

ABSTRACT

Indonesia is an archipelagic country with its main commodity being agriculture. The agricultural sub sector that is widely used includes sugar. The fluctuating price of sugar can be seen in its pattern, although it experiences an upward trend every year. Domestic sugar demand increases over time due to population growth and the food industry. Food commodity prices are determined by product availability and traders. Research using time series data applies the Backpropagation Through Time (BPTT) algorithm on the Elman Recurrent Neural Network (ERNN) architecture type for price prediction models. This research uses the ERNN architecture in predicting sugar prices in Central Java Province for the next 30 days. The data used is historical secondary data with daily periodicity from 2022 to 2024. The data is divided using a ratio of 90:10 for training and testing. The Mean Absolute Percentage Error (MAPE) value is obtained through fitness in selecting the weights generated in the Artificial Neural Network (ANN) to form an architecture with optimal parameters for testing. Highest accuracy with test MAPE of 1,70%.

Keywords: Backpropagation Through Time (BPTT), data-mining, Elman Recurrent Neural Network (ERNN), function, Mean Absolute Percentage Error (MAPE)