Public Political Sentiment Post 2024 Presidential Election: Comparison of Naïve Bayes and Support Vector Machine

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ABSTRACT

The 2024 Indonesian presidential election sparked diverse public reactions, with social media platform 'X' serving as a primary medium for discourse. This study examines public sentiment by comparing Naïve Bayes Classifier (NBC) and Support Vector Machine (SVM) for sentiment classification. A dataset of 2,193 tweets was collected, categorized into neutral, positive, and negative sentiments. Feature extraction was conducted using TF-IDF, and data balancing was addressed using SMOTE. The results show that NBC achieved a higher accuracy of 62.41% compared to SVM's 62.19%, highlighting the strengths and limitations of each method in sentiment analysis.

BACKGROUND OF THE STUDY

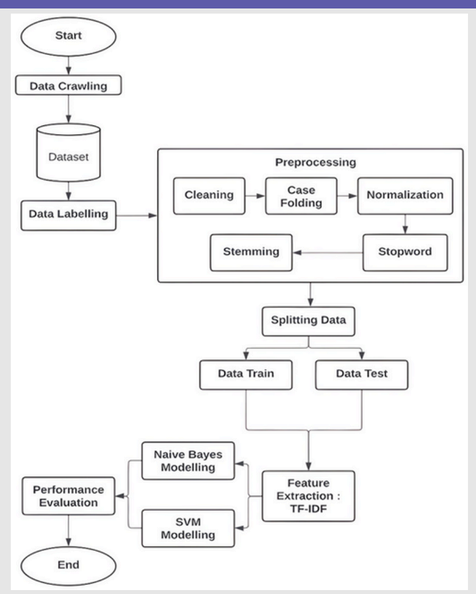
The 2024 Indonesian presidential election was a pivotal moment in the country's democratic history, triggering a vast spectrum of public responses. Social media platforms, particularly 'X', have become major channels for political discussions, influencing public perception and discourse. Analyzing sentiment from these platforms can provide crucial insights into how society perceives election outcomes and governmental policies. This study explores public sentiment using machine learning techniques to classify tweets and assess the effectiveness of sentiment analysis in political contexts.

TOPIC AND LIMITATIONS

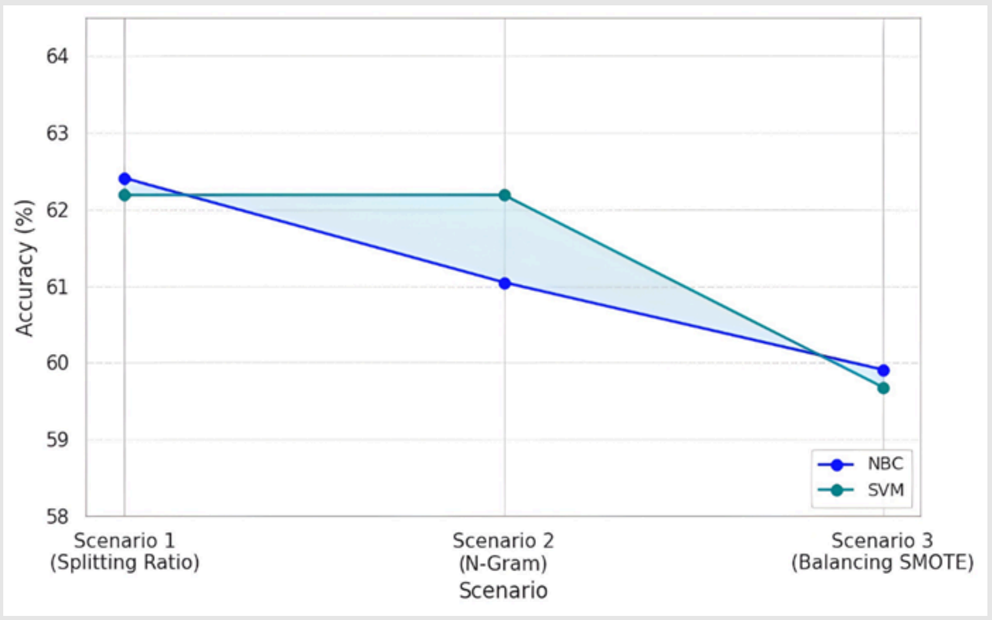
Topic: Public sentiment analysis on the results of the 2024 Presidential Election using machine learning methods.
Limitations:

- The data used is solely sourced from the social media platform 'X'.
- Only two algorithms are compared: Naïve Bayes Classifier (NBC) and Support Vector Machine (SVM).
- Data was collected within the post-election 2024 timeframe.
- The model only utilizes the TF-IDF method for feature extraction without exploring other techniques.
- Does not consider the demographic aspects of users posting on social media.

RESEARCH METHODOLOGY



EVALUATION



CONCLUSION

This study analyzed 2,193 tweets about the 2024 presidential election from platform "X," using Naïve Bayes Classifier (NBC) and Support Vector Machine (SVM) models with TF-IDF for feature extraction. NBC achieved the highest accuracy of 59.91% after balancing techniques like SMOTE and outperformed SVM in three testing scenarios. These findings are significant for sentiment analysis in elections, aiding political campaigns and media analysis. However, the study is limited to the "X" platform, which might not reflect the overall social media sentiment. Additionally, SMOTE introduces synthetic samples that could affect model performance, and further optimization strategies may enhance results.

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