

# 1. INTRODUCTION

In this day and age, social media has become a necessity for every human being. By using social media, users can easily share information. LinkedIn is a social media network that can search for information openly. Mainly used for professional networking, connecting with professionals worldwide becomes more accessible and convenient. Like an identity, LinkedIn is often used to inform yourself or your line of business to potential partners or industries for various purposes. The social media network is often used in multiple PTN and PTS institutions as a medium for delivering information. For example, they were conveying information about the achievements of state universities (PTN) and private universities (PTS).

Telkom University is a private university supported by the Telkom Education Foundation (YPT), consisting of 7 faculties with 50 study programs, 800 lecturers, and 28,789 students. Telkom University is ranked as one of the best private universities in Indonesia, as reported by the Times Higher Education (THE) and World University Rankings (WUR) ranking sites[1]. This led to the slogan "Best Private Higher Education (PTS) Number 1" for the Telkom University brand. In addition to having a quality education, the brand aspect is one of Telkom University's focuses to be improved regularly.

In this study, sentiment analysis was used to assess the brand's positive, negative, and neutral aspects from the results of data collection on the LinkedIn social media network based on posts made by Telkom University. Based on this, the Random Forest method is used, a classification algorithm that decomposes data randomly into a Decision Tree. This method was chosen in this study because it can handle large amounts of information very accurately and is not affected by missing information. The author also uses the Term Frequency — Inverse Document Frequency (TF-IDF) extraction feature, which is this calculation is carried out for each word and gives each a weighted value. This method is also famous for being practical and has optimal results[2]. This research was conducted to find out the results of working sentiment analysis from the profile of Telkom University on the LinkedIn social network using the Random Forest method. Random Forest is an evolution of the Decision Tree method using multiple Decision Trees. Each Decision Tree is trained with an individual sample, and each attribute is split into a tree selected from a subset of random features.[3].

In a study by Boma B. B et al. in 2021[4]. This research used random forest and TF-IDF methods. This study aims to analyze guest sentiment at the Purwolkerto hotel by applying the random forest method and changing guest input data from the textual form into quantitative form, inverse document frequency (TF-IDF method). The dataset used in this study includes reviews of hotel guests in Purwokerto downloaded from the TripAdvisor.co.id website. A total of 1166 reviews from various hotels were successfully uploaded. This study's results indicate that the model's accuracy reaches 87.23%. However, if the rooting process is not carried out, the model's accuracy is only 87.01%.

Another study was conducted by Ragil D. et al. In 2021[5]. This study was conducted to determine the sentiment of public tweets on the official Twitter account of the DKI Jakarta Provincial Government during the COVID-19 pandemic. The data used in this study were obtained from the Twitter social network. 1028 data streams containing questions on tweets containing particular words or mentioning the handle @dkijakarta are separated into three classes based on sentiment: negative, neutral, and positive. This is done by using different classifiers, namely Random Forest with an accuracy of 75.81%, Naive Bayes with an accuracy of 75.22%, and SVM with an accuracy of 77.58%. Dynamic analysis was carried out on tweets whose results were 8.8%, 83.6%, and 7.6% for negative, neutral, and positive, respectively.

Subsequent research was conducted by Adrian R et al. In 2021[6]. This study aims to analyze public sentiment related to PSBB using the Twitter social media platform by analyzing 466 tweet data. The data is separated into seven parts for training and three positions for testing, with a ratio of 7 to 3. The data is then processed through 2 different classification algorithm methods for comparison: the SVM classification method and the Random Forest.

The following research was conducted by Ahmad S et al. In 2022[7]. This research aims to find out public opinion on electric cars. Whether the opinion is more positive or negative and to determine the accuracy value, the AUC is from using the Support Vector Machine method and the Particle Swarm Optimization feature selection in RapidMiner Studio Software. In this study, it can be seen that 94.25% of Twitter users agree, and 5.75% of Twitter users disagree with the presence of electric cars. The Particle Swarm Optimization feature selection on the support vector machine method to analyze public sentiment about electric cars can increase the accuracy and AUC values. Where the accuracy value was originally 82.51% to 86.07%, there was an increase of 3.56%. While the AUC value was originally 0.844 to 0.862, there was an increase of 2.13%.

Further research was conducted by Yusril A et al. In 2022 [8]. This study aims to analyze sentiment towards the community [there is a vaccination program using the Sinovac Vaccine. This study used 1500 tweets with data divided into two categories, namely positive and negative. The data processing used in this research is by using the TF-IDF Algorithm and balancing the data using SMOTE. The model created will be trained with the Random Forest Classifier Algorithm and validated using K-fold Cross Validation and Confusion Matrix. The results of this study are public sentiment toward Sinovac Vaccination is positive, and the model can predict the sentiment of a tweet with an accuracy of 79% and a Precision value of 85%, a Recall of 90% and an F1 score of 88%.