UNIVERSITI TEKNOLOGI MARA

ANALYZING CUSTOMER FEEDBACK TOWARDS HOTEL PRIMULA BEACH USING SENTIMENT ANALYSIS

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ABSTRACT

Sentiment analysis is a natural language processing (NLP) that classifies customer responses to be as positive, negative, or neutral. The project will involve the collection of a set of customer reviews on Booking.Com and Agoda, text cleaning to remove any noise, and sentiment analysis using three machine learning models: Naive Bayes, random forest, and support vector machine. The 501 reviews on Booking.Com and 300 on Agoda are among the most important words that emerge to identify recurring themes in the experiences of the customers. The trends are presented with the help of data visualization methods, including the frequency of positive and negative reviews with time and the most mentioned things in Hotel Primula Beach. The results provide practical suggestions that Hotel Primula Beach can use to enhance its services, medical concerns, and strengths. The introduction of sentiment analysis into the feedback assessment mechanism at Hotel Primula Beach will complement its decision-making processes, perfection of customer engaging strategies and competence in the hospitality sector. This study explains that sentiment analysis has the potential to transform unstructured feedback of customers into useful information that leads to the creation of better business outcomes and relationships with customers. Naive Bayes, Random Forest, and Support Vector machine are three machine learning algorithms that were adopted and tested by cross-validation and performance measures like accuracy, recall, precision and F1- score. Random Forest in this case was the most effective model with an accuracy of 95.90% and an F1-score of 95.92%, so it is the best sentiment model with the highest performance in this scenario. Images were represented through the interactive dashboard built on the Power BI platform where the user could navigate sentiment trends, key word frequency, and review distributions, platform, and time. Future improvement involves widening the analysis to other platforms such as Instagram and TripAdvisor to cover a wider sentiment. The adoption of real-time sentiment analysis would help to respond to customer comments more quickly. Also, more proactive and data-driven decisions that are taken by an improvement of the dashboard can support Hotel Primula Beach ensuring such features as trend forecast, customer segmentation, and automated alerts.