

ABSTRACT

The manufacturing sector plays an important role in the Indonesian economy but is highly vulnerable to changing conditions, making firms prone to financial distress prior to bankruptcy. This study aims to identify the financial distress conditions of Indonesian manufacturing companies in 2024 using the Altman Z-Score and to apply Random Survival Forest (RSF) to model time to financial distress while accounting for censored data. The study uses 2024 financial statements from 205 manufacturing firms listed on the Indonesia Stock Exchange. Predictor variables include liquidity, solvency, profitability, activity ratios, and firm size. RSF analysis is conducted using bootstrap sampling, log-rank splitting, Out-of-Bag (OOB) error evaluation, and hyperparameter tuning. The results show that 65 firms (31.7%) are in financial distress and 140 firms (68.3%) are non-distress. The best RSF model produces an OOB error of 0.2038 and a C-Index of 0.7962, indicating good predictive performance. Profitability, asset efficiency, leverage, and liquidity ratios are the main predictors of financial distress risk, while firm size contributes the least.

Keywords: *financial distress, Altman Z-Score, survival analysis, Random Survival Forest, financial ratios.*