

CHAPTER I

INTRODUCTION

This chapter contains the background of the research, the objectives of the research, problem formulation, scope, and outline of the proposal.

1.1 Background of The Research



Small and Medium Enterprises (SMEs) constitute a fundamental pillar of Indonesia's economy, representing a significant proportion of its business landscape. With over 99% of total enterprises categorized as SMEs, they play a central role in driving economic activity across various sectors (Kemenkeu, 2021). The substantial presence of SMEs translates into a considerable contribution to employment, with nearly 97% of the Indonesian workforce employed by these enterprises (Kemenkeu, 2021). This high level of employment generation underscores the critical role SMEs play in providing livelihoods and income opportunities for millions of Indonesians, particularly in rural areas and informal sectors where formal employment opportunities may be limited.

Moreover, SMEs significantly contribute to income generation and poverty reduction by providing avenues for entrepreneurship and economic participation. They serve as incubators for innovation and creativity, enabling individuals to capitalize on their skills and talents to create value and generate income. This assertion is supported by research indicating that SMEs are crucial in reducing poverty levels by providing employment and income opportunities to individuals, particularly in rural areas.

The presence of over 4,000 cooperatives and 593,100 SMEs in West Sumatra has been able to absorb a large amount of labor and dominate the economic activities of the community as cooperative and SME operators spread to rural areas.

The majority are oriented towards the domestic market, including products such as snacks, handicrafts, garment manufacturing, embroidery, and workshops. Some of them also actively contribute to advancing tourism. However, the contribution of cooperatives and SMEs seems to have not yet made a significant impact, as the cooperative and SME movement is rarely publicized. (Dinas Koperasi and UKM Sumatera Barat, 2020)

In West Sumatra, small and medium-sized enterprises (SMEs) within the food sector play a pivotal role in the regional economy, especially attributed to tofu production. As one of the most significant contributors to the local food industry, tofu manufacturing stands out as a cornerstone of West Sumatra's culinary landscape. The region's rich agricultural resources, particularly soybeans, coupled with a long-standing tradition of tofu craftsmanship, have fostered a thriving ecosystem of tofu SMEs. These enterprises not only meet local demand but also contribute to regional employment and economic growth. Furthermore, tofu's versatility and nutritional value have positioned it as a staple in West Sumatran cuisine, enjoyed in various forms such as tahu goreng (fried tofu), tahu isi (stuffed tofu), and tahu sumedang (a type of tofu originating from the Sumedang region). With its cultural significance and economic impact, tofu production exemplifies the vital role of food-based SMEs in shaping the identity and prosperity of West Sumatra.

Tofu, a versatile and nutritious soy-based product, is an essential component of many diets worldwide. However, the tofu production process, like any manufacturing process, involves complexities and challenges that can lead to inefficiencies and waste.

Tofu is an important cuisine in West Sumatra, most household consumes Tofu and other soy-based food in weekly basis. This is confirmed by central bureau of statistics regarding the consumption of soy related products. Tofu, by average is consumed 0,124 kg weekly per capita (BPS, 2021). This study proves that Tofu and soybean to be a promising and fertile land for business, as shown in the **Table 1.1**

Table 1.1 Soy And Related Soy Products Weekly Consumption Per Capita In West Sumatera. (BPS)

| Products | Soy And Related Soy Products Weekly Consumption Per Capita In West Sumatera (Kg) | | |
|------------|--|-------|-------|
| | 2018 | 2019 | 2020 |
| Tofu | 0,129 | 0,140 | 0,124 |
| Tempe | 0,068 | 0,062 | 0,062 |
| Ground Nut | 0,003 | 0,002 | 0,002 |

CV. Usaha Jaya is a Tofu manufacturing company situated at Jl. Puding Mas Tabek Gadang, Aur Birugo Tigo Baleh, Bukittinggi. The company is led by Mr. Umar Jaya and established in 2018. CV. Usaha jaya has been an active tofu supplier for small vendor and it also have a shop in Pasa bawah, Bukittinggi. The company produced 2 products, Tofu and Tempe. The company have a work hour from 6 am – 12 am during normal work hour and can be extended further if the products doesn't quite meet the demand. Tofu usually produced in batch of 140, 110, and 100 pieces of Tofu in each buckets. CV. The process can usually produce up to 15 buckets of Tofu and 600 bags of Tempe each day. The production process conducted required 5 employees to fulfill the daily target. The employees usually have a different job at producing, distributing, and packaging the product.

The company is struggling to keep up with the demand and their competitors. Tofu needs a really long production cycle, thus a simple mishap can spell a loss for the company in terms of raw materials and time. Typically, SMEs and especially small enterprises are not only adaptive and innovative in terms of the products but also their manufacturing practices. Recognizing the continuing competitive pressures, small organizations are becoming increasingly proactive in improving their business operations. Considering the CV. Usaha Jaya is considered a small enterprise with only 7 employees, still needs to grow in order to seize the opportunity provided by Tofu market. However, CV. Usaha jaya needs to take proactive steps to improve in order to compete. This research is focused on providing suggestion to improve the production process in CV. Usaha Jaya. CV.

Usaha jaya mainly rely on manual labor and manual process in their production process and also using traditional means of storage, as seen in **Figure 1.1**.



Figure 1.1 The Buckets of Tofu, Ready to Be Distributed.

CV. Usaha Jaya order 170 sacks of soybean (~30 kg per sacks) each month. The raw material for the production is supplied from Medan with lead time of three days, and the order is placed if the company is about to run out of soybean. CV. Usaha Jaya usually delivers the product using a motorcycle or a pick-up truck that delivers the product to the customer twice a day as shown in **Figure 1.2**. Each bucket of Tofu is priced between 70.000 IDR – 85.000 IDR per bucket.



Figure 1.2 Pick-up Truck Used to Distributing the Products.

Tofu making process is started with soaking the soybean for 9-12 hours. This improves the color and reduces the beany flavor of the final tofu (Kang et al. 2014). After soaking the soybean, the grinding process began, grinding can be

performed using a variety of types of equipment, including micro-cutters, hammer mills, and other similar devices. CV. Usaha Jaya use hammer mills to grind the soybean. After the Soybean is soft enough, the next process is to boil the soybean to kills the bacteria, denatures the soy, and to remove any beany flavor left in the tofu. After cooking, Tofu then is separated from a byproduct called soy milk, the process is using a filter made from improvised filter cloth to separate the soy milk from the solid soy pulp like shown in **Figure 1.3**



Figure 1.3 An Employee in Filtering Process.

The next step for making a tofu is to coagulate the tofu. Tofu is coagulated in salts and enzymes. After that, the product is ready to be pressed and packaged. The duration of the overall process usually takes place between 1-2 days, depending on how long the soybean is soaked the day prior, but the process to transform semi-finished soybean into a finished tofu only takes 2-3 hours. While the soaking process can't be optimized, other process could be optimized using an improved method or using a semi-automatic and automatic machines.

Figure 1.4 Shows the general process of CV. Usaha Jaya tofu production process, based on the layout there's a significant waste of how the overall process is conducted. There's unnecessary waste that might have a significant impact on the long run.

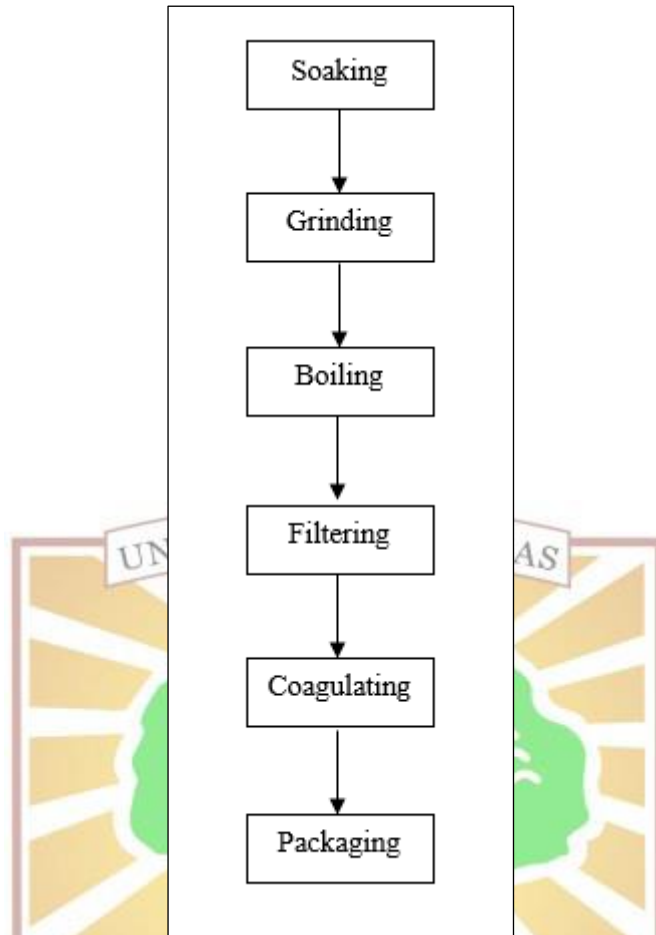


Figure 1.4 CV. Usaha Jaya Production process

The general process of CV. Usaha Jaya production is presented in **Figure 1.4**. The problem of the process is that there's no standardization of how to perform the steps in manufacturing the tofu. This might result in the disparity of each batch of the produced tofu which eventually leads to more waste. A disorganized plant layout in the tofu production process of CV. Usaha Jaya can lead to overproduction, exacerbating inefficiencies and increasing waste. Without a well-structured layout that optimizes workflow and minimizes unnecessary movement of materials and personnel, the production process may encounter bottlenecks, delays, and disruptions. The problem regarding the plant layout of CV. Usaha Jaya is shown on **Figure 1.5**.

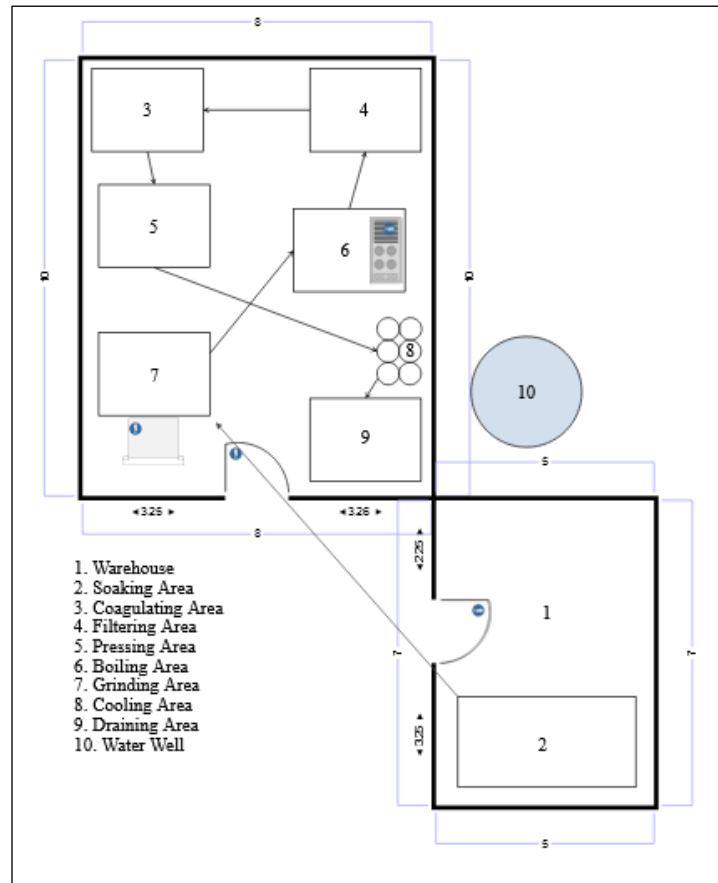


Figure 1.5 Plant Layout of CV. Usaha Jaya

Figure 1.5 illustrates the waste that might occur during the production process with each work station is roughly 1x2m in area. Firstly, the distance between the soaking area to the grinding area is visibly distant, this can cause the delay at the start of the production process. Then the flow of the material within the layout is visibly chaotic, which can cause new workers to be confused and can cause operators to bump into each other, it also shows the unnecessary movement required to move from one work floor to another. There's also a problem of underutilized free space that can be utilized more efficiently.

In the Small and Medium Enterprises, production processes are characterized by batch processing with limited emphasis on standardized work, resulting in inefficiencies and longer lead times. There's barely any supervision present on the whole process and the lack of quality control leads to many problems present in the production process.

High levels of inventory are also present because of the batch processing approach, contributing to overproduction and excess inventory. One such example is that in month of December 2023, the company loses about 15 buckets of broken Tofu (1500 batches/ 250 packages) which is about 500.000 rupiah worth of overproduction and wastes. There are also the case of molding Tempe that caused by poor inventory managements by the company. The observation reveals that the root causes in the SMEs lies in traditional production practices, limited exposure to lean principles, and a lack of systematic process documentation (Matt and Rauch, 2016).

1.2 Problem formulation

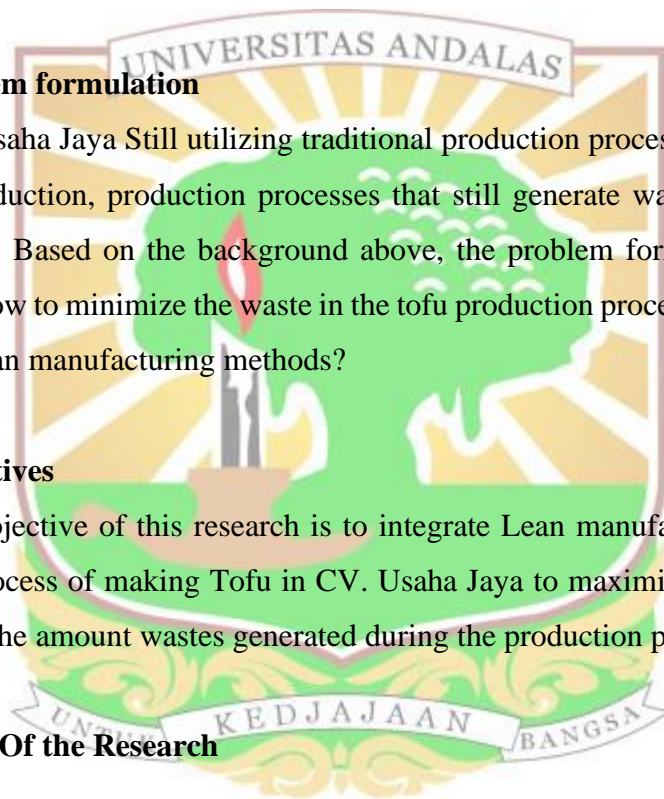
CV. Usaha Jaya Still utilizing traditional production processes, resulting in excessive production, production processes that still generate waste, and quality control issues. Based on the background above, the problem formulation of this research is: How to minimize the waste in the tofu production process at CV. Usaha Jaya using Lean manufacturing methods?

1.3 Objectives

The objective of this research is to integrate Lean manufacturing into the production process of making Tofu in CV. Usaha Jaya to maximize the resources and reducing the amount wastes generated during the production process.

1.4 Scope Of the Research

CV. Usaha Jaya is an enterprise that produce soy-based products, which includes Tofu and Tempe. The scopes of the research is only focused on Tofu production process.



1.5 Outline of Research

The outline of research report consist of six chapters with the systematic as follow :

CHAPTER 1 INTRODUCTION

This chapter contains the background of research, the objectives of research, limitations of research, and systematic writing of research report.

CHAPTER 2 LITERATURE REVIEW

This chapter contains a scientific approach to the problem with a study of various sources form books, scientific journal, magazine, etc.

CHAPTER 3 METHODOLOGY

This chapter contains the methodology used to solve the problem.

CHAPTER 4 DATA COLLECTION

This chapter contains the data collected for the research.

CHAPTER 5 DATA ANALYSIS

This chapter contains the analysis of the data collected from the previous chapter.

CHAPTER 6 CONCLUSION AND SUGGESTIONS

This chapter contains the conclusions of the research and suggestions for future research.

