

ABSTRACT

We live in a technological era where every aspect of life is connected to technology. The rise of online learning apps in Indonesia, such as Ruangguru, marks the development of technology in education. Ruangguru app focuses on education services and has served more than 22 million users. One way to get a direct picture of user satisfaction is to perform sentiment analysis and topic modeling on existing review data.

This research uses 31,070 user review datasets on Google Play, followed by labeling and preprocessing before the data will be used in the next stage. Sentiment analysis used Support Vector Machine algorithm and showed good model evaluation results with 95.99% accuracy, 96.13% precision, 95.85% recall, and 95.99% F1-score. The K-Fold Cross Validation technique also produced an average accuracy value of 95.67%. Then the model was used on 10,000 new reviews, with the result that the majority of reviews had positive sentiments. Then topic modeling with the Latent Dirichlet Allocation method identified 5 main topics in the positive sentiment class with a coherence value of 0.4779 with user review topics focusing more on positive experiences and the usefulness of the application in helping to learn. While in the negative sentiment class, 4 main topics were found with a coherence value of 0.4899 with user review topics mostly expressing complaints about incomplete learning materials.

Overall, the results of this sentiment analysis can be used to understand user sentiment and satisfaction with the application. Meanwhile, the topic modeling results can be used to illustrate product quality by identifying the topics that users talk about. This is expected to provide valuable insights for potential users in comparing Ruangguru with other similar apps. This research also contributes to the academic literature, as well as assisting the development team.

Keywords — Sentiment Analysis, Topic Modeling, Ruangguru, SVM, LDA