ABSTRACT

The restaurant industry in Indonesia is a strategic sector for economic development in Indonesia. Development is driven by several factors, such as lifestyle, trends, and quality that follow developments. Controlling raw material inventory for businesses is very important in preventing excessive purchases of raw materials because it can cause losses in the business. XYZ Restaurant is a culinary business that has a network of restaurants in Central Java and Yogyakarta Special Region. XYZ Restaurant sells various types of processed food with mutton and chicken raw materials. Currently, the raw material inventory management process of XYZ Restaurant does not have a comprehensive integrated strategy. The uncertainty of demand fluctuations causes several XYZ restaurant inventory problems. Fullfilment on goat meat raw material inventory is 74% which is far from the restaurant's target of 90%. Forecasting meat demand will help improve stock inventory accuracy to minimize overstock.

Forecasting is one way to estimate future demand. Forecasting is done to avoid a lack of inventory of goat meat raw materials. The Artificial Neural Network (ANN) method can consider factors that affect inventory, namely inventory data, sales data, difference data, meat prices, order quantities, and rice prices. The ANN method can be trained to learn and analyze data patterns. The purpose of this process is to find a formula or function that will connect previous data patterns with the current desired output. backpropagation is an ANN training algorithm that can be used to complete forecasting. In this study, the data used is data from 2022 to 2023, with the division of data carried out as training data, test data, and forecasting data, namely 6:2:2, 5:7:1, and 2:2:6, as well as 6 configurations by considering the number of layers, neurons, and maximum epochs.

Based on the research that has been done, forecasting using the ANN method can increase accuracy and minimize overstock that occurs in restaurants. Fullfillment generated by forecasting is 98.13%. The proposal using ANN forecasting shows an increase in accuracy and a decrease in overstock with a selected structure of 3 hidden layers, 128 neurons, and 200 epochs with the use of datasets in a two-year span (January 2022 to December 2023) and the division of training data,

testing data, and forecasting data as 6:2:2. Produces a MAPE value of 1.47% which means that the prediction is very good with these results showing the accuracy of forecasting that occurs by 98.53%. With increased accuracy with ANN, restaurants can make better choices about goat meat raw material stocks.

Keywords: Forecasting, inventory, raw materials goat meat, Artificial Neural Networks