ABSTRAK

ANALISIS SENTIMEN TERHADAP PROGRAM MAKAN BERGIZI GRATIS DENGAN METODE *DEEP LEARNING LONG SHORT TERM MEMORY* DAN *GATED RECURRENT UNIT* PADA MEDIA SOSIAL X

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Penelitian ini menganalisis sentimen masyarakat terhadap Program Makan Bergizi Gratis (MBG) pada tingkat SMA melalui *tweet* berbahasa Indonesia di media sosial X pada periode Januari-Agustus 2025. Data diperoleh melalui *scrapping data* berdasarkan kata kunci terkait MBG sebanyak 13.486 *tweet* dan setelah penghapusan duplikasi data tersisa 12.476 *tweet*. Pelabelan sentimen dilakukan secara semi-otomatis melalui kombinasi pelabelan manual dan IndoBERT sehingga diperoleh 5.039 kelas negatif, 3.754 kelas netral, dan 3.682 kelas positif. Untuk mengatasi ketidakseimbangan kelas, dilakukan pada data latih menggunakan ADASYN. Selanjutnya, pemodelan klasifikasi sentimen dilakukan dengan model *Long Short-Term Memory* dan *Gated Recurrent Unit*, dan menggunakan *Stratified k-Fold Cross Validation* (k=10). Hasil pengujian dengan model LSTM memberikan performa terbaik dengan akurasi 77,63%, presisi 77,51%, *recall* 77,4%, *F1-score* 77,46%, dan AUC 91,54%, sementara GRU memperoleh akurasi 75,59%, presisi 75,24%, *recall* 75,71%, *F1-score* 75,4%, dan AUC 90,82%. Penelitian ini juga melakukan analisis linguistik dengan n-gram, POS *tagging*, dan *dependency parsing*, serta analisis temporal dan spasial untuk mengidentifikasi pola percakapan dan faktor pendorong sentimen. Secara umum, percakapan didominasi sentimen negatif yang banyak menyoroti isu kualitas makanan dan anggaran, sementara sentimen positif muncul pada narasi manfaat gizi dan pemerataan program, dan sentimen netral cenderung berupa informasi pelaksanaan tanpa penilaian eksplisit.

Kata Kunci: Analisis Sentimen, Program Makan Bergizi Gratis, X, *Long Short Term Memory*, *Gated Recurrent Unit*, *Adaptive Synthetic Sampling Approach*.

ABSTRACT

SENTIMENT ANALYSIS OF THE FREE NUTRITIOUS MEAL PROGRAM USING DEEP LEARNING METHODS LONG SHORT-TERM MEMORY AND GATED RECURRENT UNIT ON X SOCIAL MEDIA

By

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This study analyzes public sentiment toward the Free Nutritious Meal Program (MBG) *at the senior high school level using Indonesian-language tweets on X from January to August 2025. The data were collected through web scraping with MBG-related keywords, resulting in 13.486 tweets, after removing duplicates 12.476 tweets were used for analysis. Sentiment labels were assigned semi-automatically by combining manual labeling and IndoBERT, producing 5.039 negative, 3.754 neutral, and 3.682 positive tweets. To handle class imbalance, ADASYN oversampling was applied to the training data. Sentiment classification was then performed using Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU) models and evaluated with Stratified k-Fold Cross-Validation (k = 10). The results show that LSTM performed better, with an accuracy of 77.63%, precision of 77.51%, recall of 77.40%, F1-score of 77.46%, and AUC of 91.54%, while GRU achieved an accuracy of 75.59%, precision of 75.24%, recall of 75.71%, F1-score of 75.40%, and AUC of 90.82%. This study also used linguistic analyses n-grams, POS tagging, and dependency parsing, as well as temporal and spatial analyses to examine discussion patterns and the main factors behind public sentiment. Overall, negative sentiment was the most common and often focused on food quality and budget allocation, while positive sentiment highlighted narratives of nutritional benefits and program equity, and neutral sentiment mostly shared implementation information without clear judgment.*

Keywords: Sentiment Analysis, Free Nutritious Meal Program, X, Long Short Term Memory, *Gated Recurrent Unit*, *Adaptive Synthetic Sampling Approach*.