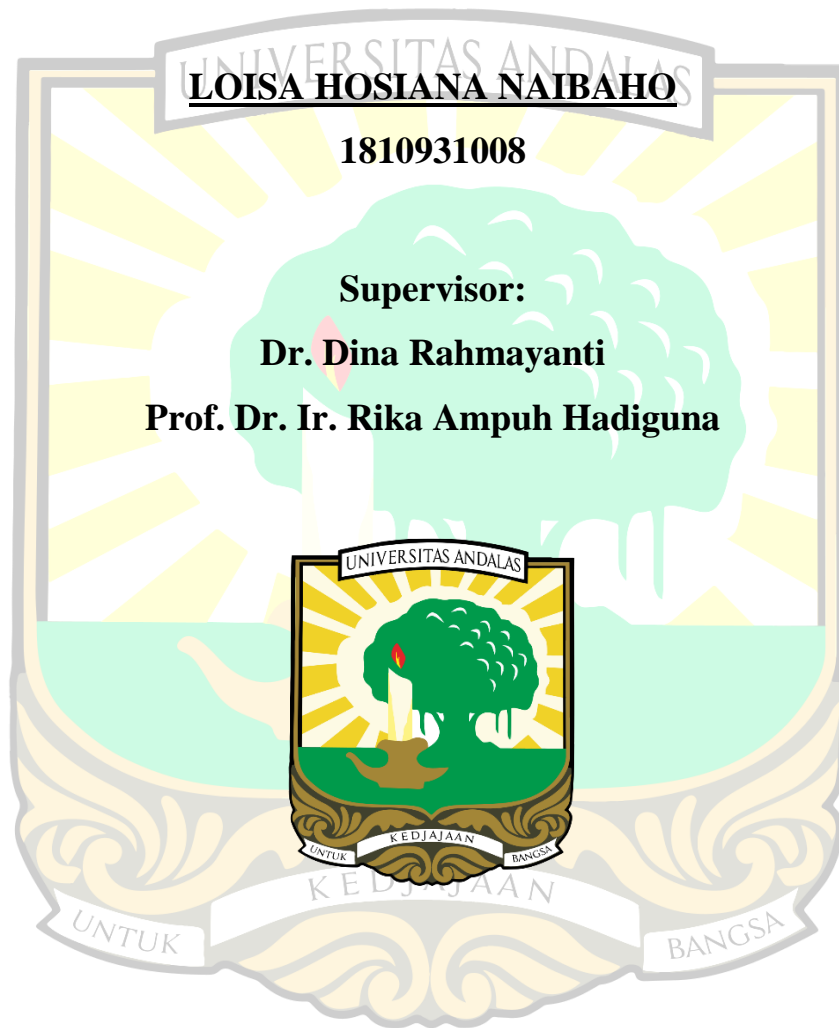


**WASTE MINIMIZATION AT SANJAI ANNA
PAYAKUMBUH USING LEAN APPROACH**

FINAL PROJECT REPORT



LOISA HOSIANA NAIBAHO

1810931008

Supervisor:

Dr. Dina Rahmayanti

Prof. Dr. Ir. Rika Ampuh Hadiguna

DEPARTMENT OF INDUSTRIAL ENGINEERING

FACULTY OF ENGINEERING

ANDALAS UNIVERSITY

PADANG

2024

**WASTE MINIMIZATION AT SANJAI ANNA PAYAKUMBUH
USING LEAN APPROACH**

FINAL PROJECT REPORT

A final project report submitted to fulfill the requirements for the Bachelor's Degree Program in the Department of Industrial Engineering, Faculty of Engineering, Andalas University

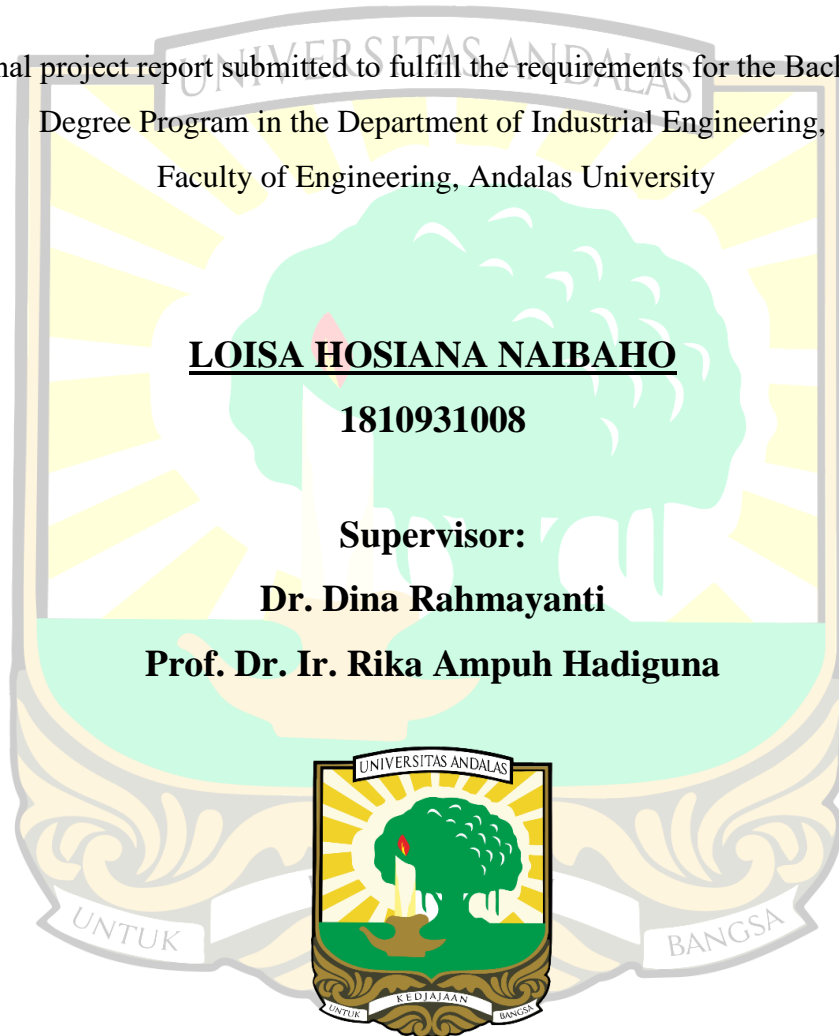
LOISA HOSIANA NAIBAHO

1810931008

Supervisor:

Dr. Dina Rahmayanti

Prof. Dr. Ir. Rika Ampuh Hadiguna



**DEPARTMENT OF INDUSTRIAL ENGINEERING
FACULTY OF ENGINEERING
ANDALAS UNIVERSITY
PADANG
2024**

ACKNOWLEDGMENT

First and foremost, praises and thanks to the Almighty God for the blessing upon the author during this research called “Waste Minimization at Sanjai Anna Payakumbuh Using Lean Approach”, so the author can complete this research study successfully. The author acknowledge that this research study can’t be complete without any help and support from various parties. Therefore, the author would like to express gratitude to:

1. Dr. Dina Rahmayanti and Prof. Dr. Ir. Rika Ampuh Hadiguna as author’s supervisor who always give invaluable guidance and insight while doing this research study.
2. Dr. Alexie Herryandie Bronto Adi and Hilma Raimona Zadry Ph.D as author’s examiner who gives suggestion throughout this research study, so that this study can be complete in better result.
3. Sanjai Anna Payakumbuh that give opportunity to the author to do the research study there and facilitate the author throughout the research process.
4. Author’s family and colleagues for the genuine support for the completion of this research.

Finally, author’s thanks go to all the people who have supported the author to complete this research directly and indirectly. The author also hope that this research study can be useful for the people who read this research study.

Padang, January 2024

Author

ABSTRACT

The Small, and Medium Enterprises (SME's) sector plays a crucial role in the Indonesian economy, contributing significantly with 61.07 percent to the gross domestic product, employing 97 percent of the workforce, and accumulating 60.42 percent of the total investment. However, the development of SME's faces challenges such as weak business management, a lack of quality human resources, and limited access to financial institutions. This research focuses on Sanjai Anna, one of the SME's in Payakumbuh engaged in the sale of typical products from West Sumatra. The study titled "Waste Minimization at Sanjai Anna Payakumbuh Using Lean Approach" aims to identify potential and prioritized wastages at Sanjai Anna and formulate appropriate solutions to minimize these inefficiencies.

The research follows the Define, Measure, Analysis, and Improve stages. The define stage in this study utilizes a Value Stream Map to identify a list of potential waste at Sanjai Anna. These potential wastes are then weighted to determine the significant ones that impact Sanjai Anna, utilizing Fuzzy Analytic Hierarchy Process (Fuzzy AHP) and identifying critical waste through a Pareto Diagram. An analysis of the root causes of waste is conducted using a Fishbone Diagram. Subsequently, solutions are formulated based on the identified causes of the problem.

The research findings reveal significant potential waste cumulatively amounting to 77%, including delays in the arrival of raw materials, the presence of defect product (crack products and the red-edged products), along with the time spent searching for tools. Proposed improvements to minimize waste at Sanjai Anna Payakumbuh include standardizing ordering and scheduling processes, establishing contracts with suppliers, evaluating the current production floor, directing workers to adhere more strictly to existing rules and procedures, and providing temperature measurement tools for oil and setting oil temperature standards.

Keywords: SME's, Waste, Fuzzy AHP, VSM, Lean Approach

ABSTRAK

Sektor Usaha Mikro, Kecil, dan Menengah (UMKM) memiliki peran penting dalam ekonomi Indonesia, dimana UMKM memberikan kontribusi sebesar 61,07 persen terhadap produk domestik bruto, menyerap 97 persen pekerja, dan mengumpulkan sebanyak 60,42 persen dari total investasi. Meskipun demikian, perkembangan UMKM dihadapkan pada tantangan seperti manajemen bisnis yang lemah, kurangnya sumber daya manusia berkualitas, dan akses terbatas ke lembaga keuangan. Penelitian ini berfokus Sanjai Anna, sebuah UMKM di Payakumbuh yang bergerak dibidang penjualan oleh oleh khas Sumatra Barat. Penelitian berjudul “Waste Minimization At Sanjai Anna Payakumbuh Using Lean Approach” bertujuan untuk mengetahui potensi dan prioritas pemborosan yang terjadi di Sanjai Anna serta formulasi solusi yang sesuai untuk meminimasi pemborosan yang terjadi.

Penelitian yang dilakukan ini mengikuti alur Define, Measure, Analysis, dan Improve. Proses tahapan define pada penelitian ini menggunakan Value Stream Map untuk mengidentifikasi daftar potensi pemborosan yang terjadi di Sanjai Anna. Potensi pemborosan tersebut kemudian dilakukan pembobotan untuk mengetahui pemborosan-pemborosan yang signifikan memberikan dampak kepada Sanjai Anna. Pembobotan dilakukan menggunakan Fuzzy AHP serta pemborosan yang kritikal didapatkan menggunakan Diagram Pareto. Analisis akar permasalahan penyebab pemborosan dilakukan dengan Diagram Fishbone. Kemudian, berdasarkan penyebab-penyebab permasalahan tersebut diformulasikan solusi yang sesuai.

Berdasarkan hasil penelitian didapatkan potensi pemborosan yang memberikan dampak yang signifikan dengan kumulatif mencapai 77% yaitu adanya keterlambatan kedatangan bahan baku, terdapat produk cacat pecah, dan produk cacat tepi kemerahan dan kegiatan mencari alat. Perbaikan yang disarankan untuk meminimasi pemborosan yang terjadi di Sanjai Anna adalah pembuatan standarisasi pemesanan dan penjadwalan, membuat kontrak dengan pemasok, melakukan evaluasi terhadap rantai produksi saat ini, mengarahkan para pekerja untuk lebih disiplin mengikuti atauran dan prosedur kerja yang ada, serta menyediakan alat ukur suhu minyak dan standar suhu minyak.

Kata kunci: UMKM, Pemborosan, Fuzzy AHP, VSM, Pendekatan Lean