

# CHAPTER I

## INTRODUCTION

The introduction consists of the background of this research, problem formulation, the purpose of research, the scope of this research, and outline writing of this research proposal.

### 1.1 Background

Supply chain management has been seen as an important aspect of an organization. A supply chain itself is a network of facilities that procure raw materials, transform them into final products, and deliver the products to customers through a distribution system that involves several stages, such as suppliers, manufacturers, distributors, retailers, and customers (Doğan, 2015). Supply chain management treats the chain and organizations around it as a whole system and also manages relationships with each chain, then delivers the highest value to the customers at the lowest cost for the entire supply chain (Czarnecka, Butor, and Halemba, 2017). Good supply chain management will certainly enhance the company's added value by meeting customer needs.

The concept that is developing in the current supply chain issue is the lean concept. The lean concept is focused on teamwork in creating continuous improvements to eliminate or reduce waste. This lean concept can be applied in various fields, such as manufacturing (lean manufacture), government (lean government), office (lean office), and health (lean healthcare) (Wronka, 2016). Optimization of product flows, services, information, and financials to increase competitiveness and profit potential is the reason for the change from traditional supply chains to lean supply chains. The application of lean concepts in supply chain management can reduce or eliminate non-added value activities or waste

along with the supply chain flow so that the level of productivity will increase (Wronka, 2016).

One of the chains in the supply chain is the supplier. The relationship between companies and suppliers is very important. This is because the relationship between the company and its suppliers can affect the overall performance of the company (Lambert and Schwieterman, 2012). Poor supplier performance can increase the cost because when a company receives bad quality goods, it has to ship back the goods or do the rework for the goods to be used (Krogh and Skogen, 2016). The relationship between the company and suppliers is divided into three types of strategies, namely: deliver, align, and collaborate. The type of deliver strategy limits the relationship to only delivery and payment. The second type, align, includes transparency and alignment. While the latter type, collaborate provides benefits for both parties due to the close relationship and the sharing of important goods and services (Booth, 2010).

Of course, to form a good relationship between the company and the supplier, the company must first choose which supplier will cooperate with it. Supplier selection is a critical decision in the supply chain because suppliers play an important role in the company's performance. Product quality and productivity are very dependent on the materials or services supplied (Kshirsagar, Teli, and Yakkundi, 2016). The selection of an effective supplier can increase profitability and customer satisfaction in four ways, namely: competitive prices, delivery, product quality, and product variants (Monczka, 2009).

The long-term relationship between the company and the supplier requires a lot of effort and investment. However, there are many benefits for both companies and suppliers in the long run. Companies that have key suppliers with long time collaboration are more able to reduce costs, have a rapid product cycle, optimize inventory levels, innovate new products, diminish risk and uncertainty, and create better value for their customers (Aydin, 2014). Long-term relationships between suppliers and companies can last for three years or more (Monczka, 2009). In

forming long-term and mutually beneficial relationships with both parties, the application of the lean concept can be used to help form good and long-term relationships between companies and suppliers.

Before the existence of the lean concept, the relationship between suppliers and buyers was not balanced, where the purpose of the imbalance here is that the supplier is the party that is being suppressed. This is because when buying goods from suppliers, buyers will certainly choose products with good quality and meet the desired quality criteria, but at the lowest price. For the product to be chosen by the buyer, the supplier must reduce the price of the product and adjust the product according to the buyer's requirements. This will certainly harm the supplier. However, with the application of the lean concept, the relationship between suppliers and buyers will be balanced. Both parties will benefit together. This can occur because, in the lean concept, product purchases use a partnership system. The partnering system allows both parties to benefit from each other. The application of lean concepts to suppliers will help companies work with suppliers that fit their needs.

PT Nusantara Beta Farma is one of the industrial companies located on Jalan Raya Padang Bukittinggi No. 30A, Sungai Buluh, Batang Anai, Padang Pariaman, Sumatera Barat. PT Nusantara Beta Farma has been established since 1976. Currently, PT Nusantara Beta Farma produces a variety of products consisting of skincare, body care, and hand sanitizer. The following are some products produced by PT Nusantara Beta Farma, namely *Salisil Talc Wangi* 50g and 100g, *Salisil Talc Wangi Sachet* 45g, Mollisa Perfume Talc Powder, Mollisa Hair and Body Mist, Mollisa Hand & Body Lotion, GLOZZ Baby & Kids Powdery Lotion, Mollisa Face Powder, Mollisa Facial Wash TTO, *Mollisa Bedak Kocok Anak*, *Mollisa Bedak Kocok Dewasa*, HEBTA Brightening & Deodorant Powder, and *Gliser Kosmetik Pelembab*.

In the production process, PT Nusantara Beta Farma collaborates with several other companies to supply the needed raw materials. PT Nusantara Beta Farma groups their raw materials into two groups, namely chemical raw materials and packaging raw materials. PT Nusantara Beta Farma has previously worked with 57 suppliers to meet raw material demand, with 30 of them supplying chemical raw materials and the remaining 27 supplying packaging materials. Here is a list of suppliers that work with PT Nusantara Beta Farma.

**Table 1.1** List of Chemical Raw Materials Suppliers in PT Nusantara Beta Farma

No	Supplier's Name	Origin	No	Supplier's Name	Origin
1	PT. Brataco	Medan	16	CV. Kurnia Jaya	Tangerang
2	PT. Talc Indonesia	Jakarta	17	PT. Tirta Buana Kemindo	Jakarta
3	PT. Signa Husada	Jakarta	18	PT. Locco Jasa Utama	Jakarta
4	PT. Juta Rasa Abadi	Jakarta	19	PT. Colorindo Chemtra	Jakarta
5	PT. Tata Rasa Primatama	Jakarta	20	PT. Sinergy Multi Lestarindo	Jakarta
6	CV. Budiarta	Tegal	21	CV. Sari Kimia	Padang
7	PT. Indo Kemika Jayatama	Jakarta	22	CV. Amor Chemical	Jakarta
8	PT. Graha Jaya Pratama	Jakarta	23	PT. Nilam Widuri	Bogor
9	PT. Tri Tunggal Multi Artha	Tangerang	24	PT. Multi Mitratama Kimia	Jakarta
10	PT. Hadi Putra Jaya	Jakarta	25	CV. Fajar Utama jaya	Medan
11	PT. Petra Kemindo	Jakarta	26	PT. Petra Kemindo Pratama Mandiri	Tangerang
12	PT. IMCD Indonesia	Jakarta	27	PT. Croda Indonesia	Bekasi
13	PT. Asvelia Gracia Pratama	Jakarta	28	PT. Ogawa Indonesia	Jakarta
14	PT. Bronson & Jacobs Indonesia	Tangerang	29	PT. Bintang Inti Talenta	Tangerang
15	PT. Nardevchem Kemindo	Tangerang	30	PT. Sinar Multi Kemindo	Tangerang

The 30 suppliers listed above are responsible for supplying chemical raw materials needed by PT Nusantara Beta Farma. Some examples of chemicals supplied by the suppliers above are acetic acid, alcohol 95%, perfume, salicyl acid, and talcum. For every chemical raw material supplied, there are raw materials that



are only sent by one supplier, but there are also raw materials that are sent by several suppliers. Perfume is one of the chemical raw materials that are supplied by several suppliers. It is different from packaging raw materials, where each packaging is almost supplied by one supplier. For example, PT Konverta Mitra Abadi supplied the boxes needed in packaging and PT Cahaya Jakarta supplied shrink labels. Other packaging raw materials such as bottle caps, bottles, labels, powder caps, and foils are supplied by the 27 packaging suppliers.

Amongst 57 suppliers, PT Nusantara Beta Farma has several exist suppliers. The purpose of the exist supplier here is to be a supplier that provides exist raw materials. Where the meaning of exist raw materials here is the raw material that is routinely used by PT Nusantara Beta Farma and has a large quantity. PT Nusantara Beta Farma has three exist chemical raw materials, namely, alcohol 95%, salicyl acid, and talcum. PT Nusantara Beta Farma also has three exist packaging raw materials, namely, box, roll labels, and spare parts. These six raw materials are the most frequently used in production and also require large quantities in processing. To meet the needs, several suppliers would be required to supply those exist raw materials, but of those six exist raw materials, alcohol 95% and salicyl acid has three suppliers available to supply.

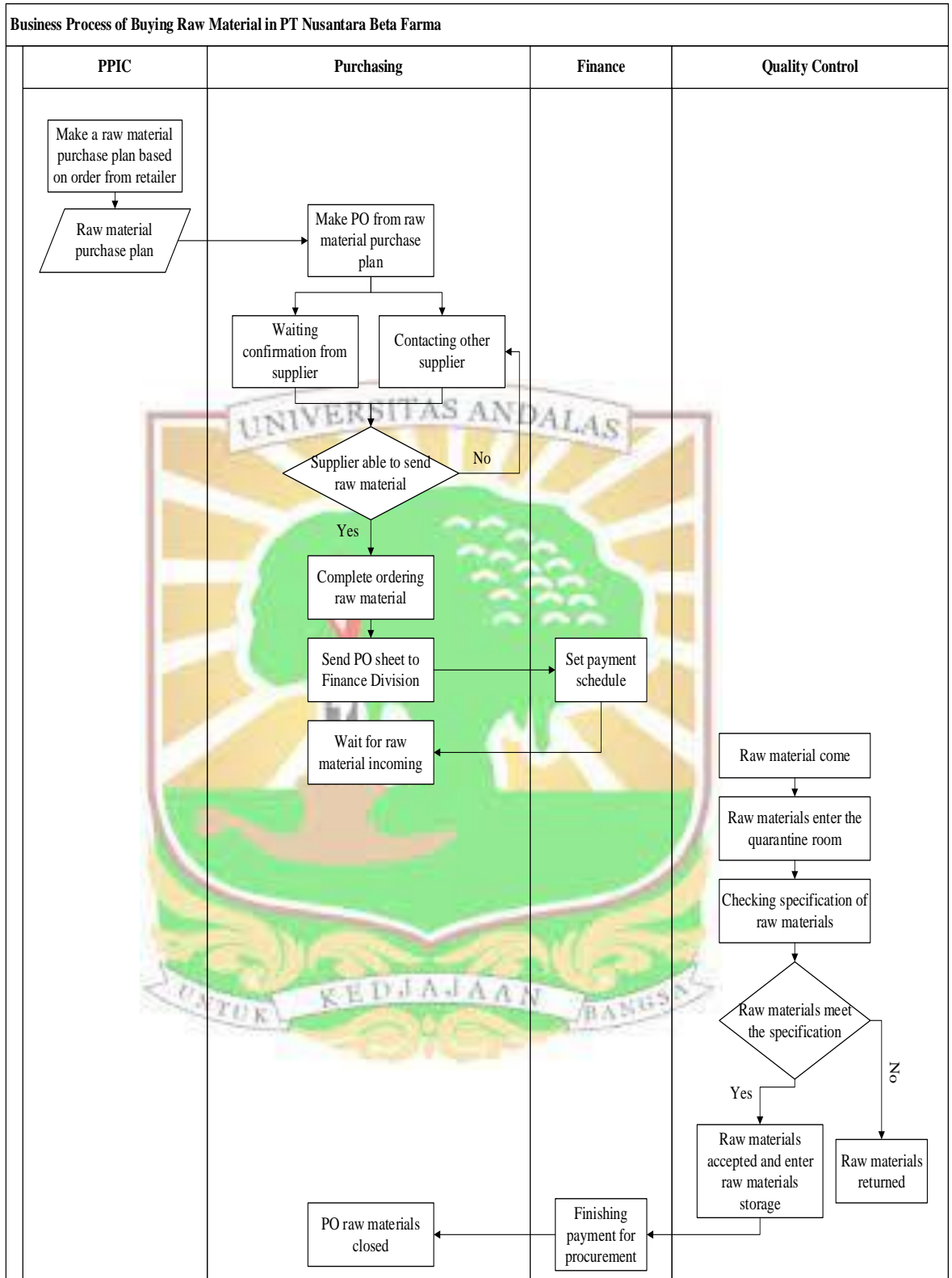
**Table 1.2** Lists of Exist Raw Materials Suppliers in PT Nusantara Beta Farma

No	Exist Material	Suppliers
1	Alcohol 95%	PT Brataco
		CV Budiarta
		PT Locco Jasa Utama
2	Salicyl Acid	PT Signa Husada
		PT Graha Jaya Pratama
		PT Tirta Buana Kemindo
3	Talcum	PT Talc Indonesia

As can be seen in **Tables 1.1**, most of these suppliers are located outside of West Sumatra. This makes raw materials require time to arrive. The shortest time needed for chemical raw materials to come after ordering until the goods comes is about two weeks. While for packaging raw materials, it takes about three weeks due to the packaging raw material being processed first. So, PT Nusantara Beta Farma

must plan raw materials supply carefully so that there are no raw material vacancies while waiting for raw materials to arrive. The purchasing plan is made by PPIC Division, but the purchasing raw materials is carried out by the Purchasing Sub-division. In the purchasing process, only Purchasing Sub-division makes purchases without involving other parties, except when there is a need to search for a new supplier. For more details, the flow of raw material purchases can be seen in **Figure 1.1**.

In the process of purchasing raw materials, there are 4 parties involved, namely the PPIC Division, Purchasing Sub Division, Finance Division, and Quality Control Division. Each party has its own task. The PPIC Division plans for raw materials needed based on orders made by a retailer, distributor, or customer and then makes a raw material purchase plan. After the purchase plan is made, the Purchasing Sub Division then contacts the supplier to determine whether they can supply it or not, and creates a pre-order sheet which will be sent to the Finance Division. In addition, the Purchasing Sub Division also does follow-up and looks for other information about other suppliers. The information consists of cost, expired date, stock, and documents needed such as halal certificate, specification, Certificate of Analysis (COA), and Material Safety Data Sheet (MSDS). The Finance Division is tasked with making a payment plan consisting of the amount paid, method of payment, and payment deadline. The Quality Control Division is in charge when the raw materials come in. Raw materials were saved in the quarantine room and checked to see if they met the specifications desired by PT Nusantara Beta Farma. The Quality Control Division then decides whether the raw materials can be released or not.



**Figure 1.1** Business Process of Buying Raw Material in PT Nusantara Beta Farma

From **Figure 1.1**, it can be seen that they are waiting for confirmation from the supplier about whether they can supply raw materials or not. This causes time wasted because the Purchasing Sub Division has to wait for an answer first, and if the supplier is not able to supply the raw materials, then the Purchasing Sub Division must contact other suppliers. In several cases where raw materials must be returned because of condition and specification being unsuitable, PT Nusantara Beta Farma has to find another supplier to supply the raw materials needed. Another concern of PT Nusantara Beta Farma is the late arrival of raw materials, which means PT Nusantara Beta Farma has to take action regarding waiting for raw materials or make another purchase plan. To increase the efficiency, PT Nusantara Beta Farma wants to minimize or eliminate this problem.

PT Nusantara Beta Farma has six exist raw materials that are frequently used. PT Nusantara Beta Farma wants to maintain the stock of these raw materials so that they are always in safety stock. PT Nusantara Beta Farma also wants to minimize or eliminate the problem of being late in coming or rejecting raw materials and achieve efficiency by eliminating or minimizing the process of finding other suppliers. To achieve this goal, lean supplier approach can be used. The lean supplier approach is used because PT Nusantara Beta Farma is inclined to work together for quite a long time with its suppliers. The nature of this long-term cooperation is consistent with the principle of lean supplier, which supports long-term cooperation between the company and its suppliers. In addition, lean suppliers also make it possible to choose which suppliers best suit the needs of the company. Lean suppliers also make it possible to minimize wasteful activities such as finding other suppliers to meet raw material needs where other suppliers cannot, anticipating the late arrival of material, and reducing the chance of raw material being rejected.



By using lean supplier approach, the selection of key supplier to supply raw materials can be done. The key supplier is selected from a supplier that supplies exist raw materials. The purpose of selecting key supplier of exist raw materials is that these raw materials are not only often used but also much used in production. Various methods can be used to select key suppliers. One of the methods that can be used to select the key suppliers is the Fuzzy Analytical Hierarchy Process (Fuzzy-AHP).

## 1.2 Problem Formulation

The problem formulation of this research is to select the key supplier to supply alcohol 95% and salicyl acid as exist raw materials that are frequently used by PT Nusantara Beta Farma.

## 1.3 Purpose

The purposes of this research are as follows:

1. Determine the criteria and sub-criteria used in selecting suppliers for PT Nusantara Beta Farma.
2. Selecting a key supplier to supply exist raw materials to PT Nusantara Beta Farma.

## 1.4 Scope

The scope of this study is as follows:

1. The study was conducted at PT Nusantara Beta Farma.
2. The study was only conducted for suppliers of alcohol 95% and salicyl acid.
3. The respondents for this research are only from the Purchasing Sub Division.

## 1.5 Outline Writing

The systematic writing of this final project is:

### CHAPTER I INTRODUCTION

The introduction consists of the background of this research, problem formulation, the purpose of research, the scope of this research, and outline writing of this research.

### CHAPTER II LITERATURE REVIEW

The literature review consists of theories related to research to be done, such as lean supply chain, lean suppliers, and supplier selection tools.

### CHAPTER III METHODOLOGY RESEARCH

The research methodology consists of steps to solve problems, starting from a preliminary study, data collection, supplier selection method, research methodology, analysis, and closing.

### CHAPTER IV DATA COLLECTION AND SUPPLIER SELECTION

The data collection and supplier selection consist of data collection and data processing done by selecting the key supplier to supply alcohol 95% and salicyl acid as exist raw materials that are frequently used by PT Nusantara Beta Farma.

### CHAPTER V ANALYSIS

The analysis consists of analysis performed based on the results of data processing that has been done on the criteria and sub-criteria for validation and the results of the selected suppliers from the Fuzzy-AHP method.

### CHAPTER VI CLOSING

The closing consists of conclusions and suggestions based on research results done by selecting the key supplier to supply alcohol 95% and salicyl acid as exist raw materials that are frequently used by PT Nusantara Beta Farma.