

## ABSTRACT

Perum Bulog is a state-owned public company engaged in food logistics. Perum Bulog has a duty to stabilize food availability in Indonesia. The staple food most often consumed by Indonesians is rice. It is estimated that the national rice consumption reaches 30.25 million tons of rice. In this way, Perum Bulog must be able to meet their rice stock to maintain national food stability. However, in fact, in 2019 as many as 20 thousand tons of domestic rice experienced a decline in quality and caused the company to lose up to 167 billion.

This study aims to find the best artificial neural network structure form that can be produced. In addition, it is also to determine the prediction results of rice procurement at Bulog Corporation.

Things that can be done to determine the amount of rice that has decreased in quality include using predictions. One method that can be used is the artificial neural network method. The artificial neural network method is a branch of artificial intelligence that can be used to solve various problems related to pattern recognition, identification, and prediction.

The results of this study found that the best artificial neural network architecture is 12-6-1 consisting of 12 input layers, 6 hidden layers, and 1 output layer with epochs 3000 with a mean square error value of 0.012728.

The results of this research are expected that Perum Bulog can make predictions in various business activities carried out. The purpose of the prediction itself is to be a reference in estimating future decisions which are expected to reduce losses due to errors in decision making. Future studies can add other input data such as national rice consumption data to improve the accuracy and performance of artificial neural networks in forecasting or prediction.

Keyword: Keywords: Bulog, Food Availability, Prediction, Artificial Neural Network