

ABSTRACT

In recent years, the development of automotive industry technology has made significant progress. Many vehicles are being produced using electric energy as an environmentally friendly alternative. The use of electric vehicles has become a hot topic in society, sparking various reactions and opinions on the social media platform Twitter. A research study has been conducted to analyze the sentiments of the Indonesian community regarding electric vehicles circulating in the country, using data collected from Twitter. Sentiment analysis was performed using machine learning approaches and Support Vector Machine classification methods to categorize each comment as positive or negative. To address data imbalance, the Synthetic Minority Over-Sampling Technique (SMOTE) was used for oversampling, and the Random Undersampling (RUS) method was employed for undersampling. After the classification process and performance evaluation, the best model selected was the Support Vector Machine model with a data split ratio of 70:30 without applying imbalance handling techniques. This model achieved excellent results, with an accuracy of 94.8%, precision of 95.5%, recall of 99.1%, and F-1 Score of 97.2%.

Keywords— Electric Vehicle, Twitter, Sentiment Analysis, Support Vector Machine (SVM), Oversampling, Undersampling, SMOTE, RUS