MINIMIZING DEFECT USING DMAIC METHOD IN PACKAGING PRINTING PROCESS AT PT. X

UNDERGRADUATE FINAL PROJECT

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

By
Listiyanti Puspa Agustina
ID No. 004201900005

FACULTY OF ENGINEERING
INDUSTRIAL ENGINEERING STUDY PROGRAM
CIKARANG
SEPTEMBER, 2023

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate final project entitled **Minimizing Defect Using DMAIC Method in Packaging Printing Process at PT. X** that was submitted by **Listiyanti Puspa Agustina** majoring in Industrial Engineering from the Faculty of Engineering was assessed and approved to have passed the Oral Examination on September 19th, 2023.

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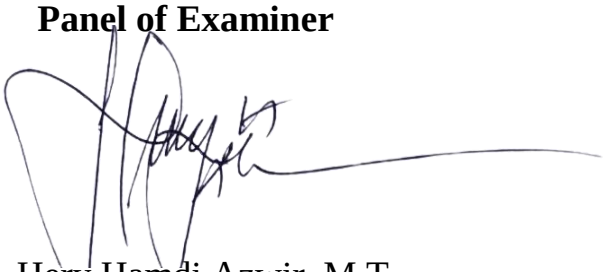

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Examiner I

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This final project entitled **"Minimizing Defect Using DMAIC Method in Packaging Printing Process at PT. X"** prepared and submitted by **Listiyanti Puspa Agustina** 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.

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Name	: Listiyanti Puspa Agustina
Student ID number	: 004201900005
Study Program	: Industrial Engineering
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By

Listiyanti Puspa Agustina

ID No. 004201900005

Approved by

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

Final Project Advisor

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

Study Program Head of Industrial Engineering

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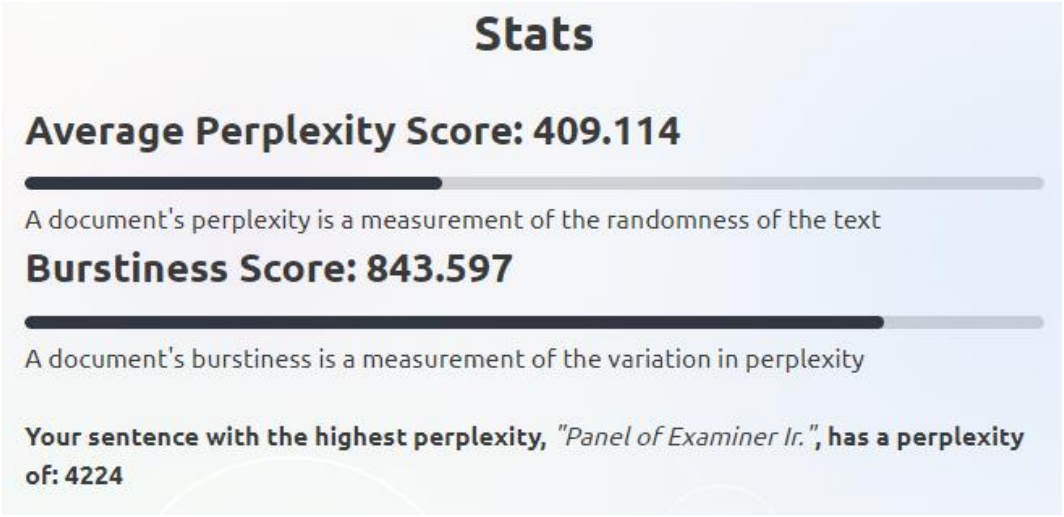

ABSTRACT

PT. X is a company engaged in manufacturing flexible film packaging. In making packaging product through several processes, namely printing, lamination, slitting and sealing processes. The problem faced by the company is the high percentage of defects in January 2023 for the entire process, which is 7.17%. Whereas the defect standard for the entire process is 5%. The printing process produces the highest defect percentage of 4.56% when compared with other processes. The six sigma method with DMAIC stages is used to improve the quality of printing process to minimize defects in the process. Start from defining the problem using pareto diagram, SIPOC diagram, and critical to quality. Measuring current data using p-chart, DPMO, and sigma level to find out the performance level of current conditions. Analyze the root causes of defects using why why analysis. Develop suggestions for improvement using the 5W1H method. Lastly, determine the control process for implementation of improvements. After the implementation of improvement, the defect percentage in the printing process decrease become 1.72% in March 2023.

Keywords: Packaging, Printing, Defect, Quality, Six Sigma, DMAIC

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LIST OF TERMINOLOGIES

Packaging	:	A package that protects products from physical damage, contamination, and other environmental factors.
Printing	:	A process of transferring designs in the form of images from cylinder to a film substrate.
Defect	:	Product quality conditions that do not meet standards or below the level expected by customers.
Article	:	The name of the customer's product that will be used as an identity by PT. X during the packaging process.
Running Process	:	A series of stages carried out during the product production process.
Change Over	:	The process of changing production activities from one article to another.
Surat Uraian Produksi (SUP)	:	Documents contain product information, specifications, and process parameters in accordance with established standards to produce products with the expected quality.
Form Cylinder Selesai Proses (FCSP)	:	Document containing information on the use of cylinders that have been used with conclusions about the quality of the cylinders during the printing process.