

Sharia Stock Price Prediction Using Recurrent Neural Network (RNN) Elman, GRU and LSTM Models

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ABSTRACT

Investment in Islamic stock assets is currently increasingly in demand by the public. Like investing in stocks, this investment has a high risk because the price can go up or down in a short time. Because of the drastic ups and downs of Islamic stock prices, investors who hope to make a profit experience losses. Therefore, a prediction system is needed that can help provide consideration to investors in purchasing Islamic stock assets. In this research, the ERNN, RNN-GRU, and LSTM methods are used to predict the Islamic stock price index for the next few days. The type of Islamic stock index predicted in this study is ANTAM. The data used is daily data from 2019 to 2022 with a total data of around 1200. The results of the comparison of the simulation, evaluation, and prediction system of ANTM.jk Islamic stocks obtained that the RNN GRU model is better than the RNN elman and LSTM models, with a MAPE value of 0.0767 and MSE of 0.0025. The results obtained from the three models indicate that the RNN GRU model is the best model among the three, followed by the RNN Elman model, then finally the RNN LSTM.

Kata Kunci: *ERNN, RNN-GRU, LSTM, Prediction, Sharia Stock Methods*