









feedback comments and satisfaction ratings, we have shed light on the nuanced interplay between customer sentiments, satisfaction levels, and the propensity for return visits.

The results of our study are both promising and enlightening. Across a diverse array of machine learning classifiers, XGBoost emerges as the top performer, boasting an impressive accuracy of 85% in predicting customers' return visits. This underscores the efficacy of machine learning algorithms in discerning subtle patterns within customer feedback data, thereby enabling airlines to anticipate and cater to customer needs more effectively.

Furthermore, our study underscores the critical role of affective expressions extracted from customer review comments. We find that a higher word count of feedback correlates positively with increased prediction accuracy, highlighting the importance of delving deeper into the nuances of customer sentiments. By leveraging sentiment analysis techniques, airlines can gain deeper insights into customer preferences and emotions, thereby enhancing service offerings and fostering long-term loyalty.

However, our study is not without its limitations. While machine learning algorithms offer remarkable predictive power, they are inherently limited by the quality and quantity of input data. Moreover, customer behavior is influenced by a myriad of external factors beyond the scope of our analysis, including economic conditions, competitor actions, and global events. As such, our study serves as a starting point for further exploration into the complexities of customer decision-making processes within the airline industry.

Moving forward, there are several avenues for future research. Firstly, incorporating additional data sources such as social media interactions and demographic information could enrich our analysis and provide deeper insights into customer behavior. Secondly, longitudinal studies tracking customer behavior over extended periods could offer a more comprehensive understanding of the factors influencing repeat patronage. Finally, exploring the potential of advanced machine learning techniques such as deep learning could unlock new avenues for predictive modeling and analysis.

In conclusion, our study offers valuable insights into the intricate interplay between customer sentiments, satisfaction levels, and return visit behavior within the airline industry. By leveraging machine learning and sentiment analysis techniques, airlines can make informed decisions and strategic interventions that resonate with their customers, thereby fostering long-term loyalty and sustainable growth in an increasingly competitive marketplace.

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