

An Empirical Study: The Effect of Supply Chain Management Practices towards Competitive Advantage and Business Performance.

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Abstract- The Supply Chain Management (SCM) has become a potential to increase competitive advantage and improve business performance. The authors analyze the sample using SmartPLS to find the effect of SCM practices to competitive advantage and business performance. The result is SCM practices have a positive and significant impact on business performance and has a positive and significant impact on competitive advantage. In addition, the result found that competitive advantage has an impact on business performance. The results of the study will be useful for academics, and researchers in the field of SCM especially for Indonesia SCM practice

Keywords: *Supply chain management practices, Competitive advantage, Business performance, Supply Chain Management, Indonesia.*

1. Introduction

In an era of increasingly fierce business competition, companies are very important to increase their strategic competitiveness. Thus, companies must maintain sustainability in their business performance [1]; [2]; [3]. Business performance as a solution to controlling and improving company performance follows the achievement of key performance indicators (KPI) and conducts alert management when there are indications that the company's business performance is outside or nearly reaching the standard limits set as ideal business process standards. Business performance is integrated with the business intelligence (BI) system which enables business performance to be compared, controlled and aligned with business strategy and company objectives. By integrating business processes, the process of monitoring business operational activities and producing related reports, and business intelligence (BI), enabling company executives to get a complete picture of the company's business. According to [1]. [2], business performance is a top-down approach to support executives to achieve a strategic goal, in addition to measuring the effectiveness of all activities and ultimately achieving the optimal results. A competitive business is a focus on how to increase value to consumers, namely providing products and services that are more valuable than competitors [4]. In order for a company to compete and develop, the company must have a competitive advantage. Therefore, the implementation of

supply chain management is very necessary for companies to increase the competitiveness of the company which has an impact on company performance or business performance for business people and entrepreneurs. Companies need to consider supply chain issues to ensure that supply chain management supports the strategy that the company carries out [5]; [6]. While the research results [7]; [4]; [8], show that supply chain management practices have a positive and significant effect on competitive advantage, meaning that good supply chain management practices can increase competitive advantage. The existence of competition requires business actors to use relevant competitive strategies to create good manufacturing strategies in order to improve their business performance. [2]; [9], [10]. and make the entire supply chain more efficient and competitive [8].

2. Literature Review.

Supply Chain Management (SCM)

Supply chain management (SCM), is an approach to optimize integration between suppliers, manufacturers, warehouses and storage, so that the production and distribution of goods can be carried out in the right amount, right location, right time and minimizing costs and providing service satisfaction to consumers [11]. Supply chain management (SCM) is an integrated method, tool or approach in managing supply chains with a spirit of collaboration and coordination [12]; [13], Research [14]; [15]; [16], stated that the implementation of good supply chain management (SCM) can improve company performance, both financial and operational performance. Likewise the supply chain improvement can increase the competitiveness [17]. Basically, supply chain management (SCM) has the main objective to meet consumer needs and generate profits [18]. Supply chain management (SCM) also allows business partners to coordinate the sharing of information to facilitate interactions between suppliers and customers, in addition to minimizing transaction costs [19]. Supply chain management also faced with the ideas of patriotism and nationalism, and therefore supply chain management is needed to succeed in marketing practice and logistics management.[20]; [21]

Business Performance (BP)

According to [2], the definition of performance as a result of work or work performance. But actually, performance has a broad meaning, not only the result of work, but how the work process takes place. However, performance has a broad meaning, other than just the results of work, and also how the work process takes place and contributes to the economy. Performance relates to the dimensions of the economy, efficiency and effectiveness of the program as well as the ability of the organization to achieve targets using the resources it has [22]. In addition, performance is a process of quality and efficiency as well as effectiveness of previous actions [23].

According to [1], competitive advantage has a positive impact on a company's business performance (BP). The application of supply chain management is indispensable for companies to improve industrial competitiveness which has an impact on company performance [24].

Company performance reflects how well the company is in achieving its market goals and objectives from a financial perspective.

[25], company performance can be described into two dimensions, namely financial and non financial dimensions, where the main elements are described based on sales and organization. Business performance (BP), is an important benchmark for a company and can reflect whether a company has achieved a competitive advantage or not. The approach in measuring business performance (BP) uses operational performance indicators and economic performance [26].

Supply Chain Management Practices (SCMP)

[27], supply chain management practice (SCMP) is defined as an organizational operational activity to promote effective management of the supply chain (SC). The results of the conclusions continued by the research of [28], supply chain management practice (SCMP), as a multidimensional in building both starts from upstream to downstream in the network chain system. Supply chain management is a network starting from raw material inventory, work in process into finished goods and then delivering products to customers through the distribution system. The purpose of supply chain management is to optimize the performance of the chain to add as much value as possible at the least possible cost. In other words, it aims to connect all supply chain agents to work together in the company to maximize productivity in the supply chain and provide benefits for all related parties [29]. SCMP, [30], explained that strategic supplier partnerships, customer relationships and information sharing are the keys to supply chain management, sustainable and green supply chains [31]; [32], This study develops a measurement of supply chain management practices referring to several previous studies. Indicators will be used to describe the variable practice of supply chain management, namely strategic relationships with suppliers, customer relations, information exchange, postponement practices, technology use and quality of information exchange. Therefore, in order to remain competitive, organizations must recognize the importance of supply chain practices that have the potential to improve

performance and also coordinate with supplier partners to improve their performance. [33]. The implementation of the correct supply chain management can give the effect of increasing competitive advantage on products and supply chain systems in the company [34]. Good supply chain management practices (SCMP), can increase shares, ROI and increase the competitive advantage of the company [35].

Competitive Advantage (CA)

[9], defines competitive advantage (CA) as anything that a firm does especially well compared to rival firms." Competitive advantage can be defined as anything that a company can do much better than its competing companies [36]. Competitive advantage (CA), is the company's ability to produce goods at low prices and unique ones by considering several aspects known to customers [37]. A result that can create a superior company will produce high value and will provide many benefits that will later provide benefits for other similar companies so that many also give benefits and trust from many parties. Supply chain management practices has a relationship in creating a company's competitive advantage [4].

Strategic relationships with suppliers, the closeness of the relationship between the company and suppliers can affect the company's competitive advantage [23]. The closer the relationship between the company and the supplier and the exchange of information running smoothly, it will increase the company's competitiveness. According to [38], the results of research with the topic is impact of supply chain management practices (SCMP) on the competitive advantage of Indian retail supermarkets, identified supply chain management Practice has a positive and significant effect on competitive advantage. [39], competition is the essence of a company's success or failure. This implies that failure depends on the company's courage to compete, success is not possible. Competition determines the appropriateness of a company's activities that can support its performance, such as innovation, a cohesive culture or good practice. Meanwhile, according to [1], competitive advantage is an indicator of a company to obtain optimal profit. Companies that have a competitive advantage try to have the ability to understand changes in market structures and effective marketing strategies.

3. Research Method

In this study the number of respondents who were used as samples was 125 respondents, and the technique of taking purposive sampling, because only companies engaged in the printing industry in Surabaya in East Java, especially for large scale businesses, while the sample criteria as managers who are relevant to the research instruments provided. The data processing uses the SPSS version 25 program [40] both to test research instruments, as well as to process survey data from the company.

Research Framework

The research frameworks used in this study is shown in Figure 1.

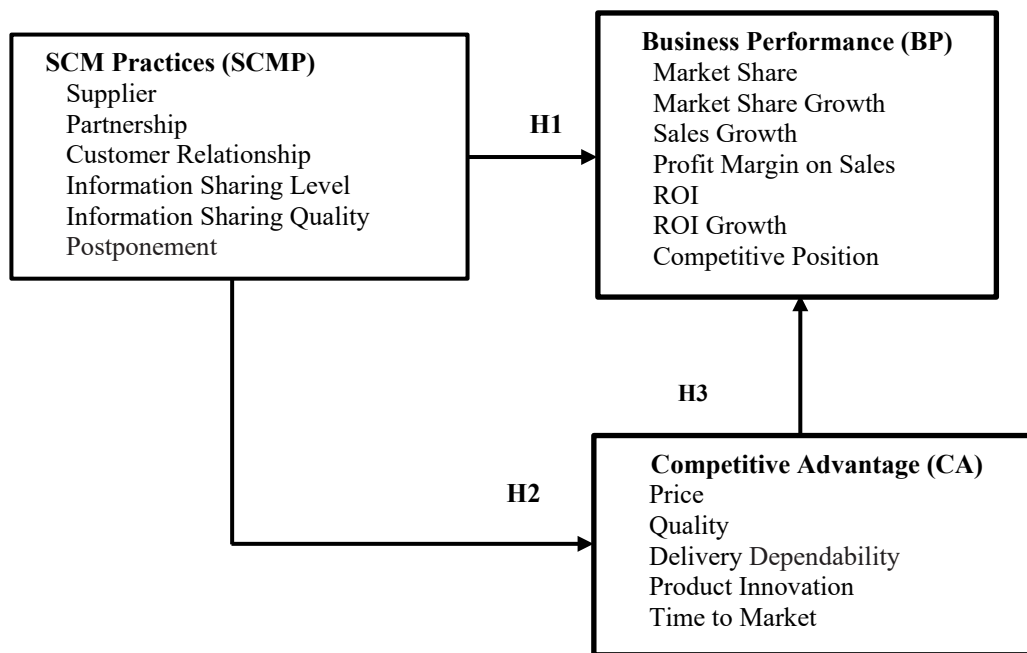


Figure 1. Research Framework

4. Result and Discussion

Validity dan Reliability Testing

This instrument was tested for validity and reliability before the questionnaire was distributed to respondents. In the validity test, it can be done by assessing the instruments filled in by the respondent, then each statement is calculated using the *Product Moment* correlation technique. A variable is said to be valid if the correlation coefficient is greater than 0.30 which is the minimum

comparison value to obtain a valid correlation [41]. To measure the reliability of the instrument in this study was the Cronbach Alpha (α). The questionnaire can be said to be reliable or reliable if the answers to the questions given are consistent or in other words the instrument is stable over time [42]. To measure the reliability of the instrument in this study was the Cronbach Alpha (α). A variable is declared reliable if it provides a *Cronbach Alpha* (α) value. > 0.60 [42].

Validity Testing

Table 1. Result of Validity Test

Variables	Indicators	Pearson Correlation	Sig.	Remarks
Supply Chain Management Practices (SCMP)	SCMP1: strategic supplier	0.883	0.000	valid
	SCMP2: partnership	0.924	0.000	
	SCMP3: customer relationship	0.913	0.000	
	SCMP4: information sharing level	0.825	0.000	
	SCMP5: information sharing quality	0.794	0.000	
	SCMP6: Postponement	0.654	0.000	
Competitive Advantage (CA)	CA1: price/ cost	0.847	0.000	valid
	CA2: quality	0.810	0.000	
	CA3: delivery dependability	0.644	0.000	
	CA4: product innovation	0.667	0.000	
	CA5: time to market	0.674	0.000	
Business Performance (BP)	BP1: market share	0.677	0.000	valid
	BP2: market share growth	0.789	0.000	
	BP3: sales growth	0.829	0.000	
	BP4: profit margin on sales	0.839	0.000	
	BP5: ROI	0.830	0.000	
	BP6: ROI growth	0.860	0.000	
	BP7: competitive position	0.888	0.000	

Sources: Result of Data Analysis (2020)

Based on Table 1. The results of the validity test show that all statement variables: customer trust, product quality, product differentiation, customer satisfaction and customer loyalty, all have a significance value of 0,000. Significance

value of 0,000 proved to be less than 0.05. Therefore, all indicators of the 5 variables are declared valid

Reliability Testing

Table 2. Result of Reliability Test

Variables	Indicators	Cronbach's Alpha if Deleted	Cronbach's Alpha	Remarks
Supply Chain Management Practices (SCMP)	SCMP1: strategic supplier	0.762	0.805	reliable
	SCMP2: partnership	0.766		
	SCMP3: customer relationship	0.759		
	SCMP4: information sharing level	0.778		
	SCMP5: information sharing quality	0.780		
	SCMP6: Postponement	0.791		
Competitive Advantage (CA)	CA1: price/ cost	0.686	0.762	reliable
	CA2: quality	0.691		
	CA3: delivery dependability	0.740		
	CA4: product innovation	0.748		
	CA5: time to market	0.735		
Business Performance (BP)	BP1: market share	0.728	0.773	reliable
	BP2: market share growth	0.769		
	BP3: sales growth	0.721		
	BP4: profit margin on sales	0.726		
	BP5: ROI	0.734		
	BP6: ROI growth	0.720		
	BP7: competitive position	0.726		

Sources: Result of Data Analysis (2020)

Based on Table 2, while for the reliability test so are all indicators. proven that Cronbach alpha > 0.6 and Cronbach alpha if deleted < Cronbach alpha

validity and reliability of a model. Evaluation of the outer model in the partial least square measurement model is useful for testing the validity and reliability through the estimation results of algorithmic literacy. Here are the results of the estimation algorithm partial least square model (Figure 1):

Evaluation of the Outer Model

Evaluation of the outer model in partial least square analysis is a measurement model to assess the

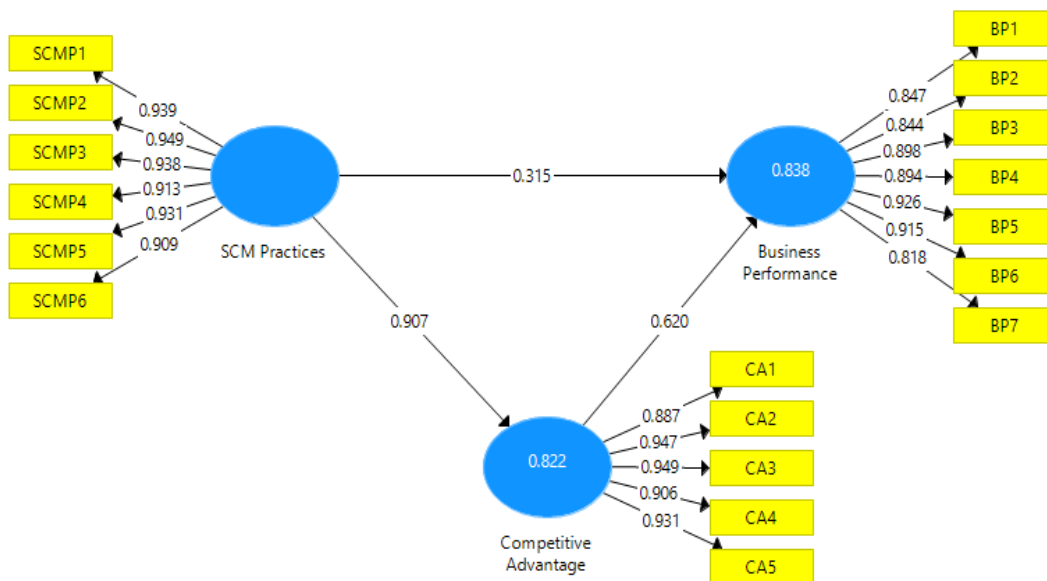


Figure 1. Path Analysis Diagram (Outer Model)

The evaluation carried out in the outer model includes testing for convergent validity, discriminant validity and composite reliability, the results of which are as follows.

Convergent Validity

The measurement of convergent validity is evaluated using the outer loading value with the limit that the minimum outer loading value is greater than 0.5. Meanwhile, if the outer loading value is greater

than 0.7, it is a measurement in accordance with the proposed rule of thumb. Another evaluation for convergent validity can be done with the average variance extracted (AVE) value which must be greater than 0.50 (Ghozali, 2016). The following is the outer loading and average variance extracted value for each research variable in the structural mode (Table 3):

Table 3. Outer Loading, T-Statistics and AVE

	Outer Loading	T-Statistics	Average Variance Extracted
SCMP1	0.939	72.629	0.865
SCMP2	0.949	73.103	
SCMP3	0.938	71.231	
SCMP4	0.913	42.970	
SCMP5	0.931	53.126	
SCMP6	0.910	29.846	
CA1	0.887	28.589	0.854
CA2	0.947	74.109	
CA3	0.949	90.638	
CA4	0.906	25.316	
CA5	0.931	62.163	
BP1	0.847	25.418	0.771
BP2	0.844	23.732	
BP3	0.898	44.653	
BP4	0.894	36.973	
BP5	0.926	67.203	
BP6	0.915	64.222	
BP7	0.818	29.901	

Based on Table 3, it is known that the outer loading value of each question indicator for all variables that compose the structural model already has a value greater than 0.5, so it can be said that the question indicators in the structural model have met convergent validity. Another evaluation on the average variance extracted value for each variable all also had a value greater than 0.50, which also concluded that the

measurement of the research variables in the model had met the convergent validity.

Discriminant Validity

After evaluating convergent validity, the next step is to evaluate discriminant validity, which uses cross-loading and Fornel-Larcker value evaluations as a measure. The results are as follows (Table 4)

Table 4. Cross Loading

	<i>SCM Practices</i>	<i>Competitive Advantage</i>	<i>Business Performance</i>
SCMP1	0.939	0.851	0.812
SCMP2	0.949	0.855	0.836
SCMP3	0.938	0.849	0.803
SCMP4	0.913	0.801	0.793
SCMP5	0.931	0.832	0.813
SCMP6	0.909	0.870	0.837
CA1	0.839	0.887	0.801
CA2	0.894	0.947	0.887
CA3	0.836	0.949	0.839
CA4	0.776	0.906	0.788
CA5	0.841	0.931	0.865
BP1	0.838	0.837	0.847
BP2	0.789	0.819	0.844
BP3	0.745	0.804	0.898
BP4	0.766	0.753	0.894
BP5	0.792	0.796	0.926
BP6	0.775	0.825	0.915
BP7	0.667	0.690	0.818

Based on Table 4, the evaluation of discriminant validity by using cross loading, it is known that the largest outer loading value has been generated by each indicator item for each variable that is measured conceptually, so that referring to this result shows that the

evaluation of discriminant validity with cross loading values can be fulfilled properly.

Table 5. Fornell-Larcker

	<i>SCM Practices</i>	<i>Competitive Advantage</i>	<i>Business Performance</i>
SCM Practices	0.930		
Competitive Advantage	0.907	0.924	
Business Performance	0.877	0.906	0.878

Based on Table 5, the Fornell-Larcker evaluation shows that the AVE root value of each research variable shown on the diagonal line has a greater value than the correlation between research variables. Referring to these results, the Fornell-Larcker evaluation concluded that the discriminant validity of the research model analyzed by PLS could be fulfilled.

Composite Reliability

The last evaluation on the *outer model* is *composite reliability*, which tests the reliability value of each indicator in a variable. A variable is said to have met the composite reliability if the value of the composite reliability and Cronbach alpha value is greater than 0.70 [42]. The following is the value of the *composite reliability* and Cronbach alpha for each variable:

Table 6. Composite Reliability dan Cronbach Alpha

	Cronbach's Alpha	Composite Reliability
SCM Practices	0.969	0.975
Competitive Advantage	0.957	0.967
Business Performance	0.950	0.959

Based on the results of the analysis in Table 6, it can be seen that each variable used in the research model has a composite reliability value greater than 0.7 and a Cronbach alpha value greater than 0.6. Referring to the results of this evaluation, it can be concluded that each research variable has also met composite reliability.

Evaluation of the Inner Model

In this evaluation, a description of the *R-square* results and hypothesis testing obtained from the Smart PLS, bootstrapping process will be given with the following results (Figure 2):

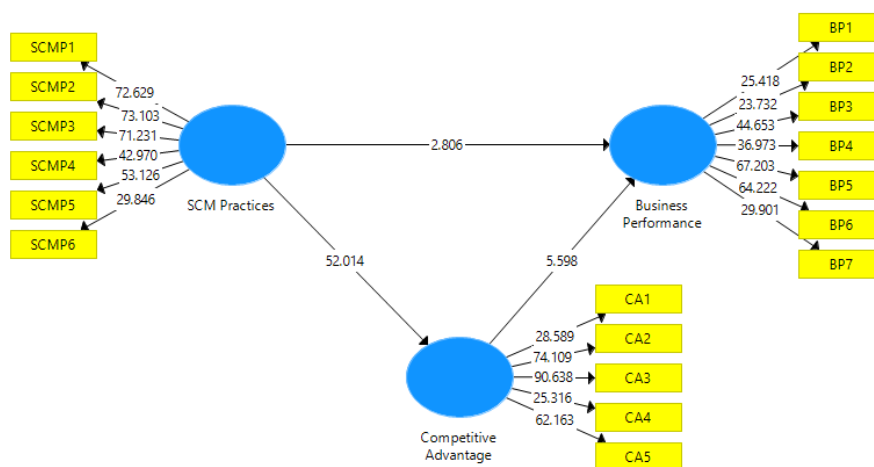


Figure 2. Path Analysis Diagram (Inner Model)

R-Square

In this goodness of fit assessment is to look at the R-square

value generated by estimating the Smart PLS on each path. Based on data processing with the PLS method, the R-square is obtained as follows (Table 7).

Table 7. Value of R Square

	R Square
Competitive Advantage	0.822
Business Performance	0.838

Based on Table 7, it can be stated that the path of influence between the SCM Practice variable on the Competitive Advantage (CA), R-square value of 0.822, this means that the percentage of diversity of the Competitive Advantage (CA) can be explained by the SCM Practice (SCMP) of 82.2%. Whereas in the SCM Practice (SCMP) and Competitive Advantage pathways to Business Performance (BP), R-square of 0.838, which means that the percentage of diversity in the Business Performance variable can be explained by the SCM Practice (SCMP) and Competitive Advantage (CA), of 83.8%.

For the value of R^2 total calculated by the formula $R^2 \text{ total} = 1 - (P_{e1}^2 \times P_{e2}^2)$ with R^2 total a total determination coefficient:

$$R^2 \text{ total} = 1 - (P_{e1}^2 \times P_{e2}^2)$$

$$R^2 \text{ total} = 1 - (0.422 \times 0.402)$$

$$R^2 \text{ total} = 1 - 0.170 = 0.830$$

Based on the calculations, the total value of the coefficient of determination (R^2 total) amounted to 0.830, which means that the diversity of all the research data has been explained by the structural model drawn up by 83%.

Direct Effect

Direct effect evaluation is used to test the research hypotheses that have been formulated. The results of testing the research hypothesis based on the *inner weight* evaluation are as follows (Table 8)

Table 8. Path Coefficients Analysis

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Remarks
SCMP → BP	0.315	0.312	0.112	2.806	0.006	Positive & significant
SCMP → CA	0.907	0.905	0.017	52.014	0.000	Positive & significant
CA → BP	0.620	0.623	0.111	5.598	0.000	Positive & significant

Based on Table 8, the results for the direct effect of the structural model can be explained as follows: Original sample column (O), all values are positive, T-Statistics column (|O / STDEV |), all values are greater than 1.96, p value column (P Values), all values are less than 0.05, so the results are all positive and significant.

Indirect Effect

The results of the indirect effect in the partial least square analysis are shown in the specific indirect effect output as follows (Table 9)

Table 9. Value Indirect Effect

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Remarks
SCMP Practice → Competitive Advantage → Business Performance	0.563	5.481	0.000	Positive & significant

The indirect effect between the SCM Practice variable on Business Performance through the mediation of Competitive Advantage has an effect value of 0.563 with a T-Statistics value of 5.481 and a p-value of 0.000. Based on these results, it is known that the T-Statistics value is $5.481 > 1.96$ and the p-value is $0.000 < 0.05$, so it can be concluded that there is a positive and significant indirect

effect between the SCMP Practice variable on Business Performance through Competitive Advantage mediation. The nature of the mediation that occurs is partial mediation because the direct effect of SCMP Practice on Business Performance is also concluded to be positive and significant

5. Conclusions

Based on the results and discussions, it can be concluded that, first, supply chain management practices have a positive and significant impact on business performance; second, supply chain management practices have a positive and significant impact on competitive advantage; third, competitive advantage has an impact on business performance. Direct effect, the results for the direct effect of the structural model can be explained as follows: Original sample column (O), all values are positive; T-Statistics column ($|O / STDEV|$), all values are greater than 1.96; p value column (p values), all values are less than 0.05, so the results are all positive and significant. Indirect effect, the indirect effect between the SCM

Practice variable on Business Performance through the mediation of Competitive Advantage has an effect value of 0.563 with a T-Statistics value of 5.481 and a p-value of 0.000. Based on these results, it is known that the T-Statistics value is $5.481 > 1.96$ and the p-value is $0.000 < 0.05$, so it can be concluded that there is a positive and significant indirect effect between the SCMP Practice variable on Business Performance through Competitive Advantage mediation. The nature of the mediation that occurs is partial mediation because the direct effect of SCM Practice on Business Performance is also concluded to be positive and significant.

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