

INTRODUCTION

The 2024 Regional Elections in Indonesia present new challenges compared to previous elections, as they are held simultaneously across multiple regions. These elections have sparked significant public discourse, with varying opinions that reflect political divides. This has led to polarized views on social media platforms, particularly on X [1], which is widely used for disseminating information [2]. People express their opinions and amplify issues related to the election by posting tweets. Tweets often use informal language, emoticons, abbreviations or slang, making X an efficient platform for sentiment analysis as it transforms unstructured data into structured data [3]. Sentiment analysis is a method used to understand the content and meaning of a text, especially to find out if the text contains certain opinions, attitudes, or emotions [4]. As technology develops, there is a shift in methods of conducting sentiment analysis from machine learning to deep learning, especially for large, unstructured text data, such as product reviews or tweets to provide more accurate results [4]. It has become an increasingly relevant tool for researchers to understand and measure the public's perceptions and emotions regarding the 2024 Regional Elections, offering valuable insights into public opinion trends.

Many studies have been conducted previously with different methods, using machine learning such as K-Nearest Neighbor (KNN) [5], Support Vector Machine (SVM) [6], Naïve Bayes [7], and deep learning such as Artificial Neural Network (ANN) [8], Convolutional Neural Network (CNN) [9], Recurrent Neural Network (RNN) [10], Long Short Term Memory (LSTM) [11], and Bidirectional LSTM (BiLSTM) [12].

In the research [11], using the LSTM models with GloVe feature expansion to test hyperparameter tuning in the LSTM method combined with GloVe feature expansion can achieve an optimal model in text classification. The result is that the best LSTM model is achieved in the sixth model with an accuracy of 95.17%. Research [13], proves that the LSTM method using FastText feature expansion can optimize the accuracy value of the topic classification model on X.

Unlike previous studies [11] & [13], which focused on general text classification or topic modeling, this research contributes to explore the application of hyperparameter tuning to optimize LSTM models combined with the expansion of the FastText feature for sentiment analysis. While these methods have been widely studied, their application in analyzing sentiment within highly polarized political contexts, such as Indonesia's 2024 Regional Elections, has rarely been explored in existing literature. This research aims to provide new insights into improving model accuracy, particularly in handling complex and dynamic data. By leveraging this approach, the research seeks to provide valuable insights for various parties, such as candidates, campaign teams, media, or survey institutions to understand the dynamics of voters and contribute to understanding of the polarization of opinions related to the Indonesia's 2024 Regional Elections through social media X.