

# ANALYSIS OF THE EFFECT OF PRACTICE AND SUPPLY CHAIN INTEGRATION ON OPERATIONAL PERFORMANCE OF SMEs IN MALANG CITY

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**Abstract:** This study was conducted to evaluate the practice of implementing Supply Chain Management (SCM) and Supply chain Integration (SCI) on operational performance in Small and Medium Enterprises (SMEs) in Malang City. This study aims to determine the effect of SCM practices on supply chain integration, the effect of SCM on operational performance, and the effect of supply chain integration on operational performance. Data collection in this study was carried out by distributing 100 questionnaires to owners or managers of SMEs in Malang City which the criteria are food and beverage agro-industry SMEs located in Malang City and have carried out supply chain management (SCM) activities for at least 1 year. The analytical method used in testing the research hypothesis is using multiple regression. The results of the study found that 1) there is a positive influence of supply chain management practices on operational performance, 2) there is a negative influence of supply chain integration on operational performance, 3) supply chain management practices and supply chain integration simultaneously have a positive effect on operational performance in SMEs in the Malang City.

**Keywords:** *Operational Performance, Supply Chain Integration, Supply Chain Management, Strategic Management*

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## INTRODUCTION

At this time, the development and competition in the business world are increasingly rapid in Indonesia, making competition between companies increasingly fierce. The current competitive conditions show very rapid changes, starting with technological advances, the global trading system, and the stability of the world's political economy (Handfield, 2002).

The intense competition requires a business owner to maintain maximum production levels and fulfill market demand with top sales. Companies have to plan the right strategy for their company. With all changes in the external and internal

environment of the company, the owner or manager must be able to carry out the right strategy to win the competition or market competition.

One strategy to win the competition is the implementation of Supply Chain Management (SCM) practices. SCM is all parties involved, either directly or indirectly, in fulfilling orders and requests from consumers. All parties involved are not only producers or suppliers but also include distributors, storage, sales, and consumers (Chopra & Meindl, 2006).

One of the industries that apply the SCM concept is Small and Medium Enterprises (SMEs). SMEs are an essential pillar in the Indonesian

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economy because they contribute to the formation of the National Gross Domestic Product (GDP), expansion of job opportunities, and employment.

Malang City is one of the cities in Indonesia experiencing a fairly rapid development in the growth of SMEs because it has many holiday destination objects, a variety of food and beverage culinary tourism, and a dense population, causing it can open up great opportunities for SME entrepreneurs. The following table shows the development of SMEs in Malang City.

Table 1. Data on the number of SMEs in Malang

| Year           | 2016 | 2017  | 2018  | 2019  | 2020  |
|----------------|------|-------|-------|-------|-------|
| Number of SMEs | 2.76 | 2.950 | 3.294 | 5.572 | 9.870 |

Source: Primary Data Processed (2021)

SMEs in Malang City have great opportunities. It can be seen from the number of SMEs growing yearly. But in fact, Malang City SMEs are still experiencing many problems in improving their performance of SMEs. Several issues occur in supply chain management, competitive advantage, quality of raw materials, capital, and the level of innovation and technology. This problem is further worsened by the emergence of the Covid-19 pandemic, in which the government has to issue many burdensome policies for the SMEs sector to mitigate the widespread pandemic, such as the implementation of isolation, social distancing, and approaches to people to keep stay at home. (Sinuraya, 2020).

The rapid growth of SMEs can create tougher competition between SMEs. To survive in the competition, it is necessary to apply supply chain management practices and supply chain integration so that operational performance can increase. Several previous studies, namely support it: (Zulkarnain et al., 2018); (Paulraj et al., 2012); (Rahmasari, 2011); (Hsu et al., 2009); and (Li et al., 2006), explained that SCM practices are practices that can improve company performance. Hertz, (2007), The higher the practice of SCM in a company, the higher the performance and competitive capability.

However, there are differences in several studies which explain that individual SCM practices cannot increase efficiency by themselves because efficiency can be achieved through the interaction of several supply chains, one of which is supply chain integration (Kim 2006). Another research by

Subburaj et al., (2020), shows that the practice of supply chain management significantly negatively affects company performance. This study was conducted to determine the effect of supply chain management practices and supply chain integration in SMEs on operational performance.

Based on the description of the phenomena and problems that have been described in this research, as well as the differences in the results of previous studies, where there are studies that show supply chain management practices have a positive effect on operational performance, the other side there are some researchers who show that supply chain management practices harm operational performance. So it is important to conduct further research about this theme so that business people such as SMEs owners or managers in Malang City can survive in business competition that has been increasing. It is expected that improving supply chain management practices that are applied to operational performance processes, it can enhance the continuity of SMEs even better.

## RESEARCH METHODS

This research is classified as explanatory research, which aims to analyze the relationship between variables by testing hypotheses. According to Masri Singarimbun, (2011), explanatory research seeks explicitly to test and analyze the relationship between variables. The object of this research is the entire agro-industry of food and beverage SMEs in Malang City. The research variables are supply chain management practices, supply chain integration, and operational performance. The location of this research was determined by purposive sampling. This sampling technique is used in research that prioritizes research objectives (Burhan, 2013).

The population of this study is the owner or manager of SMEs in Malang City who has implemented SCM practices. The sampling selection technique is purposive sampling which the criteria are being the owner or manager who has the highest authority in the company's operations with the application of SCM practices for at least 1 year. The number of samples in this study was 100 SMEs in the food and beverage agroindustry in Malang City. Measurement of variables in this study using a Likert scale. The data analysis method used in this study uses multiple linear regression. The following picture is the research paradigm in the multiple linear regression model.

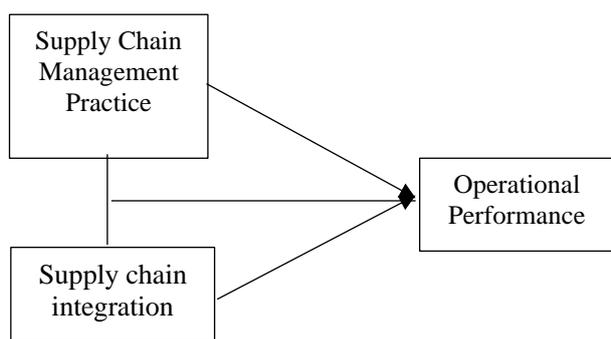


Figure 1. Research Paradigm

**RESULTS AND DISCUSSION**

This research was conducted in food and beverage agro-industry SMEs in Malang, East Java. The survey was carried out in August 2021 by as many as 100 SMEs.

**Description of Respondent's Characteristics**

Respondents in this study were owners or managers of food and beverage agro-industry SMEs. The following table describes the descriptive results based on the characteristics of the respondents.

Table 2. Descriptive Results Characteristics of Respondents

| Respondent Profile | Category   | Percentage |
|--------------------|------------|------------|
| Respondent         | Owner      | 92%        |
| Position           | Manager    | 8%         |
| Gender             | Man        | 40%        |
|                    | Woman      | 60%        |
| Entrepreneur's Age | <14 year   | 0%         |
|                    | 15-54 year | 85%        |
|                    | >55 year   | 15%        |
| Level of education | SD         | 10%        |
|                    | SMP        | 14%        |
|                    | SMA        | 27%        |
|                    | Diploma    | 8%         |
|                    | Sarjana    | 39%        |
|                    | Magister   | 2%         |

Source: Primary Data Processed (2021)

Based on table 2, it can be explained that the majority of respondents in the food and beverage agro-industry SMEs are 60% women with an average age of 15-54 years by 85%, the latest education is undergraduate by 39%, owning a company with an age between 15-54 years that is equal to 85%.

**Description of Business Characteristics**

Business characteristics are the nature or conditions inherent in business activities and the entrepreneur's behavior concerned with running his business. The following is explained in the table of results of the

description of business characteristics in food and beverage agro-industry SMEs in Malang City.

Table 3. Result Description of Business Characteristics

| Business Profile    | Category    | Percentage |
|---------------------|-------------|------------|
| Business experience | 2-5 year    | 42%        |
|                     | 6-9 year    | 18%        |
|                     | 10-13 year  | 11%        |
|                     | 14-17 year  | 8%         |
|                     | >18 year    | 21%        |
| Job status          | Main work   | 92%        |
|                     | Side job    | 8%         |
| Number of employees | 3-6 people  | 83%        |
|                     | 6-9 people  | 11%        |
|                     | 9-12 people | 3%         |
|                     | >12 people  | 3%         |

Source: Primary Data Processed (2021)

Based on table 3, it can be explained that the majority of business profiles in the food and beverage agro-industry SMEs in Malang City based on the length of business experience is between 2-5 years, which is 42%, while based on job status, the SMEs in the main job which the percentage is 92%. Based on the number of employees, most SMEs have between 3-6 workers.

The data analysis used in this study is a multiple regression analysis with the following results.

**T-Test Result (Partial)**

According to Manurung (2014), the value of t count is used to partially test the effect of the variables, which are the practice of supply chain management (X1) and supply chain integration (X2) towards the dependent variable, which explain whether these variables influence operational performance (Y) with an error rate of 5%. The test was carried out by looking at the significance column of each independent variable (free) with a significant level of <0.05. The following are the results of the t-test on research analysis.

Table 5. T-Test Result

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|--------------|-----------------------------|------------|---------------------------|--------|------|
|              | B                           | Std. Error | Beta                      |        |      |
| 1 (Constant) | 32,220                      | 2,831      |                           | 11,383 | ,000 |
| PSCM         | ,177                        | ,060       | ,304                      | 2,963  | ,004 |
| SCI          | ,092                        | ,059       | ,160                      | 1,554  | ,124 |

a. Dependent Variable: KP

Source: Primary Data Processed (2021)

Based on the results of the calculations in Table 5, it can be obtained the form of the multiple linear regression equation as follows:

$$Y = 32,22 + 0,177X1 + 0,092X2 + e$$

**The Effect of Supply Chain Management Practice Variables on Operational Performance (H1)**

The Supply chain management practice variable (X1) has a positive and significant effect on operational performance in Malang City food and beverage agro-industry SMEs. This can be seen from the significant value of supply chain management practice (X1) is  $0,004 < 0,005$ ; and t table value is  $t_{table} = t(\alpha/2; n-k-1) = t(0,05/2; 100-2-1) = (0,025; 97) = 1,988$ .

So the value of t-count is higher than t table, which is  $2,963 > 1,988$ , it is concluded that H1 is accepted so that the hypothesis which reads that there is an influence of supply chain management practices on operational performance is partially accepted.

1) **The Effect of Supply Chain Integration Variables on Operational Performance (H2)**

Supply chain integration variables (X2) negatively affect operational performance in food and beverage agro-industry SMEs in Malang City. This can be seen from the significant value in supply chain integration (X2) which is  $0,125 > 0,05$ , and the t value is small from t table ( $1,554 < 1,988$ ), it can be concluded that H2 is rejected. So that the researcher's hypothesis, which reads that there is an influence between supply chain integration variables on operational performance in food and beverage agro-industry SMEs is partially rejected.

**F Test Results (Simultaneous)**

According to Manurung, (2014), F test can be used to test the effect simultaneously on the independent variable on the dependent variable (Y). F test is done by comparing the significance of the calculated F value  $> F_{table}$ . For the model formulated at the value of  $F_{table} = f(k;n-k) = (2; 100 - 2)$ ,  $F_{table} = (2;98) = 3,09$  with an error rate of 5%. The following results of the F test performed can be seen in the table below.

Table 6. F Test Results

| Model        | Sum of Squares | df | Mean Square | F     | Sig.              |
|--------------|----------------|----|-------------|-------|-------------------|
| 1 Regression | 308,485        | 2  | 154,242     | 9,176 | ,000 <sup>b</sup> |
| Residual     | 1630,505       | 97 | 16,809      |       |                   |
| Total        | 1938,990       | 99 |             |       |                   |

a. Dependent Variable: KP

b. Predictors: (Constant), SCI, PSCM

Source: Primary data processed (2021)

Based on the test results in the table above, it can be seen that the calculated F value is 9.176 with the F table value 3.09 so it can be concluded that  $F_{arithmetic} > F_{table}$  or  $9,176 > 3,09$  with a

significant level of  $0,000 < 0,005$ , so H3 is accepted. It can be supposed that the practice of supply chain management (X1) and supply chain integration (X2) simultaneously significantly affects operational performance in food and beverage agro-industry SMEs in Malang City.

**Coefficient of Determination Test Results**

The coefficient of determination ( $R^2$ ) results measure how far the model can explain variations in the dependent variable in the study. The following results of the  $R^2$  test can be seen in the table below.

Table 7 Results of the Coefficient of Determination Model Summary

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | ,399 <sup>a</sup> | ,159     | ,142              | 4,100                      |

a. Predictors: (Constant), SCI, PSCM

Source: Primary data processed (2021)

Based on the table of determinant coefficient test results, it can be seen that there is an R Square value of 0.159. It means that the ability of the independent variables in the study to explain the dependent variable is 15.9%, the remaining 84.1% is explained by other variables not discussed in this study.

**The Influence of Supply Chain Management Practices on Operational Performance**

Based on the calculation results, it can be shown that there is a significant change in operational performance with a positive relationship direction. The results of this study support the results of previous studies where supply chain management practices have a considerable influence on operational performance carried out by earlier research by Storer et al., (2014); Ilmiyati & Munawaroh (2016), in his study explains that the practice of supply chain management has a significant effect on operational performance. Food and beverage agro-industry SMEs in Malang City have implemented supply chain management practices to create efficiency in the production process. The implementation is oriented towards customer satisfaction and operational performance where the food and beverage agro-industry SMEs prioritize what customers want so that they can achieve maximum satisfaction and SMEs are able to offer products/services in accordance with customer perceptions. So that when customer satisfaction is met, it will result in better operational performance in SMEs because they can meet customer desires.

**The Effect of Supply Chain Integration on Operational Performance**

The calculation results show that the supply chain integration variable has an insignificant effect

on changes in operational performance with an antagonistic relationship direction. So in general, the results of this study do not support the researcher's hypothesis that the influence of supply chain integration has a significant positive effect on operational performance. It also rejects previous research conducted by Storer et al., (2014); (Li et al., 2006), in his research explains that supply chain integration significantly affects operational performance.

Some food and beverage SMEs in Malang have not been integrated into the supply chain from upstream to downstream. It can be seen from the downstream partners who have not been able to build trade consignments due to constraints in their ability to adapt information technology to share information. The evidence in the field shows that the adoption of information technology is not supported by the readiness of the Human Resources (HR) itself. It can be seen that there are still SMEs that do not use the internet as a promotional and selling medium.

## CONCLUSION

Based on the results of data analysis, it can be concluded that 1) supply chain management practices have a significant positive effect on operational performance, 2) supply chain management integration has no significant positive effect on operational performance, 3) supply chain practices and supply chain integration simultaneously have a positive and significant effect. On operational performance in food and beverage agro-industry SMEs. Supply chain management activities have many benefits in the production and operation systems of the company, so SMEs need to pay attention to and improve coordination and cooperation between supply chain members, improving capabilities in the information technology field in increasing product sales. SMEs need to properly prepare and respond to future challenges, for example, changes in the external environment such as changing trends, competition between SMEs, and the tendency of consumer behavior to show different attitudes.

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