

ABSTRAK

Emisi karbon merupakan salah satu ancaman lingkungan terbesar yang berdampak pada kesehatan manusia dan keberlanjutan ekosistem. Pemerintah Indonesia telah mengeluarkan sejumlah peraturan terkait pengendalian emisi karbon, namun respons masyarakat terhadap kebijakan tersebut beragam dan belum sepenuhnya dipahami. Penelitian ini bertujuan untuk menganalisis sentimen masyarakat terhadap peraturan emisi karbon melalui media sosial X (sebelumnya *Twitter*) dengan menggunakan algoritma *Random Forest* dan *Support Vector Machine* (SVM). Data diperoleh melalui proses *crawling* dengan kata kunci relevan, menghasilkan 1579 *tweet* yang kemudian diproses melalui tahapan *cleaning*, *text processing*, dan *TF-IDF*. Selanjutnya, data dilabelkan berdasarkan jumlah kata positif dan negatif sebelum diklasifikasikan menggunakan dua algoritma tersebut. Evaluasi dilakukan dengan menggunakan *confusion matrix* untuk mengukur akurasi, presisi, dan *recall*. Hasil penelitian menunjukkan bahwa kedua algoritma mampu mengklasifikasikan sentimen dengan tingkat akurasi yang signifikan, dan memberikan gambaran opini publik terhadap kebijakan emisi karbon. Penelitian ini diharapkan dapat memberikan wawasan bagi pengambil kebijakan dalam menilai efektivitas komunikasi dan implementasi kebijakan lingkungan di ruang digital.

Kata Kunci: *Emisi Karbon, Analisis Sentimen, Random Forest, Support Vector Machine, Microblogging X, TF-IDF*

ABSTRACT

Carbon emissions are one of the most significant environmental threats, impacting human health and ecosystem sustainability. The Indonesian government has issued several regulations aimed at controlling carbon emissions; however, public responses to these policies vary and are not yet fully understood. This study aims to analyze public sentiment toward carbon emission regulations through the social media platform X (formerly Twitter) using the Random Forest and Support Vector Machine (SVM) algorithms. Data were collected through a crawling process using relevant keywords, resulting in 1,579 tweets that were then processed through cleaning, text processing, and TF-IDF stages. The data were labeled based on the number of positive and negative words before being classified using the two algorithms. Evaluation was conducted using a confusion matrix to measure accuracy, precision, and recall. The results show that both algorithms are capable of classifying sentiment with a significant level of accuracy and provide insight into public opinion regarding carbon emission policies. This study is expected to offer valuable input for policymakers in assessing the effectiveness of environmental policy communication and implementation in digital spaces.

Keywords: Carbon emission, Sentiment Analysis, Random Forest, Support Vector Machine, Microblogging X, TF-IDF



KARAWANG