

ABSTRACT

In the digital era, social media has become a primary platform for people to express their opinions, including those related to educational institutions such as Telkom University (Tel-U). Understanding public sentiment toward Tel-U is crucial for supporting institutional decision-making, particularly in formulating improvement strategies and addressing various issues. This study explores the performance of Support Vector Machine (SVM) and Random Forest (RF) algorithms in classifying public sentiment toward Tel-U branch campuses. The dataset consists of 1,500 social media comments collected between November 2022 and November 2024, categorized into positive, negative, and neutral sentiments. Natural Language Processing (NLP) preprocessing steps—such as tokenization, stopword removal, and stemming—were applied to clean the data, followed by feature extraction using the Term Frequency-Inverse Document Frequency (TF-IDF) method before training the models. The results show that SVM outperformed RF, achieving an accuracy of 75% compared to 72%. Sentiment analysis revealed that public perception was relatively balanced. Positive sentiments were generally related to appreciation of the quality of learning, a comfortable environment, and a supportive academic atmosphere. On the other hand, negative sentiments mostly focused on criticisms of facilities, the high cost of education, and the quality of internet connectivity. This study contributes by providing up-to-date insights into public perception of Tel-U branch campuses through machine learning-based sentiment analysis. The findings suggest that machine learning models can serve as a reliable tool for dynamically understanding public opinion, thereby supporting Tel-U in strategic decision-making, academic policy enhancement, student satisfaction, and more effective responses to public issues.

Keywords: Sentiment Analysis, Machine Learning, Support Vector Machine, Random Forest, Social Media