Abstract

Predicting free cash flow is vital tas for estimating a company's future financial outlook and supporitng informed investement decisions. This study employs Light Gradient Boosting Machine (LGBM) to forecast FCF. Model perfomance is evaluated using three error metrics: Symmetric Mean Absolute Percentage Error (SMAPE), Mean Absolute Error (MAE), and Root Mean Square Error (RMSE). Two experimental scenarios are compared, manual feature selection based on the highest performing variable combination and dimensionality reduction using Principle Component Analysys (PCA). The result shows that manual feature selection significantly outperforms PCA, with the best configuration of combination four lagged variabels consist of Operation Cash Flow Lag 4, , Earnings Lag 4, and Earnings Lag 1, achieved a MAE of 0.1059, an RMSE of 0.1446, and an sMAPE of 24.6702. These study manual feature selection can enhance the predictive accuracy of LGBM for FCF.

Keywords: ***Free cash flow, Light Gradient Boosting machine, Principle Component Analysis***