ABSTRAK

UMKM Rootless Screen Printing merupakan pelaku usaha di industri kreatif fashion yang mengalami peningkatan pesanan signifikan mencapai 195% dalam periode April 2024–Maret 2025. Untuk memenuhi lonjakan permintaan tersebut, perusahaan masih mengandalkan sistem produksi manual dan tenaga kerja outsourcing, yang berdampak pada peningkatan biaya operasional dan ketidakstabilan kualitas produk. Penelitian ini bertujuan untuk menganalisis kelayakan investasi mesin Direct To Garment (DTG) dan Direct To Film (DTF) guna memenuhi kapasitas produksi secara optimal. Metode yang digunakan mencakup analisis aspek teknis dan finansial, dengan pendekatan peramalan produksi menggunakan metode Holt-Winters dan perhitungan nilai investasi berdasarkan Net Present Value (NPV), Internal Rate of Return (IRR), dan Payback Period (PP). Hasil penelitian menunjukkan bahwa investasi mesin DTG lebih layak diterapkan dibandingkan mesin DTF maupun mempertahankan tenaga kerja outsourcing. Mesin DTG mampu memenuhi kapasitas produksi maksimal dan memberikan nilai NPV positif, IRR di atas MARR, serta periode pengembalian modal yang relatif singkat. Dengan demikian, investasi mesin DTG disarankan sebagai solusi strategis untuk meningkatkan efisiensi dan kualitas produksi UMKM Rootless Screen Printing.

Kata kunci: *kelayakan investasi*, *kapasitas produksi*, *UMKM*, *DTG*, *DTF*, *NPV*, *IRR*

ABSTRACT

Rootless Screen Printing MSME is a fashion-based creative industry player that experienced a significant 195% increase in customer orders from April 2024 to March 2025. To fulfill this rising demand, the company still relies on manual production processes and outsourcing labor, which has led to increased operational costs and inconsistent product quality. This research aims to evaluate the feasibility of investing in Direct To Garment (DTG) and Direct To Film (DTF) printing machines to meet the production capacity more efficiently. The study uses technical and financial feasibility analysis, applying the Holt-Winters forecasting method and investment appraisal through Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period (PP) calculations. The results show that DTG machine investment is more feasible compared to DTF and maintaining outsourced labor. DTG offers higher production capacity, a positive NPV, an IRR above the Minimum Attractive Rate of Return (MARR), and a relatively short payback period. Therefore, DTG machine investment is recommended as a strategic solution to improve production efficiency and product quality for Rootless Screen Printing MSME.

Keywords*: investment feasibility, production capacity, MSME, DTG, DTF, NPV, IRR*