
The Impact of Supply Chain Integration and Trust on Supply Chain Performance: Evidence from Indonesia Retail Sector

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Abstract:

Purpose: *This study is to determine the impact of supply chain integration and trust on supply chain performance.*

Design/Methodology/Approach: *The research was conducted empirically on supply chain activities at Indomaret outlets in Indonesia and as a representative of outlets with a total sample of 145 outlets. Factor analysis and multiple linear regression using the SPSS program with version 25 for data analysis.*

Findings: *The finding of this study reveals that all variables of supply chain integration are supplier integration (SI), customer integration (CI), process integration (PI), and trust (TR), both partially and simultaneously are stated to have a significant effect on supply chain performance (SCP).*

Practical Implications: *Based on the results the suggestion is the company must integrate the internal processes and continue by integrating with external companies, namely supplier integration and customer integration or distributor.*

Original/value: *Find novelty of this study is implementing supply chain collaboration for development in the business retail sector, especially in Indonesia. Secondly, this study shows collaboration as a communication aspect like formal and informal contact.*

Keyword: *Supplier integration, Customer integration, Process integration, Supply chain performance, Retail.*

JEL Classification: *L81, D12, L17.*

Paper Type: *Research Paper.*

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1. Introduction

The problem that often occurs in companies that manage networked minimarkets is the lack of control over logistics management, logistic distribution policy. PT. Indomarco Prismata has been optimal in that the company can be more efficient and effective in logistic distribution performance, distribution center location, smoothness that occurs in logistics distribution management control will affect company performance (Bagher, 2018; Patel, 2017; Sezhiyan *et al.*, 2011) in distributing requests to customer outlets and managing product inventory in distribution centers. PT. Indomarco Prismatama is a holding company that manages Indomaret outlets, including in cities/regencies throughout Indonesia. According to Ariani (2013), the industry needs an appropriate strategy to survive in the market and face competition, threats, and market opportunities. The company's supply chain performance is needed to survive in increasingly fierce market competition; through supply chain management, the company creates its competitive strategy to form the right image for consumers and suppliers, and parties involved in market share (Srinita, 2018). Currently, Indomaret is proliferating with the number of outlets reaching 16,000 outlets consisting of 40% franchise outlets and 60% company-owned outlets, the supply of all outlets consists of 33 distribution centers that provide more than 5000 types of products.

In this study, the object in the Indomaret outlet is owned by PT. Indomarco Prismatama, which is the largest franchise retail company in Indonesia. Indomaret outlets act as retailers in the supply chain related to consumers to meet consumer needs and demands in the market. Some of the problems that arise at Indomaret outlets are mainly problems in the supply of goods/products; often, the supply of these goods/products experiences delays in delivery which causes consumers to switch to outlets other than Indomaret. These problems pose a threat to market opportunities and reduce the company's competitiveness. Competition between companies in market share cannot be avoided because each company tries to meet market demand. For this reason, companies must have a strategy to improve supply chain management performance, so the effect for the company will be to survive in the competition (Zainurossalamia and Hidayati, 2020). The performance of the supply chain itself does not rule out being influenced by other factors because, in its implementation, there are processes that involve companies with formal and informal partners (Mols *et al.*, 2012)

The company also considers supplier integration to increase the efficiency and effectiveness of information so that the transaction process between producers and suppliers can run smoothly and ultimately impact sustainable excellence (Lai *et al.*, 2012; Zhao *et al.*, 2013). Then, another factor is customer integration; in this cases supply chain is centered on collected information from customers regarding the repurchase model, consumer preferences for the product and ultimately used by the company as a basis for decision making towards customers (Lotfi *et al.*, 2013) The existence of supplier integration as one that encourages customers, how to improve

the experience of dealing with customers or serve customers better (Kumar *et al.*, 2019). Flynn *et al.* (2010) stated that the influence between the firm performance to suppliers and customers integration on improving the performance of new products and business performance is positive. Process integrations integrate departments or organizations in a complex supply chain and can increase efficiency and effectiveness in the production process. Therefore, even though there is already an integrated supplier and customer integration running well, the process integration factor is supportive of supply chain integration.

There is a collaboration between organizations, so each organization must have each other and at the same time maintain trust both internally and externally because trust and collaboration in supply chain management (SCM) are the most effective and efficient solutions (Cao *et al.*, 2014, Dominguez, *et al.*, 2014; Sari, 2015; Nagashima *et al.*, 2015).

2. Literature Review

To increase competitiveness among companies globally, it is necessary to implement strategies to partner with other companies that will affect competitive advantage (Huang *et al.*, 2014). Several performance indicators of organizations need to improve, through supply chain integration and regulations, other globalization factors drive supply chain integration among firms (Goeltz, 2014; Hugos, 2011). Meanwhile, Huo *et al.* (2014) found companies with strong internal integration in business processes to improve financial performance. When the supply chain members are integrated, and there is a proper communication flow, the company can quickly adjust to any market changes, either in the long or short term (Seebacher and Winkler, 2015). The joint SCI partnership with a win-win situation helps the organization find the best way to reduce production, inventory, or transaction costs and increase profitability (Deshpande, 2012). Therefore, SCI brings many benefits to the organization. The company's performance to integrate it is internal or external with its supply chain partners supports its ability to respond to market demands (Kumar *et al.*, 2017).

Integration also experiences barriers due to conflicting interests in the supply chain and other reasons. Different departments have different goals and objectives (Sambasivan *et al.*, 2011), and because this information can be used to increase competitive advantage (AlSagheer and Ahli, 2011).

2.1 Supply Chain Performance (SCP)

The purpose of supply chain performance is to increase sales in the form of goods or services. Besides that, they are keeping expenses to a minimum. Logistics Management previously focused solely on procurement, shipping, maintenance, inventory management, and distributing. In essence, the supply chain increases value, such as new product development, marketing, finance, and production processes. The

development of SCP has specific objectives such as customer need and sustainable firm performance (Hassan *et al.*, 2015). The SCM performance is determined by various parameters such as measures for operations, organization, company, and finance. One of the models used to measure overall performance, resources are taken into consideration on costs, product quality, response, customer satisfaction, production capacity, schedule, lead time (Shahbaz *et al.*, 2018). Thus, this study must consider everything that is required so that operational performance can be achieved. In this case, if only financial indicators are not relevant to measure all of the performance or accuracy. Therefore, using the balanced scorecard approach, operational indicators are needed (Attia, 2015; Shahbaz *et al.*, 2018). Meanwhile, the production process and activities are associated with converting inputs into outputs (Linic *et al.*, 2011; Boutayeba, 2017). The supply chain does not only occur in one direction but also emphasizes information flow and inventory management (Wu *et al.*, 2014)

One of the important indicators for testing the achievement of supplier performance is by using its performance. Research results related to the performance of suppliers, as suppliers who have sent products to buyers. (Zainurossalamia and Hidayati, 2020). With global competition, it is necessary to have the cooperation of all supplier members. Performance must be measured using supply chain performance if the supply chain organization is successful when it can keep business performance surviving, efficient, and effective (Basu *et al.*, 2017).

2.2 Supplier Integration (SI)

Supplier integration is the existence of cooperation or partnership between companies and their suppliers. In this case, the activity is to make plans, develop inter-organizational strategies, develop an integrated process for sharing information and experiences in running the organization (Flynn *et al.*, 2010). In the company's internal supply chain, there is also a production process where products are produced based on the production process starting from raw materials to finished goods, provided that the raw materials are of high quality so that the finished goods are also of high quality (He *et al.*, 2014).

Lamb *et al.* (2011) stated that SI is a continuous collaboration between companies with outside parties to provide services and supply goods so that the relationship that occurs is a form of providing a good customer experience for external parties. Supplier Integration prioritizes service to customers according to agreed terms and product specifications and responds to market changes (Zhao *et al.*, 2013). According to Munch (2015), Supplier Integration becomes an organizational model in company integration as a whole and between departments from suppliers, shipping goods, manufacturers of finished goods to consumers (Wong *et al.*, 2011).

According to Zhao *et al.* (2013), internal partners and external partners combine strategies, practices, and processes between organizations to collaborative processes.

Also, it is synchronized, which involves the need for interrelated core competencies, especially with critical suppliers.

This study uses indicators maintaining cooperative relationships with suppliers, creating long-term relationships with suppliers, and involving suppliers to improve the quality of company services. Several studies have shown a higher level of supplier integration potential to more significant benefits (Alfalla *et al.*, 2013; Huo, 2012; Moyano *et al.*, 2016).

2.3 Customer Integration (CI)

According to Lamb *et al.* (2011), CI is a capability that allows companies to offer value-added offerings that are durable, distinctive, and valuable to customers that represent the most excellent value for the company or supply chain. Also, according to Chavez *et al.* (2015), Customer Integration, in general, is always related to collaborative activities such as frequent contact with customers. According to Zhao *et al.* (2013), producers collaborate in the form of partnerships, both internally and with external partners, every time they formulate strategies, practices, partners between organizations into a collaborative and synchronized process involving customers. This study uses indicators providing periodic information to customers, providing feedback from customers, responsiveness to customer needs, surveying customer needs. Customer integration in the supply chain can explain to the company that it has a framework for specific requirements and needs to serve consumers well.

To obtain information from customers, such as a purchase transaction, this event integrates customers, while consumer preferences for products and consumers' ability to buy products can be used in decision making (Lotfi *et al.*, 2013). When companies collaborate with customers, it means good response, which is very efficient in achieving sales targets. There are several findings that customer integration is significantly correlated with supplier integration so that coordination between partners has a positive impact and ultimately affects the organization's performance (Lau *et al.*, 2010).

2.4 Process Integration (PI)

Integration is the joining of parts or activities to form an entire system. Integration can improve relationships in each supply chain, facilitate decision making, value creation, and information from supplier to end-user, namely consumers. Integration in the supply chain shows a complicated collaborative relationship between parties in the supply chain, which, if appropriately managed, will increase efficiency and effectiveness in the production process to increase company profits and satisfy consumers (Ariani, 2013).

PI occurs when companies cooperate with suppliers to compile and prepare inter-departmental processes, including supplier involvement in product development,

and company performance, so that performance between departments or organizations can better meet market demands and respond to market share (Schoenherr and Swink, 2012). As a basis for decision making, it can be done together and look for joint solutions in facilitating companies and suppliers to help avoid possible conflicts and serve customers better (Palomero and Chalmeta, 2014). The involvement of suppliers in product development, production planning, and project teams to improve business performance (Lai *et al.*, 2012), and reduce production waiting times, accelerate the introduction and delivery of new products (Yu, 2015). To get a solution together with a supplier means increasing responsiveness to market demands and reducing operating costs (Huo, 2012). PI, with suppliers, can achieve operational synergy and a higher efficiency level, improving company performance.

Also, research by Ariani (2013), entitled analysis of the effect of supply chain management on company capability and study from Mellat-Parast and Spillan (2014) entitled logistics and supply chain process integration as a source of competitive advantage also states the same thing that the process integration has a positive effect on supply chain management performance.

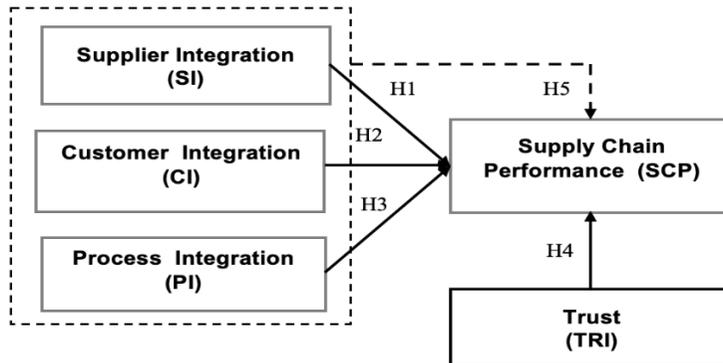
2.5 Trust (TR)

Trust has defined to what extent a person has self-confidence and is willing to do it based on words, actions and uses the system in cross-departmental coordination. (Bunduchi, 2013). Trust arises from the ability and willingness to form the consistency of trust, willingness to do something, and expertise. Xiao *et al.* (2010) state that trust or trust is expected to trust business partners expected to be reliable in carrying out their duties.

Trust is essential in a collaborative relationship because it plays a vital role in building communication and cooperation in dealing with and solving problems that arise in a relationship (Zhang *et al.*, 2018). Parties who have mutual trust in one partner company will have high integrity and quality. According to Bowersox (2013), to build trust, the first thing needed is to show that the company can be relied on in its operations and is consistent in showing the promised performance. Trust is an essential factor in building a supply chain management because trust will reduce the uncertainty (Majid, 2017), while, according to Almeida *et al.* (2017), the principle of the company, giving priority to suppliers to end-users must both can make a profit, and the presence of quality products, relatively stable prices, affordable prices and credibility (Delbufalo, 2012). In these cases, trust is essential in building communication and cooperation because it can make relationships stable.

2.6 Proposed Research Model

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

Figure 1. Research Model for retail sector in Indonesia

Source: Own creation.

The study examines the retail sector supply chain; Hence, the following hypothesis will be tested:

- H1** : Supplier integration has a positive on supply chain performance
- H2** : Customer integration has a positive on supply chain performance
- H3** : Process integration has a positive on supply chain performance
- H4** : Trust has positive on supply chain performance
- H5** : Supplier integration, customer integration, process integration and trust, simultaneously has a positive on supply chain performance

3. Research Methods

Sampling as a respondent in the study was taken from several Infomart retailers in cities and districts in Indonesia, including Surabaya, Malang, Madiun, Sidoarjo, and Jember. While the total sample consisted of 145 respondents; and the criteria for the respondents were Supervisors with a minimum work experience of 2 years.

Validity and reliability tests were carried out before researching the number of samples that had been determined, namely 145 respondents. The validity test's purpose is to ensure that the research instrument to be used has been declared valid for all indicators (Sugiyono, 2017). Meanwhile, the aim of conducting a reliability test is to find out the consistency of the instrument if it is used at different times and places, and the instrument is said to be reliable if all indicators have the value of Cronbach's alpha > 0.6, with a Cronbach's value > Cronbach's alpha if deleted (Ghozali, 2018; Sugiyono, 2017).

4. Result and Discussion

To test the validity of the instrument using the SPSS version 25 program (Santoso, 2019). The results of the validity test are in Table 1.

a. Validity Testing

The purpose and objective of validity testing is to test whether the instrument is valid or not before the research is used, so it must be ensured that the instrument is valid for all indicators Table 1).

Table 1. Result of Validity Test of Instrument

Variables	Indicators	Pearson Correlation	Sig.	Remarks
Supplier Integration	SI1	0.990	0.000	valid
	SI2	0.960	0.000	
	SI3	0.990	0.000	
Customer Integration	CI1	0.964	0.000	valid
	CI2	0.939	0.000	
	CI3	0.988	0.000	
Process Integration	PI1	0.989	0.000	valid
	PI2	0.963	0.000	
	PI3	0.989	0.000	
Trust	TR1	0.840	0.000	valid
	TR2	0.730	0.000	
	TR3	0.798	0.000	
Supply Chain Performance	SCP1	0.707	0.000	valid
	SCP2	0.694	0.000	
	SCP3	0.711	0.000	
	SCP4	0.713	0.000	

Source: Own creation.

b. Reliability Testing

The instrument is not only tested for validity, but also for reliability testing, the aim is to prove that the instrument has consistency, so that each indicator can be declared reliable see in Table 2.

Table 2. Result of Reliability Test of Instrument

Variables	Indicators	Cronbach's Alpha If Deleted	Cronbach's Alpha	Remarks
Supplier Integration	SI1	0.833	0.884	reliable
	SI2	0.842		
	SI3	0.833		
Customer Integration	CI1	0.830	0.880	reliable
	CI2	0.842		
	CI3	0.827		
Process Integration	PI1	0.832	0.883	reliable
	PI2	0.840		
	PI3	0.832		

Trust	TR1	0.805	0.848	reliable
	TR2	0.811		
	TR3	0.790		
Supply Chain Performance	SCP1	0.744	0.781	reliable
	SCP2	0.750		
	SCP3	0.745		
	SCP4	0.745		

Source: Own creation.

4.1 Multiple Linear Regression Analysis

Analysis of the regression model for supplier integration, customer integration, process integration, and trust is shown in Table 3.

Table 3. Analysis of The Regression Model for Supplier Integration, Customer Integration, Process Integration, and Trust

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.609	.178		3.425	.001
	SI	.108	.036	.175	2.969	.004
	CI	.150	.043	.199	3.490	.001
	PI	.362	.045	.474	8.057	.000
	TR	.217	.045	.259	4.802	.000

Note: *Dependent Variable: Y

Source: Own creation.

Based on Table 3, it is known that the multiple linear regression model is as follows:

$$Y = 0.609 + 0.108 SI + 0.150 CI + 0.362 PI + 0.712 TR. \tag{1}$$

The results of the analysis show that for hypothesis H1, H2, H3, and H4 partially have a significant effect on supply chain performance, which is supported by the t test results with a significance value < 0.05. The Simultaneous Testing (F- Test) is shown in Table 4.

Table 4. Regression Results for Supplier Integration, Customer Integration, Process Integration, and Trust

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.751	4	6.188	86.841	.000 ^b
	Residual	9.976	140	.071		
	Total	34.727	144			

Note: * Dependent Variable: SCP, ** Predictors: (Constant), TR, CI, PI, SI

Source: Own creation.

To test and determine the effect simultaneously, and based on Table 4, for hypothesis H5 simultaneously have a significant effect on supply chain performance, where the results show that the significance value is <0.05 , so that the simultaneous results are significant. The Coefficient of Determination (R^2) is shown in Table 5.

Table 5. The Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.844 ^a	.713	.705	.26693

Note: *Predictors: (Constant), TR, CI, PI, SI, ** Dependent Variable: SCP

Source: Own creation.

From Table 5, it can be seen that the coefficient of multiple determination (R square) is 0.713 or 71.30 %. This means that the percentage of the magnitude of the influence between supplier integration (SI), customer integration (CI), process integration (PI), and trust (TR) on supply chain performance (SCP) is 71.30% while the rest is 28.7% is influenced by other variables not studied.

4.2 Classic Assumption Test

Normality (NPar Tests) One-Sample Kolmogorov-Smirnov Test and Multicollinearity test

Based on Table 6, it can be seen that the Kolmogorov-Smirnov Z value is 0.072 with a significance level of 0.65, which means it shows that the research variables are normally distributed because the significance level > 0.05 .

Table 6. Normality Test Result

		Unstandardized Residual
N		145
Normal Parameter ^s	Mean	.0000000
	Std. Deviation	.26320093
Most Extreme Differences	Absolute	.072
	Positive	.072
	Negative	.050
Test Statistic		.072
Asymp. Sig. (2-tailed)		.065 ^c

Note: *Test distribution is Normal, **Test distribution is Normal, ***Lilliefors Significance Correction.

Source: Own creation.

The multicollinearity test is shown in Table 7.

Table 7. Multicollinearity Test Results.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.609	.178		3.425	.001		
	SI	.108	.036	.175	2.969	.004	.590	1.696
	CI	.150	.043	.199	3.490	.001	.631	1.584
	PI	.362	.045	.474	8.057	.000	.593	1.686
	TR	.217	.045	.259	4.802	.000	.705	1.419

Note: * *Dependent Variable: SCP*

Source: *Own creation.*

Based on Table 7, all existing independent variables are known to have a tolerance value greater than 0.1 and VIF less than 10, so this study is free from multicollinearity, and if the results are free from multicollinearity, then this assumption is fulfilled.

5. Conclusions

This study's independent variables are supplier integration, customer integration, process integration, and trust, significantly impacting supply chain performance. If sorted, the independent variables that have an influence on the dependent variable from the highest to the lowest are trusted (0.712), process integration (0.362), customer integration (0.150), and supplier integration (0.108). Supply chain performance can be optimized by improving the relationship between the company and its business partners.

Trust can influence supply chain management with trust between parties involved in the supply chain, including companies, suppliers, and distributors. Furthermore, process integration can improve supply chain performance by integrating the company's internal and external processes. Process integration must be carried out internally, namely in production and external companies, concerning supplier integration and customer integration or distributor.

Suggestions that can be given are based on research for the retail sector in Indonesia, so outlets, wherever located, must maintain their trustworthiness. The trust factor's accretion has the highest value, indicating that consumers are very responsive to Indomaret outlets. Furthermore, the company must integrate the internal processes and continue by integrating with external companies, namely supplier integration and customer integration or distributor. Therefore, PT. Indomarco Prismatama also has to trust its existing business partners so that Indomaret outlets will increase in number.

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