Abstract

The stunting handling program in Indonesia aims to reduce the stunting rate to 14% by 2024. Despite various interventions, its effectiveness remains questionable. This study analyzes public perceptions of the program through sentiment analysis and social network analysis on Social Media X. Sentiment analysis was conducted using VADER and BERT to classify public opinions, as well as comparing three machine learning models: Gradient Boosted Decision Trees (GBDT), Support Vector Classifier (SVC), and Extreme Gradient Boosting (XGBoost) based on accuracy, precision, recall, and F1-score metrics. Meanwhile, social network analysis was applied to map key actors and interaction patterns using centrality metrics. The results show that the public sentiment toward the stunting program is predominantly neutral, followed by negative and positive sentiments. The BERT model is more sensitive in capturing the nuances of public opinion compared to VADER. Machine learning model evaluation indicates that sentiment labeling using VADER provides the best performance in terms of accuracy, precision, recall, and F1-score. The GBDT model with VADER achieved the highest accuracy (95.59%) and the best F1-score (0.85024). Social network analysis revealed that accounts with large followings, such as PT Bukit Asam Tbk (@BukitAsamPTBA) and automated bot accounts like Tanyarlfes (@tanyarlfes), play a crucial role in disseminating information, while personal accounts like Akang Acep Nu Kasep (@san_ozil) also significantly influence public opinion formation.

Keywords: *BERT*, Sentiment Analysis, Social Network Analysis, Social Media X, Stunting Program, *VADER Lexicon*