TECHNICAL AND FINANCIAL ASPECT ANALYSIS IN INVESTMENT OF NEW OVEN HEATING MACHINE FOR BABY FASHION DOLL HEAD PART AT PT XYZ

UNDERGRADUATE FINAL PROJECT

Submitted as one of the requirements

to obtain Sarjana Teknik (S.T.)

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FACULTY OF ENGINEERING

INDUSTRIAL ENGINEERING STUDY PROGRAM

CIKARANG

FEBRUARY 2025

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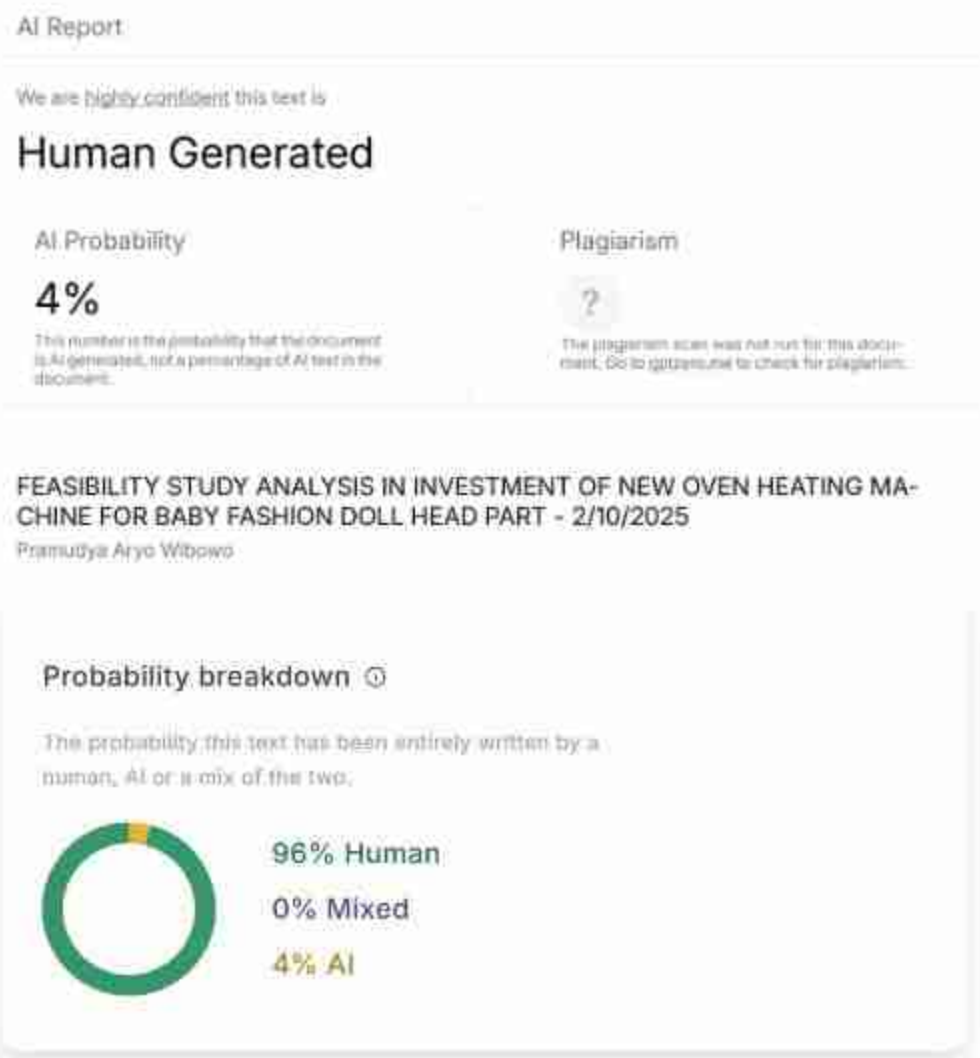

ABSTRACT

PT XYZ Indonesia is a manufacturing company specializing in children's toys, including fashion toys and HW Cars. One of the key production processes in fashion toys is heating the head part using oven head machine. However, investigations in May 2024 revealed that temperature inconsistencies led to deformations in <10 head parts and 20 process difficulties in assembly during two work shifts. These issues arise due to fluctuating machine inputs that affect heating uniformity. The company has attempted multiple repairs, but overheating persists. Additionally, the current machine cannot be upgraded with essential features like an analog thermostat for better temperature control. Its internal structure, filled with electrical components and enclosed in a wooden cover, prevents modification. Even if modifications were possible, the cost $1,250 per unit is nearly equivalent to purchasing a new machine $1,000 per unit from an alternative vendor. Given these limitations, investment in a new machine is a more cost-effective and sustainable solution than frequent repairs. Therefore, this report aims to plan the investment of new head oven machine, the positive and negative results of this objective will determine the feasibility of investing in new toy spare parts head oven machine in technical and financial aspects.

Keywords: *Efficiency Production, Investment, Feasibility Study, Financial Aspect, Technical Aspect.*

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LIST OF TERMINOLOGIES

Demand	:	A request that a customer needs from a company.
Standard Time	:	The time required to complete an activity, taking into account additional time (allowances).
Normal Time	:	The time required to complete an activity without considering allowance or rest time.
Observation Time	:	The time measured when an observation is made by watching the operator complete an activity until it is finished.
Allowances	:	The time allowance given when the operator performs an activity.
Standard Deviation	:	A statistical measure to show how wide the spread of data is from a mean.
Confidence Level	:	A measure of the level of confidence that indicates a parameter estimate in statistics.
Motion	:	A movement performed by an individual in carrying out an activity.
Fluctuate	:	Conditions that are not closed or not fixed (inconsistent).
Normal Distribution	:	Data analysis that focuses on depicting data that clusters around the mean value with the standard deviation controlling the distribution.