

ABSTRAK

Shodik, M. Bahrush. 2025. Analisis Sentimen Opini Publik Terhadap Kebijakan Kenaikan PPN 12% Menggunakan Metode *Naïve Bayes*. Tugas Akhir. Program Sarjana. Program Studi Teknik Informatika. Universitas Muhammadiyah Jember.

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Penelitian ini bertujuan mengklasifikasikan opini publik terhadap kebijakan kenaikan PPN 12% pada platform *X* ke dalam tiga kategori sentimen menggunakan metode *Naïve Bayes* yang dipadukan dengan teknik *balancing data SMOTE* untuk mengatasi ketidakseimbangan data. Hasil analisis menunjukkan distribusi sentimen publik sebanyak 400 positif, 292 negatif, dan 151 netral, dengan mayoritas tanggapan bersifat positif. Pengujian menggunakan *K-Fold Cross Validation* (2, 4, 5, 8, dan 10 *fold*) menunjukkan kinerja yang baik, di mana nilai rata-rata tertinggi diperoleh pada *K-Fold* 4, 8, dan 10 dengan *accuracy* sebesar 83,57%, *precision* sebesar 83,99%, dan *recall* sebesar 83,70% untuk *K-Fold* 4; *accuracy* sebesar 83,81%, *precision* sebesar 84,34%, dan *recall* sebesar 83,96% untuk *K-Fold* 8; serta *accuracy* sebesar 83,81%, *precision* sebesar 84,21%, dan *recall* sebesar 83,85% untuk *K-Fold* 10. Performa terbaik dicapai pada *K-Fold* 10 uji ke-9 dengan *accuracy* sebesar 88,10%, *precision* sebesar 88,31%, dan *recall* sebesar 88,06%. Evaluasi akhir menggunakan *confusion matrix* pada data uji menghasilkan *accuracy* sebesar 71,60% dengan *precision* untuk kelas positif sebesar 71,91%, negatif sebesar 83,33%, dan netral sebesar 46,15%, serta *recall* positif sebesar 80,00%, negatif sebesar 76,27%, dan netral sebesar 40,00%. Adapun hasil evaluasi pada data validasi menunjukkan *accuracy* sebesar 71,43% dengan *precision* untuk kelas positif sebesar 79,07%, negatif sebesar 70,59%, dan netral sebesar 28,57%, serta *recall* positif sebesar 85,00%, negatif sebesar 82,76%, dan netral sebesar 13,33%. Hasil ini membuktikan bahwa kombinasi *Naïve Bayes* dan *SMOTE* efektif dalam mengklasifikasikan sentimen multikelas.

Kata Kunci : *Naïve Bayes*, PPN 12%, *SMOTE*.

ABSTRACT

Shodik, M. Bahrush. 2025. *Public Sentiment Analysis on the 12% VAT Increase Policy Using the Naïve Bayes Method. Final Project. Undergraduate Program. Informatics Engineering Study Program. Universitas Muhammadiyah Jember.*

Advisors: (1) Hardian Oktavianto, S.Si., M.Kom.; (2) Ginanjar Abdurrahman, S.Si., M.Pd.

This study aims to classify public opinion regarding the policy of increasing the Value Added Tax (VAT) to 12% on the X platform into three sentiment categories using the Naïve Bayes method combined with the SMOTE data balancing technique to address data imbalance. The analysis results show a sentiment distribution of 400 positive, 292 negative, and 151 neutral, with the majority of responses being positive. Testing using K-Fold Cross Validation (2, 4, 5, 8, and 10 fold) demonstrated good performance, where the highest average values were obtained in K-Fold 4, 8, and 10 with an accuracy of 83.57%, precision of 83.99%, and recall of 83.70% for K-Fold 4; an accuracy of 83.81%, precision of 84.34%, and recall of 83.96% for K-Fold 8; and an accuracy of 83.81%, precision of 84.21%, and recall of 83.85% for K-Fold 10. The best performance was achieved in K-Fold 10 test 9 with an accuracy of 88.10%, precision of 88.31%, and recall of 88.06%. The final evaluation using a confusion matrix on the test data produced an accuracy of 71.60% with precision for the positive class of 71.91%, negative class of 83.33%, and neutral class of 46.15%, as well as recall for the positive class of 80.00%, negative class of 76.27%, and neutral class of 40.00%. Meanwhile, the evaluation results on the validation data showed an accuracy of 71.43% with precision for the positive class of 79.07%, negative class of 70.59%, and neutral class of 28.57%, as well as recall for the positive class of 85.00%, negative class of 82.76%, and neutral class of 13.33%. These results demonstrate that the combination of Naïve Bayes and SMOTE is effective in classifying multi-class sentiment.

Keywords : Naïve Bayes, VAT 12%, SMOTE