

# Uncertain Supply Chain Management

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## The effect of supplier integration, manager transformational leadership on supply chain performance

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### ABSTRACT

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This study aims to examine the effect of supplier integration on supply chain performance by moderating supply chain transformational leadership styles. The design used in this study is hypothesis testing with two hypotheses and using path analysis. The population of the respondents from this study were 550 manufacturing companies in Jakarta with data collection were performed through online questionnaires and the number of samples that met the criteria for analysis from 150 manufacturing companies represented by leaders in the supply chain management section. The results of this study indicate that supplier integration has a positive effect on supply chain performance, transformational leadership style has a positive effect on supply chain performance and supplier integration has a positive effect on transformational leadership style in Indonesian manufacturing companies. The results of the study can be a reference for decision makers and supply chain management leaders to implement supply chain management strategies in the form of integration with suppliers to improve the company's supply chain performance and to consider the influence of supply chain transformational leadership styles to maintain the sustainability of long-term relationships with suppliers in multinational companies which already has a standard and standard system.

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## 1. Introduction

In this era of industrial revolution 4.0, the desire of a company to always compete, improve company performance and be successful in the long term has forced companies to enter cooperative relationships with suppliers. Cooperation with these suppliers has become a must in today's competition where competition occurs in all supply chain networks of a company, and this implies that large companies are highly dependent on their smallest partners (Bag, 2018). To get a supply chain that has flexibility and responsiveness, an organization needs to implement integration with suppliers. Investment in integration with suppliers has the potential to provide higher operational performance than investment in integration with customers (Chakraborty & Gonzalez, 2018; Goffnett, 2018). Several studies have stated that the integration strategy with suppliers may improve supply chain performance and competitive advantage and this integration plays an essential role in facing economic competition in each region such as AFTA (Asean Free Trade Area) because supply chain integration policies can maintain the company's growth in a sustainable manner (Bäckstrand & Fredriksson, 2020; Birasnav, 2013). This causes companies to always try to operate efficiently and flexibly in their supply chains to be able to compete and its effect on the flexibility of a manufacturing company (Huo et al., 2021; Jacobs & Mafini, 2019; Jermisittiparsert & Srihirun, 2019; Khan & Wisner, 2019). The supply chain management strategy with the implementation of an integrated system between buyers and suppliers in the company is a strategic choice to be able to compete and produce optimal company performance. Interest in supply chain integration began to develop and was considered important by companies because they saw the opportunities and advantages of supply chain integration relationships. Research on supplier integration shows a positive relationship between supplier

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integration or supply chain integration as a whole and operational performance as well as buyer business performance (Shin & Park, 2021; Sriyakul et al., 2019a, 2019b). There is a direct relationship between supplier integration and supply chain operational performance (Teoman & Ulengin, 2018). Several studies have also found a negative relationship between supplier integration and supply chain operational performance, (e.g., Tarigan et al., 2021). To understand the causes of the unequal influence of supplier integration in supply chain management, it is necessary to know things related to supply chain leaders in carrying out supply chain strategies because leadership is very necessary in supply chains as the key to strategic success and competitive advantage (Pakurár et al., 2019; Phan et al., 2020).

Leadership is always described as behavior and personal traits that are unconsciously needed to influence the process of a relationship. Manager's leadership style is an important factor in supply chain leadership which not only affects the company but also the entire supply chain including suppliers (Mohammad et al., 2019; Mokhtar et al., 2019; Ojha et al., 2018). Supply chain leadership styles are generally distinguished into transactional leadership styles and transformational leadership styles (Ojha et al., 2018). Transactional leadership is traditional leadership that focuses on changes that occur between leaders and followers, where these changes allow leaders to achieve their performance targets, complete required tasks, maintain organizational conditions, motivate followers through contractual agreements, ensures direct behavior of followers towards achieving targets, defines, emphasizes external rewards, avoids unnecessary risks, and focuses on increasing organizational efficiency, while transformational leadership more often shows four components, namely influencing through ideas, inspiring and motivating, providing intellectual stimulation, and providing individual consideration. The supply chain transformational leadership style also plays an essential role in improving the quality of integration with suppliers and maintaining long-term relationships with suppliers as well as the broad application of supply chain management strategies since the transformational leadership style directs followers with motivation through mindset changes so that the expected performance can take place in the long term. Based on the gap from previous research regarding the effect of supplier integration in supply chain management, this study uses transformational supply chain leadership style as a moderating variable that can affect the implementation of supply chain integration, especially integration with suppliers on supply chain performance.

Supply chain performance is the outcome variable of the buyer-supplier relationship (Queiroz et al., 2019). Tarigan et al. (2021) also explained that the supply chain management literature was born from the positive impact of its application on company performance, where performance shows the efficiency and effectiveness of supply chain management. In addition, operational steps are included since they relate directly to the relationship between supply chain partners and include new product development time steps. Supply chain management performance measurements are based on traditional measurements, including supply chain flexibility, supply chain integration, response to customers, efficiency, quality, product innovation, market performance and relationship measurements including relationship quality, supplier performance or individually in the form of quality and market performance as well as operational performance. Supplier integration is part of supply chain integration which can be defined as a close, long-term, and cooperative relationship that is built between a company and its supply chain partners with suppliers involved in the company's important decision-making processes and sharing information regarding demand, production and inventory levels. Supplier integration can be used as a synonym for other terms, such as buyer-supplier relationship, supplier engagement, and supplier collaboration (Shin & Park, 2021). Effective supplier integration is an important strategy for companies that want to achieve competitive advantage and the best strategy for achieving reliable supply chain performance. Based on the gap from previous research regarding the influence of supplier performance in supply chain management, this study uses transformational supply chain leadership style as a moderating variable that can strengthen or weaken the influence of supplier performance on the company's supply chain performance.

## 2. Method

This research uses quantitative research and hypothesis testing that examines the relationship between two or more variables which are expressed in the form of statements that represent each variable so that conclusions can be obtained from the research conducted. The study uses a unit of analysis about the company represented by one of the managers in the chain management section and data are collected through online questionnaires and the number of samples that meet the criteria for analysis from 150 manufacturing companies represented by leaders in supply chain management. Data analysis is accomplished using path analysis with software SPSS. Data was obtained by distributing online questionnaires with google form.

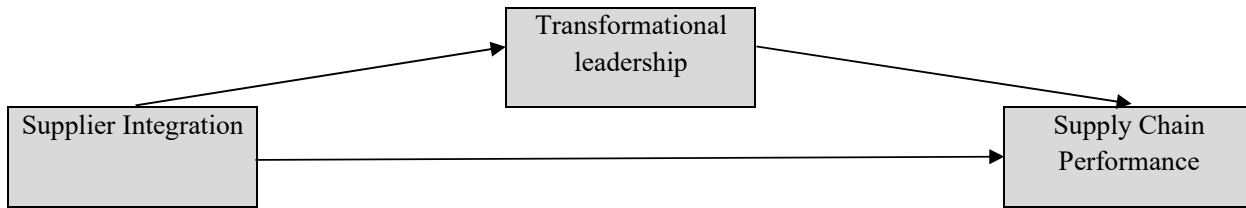
The hypotheses of this research are:

**H<sub>1</sub>:** *Supplier Integration has a positive effect on Supply Chain Performance.*

**H<sub>2</sub>:** *Transformational Leadership Style has a positive effect on Supply Chain Performance.*

**H<sub>3</sub>:** *Supplier Integration has a positive effect on Transformational Leadership Style.*

Fig. 1 shows the structure of the proposed study of this paper.



**Fig. 1.** Research Model

**3. Results and Discussion**

The tests carried out in the analysis of variance-based path analysis is as follows:

**Table 1**

Summary of correlation test results between Transformational Leadership, supplier integration and Supply Chain Performance

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     | Sig. F Change |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 |               |
| 1     | .753 <sup>a</sup> | .659     | .639              | 3.510                      | .742              | 229.279  | 3   | 239 | .000          |

a. Predictors: (Constant), Transformational Leadership and supplier integration  
 b. Dependent Variable: Supply Chain Performance

**Table 2**

Summary of correlation test results between Transformational Leadership and supplier integration

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     | Sig. F Change |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 |               |
| 1     | .543 <sup>a</sup> | .523     | .518              | 3.310                      | .542              | 212.279  | 3   | 239 | .000          |

a. Predictors: (Constant), supplier integration  
 b. Dependent Variable: supplier integration

From the R square table it can be concluded that 52.3% of the Transformational Leadership is influenced by Supplier Integration, while the remaining 48.70% is influenced by other variables outside the study. Also, Supply Chain Performance is influenced by Transformational Leadership and supplier integration by 65.97% while the remaining 34.1% is influenced by other factors outside the theme of this study. In addition to reliability in the inner model test, there is also a hypothesis test, while the hypothesis testing in this study is as follows:

**Table 3**

Relationship between Supplier Integretion, Transformational Leadership Style and Supply Chain Performance.

| Model                             | Unstandardized Coefficients |            | Standardized Coefficients |  | t      | Sig. |
|-----------------------------------|-----------------------------|------------|---------------------------|--|--------|------|
|                                   | B                           | Std. Error | Beta                      |  |        |      |
| 1 (Constant)                      | 65.482                      | 2.927      |                           |  | 22.371 | .000 |
| Supplier Integretion              | .066                        | .019       | .169                      |  | 3.428  | .001 |
| Transformational Leadership Style | .288                        | .030       | .479                      |  | 9.527  | .001 |

a. Dependent Variable: Supply Chain Performance

**Table 4**

Relationship between Supplier Integretion, Transformational Leadership Style and Supply Chain Performance.

| Model                | Unstandardized Coefficients |            | Standardized Coefficients |  | t      | Sig. |
|----------------------|-----------------------------|------------|---------------------------|--|--------|------|
|                      | B                           | Std. Error | Beta                      |  |        |      |
| 1 (Constant)         | 65.482                      | 2.927      |                           |  | 22.371 | .000 |
| Supplier Integretion | .288                        | .030       | .479                      |  | 9.527  | .001 |

a. Dependent Variable: Transformational Leadership Style

From the value of the hypothesis testing table, it is known that all hypotheses in the study are accepted when the level of significance is five percent.

## 4. Results and discussion

### 4.1 The first hypothesis: The effect of supplier Integration on Supply Chain Performance in Indonesian Manufacturing Companies

Based on the data analysis, the p value is  $0.000 < 0.050$ , so it can be concluded that Supplier Integration has a positive effect on supply chain performance, this result means that an increase in the Supplier Integration variable will increase supply chain performance. This result is in line with the research conducted by Bäckstrand and Fredriksson (2020), Bag (2018), Birasnav (2013) and Goffnett (2018).

### 4.2 The second hypothesis: The effect of Transformational Leadership on Supply Chain Performance in Indonesian Manufacturing Companies

Based on data analysis, the p value is  $0.000 < 0.050$ , so it can be concluded that transformational leadership style has a positive effect on supply chain performance, this result means that an increase in transformational leadership style variables will also increase in supply chain performance. These results are in line with the research conducted by Mohammad et al. (2019).

### 4.3 Supplier Integration has a positive effect on Transformational Leadership Style in Indonesian Manufacturing Companies

Based on the data analysis, the p value is  $0.000 < 0.050$  so it can be concluded that Supplier Integration has a positive effect on Transformational Leadership Style, this result means that an increase in the Supplier Integration variable will increase in Transformational Leadership Style. This result is in line with the research conducted by Bäckstrand and Fredriksson (2020).

Although the cooperative relationship between buyers and suppliers is very potential in improving the performance of both parties, there is always a potential for failure due to various factors and it is necessary to examine the effect of supply chain strategy on supplier performance from the buyer's side in addition to the buyer's supply chain performance. Several previous studies gave different results in examining the relationship of supply chain integration, especially integration with suppliers on performance, (Goffnett, 2018) which states that there is a positive relationship between the implementation of supply chain integration on improving supply chain performance. In addition, there are also several studies which state differently that the implementation of supply chain integration, especially supplier integration, does not significantly affect the company's performance (Birasnav, 2013) even negatively related to company performance.

## 4. Conclusion

Based on data analysis, it can be concluded that supplier integration has a positive effect on supply chain performance, transformational leadership style has a positive effect on supply chain performance and supplier integration has a positive effect on transformational leadership style in Indonesian manufacturing companies. Supply chain leadership styles are generally distinguished into transactional leadership styles and transformational leadership styles. Transactional leadership is traditional leadership that focuses on changes that occur between leaders and followers, where these changes allow leaders to achieve their performance targets, complete required tasks, maintain organizational conditions, motivate followers through contractual agreements, ensure direct behavior of followers towards achieving targets, emphasizes external rewards, avoids unnecessary risks, and focuses on increasing organizational efficiency, while transformational leadership more often shows four components, namely influencing through ideas, inspiring and motivating, providing intellectual stimulation, and providing individual consideration.

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