

ABSTRACT

The fluctuating characteristics of stock prices indicate high volatility in the stock market. Therefore, a method is needed that is able to overcome these problems by providing more accurate predictions of stock price trends in order to help investors make investment decisions. One approach that continues to grow in building prediction models is using ensemble learning techniques. Stacking Ensemble Learner (SEL) is an ensemble learning technique that combines several machine learning algorithms as base models and meta models to improve prediction performance. This research compares XGBoost, SVM, and SEL models. The SEL technique uses XGBoost and SVM as base models and XGBoost as a meta model that combines the prediction results of the two algorithms. The data used are five independent variables obtained from the calculation of stock prices using technical indicators, namely Relative Strength Index (RSI), Simple Moving Average (SMA), Moving Average Convergence Divergence (MACD), and Stochastic Oscillator (SO). The dependent variable in this study is a binary category, namely stock price trends (up and down). The results show that the XGBoost model shows an F1-score accuracy value of 96% on training data, which is higher than the SVM model of 94%, and the SEL model of 95%. This shows that ensemble models do not always guarantee significantly improved model performance.

Keywords: *Stock Price Trend, Technical Indicator, eXtreme Gradient Boosting (XGBoost), Support Vector Machine (SVM), Stacking Ensemble Learner (SEL)*