

## ABSTRACT

In e-commerce, product reviews are an important consideration for prospective buyers because they reflect the real experiences of previous users. In the beauty sector, reviews help consumers assess product suitability and safety, which is crucial to avoid potential harm from products that may not meet health standards such as BPOM certification. Reviews also influence purchase decisions by providing detailed feedback on specific product aspects. However, the diversity of aspects in reviews often makes it challenging for consumers to analyze sentiments efficiently and comprehensively. This study applies Aspect-Based Sentiment Analysis (ABSA) to beauty product reviews from the Female Daily Network using a combination of IndoBERT and Long Short-Term Memory (LSTM) to produce sentiment classification results for each aspect. IndoBERT provides contextual word embeddings tailored for Indonesian, while LSTM models the sequential patterns in text to improve prediction. The experiment was conducted using a constant 80:20 train-test split across five aspects: Packaging, Moisture, Price, Staying Power, and Aroma. The evaluation showed that the highest F1-Score was achieved in the Packaging aspect (92.31%), followed by Moisture (90%), Staying Power (83.08%), Price (82.35%), and Aroma (80.5%), all without applying SMOTE. These results suggest that Packaging and Moisture sentiments are easier to identify due to their clear and structured expressions, while Aroma remains the most challenging because of its subjective and inconsistent patterns. These findings emphasize the importance of data quality and linguistic consistency in aspect-based sentiment classification and highlight that balancing techniques like SMOTE did not enhance model performance in this case.

**Keywords:** Sentiment Analysis, IndoBERT, LSTM, Beauty Product