

SENTIMENT ANALYSIS OF INDONESIAN AIRLINE PASSENGER REVIEWS USING SVM KERNEL RBF, NAIVE BAYES, AND RANDOM FOREST

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ABSTRACT

Airlines are commercial enterprises that provide air transportation services for both passengers and cargo. Within the Indonesian aviation sector, two distinct categories of flights are distinguished: Low-Cost Carriers (LCC) and full-service airlines. This study analyzes sentiment towards airlines in Indonesia using review data from X (Twitter) and TripAdvisor, comprising 12,000 reviews. The primary objective of this study is to compare the performance of three machine learning algorithms, Support Vector Machine (SVM) with an RBF kernel, Naive Bayes, and Random Forest, in conducting sentiment analysis. The models are evaluated based on accuracy metrics. The results indicate that Random Forest delivers the best performance, achieving an accuracy of 91%, followed by SVM with an RBF kernel at 89% and Naive Bayes at 79%. Furthermore, the analysis reveals that Garuda Indonesia is the airline with the highest number of positive reviews, totaling 1,646. Thus, Random Forest is demonstrated to be more effective in analyzing the sentiment of airline users in Indonesia.

Keywords: *Sentiment Analysis, SVM, Naive Bayes, Random Forest*