

**OPTIMIZING MAINTENANCE STRATEGIES BY ANALYZING
EQUIPMENT FAILURE RECORDS THROUGH
MAINTENANCE DIAGNOSTICS**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

OPTIMIZING MAINTENANCE STRATEGIES BY ANALYZING EQUIPMENT FAILURE RECORDS THROUGH MAINTENANCE DIAGNOSTICS

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PT. BSI, an Indonesian steel company specializing in Coil Painted production, faces challenges in enhancing uptime and plant reliability. The company's uptime target is 75.26%, but the fluctuating OEE values (43.90% to 74.20%) and a decline in OEE (72.79% to 66.37%) in FY 2022 underscore the need for improved maintenance strategies.

The research project, "Optimizing Maintenance Strategies by Analyzing Equipment Failure Records through Maintenance Diagnostics," aims to leverage historical equipment failure data to enhance maintenance strategies and improve overall equipment reliability and performance. The study follows the DMAIC framework, which includes defining the background and research problem, calculating metrics like MTBF and MTTF, using tools like Pareto analysis, Fishbone diagrams, and FMEA, selecting optimal maintenance strategies, particularly for the Coil Car, through RCM, and ensuring the effectiveness of the implemented strategies.

The findings indicate substantial opportunities for improving maintenance practices, with the potential to achieve a 10% improvement in OEE and significant cost savings of Rp. 3,037,812,838, thereby enhancing overall plant reliability and performance.

Keywords: Maintenance strategies, Equipment reliability, DMAIC, MTBF, MTTF, RCM.

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DEDICATION

I dedicate this works for my parent rahimullah, my wife and my children

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