

ABSTRAK

Harga aset kripto memiliki volatilitas tinggi sehingga deteksi tren harga menjadi penting untuk membantu analisis pergerakan pasar. Penelitian ini bertujuan mendeteksi tren harga solana menggunakan model *Transformer* dengan data multivariat yang terdiri dari ohclv, indikator teknikal, dan sentiment berita. Data harga *solana* digunakan dalam interval per jam pada periode 17 November 2024 sampai 1 Mei 2026. Indikator teknikal yang digunakan adalah sma, ema, rsi, atr, dan macd. Data berita diperoleh melalui Google News RSS, kemudian dianalisis menggunakan *FinBERT* untuk menghasilkan nilai sentiment. Selain itu, *Granger Causality* digunakan untuk memilih kategori sentiment yang memiliki hubungan signifikan terhadap return solana. Pengujian dilakukan pada beberapa skenario fitur dengan window 24, 48, dan 72 jam. Evaluasi model menggunakan akurasi, presisi, recall, dan F1-score. Hasil penelitian menunjukkan bahwa integrasi indikator teknikal dan sentiment berita memberikan performa terbaik pada window 24. Skenario ohclv + indikator teknikal + sentiment mendapatkan akurasi 0,86, presisi 0,89, recall 0,83, dan F1-score 0,86. Hasil ini lebih tinggi dibandingkan ohclv saja yang memperoleh akurasi 0,71, presisi 0,78, recall 0,71 dan F1-score 0,70. Integrasi indikator teknikal dan sentiment berita dapat membantu model *Transformer* mendeteksi tren harga solana khususnya pada data berinterval per jam dan window pengujian pendek.

Kata kunci : *Solana*, *Transformer*, Deteksi Tren, Sentimen Berita, Indikator Teknikal, *Granger Causality*.

ABSTRACT

Cryptocurrency assets have high volatility, making price trend detection important to support market movement analysis. This study aims to detect Solana price trends using a Transformer model with multivariate data consisting of ohlcv, technical indicators, and news sentiment. The Solana price data used in this study are hourly data from November 17, 2024, to May 1, 2026. The technical indicators used include sma, ema, rsi, atr, and macd. News data were obtained through Google News RSS and analyzed using FinBERT to generate sentiment values. In addition, Granger Causality was used to select sentiment categories that had a significant relationship with Solana returns. The experiments were conducted using several feature scenarios with window sizes of 24, 48, and 72 hours. The model was evaluated using accuracy, precision, recall, and F1-score. The results show that the integration of technical indicators and news sentiment achieved the best performance at the 24-hour window. The ohlcv + technical indicators + sentiment scenario obtained an accuracy of 0,86, precision 0,89, recall of 0,83, and F1-score of 0,86. This result was higher than the ohlcv only scenario, which obtained an accuracy of 0,71, precision of 0,78, recall of 0,71 and F1-score of 0,70. Therefore, the integration of technical indicators and news sentiment can help the Transformer model detect Solana price trends, especially for hourly data and short testing windows.

Keywords : Solana, Transformer, Trend Detection, News Sentiment, Technical Indicators, Granger Causality.