INCREASING EFFICIENCY OF SAMPLE SEARCHING ACTIVITY IN INJECTION MOLDING DEPARTMENT AT PT XYZ BY USING PDCA CYCLE

UNDERGRADUATE FINAL PROJECT

Submitted as one of the requirements to obtain Sarjana Teknik (S.T.)

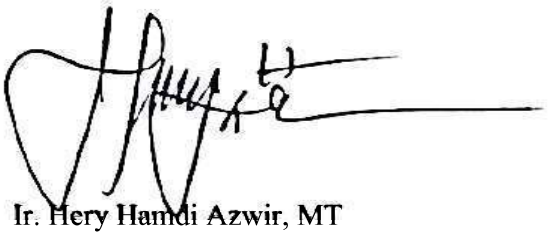
By:
Miertha Epiphania
004201800063

FACULTY OF ENGINEERING
INDUSTRIAL ENGINEERING STUDY PROGRAM
CIKARANG
JANUARY, 2023

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate final project entitled **Increasing Efficiency of Toy Sample Searching Activity in Injection Molding at PT XYZ by using PDCA Cycle** that was submitted by Miertha Epiphania majoring in Industrial Engineering from the Engineering was assessed and approved to have passed the Oral Examination on January 19, 2023.

Panel of Examiner



Ir. Hery Hamdi Azwir, MT

Chair of Panel Examiner

Dr. Ir. Mohamad Toha, MT

Examiner I

FINAL PROJECT ADVISOR
RECOMMENDATION LETTER

This thesis entitled "Increasing Efficiency of Sample Searching Activity in Injection Molding Department by using PDCA Cycle" prepared and submitted by Miertha Epiphania in partial fulfillment of the requirements for the degree of Bachelor Degree in the Faculty of Engineering has been reviewed and found to have satisfied the requirements for a final project fit to be examined. I therefore recommend this final project for Oral Defense.

Cikarang, Indonesia, 17th of January, 2023

Dr. Ineu Widaningsih, S.T., M.T.

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the undergraduate thesis/final project/business plan stated below:

Name : Miertha Epiphania

Student ID number : 004201800063

Study Program : Industrial Engineering

Faculty : Engineering

I hereby declare that my undergraduate thesis/final project/business plan entitled "Increasing Efficiency of Toy Sample Searching Activity in Injection Molding Department at PT XYZ by using PDCA Cycle" is, to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism, including but not limited to Artificial Intelligence plagiarism, is detected in this undergraduate thesis/final project/business plan, I am willing to be personally responsible for the consequences of these acts of plagiarism, and accept the sanctions against these acts in accordance with the rules and policies of President University.

I also declare that this work, either in whole or in part, has not been submitted to another university to obtain a degree.

Cikarang, 17th of January, 2023

Miertha Epiphania

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST

As a student of the President University, I, the undersigned:

Name : Miertha Epiphania

Student ID number : 004201800063

Study program : Industrial Engineering

for the purpose of development of science and technology, certify, and approve to give President University a non-exclusive royalty-free right upon my final report with the title:

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As a lecturer of the President University, I, the undersigned:

Advisor's Name : Dr. Ineu Widaningsih, S.T., M.T.

NIDN : 0424077001

Study program : Industrial Engineering

Faculty : Engineering

declare that following thesis:

Title of undergraduate thesis : Increasing Efficiency of Sample Searching Activity in Injection Molding Department at PT XYZ by using PDCA Cycle

Undergraduate Thesis author : Miertha Epiphania

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Dr. Ineu Widaningsih, S.T., M.T.

INCREASING EFFICIENCY OF TOY SAMPLE SEARCHING ACTIVITY IN INJECTION MOLDING DEPARTMENT AT PT XYZ BY USING PDCA CYCLE

By

Miertha Epiphania

ID No. 004201800063

Approved By

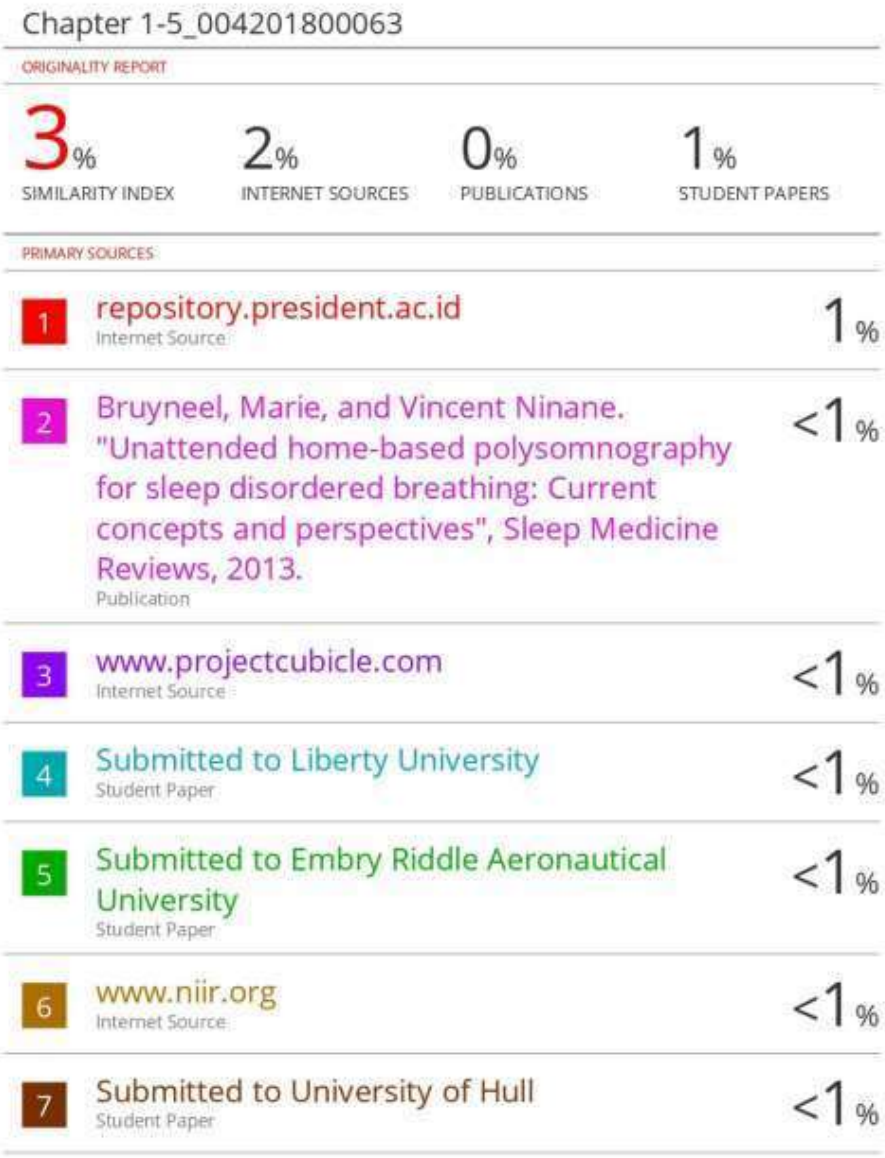
Dr. Ineu Widaningsih, S.T., M.T.

Final Project Advisor

Andira Taslim, S.T., M.T.

Program Head of Industrial Engineering

SIMILARITY CHECKING RESULT



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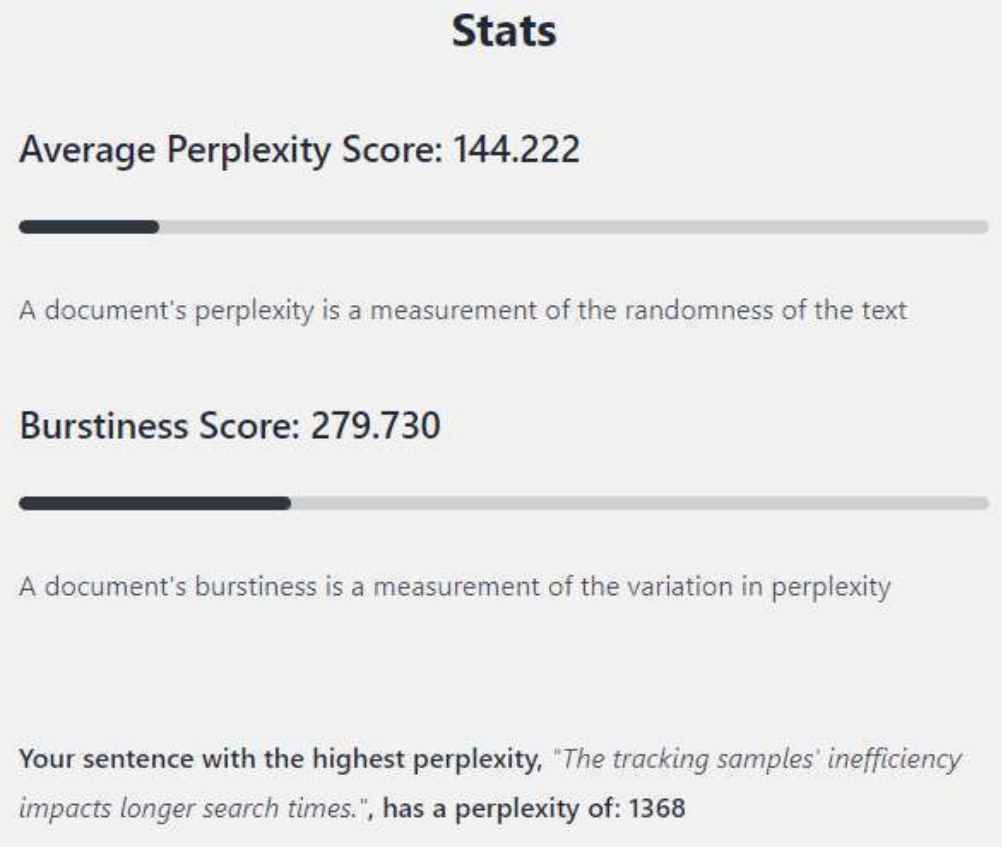

ABSTRACT

The Injection Molding department at PT XYZ is facing issues with sample searching, which is leading to decreased productivity and increased production costs. The aim of this study, conducted using the PDCA cycle, was to identify the root causes of the issue between April and August 2022 and increase the efficiency of the sample searching activity. Objectives included reducing searching time, utilizing space more effectively, increasing sample storage capacity, and reducing potential loss costs. Action plans included adding drawers and shelves, and creating a bank database of the sample locator. As a result, searching time decreased by 91%, space utilization increased to 14%, capacity increased by 136%, and the cost of lost output was reduced by up to 91%, or Rp78,938,000.20 each month. Additionally, the cost of lost searching hours was reduced by 84%, or Rp1,798,197.00. As a result, the Injection Molding department can save up to 91% of the searching time, equivalent to Rp80,736,197.20 total cost savings each month.

Keywords: Injection Molding, sample searching, PDCA cycle, efficiency, cost reduction, productivity improvement

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Lean manufacturing	:	Lean manufacturing is a production process that focuses on reducing waste in all aspects of a company's production activities by considering all available resources to achieve economic value
Injection molding	:	Injection molding is a thermoplastic material processing method in which the material is melted through heating, injected by a plunger into a water-cooled mold, and then cooled and hardened so it can be removed from the mold
PDCA	:	PDCA stands for Plan, Do, Check, and Act. The PDCA cycle is a management method that aims to solve problems through four iterative steps
Sample	:	A sample is a prototype of a product created by the vendor and approved by the customer
Searching time	:	Searching time is the time required for a person to find something, including manual and walking work. This measure of time starts from the beginning of the task until its completion
Space utilization	:	Space utilization involves optimal load security and creating a layout that takes advantage of the entire space, using the volume of the room as effectively as possible
Capacity	:	Capacity refers to the storage capacity of an item or part within a storage device

Cost reduction	:	Cost reduction is a continuous effort specifically designed to drive spending down and save costs while maximizing business value. It involves automating the analysis of non-value added activities, eliminating waste, and improving business processes to reduce overhead or cost