ABSTRAK

Transformasi digital dalam layanan publik mendorong pemerintah daerah untuk menyediakan layanan yang lebih efisien dan responsif terhadap kebutuhan masyarakat. Jogja Smart Service (JSS) merupakan aplikasi layanan publik digital yang dikembangkan oleh Pemerintah Kota Yogyakarta sebagai bagian dari implementasi konsep smart city. Seiring dengan meningkatnya penggunaan aplikasi ini, masyarakat menyampaikan berbagai ulasan berupa opini, kritik, dan apresiasi melalui Google Play Store. Ulasan tersebut mengandung informasi penting mengenai persepsi dan pengalaman pengguna terhadap kualitas layanan JSS, namun belum dimanfaatkan secara optimal sebagai dasar evaluasi layanan. Oleh karena itu, diperlukan suatu pendekatan sistematis untuk menganalisis sentimen masyarakat terhadap layanan JSS guna mendukung peningkatan kualitas layanan dan pengalaman pengguna secara berbasis data.

Penelitian ini bertujuan untuk menganalisis sentimen ulasan pengguna Jogja Smart Service menggunakan pendekatan *text mining* dan *machine learning*. Data yang digunakan berupa ulasan pengguna JSS yang tersedia di Google Play Store pada rentang tahun 2020–2025, yang dikumpulkan dan diolah menggunakan lingkungan pemrograman *Google Colab*. Proses penelitian meliputi pelabelan sentimen otomatis berbasis aturan, serta tahapan text preprocessing yang mencakup case folding, text cleaning, emoji conversion, normalisasi kata, tokenizing, stemming, negation handling, dan stopword removal. Ekstraksi fitur dilakukan menggunakan metode *Term Frequency–Inverse Document Frequency (TF-IDF)*, sedangkan klasifikasi sentimen dilakukan dengan algoritma *Logistic Regression*. Dataset dibagi menggunakan skema stratified holdout dengan perbandingan 75% data latih dan 25% data uji. Selain itu, penelitian ini mengembangkan aplikasi web berbasis Python dan Streamlit dengan metode pengembangan sistem prototyping untuk menampilkan hasil analisis sentimen.

Hasil penelitian menunjukkan bahwa kombinasi *TF-IDF* dan *Logistic Regression* mampu mengklasifikasikan sentimen ulasan pengguna JSS ke dalam kategori positif, negatif, dan netral dengan performa yang baik berdasarkan metrik *akurasi, presisi, recall,* dan *F1-score*. Aplikasi web yang dikembangkan berhasil menampilkan hasil analisis sentimen secara informatif melalui visualisasi grafik dan tabel, sehingga memudahkan pengguna maupun pengelola layanan dalam memahami distribusi sentimen masyarakat. Penelitian ini memberikan kontribusi berupa model analisis sentimen yang sederhana, interpretatif, dan mudah diimplementasikan untuk mendukung evaluasi layanan publik digital berbasis data.

Kata Kunci: Analisis Sentimen, Jogja Smart Service, *TF-IDF*, *Logistic Regression*, Layanan Publik Digital

ABSTRACT

Digital transformation in public services encourages local governments to provide services that are more efficient and responsive to the needs of the community. Jogja Smart Service (JSS) is a digital public service application developed by the Yogyakarta City Government as part of the implementation of the smart city concept. Along with the increasing use of this application, people submit various reviews in the form of opinions, criticisms, and appreciation through the Google Play Store. The review contains important information about user perceptions and experiences of JSS service quality, but it has not been optimally utilized as a basis for service evaluation. Therefore, a systematic approach is needed to analyze public sentiment towards JSS services to support data-driven improvement of service quality and user experience.

This study aims to analyze the sentiment of Jogja Smart Service user reviews using *text mining* and *machine learning* approaches. The data used is in the form of JSS user reviews available on the Google Play Store in the range of 2020–2025, which are collected and processed using the *Google Colab* programming environment. The research process includes rule-based automatic sentiment labeling, as well as text preprocessing stages which include case folding, text cleaning, emoji conversion, word normalization, tokenizing, stemming, negation handling, and stopword removal. Feature extraction was carried out using *the Term Frequency–Inverse Document Frequency (TF-IDF)* method, while sentiment classification was carried out using *the Logistic Regression algorithm*. The dataset was divided using a stratified holdout scheme with a comparison of 75% of the training data and 25% of the test data. In addition, this study develops a Python and Streamlit-based web application with a prototyping system development method to display the results of sentiment analysis.

The results showed that the combination of *TF-IDF* and *Logistic Regression* was able to classify the sentiment of JSS user reviews into positive, negative, and neutral categories with good performance based on *accuracy, precision, recall,* and *F1-score metrics*. The web application developed successfully displays the results of sentiment analysis in an informative manner through the visualization of graphs and tables, making it easier for users and service managers to understand the distribution of public sentiment. This research contributes in the form of a simple, interpretive, and easy-to-implement sentiment analysis model to support data-driven digital public service evaluation.

Keywords: Sentiment Analysis, Jogja Smart Service, *TF-IDF*, *Logistic Regression*, Digital Public Services