ABSTRAK

Program Makan Bergizi Gratis (MBG) merupakan salah satu kebijakan strategis pemerintah Indonesia yang bertujuan meningkatkan kualitas gizi masyarakat serta mendukung pembangunan sumber daya manusia yang sehat dan produktif. Implementasi program ini memunculkan berbagai tanggapan publik di media sosial, khususnya Platform X, sehingga diperlukan analisis sentimen untuk memahami persepsi masyarakat secara efektif dan berbasis data. Penelitian ini bertujuan mengoptimalkan model IndoBERT melalui proses *fine tuning* untuk mengklasifikasikan sentimen publik terhadap Program MBG ke dalam tiga kategori: positif, netral, dan negatif.Data penelitian diperoleh melalui proses *scraping* sebanyak 5.283 tweet dari Platform X pada periode Januari–Desember 2025, kemudian diproses melalui tahapan *preprocessing* meliputi *case folding*, *cleansing*, normalisasi teks, dan tokenisasi. Dataset yang telah diberi label dibagi menjadi data pelatihan, validasi, dan pengujian dengan distribusi sentimen yang seimbang (Negatif 38,6%, Netral 36,2%, Positif 25,2%). Proses *fine-tuning* dilakukan menggunakan model *indobenchmark/indobert-base-p1* dengan *optimizer* AdamW, *learning rate* 2×10^{-5}, dan *batch size* 8. Hasil penelitian menunjukkan bahwa model IndoBERT sebelum *fine-tuning* memiliki performa rendah dengan kecenderungan bias terhadap satu kelas sentimen. Setelah dilakukan *fine-tuning*, model berhasil mencapai akurasi sebesar 91,93%, *precision* 91,95%, *recall* 91,93%, dan *F1 score* 91,90%. Hasil *confusion matrix* menunjukkan peningkatan kemampuan model dalam mengklasifikasikan ketiga kelas sentimen secara lebih seimbang dan akurat. Model kemudian diimplementasikan ke dalam aplikasi web interaktif berbasis Streamlit (*MBG Sentiment AI*) yang mendukung prediksi sentimen secara *real-time* maupun analisis massal. Penelitian ini membuktikan bahwa optimisasi IndoBERT melalui *fine-tuning* efektif untuk analisis sentimen kebijakan publik berbasis media sosial dan dapat dimanfaatkan sebagai alat pendukung evaluasi Program Makan Bergizi Gratis secara *data driven*.

Kata Kunci: Analisis Sentimen, IndoBERT, *Fine-Tuning*, Program Makan Bergizi Gratis, Platform X, *Natural Language Processing*.

ABSTRACT

The Free Nutritious Meal Program (Program Makan Bergizi Gratis atau MBG) is one of the Indonesian government's strategic policies aimed at improving public nutritional quality and supporting the development of healthy and productive human resources. The implementation of this program has generated diverse public responses on social media, particularly on Platform X, necessitating a data-driven sentiment analysis approach to effectively understand public perception. This study aims to optimize the IndoBERT model through a fine-tuning process to classify public sentiment toward the MBG Program into three categories: positive, neutral, and negative. Research data were collected by scraping 5,283 tweets from Platform X during the period of January–December 2025, which subsequently underwent preprocessing stages including case folding, data cleansing, text normalization, and tokenization. The labeled dataset was divided into training, validation, and testing sets with a balanced sentiment distribution (Negative 38.6%, Neutral 36.2%, Positive 25.2%). The fine-tuning process was conducted using the indobenchmark/indobert-base-p1 model with the AdamW optimizer, a learning rate of 2×10^{-5}, and a batch size of 8. The results indicate that the IndoBERT model prior to fine-tuning exhibited poor performance with a tendency to be biased toward a single sentiment class. After fine-tuning, the model achieved an accuracy of 91.93%, precision of 91.95%, recall of 91.93%, and an F1 score of 91.90%. The confusion matrix results demonstrate a significant improvement in the model's ability to classify all three sentiment classes more accurately and consistently. The model was subsequently deployed into a Streamlit-based interactive web application (MBG Sentiment AI) supporting both real-time single-text prediction and batch analysis. These findings confirm that optimizing IndoBERT through fine-tuning is effective for sentiment analysis of public policy discourse on social media and can serve as a valuable data driven tool for evaluating the Free Nutritious Meal Program.

Keywords: Sentiment Analysis, IndoBERT, Fine-Tuning, Free Nutritious Meal Program, Platform X, Natural Language Processing.