ABSTRACT

Construction companies are companies engaged in infrastructure development and are one of the strongest industrial sectors in Indonesia's economic growth. However, the performance of construction companies from 2017 to 2021 did not show good conditions. The company's average net profit tends to decrease even to the point of experiencing negative profits. In addition, construction companies, which in general do have unstable financial conditions and have very high risks, are one of the things that can trigger financial distress in construction companies. Financial Distress does not have a definite definition because it can be seen from various points of view, but financial distress needs to be paid close attention to by companies because this condition will have a direct impact on the company's finances. Therefore, the prediction of financial distress is very important to do in order to assist the decision-making process.

The prediction of financial distress in this study uses data mining techniques, namely by using the Artificial Neural Network prediction model. The Artificial Neural Network has proven to be a superior model in predicting financial distress compared to other prediction models. Five financial ratios namely return on assets, debt to assets ratio, current ratio, total assets turnover and cash flow from operations to total debt are used as input variables in the Artificial Neural Network because they are proven to be able to predict financial distress.

The purpose of this research is to find out the differences in the calculation results of the five financial ratios used in the training data sample, to find out the architectural model of the artificial neural network that creates good performance in the training data sample so that it can be applied to predictive data testing, and to find out the prediction results of financial distress for Heavy Constructions and Civil Engineering listed on the Indonesia Stock Exchange in 2017-2021.

The results of the study show that the financial ratios of companies experiencing financial distress tend to be lower than companies that are not experiencing financial distress so that they can be used as input variables. Furthermore, the Artificial Neural Network prediction model is formed with the best architecture, namely 25 inputs, 20 hidden layer neurons, and 1 output being the best model because it has the highest accuracy (100%) and the smallest error (0.0000772). The results showed that there were 6 construction companies experiencing financial distress. The results of this study are useful for knowing the company's financial condition and can help company management in the company's decision-making process. The company is expected to be able to take appropriate and fast steps regarding its financial condition so that the company can avoid bankruptcy.

Keywords: *Financial Distress, Predictions, Financial Ratios, Data Mining, Artificial Neural Networks, Construction Companies.*