UNIVERSITI TEKNOLOGI MARA

SENTIMENT ANALYSIS OF CUSTOMER REVIEW FOR TINA ARENA BEAUTY

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ABSTRACT

The advancement of technology and the rise of digital platforms have made customer feedback more accessible yet complex to analyse. Tina Arena Beauty, a local beauty brand, faces challenges in systematically interpreting customer sentiment due to the lack of a unified sentiment analysis system. Different departments, including marketing and customer service, manage customer reviews independently, leading to inconsistent insights, missed opportunities for improvement, and reduced customer satisfaction. This study aimed to develop a sentiment analysis model to classify customer reviews into positive and negative sentiments and visualize the results in an interactive dashboard. The project followed the Cross-Industry Standard Process for Data Mining (CRISP-DM) methodology to ensure a structured implementation. Customer review data were collected from multiple platforms and processed using Natural Language Processing (NLP) techniques such as Term Frequency–Inverse Document Frequency (TF-IDF). Three machine learning algorithms Naïve Bayes, Random Forest, and Support Vector Machine (SVM) were evaluated, and SVM achieved the highest accuracy and was selected as the final classifier. An interactive dashboard was developed using Microsoft Power BI to visualize key sentiment trends by product and platform, providing Tina Arena Beauty with actionable insights to understand customer satisfaction, identify dissatisfaction patterns, and improve product and service offerings. The dashboard was validated through expert review, confirming its usability and relevance for business decision-making. While the model provided valuable insights, limitations include its moderate accuracy and the lack of real-time updates. Future work may involve expanding the dataset, integrating real-time feedback systems, and evaluating advanced algorithms to improve classification performance further. This study demonstrates the practical application of sentiment analysis and business intelligence tools in transforming unstructured customer review data into strategic business knowledge for decision-making.

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