

ABSTRAK

MUHAMMAD RIZKI FACHRIZA BAILEY. Perbandingan *Support Vector Machine* dan *K-Nearest Neighbor* Dalam Analisis Sentimen Kebijakan PPN 12% Pada Barang dan Jasa Mewah. Dibimbing oleh NURFALINDA dan FORTIA MAGFIRA.

Kebijakan pemerintah Indonesia menaikkan tarif PPN menjadi 12% khusus untuk barang dan jasa mewah memicu respons beragam dari masyarakat di media sosial *YouTube*. Penelitian ini bertujuan menganalisis sentimen publik serta membandingkan performa algoritma *Support Vector Machine* (SVM) dan *K-Nearest Neighbor* (KNN). Dengan menggunakan 8.706 data komentar hasil *scraping*, penelitian ini menerapkan pelabelan sentimen berbasis *InSet Lexicon*. Melalui optimasi *Grid Search*, hasil analisis menunjukkan dominasi sentimen negatif sebesar 52,1%, diikuti positif 32,2%, dan netral 15,7%. Pada pengujian klasifikasi, algoritma SVM dengan kernel RBF terbukti lebih unggul dengan akurasi 89,32%, dibandingkan KNN (K=13) yang memperoleh akurasi 87,31%. Meskipun SVM memiliki akurasi lebih tinggi, KNN mencatat waktu komputasi yang lebih cepat (0,0333 detik) dibanding SVM (0,2483 detik). Secara kualitatif, visualisasi *wordcloud* mengungkap bahwa sentimen negatif didorong oleh kekhawatiran ekonomi dan ketidakpercayaan publik, sedangkan sentimen positif mencerminkan dukungan terhadap sasaran pajak barang mewah. Dapat disimpulkan bahwa SVM adalah metode terbaik untuk akurasi pada *dataset* ini, di mana mayoritas publik cenderung merespons negatif terhadap kebijakan tersebut akibat kekhawatiran dampak ekonomi lanjutan.

Kata kunci: Analisis Sentimen, *Support Vector Machine*, *K-Nearest Neighbor*, PPN 12%.

ABSTRACT

MUHAMMAD RIZKI FACHRIZA BAILEY. Comparison of Support Vector Machine and K-Nearest Neighbor in Sentiment Analysis of the 12% VAT Policy on Luxury Goods and Services. Supervised by NURFALINDA and FORTIA MAGFIRA.

The Indonesian government's policy to increase the Value Added Tax (VAT) rate to 12% specifically for luxury goods and services has triggered various responses from the public on social media, particularly YouTube. This study aims to analyze public sentiment regarding this policy and compare the performance of Support Vector Machine (SVM) and K-Nearest Neighbor (KNN) algorithms in classifying comments. Using 8,706 comments collected via scraping techniques, this research applies sentiment labeling based on InSet Lexicon. Through Grid Search optimization, the analysis results show a dominance of negative sentiment at 52.1%, followed by positive at 32.2%, and neutral at 15.7%. In classification testing, the SVM algorithm with an RBF kernel proved superior with an accuracy of 89.32%, compared to KNN (K=13) which achieved an accuracy of 87.31%. Although SVM has higher accuracy, KNN recorded a significantly faster computation time (0.0333 seconds) compared to SVM (0.2483 seconds). Qualitatively, wordcloud visualization reveals that negative sentiment is driven by economic concerns and public distrust, while positive sentiment reflects support for targeting luxury goods taxation. It is concluded that SVM is the best method for accuracy on this dataset, where the majority of the public tends to respond negatively due to concerns about subsequent economic impacts.

Keywords: *Sentiment Analysis, Support Vector Machine, K-Nearest Neighbor, VAT 12%.*