

CHAPTER 1

INTRODUCTION

Chapter one will address the background of the problem and provide an overview of the company. The exploration of the problem within the company will outline the production flow of wooden kitchenware at CV X's factory and present demand data. The problem statement will define the specific issues to be investigated in this research. Research objectives will specify the criteria for the critical success factors, and the research limitations will outline the scope, ensuring the study stays within allocated resources and remains focused on the problem to be resolved.

1.1. Background

Imported products continue to dominate the Indonesian market. According to Badan Pusat Statistik (2024), the import value in January 2024 consisted of oil imports of USD 2,698.3 million (14.59 percent) and non-oil imports of USD 15,796.2 million (85.41 percent). 32.21 percent of it was contributed by the value of imported products from China, followed by imported products from Singapore, which contributed up to USD 1,599.4 million (8.65 percent), and Japan with USD 1,082.3 million (5.85 percent). This imported product included wooden kitchenware products.

Indonesia has one of the largest wood supplies in the world. Therefore, this presents a challenge for micro, small, and medium enterprises (MSMEs) to seize the opportunity to reduce Indonesia's dependence on imported products, especially wooden kitchenware products. Initially, CV X has been producing furniture and interior design projects for both local and international markets since 2002.

Since 2019, during the COVID-19 pandemic, CV X sought opportunities to expand its business into wooden kitchenware products in response to the Indonesian people's demand for items such as cutting boards, spatulas, plates, and bowls in various sizes and models. Additionally, CV X accepts requests for custom products. The company began producing wooden kitchenware to meet local and international market demands, and it is currently planning to expand its market overseas.

CV X has a regular production capacity of 8,000 to 10,000 Pieces of products per month. Recently, demand from five retailers has ranged from 14,000 to 18,000

pieces of products per month for local demand, accompanied by uncertain delivery dates. Therefore, in the current situation, the company has opted for overtime and outsourcing production to a third party to address the production capacity issue. According to information from stakeholders, there are director, production manager, production planning and inventory control (PPIC) staff, head of marketing, and one external stakeholder from one of retail partner.

Since author unable to directly contact retail partners as eksternal stakeholder, the author learned from the company's director that one of the five retail partners observed a decline in wooden kitchenware product demand. This was attributed to their strategic shift in focus from household goods to fresh and frozen food products. Consequently, retail partners have scaled back their procurement of non-food and household items. Meanwhile, other customers have significantly increased their product demand. Therefore, the company, which primarily employs B2B (business-to-business) strategy, is facing a challenge in expanding its market, specifically in finding new buyers.

1.2. Problem Exploration

CV X is a company that, since 2019, has been producing cooking and eating utensils such as cutting boards, spoons, and forks and accepts custom product orders based on consumer demand. Within one month, CV X can regularly produce 8,000 to 10,000 units, which are then marketed using a business-to-business (B2B) marketing strategy to various retail partner outlets. Their reach extends to export markets, including Japan, collectively representing over 1,500 outlets. CV X has received FSC 100% certification by maintaining a commitment to always use legal, responsible, and sustainable wood. The production process flow for the wooden kitchenware product can be seen in Figure 1.1 and Table 1.1.

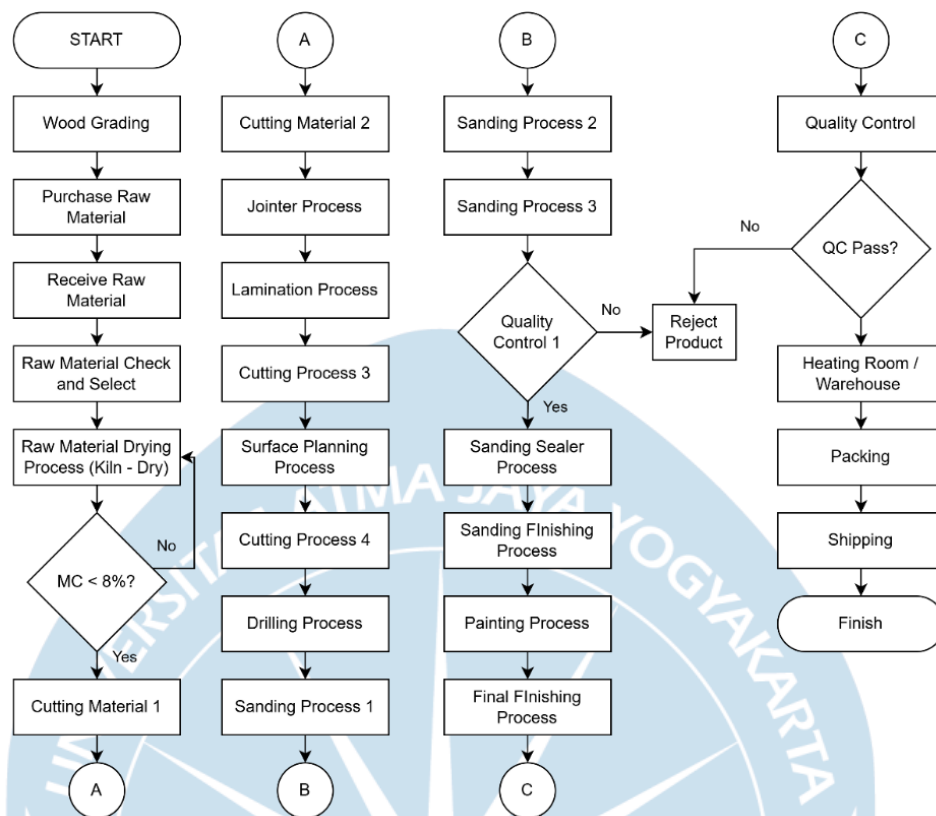


Figure 1.1. The Production Process Flow Diagram

The production of wooden kitchenware at CV X begins with raw material preparation, starting with wood grading to select appropriate timber. This is followed by the purchase and reception of wood boards. Once received, the wood boards undergo drying and cooling before proceeding to the woodworking department. In this department, the boards are cut to the required dimensions, laminated according to product specifications, and then assembled and drilled as necessary. Finally, the products are sent to the sanding section for smoothing and surface finishing.

After the Woodworking Department, products move to the Finishing Department for a three-stage painting process: sanding sealer, coloring, and varnishing. This ensures the products are safe for use, as food-grade water-based paint is applied. Following painting, the products are smoothed again and then treated with beeswax to maintain color and quality. Finally, the products are dried using a heater and are then ready for packaging and shipment to retail partners. The details for each process can be found in the table below.

Table 1.1. Production Flow and Machines Used

Nr.	Process	Photo	Explanation
1	Raw Material Selection Process		This selection helps to separate materials for kitchenware production and projects, as well as to evaluate the condition of the wood to be used.
2	Wood Drying Process		To reduce the moisture content of wood to below 8%. Each of the two dry-kiln chambers has a capacity of up to seven cubic meters of wood, with a standard drying time of 14 – 17 days.
3	Raw Material Inventory		The raw material inventory facility enables a one or two day period of cooling dried wood, This facility possesses a capacity of 20 cubic meters of wood plank.
4	First Cutting Process		wooden planks are cut into 33 to 48 cm, based on specific product specifications. Utilizing a single cutting machine, with daily output of 1,600 to 1,700 short wooden planks.
5	Second Cutting Process		Second cutting process focuses on debarking short wooden planks or removing any damaged. Daily output are between 1,600 to 1,700 short wooden planks per day using single machine.
6	Jointer Process		Jointing process serves to flatten the opposing surfaces of short wooden planks, daily output are between 3,360 and 3,450 short wooden planks per day. The factory currently operates two jointer machines.

Table 1.1. Continuation

Nr.	Process	Photo	Explanation
7	Wood Lamination Process		The lamination process integrates short wooden planks with wood glue. Each cutting board requires four to five short wooden planks. a daily output of 560 to 630 cutting boards can be achieved with 1 machine.
8	Third Cutting Process		Third cutting process involves segmenting laminated boards into four to five individual cutting boards. This machine can process 280 to 320 cutting boards per day.
9	Planner Process		The planing process entails double-sided surfacing of cutting boards with a planer. With the deployment of two machines, this process is capable of producing 580 to 630 cutting boards per day
10	Fourth Cutting Process		The planing process, the fourth cutting operation is performed to precisely trim the upper and lower surfaces of the cutting board. An individual machine is capable of processing approximately 780 to 840 cutting boards per day.
11	Drill Process		Drilling is used to create holes in the cutting boards, which allows for the attachment of handles and helps with waste removal. One drilling machine can process about 950 to 1,000 cutting boards daily.
12	First Sanding Section		Cutting boards are go to sanding process using 150-grit sandpaper, which serves to establish precise right-angled corners. An individual machine is capable of processing approximately 450 to 500 cutting boards per day.

Table 1.1. Continuation

Nr.	Process	Photo	Explanation
13	Second Sanding Section		Second sanding section, sanding using a grinding machine with 150-grit sandpaper. This prepares the boards for later sanding stages, making those processes faster. Each machine can sand about 150 to 200 cutting boards daily.
14	Third Sanding Section		Third sanding section, cutting boards are subjected to a comprehensive surface sanding procedure involving a slab sander and 400-grit sandpaper. With the deployment of six operators, this machine is capable of processing approximately 650 cutting boards per day.
15	Sanding Sealar Process		Sanding sealar is implemented to occlude wood pores, thereby inhibiting fluid ingress and augmenting structural longevity. Operational efficiency indicates a processing rate of up to 680 cutting boards per operator daily.
16	Fourth Sanding Section / Sanding Finishing		Fourth sanding section, a final sanding to ensure the complete removal of sanding sealar residue. This preparation is essential before the staining process. A team of six operators can achieve a daily output of 450 cutting boards.
17	Painting Process		Painting Process is to provide a protective layer that augments its overall durability. Operational efficiency indicates a processing rate of 800 cutting boards per day by four operators.

Table 1.1. Continuation

Nr.	Process	Photo	Explanation
18	Finishing		Finishing process have two steps: sanding with 1000-grit sandpaper to remove of superfluous stain, then application of beeswax. Operational capacity suggests a processing rate of 800 cutting boards per day by three workers.
19	Quality Control		Quality Control (QC) process entails inspecting each finished product to identify and segregate defective or non-conforming items. One worker can inspect 800 cutting boards daily.
20	Inventory		Inventory process involves heating the products in a drying cabinet to cure the beeswax applied during the finishing process. This requires 36 to 48 hours before packaging process,
21	Packing		Packing process start when receipt of an order and when products are ready for packaging. One worker can pack up to 504 products per day.
22	Shipping		Before shipment, all products undergo a final inspection to verify their condition, quantity, packaging, and accompanying documentation. This process ensures the prevention of errors during shipping.

Based on interviews conducted with stakeholders at CV X on March 2, 2024, including the director, production manager, head of marketing, and production planning and inventory control (PPIC) staff, as well as observations made at the facility, it was found that one of the retail partners has experienced a decrease in product demand. This decline is attributed to a shift in the partner's target market, from a previous focus on household goods to a new prioritization of fresh and frozen food marketing.

Table 1.2. Order Data 2023 and 2024

Product	Partner Retail								
	Partner Retail 1			Partner Retail 2			Partner Retail 3		
Year	2023	2024	%	2023	2024	%	2023	2024	%
Oval Cutting Board (M)	330	614	86,06%	17190	12150	-29,32%	384	2376	518,75%
Long Spatula	615	732	19,02%	12160	11960	-1,64%	40	780	1850,00%
Oval Spatula	351	393	11,97%	8160	640	-92,16%	40	540	1250,00%
Curved Spatula	267	239	-10,49%	8180	1364	-83,33%	40	500	1150,00%
Rice Spoon	258	312	20,93%	7940	1020	-87,15%	40	220	450,00%
Total	1821	2290	25,76%	53630	27134	-49,41%	544	4416	711,76%

Table 1.2. Continuation

Product	Partner Retail								
	Partner Retail 4			Partner Retail 5			Total		
Year	2023	2024	%	2023	2024	%	2023	2024	%
Oval Cutting Board (M)	3534	52250	1378%	972	888	-0,0864	22410	68278	205%
Long Spatula	4620	27780	501%	1780	3540	0,9888	19215	44792	133%
Oval Spatula	4620	20140	336%	840	1850	1,2024	14011	23563	68%
Curved Spatula	4620	9420	104%	0	0	0	13107	11523	-12%
Rice Spoon	6000	12820	114%	0	0	0	14238	14372	1%
Total	23394	122410	423%	3592	6278	0,7478	82981	162528	96%

It is known that one retail partner reduced its order quantity from 53,630 pieces in 2023 to 27,134 pieces in 2024, resulting in a sales decline of 49.41%. This is also due to a decrease in demand for certain product types or stock-keeping units (SKUs), from 11 products in 2023 to only two in 2024. Overall, despite this decline in demand from one retail partner, total demand in 2024 actually increased by 95.86%. This was driven by the presence of a new retail partner that markets X products.

1.3. Problem Statement

Based on the problem exploration, the issue at CV X that will be addressed in this research relates to market expansion to counteract declining orders from current buyers and to satisfy the rising demand from other buyers.

1.4. Research Objectives

This research aims to develop a solution that helps the company expand its market reach by addressing a projected decline in orders from one retail partner while managing increased demand from others, within the company's 35m³ wood plank production capacity. The goal is to ensure timely order fulfillment and prevent lost sales due to wood drying delays.

1.5. Research Limitation

The limitations for this research are as follows.

- a. Production data comes from March 2024 until the final project is completed.
- b. The research focuses on increasing production of wooden kitchenware products.
- c. Research and development of production capacity focuses on the wood purchasing and woodworking department specifically for drying wood section.
- d. The number of retail partners who distribute the products until June 2025 is five retail partners, with a total of more than 1,500 outlets.