

ABSTRAK

Pasar saham merupakan salah satu instrumen investasi yang pergerakannya dipengaruhi oleh berbagai faktor teknikal dan eksternal. Penelitian ini bertujuan membangun model klasifikasi tren saham BBKA menggunakan Gated Recurrent Unit (GRU) berbasis multivariat serta menganalisis pengaruh penambahan variabel eksternal terhadap performa model. Data yang digunakan mencakup periode 2014–2025 yang diperoleh dari Yahoo Finance, terdiri atas data saham BBKA, IHSG, USD/IDR, dan BBRI. Fitur yang digunakan meliputi indikator teknikal berupa SMA, EMA, RSI, MACD, Stochastic Oscillator, Volume, dan Close, serta variabel eksternal berupa return harian IHSG, USD/IDR, dan BBRI. Pengujian dilakukan melalui lima skenario kombinasi fitur, variasi sliding window, dan target prediksi. Hasil penelitian menunjukkan bahwa konfigurasi terbaik diperoleh pada window 30 hari dengan target prediksi 1 hari ke depan. Model baseline yang menggunakan indikator teknikal menghasilkan akurasi 84,85%, sedangkan kombinasi seluruh variabel eksternal menghasilkan performa terbaik dengan akurasi 87,12% dan F1-Score 0,8712. Di antara variabel eksternal yang diuji, Return BBRI memberikan kontribusi peningkatan terbesar terhadap performa model. Hasil penelitian menunjukkan bahwa integrasi indikator teknikal dan variabel eksternal mampu meningkatkan kemampuan model GRU dalam mengklasifikasikan tren saham BBKA.

Kata Kunci: Gated Recurrent Unit, Klasifikasi Tren Saham, Multivariat, Indikator Teknikal, Variabel Eksternal, BBKA.

ABSTRACT

The stock market is one of the investment instruments whose movements are influenced by various technical and external factors. This study aims to develop a multivariate Gated Recurrent Unit (GRU) model for BBCA stock trend classification and to analyze the impact of incorporating external variables on model performance. The dataset covers the period from 2014 to 2025 and was obtained from Yahoo Finance, consisting of BBCA stock data, the Indonesia Composite Index (IHSG), USD/IDR exchange rate data, and BBRI stock data. The features used include technical indicators, namely SMA, EMA, RSI, MACD, Stochastic Oscillator, Volume, and Close, as well as external variables represented by the daily returns of IHSG, USD/IDR, and BBRI. The experiments were conducted through five feature combination scenarios, various sliding window sizes, and prediction horizons. The results show that the optimal configuration was achieved using a 30-day window and a 1-day prediction horizon. The baseline model using only technical indicators achieved an accuracy of 84.85%, while the model incorporating all external variables achieved the best performance with an accuracy of 87.12% and an F1-Score of 0.8712. Among the external variables, BBRI Return contributed the largest improvement to model performance. The findings indicate that integrating technical indicators and external variables enhances the capability of the GRU model in classifying BBCA stock trends.

Keywords: *Gated Recurrent Unit, Stock Trend Classification, Multivariate, Technical Indicators, External Variables, BBCA.*