

ABSTRACT

The advancement of information technology has encouraged the use of sentiment analysis to understand public opinion, including in the field of education. This study develops a web-based sentiment analysis system capable of classifying public opinions toward SMKN 3 Bandung into three categories: positive, negative, and neutral. The dataset consists of 975 rows and has undergone preprocessing as well as labeling using two different approaches, namely manual and automatic. Class imbalance in the data is addressed using the ADASYN oversampling method. The study applies four machine learning algorithms, namely Support Vector Machine, Random Forest, Decision Tree, and Extreme Gradient Boosting. Model evaluation is conducted using accuracy, precision, recall, F1-score, and confusion matrix visualization. The results show that the Extreme Gradient Boosting model with manual labeling achieves the best performance, with an accuracy of 85 percent. The system is implemented as an interactive web dashboard using Flask, equipped with features for data uploading, sentiment classification, and result visualization.

Keywords: Sentiment Analysis, Vocational High School, Machine Learning, XGBoost, Flask, ADASYN