THE EFFECT OF SUPPLY CHAIN QUALITY INTEGRATION
ON SUPPLY CHAIN MANAGEMENT PRACTICE TO
ACHIEVE SUPPLY CHAIN PERFORMANCE

SKRIPSI

Presented in partial fulfillment of the requirements for
The Bachelor’s Degree in Accounting

by
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0085201500033

FACULTY OF BUSINESS
ACCOUNTING STUDY PROGRAM
PRESIDENT UNIVERSITY
CIKARANG, BEKASI
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# THE EFFECT OF SUPPLY CHAIN QUALITY INTEGRATION ON
SUPPLY CHAIN MANAGEMENT PRACTICE TO ACHIEVE SUPPLY
CHAIN PERFORMANCE

## The Effect of Supply Chain Quality Integration on Supply
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DECLARATION OF ORIGINALITY

I hereby declare that the thesis entitled:

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Cikarang, 21 March 2019

Yunica Wahyu Dewantari
PANEL OF EXAMINERS APPROVAL

SUPPLY CHAIN MANAGEMENT PRACTICE AND PERFORMANCE:
THE EFFECT OF SUPPLY CHAIN QUALITY INTEGRATION

submitted by Yunica Wahyu Dewantari, Accounting Study Program, Faculty of Business, has been assessed and proved to pass the oral examination held on March 28, 2019.

Panel of Examiner,

Advisor,

( Monika Kussetya Ciptani, S.E., Ak., M.Ak. )

Examiner 1

( Dr. Ika Pratiwi Simbolon, S.E., M.M. )

Examiner 2

( Setyarini Santosa, S.E., M.Sc., CMA. )

Approved By

Date: ..............................................

( Andi Ina Yustina, M.Sc., CMA. )

Head of Study Program
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First of all, thankful to the presence of the Allah SWT for the blessings of His mercy and guidance I can complete the research thesis with the title “The effect of Supply Chain Quality Integration on Supply Chain Management Practices to achieve Supply Chain Performance”.

The purpose of writing this research thesis is to fulfill the criteria for a bachelor degree in accounting (B.Acc) for bachelor degree program in Accounting Study Program President University. Researcher realizes that this thesis still not complete, therefore researcher expects critics and suggestions from other parties to complete this research thesis.

The completion of this research thesis was because of help from many parties, so that researcher gave a big thank you to all parties who have provided moral and material support both directly and indirectly in the preparation of completion this research thesis, especially to whom I respect

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Cikarang, 21 March 2019

Regards,

Yunica Wahyu Dewantari
008201500033
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ABSTRACT

In manufacturing company, quality of product could become their competitive advantage to compete in the market. To achieve good quality of products and activities, company need to have system or strategy to manage their supply chain activity and make it more effective and efficient flow of production and improve the quality of information sharing, production time, and products, so the company can improve their performance. This study conducted to find out the mediating effect of supply chain quality integration on supply chain management practices to achieve performance. Researcher was using PLS Structural Equation Modelling (PLS-SEM) to analyze data. The sample of this research was consumer goods manufacturing in Indonesia and using primary data with questionnaire as data collection method. After analysis using PLS-SEM, researcher was found that supply chain management practices affects operational performance; and supply chain quality integration has mediating effect on the effect of supply chain management practices on operational performance of company.

Keywords: supply chain management practices, supply chain quality integration, supply chain performance, just in time capability, postponement
INTISARI

Di perusahaan manufaktur, kualitas produk dapat menjadi kompetitif advantage untuk bersaing di pasar. Untuk mendapatkan kualitas aktifitas dan produk yang baik, perusahaan perlu memiliki sistem atau strategi untuk mengatur aktifitas rantai pasokan meningkatkan efektifitas dan efisiensi proses produksi dan meningkatkan kualitas persebaran informasi, waktu produksi, dan produk, sehingga perusahaan dapat meningkatkan performa mereka. Penelitian ini dilakukan guna mengetahui pengaruh mediasi dari kualitas integrasi rantai pasokan terhadap pengaruh praktik manajemen rantai pasokan untuk mencapai performa rantai pasokan yang lebih baik. Peneliti menggunakan PLS Structural Equation Modelling (PLS-SEM) dalam menganalisis primary data yang diperoleh melalui questionnaire terhadap perusahaan manufaktur barang konsumsi di Indonesia sebagai sampel penelitian. Setelah melakukan analisis data, peneliti menemukan bahwa praktik manajemen rantai pasokan dapat mempengaruhi performa operasional rantai pasokan dalam perusahaan; dan kualitas integrasi rantai pasokan dapat memediasi pengaruh praktik manajemen rantai pasokan terhadap performa operasional rantai pasokan.

Kata Kunci: praktik manajemen rantai pasokan, kualitas integrasi rantai pasokan, performa rantai pasokan, kemampuan just in time, postponement
CHAPTER I
INTRODUCTION

1.1 Research Background

In a manufacturing company, the quality of their product could become their competitive advantage to compete in the market. Customers are only focused on the quality of the product and service that they will get, such as high quality, fast delivery, and low-cost products (Huo et al., 2016). To improve the quality of products and services, they need to manage their activity by making an effective and efficient supply chain management. Supply chain management (SCM) is a set of strategies to coordinate within the business functions to improve the performance and whole supply chain from source to the customer (Mentzer et al., 2001).

Supply Chain Management is important for the company. Supply chain management was defined as a set of strategy that was taken by the company to improve the effectiveness of supply chain (Li et al., 2005). The main objective of the supply chain management practice was to reduce the cycle and inventory time and increase product quality and productivity at the same time. In the long term period, supply chain management hopefully can improve the profit, market share, also customer satisfaction of company (Wisner, 2003). Supply chain management also has the ability to promote company integration in order to increase company collaboration (Ajmera & Cook, 2009; Sundram et al., 2016).
In some manufacturing companies, they use just in time management practices on the production process, or the product will be produced based on the order received. It could improve quality control; reduce the lead time; improving the performance of the vendor; and waste elimination (Vokurka & Lummus, 2000). In some conditions, manufacturing also decides to use the postponement management practice, or they delay the production for a period of time. They decide to do this activity to give the value added to their products and improve customer satisfaction (Sundram et al., 2016). It is important to manage their supply chain because by applying an effective supply chain management, a manufacturing company could boost their customer satisfaction, reduce the operating cost and improve the quality of products, efficiency of production process, competitive advantages, and their financial position (Al-Shboul et al., 2017). But an effective supply chain management would improve the performance depends on how the management commitment and willingness to train their employee and improve the information quality among supply chain member, external or internal members.

With a good cooperative integration among supply chain members, the company can improve the performance by helping the company to solve the quality problem, reduce quality defects, and improve process and efficiency of production (Yu & Huo, 2018). But, to be more competitive in the market, the company does not only need to have and manage good integration in supply chain activity, but they also need to have good supply chain quality integration. With managing good supply chain quality integration, the company can improve the
efficiency and effectiveness of flow of production and quality sharing to improve the quality and value of the product, quality of production time, and low-cost product (Flynn et al., 2010; Huo et al., 2016).

Some company was realized the importance of supply chain management for their supply chain activity, but usually they does not know what supply chain management practices they should implement (Sundram et al., 2016; Li et al., 2005); and although quality becoming the important things in a company that would gave them competitive advantage to compete in the market, company does not realize the importance of implementing supply chain quality integration in improving the quality of their supply chain activity and products (Huo et al., 2016; Yu and Huo, 2018). This could happen due to lack understanding of what constitutes a comprehensive set of supply chain management practices and what is supply chain quality integration and why it is important for the company.

Although previous researchers were given a clear understanding of how supply chain management affects the supply chain performance, or how supply chain management affects the supply chain integration, there are limited sources about supply chain quality integration and its role in mediating the effects of supply chain management practice to achieve better performance both operational and financial. Previous research has only examined the indirect effect of supply chain integration on supply chain practices and performances (Sundram et al., 2016); and the effects of supply chain quality integration on operational performance (Huo et al., 2016; Yu and Huo, 2018)). Consider the explanation above, the researcher interested to do the research with the title “The effect of
Supply Chain Quality Integration on Supply Chain Management Practices to achieve Supply Chain Performance”.

1.2 Research Questions

There are several questions that were formulated to be answered in this research:

RQ1: Does supply chain management practices positively affect supply chain quality integration?

RQ2: Does supply chain quality integration positively affect supply chain performance of company?

RQ3: Does supply chain management practices positively affect supply chain performance of company?

RQ4: Does supply chain quality integration mediate the supply chain management practice in achieving supply chain performance?

1.3 Research Objectives

This research has several objectives:

RO1: To find the effects of supply chain management practice on supply chain quality integration

RO2: To find the effects of supply chain quality integration on supply chain performance

RO3: To find the effects of supply chain management practice on supply chain performance
RO4: To find the mediating effects of supply chain quality integration on supply chain management practice in achieving supply chain performance

1.4 Research Scope and Limitation

Researcher in this study will discuss two questions related to supply chain management. First is about the effect of supply chain management practices on supply chain performance. Second, the effect of supply chain quality integration in supply chain management practice to achieve supply chain performance.

In this study, the researcher will focus on two types of supply chain management which includes just in time capability and postponement. Just in time capability relates to the management practices to purchasing the materials based on the materials needed for production, producing the product at the time they receive the order from customers, and delivering the product to customers (Vokurka & Lummus, 2000). While, postponement refers to the management practices when they need to delay or postpone the production process in order to improve the quality of product and meet customer satisfaction (Sundram et al., 2016). In manufacturing company, especially in consumer goods manufacturing company, just in time capability and postponement is the supply chain management practices that commonly used; but their supply chain management practices are not effectively improve the performance of the company because they does not know how to make the just in time capability and postponement to be effective for their condition in the company.
The researcher will analyze the impact of just in time capability and postponement management practice on the supply chain performance of the company either operationally (such as supplier-oriented performance and customer oriented performance), or financially (financial performance). The researcher also will analyze the effect of supply chain quality integration on supply chain management practices in improving the supply chain performance of the company.

To reduce the heterogeneity data, the researcher will do the research on consumer goods manufacturing company that was listed on the Indonesia Stock Exchange (IDX). The selection of consumer goods manufacturing industry was based on the company’s production and sales activity.

1.5 Research Benefits

In doing research about supply chain management, researcher was expected that this research could give benefits to several parties.

1.5.1 Benefits for manager or company

For company and managers of the company, this research could give several benefits such as:

a  To give knowledge in creating an effective supply chain management activity;

b  To give knowledge whether the supply chain quality integration will affecting the supply chain management practice to achieve the supply chain performance.
1.5.2 Benefits for student or academic practitioner

For academic practitioner or student, this research could give several benefits such as:

a. Giving a clear understanding of the relationship between supply chain management practice, supply chain performance, and supply chain quality integration;

b. Expanding the previous research in the supply chain of the company.
CHAPTER II
LITERATURE REVIEW

In a company, there are two main activities that usually happen. First, demand chain activity which refers to the backward process or action from the end customer to the source of the product (Vollman et al., 2000). Second, supply chain which refers to the forward process or action of production, service, finance, and information from the source to the customer (Mentzer et al., 2001). In this study, the researcher will focus on the supply chain activity which includes: supply chain management practice, supply chain performance and supply chain quality integration.

2.1 Supply Chain Management Practice

In supply chain activity, we need to have tools to control all the process and action that was taken. One of the tools that could we use is supply chain management practice. Supply chain management practice refers to the practice or actions that were taken by the company in order to make effective and efficient management in supply chain activity (Gorane & Kant, 2016). A good supply chain management should in line with our business strategy and management; in line with our customer needs; in line with our position and influence to supplier and customer; it also should be adaptive with the market condition and market change (Cohen & Roussel, 2005).
Supply chain management practice in a company has several objectives: (Wisner, 2003)

a. Short term objectives include Quality and productivity improvement while reducing inventory and cycle time;

b. Long term objectives include: Increase the customer satisfaction, increase the market share, also increase in profit of all networks in the supply chain.

In manufacturing company, supply chain management practice is important in order to: (Council of Supply Chain Management Professionals (CSCMP), n.d)

a. Boost customer service by delivering the correct product variance and quantity; locate the product in the right location, deliver product at the right time, and giving a right after sale support;

b. Reduce operating costs by decreasing the cost of purchasing, decreasing the cost of production, and decreasing the cost of the total supply chain;

c. Improve the financial position by increasing the profit leverage, decrease the fixed asset, and increase the cash flow.

To make a good supply chain management and achieve the objectives of supply chain management practices, the company was adopted several kinds of supply chain management practices such as just in time capability and/or postponement.

2.1.1 Just in Time Capability

Just in time (JIT) capability refers to the system to synchronized the producing time so the company can produce appropriate items inappropriate amount of product inappropriate time (Gorane & Kant, 2016). So we can conclude
that when company adopting the just in time (JIT) in supply chain management, they need to evaluate, eliminate, and reduce the unnecessary items that they purchase and produce, so they can maximize or improve their time of production.

There are several elements that just in time (JIT) management should have such as (Vokurka & Lummus, 2000)

a. Improvement of quality control;
b. Lead time reduction;
c. Improvement of vendor performance;
d. Improvement of total preventative maintenance; and
e. Elimination of waste.

2.1.2 Postponement

Postponement management refers to the postpone or delay the producing process of a product to later point of time in order to improve the product, give the added value, and increase the customer satisfaction (Sundram et al., 2016). In a company, adopting postponement management will be appropriating in several conditions: innovative product, high monetary density product, high specialization, and wide range product, long delivery time product market, low frequency of delivery product, and high demand uncertainty (Li et al., 2005). Sometimes, the company needs to postpone their production because they want to improve their quality of the product or reducing the production cost cause of the high monetary density or low frequency of product that was ordered by customer.
2.2 Supply Chain Quality Integration

Supply chain quality integration is the combination of supply chain integration and quality management. Supply chain integration refers to the degree to which company collaborates and integrates the internal organization (divisions and staffs in the company) and external organization (supplier and customer) in order to make more effective and efficient flow of product and information sharing to improve the product value, time of production, with a low cost of production (Flynn et al, 2010). While, quality management focused on quality of products and services delivered to the customer (Huo et al., 2016). Based on description above, supply chain quality integration can be defined as the degree to which company collaborates and synchronize the internal organization with external organization parties in order to improve the efficiency and effectiveness of flow of production and quality of information sharing to improve the quality and value of product, quality of time production, and low cost product. There are two kinds of supply chain quality integration, which are internal and external quality integration.

2.2.1 Internal Quality Integration

Internal quality integration refers to the degree to which the company set the strategy, practice, and procedures for the internal parties in order to collaborate and synchronized the production process and quality of information sharing to fulfill the quality of customer requirements (Huo et al., 2016).
2.2.2 External Quality Integration

In the external quality integration, they will set the strategies for the external parties of the organization. External quality integration refers to the degree, to which organization integrates with the external parties to set the strategic, procedure, and practice to collaborate and synchronized the production process and quality of information sharing to improve the quality of customer requirements (Yu & Huo, 2018). External quality integration could be separated into two types: supplier quality integration which refers to the degree of integration among company with their supplier; and customer quality integration which refers to the quality integration among company with their customers.

2.3 Supply Chain Performance

Supply chain performance was referred to the systematic process to measure the effective and efficient supply chain activity in their company (Sundram et al., 2016). Supply chain performance could help us to measure our supply chain activity and management was already achieved or not. So, we can evaluate our supply chain management is effective and efficient for the company or not. There are two kinds of performance: operational performance and financial performance.

2.3.1 Operational Performance

Operational performance refers to the performance of the production process and quality in the manufacturing and distribution process to deliver the product in a timely and effective manner (Huo et al., 2014). There are two types
of operational performance: supplier-oriented performance and customer oriented performance. Supplier oriented performance relates to the manufacture perception about how their key supplier serves the manufacture with the quality, flexibility, and delivery of products. While, customer oriented performance relates to how the company will serve their customer with the quality, flexibility, and delivery of the product.

2.3.2 Financial Performance

Financial performance will be the focus on evaluates the financial aspects performance such as sales growth, profitability and market share growth of the company.

2.4 Hypothesis Development

![Research Model](image)

(Adopted from Sundram et al. (2016), Huo et al. (2016) and Yu and Huo (2018))
2.4.1 The Effect of Supply Chain Management Practice on Supply Chain Quality Integration

Just in time (JIT) capability refers to how a company produces the appropriate items, with an appropriate amount, in an appropriate time (Gorane & Kant, 2016). We can well manage this management system only when we can well manage the internal quality integration and external quality integration in the company. When we use just in time in the supply chain, we need to have good communication and information sharing with internal or external parties. If our integrations are not good enough, then our production process will face some problem cause of miscommunication or late information sharing. As the result, our production will be delayed or postponed. So, to make them just in time (JIT) management success, we also need to improve the supply chain quality integration. Thus, we proposed following hypothesis

H1a: The level of just in time capability has positive effect on the level of internal quality integration

H1b: The level of just in time capability has positive effect on the level of supplier quality integration

H1c: The level of just in time capability has positive effect on the level of customer quality integration

Postponement management system refers to the system which we delayed or postponed the production in order to improve the quality of the product, give the value added, and give more innovation. In applying this management system, we need to improve our quality integration. The success postponement management
depends on how management could be integrated internally and externally. For example, when the company needs to postpone product A for a couple month, so they do not need to order more raw materials and they also need to tell the reasons to the customer so they can reduce the cost of production and their customer will not be unsatisfied. Thus we proposed the following hypothesis:

H1d: The level of postponement has positive effect on the level of internal quality integration

H1e: The level of postponement has positive effect on the level of supplier quality integration

H1f: The level of postponement has positive effect on the level of customer quality integration (H1f)

2.4.2 The Impact of Supply Chain Quality Integration on Supply Chain Performance

Internal quality integration relates to the integration among the internal parties of the company. When their internal integration such as quality of information sharing and communication were improved, they also could improve their performance. When their quality of information sharing and information improved – such as real-time information sharing, accurate information, etc – their production process will be improved so the delivery time and quality of the product will also improve. Their financial performance will also be improved since they could reduce the cost of production from unnecessary raw materials purchased. Thus researcher was proposed following hypothesis
H2a: The level of internal quality integration has positive effect on the level of supplier oriented performance

H2b: The level of internal quality integration has positive effect on the level of customer oriented performance

H2c: The level of internal quality integration has positive effect on the level of financial performance

Supplier quality integration relates to the performance of the company. When the company can improve their integration with the supplier, they will have a close relationship with their supplier; as a result, our supplier will serve us better in quality, delivery, and flexibility of the product. So we could get the product we need on time and it also could reduce the cost of production. Thus researcher was proposed following hypothesis

H2d: The level of supplier quality integration has positive effect on the level of supplier oriented performance

H2e: The level of supplier quality integration has positive effect on the level of financial performance

Customer integration relates to the organization performance. If our customer integration improved, then we will serve our customer better. When it improved, we could better understanding about what the need and what they want, so we could serve better quality, delivery, and flexibility of the product to fulfill customer needs. Thus researcher was proposed following hypothesis

H2f: The level of customer quality integration has positive effect on the level of customer oriented performance
H2g: The level of customer quality integration has positive effect on the level of financial performance (H2g)

2.4.3 The Effect of Supply Chain Management Practice on Supply Chain Performance

Supply chain management practice was referring to set of tools that were taken by the management of the company to improve the efficiency and effectiveness of supply chain activity in the company (Gorane & Kant, 2016). Good supply chain management practice could reflect the performance of the company. The objective of supply chain management was to improve the performance of the company both operational and financial (Al-Shboul et al., 2017; Wisner, 2003). Therefore, the researcher formulated the following hypothesis:

H3a: The level of just in time capability has positive effect on the level of supplier oriented performance

H3b: The level of just in time capability has positive effect on the level of customer oriented performance

H3c: The level of just in time capability has positive effect on the level of financial performance

H3d: The level of postponement has positive effect on the level of supplier oriented performance

H3e: The level of postponement has positive effect on the level of customer oriented performance
H3f: The level of postponement has positive effect on the level of financial performance

2.4.4 Mediating Effect of Supply Chain Quality Integration

The effect of supply chain management practice on the performance will not be direct and universal. This relationship will depend on how the supply chain quality integration that was set and applied in the company (Sundram et al, 2016). When their supply chain management practice was good but their supply chain quality integration not good, it may affect the performance (it may be good or bad). It depends on how integrative capabilities of the organization across the supply chain. Based on this, we proposed:

H4: Supply chain quality integration will mediate the supply chain management practice in achieving supply chain performance
CHAPTER III
RESEARCH METHOD

3.1 Sampling

To test the hypothesis, researchers were collected the data from consumer goods manufacturing industry listed on Indonesia Stock Exchange (IDX), especially in consumer goods industry. The reasons for the only focus on manufacturing industry; first, is to minimize the heterogeneity of the data. Second, the manufacturing industry is one type of business which has a complete supply chain activity. It does not mean that other industry does not have a supply chain activity, but supply chain activity in the manufacturing industry is more complete and clear to analyze rather than another type of industry. Third, compared to another two sub-sector in the manufacturing sector, consumer goods industry is one of the most active sub-sector in trading their share in Indonesia Stock Exchange (IDX). The survey questionnaire was separated into a total of 51 consumer goods manufacturer that was randomly selected from the Indonesian Stock Exchange (IDX). The survey was conducted over a span of 4 months. As a result, a total of 22 were collected and the final response rate was 43.14 percent.

In collecting data, researcher was using primary data. Researcher collecting the primary data by doing the survey questionnaire which divided into four main sections of the survey questionnaire: respondent profile, supply chain management practice, supply chain quality integration, and supply chain performance.
3.2 Variables and Measurement

To test the hypothesis, the researcher was adapted several measurements of SCMP, SCQI, and SCP from extant literature. A survey questionnaire was developed in collecting the data and information consisted of four main sections: respondents’ profile, SCMP, SCQI, and SCP constructs.

3.2.1 Independent Variable

There are two types of Supply Chain Management Practices (SCMP) that used in this research as independent variables, which are *just in time capability* and *postponement*. Just in time capability will be measures using eight items of SCMPs scale developed by Dong et al. (2001). Postponement will be measured using four items of SCMP scale developed by Li et al. (2005). All the SCMP items were measured using 7 points Likert scale ranging from 1 (no extent) to 7 (great extent).

3.2.2 Dependent Variable

Supply Chain Performance (SCP) as dependent variable in this research was divided into two types, which are *operational performance* (supplier oriented performance and customer oriented performance) and *financial performance*. Supplier oriented performance will be measured using six items of SCP scale developed by Huo (2012). Customer oriented performance will be measured using six items of SCP scale developed by Huo (2012). All operational items were measured using 7 points Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Financial performance will be measured using eight items of
SCP scale developed by Huo (2012) with 7 points Likert scale ranging from 1 (much worse) to 7 (much better).

3.2.3 Mediating Variable

Supply Chain Quality Integration (SCQI) as mediating variable will be divided into two types: *internal quality integration* and *external quality integration* (supplier quality integration and customer quality integration). Internal quality integration was measured with nine items of SCQI scale developed by Yu and Huo (2018). Supplier quality integration will be measured using nine items of SCQI scale developed by Yu and Huo (2018). Customer quality integration will be measured using six items of SCQI scale developed by Yu and Huo (2018). SCQI items will be measured using 7 point Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree).

3.3 Research Method

In doing statistical analysis in this study, the researcher was used PLS–SEM (Partial Least Square – Structural Equation Modelling). Structural equation modeling (SEM) is the second generation techniques in statistical analysis which can researcher used to incorporate unobservable variables measured indirectly by indicator variables (Hair et al., 2017). PLS-SEM is one part of SEM which used to do exploratory research (develop theories) (Hair et al., 2017). Researcher used SmartPLS (Ver. 3.2.8) and the maximum estimation method to estimate the conceptual model from a sample of 22 consumer goods manufacturing companies in Indonesia.
CHAPTER IV
RESULT ANALYSIS, DISCUSSION, AND IMPLICATION

4.1 Sample Profile

After conducted the research for four months (start from September 2018 until January 2019) and distributing the research questionnaire to 51 consumer goods manufacturing in Indonesia, researcher was collected responses from 22 firms with final response rate 43.14 percent. The respondent firms were from several sectors in consumer goods manufacturing industry that was listed on Indonesian Stock Exchange (IDX), which are: food and beverage (50.00 percent), pharmaceutical (18.18 percent), cosmetic and household (13.64 percent), tobacco manufactures (9.09 percent), and house-ware (9.09 percent).

Table 4.1 Respondents Firm Profile

<table>
<thead>
<tr>
<th>Sector in Consumer Goods Manufacture</th>
<th>Number of Employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Beverages</td>
<td>&lt; 5,000 employees</td>
<td>45.45%</td>
</tr>
<tr>
<td>Tobacco Manufacturer</td>
<td>5,000 - 10,000 employees</td>
<td>27.27%</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>10,000 - 15,000 employees</td>
<td>9.09%</td>
</tr>
<tr>
<td>Cosmetics and Household</td>
<td>15,000 - 20,000 employees</td>
<td>4.55%</td>
</tr>
<tr>
<td>House-ware</td>
<td>20,000 - 25,000 employees</td>
<td>0.00%</td>
</tr>
<tr>
<td>Others</td>
<td>&gt; 25,000 employees</td>
<td>13.64%</td>
</tr>
</tbody>
</table>
4.2 Reliability and Validity

To verify the reliability and validity of the construct, researcher used internal consistency reliability, convergent validity, and discriminant validity as the criteria of evaluation measurement model. Composite reliability ($\rho_c$) and Cronbach’s alpha ($\alpha$) were used to analyzed the internal consistency reliability. In testing convergent validity, researcher used loadings factor and average variance extracted (AVE). Fornell-Larcker criterion were used to test the discriminant validity.

Internal consistency reliability were achieved when the composite reliability ($\rho_c$) and Cronbach’s alpha ($\alpha$) were fulfilled the criteria. Based on Ghozali (2008), to fulfill the criteria of reliability data, Cronbach's alpha ($\alpha$) should be greater than 0.70; and composite reliability will be fulfilled at point 0.70 or greater, but 0.60 and 0.50 still can be supported. As shown in Table 4.2, the value of Cronbach's alpha ($\alpha$) and the composite reliability ($\rho_c$) was greater than 0.70 which shows that the construct was fulfilling the criteria of internal consistency reliability.
Convergent validity were tested using loadings factor and average variance extracted (AVE). In fulfilled the criteria of convergent validity, loading factors should be at/more than 0.50; and average variance extracted (AVE) should be more than 0.50. Table 4.2 shows that loadings factor and average variance extracted (AVE) was exceeded 0.50; and the research model was fulfilled the criteria of convergent validity.

Table 4.2 Internal Consistency Reliability and Convergent Validity

<table>
<thead>
<tr>
<th>Supply chain Management Practices</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Just in Time Capability</strong></td>
<td></td>
</tr>
<tr>
<td>(ρc = 0.914; α = 0.900; AVE = 0.582)</td>
<td></td>
</tr>
<tr>
<td>JIT01</td>
<td>0.759</td>
</tr>
<tr>
<td>JIT02</td>
<td>0.743</td>
</tr>
<tr>
<td>JIT03</td>
<td>0.832</td>
</tr>
<tr>
<td>JIT04</td>
<td>0.801</td>
</tr>
<tr>
<td>JIT05</td>
<td>0.885</td>
</tr>
<tr>
<td>JIT06</td>
<td>0.841</td>
</tr>
<tr>
<td>JIT07</td>
<td>0.756</td>
</tr>
<tr>
<td>JIT08</td>
<td>0.511</td>
</tr>
<tr>
<td><strong>Postponement</strong></td>
<td></td>
</tr>
<tr>
<td>(ρc = 0.847; α = 0.766; AVE = 0.582)</td>
<td></td>
</tr>
<tr>
<td>POS01</td>
<td>0.769</td>
</tr>
<tr>
<td>POS02</td>
<td>0.729</td>
</tr>
<tr>
<td>POS03</td>
<td>0.792</td>
</tr>
<tr>
<td>POS04</td>
<td>0.742</td>
</tr>
</tbody>
</table>

**Supply Chain Quality Integration**

<table>
<thead>
<tr>
<th>Internal Quality Integration</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ρc = 0.943; α = 0.934; AVE = 0.626)</td>
<td></td>
</tr>
<tr>
<td>IQI01</td>
<td>0.782</td>
</tr>
<tr>
<td>IQI02</td>
<td>0.835</td>
</tr>
<tr>
<td>IQI03</td>
<td>0.720</td>
</tr>
<tr>
<td>IQI04</td>
<td>0.848</td>
</tr>
<tr>
<td>Supplier Quality Integration</td>
<td>SQI01</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>(ρc = 0.901; α = 0.875; AVE = 0.509)</td>
<td>SQI02</td>
</tr>
<tr>
<td></td>
<td>SQI03</td>
</tr>
<tr>
<td></td>
<td>SQI04</td>
</tr>
<tr>
<td></td>
<td>SQI05</td>
</tr>
<tr>
<td></td>
<td>SQI06</td>
</tr>
<tr>
<td></td>
<td>SQI07</td>
</tr>
<tr>
<td></td>
<td>SQI08</td>
</tr>
<tr>
<td></td>
<td>SQI09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Quality Integration</th>
<th>CQI01</th>
<th>0.314</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ρc = 0.897; α = 0.869; AVE = 0.509)</td>
<td>CQI02</td>
<td>0.346</td>
</tr>
<tr>
<td></td>
<td>CQI03</td>
<td>0.805</td>
</tr>
<tr>
<td></td>
<td>CQI04</td>
<td>0.393</td>
</tr>
<tr>
<td></td>
<td>CQI05</td>
<td>0.774</td>
</tr>
<tr>
<td></td>
<td>CQI06</td>
<td>0.783</td>
</tr>
</tbody>
</table>

**Supply Chain Performance**

<table>
<thead>
<tr>
<th>Supplier Oriented Performance</th>
<th>SOP01</th>
<th>0.682</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ρc = 0.911; α = 0.920; AVE = 0.634)</td>
<td>SOP02</td>
<td>0.840</td>
</tr>
<tr>
<td></td>
<td>SOP03</td>
<td>0.914</td>
</tr>
<tr>
<td></td>
<td>SOP04</td>
<td>0.703</td>
</tr>
<tr>
<td></td>
<td>SOP05</td>
<td>0.818</td>
</tr>
<tr>
<td></td>
<td>SOP06</td>
<td>0.819</td>
</tr>
</tbody>
</table>
Table 4.2 Internal Consistency Reliability and Convergent Validity

<table>
<thead>
<tr>
<th>Customer Oriented Performance</th>
<th>COP01</th>
<th>0.656</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COP02</td>
<td>0.744</td>
</tr>
<tr>
<td></td>
<td>COP03</td>
<td>0.953</td>
</tr>
<tr>
<td></td>
<td>COP04</td>
<td>0.759</td>
</tr>
<tr>
<td></td>
<td>COP05</td>
<td>0.932</td>
</tr>
<tr>
<td></td>
<td>COP06</td>
<td>0.800</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>FP01</td>
<td>0.793</td>
</tr>
<tr>
<td></td>
<td>FP02</td>
<td>0.728</td>
</tr>
<tr>
<td></td>
<td>FP03</td>
<td>0.842</td>
</tr>
<tr>
<td></td>
<td>FP04</td>
<td>0.771</td>
</tr>
<tr>
<td></td>
<td>FP05</td>
<td>0.912</td>
</tr>
<tr>
<td></td>
<td>FP06</td>
<td>0.921</td>
</tr>
<tr>
<td></td>
<td>FP07</td>
<td>0.880</td>
</tr>
<tr>
<td></td>
<td>FP08</td>
<td>0.893</td>
</tr>
</tbody>
</table>

Note: Composite reliability ($\rho_c$) $\geq$ 0.70; Cronbach’s alpha ($\alpha$) $\geq$ 0.70; Average variance extracted (AVE) $\geq$ 0.50; Loading factor $\geq$ 0.50

To test the discriminant validity of the data, researcher was used Fornell-Lercker criterion. In Fornell-Lercker criterion, the square root of average variance extracted (AVE) should be higher than constructs correlations with other constructs in the model. Table 4.3 shows that the square root average variance extracted (AVE) in the diagonal elements were higher than other constructs correlations. Other criteria of discriminant validity are the cross loadings of intended factors should be greater than loadings of other factors. Appendix C shows that cross loadings factor of intended factors were higher than loadings.
factor of other constructs. Based on Fornell-Larcker criteria and Cross Loadings factor, these research model was fulfilled the criteria of discriminant validity.

<table>
<thead>
<tr>
<th></th>
<th>JIT</th>
<th>POS</th>
<th>IQI</th>
<th>SQI</th>
<th>CQI</th>
<th>SOP</th>
<th>COP</th>
<th>FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just in Time Capability</td>
<td>0.763</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posponement</td>
<td>0.280</td>
<td>0.763</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Quality Intg</td>
<td>0.394</td>
<td>0.156</td>
<td>0.791</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier Quality Intg</td>
<td>0.500</td>
<td>0.238</td>
<td>0.811</td>
<td>0.714</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Quality Intg</td>
<td>0.453</td>
<td>0.514</td>
<td>0.552</td>
<td>0.753</td>
<td>0.714</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier Oriented Perf</td>
<td>0.593</td>
<td>0.501</td>
<td>0.445</td>
<td>0.631</td>
<td>0.511</td>
<td>0.797</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Oriented Perf</td>
<td>0.446</td>
<td>0.498</td>
<td>0.656</td>
<td>0.687</td>
<td>0.709</td>
<td>0.674</td>
<td>0.813</td>
<td></td>
</tr>
<tr>
<td>Financial Performance</td>
<td>0.180</td>
<td>0.146</td>
<td>0.600</td>
<td>0.444</td>
<td>0.114</td>
<td>0.341</td>
<td>0.449</td>
<td>0.854</td>
</tr>
</tbody>
</table>

Mean | 0.893 | 0.754 | 0.936 | 0.875 | 0.860 | 0.870 | 0.885 | 0.956 |
Standard Deviation | 0.042 | 0.079 | 0.022 | 0.037 | 0.038 | 0.060 | 0.028 | 0.013 |

Note: Diagonal items are square root of AVE

### 4.3 Structural Model

![Diagram](Image)

Panel A Direct Effect

Panel B Indirect Effect

Figure 4.1 Direct and Indirect Effect of Supply Chain Management Practice on Performance

Researcher was testing multicollinearity which analyzes the intercorrelations among independent variables. In assessing the multicollinearity, researcher using variance inflation factors (VIF) should be greater than 10. As
showed in Appendix B, research model in this research, variance inflation factors (VIF) was below 10 and fulfilled collinearity criteria.

In structural modelling, researcher was used path coefficient ($\beta$), p-value, and T-value to test the effect and significant level between two variables. Path coefficient defines as value of effect/relation of latent variable. To determine the effect of one variable to other variable, researcher was used P-value with significant at $p \leq 0.05$. T-value will analyzed the variable have significant effect to another variable or no significant effect. When T-value were greater than T-tables (in this research = 1.96 ($\alpha = 0.05$; two tailed)).

Table 4.4 Result of Hypothesis Test

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>T-Value</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIT Capability $\rightarrow$ IQI</td>
<td>0.380**</td>
<td>1.967</td>
<td>H1a Supported</td>
</tr>
<tr>
<td>JIT Capability $\rightarrow$ SQI</td>
<td>0.470*</td>
<td>2.580</td>
<td>H1b Supported</td>
</tr>
<tr>
<td>JIT Capability $\rightarrow$ CQI</td>
<td>0.335***</td>
<td>1.954</td>
<td>H1c Supported</td>
</tr>
<tr>
<td>POS $\rightarrow$ IQI</td>
<td>0.068</td>
<td>0.238</td>
<td>H1d Not Supported</td>
</tr>
<tr>
<td>POS $\rightarrow$ SQI</td>
<td>0.171</td>
<td>0.692</td>
<td>H1e Not Supported</td>
</tr>
<tr>
<td>POS $\rightarrow$ CQI</td>
<td>0.531***</td>
<td>1.952</td>
<td>H1f Supported</td>
</tr>
<tr>
<td>IQI $\rightarrow$ SOP</td>
<td>-0.136</td>
<td>0.441</td>
<td>H2a Not Supported</td>
</tr>
<tr>
<td>IQI $\rightarrow$ COP</td>
<td>0.491**</td>
<td>2.097</td>
<td>H2b Supported</td>
</tr>
<tr>
<td>IQI $\rightarrow$ FP</td>
<td>0.608***</td>
<td>1.960</td>
<td>H2c Supported</td>
</tr>
<tr>
<td>SQI $\rightarrow$ SOP</td>
<td>0.773*</td>
<td>2.889</td>
<td>H2d Supported</td>
</tr>
<tr>
<td>SQI $\rightarrow$ FP</td>
<td>0.435</td>
<td>1.004</td>
<td>H2e Not Supported</td>
</tr>
<tr>
<td>CQI $\rightarrow$ COP</td>
<td>0.541**</td>
<td>2.531</td>
<td>H2f Supported</td>
</tr>
<tr>
<td>CQI $\rightarrow$ FP</td>
<td>-0.482</td>
<td>1.470</td>
<td>H2g Not Supported</td>
</tr>
</tbody>
</table>
Table 4.4 Result of Hypothesis Test

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>t-value</th>
<th>p-value</th>
<th>H3a</th>
<th>H3b</th>
<th>H3c</th>
<th>H3d</th>
<th>H3e</th>
<th>H3f</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIT → SOP</td>
<td>0.520*</td>
<td>2.612</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JIT → COP</td>
<td>0.316***</td>
<td>1.679</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JIT → FP</td>
<td>0.214</td>
<td>0.961</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Not Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS → SOP</td>
<td>0.322</td>
<td>1.501</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Not Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS → COP</td>
<td>0.429**</td>
<td>2.196</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS → FP</td>
<td>0.141</td>
<td>0.556</td>
<td>p ≤ 0.05; t ≥ 1.96</td>
<td>Not Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Significant at *p < 0.01; **p < 0.05; and ***p < 0.1
Significant when T-Values was greater than T-Table (confidence level 0.05; two tailed (1.96))

Based on the criteria and result of hypothesis testing, the following result was concluded to answer the research questions. This research was found that just in time capability in supply chain management practices have significant and positive effect on internal quality integration (β = 0.380; p ≤ 0.05; t ≥ 1.96) and supplier quality integration (β = 0.470; p ≤ 0.05; t ≥ 1.96). Postponement in supply chain management practices has no effect on internal quality integration and supplier quality integration. Customer quality integration was positively affected by just in time capability (β = 0.335; p ≤ 0.1; t ≤ 1.96) and postponement (β = 0.531; p ≤ 0.1; t ≤ 1.96) but not significant. Thus results hypothesis H1a, H1b, H1c, and H1f are supported; while hypothesis H1d and H1e are not supported.

Internal quality integration in supply chain quality integrations was found to have positive significant effect on customer oriented performance (β = 0.491; p ≤ 0.05; t ≥ 1.96); not significant positive effect to financial performance (β = 0.608; p ≤ 0.1; t ≤ 1.96); and internal quality integration has no effect on supplier
oriented performance. External quality integrations were found to have positive and significant effect on operational performance (supplier ($\beta = 0.773; p \leq 0.05; t \geq 1.96$) and customer ($\beta = 0.541; p \leq 0.05; t \geq 1.96$) oriented performance), and it has no effect on financial performance. It results supported for hypothesis H2b, H2c, H2d, and H2f; and not supported hypothesis H2a, H2e, and H2g.

In line with previous research, just in time capability was found to have positive and significant direct effect on supplier oriented performance ($\beta = 0.520; p \leq 0.05; t \geq 1.96$). Just in time also found to have not significant positive direct effect on customer oriented performance ($\beta = 0.316; p \leq 0.1; t \leq 1.96$). Postponement found to have positive and significant direct effect on customer oriented performance ($\beta = 0.429; p \leq 0.05; t \geq 1.96$), and found to have no effect on supplier oriented performance. Financial performance was not affected by supply chain management practice either just in time capability or postponement. This result was supported hypothesis H3a, H3b, and H3e; and rejected hypothesis H3c, H3d, and H3f.

4.4 Mediating Effect Testing

In testing the mediating effects of supply chain quality integration on supply chain management practices to achieve performance, researcher was adopted mediation analysis procedure from Hair et al. (2017). First, researcher tested the significance level of indirect effect via mediating variable. If there is no significance level of indirect effect, it means that there is only direct effect (if there is significant level of direct effect) or no effect (if there is no significance
level of direct effect). If there is significance level of indirect effect, researcher continued to next step of mediation analysis procedure.

![Figure 4.2 Mediating Analysis Procedure](image)

Second, researcher tested the significance level of direct effect. If there is no significant level of direct effect, it means the mediating variable was fully mediated the effect of independent and dependent variable. If there is significant level of direct effect, researcher continued to next step of mediation procedure.

Third, researcher tested the positive and negative product of direct and indirect effect. Positive product of direct and indirect effect means that the indirect path has same direction as direct path. While, negative product of direct and indirect effect means that indirect path has opposite direction as direct path. If the products of direct and indirect effects are positive, it means that the mediating variable has complementary partial mediating effect on dependent and independent variable. If the products of direct and indirect effects are negative, it means that the mediating variable has competitive partial mediating effect on
dependent and independent variable. Figure 4.2 was clearly shows us the procedure of mediating analysis from Hair et al. (2017).

Table 4.5 Mediating Analysis

<table>
<thead>
<tr>
<th></th>
<th>Indirect B</th>
<th>T-Value</th>
<th>Direct B</th>
<th>T-Value</th>
<th>Mediate</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIT → SOP</td>
<td>0.295**</td>
<td>2.349</td>
<td>0.520*</td>
<td>2.612</td>
<td>Yes</td>
<td>Positive</td>
</tr>
<tr>
<td>JIT → COP</td>
<td>0.301**</td>
<td>2.412</td>
<td>0.316***</td>
<td>1.679</td>
<td>Yes</td>
<td>Positive</td>
</tr>
<tr>
<td>JIT → FP</td>
<td>0.222</td>
<td>1.267</td>
<td>0.214</td>
<td>0.961</td>
<td>No</td>
<td>Positive</td>
</tr>
<tr>
<td>POS → SOP</td>
<td>-0.074</td>
<td>0.449</td>
<td>0.322</td>
<td>1.501</td>
<td>No</td>
<td>Positive</td>
</tr>
<tr>
<td>POS → COP</td>
<td>0.229</td>
<td>1.053</td>
<td>0.429**</td>
<td>2.196</td>
<td>No</td>
<td>Positive</td>
</tr>
<tr>
<td>POS → FP</td>
<td>-0.120</td>
<td>0.574</td>
<td>0.141</td>
<td>0.556</td>
<td>No</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Note: Significant at *p < 0.01; **p < 0.05; and ***p < 0.1

Significant when T-Values was greater than T-Table (confidence level 0.05; two tailed (1.96))

Based on criteria of mediating analysis procedure by Hair et al. (2017), researcher was found that supply chain quality integration as mediating variable was partially mediates the effect of just in time capability on operational performance (supplier ($\beta = 0.295$; $p \leq 0.05$; $t \geq 1.96$) and customer oriented performance ($\beta = 0.301$; $p \leq 0.05$; $t \geq 1.96$)). Supply chain quality integration was not found to mediate the effect of just in time capability on financial performance; and also the effect of postponement on supply chain performance. Thus the result was supported hypothesis H4.
4.5 Discussion and Theory Implications

After conducting research in consumer goods manufacturing industry listed in Indonesian Stock Exchange (IDX), researcher was found several information regard “the effect of supply chain quality integration on supply chain management practice to achieve supply chain performance”.

4.5.1 The Effect of Supply Chain Management Practices on Supply Chain Quality Integration

Supply chain quality integration was refer to the degree to which company synchronized and collaborates internal and external organization functions in order to improve the effectiveness and efficiency flow of production and quality of information sharing in order to improve the quality and value of product, quality of time production, and low cost product (Flynn et al., 2010; Huo et al., 2016). Just in time (JIT) capability refers to how a firm produces the appropriate items, with an appropriate amount, in an appropriate time (Gorane & Kant, 2016). When firms applying just in time capability in their supply chain management practices and well managing their just in time capability, it will results the positive effects on their supply chain quality integration.

Researcher was found that just in time capability has positive effect on internal quality integration, supplier quality integration, and customer quality integration. It reflects that by well managing their just in time capability in supply chain management practices, firms can improve their quality integration within internal functions and external functions of supply chain members. When the quality integration within internal functions improve, they can improve their
efficiency and effectiveness of production process by improving the quality of information sharing (accuracy and real time information sharing), improving communication in problem solving, and coordination activities. When the quality integration with supplier improve, the company can manage the close relationship with supplier in order to help supplier improve their quality of product, communicate the design changes to meet our criteria of product quality. By applying just in time capability, company quality integration with customer will be improved by managing close relationship with customer in order to well understand customer demands, improve quality of products, and solve the problems with customer.

Postponement in supply chain management practice was refer to the activities of delay or postpone the production process to later point of time in order to improve the products quality, give added value, and increase customer satisfaction (Sundram et al., 2016). By applying and well managing postponement in supply chain management, company quality integration with customer will be improved also. Postponement management practices allow company to delay or postpone their production process to later point of time, then company can give added value to their products, or customer can give input to the company about the quality of product development.

4.5.2 The Effect of Supply Chain Quality Integration on Supply Chain Performance

Supply chain quality integration was divided into two types which are: internal quality integration and external quality integration. Internal quality
integration refers to the degree to which company collaborates and synchronized production process and information sharing quality by set the strategy, procedure, and practice for internal functions of company (Huo et al., 2016). External quality integration was refer to the degree to which company collaborates and synchronized production process and quality of information sharing by set strategy, procedure, and practice within company with their supplier and customer. By applying supply chain quality integration, company could improve their performance of supply chain activity.

Result in this study was found that supply chain quality integration has positive effect on performance of operational activities in company. By applying supply chain quality integration, company can quickly modify the products to meet criteria of customer quality of products needed. Company also can introduced their new product faster, improve the lead time production which resulted on time delivery product of customer, and improve customer satisfaction. Supplier of company also can improve their performance by reducing the lead time of production, introduced new product faster, and quickly modified the products. But, by applying supply chain quality integration, the financial performance of the company would not be affected, which means that the sales and profit with and without supply chain quality integration will not change.

4.5.3 The Effect of Supply Chain Management Practices on Supply Chain Performance

Operational performance (supplier oriented performance and customer oriented performance) were affected by just in time capability and postponement.
With just in time capability in supply chain management practice, company can improve their operational performance. It is because when company applied just in time capability, they would produce their product in appropriate time with appropriate amount, and it resulted the efficient and effective of production process. If company can improve the efficiency and effectiveness of production process, company can reduced the lead time of production process and deliver the products on time. With postponement in supply chain management practice, company can quickly respond the changes of market demands, quickly modify their products, and quickly introduced the new products to the market. This result were confirmed previous research from Dong et al (2001) that high level just in time capability in company supply chain management practices would improved the performance of the company. Also, the high level postponement would improve the performance of the company (Sundram et al., 2016).

Financial performance of the company would not affected by supply chain management practice either just in time capability and postponement. It is because by applying just in time capability and postponement, financial performance of the company such as sales and profit will not changes.

4.5.4 The Mediating Effect of Supply Chain Quality Integration on Supply Chain Management Practices to achieve Supply Chain Performance

Supply chain quality integration was found to have partial mediating effect on supply chain management practice in achieving supply chain performance. Just in time capability would directly affect and improve the supply chain performance of company. The effect of just in time capability to supply chain performance
would be affected by supply chain quality integration. By applying supply chain quality integration, their just in time capability in supply chain management practice would be more effective and efficient to achieve supply chain performance.

The effect of postponement in supply chain management practice to achieve supply chain performance would not be affected by supply chain quality integration. Postponement only has direct effect to supply chain performance. It means that the effect of postponement to supply chain performance with/without supply chain quality integration will not be changes.
CHAPTER V

CONCLUSION, LIMITATIONS, AND SUGGESTIONS

5.1 Conclusions

This research study was analyzed the effect of supply chain quality integration on supply chain management practice to achieve supply chain performance. Besides that, researcher analyzed the effect of supply chain management practice to supply chain quality integration and supply chain performance, and the effect of supply chain quality integration on supply chain performance.

Result in this study was found that supply chain management practices would positively affected supply chain quality integration and operational performance in supply chain performance of the company. By applying and well managing the supply chain management practices, company can improve their effectiveness and efficiency of production and quality of information sharing and improve the quality integration within internal functions of the company, and between company and external functions of company. Supply chain management practice would improve the performance of the company by reducing the lead time of production, quickly modify the product and introduced the new product to the market. Company also can quickly analyzed and understand the changes in demand on the market.

Supply chain quality integration has positive effect on supply chain performance of the company. Supply chain quality integration would help
company to set strategy and procedure to improve the effective and efficient production process and quality of information sharing. With a good quality integration on supply chain management practice, company can well understanding the changes on the demand of market, quickly introduced new product on the market, and quickly modify the product to meet customer criteria of product and achieve customer satisfaction.

Supply chain quality integration also found to have mediating effect on the effect of supply chain management practice to achieve operational performance in company. By applying supply chain quality integration, the supply chain management practices on the company would improve and the supply chain performance also would be improved.

5.2 Limitations

Researcher was found to have several limitations related to the data analysis and data collection. First, this study only focused on one sector of the manufacturing industry which has the most activities in production and selling in order to minimize the heterogeneity of the data resulted from this research. That is, the result of this study might be different with the conditions of other sector in manufacturing industry or business. Second, the number of samples; the researcher only took the small amount of sample according to the data of consumer goods manufacturing industry that only was listed in Indonesia Stock Exchange (IDX). So, if researcher takes the bigger population such as all consumer goods manufacturing in Indonesia both listed or not listed in IDX it
could reflect the different result also. Third, this research was held in a limited point of time (4 months). It might not see the changes or trends of how supply chain management practices would affect supply chain performance in different period of time. Last, researcher in this research was only focus on two types of supply chain management practice which are just in time capability and postponement.

5.3 Suggestions

The researcher in this study faced several limitations of the study such as the sample and the size of the sample, or the limited period of doing this research, so we cannot see the trends or changes in supply chain activity in the company. Future research could do the research in a different sector of the company and held a long time period of research, so we can see and analyze the trends in supply chain activity. Future research also could find another combination of the supply chain management practice – besides just in time capability and postponement such as agreed vision and goals and/or risk and reward sharing – that will influence the supply chain performance with supply chain quality integration. Future researcher could expand this research by finding the new combination of supply chain quality integration or finds another measurement that would influence the supply chain management practice to have better supply chain performance.
REFERENCES


APPENDIX

A.1 Appendix A: Research Measurement Items

Measurement Items

Supply Chain Management Practices

Just in Time Capability
To what extent has this customer and supplier used the following JIT programs with you?

JIT01 Order size reduction
JIT02 Negotiation process simplification
JIT03 Open-order status paperwork reduction
JIT04 Expediting, receiving count, and inspection cost reduction
JIT05 Order lead time reduction
JIT06 Quality assurance program
JIT07 Formal supplier evaluation and selection program
JIT08 Sole sourcing

Postponement
Please indicate the extent to which you agree or disagree with each of these statements about your company

POS01 Our products are designed for modular assembly
POS02 Our production process modules can be re-arranged so that customization can be carried out later at distribution centers
POS03 We delay final product assembly activities until customer orders have actually been received
POS04 We delay final product assembly activities until the last possible position (or nearest to customers) in the supply chain
Appendix A: Research Measurement Items

Supply Chain Quality Integration

Internal Quality Integration

Please indicate the extent to which you agree or disagree with each of these statements about your company

IQI01 The functions in our company work well together
IQI02 The functions in our company cooperate to solve conflicts between them when they arise
IQI03 Our company’s functions coordinate their activities
IQI04 Our company’s functions work interactively with each other
IQI05 During problem solving sessions, we make an effort to get all team members’ opinions and ideas before making a decision
IQI06 Our company forms teams to solve problems
IQI07 In the past 5 years, many problems have been solved through small group sessions
IQI08 Real-time searching of quality-related operating data
IQI09 The utilization of periodic inter-functional quality meetings among internal functions

Supplier Quality Integration

Please indicate the extent to which you agree or disagree with each of these statements about your company

SQI01 We maintain cooperative relationships with our major supplier
SQI02 We help our major supplier to improve their quality
SQI03 We maintain close communications with our major supplier about quality considerations and design changes
SQI04 Our major supplier provides input into our product development projects for quality control
SQI05 Our major supplier is involved in our new product development processes for quality management
SQI06 We engage our major supplier in our quality improvement efforts
SQI07 We help our major supplier to improve its processes to better meet our quality requirements
Appendix A: Research Measurement Items

SQI08  We share our quality requirements with our major supplier
SQI09  We jointly resolve quality problems with our major supplier

Customer Quality Integration

Please indicate the extent to which you agree or disagree with each of these statements about your company

CQI01  We are frequently in close contact with our major customer in quality management
CQI02  Our major customer gives us feedback on our quality and delivery performance
CQI03  Our major customer provides input into quality control during our product design process
CQI04  Our processes are certified, or qualified, by our major customer
CQI05  Our major customer is involved in quality management during our new product development process
CQI06  We engage major customer in our quality improvement efforts

Supply Chain Performance

Supplier Oriented Performance

Please indicate the extent to which you agree or disagree with each of these statements about your company

SOP01  Our major supplier can quickly modify products to meet our company’s requirements
SOP02  Our major supplier can quickly introduce new products into the markets
SOP03  Our major supplier can quickly respond to changes in market demand
SOP04  Our supplier has an outstanding on-time delivery record to our company
        The supplier’s lead time for fulfilling our company’s orders (the time which elapses between the receipt of our order and the delivery of the goods) is short
SOP05  Our major supplier provide high level of customer service to our company
Customer Oriented Performance

Please indicate the extent to which you agree or disagree with each of these statements about your company

COP01 Our company can quickly modify products to meet our major customer’s requirements

COP02 Our company can quickly introduce new products into the markets

COP03 Our company can quickly respond to changes in market demand

COP04 Our company has an outstanding on-time delivery record to our major customer

      The lead time for fulfilling customers orders (the time which elapses between the receipt of customer’s order and the delivery of the goods) is short

COP05 Our company provides high level of customer service to our major customer

Financial Performance

How does your company perform compared with your major competitors?

FP01 Sales

FP02 Growth in sales

FP03 Profit

FP04 Growth in profit

FP05 Return on investment (ROI)

FP06 Return on sales (ROS)

FP07 Market share

FP08 Growth in market share
A.2 Appendix A: Item Pengukuran Penelitian

Supply Chain Management Practices

Just in Time Capability

Sejauh mana pemasok dan pelanggan anda menerapkan program-program Just in Time (JIT) berikut bersama anda?

JIT01 Pengurangan ukuran pesanan

JIT02 Penyederhanaan proses negosiasi

JIT03 Pengurangan dokumen status open-order

JIT04 Pengurangan ekspedisi, jumlah penerimaan, dan biaya pemeriksaan

JIT05 Pengurangan lead time pesanan

JIT06 Program jaminan kualitas

JIT07 Program evaluasi dan pemilihan supplier resmi

JIT08 Sumber tunggal

Postponement

Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?

POS01 Produk kami telah dirancang untuk perakitan modular

POS02 Modul proses produksi kami dapat disusun ulang sehingga proses kustomisasi dapat dilakukan nanti di pusat distribusi

POS03 Kami menunda kegiatan perakitan produk akhir hingga pesanan pelanggan benar – benar diterima

POS04 Kami menunda proses perakitan produk akhir hingga posisi akhir yang memungkinkan (atau paling dekat dengan pelanggan) dalam supply chain
Appendix A: Item Pengukuran Penelitian

Supply Chain Quality Integration

Internal Quality Integration

Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?

IQI01 Fungsi di perusahaan kami bekerjabersama dengan baik
IQI02 Fungsi di perusahaan kami bekerjasama untuk menyelesaikan masalah yang timbul diantara mereka
IQI03 Fungsi di perusahaan kami mengkoordinasikan kegiatan mereka
IQI04 Fungsi di perusahaan kami bekerja secara interaktif satu sama lain
Selama sesi penyelesaian masalah, kami berusaha mendapatkan semua opini dan ide semua anggota tim sebelum membuat keputusan
IQI05 Perusahaan kami membentuk tim untuk menyelesaikan masalah
IQI06 Dalam 5 tahun terakhir, banyak masalah yang telah diselesaikan melalui sesi kelompok kecil
IQI07 Kualitas terkait pencarian real-time dari data operasi
IQI08 Pemanfaatan kualitas pertemuan inter-fungsional berkala antar fungsi internal

Supplier Quality Integration

Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?

SQI01 Kami mempertahankan hubungan kerjasama dengan supplier kami
SQI02 Kami membantu supplier kami untuk meningkatkan kualitas mereka
SQI03 Kami mempertahankan komunikasi yang erat dengan supplier kami mengenai pertimbangan kualitas dan perubahan rancangan
SQI04 Supplier kami memberikan masukan terkait pengembangan produk untuk quality control
SQI05 Supplier kami terlibat dalam proses pengembangan produk baru kami untuk kualitas manajemen
SQI06 Kami melibatkan supplier kami dalam upaya peningkatan kualitas
SQI07 Kami membantu supplier kami untuk meningkatkan prosesnya agar dapat memenuhi persyaratan kualitas kami
## Appendix A: Item Pengukuran Penelitian

### Customer Quality Integration

Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?

<table>
<thead>
<tr>
<th>CQI</th>
<th>Pernyataan</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQI01</td>
<td>Dalam manajemen kualitas, kami tetap menjaga hubungan erat dengan pelanggan kami</td>
</tr>
<tr>
<td>CQI02</td>
<td>Pelanggan kami memberikan umpan balik mengenai performa kualitas dan pengiriman kami</td>
</tr>
<tr>
<td>CQI03</td>
<td>Pelanggan kami menyediakan masukan dalam kualitas kontrol selama proses perancangan produk</td>
</tr>
<tr>
<td>CQI04</td>
<td>Proses kami telah bersertifikat, atau memenuhi syarat, dari pelanggan kami</td>
</tr>
<tr>
<td>CQI05</td>
<td>Pelanggan kami terlibat dalam manajemen kualitas selama proses pengembangan produk baru kami</td>
</tr>
<tr>
<td>CQI06</td>
<td>Kami mengikut-sertakan pelanggan kami dalam upaya peningkatan kualitas kami</td>
</tr>
</tbody>
</table>

### Supply Chain Performance

Supplier Oriented Performance

Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?

<table>
<thead>
<tr>
<th>SOP</th>
<th>Pernyataan</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOP01</td>
<td>Supplier kami dapat memodifikasi produk dengan cepat untuk memenuhi persyaratan perusahaan kami</td>
</tr>
<tr>
<td>SOP02</td>
<td>Supplier kami dapat memperkenalkan produk baru ke pasar dengan cepat</td>
</tr>
<tr>
<td>SOP03</td>
<td>Supplier kami dapat merespon perubahan dalam permintaan pasar dengan cepat</td>
</tr>
<tr>
<td>SOP04</td>
<td>Supplier kami memiliki rekaman on-time delivery yang luar biasa ke perusahaan kami</td>
</tr>
<tr>
<td>SOP05</td>
<td>Lead time yang dibutuhkan supplier kami (waktu yang berlalu antara pemesanan kami dan pengiriman produk) untuk memenuhi pesanan kami singkat</td>
</tr>
<tr>
<td>SOP06</td>
<td>Supplier kami menyediakan layanan pelanggan tingkat tinggi ke perusahaan kami</td>
</tr>
</tbody>
</table>
Appendix A: *Item Pengukuran Penelitian*  

### Customer Oriented Performance

_Berdasarkan kondisi di perusahaan anda, apakah anda setuju atau tidak setuju dengan pernyataan berikut?_

<table>
<thead>
<tr>
<th>COP01</th>
<th>Perusahaan kami dapat memodifikasi produk dengan cepat untuk memenuhi persyaratan pelanggan kami</th>
</tr>
</thead>
<tbody>
<tr>
<td>COP02</td>
<td>Perusahaan kami dapat memperkenalkan produk baru ke pasar dengan cepat</td>
</tr>
<tr>
<td>COP03</td>
<td>Perusahaan kami dapat merespon perubahan dalam permintaan pasar dengan cepat</td>
</tr>
<tr>
<td>COP04</td>
<td>Perusahaan kami memiliki rekam jejak on-time delivery ke pelanggan yang luar biasa</td>
</tr>
<tr>
<td>COP05</td>
<td>Lead time yang dibutuhkan (waktu yang berlalu antara penerimaan pesanan pelanggan dan pengiriman produk) untuk memenuhi permintaan pelanggan singkat</td>
</tr>
<tr>
<td>COP06</td>
<td>Perusahaan kami menyediakan layanan pelanggan tingkat tinggi untuk pelanggan kami</td>
</tr>
</tbody>
</table>

### Financial Performance

_Bagaimana performa perusahaan anda dibandingkan dengan kompetitor anda?_

<table>
<thead>
<tr>
<th>FP01</th>
<th>Penjualan</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP02</td>
<td>Pertumbuhan penjualan</td>
</tr>
<tr>
<td>FP03</td>
<td>Keuntungan</td>
</tr>
<tr>
<td>FP04</td>
<td>Pertumbuhan keuntungan</td>
</tr>
<tr>
<td>FP05</td>
<td>Laba atas investasi (ROI)</td>
</tr>
<tr>
<td>FP06</td>
<td>Laba atas penjualan (ROS)</td>
</tr>
<tr>
<td>FP07</td>
<td>Pangsa pasar</td>
</tr>
<tr>
<td>FP08</td>
<td>Pertumbuhan pangsa pasar</td>
</tr>
</tbody>
</table>
## A.3 Appendix B: Reliability, Validity and Multicollinearity Test

<table>
<thead>
<tr>
<th></th>
<th>Reliability</th>
<th>Validity</th>
<th>Collin.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ρc</td>
<td>AVE</td>
<td>Loadings</td>
</tr>
<tr>
<td><strong>Supply Chain Management Practices (SCMP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Just in Time Cap.</td>
<td>0.914</td>
<td>0.900</td>
<td>0.582</td>
</tr>
<tr>
<td>JIT01</td>
<td></td>
<td></td>
<td>0.759</td>
</tr>
<tr>
<td>JIT02</td>
<td></td>
<td></td>
<td>0.743</td>
</tr>
<tr>
<td>JIT03</td>
<td></td>
<td></td>
<td>0.832</td>
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### Appendix B: Reliability, Validity and Multicollinearity Test

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### Appendix B: Reliability, Validity and Multicollinearity Test

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A.5 Appendix D: Structural Equation Modelling

Structural equation modelling for the effect of Supply Chain Management Practices (SCMP) to Supply Chain Quality Integration (SCQI) and Supply Chain Quality Integration (SCQI) to Supply Chain Performances (SCP)
Structural equation modelling for the direct effect of Supply Chain Management Practices (SCMP) to Supply Chain Performances (SCP)
Structural equation modelling for the indirect effect of Supply Chain Quality Integration (SCQI) to the effect of Supply Chain Management Practices (SCMP) to Supply Chain Performances (SCP)