Application of the Naïve Bayes Method for Sentiment Analysis on Health Law Issues on Twitter

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ABSTRACT

This study focuses on public sentiment towards the enactment of the Health Law on Tuesday, July 11, 2023, which is seen as detrimental to healthcare workers in Indonesia. The controversial points in the Health Law include relaxed regulations for foreign doctors, concerns about the criminalization of healthcare workers, mandatory expenditures, and the accountability of the medical board to the minister. The enactment of this law has elicited diverse reactions on social media, with some supporting the government's decision and others opposing it. Therefore, the author conducted research on sentiment analysis of public opinion regarding the Health Law enactment using the Naïve Bayes method to determine whether the majority opinion is pro, contra, or neutral. In this study, the author collected tweet data from social media X (Twitter), with 1,182 selected data. The data was then preprocessed, labeled as positive, negative, or neutral, and weighted using TF-IDF calculations. Based on the research results, the Naïve Bayes algorithm performed well but not optimally, achieving a highest accuracy of 65.75% in a scenario where data was manually labeled by the author with a 60:40 ratio, yet still lower than the SVM algorithm's accuracy of 66.81%. Meanwhile, Random Forest achieved the lowest accuracy at 65.54%.

Keywords: Classification, Sentiment Analysis, Health Law, Naïve Bayes, SVM, Random Forest.