

## **ABSTRACT**

The increase of smartphone usage in Indonesia has encouraged the development of digital wallet applications, one of which is GoPay. Nowadays, GoPay has gained significant popularity among the public in Indonesia. Therefore, this research conducts aspect-level sentiment analysis to analyze user reviews of the GoPay application in more detail and depth. The sentiment analysis process in this study utilizes the Multilayer Perceptron (MLP) with fastText and word2vec as word embeddings. The dataset used is GoPay application reviews, which consist of 15,000 reviews collected from Google Play Store. The dataset is categorized into three main aspects: Feature and functionality, App Interface, and User Satisfaction. The stages of the research include data preparation, data preprocessing, word embeddings, model training, and model testing and evaluation. This research explores the effect of fastText and word2vec as word embeddings on model performance. Furthermore, this research examines the application of oversampling techniques, such as SMOTE and Random Oversampling. Based on the experiments conducted, utilizing fastText as word embeddings in MLP with a balanced dataset resulted the best model performance, with an F1-Score of 97%, Recall of 96%, and Precision of 95% for aspect category classification. Then, for sentiment classification, using fastText on MLP with a balanced dataset resulted in a value of 98% for each of the F1-score, Recall, and Precision metrics. This research validates that MLP is effective for aspect-level sentiment analysis, delivering strong evaluation results.