CHAPTER I
INTRODUCTION

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

1.1 Background

Along with the times, the growth of the industry also showed a rapid increase. This is supported by the Ministry of Industry's statement that from January-September 2021, the realization of investment in the manufacturing sector was recorded at Rp.236.79 trillion. This figure is up 17.3 percent when compared to the realization of investment in the same period in 2020 of Rp.201.87 trillion. The manufacturing industry sector that is also rapidly growing is the textile and textile products (TPT) industry. The Ministry of Industry stated that the contribution of the textile industry to the GDP of the manufacturing sector amounted to 6.08% in the third quarter of 2021. Meanwhile, the growth of the textile industry quarterly also improved to 4.27% (q to q) when compared to the second quarter of 2021 by 0.48%. In fact, textile exports in the period January-October 2021 also increased by 19% to USD10.52 billion, in addition to the value of investment which also increased by 12% to Rp.5.06 trillion (Kemenperindo, 2021).

The development of the textile sector is continuously increasing today, this is due to the various advances that have been made by mankind in all fields, especially in the field of technology and science. To deal with the development of the textile industrial sector, entrepreneurs must carry out various efforts to serve consumers optimally, this can be done if the resulting product can meet the tastes and satisfaction of consumers, which means the quality of the product is sufficient. (Ekawati, 2007).

A defective product is one of the common problems shared by all companies. Usually, a defective product contained in a product produced physical changes that are not following prescribed standards due to causes in the production process as well as other causes. Disability products may be due to the factors of machines, humans, or the environment (Suryoputro et al., 2017). Therefore, the company in addition to increasing its production results also always strives so that its production can achieve and meet high levels of quality standards. These developments can make the company can maximize productivity by still producing goods with high quality and become a choice among the community. Based on the above description, it can be concluded how important it is to perform quality control in each production process of the products it produces which is a management evaluation tool to avoid deviations that can be detrimental.

Improvement of production quality is carried out in the hope that the production of defective goods becomes close to zero. This defective product will harm the company especially if there are defects in large quantities. For craft products with high artistic value and difficulties such as batik, when experiencing product defects, the product cannot be reworked so that it can interfere with the production process (Handayani et al., 2021). Through the product, the company can provide satisfaction to the consumer. Therefore, it is very important to maintain product quality in order to achieve customer satisfaction (Kusuma et al., 2014).

There are three Batik Tanah Liek making centers in West Sumatra, namely in Dharmasraya Regency, Pesisir Selatan Regency, and Padang City. In Dharmasraya Regency, the center of Batik Tanah Liek, named Batik Tanah Liek Citra Mandiri is located in Jorong Teluk Sikai, Nagari Sungai Duo, Sitiung Subdistrict. Batik Tanah Liek Citra Industry is managed by a housewife named Eni Mulyatni (Humas, 2019). The batik industry was established by Eni Mulyatni in 1997 after participating in the activities of study in village community empowerment programs in Jogja and Solo for six months and is now 25 years old, in 2022. Batik making in this industry uses dyes that are quite diverse such as yellow, brown, red, black, and green colors that all use “Noli” (liat) soil material

and the production process in batik making is done by 30 artisans who all work as housewives (Adyatami, 2020).

Table 1. 1 Business Profile of Batik Tanah Liek Industry in West Sumatra

No.	Business Name/Year Standing	Owner Name	Address
1	Citra Monalisa Tanah Liek Batik Year Standing 1995	Hj. Wirda Hanim	Sawahan Dalam Street No. 33 Padang, Sumatra Barat
2	Bundo Kanduang Tanah Liek Batik Year Standing 2016	M. Iqbal/Nora Basrida	Ratulangi Street No. 5 Padang Sumatra Barat
3	Ayesha Collection Year Standing 2009	Fitria Lusia	Andam Dewi Street No. 8 Marapalam, Padang Sumatra Barat
4	Fitria Endika Tanah Liek Batik Year Standing 2014	H. Syahburdin	Aru Street No. 8 Lubuk Begalung, Padang, Sumatra Barat
5	Pondok Batik Year Standing 2013	Nurcholis	Jorong Padang Sari, Bukit Mindawa, Dharmasraya, Sumatra Barat
6	Citra Mandiri Year Standing 2000	Eni Mulyatni	Jorong Teluk Sikai, Blok B Situng I, Dharmasraya, Sumatra Barat
7	Dewi Busana Year Standing 2013	Dewi Hapsari	Nagari Lubuk Bonta, Silaut I, Pesisir Selatan, Sumatra Barat

(Source: Business and Management Research (AEBMR), 2018)

Batik Tanah Liek Industry in West Sumatra, especially in Batik Tanah Liek Citra Mandiri based on its development, has many difficulties. These difficulties include (Adyatami, 2020):

a. Batik artisans who work as housewives have difficulty in making motifs on batik cloth in the production process.
b. Inhibition of the manufacture of motifs in the production process causes Batik Tanah Liek Citra fabric in its completion takes a long time.
c. The owner of Batik Tanah Liek Citra Industry has difficulty buying raw materials and tools that are outside the island of Sumatra.

Batik Tanah Liek Citra Mandiri produces batik fabrics that have motifs Dharmasraya is a batik motif of rubber trees and palm bungo that is a favorite among consumers. Other traditional Minangkabau traditional liek batik motifs such as "*sirih dalam carano*", "*kaluak paku*" (fern leaves), "*kucing tidur*", "*lokan*" (river shells), "*batuang kayu*", "*tari piriang*", "*kipas*" and "*rangkiang*". But motifs continue to be developed whose inspiration is drawn from the richness of Minangkabau natural culture, such as motifs "*tabuik*" (ark), "*Jam Gadang*" and "*Rumah Gadang*". In the process of making this batik, there are obstacles in its

production such as batik color that fades, candles that come out of mold motifs, wrong prints, and others.

Based on the results of interviews with the owner of Batik Tanah Liek Citra Mandiri, the production process of batik tanah liek goes through several stages starting from making patterns and moving images that aim to make “pencanting” have no difficulty in making motifs. Next is “mencanting”, which is putting wax on the fabric to form a batik motif. The next stage fabric will go through the basic dyeing stage and then be dried for approximately 30 minutes before entering the next stage. The next stage is the fixation or locking of colors which is carried out overnight for maximum results. The next stage is boiling. The goal is to remove the wax used for walling can be removed. The cloth will then be washed so that if there is a color that is not included in the pattern, it can be cleaned and the remaining wax from boiling is also lost. Then the fabric will be dried in the sun and rubbed before packaging.

The completion of one batik cloth can take 5 days or even more depend on the weather. Each stage in the production process of batik tanah liek has internal standards that have been set by Batik Tanah Liek Citra Mandiri as product specifications. This critical point will later affect consumer needs and their fulfillment according to operational standards by workers at Batik Tanah Liek Citra Mandiri.

The batik production process in Batik Tanah Liek Citra Mandiri is still carried out manually and traditionally. The manual production process is usually carried out not following the existing work instructions. This has an impact on the production of batik tanah liek reject. In addition to not following the work instructions, working conditions and aged equipment are also the cause of the resulting product being disabled. From the results of interviews with the owner of Batik Tanah Liek Citra Mandiri, it is known that batik rejects products include; batik tanah liek faded from the basic dyeing, boiling stage and washing process, batik fabric torn from the washing process, and batik cloth wrong pattern from

making pattern stage and “mencanting” process. **Figure 1.1** shows the amount of batik production in Batik Tanah Liek Citra Mandiri in 2021 also the amount and percentage of rejected products.

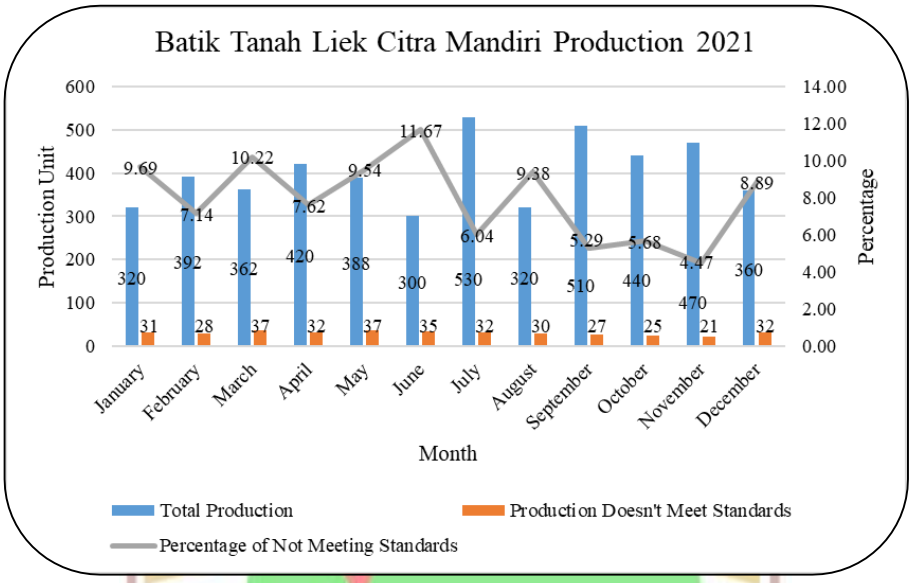

Figure 1. 1 Batik Tanah Liek Citra Mandiri Production Data 2021
(Source: Batik Tanah Liek Citra Mandiri, 2021)

Based on the data above, it can be seen that high batik production is found in July and September when this month is the time of Eid so demand increases. **Figure 1.1** shows the production range ranging from 300-530 strands per month with the reject cloth interval being at 21-37 strands or 4.47%-11.67% with a total loss of Rp 5,250,000-Rp 9,250,000 per month. According to research conducted by (Dino et al., 2017) on drinking water quality control, the tolerance of defects that can still be tolerated is below 5% of total production. Slightly different from the research by (Meldia et al., 2019) on the production of bottled water where the percentage of tolerance of defective products is a maximum of 4%. Compared to previous research, the condition of rejected products in Batik Tanah Liek Citra Mandiri is still relatively high. The owner of Batik Tanah Liek Citra Mandiri himself hopes that the production of batik reject can be reduced to 0% of the total production per month.

The necessity for quality control in the production process of batik tanah liek is to reduce the presence of defective products because if it occurs errors in the

production of batik writing also affect the profits that can be received by the company massively. Batik tanah like as one of the main endemic commodities in Dharmasraya regency became one of the highest sales sources in Dharmasraya sourced from Dharmasraya's regent, Mr. Sutan Riska Tuanku Kerajaan. Batik Tanah Liek Citra Mandiri is the largest batik business in Dharmasraya which is trusted by the local government to accommodate the mandatory service for example in the clothing of civil servants in early 2022, making public trust in Batik Tanah Liek Citra Mandiri increased rapidly. Batik Tanah Liek Citra Mandiri was chosen as a company that will be reviewed and given an improvement proposal because Batik Tanah Liek Citra Mandiri is more active than other batik businesses in Dharmasraya, so this batik has greater potential to be chosen by the community both for personal clothing, souvenirs, and even exported at national and abroad. In addition, the total defects of Batik Tanah Liek Citra Mandiri always fluctuate every year. The ups and downs in defects prove that batik tanah liek quality control against defects has not been fully optimally carried out so it requires other proposed improvements to the quality of batik tanah liek.

Product defects due to faded, batik fabric torn, batik cloth wrong pattern/printing errors, writing errors with candles, and others can affect overall profits for both Batik Tanah Liek Citra Mandiri and Dharmasraya districts as major trademarks. As an artistic use/textile item with a manufacturing period that tends to take a long time, if there is an error in the automatic production process, making batik products cannot be reworked or become scrap will significantly affect product specifications periodically and reduce consumer trusts in Batik Tanah Liek Citra Mandiri. So that if there is a defect in the batik cloth, it can reduce people's purchasing power toward batik tanah liek (Sari, 2018).

Based on the information obtained from the owner of Batik Tanah Liek Citra Mandiri, the impact caused by the product rejection is to result in high production costs that must be incurred. In addition, human resources at Batik Tanah Liek Citra Mandiri are also limited. If Batik Tanah Liek Citra Mandiri gets a large number of orders, workers will rush to work which has an impact on the quality of

batik tanah liek produced decreases. This leads to the potential loss of regulars and potential customers. Seeing this condition, Batik Tanah Liek Citra Mandiri seeks to minimize the production of batik tanah liek reject to maintain consumer trust.

Errors in the production of batik tanah liek as previously spelled out if left unchecked can harm the company on a large scale. But the efforts that have been done by Batik Tanah Liek Citra Mandiri are still minimal. If this situation is allowed, it can cause the quality of the product not to meet the company's specifications. As the largest and best batik company in Dharmasraya, of course, the losses caused by batik cloth defects that can reach 5 to 9 million rupiahs per month automatically affect the turnover of Batik Tanah Liek Citra Mandiri significantly. Also, the level of public trust as customers and potential customers will be greatly affected. Therefore, a quality improvement step is needed that can analyze the cause of defects in the product and prevent the occurrence of failure as much as possible overall.

Based on direct observations and data obtained from Batik Tanah Liek Citra Mandiri related to the percentage of rejected products produced is quite high, it is necessary to make efforts to control the quality of batik tanah liek production. Quality control of this production is carried out so that the number of batik rejects produced is minimal. This research is expected to be able to provide proposed improvements that will reduce the occurrence of reject production in Batik Tanah Liek Citra Mandiri.

Quality control and failure identification process using FMEA methods are expected to be able to help Batik Tanah Liek Citra Mandiri in minimizing defective products to continue to improve quality according to company specifications. FMEA approach considered able to describe the cause and effect of rejects in batik tanah liek through the identification of each stage of the production process, then an assessment of the technical standardization that Batik Tanah Liek Citra Mandiri has set so that the root cause of the problem of defects in the product is found that affects the production time, profits, to consumer trusts in Batik Tanah Liek Citra

Mandiri products. If the core of the problem has been obtained and the consequences of the problem have been clearly described using FMEA, then it is hoped that the results of this study will be able to provide propose for improvements that are right on target to minimize rejects and losses in Batik Tanah Liek Citra Mandiri. It is also expected to increase the purchasing power of the community towards batik cloth as the main commodity in Dharmasraya regency.

1.2 Problem Formulation

The formulation of the issues raised for this study is based on the background that has been made, namely how to minimize reject of batik products in Batik Tanah Liek Citra Mandiri of Dharmasraya Regency.

1.3 Objectives

Based on the background that has been described and the formulation of the problem, the purpose of this study is to propose improvements to the production process in Batik Tanah Liek Citra Mandiri.

1.4 Scope of Problems

For achieving the research objectives, the study is limited to the research only on the production process of making batik tanah liek produced by Batik Tanah Liek Citra Mandiri from the process of printing patterns of batik's making to the drying process by Batik Tanah Liek Citra Mandiri employees.

1.5 Outline of The Report

This report contain three chapter as follow:

CHAPTER I INTRODUCTION

This chapter contain background, problem formulation, objectives, scope of problem and outline of the thesis.

CHAPTER II LITERATURE REVIEW

This chapter contain literature review of the thesis related to the topic.

CHAPTER III RESEARCH METHODOLOGY

This chapter contain problem formulation, methodologies of the thesis in order to solve the problem.

CHAPTER IV RESULT AND DISCUSSION

This chapter contain data, calculation and evaluation of production process of the thesis in order to solve the problem by provide improvement recommendation.

CHAPTER V CONCLUSION AND SUGGESTION

This chapter contain conclusion of the thesis and suggestion for future research.