

ABSTRACT

Rice price stability is a crucial issue in maintaining food security in Indonesia. Predictions of average wholesale rice prices are needed to evaluate the effectiveness of policies in maintaining price stability and protecting farmers and consumers going forward. The data period used is monthly data, allowing for a more detailed analysis of rice price fluctuations. The prediction method used in this research is backpropagation artificial neural network equipped with GUI R. Backpropagation trains the network in order to get a balance between the network's ability to recognize patterns used during training. This research takes 6 different artificial neural network models to compare the effectiveness of each in recognizing patterns and predicting data. The model in this study produces excellent predictions in the 3-3-2-1-1 model with the parameters used, namely 3 inputs, 3 hidden layers consisting of 3 neurons in hidden layer 1, 2 neurons in hidden layer 2, and 1 neuron in hidden layer 3, as well as a learning rate of 0.01 and a training process of 10^5 epochs. The model and parameters gave a result in the training process of 7.2930% and a MAPE value of 4.0779% in the testing process.

Keywords: Rice Price, Predictions, Artificial Neural Network, Backpropagation.