

# **Customer Sentiment Analysis on E-Commerce Product Reviews**

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**Abstract:** *This study explores customer sentiment analysis as a way to understand consumer opinions expressed in e-commerce product reviews. With the rapid growth of online shopping, customer feedback has become an important source for assessing satisfaction and product performance. Using a dataset of Amazon product reviews, this research applies natural language processing and machine learning techniques to classify opinions into positive, negative, or neutral sentiments. The analysis also highlights frequently mentioned issues such as delivery delays, product defects, and packaging concerns. Models like Logistic Regression, Naïve Bayes, SVM, and Random Forest were tested to identify the most reliable method for sentiment classification. Results show that combining text preprocessing with TF-IDF features produces strong classification accuracy. This work demonstrates how businesses can leverage sentiment analysis for better product management, improved services, and enhanced customer experience in online marketplaces*

**Keywords:** Customer Sentiment, E-Commerce, Product Reviews, Aspect-Based Analysis, Machine Learning, Text Mining, Consumer Satisfaction

