ABSTRACT

Garut City has natural tourism potential, one of which is its beach tourism. Reviews and ratings given by tourists on various aspects on the Google Map platform can be a very important source of information for other tourists or tourism managers to improve visitor satisfaction and experience. The sentiment analysis method based on aspects is considered suitable and allows to understand the reactions and views of tourists or visitors to various aspects related to beach tourism in Garut. In this aspect-based sentiment analysis study, two machine learning algorithms were used with the Support Vector Machine (SVM) and Long Short-Term Memory (LSTM) methods with TF-IDF feature extraction for the SVM algorithm and word2vec for LSTM.

This study uses 8711 rows of data from 13 coastal locations in Garut district. This review data was obtained from google maps with the help of the apify.com website. Data was cleaned and feature extracted using TF-IDF for SVM and Word2Vec for LSTM. In the dataset taken, imbalanced data was found, but in this study there was no special treatment for the dataset. The dataset is classified into 3 sentiments, namely positive, negative and neutral and 4 aspect labels, namely nature, public facilities, location access and cleanliness. The most aspects are in the nature aspect with 3958 rows, and the lowest aspect is location access with 1257 rows of data, while the most positive sentiment is in the nature aspect, namely 3688 positive sentiments, and the negative sentiment is in the cleanliness aspect with 1054 rows of data. In the results of the aspect identification test, the two models have very high performance in the cleanliness aspect with an f1-score of 0.95. In other aspects, SVM is superior to LSTM with an accuracy of 0.78 and a hamming loss of 0.061. In the sentiment classification of each aspect, the LSTM algorithm has quite good performance on the negative and positive polarity of the cleanliness aspect with an f1-score of 0.89 and 0.88 with an accuracy of 0.8. However, in other aspects, SVM is superior in classifying polarity compared to LSTM.

Keywords: Aspects Based Sentiment analysis, SVM, LSTM, TF-IDF, Word2Vec, Garut