ABSTRACT

Vehicle that function as means of public transportation have become an essential factor in life, supporting mobility and daily movement. The development of automotive technology is currently progressing rapidly, with the production of vehicles that use electric energy and are environmentally friendly. The use of electric vehicles has become a heated topic in society, triggering diverse reactions and opinions. Twitter is one of the popular platforms for expressing opinions and contains various opinion texts, making it suitable for analyzing current opinions and becoming an interesting research topic. This study aims to examine the opinions of Indonesian society through social network analysis related to electric vehicles in Indonesia. Sentiment analysis is conducted using machine learning approaches and k-nearest neighbor classification method to classify comments into positive and negative sentiments. In handling textual cases, imbalance data handling methods such as SMOTE for oversampling, and RUS for undersampling are implemented. After the classification process is completed, the model's performance is further evaluated using Confusion Matrix. The research results indicate that the best model is the baseline KNN model with data ratio 70:30, achieving an performance evaluation with an accuracy of 93.57%, precision of 93.73%, recall of 99.65%, and f1-score of 99.60%.

Keywords— [Electric Vehicle, Twitter, Sentiment Analysis, K-Nearest Neighbor, Oversampling, Undersampling, SMOTE, RUS]