the supply chain: (a) the movement of products and materials from upstream to downstream; (b) the movement of financial resources from upstream to downstream; (c) the movement of information, whether it is going upstream, downstream, or both. According to [9]–[11], the ability of SCM to control the flow of commodities or products in a supply chain, or in other words, how a company's network of production and distribution activities can cooperate to meet customer requests, is its competitive advantage. Delivering goods on time is the key goal of SCM because it will satisfy customers, lower costs, improve overall supply chain outcomes, and free up time for planning and distribution tasks.

The sequence, functions, facilities, and activities that are used to create and transport goods or services are all included in the supply chain. SCM is a comprehensive picture of supply chain activities from raw materials to end users. The supply chain includes starting from suppliers or suppliers, manufacturing companies or service providers, distribution, retailers or agents, to end users. The supply chain is a group of companies that work together to produce and distribute products needed by end consumers. According to [7], [8], the supply chain has a function, namely to cut the total cost of the company's operations so as to create an effective and efficient system. With today's increasingly modern era, SCM is growing rapidly with the aim of reducing risks in the supply chain so that it affects inventory, product cycles, operating processes, and services to consumers. Developing strategies to deal with SCM risks, namely, understanding the entire organization involved in SCM risks. Second, develop an approach to deal with SCM risks. The first stage is stress testing, and the second stage is designing an approach tailored to each organisation's conditions. Managing the supply chain starts from an agreement on common goals, and a harmonious organizational culture. According to [10]–[12], Information sharing refers to the willingness and ability of businesses to exchange information with partners on shared business strategies. A strong value chain or supply chain collaboration based on the association between the business and its suppliers is what is meant by a long-term relationship. Communication, loyalty, and trust are three factors that can be used to gauge the extent of long-term cooperative partnerships between retailers and suppliers; collaboration is one of the top options for carrying out ideal SCM. Integration, which combines parts or activities to create a whole, can strengthen the bonds between each value chain's participants.

2.2 Company performance

Firm performance is an indication of the overall health of a company during a specific time

period. It refers to a result or accomplishment that is influenced by the operational activities of the company in the use of its resources. Performance is a broad phrase that refers to all or a portion of an organization's actions or activities over a period of time, with reference to standard amounts like previous or expected expenses, and based on effectiveness, management accountability, and other criteria. Company performance is anything that a company produces over a specific period of time in comparison to the standards established [13], [14]. Performance of a corporation should be quantifiable and describe its empirical state across a range of agreed-upon sizes. Business performance refers to how well a company is market-oriented and its financial goals. According to [13], [14], performance is the level of outcomes achieved when completing specific tasks, realizing an organization's goals, objectives, mission, and vision, as well as the level of results achieved when achieving organizational goals.Performance is the level of outcomes achieved when completing specific tasks, realizing an organization's goals, objectives, mission, and vision, as well as the level of results achieved when achieving organizational goals. Based on the above explanation, Performance is the accomplishment of a certain task to reach company objectives as assessed by standards. Company performance evaluation tries to ascertain the operational effectiveness of the company. According to [13]–[16], company performance is the extent to which a company succeeds in achieving the goals, visions, and missions that it has established as a responsibility through engaging in effective business operations, which can be measured by comparing achievement with company targets or comparing the company's performance with the performance achieved by other companies that have the same industry. the level of operational performance can be measured by: cost through inventory turnover, flexibility through process flexibility, quality through product performance, and delivery through on-time delivery. It can be concluded that if the company's performance increases, it is getting closer to the target set. SCM aims to enhance the performance of individual firms, the performance of the entire supply chain, and the integration of data throughout the supply chain as a potent tool for competition. According to [15]–[17], customer and company performance is the company's achievement level in carrying out activities for optimal achievement of the vision, mission, and goals assessed by comparing achievement with targets or with the performance of several companies in the same industry. It illustrates that SCM is important to improve company performance.

3. Research Method

This research used the Partial Least Square method, starting with determining the variables and indicators used, then recaping the data using SEM. SEM is a multivariate analysis method that can describe simultaneous linear relationships between observed variables and variables that cannot be measured directly. Then the validity test is used to determine the accuracy of a measuring instrument in carrying out its function [18]. The validity test uses 2 stages: convergent validity and discriminant validity. Furthermore, the reliability test was carried out; this reliability test was carried out in 2 stages: composite reliability and Cronbach's Alpha. Furthermore, the Inner Model Test is carried out where this test is an Evaluation of the Structural Model in this method, carried out to see the relationship between the constructs, the significance value and the R-Square.

The steps in testing the moderating effect using the SEM Partial Least Square (PLS) are first

to test the model using the results of the convergent validity test. Convergent validity is done by comparing the value of the outer model (loading factor) with a critical value of 0.5 [19]. If the loading factor > 0.5, the instrument item is declared valid, and vice versa; if the value is < 0.5, it is declared invalid. The next assessment of convergent validity uses the AVE value greater than 0.5.After testing the validity of all indicators, then the next analysis is to test the reliability of the research model.

The next step is to test the structural model (Inner Model). By examining the findings of the path parameter coefficients and their level of significance, one can evaluate the inner model by observing the relationships between the various variables. By examining the findings of the path parameter coefficients and their level of significance, one can evaluate the inner model by observing the relationships between the various variables. This analysis determines the magnitude of the SCM capability that affects the company's performance. Evaluation of the inner model (structural model), including the value of latent variable correlations (valid when r > 0.5), path coefficients (if r is valid, then the path coefficients are significant), and R-Square (R2 means the diversity of endogenous constructs that can be explained by the construct simultaneously exogenous constructs). The hypothesis in this study will also be analyzed with SMART-PLS 3.0 so as to test the significance of loading factors and research coefficients using a bootstrapping technique that doubles the sample. The minimum criteria that must be met for the hypothesis to be accepted are t-statistics must be above 1.96 for a standard error (alpha) of 5%, and beta is positive.

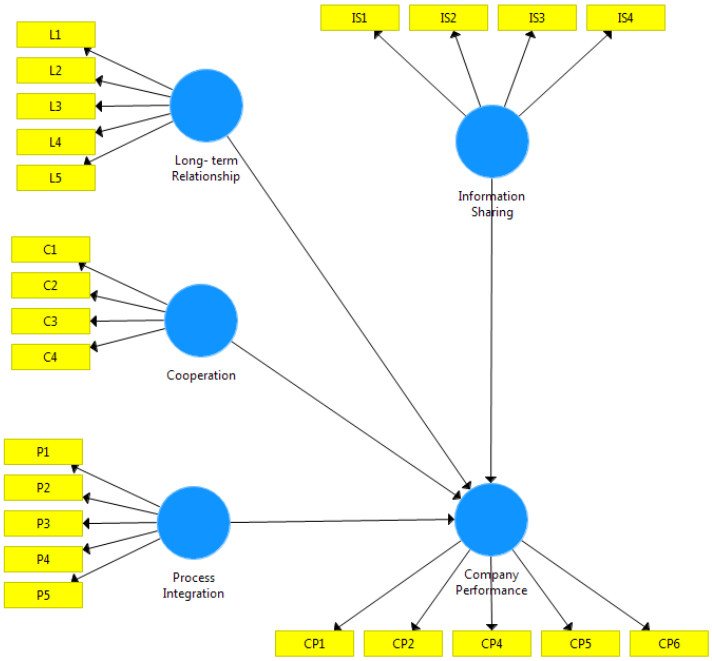

Fig 1 . Research Model

The hypotheses are:
H1: Information sharing positively and significantly impacts company performance
H2: Long-term relationship positively and significantly impacts company performance
H3: Cooperation positively and significantly impacts company performance
H4: Process integration positively and significantly impacts company performance

4. Result and Discussion

The information used in this study was gathered by sending questionnaires to owners of SMEs. Data were then recapitulated and changed into Comma Delimited or CSV to create the framework. Evaluation of the measurement model is used to measure the model using the MTMM (Multi-Trait Multi-Method) approach with validity tests consisting of convergent validity and discriminant validity, as well as reliability tests with two Cronbach's Alpha and composite reliability.

4.1 Validity Testing

The study's results must show that all indicators have an outer loading value of > 0.7, meaning that all indicators are valid.

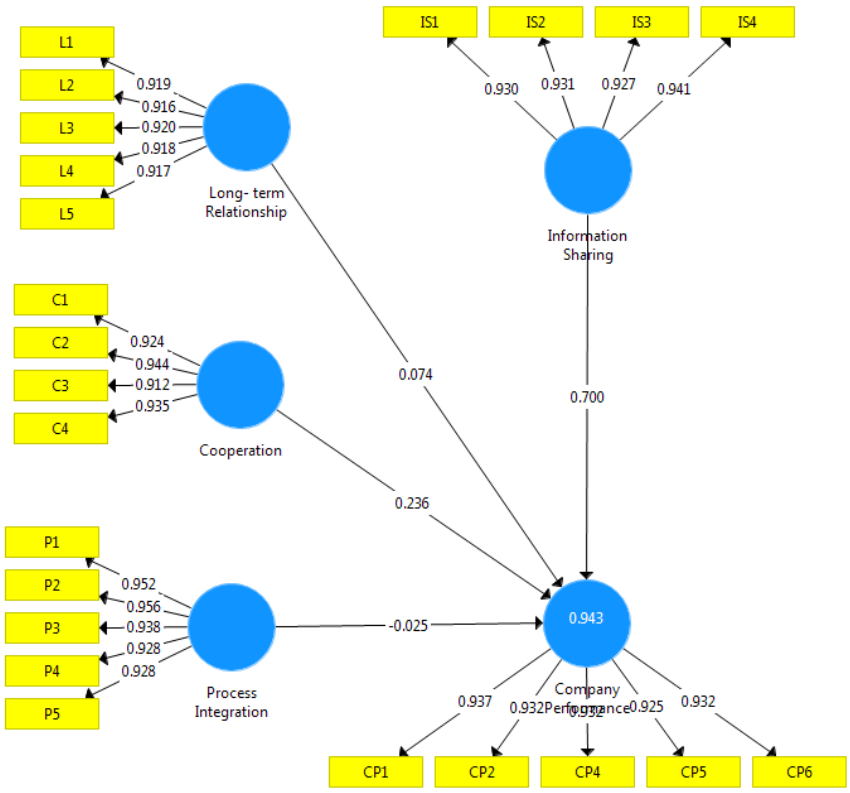

Fig 2. Validity Testing

4.2 Reliability Testing

Average Variance Extracted (AVE) >0.5 to be declared valid. The following is an output image of the Average Variance Extracted (AVE) stage. From the output table, all variables are declared valid at the Average Variance Extracted (AVE) stage; it can be concluded that all indicators are valid and have convergent validity, meaning that each indicator explains the variables well. The next step was to carry out a composite reliability test. The composite reliability Test has an internal consistency measurement with a value of 0.6. So if < 0.6, then it is not reliable.

Table 1. Reliability Testing

	Cronbach's Al...	rho_A	Composite Reliability	Average Variance Extracte...
Company Performance	0.962	0.962	0.971	0.868
Cooperation	0.947	0.948	0.962	0.863
Information Sharing	0.950	0.950	0.964	0.869
Long- term Relationship	0.953	0.954	0.964	0.843
Process Integration	0.967	0.969	0.975	0.885

Based on the output table above, it is known that after the composite reliability test, the values obtained for all variables are above 0.6. It can be said that the measurement of internal consistency is appropriate and can be said to be reliable. Cronbach's Alpha test results are said to be good because all variables get a value > 0.7. This value shows that all variables can be said to be reliable.

4.3 Structural Model Evaluation

According to [20], the inner model test was conducted to predict the causal relationship between variables and hypothesis testing. It is done first by looking at the R Square (R2) value, which determines the magnitude of the variability in endogenous variables that exogenous variables can explain. The R-Square value is a value that is only owned by the Y variable, which shows how much the X variable affects Y.

Table 2. R Square (R2)

	R Square	R Square Adjusted
Company Performance	0.943	0.940

From the output table, it is known that the R-Square Value of the Company's Performance Variable is 0.943, which means that the Company's Performance Variable can be explained by the Supply Chain Management variable of 94.3% and other factors influence the remaining 5.7%

4.4 Hypothesis Testing

Bootstrapping produces t-statistical values for each relationship path used for hypothesis testing. We compared t-statistic with t-table values. We used a 95% confidence level, so the (α) was 5% or 0.05, and the t-table was 1.96. If the t-statistic is less than the t-table (t-statistic <1.96), Ho is accepted, and Ha is rejected. If the t-statistic value is greater than or equal to the t-table (t-statistic > 1.96), Ho is rejected, and Ha is accepted. Table 3 shows the results of the t-statistic test.

Table 3 . T-Statistic Test.

	Original Sampl...	T Statistics (|O...	P Values
Cooperation -> Company Performance	0.236	1.558	0.120
Information Sharing -> Company Performance	0.700	6.666	0.000
Long- term Relationship -> Company Performance	0.074	0.572	0.567
Process Integration -> Company Performance	-0.025	0.297	0.766

Table 3 confirms that cooperation produces a value of 1.558 < 1.96, meaning that cooperation does not significantly affect company performance. Information sharing produces a value of 6.666 > 1.96, meaning that information sharing significantly affects company performance. Process integration produces a value of 0.297 < 1.96, v company performance. Then the long-term relationship variable produces a value of 0.572 < 1.96, meaning that it does not significantly affect company performance. If the resulting p-value has a value > 0.050, it can be said that the model has predictive relevance, so it can be said that it has achieved good prediction accuracy [19].

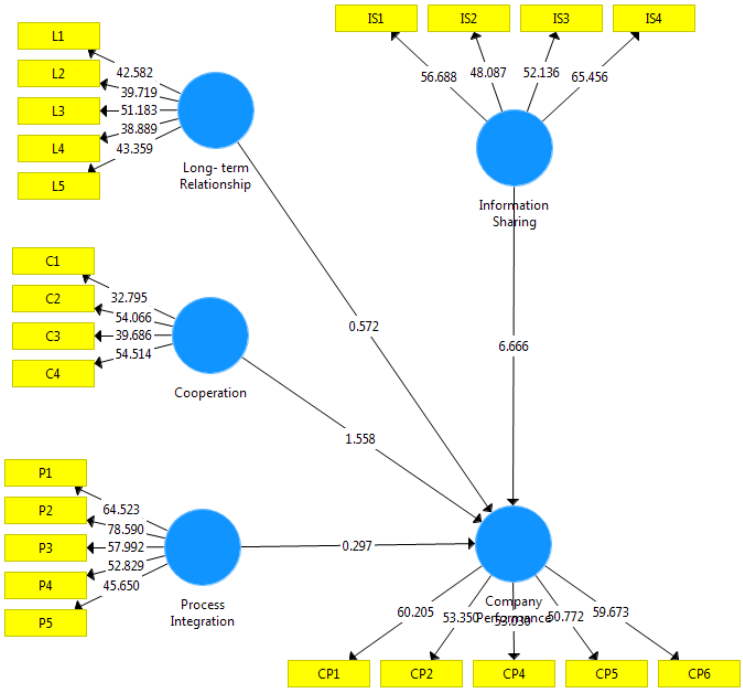

Fig 3. Hypothesis Testing

4.4.1 Information Sharing and Company Performance

From the evaluation results of the path coefficient, information sharing has a value of 0.700, and the t-statistic bootstrapping evaluation of information sharing produces a value of 6.666 > 1.96, which means that information sharing significantly and positively impacts company performance. This result supports [13], [14], [16]

4.4.2 Long-Term Relationship and Company Performance

Furthermore, the evaluation results for the path coefficient of the long-term relationship have a value of 0.074. The t-statistic bootstrapping evaluation produces a value of 0.572 <1.96, which means the long-term relationship has a positive yet not significant impact on company performance. This finding contradicts [15], [17], [21].

4.4.3 Cooperation and Company Performance

The evaluation results for the path coefficient of cooperation show a value of 0.236 and the t-statistic bootstrapping evaluation of 1.558 < 1.96, meaning that cooperation significantly and positively affects company performance, as mentioned by [15], [17], [21].

4.4.4. Process Integration and Company Performance

The evaluation results for the path coefficient of the process integration have a value of -0.025 and the t-statistic bootstrapping evaluation of 0.297, which means that process integration has neither significant nor positive impacts on performance. This result contradicts [9], [10].

[1], [6] show that business players must consider product or service quality and cost to compete, win over customers, and meet sales and profit targets to enhance corporate performance. According to [2]–[4], the company provides made-to-order products and can develop customized offerings to improve the company's operational efficiency to deliver products or services based on customer perceptions. As a result, the business can attain desired sales, profit, output, and cost levels. The performance of the company increases with the competitive advantage. The results show that competitive advantage has a positive impact on business performance. This indicates that better companies perform better than others the more their performance increases. This aligns with [2], [3], showing a significant and positive influence of competitive advantage on organizational performance.

5. Conclusion

Based on the results of hypothesis testing using SEM-PLS, it can be seen that information sharing significantly and positively affects company performance, the long-term relationship variable does not have a significant positive impact on company performance, cooperation does not have a significant positive impact on company performance, and process integration does not have a positive impact on company performance. Based on the description of the conclusions above, the following suggestions can be given: 1) we only examined SCM and competitive advantage, so other variables were not examined in this study. 2) It is hoped that further researchers can add other variables such as information sharing variables, long-term relationships, company size, relationship quality, and others that affect company performance. It is hoped that further research can use a wider population. 3) SMEs need to improve supply chain management by maintaining relationships with partnerships, customer relationships, sharing information, information quality, and postponement. 4) SMEs need to increase their competitive advantage by paying attention to price, quality, product innovation, time to market, and delivery dependability. Recommendations given to SMEs are prioritizing quality in selecting suppliers and increasing competitive advantage by providing new products that match the quantity and orders compared to competitors.

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