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1. INTRODUCTION

One of Indonesia's top private universities is Telkom University. Being a top university means that branding matters. It is vital to understand what the general public thinks of Telkom University in order to uphold this. In this digital age, the public shares its knowledge and opinions about various topics on social media platforms [1]. There are several public opinions regarding Telkom University in social media, particularly about Application X. X, or formerly Twitter, providing a platform for the public to share knowledge, whether it be textual, audio, or video related to any organization, product, toy, or other topic. X can also be a useful tool for research because it contains a variety of emphases from the general public through text publishing. This explains why research on sentiment analysis has become rather popular [1].

Sentiment analysis is a text mining technique that assesses and extracts subjective data to help needy individuals [2]. Sentiment analysis can offer insightful information about how students and alumni feel about a specific university, like Telkom University, in the context of education. Researchers from the past have studied university sentiment. Research on public opinion of Telkom University based on postings shared on LinkedIn social media with positive, negative, and neutral categories was carried out in 2022 by Prakoso et al. [3]. The study also seeks to ascertain how well the Random Forest approach performs.

As Ryanto et al. demonstrated, sentiments voiced on social media can impact the public's image and perception of an educational institution [4]. Therefore, sentiment analysis allows us to obtain various information about the sentiments expressed on social media. In 2021, Wibowo et al.[5] talked about using Word2Vec and LSTM as techniques for sentiment analysis of hotel evaluations in the Traveloka application, using a total of 2500 review data. The model integrates effectively; LSTM helps manage the word order in the review, while Word2Vec offers a superior vector representation of words, enabling it to overcome the issue of language complexity with an accuracy of 85.96%. We have chosen to employ the LSTM and Word2Vec algorithms for sentiment analysis in the X application since it is evident that their combination performs sentiment analysis with a reasonably high degree of accuracy.

In 2022, Mollah [1] used 27,056 data from the combination of 7 dataset to study the application of LSTM as a technique for sentiment analysis on Twitter social media. Because there are no emojis in the Word Embedding method that was employed during testing, the accuracy result obtained with 4,459 data is 68%. We may conclude that while LSTM is a pretty decent tool for sentiment analysis, there is still a need for improvement in terms of its word embedding techniques.

Research was done using sentiment analysis on social media X to compare and evaluate four universities in Michigan: Wayne State University, Michigan State University, Oakland University, and University of Michigan by Zohdy et al. in 2019 [6]. Naïve Bayes, Support Vector Machine, KNN, and Decision Tree were the methods used.

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Pane and Ramdan [7] carried out additional research on sentiment analysis using Twitter social media in relation to the government's implementation of the Enforcing Restrictions on Community Activities (PPKM) policy in response to the COVID-19 pandemic. The 2,176 data are ready to be used for modeling after the preparation step. Using the LSTM model, a 94.3% accuracy rate was achieved when classifying sentiment as positive or negative. We may conclude that the LSTM model performs a good job of classifying the community's attitude on Twitter or what is now termed X.

Given the foregoing context, the purpose of this study is to categorize public sentiment on X social media regarding Telkom University into three categories: "Positive," "Negative," and "Neutral". LSTM and Word2vec feature expansion were used in this project.