ABSTRACT

The Indonesian government decided to issue a policy related to the increase in fuel prices. This is done by transferring fuel subsidies to the form of BLT (Direct Cash Transfer) to protect the poor and vulnerable poor. However, the increase in fuel prices affects people's daily activities. Therefore, the increase in fuel prices raises discussions of pros and cons in the community which are widely expressed on social media. Twitter, as a popular social media used in Indonesia and the world, is one of the microblogging platforms to express opinions related to hot issues, such as the increase in fuel prices in Indonesia. The opinions issued by the Indonesian people are quite diverse, such as praise or approval, criticism, satire, and insults. In this study, sentiment analysis was carried out on public opinion obtained from the Twitter platform to determine public sentiment regarding the increase in fuel prices. Sentiment analysis in this study uses a machine learning approach with Support Vector Machine (SVM) algorithms to classify each comment into positive or negative sentiment by implementing imbalance handling methods such as SMOTE for oversampling, RUS for undersampling, and two hybrid methods between oversampling and undersampling, namely SMOTE-ENN and SMOTE-Tomek. After carrying out the classification process, a comparison of the performance of the evaluated model will be carried out using a confusion matrix and using an ROC curve that shows the AUC value. The best model based on this study is the SVM model with a ratio of 80:20 and the application of SMOTE-Tomek for imbalance handling because it produces a F-1 Score value of 57,99% and an AUC value of 0.911 which has advantages over the SVM baseline model with a ratio of 70:30 which produces a F-1 Score of 48,27% and an AUC value of 0.910.

Keywords— Fuel Price Increase, Twitter, Sentiment Analysis, Support Vector Machine (SVM), Oversampling, Undersampling, SMOTE, RUS, SMOTE-ENN, SMOTE-Tomek