

ABSTRAK

Ulasan produk *e-commerce* umumnya hanya dianalisis melalui *rating* dan sentimen polaritas, sehingga informasi emosi di balik ulasan belum dimanfaatkan secara maksimal, padahal ulasan bersentimen sama dapat mencerminkan kepuasan berbeda. Penelitian ini mengembangkan analisis sentimen berbasis emosi pada 3.479 ulasan produk *fashion* wanita dari toko Alunicorn Official Store di Shopee, menggunakan IndoBERT dengan pendekatan *multi-task learning* yang mengklasifikasikan sentimen dan emosi secara bersamaan. Dua model dibandingkan, yaitu *Baseline* (hanya sentimen) dan *Enhanced* (sentimen dan emosi), diuji pada tiga skenario pembagian dataset (70:10:20, 80:10:10, dan 60:20:20). Pada skenario acuan model *Enhanced* mencapai akurasi sentimen 93,25% (F1-score 92,96%), unggul dari *Baseline* yang mencapai 91,67% (F1-score 91,58%), dengan akurasi klasifikasi emosi 67%. Hasil prediksi sentimen dan emosi kemudian dikombinasikan dengan *rating* menggunakan *Simple Additive Weighting* (SAW) dengan bobot Entropy untuk mengidentifikasi kepuasan pelanggan. Penerapan metode ini pada 696 data uji menghasilkan distribusi *satisfied* 76,15%, *unsatisfied* 17,39%, dan *neutral* 6,47%. Integrasi emosi terbukti meningkatkan performa klasifikasi sentimen sekaligus menghasilkan identifikasi kepuasan pelanggan yang lebih objektif dibandingkan hanya mengandalkan *rating* atau sentimen saja.

Kata Kunci: Analisis Sentimen, Analisis Emosi, IndoBERT, Kepuasan Pelanggan, *Multi-task learning*, *Simple Additive Weighting*

ABSTRACT

E-commerce product reviews are typically analyzed only through ratings and sentiment polarity, so the emotional information behind the reviews has not been fully utilized even though reviews with the same sentiment can reflect different levels of satisfaction. This study develops an emotion-based sentiment analysis of 3,479 women's fashion product reviews from the Alunicorn Official Store on Shopee, using IndoBERT with a multi-task learning approach that classifies sentiment and emotion simultaneously. Two models were compared Baseline (sentiment only) and Enhanced (sentiment and emotion) and tested across three dataset splitting scenarios (70:10:20, 80:10:10, and 60:20:20). In the baseline scenario, the Enhanced model achieved a sentiment accuracy of 93.25% (F1-score 92.96%), outperforming the Baseline model, which achieved 91.67% (F1-score 91.58%), with an emotion classification accuracy of 67%. The sentiment and emotion prediction results were then combined with ratings using Simple Additive Weighting (SAW) with Entropy weights to identify customer satisfaction. Applying this method to 696 test data points yielded a distribution of 76.15% satisfied, 17.39% unsatisfied, and 6.47% neutral. The integration of emotions was shown to improve sentiment classification performance while also yielding a more objective identification of customer satisfaction compared to relying solely on ratings or sentiment alone.

Keywords: Customer Satisfaction, IndoBERT, Multi-task learning, Sentiment Analysis, Simple Additive Weighting