

ABSTRACT

The Raw Materials sector, particularly the Metals and Minerals Industry, plays a crucial role in the Indonesian economy, contributing significantly to Gross Domestic Product (GDP) and job creation. However, this industry faces challenges, one of which is the volatility of commodity prices caused by the accumulation of supply, which has an impact on the company's financial performance, causing many companies in the metals and minerals industry to experience a decrease in profits, resulting in the company having negative Earnings Per Share (EPS).

This research utilizes data mining techniques, specifically the Artificial Neural Network (ANN) model, to predict financial distress. In this ANN model, five financial ratios serve as the main input variables, namely Return on Assets (ROA), Debt to Assets Ratio (DAR), Current Ratio, Total Assets Turnover, and Operating Cash Flow Ratio. The selection of these ratios is based on evidence that they are effective in predicting financial distress.

This study aims to develop a financial distress prediction model for metal and mineral industry companies listed on the Indonesia Stock Exchange during the 2019-2023 period, using a data mining approach with Artificial Neural Network (ANN). The study results show that the financial ratios of companies experiencing financial distress tend to be lower than companies that do not experience it, so these ratios are effective as input variables for the model. The best ANN architecture, found through training using a sample of 26 companies, has a configuration of 25 neurons in the input layer, 10 neurons in the hidden layer, and 1 neuron in the output layer. Further analysis revealed that 12 out of 26 energy companies were predicted to experience financial distress, with the model achieving the highest accuracy of 84.62%.

Keywords: Artificial Neural Network, Data Mining, Financial Distress, Financial Ratios, Metals and Minerals Industry Companies.