

ABSTRAK

Masalah lingkungan seperti perubahan iklim dan pencemaran udara telah mendorong inovasi terhadap kendaraan yang lebih ramah lingkungan, salah satunya adalah mobil listrik. Namun, di Indonesia, respons masyarakat terhadap mobil listrik masih beragam dan banyak dibicarakan di media sosial, khususnya TikTok. Penelitian ini bertujuan untuk menganalisis sentimen publik terhadap mobil listrik melalui komentar pengguna TikTok serta mengevaluasi kinerja dua algoritma machine learning, yaitu *Support Vector Machine* (SVM) dan *K-Nearest Neighbor* (K-NN), dalam klasifikasi sentimen. Sebanyak 2.567 komentar dikumpulkan dan diproses melalui beberapa tahap, termasuk pembersihan data duplikat dan null, serta pemrosesan seperti tokenisasi, stemming, penghapusan stopword, dan normalisasi. Penentuan label sentimen dilakukan menggunakan metode *Term Frequency-Inverse Document Frequency* (TF-IDF), kemudian divalidasi oleh pakar bahasa untuk memastikan akurasi pelabelan. Distribusi sentimen dalam data tersebut terdiri dari 25.3% positif, 33.8% negatif, dan 40.9% netral. Hasil evaluasi menunjukkan bahwa algoritma SVM menghasilkan akurasi tertinggi sebesar 91.49% dengan performa yang konsisten pada seluruh kategori sentimen. Sementara itu, algoritma K-NN memperoleh akurasi 86.25%, dengan performa yang sedikit lebih rendah pada kategori sentimen negatif dan positif. Dengan demikian, algoritma SVM terbukti lebih unggul dalam mengklasifikasikan opini publik mengenai mobil listrik di platform TikTok dibandingkan dengan K-NN.

Kata kunci: *Support Vector Machine, K-Nearest Neighbor, Term Frequency-Inverse Document Frequency.*



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ABSTRACT

Environmental issues such as climate change and air pollution have driven innovations in more eco-friendly vehicles, one of which is the electric car. However, in Indonesia, public responses to electric cars remain diverse and are widely discussed on social media, particularly TikTok. This study aims to analyze public sentiment toward electric cars through TikTok user comments and evaluate the performance of two machine learning algorithms, namely Support Vector Machine (SVM) and K-Nearest Neighbor (K-NN), in sentiment classification. A total of 2.567 comments were collected and processed through several stages, including the removal of duplicate and null data, as well as preprocessing steps such as tokenization, stemming, stopword removal, and normalization. Sentiment labeling was carried out using the Term Frequency-Inverse Document Frequency (TF-IDF) method and subsequently validated by linguistic experts to ensure labeling accuracy. The sentiment distribution in the dataset consisted of 25.3% positive, 33.8% negative, and 40.9% neutral. Evaluation results show that the SVM algorithm achieved the highest accuracy of 91.49%, with consistent performance across all sentiment categories. Meanwhile, the K-NN algorithm achieved an accuracy of 86.25%, with slightly lower performance in the positive and negative sentiment categories. Thus, the SVM algorithm proved to be more effective in classifying public opinion on electric cars on the TikTok platform compared to K-NN.

Keywords: *Support Vector Machine, K-Nearest Neighbor, Term Frequency-Inverse Document Frequency.*



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