

Amazon Fine Food Reviews – Sentiment Analysis Project Summary

1. Project Overview

- ❖ Objective: To analyze customer sentiments from Amazon fine food product reviews and extract valuable insights to understand consumer perception.
- ❖ Dataset: Amazon Fine Food Reviews (568,454 reviews; key columns include review text, score, time, etc.).

2. Tools & Techniques Used

- Language: Python
- Libraries: Pandas, Matplotlib, Seaborn, TextBlob, NLTK, WordCloud, VADER
- Techniques:
 - Data Cleaning & Preprocessing
 - Sentiment Polarity Scoring (TextBlob)
 - Word Frequency & Word Cloud Analysis
 - Emotion Detection (VADER)
 - Visual Exploration

3. Key Analysis Steps

Step 1: Data Cleaning

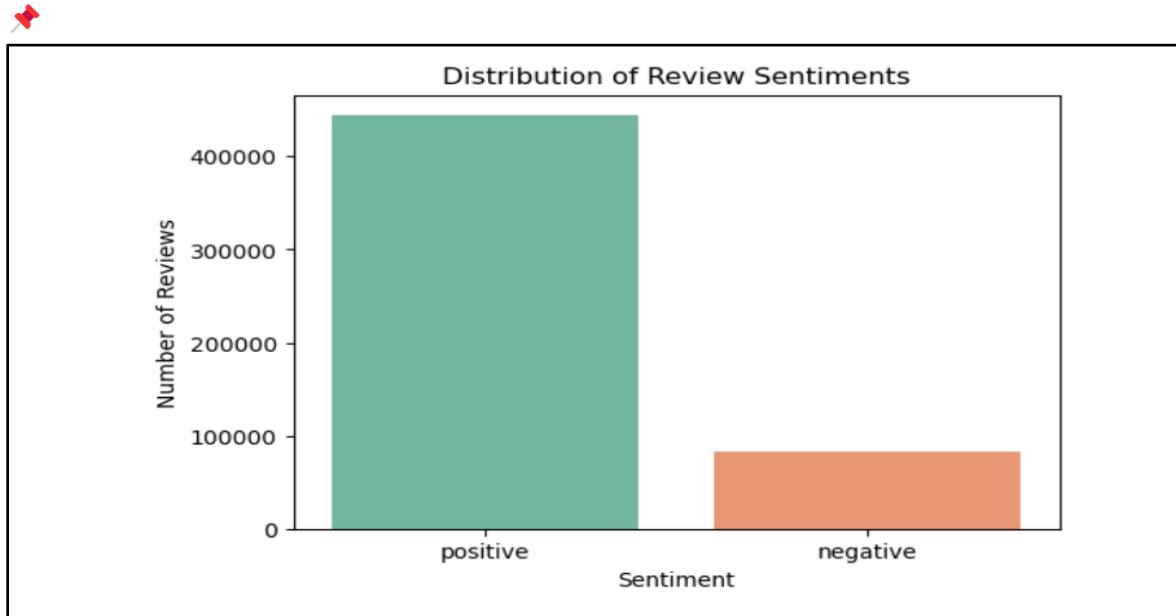
- Removed duplicates and null values
- Standardized text (lowercase, punctuation removal, stopword filtering)

Step 2: Sentiment Classification (TextBlob)

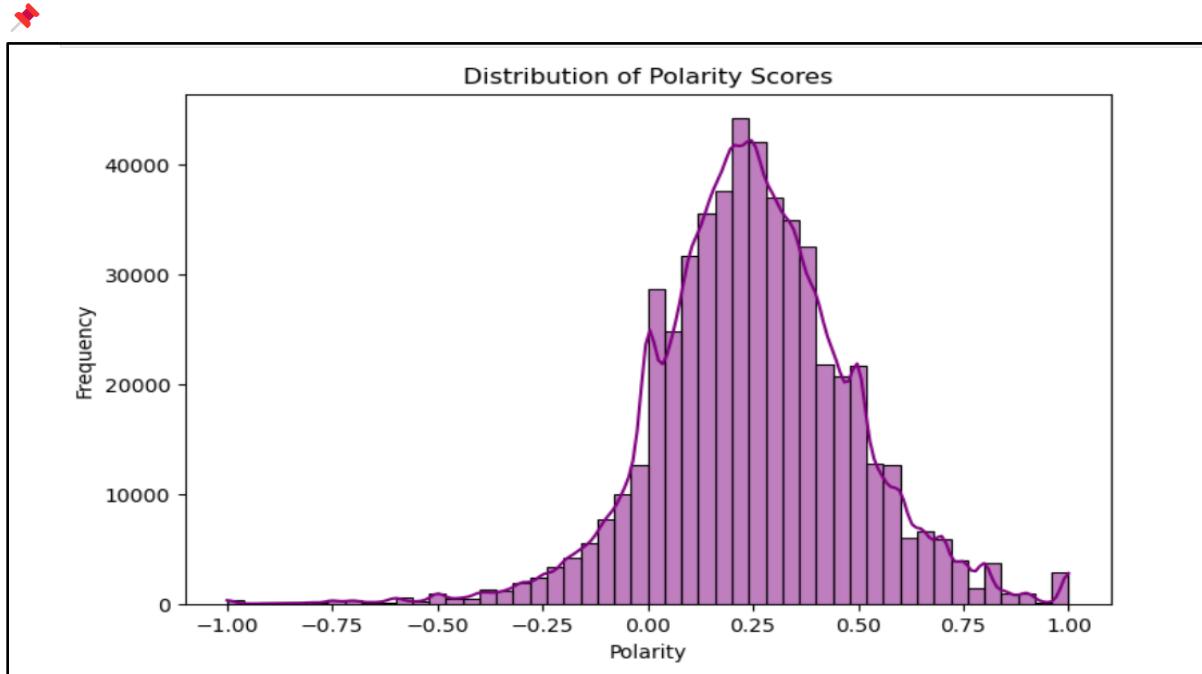
- Applied polarity scoring to classify reviews as Positive or Negative
- Extracted polarity values for each review

Step 3: Exploratory Sentiment Analysis

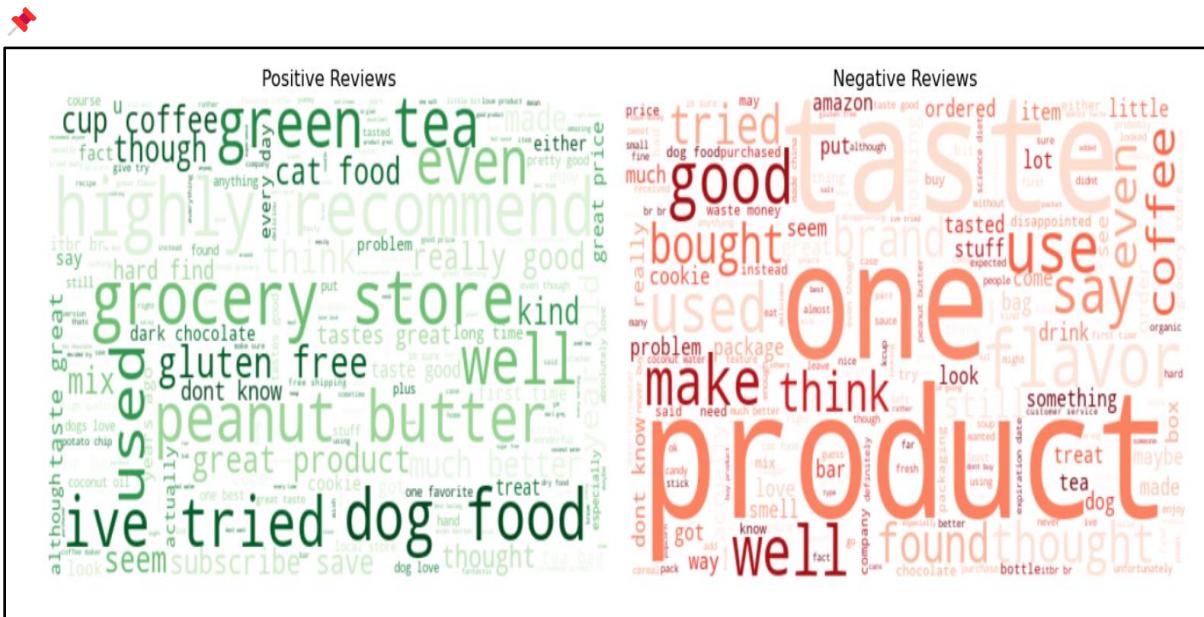
- Visualized review distribution by sentiment



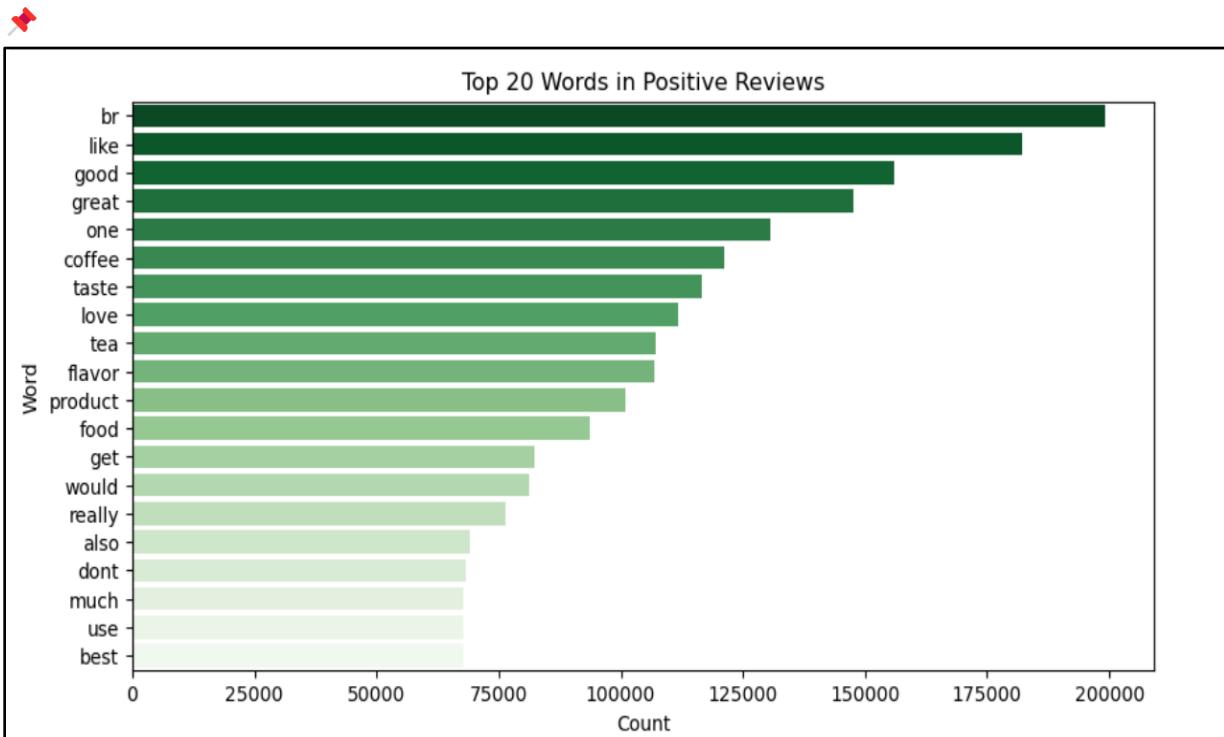
- Analyzed polarity score distribution

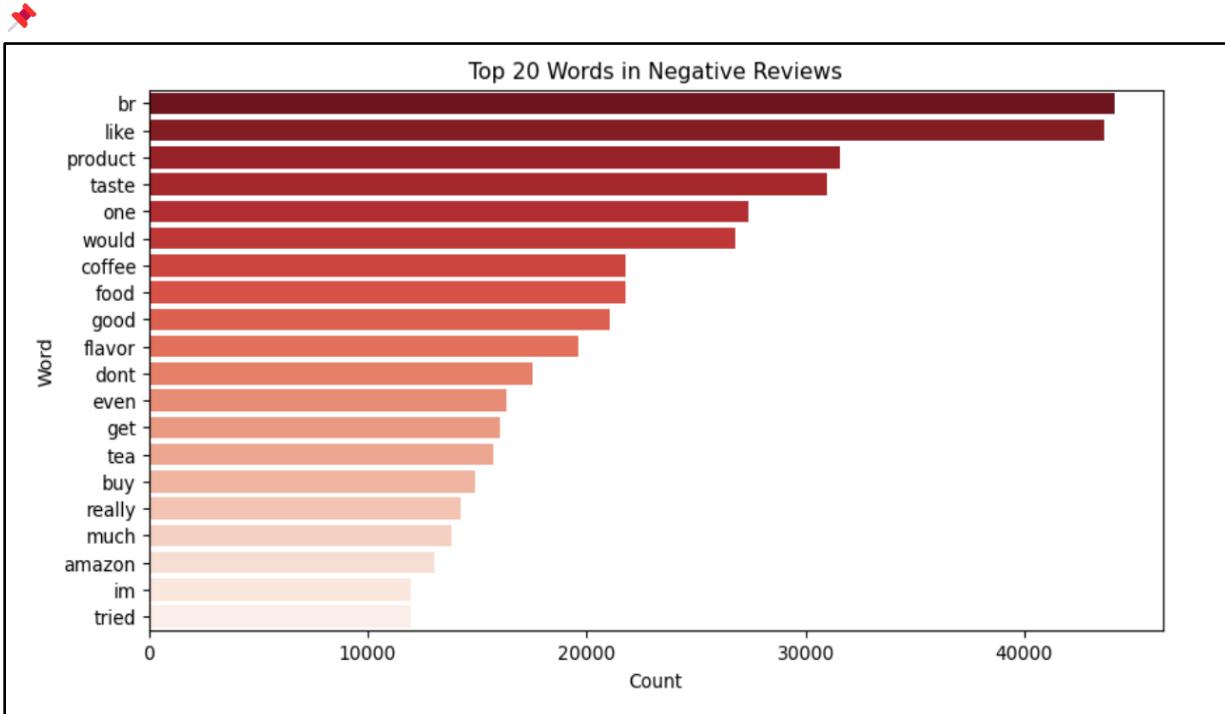


- Generated WordClouds for each sentiment



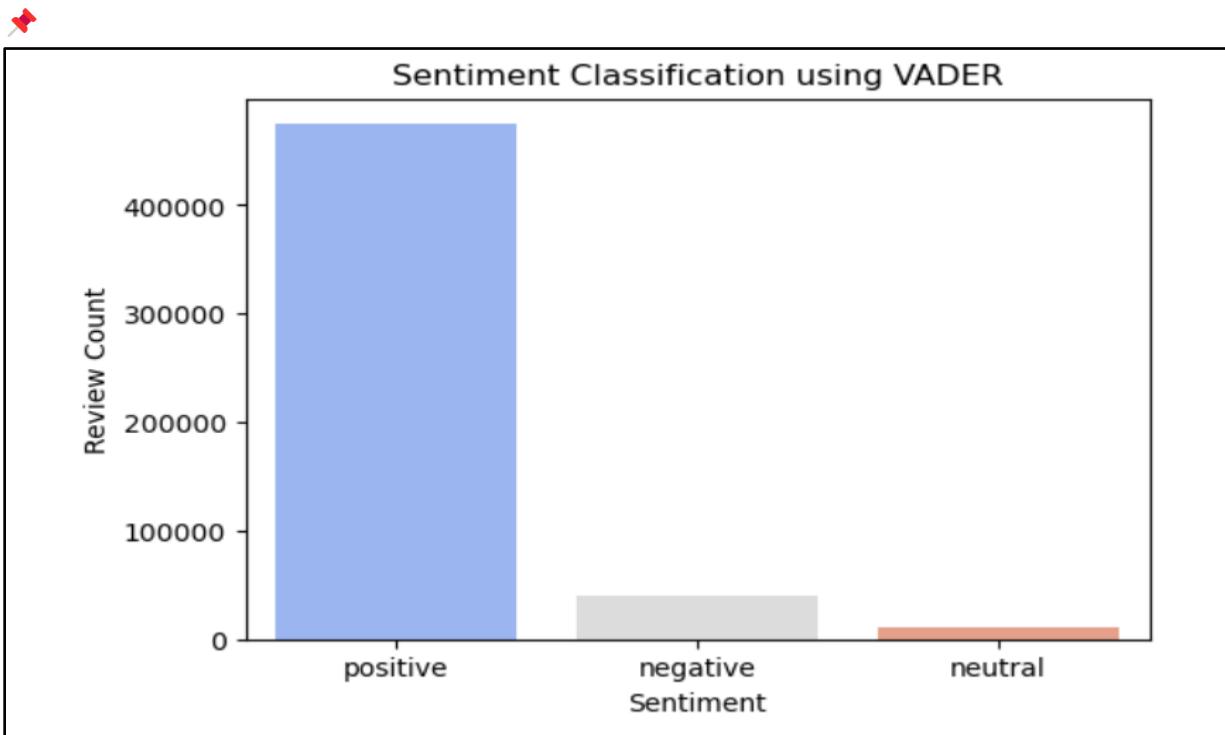
- Created bar charts of top 20 most frequent words in both sentiment groups

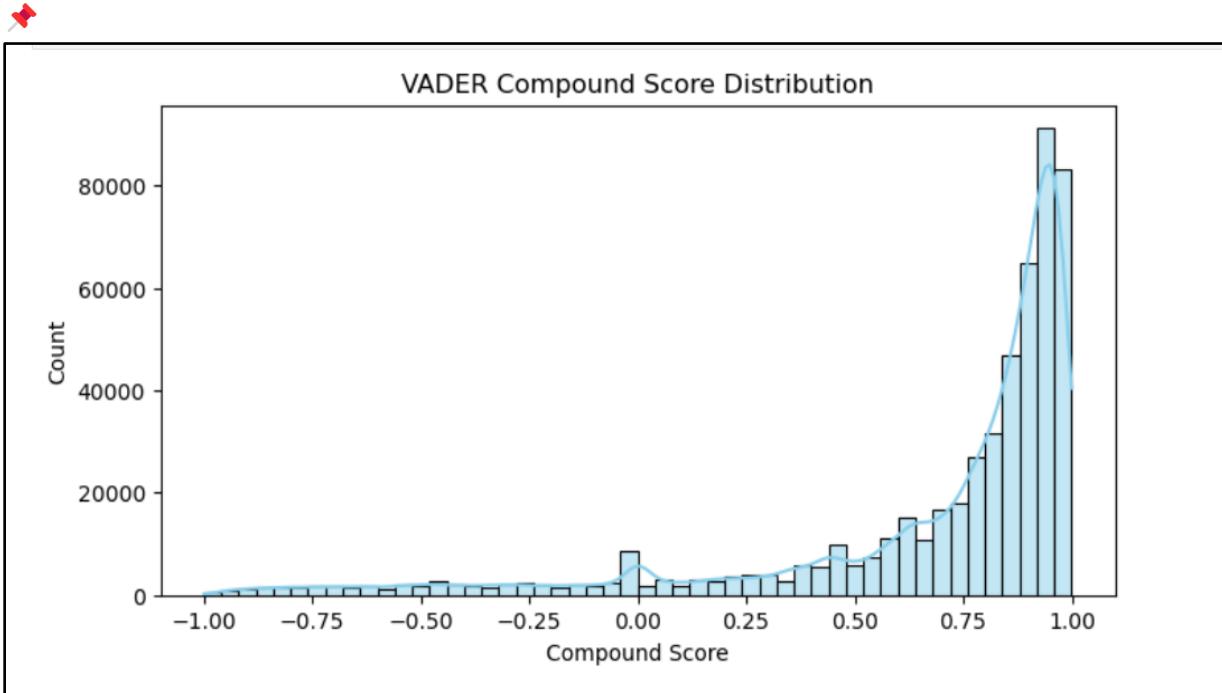




Step 4: Emotion Detection (VADER)

- Used VADER to extract compound sentiment scores
- Classified each review as Positive, Negative, or Neutral





4. Key Insights

- Over 84% of the reviews were positive, confirming customer satisfaction.
- Positive reviews featured keywords like “good”, “love”, “taste”, and “coffee”. Negative reviews focused on “taste”, “waste”, “disappointed”, and “bad”.
- VADER confirmed sentiment results with some neutral cases.
- Most polarity scores fell in the 0.1 to 0.5 range, showing mild-to-strong positivity.

5. Business Implications

- Product Feedback Loop: Identify common customer issues to improve product lines.
- Brand Messaging: Use strong positive keywords in marketing and branding efforts.
- Customer Loyalty: Monitoring sentiment trends can guide experience strategies.

6. Conclusion

The sentiment analysis of Amazon food reviews reveals highly positive customer perception. By leveraging NLP tools like TextBlob and VADER, businesses can gain a clear view into consumer satisfaction and optimize their product quality, messaging, and support efforts.