

Sentiment Prediction Using Machine Learning for Q-Commerce Reviews

Abstract—

Quick Commerce (Q-Commerce) platforms generate large volumes of customer feedback. Manual analysis of this unstructured text is inefficient. This project proposes a supervised machine learning approach to classify customer opinions into Positive, Neutral, and Negative sentiments. A real-world Q-Commerce survey dataset was manually labeled and processed using TF-IDF feature extraction. Logistic Regression was trained and evaluated, achieving an accuracy of 90.9%. The system is deployed using a Streamlit dashboard for analysis and prediction.

I. INTRODUCTION

Q-Commerce platforms generate large amounts of customer feedback related to delivery, pricing, and service quality. Automated sentiment analysis helps businesses understand customer satisfaction efficiently.

II. DATASET DESCRIPTION

The dataset consists of consumer survey responses collected from Q-Commerce users. Since sentiment labels were not present, manual labeling was performed.

III. METHODOLOGY

Text preprocessing includes lowercase conversion, stopword removal, and normalization. TF-IDF vectorization is used for feature extraction, followed by Logistic Regression classification.

IV. EXPLORATORY DATA ANALYSIS

EDA includes sentiment distribution analysis, text length analysis using boxplots and violin plots, and ROC curve visualization.

V. RESULTS AND EVALUATION

The model achieved an accuracy of 90.9%. The results indicate effective classification of Positive and Neutral sentiments.

VI. SYSTEM IMPLEMENTATION

A Streamlit dashboard provides interactive visualization, live prediction, and automated report generation.

VII. CONCLUSION

The proposed system successfully applies supervised machine learning for sentiment analysis in Q-Commerce reviews.

VIII. FUTURE WORK

Future enhancements include deep learning models, multilingual support, and real-time integration.