THE INFLUENCE OF SUPPLIERS, KNOWLEDGE TRANSFER ON THE PERFORMANCE OF THE MSME FASHION SUPPLY CHAIN THROUGH SUSTAINABLE PROCUREMENT

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Abstract

The fashion industry, especially fashion MSMEs, has an important role in the economy but faces various challenges in supply chain management, such as dependence on suppliers, limited knowledge transfer, and low implementation of sustainable procurement. The complexity of the supply chain network and the lack of understanding of sustainability practices cause the performance of the MSME supply chain to be suboptimal. This study aims to analyze the influence of suppliers and knowledge transfer on the performance of the fashion MSME supply chain with sustainable procurement as a mediating variable. The research method used is a quantitative approach with data collection through questionnaires distributed to fashion MSME actors. Data were analyzed using statistical analysis methods to test the relationships between variables in the research model. The results show that suppliers and knowledge transfer have a positive effect on sustainable procurement and supply chain performance. In addition, sustainable procurement has been proven to mediate the relationship between suppliers and knowledge transfer on the performance of the fashion MSME supply chain. These findings indicate that strengthening relationships with suppliers and increasing knowledge transfer can support the implementation of sustainable procurement as well as improve supply chain performance. This study recommends that fashion MSMEs increase collaboration with suppliers, strengthen the knowledge sharing process, and develop an understanding of sustainability practices to improve the competitiveness and sustainability of their businesses in the future.

Keywords: Suppliers, Knowledge Transfer, Sustainable Procurement, Supply Chain Performance, Fashion MSMEs

INTRODUCTION

Global fashion is one of the important parts for people who follow fashion trends and also fashion MSMEs are part of the fashion industry. With a projected CAGR of 8.67% in the 2023–2028 period, the fashion industry's revenue is predicted to continue to increase until the market value reaches around $1.062 billion by 2028 (Qiao et al., 2025). This fashion has also always been an important part of human life. Fashion is always on top of the seasons and innovates every few months for their own brands. The fashion industry is known as fast fashion which has a bad impact on the environment (Nisrina et al., 2025). In addition, fashion always challenges their creativity to produce stunning works. The fashion industry has long been an important part of people's lives and cultural developments, and globally this market is growing rapidly thanks to the variety of consumer demand, textile innovations, as well as the increasing use of e-commerce (Qiao et al., 2025). The supply chain has always been a part of the fashion industry that can reach consumers globally. However, there is still relatively little research highlighting the topic of sustainable fashion, especially in the context of developing countries such as Indonesia (Nisrina et al., 2025). In development, fashion is highly dependent on complex supply chain networks and the role of suppliers in the supply of raw materials, so effective and sustainable supply chain management is an important factor in maintaining the performance of the fashion MSME sector (Zai et al., 2024).

A supply chain is a complex network that connects various entities that include various parties involved such as: suppliers, manufacturers, distributors, and customers. The performance of the supply chain is one of the important roles in carrying out the supply chain, namely the existence of suppliers and the knowledge transfer to various organizations in business performance. Supplier is the provision of resources, goods or products to entities such as governments and private companies in need according to research (Ayele et al., 2024). According to research (Marbun et al., 2020) knowledge transfer is defined as the process by which knowledge is transferred from one unit to another in an organization. Knowledge Transfer can help in the supply chain process by improving communication with employees so as to improve performance or good performance at work. In addition, in the supply chain performance process, knowledge transfer also plays an important role in assisting or facilitating sustainable procurement in sharing information to implement more effective strategies in selecting suppliers who meet the criteria in sustainability.

According to (Hasan & Habib, 2022) sustainable procurement, it is an important part of supply chain management that emphasizes the purchase of goods and services by considering environmental, social, and economic aspects. Supply chain performance reflects the level of effectiveness and efficiency of an organization in achieving its goals, which is measured through financial aspects, customer satisfaction, internal processes, and learning and growth (Balaji et al., 2021). In the context of increasingly fierce business competition, good supply chain management is very important so that the knowledge transfer process can run effectively and be able to improve organizational performance.

However, in practice, companies often face various problems due to the complexity of the supply chain involving many parties, such as suppliers, customers, and business partners. This condition causes the knowledge transfer process to be not optimal because each party has different ways of communication and information needs. These differences can hinder the flow of knowledge in the supply chain and weaken coordination between parties.(Reza et al., 2019). In addition, low communication intensity and limited

understanding of sustainability are also major obstacles in the implementation of sustainable procurement. The high level of uncertainty in the business environment requires companies to be more flexible in managing delivery times and production volumes to remain competitive.

Previous research has shown that employee performance has a positive effect on knowledge transfer, which confirms that employees play a role not only as task implementers, but also as the main driver in the knowledge sharing process within the organization (Reza et al., 2019). On the other hand, some studies have more discussed the role of suppliers in supply chain performance separately or knowledge transfer on individual organizational performance. However, there is still very limited research that examines the role of suppliers and knowledge transfer simultaneously with sustainable procurement as a mediating variable, especially in the context of fashion MSMEs.

This research was compiled to fill the research gap by developing a framework that integrates suppliers, knowledge transfer, sustainable procurement, and supply chain performance in one research model. The novelty of this study lies in the combination of the role of suppliers and knowledge transfer in supporting supply chain performance through sustainable procurement of fashion MSMEs, which is still rarely discussed in the supply chain management literature. Through this approach, the research is expected to not only make a theoretical contribution to the development of supply chain science, but also provide practical recommendations for fashion MSMEs in increasing supplier effectiveness, strengthening knowledge transfer, and optimizing the implementation of sustainable procurement.

REVIEW OF LITERATURE

The theoretical framework in this study is built on four main variables: suppliers, knowledge transfer, sustainable procurement, and supply chain performance. Suppliers play a strategic role in the supply chain as they contribute to the availability of raw materials, product quality, and the smooth production process. Effective relationships between companies and suppliers can support better coordination and collaboration in the supply chain. Furthermore, knowledge transfer is an important factor in improving an organization's ability to adapt to changing business environments, through the sharing of information, experience, and best practices among employees and with supply chain partners. Sustainable procurement serves as a mechanism that integrates economic, social, and environmental aspects into the procurement process, thereby encouraging more responsible and sustainable business practices. In addition, supply chain performance reflects the level of effectiveness and efficiency of the supply chain in achieving organizational goals, which is influenced by the quality of relationships with suppliers, the effectiveness of knowledge transfer, and the implementation of sustainable procurement. Thus, these four variables are interrelated in forming a supply chain system that can improve the performance and competitiveness of Fashion MSMEs**.**

H1 : Supplier to Sustainable Procurement

The hypothesis proposed is H1: Suppliers to Sustainable Procurement, in this study (Ayele, Shen, Mulugetta, et al., 2024) states that procurement through private suppliers requires competent governance arrangements to ensure the suitability of the entire structure of the energy sector in supporting the transition to sustainability. Based on the research

(Filippo Corsini et al., 2024), evaluating suppliers based on circular principles contributes positively to the implementation of sustainable procurement practices. Research by (Alhammadi et al., 2024) strategic relationships with suppliers has a positive influence on sustainable procurement. Research by (Fontana et al., 2021) Supplier involvement in the Sustainable Procurement process has a positive effect on the level of sustainability compliance in the supply chain. In addition, according to research (Holma et al., 2022), the level of interaction between buyers and suppliers during market dialogue has a positive effect on the successful implementation of Sustainable Procurement.

H2: Knowledge Transfer to Sustainable Procurement

The proposed hypothesis, namely H2: Knowledge Transfer to Sustainable Procurement, focuses on the role of knowledge transfer in supporting and strengthening the implementation of sustainable procurement. Based on their research.(Kabra et al., 2023), they conducted a bibliometric analysis that showed that knowledge transfer is an important factor in building a network of sustainable procurement practices. The research by (Adjei-Bamfo et al., 2023) also supports this hypothesis through their systematic review of public procurement for innovation with a supplier sustainability perspective. Research by (Sönnichsen & Clement, 2020) Green and sustainable procurement requires a shared understanding of sustainability principles among stakeholders. Research by (Msakwa, 2023) The success of sustainable construction projects relies heavily on the transfer of knowledge to stakeholders regarding sustainable procurement techniques and practices. Research by (Berg et al., 2023) knowledge transfer through strategic and innovative partnerships is key in driving sustainable procurement change. In the (Saputra et al., 2024) context of electric vehicles, it is shown that increased knowledge transfer is capable of increasing the intention of adopting new technologies, even without major changes in attitudes.

H3: Sustainable Procurement to Supply Chain Performance

The H3 hypothesis states that the implementation of Sustainable Procurement contributes positively to sustainable supply chain performance. (Sánchez-Flores et al., 2022) found that sustainable procurement improves overall organizational performance in supply chain management, according to research (Asiedu et al., 2023) whereas showing that MSMEs in developing countries that implement sustainable procurement practices experience improved sustainable performance in their supply chain performance. This evidence reinforces the hypothesis that Sustainable Procurement has a positive effect on sustainable supply chain performance. According to research (Shofiullah, 2024), by adopting green procurement practices, organizations can optimize their supply chains, reduce environmental impact, and improve overall sustainability. According to research (Kannan, 2021) on multi-tier supply chains in Denmark showing that drivers for the implementation of sustainable procurement can strengthen the relationships between levels in the supply chain. Research (Cammarano et al., 2022) also shows that sustainable supply chains and SDG-oriented supply chains can apply business practices to procurement and distribution activities that can make a positive contribution to overall performance.

H4 : Suppliers to Supply Chain Performance

The hypothesis proposed is H4: Suppliers to Supply Chain Performance, in the study (Sharma et al., 2024) shows that the competence and responsibility of supplier sustainability, including the ability to monitor sub-suppliers, have a positive and significant impact on improving supply chain performance in the agro-food supply chain. The results of the

research (O' Connor et al., 2020) Supplier performance has been proven to have a positive and significant influence on supply chain performance, so that the better the supplier's performance, the better the company's supply chain performance The results (Purwanto & Juliana, 2022) show that the active involvement of suppliers in supporting decarbonization strategies and supply chain collaboration has a positive impact on improving the efficiency and sustainability of supply chain performance, especially in the construction industry. The results(Liu et al., 2021) show that suppliers to key customers have a positive effect on supply chain performance and this influence is stronger when supply vhain finance is adopted so that there is an improvement in financial performance and a reduction in risk. The results of the study (Štreimikienė et al., 2024) show that suppliers who implement sustainability practices and maintain quality consistently have been proven to improve efficiency and supply chain performance has a positive effect.

H5: Knowledge Transfer to Supply Chain Performance

The H5 hypothesis that knowledge transfer has an impact on supply chain performance is supported by several studies that identify the important role of knowledge transfer in improving supply chain efficiency and performance. Research (Zaid et al., 2023) emphasizes that knowledge transfer and supply chain quality management are key mediators that improve organizational performance. In effective knowledge transfer research (Demarinis Loiotile et al., 2022), it significantly improves supply chain performance in MSMEs through increasing innovation and process efficiency. Research by (Ren et al., 2023) effective Knowledge Transfer significantly improves supply chain performance through innovation and process efficiency. Research by (Reza et al., 2019) which highlights the important role of knowledge transfer in increasing flexibility and technology adoption in supply chain performance. Research underscores that external knowledge transfer allows supply chains to become more adaptive and responsive to change. Overall, these two studies show that knowledge transfer has a significant impact on supply chain performance, proving that the H5 hypothesis is true.

H6: Knowledge Transfer, Sustainable Procurement, Supply chain performance

The H6 hypothesis, which states that knowledge transfer and sustainable procurement have a positive impact on supply chain performance, is supported by various studies in the literature. This research (Nazam et al., 2020) shows that knowledge transfer through knowledge management practices supports sustainable procurement and improves supply chain performance. (Chiang & Chuang, 2024) Environmental-related knowledge transfer drives sustainable procurement and contributes to improved supply chain performance. In addition, (Arora et al., 2020)it adds evidence that environmental collaboration and sustainable strategic procurement strengthen an organization's sustainability performance, especially when supported by a strong supplier base. Thus, it can be concluded that H6 is valid, as various studies show that knowledge transfer and sustainable procurement play an important role in improving supply chain performance, both from environmental and operational aspects.

Hypothesis 7 : Suppliers, Sustainable procurement, Supply Chain Performance

The H7 hypothesis that sustainable suppliers and procurement have a positive impact on supply chain performance is supported by various literature studies. Research of (Abuzaid et al., 2024) suppliers who excel in quality, price, delivery, flexibility, and environmentally friendly practices encourages the implementation of sustainable procurement which

ultimately improves supply chain performance. Sustainable procurement acts as a mediating variable that bridges the influence of suppliers on supply chain performance, where the effectiveness of sustainable procurement determines the extent to which sustainability values are able to improve efficiency, compliance, and overall supply chain performance (Fontana et al., 2021). According to (Kähkönen et al., 2025) research, sustainable procurement is able to develop the supply market *and* improve supply chain performance through dynamic capabilities (sensing, seizing, and transforming capabilities) that strengthen collaboration with suppliers.

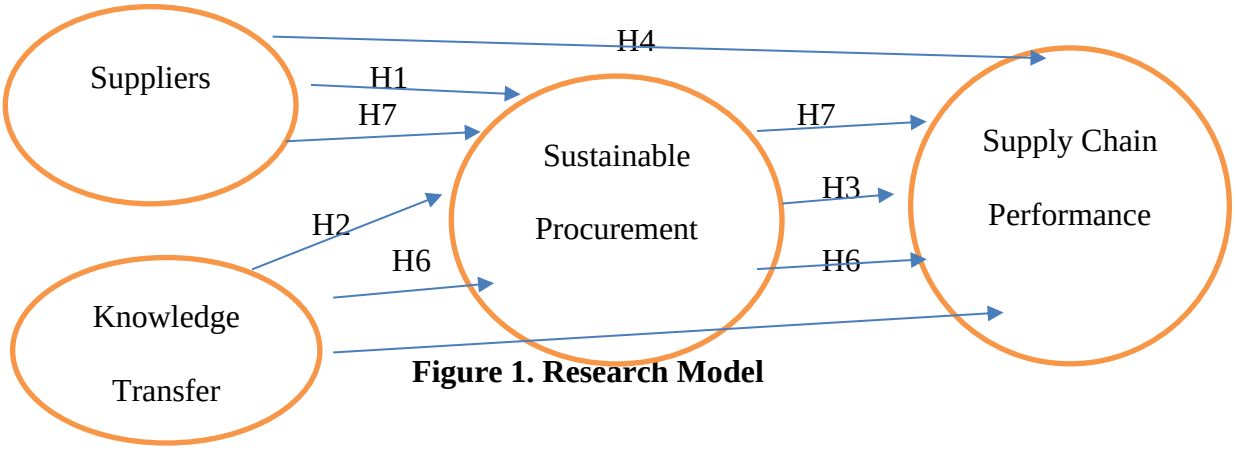


Figure 1. Research Model

RESEARCH METHOD

Type of Research

This research method is designed using a quantitative approach with a survey design to analyze the influence of Suppliers and Knowledge Transfer by mediating Sustainable Procurement on Supply Chain Performance. According to Johnson & Christensen (2014:56) in this study (Farian Thaib et al., 2023), the quantitative method is a research method based on the philosophy of positivism, useful for researching a sample in a population. The quantitative approach was chosen because it allows the collection of statistically analyzeable numerical data to test the relationships between predetermined variables. In this study, the independent variables analyzed are Suppliers and Knowledge Transfer and mediation, namely Sustainable Procurement, while the dependent variables of the Population in this study are MSMEs engaged in the Fashion sector in Indonesia that have applied the principles of Sustainable Procurement in their operational activities. The research sample reached 160 respondents who were selected using the purposive sampling technique, namely by selecting MSMEs who have more than 1 year of experience in carrying out Sustainable Procurement practices. The selected respondents are the *Owners* or Staff who are directly involved in the management of the supply chain and relationships with suppliers, as well as those involved in the implementation of Knowledge Transfer within the company.

Data research Methodology

The research instrument used was a questionnaire distributed using Google Form to Owners or Staff on a Linear scale of 1-5 to measure respondents' perceptions regarding the

influence of Suppliers and Knowledge Transfer by mediating Sustainable Procurement on Supply Chain Performance. This questionnaire is designed to cover items relevant to each research variable. Each section of the questionnaire measures specific aspects of each variable: Supplier quality, Knowledge Transfer effectiveness, and implementation of Sustainable Procurement, as well as their impact on supply chain performance. The data collection procedure was carried out by distributing questionnaires directly to respondents on the media platform that had been selected. Data collection was carried out in a period of 1 week, questionnaires were distributed through the media platform.

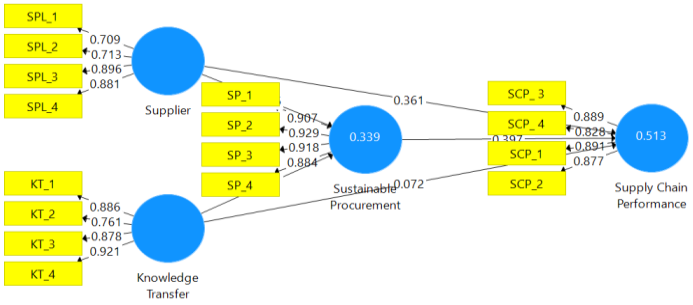
Data Analysis Method

The data analysis in this study began with descriptive statistical analysis to describe the characteristics of the respondents and provide an initial picture of their perceptions regarding supplier relationships, knowledge transfer, sustainable procurement, and supply chain performance in Fashion MSMEs. Descriptive statistics are used to summarize the respondent profile and ensure an initial understanding of the distribution of the data before hypothesis testing. Furthermore, hypothesis testing and structural model evaluation were carried out using Structural Equation Modeling with the Partial Least Squares (PLS-SEM) approach, using SmartPLS software version 3.2.9, with SPSS used for data filtering, coding, and preliminary analysis. The PLS-SEM method was chosen for its ability to simultaneously examine the complex relationships between latent variables, including the direct effects of suppliers and knowledge transfer on supply chain performance, as well as the mediating role of sustainable procurement.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistical analysis of respondent demographic data was conducted to understand the general characteristics of the participants in this study. This study uses SPSS in processing demographic data. The information presented includes several variables such as gender, age, education level, income per month, the type of products to be sold and where your MSMEs usually sell fashion products which aims to provide a comprehensive picture of the respondent's profile. Descriptive statistics is a statistical method used to analyze data by presenting or describing the data that has been obtained as it is, without aiming to draw general conclusions or make generalizations. (Khumaini & Nadiya, 2021). This data was collected from December 2024 – April 2025 with a total of 160 respondents.



Source : *SmartPLS Output* 3.2.9

Table 1. Demographics

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pria / Male	14	8,8	8,8	8,8
	Wanita / Female	146	91,3	91,3	100
	Total	160	100	100	

Final Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	49	30,6	30,6	30,6
	S1	28	17,5	17,5	48,1
	High School/Vocational School	82	51,3	51,3	99,4
	SMP	1	0,6	0,6	100
	Total	160	100	100	

Monthly Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< Rp. 5,000,000	39	24,4	24,4	24,4
	> 50.000.000	1	0,6	0,6	25
	IDR 10,000,000 - IDR 20,000,000	21	13,1	13,1	38,1
	IDR 20,000,000 - IDR 30,000,000	1	0,6	0,6	38,8
	IDR 30,000,000 - IDR 40,000,000	1	0,6	0,6	39,4
	IDR 5,000,000 - IDR 10,000,000	97	60,6	60,6	100
	Total	160	100	100	

Types of fashion products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Shirts	133	83,1	83,1	83,1
	Shoes	15	9,4	9,4	92,5
	Bag	12	7,5	7,5	100
	Total	160	100	100	

Where your MSMEs usually sell fashion products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Online marketplaces	14	8,8	8,8	8,8

(Shopee, Tokopedia, etc.)				
Social media (Instagram, Facebook, etc.)	42	26,3	26,3	35
Everything	10	6,3	6,3	41,3
Physical Stores	94	58,8	58,8	100
Total	160	100	100	

Source : SPSS

The table above shows that the majority of MSME actors in the Gender data are women (91.3%) or 146 women, showing that the MSME fashion sector is in great demand by women while men show 8.8% or 14 men, which is quite a lot. Most MSME actors have a high school/vocational education background (51.2%), followed by Diploma (30.6%), and S1 education (17.5%), a small number have junior high school education (0.6%), which can be concluded with the most high school/vocational school background. MSME actors have monthly income from a total of 160 MSMEs recorded, in the range of IDR 5 million – IDR 10 million (60.6%). Meanwhile, (24.4%) MSME actors generate an income of less than IDR 5 million, and only (13.1%) have an income between IDR 10 million and IDR 20 million. The rest, around (2%) MSME actors have an income above Rp 20 million, with only one actor having an income of more than Rp 50 million. It can be concluded that the majority of MSME actors have a monthly income, which is around 5 million to 10 million per month.

Types of fashion products produced by MSMEs. Of the total 160 units recorded, 83.1% (133 units) were clothing products, 9.4% (15 units) were shoes, and 7.5% (12 units) were bags. It can be concluded that clothing products are the most dominant main product in the MSME fashion industry, confirming that the main focus of business in this sector is clothing production. These figures illustrate that fashion MSMEs produce more clothes compared to other fashion products such as shoes and bags. Where your MSMEs usually sell fashion products in the data shows that Market Place is online (8.8%), Social Media (26.3%), Physical Stores (58.8%) and all (6.3%). It was concluded that MSMEs Fashion Products sell their products in Physical Stores.

Validity Test

The validity test carried out using Smart PLS for variable data processing, namely Suppliers, Knowledge Transfer, Sustainable Procurement and Supply Chain Performance ensures that the research instrument can measure the construct in question accurately and consistently. Validity Test is a concept that shows the extent to which an instrument is able to measure according to the purpose or construct to be measured. Validity is tested through VIF, Convergent Validity can be seen from (Outer Loadings, AVE), Discriminant Validity (Cross Loadings, Fornel Larcker, HTMT Ratio).(Khumaini & Nadiya, 2021)

Common Method Bias Test: Collinearity Statistics / VIF

Tabel 2. *Collinearity Statistic* (VIF)

	LIVE
SCP_ 3	2.721
SCP_ 4	1.931
SCP_1	2.980

SCP_2	2.682
SP_1	3.400
SP_2	4.210
SP_3	3.778
SP_4	2.801
SPL_1	2.483
SPL_2	2.518
SPL_3	2.696
SPL_4	2.582
KT_1	2.868
KT_2	1.893
KT_3	2.712
KT_4	3.272

Source: *SmartPLS Output* 3.2.9

Based on the output results of the Variance Inflation Factor (VIF) value in each indicator, it is known that all indicators have a VIF value below 5, with a value range between 1,893 (KT_2) to 4,210 (SP_2), so it can be concluded that the data is valid or free from the Common method Bias because the VIF value can be said to be valid if it is below 5.(Hair Jr, 2019)

Convergent Validity Test of Outer Loadings & AVE values

a. Outer Loadings

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

	Supply Chain Performance	Suppliers	Sustainable Procurement	Knowledge Transfer
SCP_ 3	0.889			
SCP_ 4	0.828			
SCP_1	0.891			
SCP_2	0.877			
SP_1			0.907	
SP_2			0.929	
SP_3			0.918	
SP_4			0.884	
SPL_1		0.709		
SPL_2		0.713		
SPL_3		0.896		
SPL_4		0.881		
KT_1				0.886
KT_2				0.761
KT_3				0.878
KT_4				0.921

Source: *SmartPLS Output* 3.2.9

The ideal Outer Loading value is more than 0.6 which meets the rule of thumb. (Othman & Yusuf, 2022)

- The Supply Chain Performance of all indicators SCP_1-SCP_4 having a load greater than 0.6 can be declared to → be Valid.

-Sustainable Procurement of all indicators SP_1-SP_4 have a loading greater than 0.6 can be declared as → Valid.

-Suppliers of all indicators SPL_1-SPL_4 have a load of more than 0.6 can be declared as → Valid.

- Knowledge Transfer of all indicators KT_1-KT_4 have a loading of more than 0.6 can be declared as → Valid.

It can be concluded that the Convergent Validity Test of the Outer Loading Value for each indicator is more than 0.6 so that the validity test has been met.

AVE

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

	Average Variance Extracted (AVE)
Supply Chain Performance	0.760
Suppliers	0.648
Sustainable Procurement	0.827
Knowledge Transfer	0.746

Source: *SmartPLS Output* 3.2.9

The Convergent Validity based on AVE must be more than 0.5. The results of each AVE indicator from Supply Chain Performance, Suppliers, Sustainable Procurement and Knowledge Transfer are more than 0.5 so that it can be concluded that the Convergent Validity Test has been met(Cheung et al., 2024).

Validitas Discriminant

a. Cross Loadings

Table 5. ***Cross Loadings***

	Supply Chain Performance	Suppliers	Sustainable Procurement	Knowledge Transfer
SCP_ 3	**0.889**	0.587	0.532	0.459
SCP_ 4	**0.828**	0.469	0.635	0.468
SCP_1	**0.891**	0.546	0.526	0.499
SCP_2	**0.877**	0.570	0.490	0.501
SP_1	0.545	0.422	**0.907**	0.454
SP_2	0.586	0.478	**0.929**	0.544
SP_3	0.579	0.515	**0.918**	0.560

SP_4	0.571	0.507	**0.884**	0.437
SPL_1	0.389	**0.709**	0.253	0.486
SPL_2	0.305	**0.713**	0.212	0.424
SPL_3	0.601	**0.896**	0.532	0.735
SPL_4	0.600	**0.881**	0.555	0.615
KT_1	0.424	0.601	0.447	**0.886**
KT_2	0.392	0.674	0.301	**0.761**
KT_3	0.492	0.605	0.513	**0.878**
KT_4	0.569	0.656	0.583	**0.921**

Source: *SmartPLS Output* 3.2.9

All variables here are said to be valid because they are higher than other variables, even if there are those that are less than 7, they are still valid (Schuberth, 2021). Based on the results in the table, all indicators from Supplier (SPL), Knowledge Transfer (KT), Sustainable Procurement (SP), and Supply chain performance (SCP) show the highest loading value in their respective constructs. The SCP_1–SCP_4 indicator (0.891–0.828) shows that the Supply Chain Performance construct has the highest loading value in its original construct compared to other constructs from Suppliers, Knowledge Transfer, and Sustainable Procurement. The SPL_1-SPL_4 indicator (0.709-0.881) indicates that the supplier construct is higher than the other constructs of Knowledge Transfer, Sustainable Procurement, and Supply Chain Performance. The SP_1–SP_4 indicator (0.907–0.884) also shows that the Sustainable Procurement construct has the highest loading compared to other constructs. The KT_1–KT_4 indicator (0.886–0.921) shows that the Knowledge Transfer construct has the highest loading value on its original construct compared to the loading on other constructs. It can be concluded that the model has met the criteria for discriminant validity, as the cross-loadings exceed 0.7.

b. Fornell-Larcker Criterion

Table 6. ***Fornell-Larcker Criterion***

	Supply Chain Performance	Suppliers	Sustainable Procurement	Knowledge Transfer
Supply Chain Performance	**0.872**			
Suppliers	0.623	**0.805**		
Sustainable Procurement	0.627	0.530	**0.909**	
Knowledge Transfer	0.552	0.726	0.551	**0.864**

Source: *SmartPLS Output* 3.2.9

Based on the results of the discriminant validity test using the Fornell-Larcker Criterion, it can be seen that the root values of AVE (√AVE) of each construct, namely Supply chain performance (0.872), Supplier (0.805), Sustainable Procurement (0.909), and Knowledge Transfer (0.864) are all higher than their correlation values with other constructs in the model. This shows that each construct in this study has good discriminant validity, because the square root of each construct AVE is larger than the construct in the model (Cheung et al., 2024). Thus, it can be concluded that the model has qualified discriminant

validity and that the constructs used are unique and do not overlap significantly with each other.

c. HTMT Ratio

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

	Supply Chain Performance	Suppliers	Sustainable Procurement	Knowledge Transfer
Supply Chain Performance				
Suppliers	0.676			
Sustainable Procurement	0.686	0.541		
Knowledge Transfer	0.611	0.826	0.585	

Source: *SmartPLS Output* 3.2.9

Based on the discriminant validity test using the HTMT Ratio, it can be concluded that all discriminant validity is achieved because the table above shows that the overall correlation value between constructs is less than 0.9 (Roemer et al., 2021).

- **Supply Chain performance (SCP)**
  Supply chain performance has an HTMT value of 0.676 for Suppliers, 0.686 for Sustainable Procurement, and 0.611 for Knowledge Transfer. All three values show that there is no discrimination problem because all HTMT values are below the threshold value of 0.90. It can therefore be concluded that supply chain performance can be considered valid.
- **Supplier (SPL)**
  The Supplier construct shows an HTMT value of 0.541 for Sustainable Procurement and 0.826 for Knowledge Transfer. All of these values are below the tolerance limit of 0.90, so it can be concluded that the discriminatory validity of the Supplier is also met.
- **Sustainable Procurement (SP)**
  Sustainable Procurement has an HTMT value of 0.585 for Knowledge Transfer. All of these HTMT values are below the threshold of 0.90, so it can be concluded that Sustainable Procurement has good discriminant validity relative to other constructs.

Reliability Test

Reliability is an indicator that shows the level of reliability or consistency of a measuring instrument in producing reliable data.(Khumaini & Nadiya, 2021).Reliability test using Cronbach's alpha and composite Reliability.

Tabel 8. *Cronbach's Alpha*

	Cronbach's Alpha
Supply Chain Performance	0.894
Suppliers	0.830
Sustainable Procurement	0.930
Knowledge Transfer	0.887

Source: *SmartPLS Output* 3.2.9

Based on Cronbach's Alpha value table, all variables in this study show values above 0.7, it can be concluded that all constructs in this research model meet the validity test requirements if it is more than 0.7 (Hair Jr, 2019). The highest Cronbach's Alpha value is indicated by the Sustainable Procurement construct (0.930), followed by Supply chain performance (0.894), Knowledge Transfer (0.887), and Supplier (0.830). These values indicate that the indicators in each construct have a strong internal consistency in measuring variables.

a. Composite Reliability

Tabel 9. ***Cronbach's Reliability***

	Composite Reliability
Supply Chain Performance	0.927
Suppliers	0.879
Sustainable Procurement	0.950
Knowledge Transfer	0.921

Source: *SmartPLS Output* 3.2.9

Based on the above composite reliability table, it can be concluded that all constructs in this study have a very good level of reliability because it exceeds 0.7, which can be concluded to meet the requirements of the validity test because it exceeds 0.7 (Hair Jr, 2019). This can be seen from the composite reliability value for each variable, namely Supply chain performance (0.927), Suppliers (0.879), Sustainable Procurement (0.950), and Knowledge Transfer (0.921).

Inner Model

Path Coefficient

Path Coefficients show the magnitude, direction, and significance of the influence between latent variables.

A statistical T > 1.96 means a significant effect, and a P-Value < 0.05 means a significant effect (Hair Jr, 2019).

Tabel 10. ***Path Coefficients***

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Suppliers -> Supply Chain Performance	0.361	0.358	0.090	4.003	0.000
Supplier -> Sustainable Procurement	0.275	0.266	0.084	3.260	0.001
Sustainable Procurement -> Supply Chain Performance	0.397	0.395	0.073	5.397	0.000

Knowledge Transfer -> Supply Chain Performance	0.072	0.073	0.100	0.723	0.470
Knowledge Transfer -> Sustainable Procurement	0.351	0.361	0.084	4.200	0.000

Source: *SmartPLS Output* 3.2.9

H1: Suppliers have a significant impact on Supply Chain Performance

The test results show that the Supplier has a significant effect on Supply Chain Performance. The path coefficient value is 0.361 with *a t-statistic* of 4.003 and a *p-value* of 0.000 < 0.05**.** The first hypothesis (H1), which states that the Supplier has a positive effect on the Supply Chain Performance, is declared proven. This research is in line with research from (Sharma et al., 2024) which the competence and responsibility of supplier sustainability improve supply chain performance. This research is also in line with research (Liu et al., 2021) from the conclusion that suppliers to key customers improve supply chain performance and are getting stronger with the adoption of supply chain finance.

H2: Suppliers have a significant impact on Sustainable Procurement

The test results show that suppliers have a significant impact on sustainable procurement. The test results show that Knowledge Transfer and Sustainable Procurement also show significant results. The influence coefficient of 0.275 with a *t-statistic* value of 3.260 and *a p-value* of 0.000 indicates that this relationship is very strong and significant. Therefore, the second hypothesis (H2), which states that Knowledge Transfer has an effect on Sustainable Procurement, is proven. This research is in line with research by (Fontana et al., 2021) the involvement of suppliers in the Sustainable Procurement process has a positive effect on the level of sustainability compliance in the supply chain. In addition, according to research (Holma et al., 2022), the level of interaction between buyers and suppliers during market dialogue has a positive effect on the successful implementation of Sustainable Procurement.

H3: Sustainable Procurement has a Significant Effect on Supply Chain Performance

The test results show that Sustainable Procurement has a significant influence on supply chain performance. This is indicated by a coefficient of 0.397 with *a t-statistic* of 5.397 and *a p-value* of 0.000. Thus, the third hypothesis (H3) that states that Sustainable Procurement has an effect on supply chain performance is proven to be proven. This research is in line with the research (Sánchez-Flores et al., 2022) that found that Sustainable Procurement improves overall organizational performance in supply chain management, while showing that MSMEs in developing countries that implement Sustainable Procurement practices experience a sustainable improvement in their supply chain performance (Asiedu et al., 2023).

H4: Knowledge Transfer is not significant to Supply Chain Performance

The test results showed that Knowledge Transfer had a non-significant effect on Sustainable Procurement with a coefficient value of 0.072, *t-statistic* 0.723, and *p-value* of 0.470. This shows that the fourth hypothesis (H4) that states that the Knowledge Transfer is not significant to the supply chain performance is also not proven. This research is not in line with research that has found research by (Ren et al., 2023) knowledge transfer to significantly improve supply chain performance through innovation and process efficiency. In addition,

research by (Reza et al., 2019) which highlights the important role of knowledge transfer in improving flexibility and technology adoption in supply chain performance. This difference in results is due to the difference in the research context, where this researcher focuses on fashion MSMEs that still have limitations and applications in knowledge transfer to supply chain performance.

H5: Knowledge Transfer has a significant impact on Sustainable Procurement

The test results show that Knowledge Transfer has a significant influence on Sustainable Procurement. This is indicated by a coefficient of 0.351 with *a t-statistic* of 4.200 and *a p-value* of 0.000. Thus, the fifth hypothesis (H5), which states that Knowledge Transfer has an effect on Sustainable Procurement is proven. This research is in line with their research (Kabra et al., 2023) conducting a bibliometric analysis, which shows that knowledge transfer is an important factor in building a network of sustainable procurement practices.

Specific Indirect Specific

Specific Indirect Specific indicates the magnitude, direction, and significance of the mediation variable. A statistical T > 1.96 means a significant effect, and a P-Value < 0.05 means it has a significant effect (Hair Jr, 2019).

Table 11. ***Specific Indirect Effect***

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Suppliers -> Sustainable Procurement -> Supply Chain Performance	0.109	0.107	0.042	2.581	0.010
Knowledge Transfer -> Sustainable Procurement -> Supply Chain Performance	0.139	0.141	0.038	3.652	0.000

Source: *SmartPLS Output* 3.2.9

Hypothesis 6: Suppliers → Sustainable Procurement → Supply Chain Performance

The test also shows that the Supplier has an indirect effect on the Supply Chain Performance through Sustainable Procurement. The direct influence coefficient value was 0.109, with a t-statistic of 2.581 and a p-value of 0.010. Since the t-value is statistically above 1.96 and the p-value is below 0.05, this relationship is also statistically significant. Therefore, the sixth hypothesis (H6) which states that Suppliers have a direct influence on the performance of the supply chain through Sustainable Procurement is proven to be proven. This research is in line with the research of (Abuzaid et al., 2024) suppliers who excel in quality, price, delivery, flexibility, and environmentally friendly practices to encourage the implementation of sustainable procurement, which ultimately improves supply chain performance. Sustainable procurement acts as a mediating variable that bridges the influence of suppliers on supply chain performance, where the effectiveness of sustainable procurement determines the extent to which sustainability values are able to improve efficiency, compliance, and overall supply chain performance (Fontana et al., 2021).

Hypothesis 7: Knowledge Transfer → Sustainable Procurement → Supply chain performance

The test results show that Knowledge Transfer has a direct influence on the performance of the supply chain through Sustainable Procurement. The direct influence coefficient value is 0.139, with a t-statistic of 3.652 and a p-value of 0.000. Since the t-statistic value is greater than 1.96 and the p-value is less than 0.05, this relationship is statistically significant. Thus, the seventh hypothesis (H7) that Knowledge Transfer has a direct effect on the Supply Chain Performance through Sustainable Procurement is proven to be proven**.** This research shows (Nazam et al., 2020) that knowledge transfer through knowledge management practices supports sustainable procurement and improves supply chain performance. (Chiang & Chuang, 2024) Environmental-related knowledge transfer drives sustainable procurement and contributes to improved supply chain performance.

2. Mdel Fit

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Supply chain performance	0.458	0.470	0.072	6.402	0.000
Sustainable Procurement	0.344	0.354	0.051	6.738	0.000

A. R. Square

Table 12. ***R-Square Results***

Source: *SmartPLS Output* 3.2.9

The value of R squares > 0.50 indicates the prediction result in the "Strong" category while the value of R squares < 0.25 indicates the prediction result in the "Weak" category according to (Hair Jr, 2019).

1. Supply chain performance: The Original Sample value (O) is 0.458, which explains 45.8% of the variance of Supply chain performance, the sample Mean shows 0.470. The T Statistics value of 6,402 and the P value of 0.000 show very significant results. Although the R-squared is less than 0.50, its influence can be categorized as "Quite Strong" due to its high T-Statistics.
2. Sustainable Procurement: The Original Sample (O) value is 0.344, which explains 34.4% of the Sustainable Procurementvariance, the Sample Mean shows 0.354. The T Statistics value of 6.738 and the P value of 0.000 showed significant results. Although the R-squared is less than 0.50, its influence can be categorized as "Quite Strong" due to its high T-Statistics.

Both variables show very significant results with Supply chain performance having a slightly stronger influence compared to Sustainable Procurement, due to higher T Statistics and P Value on supply chain performance.

Standardized Root Mean Square Residual (SRMR)

Tabel 13. ***Standardized Root Mean Square Residual*** **(SRMR)**

	Saturated Model	Estimated Model
SRMR	0.093	0.093

Source: *SmartPLS Output* 3.2.9

The Rule of Thumb says that an SRMR value of less than 0.1. (Hair et al., 2019) indicates that the model is fit with the data. In this case, the SRMR values for **the Saturated**

Model (0.093) and **Estimated Model** (0.093) are both smaller than 0.1, indicating that both models match the data used. Thus, both models meet the SRMR criteria well and can be categorized as fit.

GoF (Goodness of Fit) Index

Formula:

GoF=$\sqrt{Comm \times R^2}$

Where:

- **Comm** is the average **of Average Variance Extracted (AVE).**
- **R²** is the **R-squared** value for each variable.

Calculation Steps:

1. **Calculating Comm** (AVE Average):
   - **Knowledge Transfer (AVE)** = 0.746
   - **Supplier (AVE)** = 0.648
   - **Supply chain performance (AVE)** = 0.760
   - **Sustainable Procurement(AVE)** = 0.827

   The average AVE (**Comm**) is calculated as:

$$Comm = \frac{0.746 + 0.648 + 0.760 + 0.827}{4} = 0.745$$

2. **Calculating R²** (R-squared):
   - **Supply chain performance (R²)** = 0.470
   - **Sustainable Procurement (R²)** = 0.354

   The average of R² (**R²**) is calculated as:

$$R^2 = \frac{0.470 + 0.354}{2} = 0.412$$

3. **Calculating GoF**:

   GoF=$\sqrt{0.745\ X\ 0.412}$ = = 0.640$\sqrt{0.298}$

Based on the calculations above, the GoF value is 0.640 Because the GoF is greater than 0.5, this model can be categorized in the "Strong" category, according to the applicable Goodness-of-Fit criteria . The criteria for GoF values were 0.10 (weak GoF), 0.25 (moderate GoF) and 0.36 (strong GoF) (Wulandari et al., 2025).

CONCLUSION

Based on the results of the study, it can be concluded that suppliers and knowledge transfer have a significant influence on sustainable procurement and supply chain performance in fashion MSMEs. Sustainable procurement acts as a mediator that strengthens the relationship between suppliers, knowledge transfer, and supply chain performance. In addition, the results of the study show that the implementation of sustainable procurement can improve the operational performance of MSMEs by strengthening relationships with suppliers and increasing efficiency in the flow of goods and information. The study also identifies challenges faced by MSMEs in implementing sustainable procurement, such as lack of training and adequate understanding of sustainability. Therefore, it is important for MSMEs to strengthen training on sustainable procurement and involve suppliers in the knowledge transfer process to improve their competitiveness and supply chain performance.

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