IMPLEMENTATION OF VALUE STREAM MAPPING TO IDENTIFY AND MINIMIZE WASTE IN THE COSMETICS PRODUCTION PROCESS AT PT. DBI

UNDERGRADUATE FINAL PROJECT

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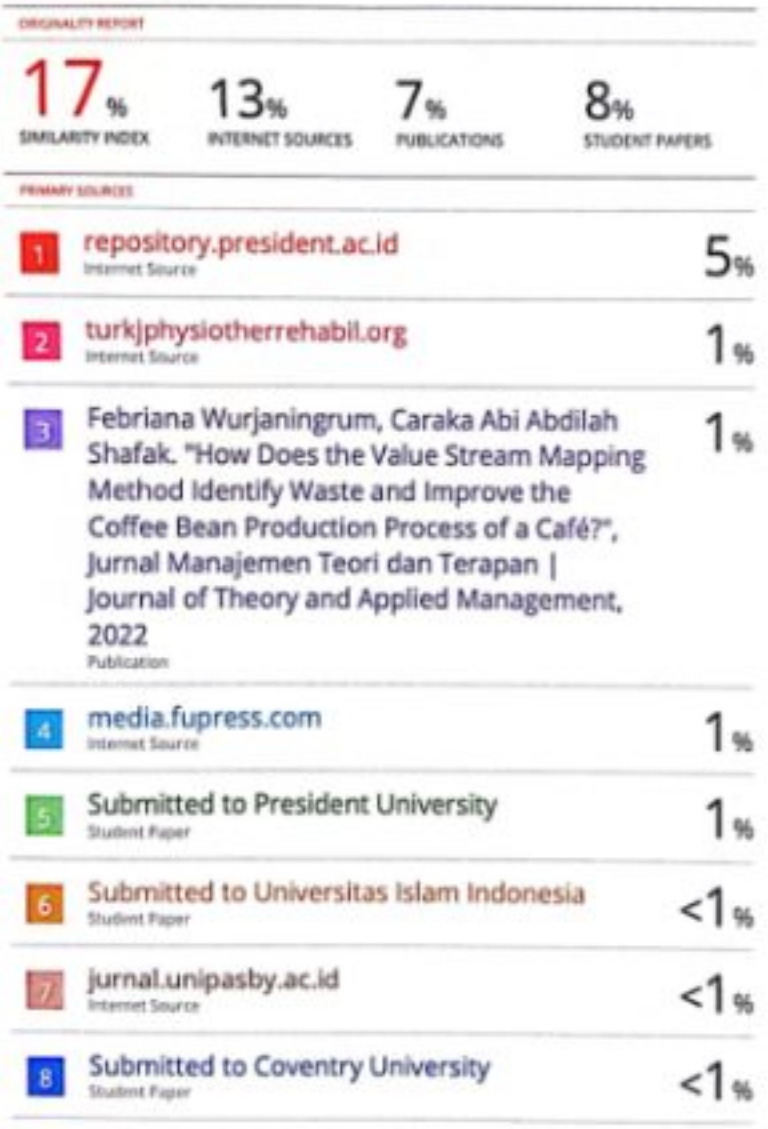
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ABSTRACT

The cosmetics production process at PT DBI experiences inefficiencies that impact overall productivity. This study applies Lean Manufacturing, specifically Value Stream Mapping (VSM), to analyze production flow and identify waste. Process Activity Mapping (PAM) and the 7 Waste framework revealed two significant inefficiencies: waiting time (totaling 2,000 minutes) and transportation waste (407 meters of unnecessary movement). Root cause analysis using 5 Why led to key improvement recommendations, including the use of a Heated Jacketed Tank to accelerate product temperature stabilization, optimization of QC inspection through parallel testing, and the implementation of a Make-to-Order with Pre-Scheduled Shipping system to reduce delivery delays. Additionally, facility layout redesign using ARC and BLOCPLAN resulted in an optimized R-SCORE of 0.74, suggesting a more efficient spatial arrangement. A Future State Mapping (FSM) was developed to visualize potential improvements if these recommendations are implemented. This study highlights the effectiveness of Lean Manufacturing in reducing waste and optimizing production processes in the cosmetics industry. Further research should explore automation and digital manufacturing integration to sustain long-term efficiency improvements.

Keywords: *5 Why Analysis, 7 Waste Reduction, Activity Relationship Chart (ARC), Lean Manufacturing, Process Activity Mapping (PAM), Spaghetti Diagram, Value Stream Mapping (VSM).*

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