

CHAPTER I

INTRODUCTION

This chapter is an introduction to the research conducted. This chapter will include the background of the research, problem formulation, research objectives, limitations of the research carried out and the outline of the final project report.

1.1 Background

Small and Medium-Sized Enterprises (SME's) are productive economic business that stand alone and are carried out by individuals or business entities that are not part of a company and are differentiated based on the amount of business funds and annual income as referred to in the *Peraturan Pemerintah (PP) No. 7 of 2021* articles 35 and 36. SMEs are very essential to the Indonesian economy. According to *Kementrian Koperasi dan Usaha Kecil dan Menengah (KemenkopUKM)* data in March 2021 there is a contribution of 61,07 percent of SMEs to gross domestic product (Catriana, 2021). According to the Indonesian Ministry of Finance website, SMEs can absorb up to 97 percent of the existing workforce and gather up to 60,42 percent of total investment in Indonesia. The existence of SMEs also helps to maximize the utilization of existing resources in the region. However, the development of SMEs is still considered lacking due to the weak business management capabilities of the SMEs, the lack of quality human resources, and weak access to financial institutions (Adiningsih, 2001). Continuous improvement in business management, including good waste management, will affect the effectiveness of a company's business processes (Bismala, 2016). So, it is necessary to minimize waste. One of the methods is to use a Lean approach

According to James and Scott's article "Introduction to Lean Manufacturing" (Introduction to Lean Manufacturing, 2010), the goal of lean is to

eliminate all waste. There are two most common waste classifications: type 1 waste (enabling activities) and type 2 waste (pure waste) (Welo & Ringen, 2016). Activities of waste type 1, such as administration, management, mandated testing, and so on, do not produce direct value but are still necessary to support value creation (Welo & Ringen, 2016). Defects, over-production, transportation, waiting, inventory, motion, and over-processing (and underutilization of people) are the seven (or eight) subcategories of pure waste in manufacturing (Welo & Ringen, 2016). According to Torgeir and Geir (Beyond Waste Elimination: Assessing Lean Practices in Product Development, 2016), the highest feasible efficiency may be achieved, around 80-90 percent depending on the production process. The Lean method provides companies with management philosophy and business tools to help them improve their efficiency and, as a result, become more competitive (Reeb & Leavengood, 2010).

Sanjai is one of the popular typical foods of West Sumatera, with cassava as its primary raw material. The name sanjai is derived from a road in Bukittinggi's northern area, namely in Manggis Gantiang Sanjai Village (Selwyn, 2021). Along with the growing number of sanjai enthusiasts, the area for producing sanjai is also expanding, with Payakumbuh being one of them. Based on the *Dinas Tenaga Kerja dan Perindustrian* data in 2020, there are 389 business units in the chips industry and its kind on Payakumbuh. Based on the LKjIP of KemenkopUKM Payakumbuh City in 2021, SMEs are business units with 96% of the proportion of all the business units in Payakumbuh.

One of the SMEs that produces sanjai at Payakumbuh is Sanjai Anna. Sanjai Anna is one of the SMEs in Payakumbuh that is focused on the food industry, specifically for gifts. Sanjai Anna was established in 2002 which founded by Susridewita and Kaslim Rida. Sanjai Anna is located at Jalan Imam Bonjol, Bulakan Balai Kandih West Payakumbuh. Sanjai Anna has two outlets to distribute their product. Besides being distributed at their outlets, Sanjai Anna product is also distributed in Padang, Pekanbaru, Ketinggian, Aceh and Java. The current revenue of Sanjai Anna reaches Rp20.000.000 per week. The current workforce employed

by Sanjai Anna to achieve their business targets consists of 17 peoples. Among them, 6 employees are assigned to manage and package products in the store, specifically pack the product into 250g size. Additionally, 2 peoples are responsible for activities at Production House 1, while the remaining are assigned to Production House 2. **Figure 1.1** illustrates the products manufactured by Sanjai Anna, namely karak kaliang and various types of sanjai variants such as sanjai balado, sanjai manis, sanjai tawar, and others. The Sanjai production process include the cleaning the cambium layer of cassava, cutting, washing, frying, flavoring, and packaging. Sanjai Anna's self-produced products on a daily basis include karak kaliang, sanjai balado panjang, and sanjai balado bulek. The daily production totals for each product are 150 kg for karak kaliang, 60 kg for sanjai balado panjang, and 250 kg for sanjai balado bulek.

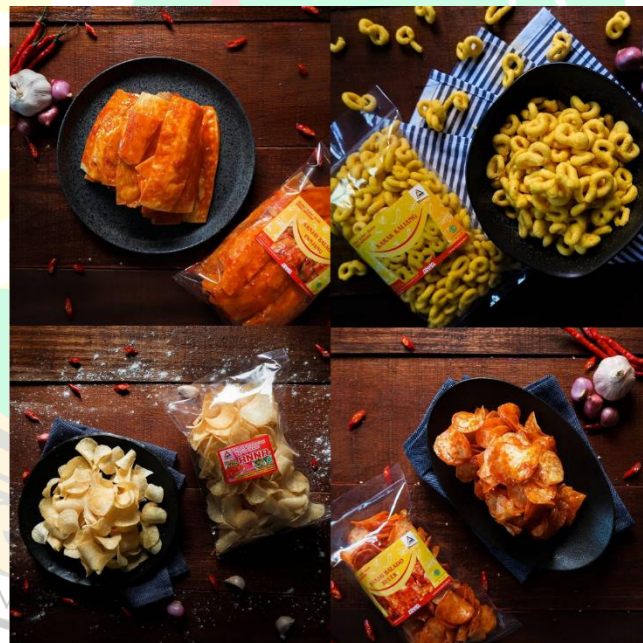


Figure 1. 1 Product Produced at Sanjai Anna
(Source: Sanjai Anna)

During the observations conducted, several potential sources of waste were identified in Sanjai Anna's production process for the sanjai balado bulek product. These waste potentials include waiting waste, product defects, and motion waste. An activity in Sanjai Anna's production process that has the potential to cause waiting waste is the waiting time for cassava to arrive at the production site. Based

on interviews with the owner, it was found that delays in cassava delivery can occur 2-4 times per week, with the duration of delays ranging from minutes to several hours. The delay is caused to several factors, namely the cassava undersupply, the distant location of cassava harvest site, and the presence of numerous competitors of Sanjai Anna competing for cassava resources. The tardiness in the arrival of raw materials will result in a delay to begin the Sanjai production process, potentially leading Sanjai Anna cannot achieve their daily targets. **Table 1. 1** illustrates the raw material delays during the month of May 2022.

Table 1. 1 The Delay in Raw Material Supply at Sanjai Anna

No.	Date	Delayed
1	9-May-2022	
2	10-May-2022	√
3	11-May-2022	
4	12-May-2022	√
5	13-May-2022	√
6	14-May-2022	
7	17-May-2022	
8	18-May-2022	
9	19-May-2022	√
10	20-May-2022	
11	21-May-2022	
12	23-May-2022	√
13	24-May-2022	
14	25-May-2022	
15	27-May-2022	√
16	28-May-2022	√
17	30-May-2022	
18	31-May-2022	√

The potential for waste in the defect category at Sanjai Anna is attributed to several factors. These include raw materials not meeting the specified criteria due to insufficient age, raw materials arriving mixed with other types of cassava, cassava soaking, and insufficiently oil temperature during the frying process. The ideal criterion for the age of raw materials in the Sanjai Anna production process is cassava aged between 9-12 months. If the delivered raw materials do not meet the desired age criteria, the resulting product may lack satisfaction in terms of both

crispiness and color. In addition to not meeting the age criteria, raw materials mixed with other types will impact the quality of the final product. The intended cassava type for Sanjai production to ensure a high-quality product is the bread-type cassava. There is also a potential decrease in product quality if cassava, as a raw material for Sanjai, arrives at the production site in the late afternoon. Ideally, cassava should arrive by 09:00 AM. If it arrives in the afternoon, the production stages may be limited to cleaning the cambium layer, skipping the frying stage. Consequently, cassava needs to be soaked in water to prevent it from turning dark. This process may decrease the quality of the final product, leading to a reduction in the natural sweetness of cassava. Furthermore, oil temperature that insufficiently hot during the frying process can result in the final product being tough and less crispy



Figure 1. 2 Example of Defect Product

Activities that non-added value and have the potential to delay the production process at Sanjai Anna include the employees frequent to perform search movements for items. This is caused by the improper placement of tools and equipment that have been used. For instance, staples, peelers, and mineral water bottles are placed on the cutting machine, contributing to the inefficiency of the workflow. **Figure 1.3** dan **Figure 1. 4** show the presence of tools that are not properly arranged or stored in their designated locations.



Figure 1. 3 The Staples Placed On Top of The Cutting Machine



Figure 1. 4 The Peeler Placed On The Cutting Machine

Neglected and unresolved waste can reduce the effectiveness of the company in meeting demands. The resulting lack of effectiveness due to wastefulness can impact customer satisfaction. Therefore, efforts to minimize or eliminate activities leading to wastefulness are necessary. This research aims to reduce the waste within Sanjai Anna by employing a lean approach.

1.2 Problem Formulation

Based on observations and interviews with responsible parties at Sanjai Anna, it has been identified that certain activities contribute to an ineffective production process. The potential sources of waste at Sanjai Anna include waiting, defects, and motion. In line with the problem statement outlined in the background earlier, the problem formulation for this final project are as follows:

1. What are the potential sources of waste that can cause losses in the business process at Sanjai Anna?
2. What is the prioritized waste occurring at Sanjai Anna?
3. What is the formulated solution to address the sources of waste at Sanjai Anna?

1.3 Research Objective

The objective of this research is to formulate solutions by applying a lean approach to minimize the main sources of waste occurring at Sanjai Anna. Based on the problem formulation, the objectives of this final research are as follows:

1. To identify potential sources of waste that may lead to losses in the business processes at Sanjai Anna.
2. To determine the priority of wasteful practices occurring at Sanjai Anna.
3. To formulate solution to address the sources of waste at Sanjai Anna.

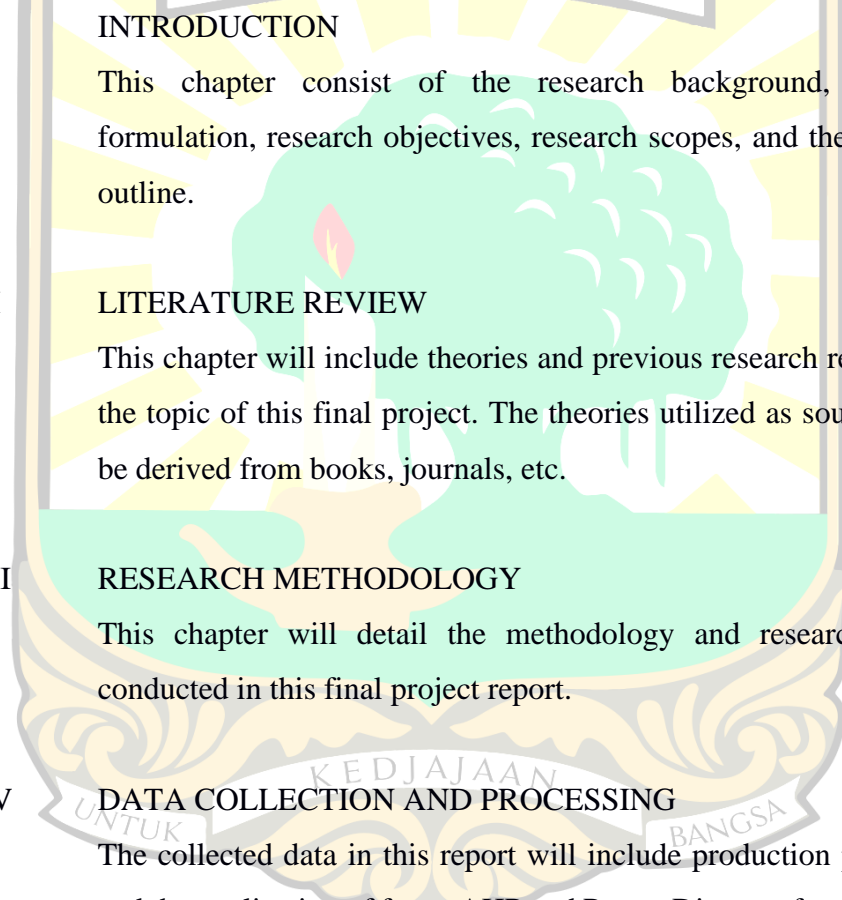
1.4 Research Scopes

The scope of the research shows the extent to which the research topic will be explored. In other words, this section will identify what the research will cover, what its focus will be and what its constraints. Product that will be studied in this research is sanjai balado bulek. This is due to the fact that, from the three products produced by Sanjai Anna, sanjai balado bulek has the highest quantity. The DMAIC

method used in this research are not including the control phase. The research study will discuss the sources of waste from the arrival of raw materials at the production site to the transformation into the final product and ready for customer.

1.5 Research Outline

This section provides an overview of the structure of this final project report. The report will consist of six chapters, outlined as follows.

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- BAB I INTRODUCTION**
This chapter consist of the research background, problem formulation, research objectives, research scopes, and the research outline.
- BAB II LITERATURE REVIEW**
This chapter will include theories and previous research relevant to the topic of this final project. The theories utilized as sources may be derived from books, journals, etc.
- BAB III RESEARCH METHODOLOGY**
This chapter will detail the methodology and research stages conducted in this final project report.
- BAB IV DATA COLLECTION AND PROCESSING**
The collected data in this report will include production processes and the application of fuzzy AHP and Pareto Diagram for weighting the waste. The structure for this chapter will follow the DMAI phase.
- BAB V CLOSING**
This chapter will provide the conclusions drawn from this research and offer suggestion for Sanjai Anna and the future studies.