ABSTRACT

Indonesia is located in the Pacific Ring of Fire, making it one of the countries with the highest risk of earthquakes in the world. Official warnings from the Meteorology, Climatology, and Geophysics Agency (BMKG) regarding the potential for a major megathrust earthquake have caused public anxiety, which is reflected in various comments on social media platforms such as YouTube. Analyzing these comments is essential to understanding public opinion and developing more targeted disaster communication strategies.The aim of this study is to classify public sentiment into two categories — positive and negative — using a machine learning approach with the Support Vector Machine (SVM) algorithm. Comments were collected from two popular YouTube videos and analyzed through several stages, including preprocessing, labeling using SenticNet , TF-IDF weighting, data balancing with SMOTETomek, and testing using four SVM kernels: Linear, RBF, Polynomial, and Sigmoid. The experiments were conducted with two data split ratios, 80:20 and 90:10. The RBF kernel achieved the highest accuracy of 89% in the 80:20 scenario but showed a tendency to be biased toward the positive class. Meanwhile, the Linear and Sigmoid kernels delivered more stable and balanced performance, with the Linear kernel selected as the best-performing model in this study.

Keywords: *megathrust earthquake, sentiment analysis, YouTube comments, support vector machine, SMOTETomek.*