INTISARI

Aplikasi Info BMKG merupakan aplikasi resmi yang digunakan masyarakat untuk memperoleh informasi cuaca, iklim, dan gempa bumi di Indonesia. Ulasan pengguna pada platform distribusi aplikasi dapat dimanfaatkan untuk mengevaluasi kualitas layanan aplikasi secara lebih mendalam pada tiap aspek layanan. Penelitian ini bertujuan untuk menerapkan *Aspect-Based Sentiment Analysis* (ABSA) berbasis *Bidirectional Encoder Representations from Transformers* (BERT) guna mengevaluasi ulasan pengguna Info BMKG berdasarkan empat aspek dalam kerangka kesuksesan sistem informasi DeLone dan McLean, yaitu *Information Quality*, *System Quality*, *Service Quality*, dan *User Satisfaction*. Dataset penelitian diperoleh dari *Google Play Store* dan *App Store* dengan total 8.422 ulasan yang telah dilabeli secara manual berdasarkan aspek dan sentimen (positif, negatif). Proses analisis dilakukan menggunakan pendekatan *pipeline* dua tahap, yaitu klasifikasi aspek dengan skema *multi-label* dan klasifikasi sentimen untuk tia p aspek teridentifikasi, dengan berbagai eksperimen terhadap model pralatih (IndoBERT-base, IndoBERT-lite, dan mBERT) beserta variasi *hyperparameter*, *pooling strategy*, dan kedalaman *fine-tuning*. Hasil penelitian menunjukkan bahwa model terbaik untuk klasifikasi aspek adalah IndoBERT-base dengan nilai F1-*score* sebesar 88,3%, sedangkan IndoBERT-lite menjadi model terbaik untuk klasifikasi sentimen dengan nilai F1-*score* sebesar 96,8%. Analisis sentimen per aspek mengungkap bahwa *Information Quality* dan *User Satisfaction* didominasi sentimen positif yang menandakan informasi aplikasi dinilai akurat dan mayoritas pengguna merasa puas, sedangkan *System Quality* dan *Service Quality* cenderung negatif yang mengindikasikan adanya kendala teknis dan keandalan layanan yang perlu diperbaiki. Hasil penelitian ini diharapkan dapat menjadi masukan bagi pengembang aplikasi Info BMKG serta menjadi dasar bagi penelitian lanjutan mengenai penerapan ABSA berbasis BERT pada teks berbahasa Indonesia.

Kata kunci: *Aspect-Based Sentiment Analysis*, *Bidirectional Encoder Representations from Transformers*, Info BMKG, *Sentiment Analysis*.

ABSTRACT

The Info BMKG application is an official platform used by the public to obtain weather, climate, and earthquake information in Indonesia. User reviews on application distribution platforms can be utilized to evaluate the quality of application services more comprehensively across multiple aspects. This study aims to implement Aspect-Based Sentiment Analysis (ABSA) based on the Bidirectional Encoder Representations from Transformers (BERT) method to evaluate user reviews of Info BMKG according to four aspects of the DeLone and McLean information system success model, namely Information Quality, System Quality, Service Quality, and User Satisfaction. The dataset was collected from the Google Play Store and App Store, consisting of 8,422 reviews that were manually labeled based on aspect and sentiment (positive, negative). The analysis employed a two-stage pipeline approach consisting of aspect classification with a multi-label scheme and sentiment classification for each identified aspect. Several experiments were conducted to compare pre-trained models (IndoBERT-base, IndoBERT-lite, and mBERT) with variations in hyperparameters, pooling strategies, and fine-tuning depth. The results show that the best model for aspect classification is IndoBERT-base with an F1-score of 88.3%, while IndoBERT-lite performs best for sentiment classification with an F1-score of 96.8%. Sentiment distribution analysis reveals that Information Quality and User Satisfaction are dominated by positive reviews, indicating accurate information and high user satisfaction, whereas System Quality and Service Quality tend to be negative, indicating technical issues and reliability problems that need improvement. The findings of this study are expected to provide recommendations for improving the Info BMKG application and serve as a foundation for further research on BERT-based ABSA in the Indonesian language context.

Keywords: Aspect-Based Sentiment Analysis, Bidirectional Encoder Representations from Transformers, Info BMKG, Sentiment Analysis.