ABSTRACT

Indonesia is one of the countries that has the biggest natural resources in the world, one of the many natural resources produced is coal. The abundance of coal in Indonesia makes Indonesia one of the largest coal producing countries in the world. Therefore export activities become one of the main activities in the coal industry in Indonesia.However, in the last 5 years, the coal industry has been decreased and causing the financial performance of companies in the industry to detoriate. The worst possibility that can happen is bankruptcy. Therefore knowledge of financial distress (difficult financial conditions) needs to be detected earlier sothe company can avoid bankruptcy..

In this study, financial distress prediction is performed using data mining methods, which are Support Vector Machine models that are able to work on high-dimensional data with the help of kernels, k-Nearest Neighbor which do classification based on the closest k value, and Naive Bayes Classifier models which is a classification model that is rooted in Bayes' Theorem with the aim of knowing the differences in financial distress prediction results using these three models in grouping distress and non-distress companies.

Input variables in these three models of this study are the results of the calculation of financial ratios: Current Ratio, Return on Asset, dan *Shareholder's Equity Ratio. Each ratio represents profitability ratios, liquidity ratios, and solvency ratios that are shown high discrimination in predicting the company's financial distress.*

The sample of this study was 18 coal mining subsector companies listed on Indonesia Stock Exchange period 2014-2018 with training data samples of 20 companies including 10 companies that are in financial distress condition and 10 companies that are not in financial distress condition.

The results showed that the level of prediction accuracy with the K-Nearest Neighbor model was 89.5% in the testing data and 89,5% in the training data with the best k value in the dataset was k = 7, the Naïve Bayes Classifier Model was 84.2 % in the testing data and 83% in the training data, while the Support Vector Machine model using the kernel function RBF C = 10 and the Gamma value = 2 amounted to 94.7% in the testing data and 88,2% in the training data.

Keywords: Financial Distress, Support Vector Machine, k-Nearest Neighbor, Naive Bayes Classifier.