

## Analysis of the Effect of Trust and Information Sharing on Supply Chain Performance with Innovation as a Mediating Variable (Study on gula semut SMEs in Kulon Progo Regency)

Ardhia Rezkitiani Andiana<sup>1</sup>, Titik Kusmantini<sup>2</sup>, Nilmawati<sup>3</sup>

Universitas Pembangunan Nasional "Veteran" Yogyakarta<sup>1,2,3</sup>  
Jl. SWK Jl Ring Road Utara No. 104, Ngropoh, Condongcatur, Depok, Sleman, Daerah Istimewa Yogyakarta, Indonesia  
Correspondence email: [titik.kusmantini@upnyk.ac.id](mailto:titik.kusmantini@upnyk.ac.id)

### ARTICLE INFORMATION

#### Publication information

#### Research article

#### HOW TO CITE

Andiana, A. R., Kusmantini, T., & Nilmawati, N. Analysis of the effect of trust and information sharing on supply chain performance with innovation as a mediating variable (study on Gula Semut SMEs in Kulon Progo Regency). *International Journal of Applied Business and International Management*, 9(1), 58-72.

#### DOI:

<https://doi.org/10.32535/ijabim.v9i1.2914>

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Received: 20 February 2024

Accepted: 20 March 2024

Published: 20 April 2024

### ABSTRACT

This study aims to determine the effect of trust (X1), information sharing (X2) on supply chain performance (Y) mediated by Innovation SMEs. The population in this study were SMEs in Kulon Progo Yogyakarta. From the population taken 35 samples with non-probability sampling method. The model in this study uses Partial Least Square. And the results showed that trust and information sharing have a significant positive effect on supply chain performance mediated by SME Innovation. Applicative suggestions that can be applied are the need for trust between supply chain members. because there is still distrust between supply chain members which in the future can hinder supply chain performance. In addition, there is a need for innovations that can accelerate the performance of the supply chain such as the need for a sap drying oven, plastic caps so that the sap is not mixed with water and dirt and jerry cans are placed between 4 - 5 coconut trees which makes it easier to transport raw material supplies. With trust and information sharing can create these innovations that can affect supply chain performance.

**Keywords:** information sharing; innovation; SMEs; Supply Chain Performance; Trust

## **INTRODUCTION**

Competition in the business world is getting tougher from year to year, as the latest technology that continues to develop has opened up opportunities for innovation in creating more unique and up-to-date products. Manufacturers must be able to produce quality products that are in line with market developments and can keep low production costs. This factor can also be influenced by cooperation with partners such as raw material suppliers and other partners. One form of business actors who work with partners is Small and Medium Enterprises (SMEs).

Small and Medium Enterprises (SMEs) are business actors who are active in various fields or businesses to achieve business goals. In running SMEs, actors need to recognize and understand the factors that make them different or superior to competitors. These factors may include product quality, strategic positioning, higher production cost efficiency, or other elements that make them special. Gula semut is also highly recommended for people with diabetes so that blood sugar levels can be controlled (Ekon.go.id, 2018).

SMEs are spread in various regions in Indonesia, one of which is in Kulon Progo Regency. Kulon Progo Regency has a superior commodity in the agricultural sector and has a Regional Industrial Core Competency (KIID) established by the Ministry of Industry, namely the gula semut industry. Organic gula semut derived from coconut tree sap can attract the interest of business people. In addition to the higher price of gula semut compared to granulated sugar, there are also other benefits contained in this gula semut. Gula semut is an organic product, because it does not go through a refining process which reduces the content of vitamin B, calcium, potassium and iron, and the existence of the gula semut business can strengthen the growth of the sustainable agricultural sector.

The production process of gula semut also still uses conventional methods, namely at the thickening, crystallization and drying stages. The application of modern technology in the processing of gula semut has not been optimized while the increase in capacity, hygiene, and continuity is needed by the market. In conventional processing, processing 15-20 liters of nira will produce 3.5 kg of gula semut and takes 6-8 hours. According to the Hargotirto village official website, to process 80 kg of palm sugar manually requires 2 cubic meters of firewood.

Supply chain performance is not entirely satisfactory, this is supported by research from (Fadhilah et al., 2017) which states that the results of identifying supply chain performance at the collector level show satisfactory results, out of 8 collectors, seven of them have 100% performance efficiency. The performance of the gula semut supply chain at the company level from 4 gula semut companies, three of which have a supply chain performance efficiency of less than 100%. This indicates that the performance of the gula semut supply chain at the farmer and company levels has not been maximized. Not maximizing the performance of the supply chain is due to the high value of inputs while the resulting output is low. Output can be increased by increasing the value of delivery performance, order fulfillment and conformity of gula semut according to standards.

To improve the delivery performance of the gula semut supply chain, the delivery of gula semut should take less than 7 days. Because the average farmer partner waits for the gula semut to be collected as needed and sent. The difficult road conditions in the research area also cause the delivery to be less smooth. Improving delivery performance

needs to be done which aims to ensure the percentage of orders delivered on time in accordance with consumer desires (Fadhilah et al., 2017).

Existing literature reveals that there is a relationship between trust and supply chain performance mediated by innovation (Gwaltu & Mrisho, 2023). Trust facilitates strong relationships that are at the core of operational functions and supply chain performance (Yoshizaki et al., 2018). Trust is an important variable to explain and predict the mechanism of supply chain performance in a company for the better (Jajja et al., 2014). Trust is not a replaceable tool to improve supply chain performance but rather a complement for supply chain performance to run well (Charterina et al., 2018). Trust has an important contribution in increasing innovation. Innovation is not fixated on technological innovation alone but innovation of ideas in running a business (Gwaltu & Mrisho, 2023). Some studies warn of the negative effects of trust where over-trust leads to relational inertia and increases the likelihood of supply chain members using deception and coercion strategies for their own benefit (Villena et al., 2011). Trust and information sharing can also improve supply chain performance (Owot et al., 2023).

The organization's supply chain performance is more effective and efficient if the organization pays attention to information sharing (Kusmantini et al., 2020). Information sharing means that actors have the will and want to establish connectivity with other actors with the aim of helping each other smooth the flow of information and improve supply chain performance (Fawcett et al., 2007). When the company prioritizes information flow over materials, the company will experience efficient utilization of operational flow (Rashid & Rasheed, 2022). Information sharing will reduce the impact of the bullwhip effect, which helps improve supply chain performance (Flynn et al., 2010). Information sharing is important in improving supply chain performance. Information sharing can help SMEs to realize external changes in the environment, understand market trends, seize market opportunities, increase market share and finally to improve performance with support's partner (Sujatmika et al., 2023). Some organizations do not share information with supply chain members because the organization is afraid of internal information being disseminated by supply chain members, which leads to losing competitive advantage in the market (Ahmed, 2022). However, information sharing can improve the performance of the supply chain. An integrated information system throughout the supply chain will make it easier for companies to innovate and develop new products (Setyawan Firmansyah & Siagian, 2022).

Innovativeness will lead to higher firm performance (Hurley et al., 2005). Openness to new ideas that support efficiency administration and adoption of new technologies in the supply chain can accumulate improvements in supply chain performance (Panayides & Lun, 2009). Innovation can solve business problems that aim for future success (Hurley et al., 2005). Innovation can be created if there is a business problem conveyed by supply chain members by adhering to trust between supply chain members (Gwaltu & Mrisho, 2023 and Setyawan Firmansyah & Siagian, 2022). Other studies argue that the number of innovations does not affect the performance of the supply chain, it will hinder the performance of the supply chain (Arsawan, 2023).

## **LITERATURE REVIEW**

### **Supply Chain Management**

Supply chain management is the process of managing the flow of information, operations and products and services across internal and external networks (Russell & Taylor, 2011). Supply chain management mentions supply chain management as the management of activities that involve planning, procurement, production, delivery, and re-management of products or services with the aim of meeting customer needs

efficiently and effectively (Syofya & Chatra, 2022). The purpose of the supply chain is to be able to assist companies in formulating appropriate planning strategies. This goal is the basis for identifying the steps that need to be taken in managing the supply chain effectively and efficiently (Syofya & Chatra, 2022).

### **Supply chain performance**

Supply chain performance is the activities of the supply chain to meet the needs of end customers, including availability of goods, on-time delivery, and inventory of supply chain capacity, which are carried out as responsively as possible. Supply chain performance refers to the expansion of supply chain activities in meeting the needs of end customers, including product availability, on-time delivery, and all necessary inventory and capacity in the supply chain to provide responsive performance (Hausman, 2005).

Supply chain performance measurement is one of the important ways to provide a deeper understanding of the supply chain and improve overall performance (Chen & Paulraj, 2004). Therefore, supply chain performance measurement can be used to measure how effective and efficient the supply chain process is. According to (Panayides & Lun, 2009), the indicators of supply chain performance research are: 1) delivery reliability (SCP1), 2) responsiveness (SCP2), 3) cost reduction (SCP3), 4) lead time (SCP4) 5) conformance to specifications (SCP5), 6) process improvement (SCP6), 7) time to market (SCP7).

### **Trust**

Trust is defined as the willingness to be able to trust another party in whom one can have confidence (Moorman et al., 1993). Trust is important in an efficient and effective supply chain (Render, 2005) revealed that. Trust between business parties in the supply chain is needed to carry out operational activities and in planning strategy formulations. Trust itself can bring success in building relationships between producers and suppliers which in turn can maintain good relationships and loyalty in the long term. In addition, trust is defined as one of the most recognized social norms for managing and coordinating exchanges between organizations (Kohli & Jensen, 2010). The indicators of trust are adjusted (Panayides & Lun, 2009) are 1) this supplier keeps his promises to our company (TR1), 2) this supplier is not always honest with us (TR2), 3) we trust the information this vendor gives us (TR3), 4) this supplier really cares that our business succeeds, when making important decisions (TR4), 5) this supplier considers our well-being and its own well-being (TR5), 6) we believe that this supplier always has our best interests in mind (TR6), 7) this supplier is trustworthy (TR7), 8) we feel the need to be careful with this supplier (TR8).

### **Information sharing**

Information is one of the most essential parts of business (Liestyana et al., 2022). Information sharing is a communication process that allows a person to provide information and understanding to others about a particular topic or subject (Mcleod & Schell, 2007). Information sharing is a message that contains relevant meaning, implications, or input for decision-making or action. This information sharing will affect the performance of a company. Furthermore, the purpose of information is to help make decisions, solve problems, and see opportunities in their respective organizations, such as manufacturers, supply chains including all functions involved in receiving and fulfilling customer demand (Liew, 2007). Information exchange in the supply chain can help companies to improve inventory levels and reduce costs. According to Pandey et al., 2010 research indicators of various information: 1) inaccuracy (INF1), 2) time (INF2), 3) accuracy (INF3), 4) adequacy (INF4).

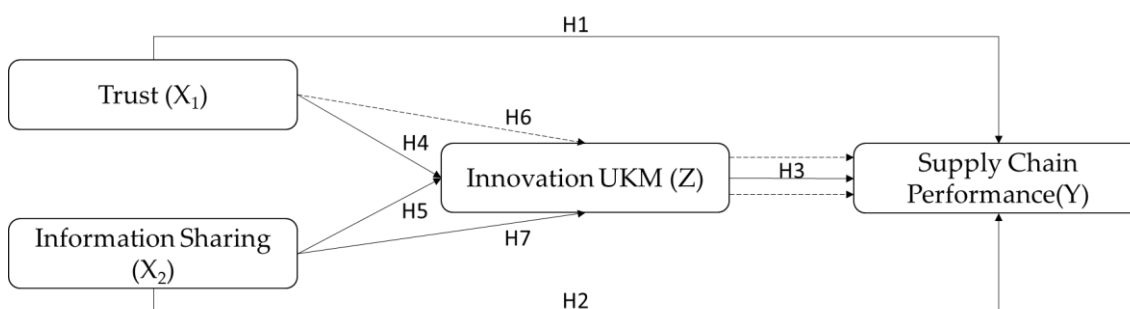
### **Innovation**

Innovation is an effort to introduce new things with the intention of improving what is already familiar for the sake of new practices in both methods and ways of working to achieve goals. innovation is an activity that creates new value by creatively combining existing resources (Drucker, 2023). Innovation is also defined as the introduction of new technologies, products or business models that disrupt existing markets (Christensen, 2015). According to (Panayides & Lun, 2009) Indicators of innovation research: 1) we often try new ideas in the context of the supply chain (INN1), 2) we look for new ways to do things in our supply chain (INN2), 3) we are creative in operating methods in the supply chain (INN3), 4) we often introduce new ways to serve the supply chain (INN4), 5) the introduction of our new processes in the supply chain has increased over the past 5 years (INN5).

### Frame of Concept

Frame of concept is used by researchers to provide an overview of the variables studied. Based on the research conducted, the following results were obtained:

**Figure 1.** Frame of Concept



### Hypothesis

Based on the frame of concept, the following hypothesis is obtained:

- H<sub>1</sub>: Trust directly has a positive significant effect on supply chain performance
- H<sub>2</sub>: Information sharing directly has a positive significant effect on supply chain performance
- H<sub>3</sub>: SME's innovation directly has a positive significant effect on supply chain performance
- H<sub>4</sub>: Trust directly has a positive significant effect on SME's innovation
- H<sub>5</sub>: Information sharing directly has a positive significant effect on SME's innovation
- H<sub>6</sub>: Trust indirectly has a significant effect on supply chain performance mediated by SME innovation
- H<sub>7</sub>: Information sharing indirectly has a significant effect on supply chain performance mediated by SME innovation

## RESEARCH METHOD

### Research Design

In this study, the authors will analyze and research with "Analysis of the Effect of Trust and Various Information on Supply Chain Performance with Innovation as a Mediating Variable". This type of research includes quantitative descriptive research, which is research that produces data in the form of numbers. The author will distribute questionnaires to several Gula semut SME business actors in Kulon Progo to analyze related to trust, information sharing, supply chain performance and innovation. The population in this study is the business actors of gula semut SMEs spread across Kulon Progo Regency. The sampling method in this study is to use non-probability sampling

method. The non-probability sampling method used in sampling this research using the method is Saturated Sampling (census). Saturated sampling is a sampling technique when all members of the population are used as samples. The research sample is 35 producers of Gula Semut in Kulon Progo.

The data used by the authors in this study are primary data. Primary data in this study was obtained directly using a structured questionnaire or questionnaire with the aim of collecting information from business owners or managers as respondents in this study.

#### **Instrument test – Outer Model**

In this study, there are 3 types of variables, namely supply chain performance dependent variable (Y), trust variables and information sharing as independent variables (X) and SME innovation variables as mediating variables (Z). This study uses SmartPLS 4.0 which aims to predict the relationship between constructs and confirm the theory (Hair et al., 2013). SmartPLS 4.0 uses two models, namely the outer model and the inner model (Hair et al., 2013).

The outer model used in this study uses Validity test and reliability test. The validity test used in this study is content validity which evaluates the extent to which indicators measure a concept. Sampling was taken at gula semut SMEs in Kulon Progo Regency. The validity test in this study was carried out using SmartPLS 4.0 software. Validity test in this study using discriminant validity. Discriminant validity occurs if two different instruments measuring two constructs that are predicted to be uncorrelated produce scores that are indeed uncorrelated model (Hair et al., 2013). Discriminant validity of the reflective model is evaluated through cross loading and comparing the AVE value with the square of the correlation value between constructs / comparing the square root of the AVE with the correlation between the constructs. The cross-loading measure is to compare the correlation of indicators with other block constructs. If the correlation between the indicator and its construct is higher than the correlation with other blocks, this indicates that the construct predicts the measure in their block better than other blocks. Another measure of discriminant validity is that the root AVE value must be higher than the correlation between the construct and other constructs or the AVE value is higher than the square of the correlation between the constructs (Hair et al., 2013).

Reliability is defined according to Sekaran and Bougie (2014) as a test of how the measurement instrument consistently measures whatever is being measured. The questionnaire will be said to be reliable or reliable if the respondent's answer to the statement is consistent or stable over time. Reliability testing itself can be done in one measurement and then the results will be compared with the questions. A variable is said to be reliable if it provides a Cronbach alpha value > 0.70.

#### **Instrument test – Inner Model**

This study uses the PLS SmartPLS version 4.0 model analysis to analyze the data. PLS (Partial Least Square) is a component or variant-based SEM structural equation model. The measurement model is used for validity and reliability tests, while the structural model is used for causality testing (hypothesis testing with prediction models). For the inner model in this study using Goodness of fit based on  $R^2$ , test the direct and indirect relationship between variables.

Goodness of fit test is also one of the most frequently used non-parametric tests. The aim is to determine how appropriate the observed frequency is to the expected frequency. Testing the structural model is done by looking at the coefficient of determination ( $R^2$ ) which is the Goodness-fit model test. The coefficient of determination ( $R^2$ ) in the PLS Algorithm report can be seen by selecting R Square (SmartPLS, 2015). The ( $R^2$ ) value is used to measure how much the endogenous variable is influenced by other variables.

Test the effect directly and indirectly by looking at the probability value. To get the probability value, the bootstrapping test is carried out in SmartPLS 4.0 then selecting the path coefficients where the results will show the parameter coefficient value and probability value. After obtaining the results of the path coefficients, the researcher looks at the probability value. The probability value can be seen in the p-value. Where if the p-value  $< 0.05$ , the independent variable has a significant effect on the dependent variable (Hair et al., 2013).

## **RESULTS**

### **Descriptive analysis of research variables**

Variable analysis in this study was used to determine the results of the answers from respondents with an average mean value with a score based on an interval of 0.8 and the following intervals were obtained:

**Table 1.** Interval variable

Interval	Category
1,00 – 1,79	Very Less Effective
1,80 – 2,59	Less Effective
2,60 – 3,39	Moderately Effective
3,40 – 4,19	Effective
4,20 – 5,00	Highly Effective

The variable intervals in table 1 are used as a reference to determine how effective the variables that researchers analyze are with the following results:

**Table 2.** Variable Description

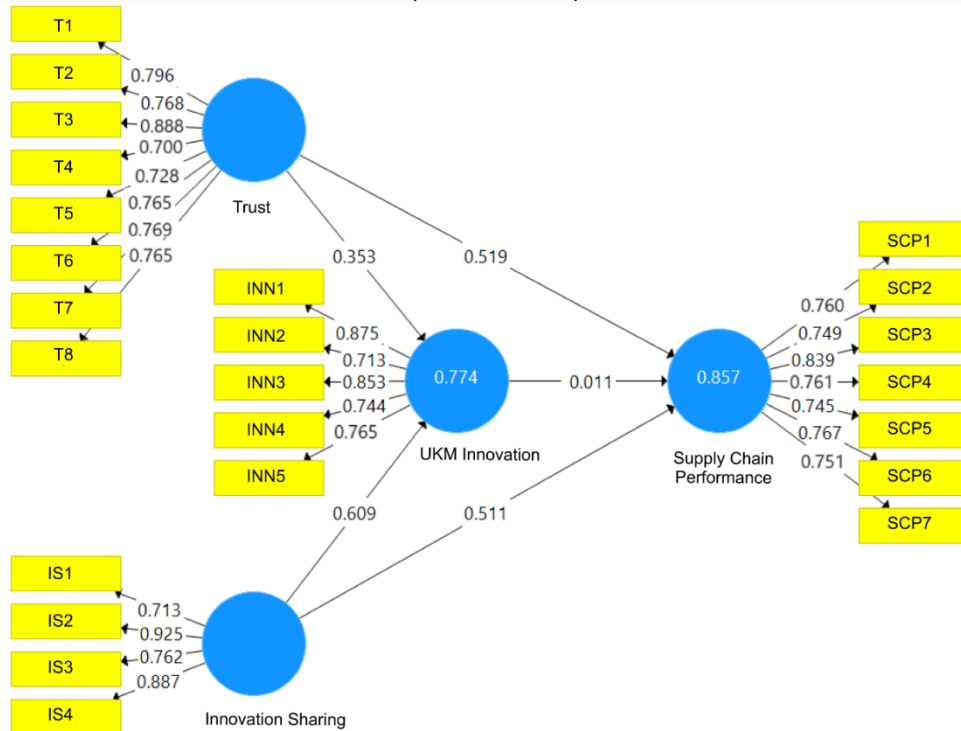
Variable	Name Variable	Mean	Result
X1	Trust (TR)	3,23	Moderately effective
X2	Information Sharing (BI)	3,69	Effective
Z	Innovation (UI)	3,69	Effective
Y	Supply Chain Performance (SPC)	3,57	Effective

Based on the description of variables, the results show that the Trust variable (X1) is quite effective when respondents answer the questionnaire. Information sharing (X2), Innovation (Z) and supply chain performance (Y) variables are effective when respondents answer the questionnaire. A higher mean value indicates that the questions in the questionnaire have a high response. So, it can be concluded that the trust variable has a lower response than other variables.

### **Measurement model testing result (outer model)**

The model used in this study uses partial least square using Smart-PLS 4.0 software. PLS is an analysis model using structural equation modeling (SEM) to determine the relationship between complex variables (Hair et al., 2013). The first step is to determine the quality of the model (outer model) as seen from the validity test and reliability test. The results of the outer model are as follows:

**Figure 2.** Measurement model results (outer model)



Based on the outer model results, each variable has fulfilled the outer model because the indicator value on the variable is above 0.5. After all variables meet the requirements of 0.5, the next step is to test validity and reliability.

The validity test used in this study uses discriminant validity cross loading. An indicator is said to be valid if the outer loading value for each indicator is  $\geq 0.70$  (Sekaran & Bougie, 2014). And the results are as follows:

**Table 3.** discriminant validity – cross section

Indicator	TR ( $X_1$ )	IS ( $X_2$ )	INN ( $Z$ )	KRP ( $Y$ )	Ket.
TR1	0.796	0.609	0.683	0.651	Valid
TR2	0.768	0.572	0.699	0.576	Valid
TR3	0.888	0.607	0.669	0.787	Valid
TR4	0.700	0.166	0.304	0.525	Valid
TR5	0.728	0.234	0.255	0.534	Valid
TR6	0.765	0.017	0.118	0.085	Valid
TR7	0.769	0.112	0.247	0.166	Valid
TR8	0.756	0.434	0.349	0.487	Valid
IS1	0.514	0.713	0.579	0.566	Valid
IS2	0.608	0.925	0.766	0.765	Valid
IS3	0.443	0.762	0.625	0.721	Valid
IS4	0.570	0.887	0.778	0.703	Valid
INN1	0.718	0.809	0.875	0.730	Valid
INN2	0.484	0.554	0.713	0.610	Valid
INN3	0.702	0.739	0.853	0.721	Valid
INN4	0.482	0.558	0.744	0.468	Valid
INN5	0.259	0.336	0.765	0.376	Valid
KRP1	0.599	0.645	0.713	0.760	Valid



KRP2	0.605	0.707	0.595	0.749	Valid
KRP3	0.637	0.689	0.614	0.839	Valid
KRP4	0.385	0.317	0.382	0.761	Valid
KRP5	0.561	0.571	0.599	0.745	Valid
KRP6	0.754	0.656	0.623	0.767	Valid
KRP7	0.543	0.436	0.375	0.751	Valid

Based on the discriminant validity table - cross section, the results show that the value of the indicators on the related variables  $\geq 0.70$  compared to other variables outside the indicators. It can be concluded that the variables studied are valid and can proceed to the reliability test.

Reliability testing in this study uses the expected average variance extracted (AVE) of  $> 0.5$  and composite reliability has a value  $\geq 0.70$ . The reliability test results are as follows:

**Table 4.** Average variance extracted (AVE)

Variabel	Cronbach's Alpha	rho_A	Composite Reliability	(AVE)
Trust	0.758	0.836	0.817	0.589
Information Sharing	0.840	0.857	0.895	0.683
Innovation	0.789	0.843	0.857	0.554
Supply Chain Performance	0.825	0.846	0.871	0.597

Based on the AVE table, it is found that the average variance extracted (AVE) value is  $> 0.5$  and composite reliability has a value  $\geq 0.70$  for each variable so that the research passes the reliability test.

#### Structural model (inner model)

Structural is known as the inner model where this test involves the relationship between independent and dependent variables (Sekaran & Bougie, 2014). The stages carried out in this study include the R<sup>2</sup> determinant test and the effect test (t test).

The first test is using the R<sup>2</sup> determinant test. The R<sup>2</sup> test is used to predict how much or important the contribution of the influence given by the independent variables together to the dependent variable. The results are as follows:

**Table 5.** R<sup>2</sup> Determinant Test

Variable	R Square	R Square Adjusted
Innovation (Z)	0.774	0.760
Supply Chain Performance (Y)	0.857	0.843

Based on the results of the determinant test table, the results show that SME innovation is 0.760 or 76% and supply chain performance is 0.843 or 84%. So, it can be concluded that the SME Innovation variable as a mediating variable is able to clarify through the independent variable by 76% and the supply chain performance variable as the dependent variable can be explained through the independent variable by 84%.

The second test is the effect test (t). This test is done by observing the significance value. Where if the p-value  $< 0.05$ , there is a noteworthy impact of the independent variable on the dependent variable. The results of the path coefficients model are as follows:

**Table 6.** Direct effect and indirect effect test

Relationship among variables	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Result
$X_1 \rightarrow Y$	0.519	0.522	0.094	5.548	0.000	Significant
$X_2 \rightarrow Y$	0.511	0.518	0.146	3.507	0.000	Significant
$Z \rightarrow Y$	0.011	-0.026	0.168	2.066	0.007	Significant
$X_1 \rightarrow Z$	0.353	0.342	0.139	2.545	0.011	Significant
$X_2 \rightarrow Z$	0.609	0.621	0.133	4.572	0.000	Significant
$X_1 \rightarrow Z \rightarrow Y$	0.104	0.112	0.059	3.067	0.007	Significant
$X_2 \rightarrow Z \rightarrow Y$	0.107	0.113	0.112	2.060	0.002	Significant

Based on the direct and indirect effect test table, the results show that:

- It is therefore possible to conclude that trust ( $X_1$ ) significantly improves supply chain performance ( $Y$ ) because its P-Value of 0.00 on supply chain performance ( $Y$ ) is less than the significance value of 0.05.
- Information sharing ( $X_2$ ) has a substantial positive impact on supply chain performance ( $Y$ ), as indicated by the P-threshold of 0.00 for information sharing on supply chain performance ( $Y$ ), which is less than the significance threshold of 0.05.
- From the P-value of 0.007 for SME innovation ( $Z$ ) on supply chain performance ( $Y$ ) to the significance value of 0.05, it can be deduced that SME innovation ( $Z$ ) significantly improves supply chain performance ( $Y$ ).
- The conclusion that trust ( $X_1$ ) has a substantial positive effect on SME innovation ( $Z$ ) may be drawn from the fact that its P-Value of 0.011 on SME innovation ( $Z$ ) is less than the significance value of 0.05.
- It is possible to conclude that information sharing ( $X_2$ ) significantly positively affects SME innovation ( $Z$ ) because the P-Value of  $X_2$  on SME innovation ( $Z$ ) of 0.000 is less than the significance value of 0.05.
- The P-Value of trust ( $X_1$ ) on supply chain performance ( $Y$ ) via SME innovation ( $Z$ ) is less than the significance level of 0.05, it can be said that trust ( $X_1$ ) significantly positively affects SME innovation ( $Z$ ).
- Trust ( $X_1$ ) has a substantial positive influence on supply chain performance ( $Y$ ), as indicated by the P-Value of information sharing ( $X_2$ ) on supply chain performance ( $Y$ ) mediated by SME innovation ( $Z$ ) of 0.002, which is less than the significance value of 0.05.

## DISCUSSION

Based on the research results, the following discussion were obtained:

### The direct effect of trust on supply chain performance

Trust by the organization will facilitate strong relationships that are at the core of operational functions and supply chain performance (Yoshizaki et al., 2018). Trust in gula semut SMEs in Kulon Progo towards the supply chain is very important, because trust will create supplier responsiveness to gula semut SMEs. Trust is an important variable to explain and predict the supply chain performance mechanism in a company for the better (Jajja et al., 2014). Trust is not obtained directly, which requires high effort with an agreement so that supplier and SME trust can be established. In this context, SMEs entrust all the nira liquid obtained from coconut trees purchased directly without negotiating prices from suppliers apart from poor quality during the rainy season and quantities that are less than the production target. Effort to provide statements to suppliers can have an impact on supplier confidence to faithfully sell sap liquid even though the quality is poor and the quantity is not on target. So, it can be concluded that trust has a significant positive effect on supply chain performance. This research is in

accordance with research from Charterina et al. (2018); Gwaltu and Mrisho (2023); Jajja et al. (2014); Owot et al. (2023); Panayides & Lun (2009) and rejects research from Villena et al. (2011) where trust has a negative effect on supply chain performance.

#### **The direct effect of information sharing on supply chain performance**

The organization's supply chain performance is more effective and efficient if the organization pays attention to information sharing (Kusmantini et al., 2020). In the context of SMEs, the actors of gula semut SMEs communicate with each other and share information about the obstacles they are facing and their solutions. The information obtained is very useful and can be used as a basis for action or business planning. The willingness and desire to establish connectivity that gives rise to communication can improve supply chain performance (Fawcett et al., 2007). Sharing information between SME members can help supply chain members obtain and manage information to improve the efficiency and effectiveness of the supply chain from upstream to downstream. Gula semut SMEs in Kulon Progo share information about obstacles in improving product quality. The information obtained is to use an oven as a sap dryer so that the productivity of gula semut can be faster, thereby improving the performance of the supply chain. So, it can be concluded that information sharing has a significant positive effect on supply chain performance. This research is in accordance with research from Kankam et al. (2023), Kusmantini et al. (2020), Owot et al. (2023), Setyawan Firmansyah & Siagian (2022) and rejects research from Ahmed (2022) where information sharing has no effect on supply chain performance, because the practice of sharing information between SMEs and suppliers is not yet fully integrated. Sharing information that is not supported by the development of an integrated information system and commitment between partners to share information accurately will result in the impact of various information on supply chain performance being not significant.

#### **The direct effect of innovation on supply chain performance**

Innovative will lead the company to higher company performance (Hurley et al., 2005). Receptivity to creative ideas that promote efficiency performance gains in the supply chain can be accumulated through management and the integration of new technology (Panayides & Lun, 2009). In the context of this research, innovations made by SMEs can accelerate supply chain performance. Innovations that have been implemented with the intention of improving the quality and quantity of raw materials. This innovation can still be said to be traditional, but it is able to help SMEs to improve the quality and quantity of gula semut. So, it can be concluded that innovation has a significant positive effect on supply chain performance. This research is in accordance with research from (Gwaltu & Mrisho, 2023; Hurley et al., 2005; Panayides & Lun, 2009; Setyawan Firmansyah & Siagian, 2022) and rejects research from Arsawan (2023) and Charterina et al. (2018) where innovation has no effect on supply chain performance. Innovation carried out by SMEs is generally encouraged to duplicate products that already exist on the market. Innovation steps are not carried out carefully (Charterina et al, 2018). According to Arsawan (2023), product novelty that is not supported by supplier commitment to provide raw materials and the absence of use of new technology is thought to be a trigger for innovation failure in the context of creating supply chain performance.

#### **The direct effect of trust on innovation**

Higher trust between individuals can create innovation. Trust has an important contribution in increasing innovation. Innovation is not fixated on technological innovation alone but innovation of ideas in running a business (Gwaltu & Mrisho, 2023). The constraints of the problems faced by SMEs are that the quality of sap becomes poor due to dust, dew and rainwater. This creates creative ideas from suppliers to improve the quality of the sap in order to speed up the supply chain process. The innovation is to use a bottle with the end wrapped in plastic and tied by rubber. This innovation can be

implemented if there is trust between supply chain members. So, it can be concluded that trust has a significant positive effect on innovation. This research is in accordance with research Gwaltu & Mrisho (2023), Panayides & Lun (2009) and rejects research from (Bidault & Castello, 2010) where researchers explain that too high trust will hinder innovation. Bidault and Castello (2010) has argument that the biggest barrier to innovation is individual or organizational trust, many SMEs feel resistant to do new things for risk-averse reasons.

#### **The direct effect of information sharing on innovation**

Innovation can be created if there are business problems conveyed by supply chain members by sharing information between supply chain members (Gwaltu & Mrisho, 2023; Setyawan Firmansyah & Siagian, 2022). Information sharing is very easy to do and can provide creative ideas and a deep understanding of the problems that occur. Sharing information in the age of all things internet makes it easier to find solutions and provide innovations to increase gula semut production. For example, bottles tied with rubber and jerry cans located between 4 - 5 coconut trees are one way that can be done to increase sales. Actors can also provide information about oven constraints experienced by gula semut to the local government. It can be seen that information sharing has a significant positive effect on innovation. So, it can be concluded that trust has a significant positive effect on innovation. This research is in accordance with research (Firmansyah & Siagian, 2022) and this study rejects research from (Liao et al., 2007) which states that information sharing cannot influence innovation without good capacity support.

#### **The indirect effect of trust on supply chain performance mediated by SME innovation**

Trust is not a replaceable tool to improve supply chain performance but rather a complement to make supply chain performance work well (Charterina et al., 2018). Innovation will be created if supply chain performance goes well and is based on trust between supply chain actors. Trust between farmers and SMEs creates various innovations and improves supply chain performance. The Javanese tradition of building trust is known as the "Pamali" culture which prioritizes not harming other parties in building social capital, this is what encourages farmers to have an attitude of mutual trust in building long-term cooperation. The choice of jerry can lay out between coconut trees and extracting sap using a modified bottle with the tip of the bottle covered with plastic and tied using rubber is a simple method of innovation in maximizing supply chain performance. For SMEs, these innovations have constraints that hinder their implementation, which is financial constraints. SMEs can convey this constraint to the local government in order to improve the gula semut production process. The higher trust of farmers and SMEs can improve supply chain performance mediated by SME innovation. So, it can be concluded that indirectly trust has a significant effect on supply chain performance mediated by SME innovation. This statement is supported by research from Gwaltu & Mrisho (2023).

#### **The indirect effect of information sharing on supply chain performance mediated by SME innovation**

Information sharing will reduce the impact of the bullwhip effect, which helps improve supply chain performance (Flynn et al., 2010). An integrated information system across the supply chain will make it easier for companies to innovate and be able to develop new products (Setyawan Firmansyah & Siagian, 2022). Information sharing by SMEs and farmers can be used in various ways including information on quality, quantity and optimization of the production process. Information obtained from social media can be used to optimize the production process. So, it can be seen from the results that information sharing can have a significant positive effect on supply chain performance

mediated by innovation. this research is in accordance with research from (Setyawan Firmansyah & Siagian, 2022).

## **CONCLUSION**

The trust that exists between SMEs and their partners in the supply chain is the main capital for building long-term relationships. With strong trust capital, it will encourage a better communication process, to continue sharing accurate and timely information and planning. Trust and sharing good information will encourage the ability to create new processes that are created jointly between SMEs and sap producers, for example creativity in designing the layout of the sap jar using a combination of plastic layers to strengthen the conductor cover and re-tying it with rubber. Closing the jar cans is a security measure for the process of sending sap raw materials to avoid the risk of spillage. Innovation has been proven to be able to mediate the relationship between trust and information sharing with supply chain performance. The results of this research provide an overview of the novelty of the sap delivery process, packaging practices and consistency of sugar granules which have been proven to influence supply chain performance. To optimize performance, the use of modern technology or equipment needs to be adopted to produce product packaging that has high marketability.

## **ACKNOWLEDGMENT**

N/A

## **DECLARATION OF CONFLICTING INTERESTS**

We declare no potential conflicts of interest regarding research, authorship, and/or publication of this article.

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