

Sentiment Analysis of Amazon Reviews – Report

1. Objective

The main objective of this project is to understand customer sentiment by analyzing Amazon product reviews. The goal is to identify whether customers express positive, negative, or neutral opinions while reviewing products. This helps businesses understand customer satisfaction, identify improvement areas, and make better product and marketing decisions.

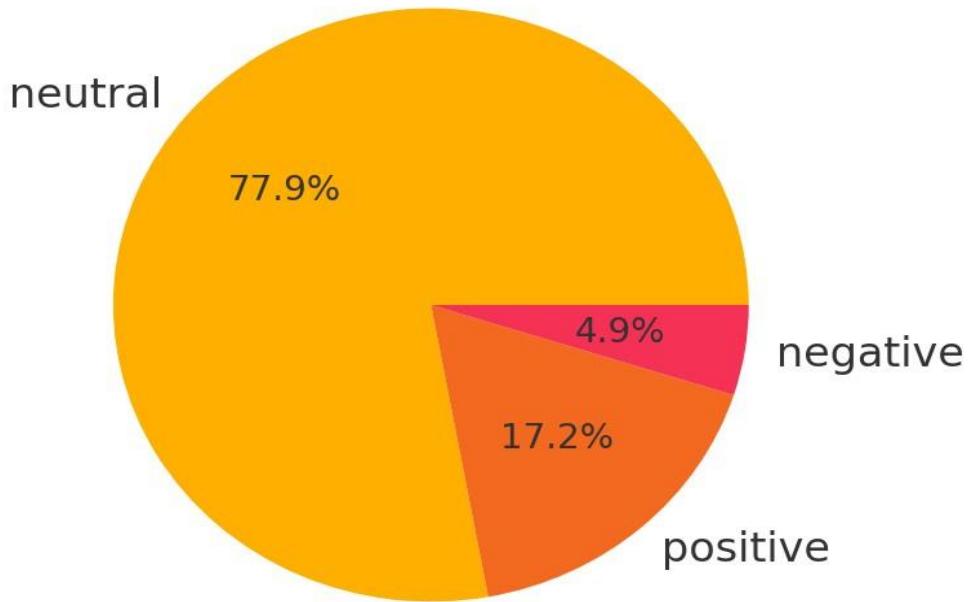
2. Dataset Description

The dataset used in this project is `sentiment_results.csv`, which contains 1,465 Amazon reviews. It includes product details such as product name, category, price, rating, and complete review text. Text preprocessing was applied, including lowercasing, removing URLs and symbols, removing stopwords, and lemmatization. Sentiment scores were generated using TextBlob and VADER and converted into labels for easier interpretation.

3. Exploratory Data Analysis (EDA)

EDA was performed to understand patterns in customer reviews. Most reviews are short and neutral, indicating factual descriptions. Positive reviews express satisfaction, while negative reviews highlight defects or issues. The following charts show sentiment patterns.

4. Sentiment Distribution (Pie Chart)

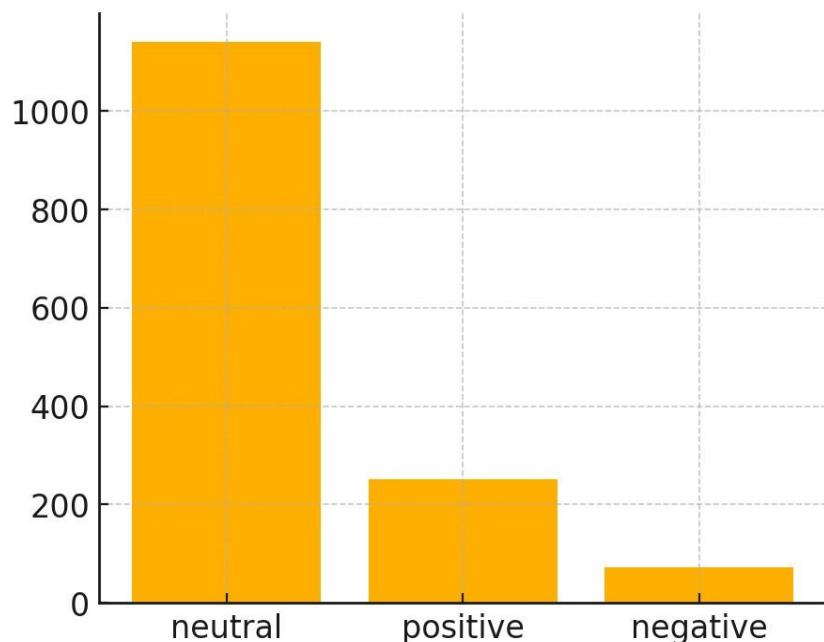


5. Sentiment Counts (Bar Chart)

The bar chart provides a clear comparison of how many reviews fall into each sentiment category.

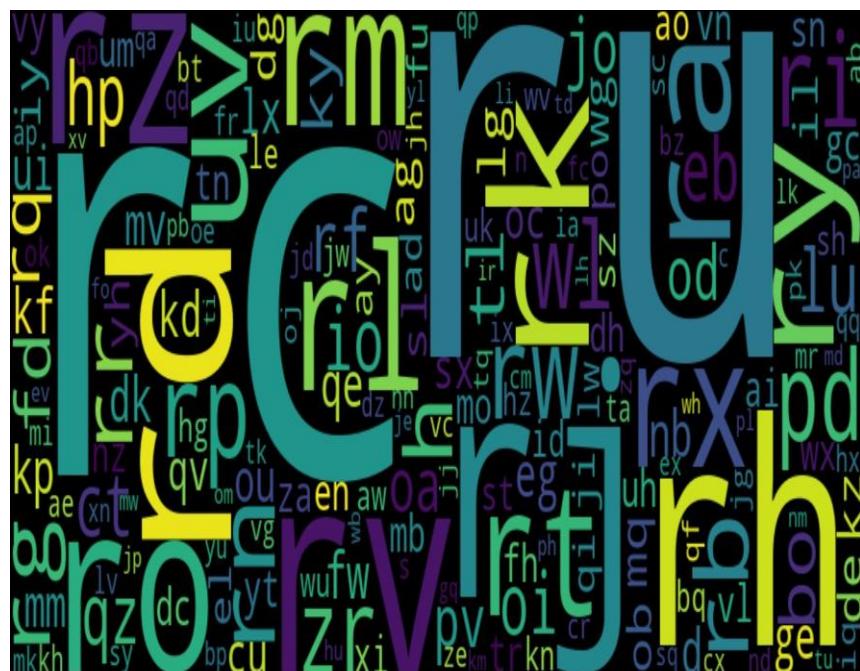
Neutral: 1,141 reviews Positive: 252 reviews Negative: 72 reviews

This shows that while customers are mostly neutral, a good portion of users still share positive experiences about the products.



6. Word Cloud

The word cloud displays the most commonly used words in all the customer reviews. Words that appear larger are used more frequently. This helps identify important themes in customer feedback, such as product quality, delivery, and usability. It also shows what customers care about the most when sharing their experience.



7. Recommendations

- Monitor negative reviews to identify repeated issues and resolve them quickly.
- Use positive review keywords in marketing campaigns to attract more customers.
- Encourage customers to write detailed reviews to improve analysis accuracy.
- Track sentiment trends over time to detect changes in customer satisfaction.

8. Conclusion

The sentiment analysis helped categorize customer opinions and understand how users feel about Amazon products. The insights gained from this analysis can support better decision-making in product improvement, customer service, and marketing strategies. This project highlights how NLP and sentiment analysis can provide meaningful insights for businesses.