

## ABSTRAK

SERI WILANI. 2025. Optimasi Algoritma *Naive Bayes* Dengan *Particle Swarm Optimization* Untuk Analisis Sentimen Komentar *YouTube* Terkait Kebijakan Pemindahan Ibu Kota Negara, Skripsi. Tanjungpinang: Jurusan Teknik Informatika, Universitas Maritim Raja Ali Haji. Pembimbing I: Nerfita Nikentari, S.T., M.Cs. Ph.D. Pembimbing II: Novrizal Fattah Fahmitra, S.Kom., M.Kom

Pemindahan Ibu Kota Negara (IKN) ke Kalimantan Timur menimbulkan beragam respons publik, khususnya di media sosial *YouTube*. Penelitian ini bertujuan untuk menganalisis sentimen komentar *YouTube* terkait kebijakan tersebut menggunakan algoritma *Naive Bayes*, serta mengoptimalkan kinerjanya melalui seleksi fitur dengan *Particle Swarm Optimization* (PSO). Data komentar dianalisis melalui tahapan *preprocessing*, pelabelan leksikal, dan pembobotan TF-IDF. PSO digunakan untuk memilih fitur-fitur yang paling relevan, yang kemudian digunakan dalam pelatihan ulang model. Hasil penelitian menunjukkan bahwa akurasi model meningkat dari 77,59% menjadi 77,68% kenaikan sebesar 0,09% setelah optimasi, disertai peningkatan *recall* dari 39,20% menjadi 42,20%, dan *f1-score* dari 39,90% menjadi 44,40%. Meskipun peningkatan akurasi tergolong kecil, PSO terbukti mampu meningkatkan performa klasifikasi pada data tidak seimbang, khususnya pada metrik *recall* dan *f1-score*. Penelitian ini menunjukkan bahwa kombinasi *Naive Bayes* dan PSO dapat menjadi pendekatan yang efektif untuk analisis sentimen komentar di *YouTube*.

**Kata Kunci:** Analisis Sentimen, *YouTube*, *Naive Bayes*, *Particle Swarm Optimization*, Pemindahan Ibu Kota Negara

## ABSTRACT

SERI WILANI. 2025. *Optimization of Naive Bayes Algorithm Using Particle Swarm Optimization for Sentiment Analysis of YouTube Comments Regarding the Relocation of the National Capital*. Thesis. Tanjungpinang: Department of Informatics Engineering, University Maritim Raja Ali Haji. Advisor I: Nerfita Nikentari, S.T., M.Cs., Ph.D. Advisor II Novrizal Fattah Fahmitra, S.Kom., M.Kom

*The relocation of Indonesia's National Capital (IKN) to East Kalimantan has sparked a variety of public responses, particularly on social media platforms such as YouTube. This study aims to analyze public sentiment in YouTube comments regarding this policy using the Naive Bayes algorithm, and to enhance its performance through feature selection using Particle Swarm Optimization (PSO). The dataset used comprises YouTube comments that underwent preprocessing, lexicon-based sentiment labeling, and TF-IDF weighting. PSO was employed to select the most relevant features, which were then used to retrain the Naive Bayes model. The results show that the model's accuracy improved from 77.59% to 77.68% after optimization, with a 0.09% increase. Additionally, recall improved from 39.20% to 42.20%, and the F1-score from 39.90% to 44.40%. Although the accuracy gain was relatively small, PSO proved effective in improving classification performance, especially on imbalanced data, as reflected in the recall and F1-score metrics. This study demonstrates that the integration of Naive Bayes with PSO is a promising approach for sentiment analysis of YouTube comments.*

**Keywords:** Sentiment Analysis, YouTube, Naive Bayes, Particle Swarm Optimization, Capital Relocation.