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## SUPPLIER RELATIONSHIPS, TRUST, AND COMMUNICATION: MEDIATING SUSTAINABLE PROCUREMENT OF COMPANY PERFORMANCE

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### Abstract

This article discusses the influence of supplier relationships, trust, and communication on supply chain performance, with continuous procurement as a mediating variable. The main problem faced is the low performance of the supply chain caused by the lack of cooperation between companies and suppliers, where awareness in maintaining relationships such as good communication and trust is lacking. The performance of the supply chain is greatly influenced by good cooperation between suppliers and their companies, thus it will support the improvement of operational efficiency and effectiveness. Strong relationships as well as a high level of trust and effective communication with suppliers can create a positive impact on sustainable procurement which ultimately improves the performance of a company's supply chain. This research method uses a quantitative method with a survey questionnaire to collect data from companies involved in the supply chain. Recommendations for future research are to explore more deeply about sustainable procurement practices across industries and their impact on long-term performance. The results of this study are expected to provide insights for companies in managing relationships with suppliers and implementing sustainable procurement to improve supply chain performance.

**Keywords:** Supplier Relationships, Trust, Communication, Supply Chain Performance, Sustainable Procurement

## INTRODUCTION

Supply chain performance refers to a company's ability to improve efficiency, effectiveness, and manage its supply chain operations (Yuwono, Naimah, & Yulianto, 2024) which includes aspects such as reduced supply risk, improved relationships with suppliers, and the ability to respond appropriately to customer demands (AL-Shboul, 2023). Good cooperation between all parties involved, both within the company itself and with other business partners will have a good impact on the performance of the supply chain. Good supply chain performance depends on the level of integration and collaboration between various parties (Fatorachian & Kazemi, 2021). In other words, all functions in the company must work together effectively. Overall, this supply chain performance emphasizes the importance of strong relationships and quality of interaction between companies and suppliers in improving supply chain performance (AL-Shboul, 2023).

Relationships with suppliers are important to maintain the resilience of the supply chain because by building a good relationship with suppliers, companies can be ensured to get a stable flow of materials (Yuwono et al., 2024), so as to meet customer demands and maintain customer satisfaction. (Huo, Li, & Gu, 2024). This relationship with suppliers has a direct impact on the performance of the supply chain because when suppliers and companies work effectively, they can ensure the stability of their supply, which in turn affects the overall improvement of their performance (Gu, Zhang, Li, & Huo, 2023). Not only the relationship with suppliers, trust also has an influence on supply chain performance (Yuwono, Danito, & Nainggolan, 2023). Trust means that our partners will act in the common interest, which if the higher the level of trust between members, the better it will be because they can share information and work together, so that it ultimately contributes well to the performance of the supply chain, both in terms of operations and economy. (Ramirez, Roman, Ramos, & Patrucco, 2021). And lastly, there is communication that (in the context of *supply chain*) means the exchange of relevant information between various *stakeholders* or stakeholders such as suppliers, manufacturers, distributors, and customers (Yuwono et al., 2023). Communication has a positive effect on supply chain performance because it can reduce uncertainty, can make better decisions, and is more responsive to customer demand. With communication, information can be obtained quickly, so that companies can respond to market demands more efficiently, quickly, and will have a good impact on improving performance (Pham & Doan, 2020).

Sustainable procurement is a procurement process that considers not only the social, economic, and environmental impacts of purchasing decisions, but also how it can improve the overall performance of the supply chain (Hallikas, Immonen, & Brax, 2021). Sustainable procurement here acts as a mediating variable between independent and dependent. When a company establishes a strong relationship with suppliers, they will create a relationship of mutual trust (Ramirez, 2021) and open communication that allows negotiations to be more effective regarding their price, quality, and delivery (Pham & Doan, 2020). By implementing these things, the role of sustainable procurement is to make the company not only focus on that, but also focus on social and environmental responsibility, which will increase trust and communication between the two parties for the better. (Kaur & Singh, 2019). All of this results in a more efficient process because the company can produce quality products. Continuous procurement here helps optimize supplier relationships, increase responsiveness

to market demand, and most importantly improve overall supply chain performance (Ghadge, Kidd, Bhattacharjee, & Tiwari, 2019).

In Indonesia, there are several companies that have problems about the relationship between suppliers and the performance of their company's supply chain (Sebayang, 2022). One example of the company is PT. Unilever Indonesia which has problems with raw material quality, supply uncertainty, and poor communication (Yosuky, Renalbi, Rachmi, Felix, & Ricky, 2022). Inconsistent quality of raw materials from suppliers can interfere with their production process which will negatively impact the final product (Sebayang, 2022). Then, less effective communication is also an obstacle, as it results in misunderstandings about product specifications and delivery times. If the relationship cannot be managed properly, then the company will suffer losses ranging from loss of customer satisfaction and overall performance of the company (Yosuky, Renalbi, Rachmi, Felix, & Ricky, 2022). Therefore, it is important to be able to manage relationships with suppliers in order to improve supply chain performance at PT. Unilever Indonesia.

This research has many aspects of renewal (*Novelty*) in the context of supply chain management. *Novelty* It usually arises from the ability of researchers to find similarities and differences from all existing literature where researchers can develop new ideas that are more original and relevant in their field of study. This study highlights the importance of relationships with suppliers as an independent variable that influences their supply chain performance (Alshurideh, 2022). Although many previous studies have discussed supply chain management in general, this study specifically explores the aspects of relationships, trust, and communication with suppliers that can have an impact on the efficiency and effectiveness of their supply chains. Then, with sustainable procurement as a mediating variable between the relationship with suppliers and their supply chain performance, it provides a new perspective on how this sustainable procurement can improve outcomes in supply chain management (Ghadge, 2019). This is relevant to the current era, where companies are expected to operate responsibly for the environment and society.

*Framework*, or framework, in the context of supply chain management refers to the conceptual structure used to understand and organize the interrelated variables in a research.

In this study, *framework* serves as a guide to explore the relationship between factors such as supplier relationships, trust, communication, and sustainable procurement, as well as their impact on supply chain performance (Hazen, Russo, Confente, & Pellathy, 2020). The quality of the relationship with suppliers, including these aspects of trust and communication, is expected to affect operational efficiency, customer satisfaction, and customer satisfaction (Alshurideh, 2022). Then there is continuous procurement as a mediator that connects relationships with suppliers, trust and communication, with supply chain performance. This sustainable procurement creates synergies that can improve the overall performance of the supply chain. *Framework* It provides a framework to understand how the management of supplier relationships, trust, and communication, can contribute to supply chain performance through continuous procurement as a mediator.

This research makes a contribution in the field of supply chain management as it highlights the important role of supplier relationships, trust, and communication as independent variables that influence supply chain performance. Then by using sustainable procurement as a mediator, this research can show that a sustainable approach is not only relevant for corporate responsibility, but can also improve operational efficiency and

effectiveness in supply chain performance (Kaur & Singh, 2019). The main contribution in this study is to clarify the quality of relationships with suppliers that can affect supply chain performance (Alshurideh, 2022), and emphasizing the importance of trust and communication that can create productive relationships (Hazen, 2020). It also describes sustainable procurement as a key factor that can increase the positive impact and relationship with suppliers on supply chain performance (Ghadge et al., 2019). This shows that sustainable procurement can be a bridge that connects independents with their dependents. After that, it is to provide insight to stakeholders (*Stakeholders*) in formulating more effective strategies in supply chain management, including the development of stronger relationships with suppliers and the implementation of sustainable procurement practices. And finally, this study offers guidance for designing corporate policies and strategies to consider mutually beneficial supplier relationships to achieve higher supply chain performance.

## **REVIEW OF LITERATURE**

This section discusses the definition of influential variables in the context of supply chain performance. A deep understanding of these variables is essential to analyze the relationship and their impact on the sustainability and efficiency of the supply chain as a whole. By examining each of the variables, we can identify and explore how the interaction between supplier relationships, trust, and communication can support sustainable procurement practices, which in turn, will improve supply chain performance.

### **Supplier Relationship**

The relationship with suppliers is a cooperation between the company and its suppliers. By encouraging good relationships with suppliers, it will create mutual value, increase innovation, build more collaborative and sustainable relationships with suppliers. In addition, a relationship based on strong commitment can result in better cooperation and avoid conflict. This can contribute well to the stability of the supply chain. If companies can understand and manage risks related to suppliers, they can reduce various potential disruptions in their supply chain. Ultimately, this not only contributes to short-term performance, but also supports the company's long-term sustainability and competitiveness (Wieland & Ivens, 2025).

### **Trust**

Trust is the expectation that partners in the supply chain will act in the common good even though there is no ability to monitor their behavior. In context *supply chain*, trust plays an important role in facilitating better exchange of information between suppliers and companies and reducing the risk of actions that focus on personal gain such as manipulation of information, ignoring commitments and exploiting partner weaknesses to gain greater profits. With a high level of trust, it allows for more effective collaboration, which ultimately improves operational performance as well as supply chain economics (Ramirez et al., 2021).

### **Communication**

Communication is the process of conveying information between stakeholders in the supply chain, in which there is an exchange of information and data about product sustainability, product conditions, and other logistical information. Effective communication will create collaboration between stakeholders that can help reduce errors and improve response to changing market demands (Yun, 2023).

### **Sustainable Procurement**

Sustainable procurement is a procurement practice that considers standards in the economic and social environment in each transaction. This includes the use of services and products that have an impact on the environment, as well as providing positive benefits for society. Sustainable procurement plays a role in improving the efficiency and effectiveness of the supply chain. By implementing these practices into the procurement process, companies can minimize waste, reduce emissions, and increase transparency in the supply chain. In addition, this practice can strengthen a company's reputation and provide long-term value through reduced costs and increased customer satisfaction (Singh & Chan, 2022).

### **Supply Chain Performance**

Supply chain performance is a measure of how effectively and efficiently a supply chain is in achieving customer demand business goals. Supply chain performance includes aspects such as the ability to deliver high-quality products on time, risk reduction in supply, speed of response to market demand, and so on. Supply chain performance is also influenced by factors such as the quality of multi-directional relationships, where the quality of interaction between buyers and suppliers must be good relationship in order to increase collaboration, which will ultimately increase customer satisfaction and overall business success (AL-Shboul, 2023).

### **The Influence of Supplier Relationship on Supply Chain Performance**

A good relationship with suppliers will increase operational efficiency and customer satisfaction, which will contribute directly to the overall performance of the supply chain (Amoako-Gyampah, Boakye, Adaku, & Famiyeh, 2019). When the company and its suppliers work together in harmony, the company can improve delivery accuracy, reduce lead times, and lower operational costs (Gu et al., 2023). Better access can result in a mutually beneficial relationship. This all contributes to better supply chain performance, which in turn improves customer satisfaction (Al-Shboul, 2023).

H1: Supplier Relationship has a Positive Effect on Supply Chain Performance

### **The Influence of Supplier Relationship on Sustainable Procurement**

Strong relationships with suppliers will increase collaboration and communication, which is necessary to implement sustainable procurement practices (Kannan, 2021). Support from the company's management and the supplier's commitment to sustainability are very important factors (Tang, 2019). When a company has a strong and open relationship with its suppliers, then they can work well together in implementing environmentally friendly solutions and innovations (Kaur & Singh, 2019). This creates synergies that help both parties to achieve sustainability goals

H2: Supplier Relationship has a Positive Effect on Sustainable Procurement

### **The Influence of Trust on Sustainable Procurement**

Trust is a key element in business relationships (Sholihah, 2022). High trust between companies and suppliers can drive the adoption of sustainable procurement practices (Ramirez et al., 2021). With this kind of mutual trust, companies are more likely to improve sustainable and innovative solutions (Baah, Acquah, & Ofori, 2022). When a company trusts its suppliers, they will be more open to implementing sustainable practices (Alshurideh, 2022). Trust also encourages suppliers to share strategic information, making it easier for companies to make decisions that support sustainability (Ramirez, 2021). If not In the absence of trust, interaction between companies and supply chain partners can be disrupted, resulting in increased risk and higher costs.

H3: Trust has a positive effect on Sustainable Procurement

#### **The Influence of Communication on Sustainable Procurement**

Communication is identified as one of the important variables in a sustainable procurement system (Sholihah, 2022). Effective communication improves the flow of information between all parties involved in the project, which will create better collaboration and more efficient problem-solving (Ummah, 2019). The involvement of all project parties in open and transparent communication can reduce the risk of conflict and increase the satisfaction of all parties (Tang, 2019). Good communication can ensure that information related to sustainable procurement can be conveyed clearly and in a timely manner (Tang, 2019). This can enable better collaboration in implementing sustainable procurement (Kannan, 2021).

H4 : Communication has a positive effect on Sustainable Procurement

#### **The Effect of Sustainable Procurement on Supply Chain Performance**

Sustainable procurement refers to procurement practices that consider environmental, social, and economic impacts in the process of selecting and managing suppliers (Kaur & Singh, 2019). By implementing these practices, companies can reduce waste and operational costs, improve process efficiency, and optimize the use of raw materials (Gu, 2023). In addition, sustainable sourcing enhances the company's reputation in the eyes of consumers who are increasingly concerned about environmental issues, thus attracting more customers and increasing brand loyalty (Kaur & Singh, 2019). This sustainable procurement practice not only improves operational efficiency, but also reduces environmental impact. This can contribute to better and sustainable supply chain performance (Baah, 2022).

H5 : *Sustainable Procurement* has a positive effect on *Supply Chain Performance*

#### **The Influence of Supplier Relationship on Supply Chain Performance with Sustainable Procurement as Mediation**

Strong relationships with suppliers not only improve supply chain performance directly, but also through sustainable procurement (Emon, Khan, & Siam, 2024). When companies establish good relationships with suppliers, they can more easily implement environmentally friendly procurement practices (Emon et al., 2024). This creates synergies that support sustainability and operational efficiency. By integrating sustainable procurement as part of the strategy, companies can reduce costs and improve overall supply chain performance.

H6 : Supplier Relationship has a positive effect on Supply Chain Performance and Sustainable Procurement as a mediation

#### **The Influence of Trust on Supply Chain Performance with Sustainable Procurement as a Mediation**

Trust between companies and suppliers plays an important role in improving supply chain performance (Cooper, 2024). When trust is established, companies will be more open to collaborating in implementing sustainable procurement practices. High trust encourages suppliers to share strategic information, which makes it easier for companies to make decisions that support sustainability (Cooper, 2024). With effective sustainable procurement practices, companies can improve customer reputation and loyalty, which in turn contributes to supply chain performance.

H7 : Trust has a positive effect on Supply Chain Performance and Sustainable Procurement as a mediation

## The Effect of Communication on Supply Chain Performance with Sustainable Procurement as Mediation

Effective communication between companies and suppliers is essential for the success of sustainable procurement (Agyekum, Fugar, Agyekum, Akomea-Frimpong, & Pittri, 2023). Open and transparent communication ensures that all parties involved understand sustainability goals and can work together efficiently. By optimizing communication, companies can reduce the risk of conflict and improve collaboration, which positively impacts supply chain performance (Agyekum et al., 2023). Clear and timely information on sustainable procurement practices allows companies and suppliers to innovate and adapt as market needs.

H8 : Communication has a positive effect on Supply Chain Performance and Sustainable Procurement as mediation

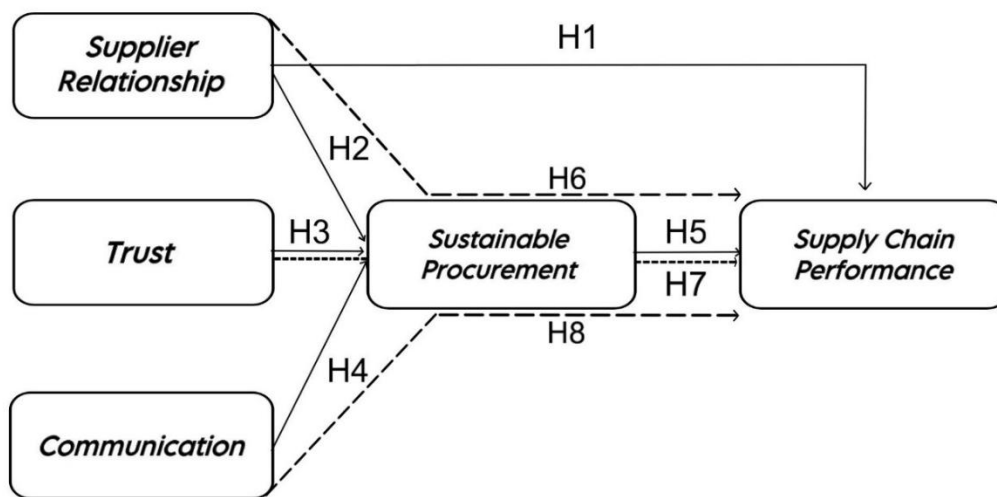


Figure 1. Research Model

## RESEARCH METHOD

The population in this study is companies involved in supply chains in certain industrial sectors such as manufacturing, distribution and logistics, services, culinary, pharmaceuticals, and so on (Li et al., 2024). Such populations were chosen because they have direct relevance to the research topic of supply chain performance and sustainable procurement (Novelli et al., 2024). This study also uses the purposive sampling method, where this technique is carried out by taking samples by selecting respondents with certain criteria (Restrepo et al., 2024) Criteria can include companies that have implemented sustainable procurement practices, companies that have suppliers, employees who are directly involved with the supply chain such as logistics employees, procurement managers, marketing managers and so on. To determine the sample size, this study follows the recommendation of a minimum sample size, which is 10 respondents for each variable studied. With a total of 20 questions from 5 variables, the minimum sample size required is 200 respondents (20 questions x 10 respondents) (Rachman, Putro, Rusandi, & Situmorang, 2024) For data collection, the researcher used a questionnaire consisting of questions related

to the research variable. Each variable will be measured on a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5) (Li et al., 2024). With this scale, it allows researchers to capture the perception of respondents towards the variables being studied. Once the data has been collected, statistical analysis will be carried out to test the hypothesis that has been made (Novelli, Pesce, & Bubbico, 2024). Appropriate analysis techniques will be used to evaluate the relationship between well-researched variables. That way, researchers can identify patterns that show how the relationship between supply chains, trust and communication can affect supply chain performance with sustainable procurement as a mediator.

The research conducted uses quantitative methods by conducting surveys such as distributing questionnaires. Quantitative was chosen as the research method because this method can collect numerical data (data that can be taken into account) that can be analyzed statistically to achieve valid and clear research results. This study aims to test hypotheses related to the influence of supplier relationships, trust, and communication on supply chain performance by mediation of sustainable procurement. This method can help researchers to collect data from respondents, thereby producing representative data. By using questionnaires as structured data collection, researchers can get reliable information.

This research methodology was created to provide a clear understanding of the influence of supply chain relationships, trust, and communication on supply chain performance with sustainable procurement as mediation. With the right quantitative approach and statistical analysis, it is hoped that this research can make a useful contribution to the development of theories and practices in supply chain management (Chapter, 2023). In addition, the findings of this study can also be expected as a reference for companies to make more effective strategies in managing their supply chains and sustainable procurement. Through a better understanding of the factors that affect supply chain performance, companies can optimize their procurement practices and support business sustainability in their business operations.

Data analysis began with descriptive statistics that showed the characteristics of the respondents. To test hypotheses and structural models, this study uses equation modeling *Struktural Partial Least Squares* (PLS-SEM) with software SmartPLS (v.3.2.9) and SPSS to analyze the data. This study adopts the PLS-SEM method which involves causal modeling to maximize the variance described from the latent dependent construct. In general, PLS-SEM is more suitable for model prediction and exploratory research because the focus of this study is on the implementation of good supplier relationships, sustainable procurement, and corporate performance, PLS-SEM is considered appropriate for the purpose of this study.

## RESULTS AND DISCUSSION

### Respondent Demographics

The data collected were 200 respondents where most of the respondents were women (71.5%). The majority of respondents are from Generation Z (68.5%). The most common type of company is the service sector (20%). In addition, 29.5% of the company is between 11 and 15 years old, and the majority of their monthly income is Rp. 4,000,000.00 to Rp. 10,000,000.00 (46%).

**Table 1. Demographics**

Gender

	<i>Frequency</i>	<i>Percent</i>
<i>Pria / Male</i>	57	28.5
<i>Wanita / Female</i>	143	71.5
Total	200	100.0
<i>Age</i>		
	<i>Frequency</i>	<i>Percent</i>
< 17 years old	2	1.0
> 47 years old	1	0.5
17 - 26 years old	134	67.0
27 - 36 years old	58	29.0
37 - 46 years old	5	2.5
Total	200	100.0
<i>Monthly Income</i>		
	<i>Frequency</i>	<i>Percent</i>
< Rp. 4,000,000	46	23.0
> Rp. 40.000.000	3	1.5
IDR 10,000,001 - IDR 20,000,000	36	18.0
IDR 20,000,001 - IDR 30,000,000	23	11.5
IDR 4,000,000 - IDR 10,000,000	92	46.0
Total	200	100.0
<i>Company type</i>		
	<i>Frequency</i>	<i>Percent</i>
<i>Bank</i>	2	1.0
<i>Developer</i>	1	0.5
Distribution and Logistics	56	28.0
Farmasi	31	15.5
Services	40	20.0
Construction	1	0.5
Culinary	38	19.0
Manufactory	26	13.0
Shipowner	1	0.5
Retail	1	0.5
Hospitals	1	0.5
<i>Supplier</i>	1	0.5
Telecommunications	1	0.5
Total	200	100.0
<i>Length of operation of the company</i>		
	<i>Frequency</i>	<i>Percent</i>

> 21 years old	22	11.0
0 - 5 Years	42	21.0
11 - 15 Years	59	29.5
15 - 20 Years	43	21.5
6 - 10 Years	34	17.0
Total	200	100.0

**a) Common Method Variance**

This study uses Smart-PLS3 to test data related to Common Method Variance/Common Method Bias, by ensuring that the Collinearity Statistic/VIF is below 5.00, which indicates that the data is free of Common Method Bias. As seen in table 2, the VIF value listed there indicates that if the number is below 5.00, it indicates that the data is not affected by Common Method Bias. Therefore, the results of this study can indicate that the data used is valid and not affected by Common Method Bias.

**Tabel 2. Collinearity Statistic (VIF)**

	LIVE
C1	1.701
C2	2.146
C3	2.209
C4	1.879
SCP1	1.264
SCP2	1.218
SCP3	1.384
SCP4	1.423
SP1	1.345
SP2	1.367
SP3	1.529
SP4	1.481
SR1	1.260
SR2	1.302
SR3	1.259
SR4	1.371
T1	1.337
T2	1.288
T3	1.349
T4	1.383

Source: *SmartPLS Output 3.2.9*

**b) Convergent Validity**

Convergent validity is the measure of the extent to which a variable has a positive relationship with another variable that measures the same thing (Alsehaimi et al., 2024). A construct must have a significant positive correlation with other relevant constructs, indicating that the measuring tool is valid (Alsehaimi et al., 2024). Convergent validity measurements can use Average Variance Extracted (AVE), which is the average of the

squared value and the related indicators. A satisfactory level of reality is demonstrated by the value of *loading* > 70% which means that the construction can explain more than 50% of the indicator's variants, Value *loading* The high indicates that the indicators used in the study are strong enough to explain the variables being studied (Eze & Ameyaw, 2025). The acceptable value of  $AVE \geq 0.50$ .

Value *loading* factors will be considered high if an indicator has a correlation more than 0.70 with its construction (Ammad, Alaloul, Saad, & Qureshi, 2021). If the value *loading* The indicator is between 0.40 and 0.70, so it is possible to consider removing the indicator in order to increase the reliability of the composite to reach the minimum recommended limit. It is important to consider validity when performing indicator removal, especially if the value of the indicator is very low. The indicator should be removed from the scale if the value is around 0.40 or lower. If it is still in the early stages of research and the development of a scale of measurements, the value of *outer loading* which is between 0.5 to 0.6 can still be considered adequate.

**Table 3. Analysis Results Outer Loading (Convergent Validity)**

	Communication	Supplier Relationship	Supply Chain Performance	Sustainable Procurement	Trust
C1	0.804				
C2	0.855				
C3	0.868				
C4	0.745				
SCP1			0.729		
SCP2			0.639		
SCP3			0.737		
SCP4			0.769		
SP1				0.712	
SP2				0.728	
SP3				0.784	
SP4				0.776	
SR1		0.742			
SR2		0.677			
SR3		0.699			
SR4		0.741			
T1					0.773
T2					0.692
T3					0.712
T4					0.720

Source: *SmartPLS Output 3.2.9*

Based on the results of table 3 above, it shows that the 5 variables used in this study are declared valid, because each indicator in each variable obtains a value *loading factor* > 0.6, that way it can be stated that the indicator of each variable is eligible for research.

**Tabel 4. Average Variance Extracted (AVE)**

	Average Variance Extracted (AVE)
<b>Communication</b>	0.671
<b>Supplier Relationship</b>	0.512
<b>Supply Chain Performance</b>	0.518
<b>Sustainable Procurement</b>	0.563
<b>Trust</b>	0.525

Source: SmartPLS Output 3.2.9

Based on the results of Table 4 above, it can be known that AVE is from the variable Communication

0.671, Supplier Relationship 0.512, Supply Chain Performance 0.518, Sustainable Procurement 0.563, Trust 0.525. This shows that the 5 variables have a value of more than 0.5, meaning that each variable has good discriminant validity.

### c) Validitas Diskriminan (Discriminant Validity)

#### 1. Cross Loadings

Cross Loadings is an indicator in factor analysis, where the indicator shows how well an indicator contains the variables that change it. A minimum value of 0.7 is required to ensure the indicators gather correctly on the respective variables. Although there are some indicators in Table 5 that show a correlation value of less than 0.7, they still show a tendency to gather with the relevant variables. This shows that the indicator can still be considered valid even if it cannot meet the specified minimum limit. Therefore, it is important to consider the context and relevance of each indicator.

**Table 5. Cross Loadings**

	Communication	Supplier Relationship	Supply Chain Performance	Sustainable Procurement	Trust
<b>C1</b>	<b>0.804</b>	0.410	0.217	0.202	0.155
<b>C2</b>	<b>0.855</b>	0.359	0.190	0.182	0.054
<b>C3</b>	<b>0.868</b>	0.404	0.205	0.197	0.097
<b>C4</b>	<b>0.745</b>	0.328	0.098	0.124	0.075
<b>SCP1</b>	0.109	0.330	<b>0.729</b>	0.618	0.336
<b>SCP2</b>	0.160	0.305	<b>0.639</b>	0.472	0.233
<b>SCP3</b>	0.194	0.292	<b>0.737</b>	0.528	0.287
<b>SCP4</b>	0.194	0.392	<b>0.769</b>	0.584	0.253
<b>SP1</b>	0.156	0.367	0.564	<b>0.712</b>	0.320
<b>SP2</b>	0.135	0.414	0.546	<b>0.728</b>	0.315
<b>SP3</b>	0.173	0.399	0.604	<b>0.784</b>	0.367
<b>SP4</b>	0.195	0.508	0.595	<b>0.776</b>	0.318
<b>SR1</b>	0.357	<b>0.742</b>	0.425	0.431	0.390
<b>SR2</b>	0.322	<b>0.677</b>	0.278	0.348	0.183
<b>SR3</b>	0.318	<b>0.699</b>	0.288	0.408	0.201
<b>SR4</b>	0.322	<b>0.741</b>	0.303	0.422	0.246

<b>T1</b>	0.108	0.341	0.390	0.385	<b>0.773</b>
<b>T2</b>	0.041	0.237	0.278	0.305	<b>0.692</b>
<b>T3</b>	0.057	0.219	0.215	0.285	<b>0.712</b>
<b>T4</b>	0.138	0.248	0.208	0.282	<b>0.720</b>

Source : SmartPLS Output 3.2.9

### 2. Fornell-Larcker Criterion

Discriminant validity is by comparing the square root of AVE for each construct with the correlation values between constructs in the model (Alsehaimi et al., 2024). The good discriminant validity shown from the square root of AVE for each construct is greater than the correlation between constructs in the model. Based on the results of table 6, the results of the criteria Fornell-Lacker each square root of AVE is variable greater than the correlation between latent constructs so as to meet the discriminant liquidity.

**Table 6. Fornell-Larcker Criterion**

	Communication	Supplier Relationship	Supply Chain Performance	Sustainable Procurement	Trust
Communication	0.819				
Supplier Relationship	0.462	0.715			
Supply Chain Performance	0.226	0.460	0.720		
Sustainable Procurement	0.221	0.565	0.770	0.750	
Trust	0.120	0.367	0.388	0.440	0.725

Sources: Output SmartPLS 3.2.9

### 3. Heterotrait-Monotrait Ratio (HTMT Ratio)

An HTMT value of less than 0.9 means that it is very good and discriminant validity has been achieved. Here are the HTMT values for each indicator on the model. The results of table 7 show that the majority of indicators are good so that they can still achieve discriminant validity.

**Tabel 7. Heterotrait-Monotrait Ratio (HTMT Ratio)**

	Communication	Supplier Relationship	Supply Chain Performance	Sustainable Procurement	Trust
Communication					
Supplier Relationship	0.603				
Supply Chain Performance	0.302	0.657			
Sustainable Procurement	0.271	0.785	1.070		
Trust	0.151	0.506	0.537	0.601	

Source: SmartPLS Output 3.2.9

#### d) Reliability

Performing a reality test can be measured by using cronbach's alpha and composite reliability. A variable can be considered reliable if it has a value cronbach's alpha and composite reliability 0.06 to more than 0. Composite Reliability is a better size compared to Commont's Alpha. Results of the feasibility test Cronbach's Alpha and Composite Reliability Table 8 shows that the value is more than 0.06 to more than 0.07 so it can be said that the construct is reliable (Ammad et al., 2021).

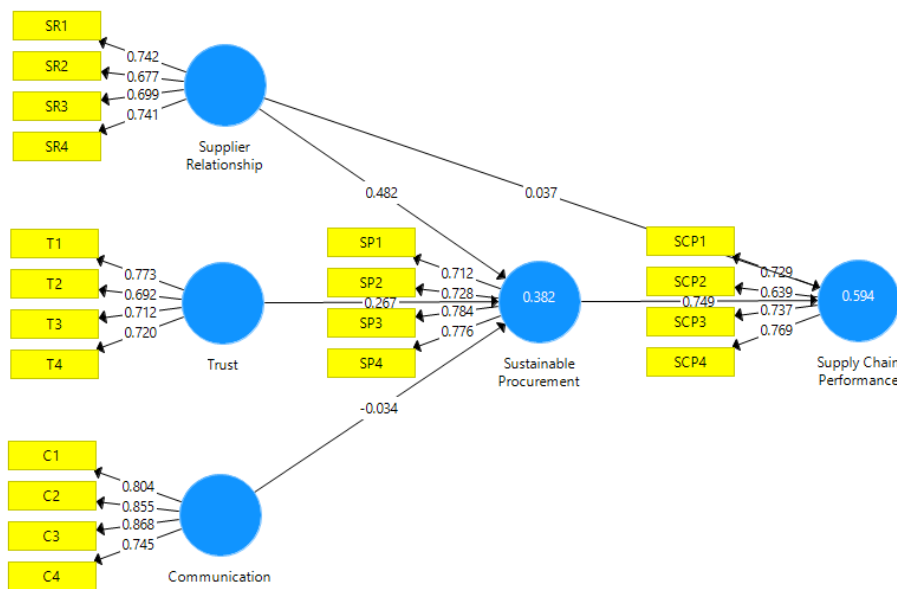
**Table 8. Cronbach's Alpha dan Composite Reliability**

	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>
<b>Communication</b>	0.838	0.891
<b>Supplier Relationship</b>	0.684	0.807
<b>Supply Chain Performance</b>	0.690	0.811
<b>Sustainable Procurement</b>	0.741	0.837
<b>Trust</b>	0.701	0.815

Source: SmartPLS Output 3.2.9

**e) Results of Structural Model Analysis (Inner Model) and Hypothesis Test**

Structural model testing or inner model can be done by looking at the relationship or influence between latent variables, assessing the degree of conformity (Goodness of Fit) the model that is produced, and looks at the relationship or influence between constructs, significant values, and R-Square (R2) of the research model. Measurement analysis using SmartPLS 3.2.9 shows the following images:



Source: SmartPLS Output 3.2.9

**Figure 2. Results of Structural Model Analysis (Inner Model)**

This process is useful to explain the strong relationship or influence of independent latent variables on dependent variables by using a measurement standard of 0.75 is declared strong, 0.50 is declared moderate, and 0.25 is declared weak (Alsehaimi et al., 2024). The table below is the approximate result *R-Square* by using SmartPLS 3.2.9:

**Table 9. R-Square Results**

	<b>R Square</b>	<b>R Square Adjusted</b>
Supply Chain Performance	0.594	0.590
Sustainable Procurement	0.382	0.373

Source: SmartPLS Output 3.2.9

Value *R-Square* for the variable *supply chain performance* is 0.594 and *R-Square adjusted* 0.590, which means that SMM and SE are able to explain the variable *Supply Chain Performance* 59.4% and 59% while the remaining 41.6% and 41% were explained by other variables not present in the model. Conform to values *R-square* > 0.50 shows the prediction results in the category "**strong**" (Alsehaimi et al., 2024). Value *R-square* and *R-square adjusted* on the *Sustainable Procurement* are 0.382 and 0.373, which means SMM, SE and *P value* able to explain *Sustainable Procurement* were 38.2% and 37.3% while the remaining 61.8% and 63.7% were explained by other variables not included in the model. In accordance with the criteria, the *R-square* and *R-Square adjusted* < 0.50 shows the prediction results in the category "**moderate**" (Alsehaimi et al., 2024).

In table 10 *Path Coefficients* is the *output* to see the direct influence between other variables. In this case, it is done by *bootstrapping* the sample. Test results with *bootstrapping* from SmartPLS analysis 3.2.9. The results of this analysis are important to understand the dynamics between the variables studied. Thus, the information obtained can contribute to the development of theories from practices in related fields.

**Tabel 10. Path Coefficients**

Hipotesis	<i>Path Coefficiens</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>T Statistics ( O/STDEV )</i>	<i>P Values</i>	<i>Decision</i>
H4 = C -> SP	-0.034	-0.026	0.050	0.678	<b>0.498</b>	<i>Not Supported</i>
H1 = SR -> SCP	0.037	0.041	0.071	0.518	<b>0.604</b>	<i>Not Supported</i>
H2 = SR -> SP	0.482	0.474	0.107	4.516	<b>0.000</b>	<i>Supported</i>
H5 = SP -> SCP	0.749	0.746	0.057	13.128	<b>0.000</b>	<i>Supported</i>
H3 = T -> SP	0.267	0.272	0.112	2.387	<b>0.017</b>	<i>Supported</i>

Source: *Smart PLS Output 3.2.9*

Table *Path Coefficients* present a direct influence on the variable, including the *Coefficients*, *T Value effect size* and *Confidence Intterval*. This finding can be explained by the contexts between the interrelated variables. Studies can analyze the value and direction of influence between variables. Based on table 10, it can be concluded that the results of the analysis of each hypothesis in this study can be described as follows:

1. The Influence of *Supplier Relationship* on *Supply Chain Performance* (H1)

The first hypothesis to test the influence *Supplier Relationship* against *Supply Chain Performance* did not receive strong empirical support ( $\beta = 0.037$ ,  $t = 0.518$ ,  $p = 0.604$ ). These results show *supplier relationship* has no effect on *supply chain performance*. Based on these results, it can be concluded that *Supplier Relationship* negative and insignificant effects on *Supply Chain Performance*.

2. The Influence of *Supplier Relationship* on *Sustainable Procurement* (H2)

The second hypothesis that tests the influence *supply chain strategy* against *supply chain performance* There is strong empirical support ( $\beta = 0.482$ ,  $t = 4.516$ ,  $p = 0.000$ ). These results confirm the H2 hypothesis and are in line with the findings of previous research. *Sustainable Procurement* highly dependent on *Supplier Relationship* good. Based on these results, it can be concluded that *Supplier*

*Relationship* proven to have a positive or significant effect on *Sustainable Procurement*.

3. The Influence of *Trust* on *Sustainable Procurement*

The third hypothesis shows that *Trust* has a positive and significant influence on *Sustainable Procurement* ( $\beta = 0.267$ ,  $t = 2.387$ ,  $p = 0.017$ ). The results of this analysis support the H3 hypothesis and show that *Trust* affects *Sustainable Procurement* in the company. The results of this analysis support H3 and show that *Trust* has a positive or significant effect on *Sustainable Procurement*.

4. The Influence of *Communication* on *Sustainable Procurement*

The fourth hypothesis shows that *Communication* has a negative and insignificant influence on *Sustainable Procurement* ( $\beta = -0.034$ ,  $t = 0.678$ ,  $p = 0.498$ ). The results of this analysis do not support the H4 hypothesis and show that *Communication* has no effect on *Sustainable Procurement* in the company. The results of this analysis do not support H4 and show *Communication* negative or insignificant effect on *Sustainable Procurement*.

5. The Effect of *Sustainable Procurement* on *Supply Chain Performance*

The fifth hypothesis shows that *Sustainable Procurement* has a positive and significant effect on *Supply Chain Performance* ( $\beta = 0.749$ ,  $t = 13.128$ ,  $p = 0.000$ ). The results of this analysis support the H5 hypothesis and show that *Sustainable Procurement* has an effect on *Supply Chain Performance* in the company. The results of this analysis support H4 and show *Sustainable Procurement* has a positive or significant effect on *Supply Chain Performance*.

**Table 11. Spesific Indirect Effect**

Hipotesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Decision
H8 = C -> SP -> SCP	-0.026	-0.019	0.038	0.678	0.498	Unproven
H6 = SR -> SP -> SCP	0.361	0.355	0.090	4.012	0.000	Proven
H7 = T -> SP -> SCP	0.200	0.202	0.082	2.434	0.015	Proven

Source: SmartPLS Output 3.2.9

The results of table 11 *Specific Indirect Effect* showed that most of the relationship paths between variables in this study model were significantly positive, while there was one path that was not significant because the T-statistic value was below the threshold and the p-value exceeded 0.05 so there was no real influence on the relationship. Studies can analyze the value and direction of influence between variables. Based on table 11, it can be concluded that the results of the analysis of each hypothesis in this study can be described as follows:

1. The Influence of *Supplier Relationship* on *Supply Chain Performance* through *Sustainable Procurement* (H6) mediation

Analysis results *Supplier Relationship* through *Sustainable Procurement* Wed *supply chain performance* statically significant ( $\beta = 0.361$ ,  $t = 4.012$ ,  $p = 0.000$ ). The results of this analysis confirm that H<sub>6</sub> Stating the relationship A good relationship with suppliers can improve supply chain performance, and this influence is mediated by continuous procurement. With that, continuous procurement can serve as an important binder and allow relationships with effective suppliers to lead to better performance. The results of this study

support H6 and the results are that *Sustainable Procurement* have positive and significant results among the variables *Supplier Relationship* and *supply chain performance*.

2. The Influence of *Trust* on *Supply Chain Performance* through *Sustainable Procurement* (H7) mediation

Analysis results *Trust* through *Sustainable Procurement* Wed *supply chain performance* statistically significant ( $\beta = 0.200, t = 2.434, p = 0.015$ ). The results of this analysis confirm that H7 expresses confidence can improve supply chain performance, and this influence is mediated by sustainable procurement. With that, continuous procurement can serve as an important link and allow trust to lead to better performance. The results of this study support H7 and the results are that *Sustainable Procurement* have positive and significant results among the variables *Trust* and *supply chain performance*.

3. The Effect of *Communication* on *Supply Chain Performance* through *Sustainable Procurement* (H8) mediation

Analysis results *Communication* through *Sustainable Procurement* Wed *supply chain performance* not statistically significant ( $\beta = -0.026, t = 0.678, p = 0.498$ ). The results of this analysis stated that communication was not affect the performance of the supply chain mediated by sustainable procurement. With that, sustainable procurement does not serve as an important link in the communication relationship with better performance. The results of H8's study stated that *Sustainable Procurement* have negative and significant results among the variables *Communication* and *supply chain performance*.

f) **Standardized Root Mean Square Residual (SRMR)**

**Tabel 12. Standardized Root Mean Square Residual (SRMR)**

	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<b>95%</b>	<b>99%</b>
<i>Saturated Model</i>	0.098	<b>0.060</b>	0.068	0.074
<i>Estimated Model</i>	0.099	<b>0.062</b>	0.071	0.079

Source: *SmartPLS Output 3.2.9*

The results of the analysis in this table show that the research model has an adequate level of compatibility based on the SRMR value (*Standardized Root Mean Square Residual*). The saturation model yields an SRMR value of 0.060, while the estimation model yields a value of 0.062. SRMR values smaller than 0.08 identify a good model fit, while values below 0.10 are still acceptable. Thus, the saturation model shows a good match, and the estimation model also shows a good match. This indicates that the model proposed in this study can be considered to have a fairly good match with the collected empirical evidence.

g) **Goodness of Fit Index**

To evaluate the overall fit of the model, this study uses an index of *Goodness of Fit* (GoF). GoF is an index that describes the fit of models globally by considering both measurement models and structural models. In this study, the average AVE value of all constructs was 0.558, which was obtained from the AVE value of each construct (0.671; 0.512; 0.518; 0.563; and 0.525). Meanwhile the mean R2 was 0.507, which was calculated from the R2 values on each endogenous variable (0.601 and 0.413). Based on this calculation, the GoF value obtained is 0.532.

The value of GoF can be categorized as  $\geq 0.10$  is said to be weak GoF,  $\geq 0.25$  is said to be GoF *moderate*,  $\geq 0.36$  said GoF is strong (Alsehaimi et al., 2024). With a GoF value of

0.532, this research model can be categorized as strong GoF. This identifies that this research model has a fairly good ability to explain the observed phenomenon and describe the relationships between variables with an adequate level of accuracy (Eze & Ameyaw, 2025). These results also support the validity of the results of the analysis conducted on the influence of effective supply chain strategies in improving flexibility and performance.

## CONCLUSION

This study has analyzed the influence of supplier relationships, trust, and communication on supply chain performance, focusing on sustainable procurement as a mediating variable. The results of the analysis show that strong relationships with suppliers contribute positively to operational efficiency and customer satisfaction, which in turn improves overall supply chain performance. This is in line with previous findings that show that harmonious collaboration between companies and suppliers can improve delivery accuracy, reduce lead times, and lower operational costs (Amoako-Gyampah et al., 2019; Gu et al., 2023). Thus, good relationships with suppliers are essential to achieve sustainability and efficiency goals in procurement.

In the context of sustainable procurement, the results show that strong relationships with suppliers not only improve supply chain performance directly, but also through environmentally friendly procurement practices. When companies establish effective and open communication with suppliers, they can more easily implement innovative solutions that support sustainability (Emon et al., 2024). Trust between companies and suppliers is proving to be a key element in driving the collaboration necessary for sustainable procurement success. High trust allows suppliers to share strategic information, so companies can make better decisions in supporting sustainability initiatives (Cooper, 2024).

Although some hypotheses, such as the influence of communication on sustainable procurement, do not receive significant empirical support, the study emphasizes the importance of good collaboration in supply chains. The study model showed a strong match with a Goodness of Fit (GoF) value of 0.532, which suggests that this model is effective in explaining the relationship between the variables studied. This suggests that the implementation of a sustainable procurement strategy can strengthen the relationship between suppliers and supply chain performance.

Recommendations for further research include an exploration of sustainable procurement practices across various industries and their impact on long-term performance. These findings are expected to provide valuable insights for companies in managing relationships with suppliers and implementing sustainable procurement to improve supply chain performance. In addition, it is important to continue testing for other variables that may affect the relationship between sustainable procurement, trust, and communication with supply chain performance.

Overall, the study concludes that sustainable procurement serves as an important link in the relationship between companies and suppliers, allowing both parties to collaborate more effectively and achieve better outcomes in supply chain performance. Thus, supporting and developing trusting relationships with suppliers is an important strategy that companies must adopt to improve competitiveness and sustainability in their supply chain operations.

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