

Amazon Product Reviews & Recommendation

Project Overview

The **Amazon Product Reviews Dataset** contains over **50,000 records** of customer feedback, capturing valuable fields such as user ratings, review text, helpfulness scores, and timestamps. This dataset enables the creation of powerful data visualizations in **Tableau** to explore **customer sentiment**, **review quality**, and **product performance**.

This project focuses on transforming raw review data into actionable insights that support product recommendations, feature improvement, and customer experience enhancement.

Project Goals

- 1. Customer Sentiment Dashboard**
Analyze customer sentiment across scores, time, and product dimensions.
- 2. Top Reviewed Products**
Identify products with high engagement and positive feedback.
- 3. Helpfulness Analysis**
Understand factors contributing to review helpfulness.
- 4. Trend Over Time**
Track rating and review volume trends across time.
- 5. Review Quality Insights**
Use text analysis to extract sentiment-rich keywords and phrases.
- 6. Product Improvement Suggestions**
Pinpoint low-rated reviews and derive actionable recommendations.

Dashboard Components

1. Sentiment and Rating Overview Dashboard

Key Visualizations:

- Pie Chart: Rating distribution (1 to 5)
- Line Chart: Average rating over time
- Bar Chart: Top 10 best-rated products
- Heatmap: Review activity by day/month
- **KPIs:**
 - Average Rating Score
 - Total Number of Reviews
 - Most Reviewed Product
 - Count of Products Rated Above 4.5

2. Helpfulness & Reviewer Engagement Dashboard

Key Visualizations:

- Bar Chart: Top 10 most helpful reviewers
- Ratio Chart: Helpfulness numerator vs. denominator
- Data Table: Reviews with 100% helpfulness
- Word Cloud: Common keywords in helpful reviews
- **KPIs:**
 - Average Helpfulness Percentage
 - Count of Highly Helpful Reviews ($\geq 80\%$)

3. Product Improvement Insights Dashboard

Key Visualizations:

- Product Filter: Select product ID to explore review patterns
- Bar Chart: Volume of negative reviews per product
- Text Area: Extracted complaint topics from low-rated reviews
- Timeline: Spike detection for negative sentiment periods

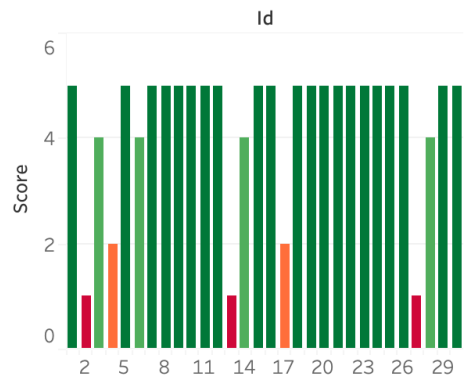
Average Helpfulness Rating



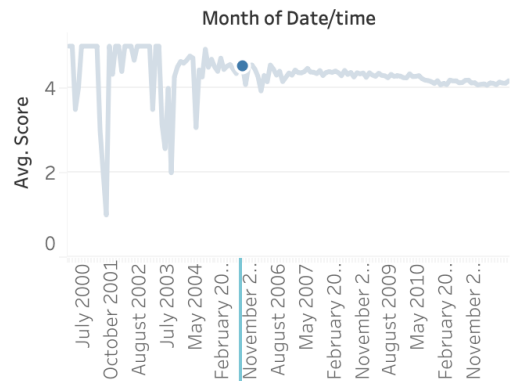
Score



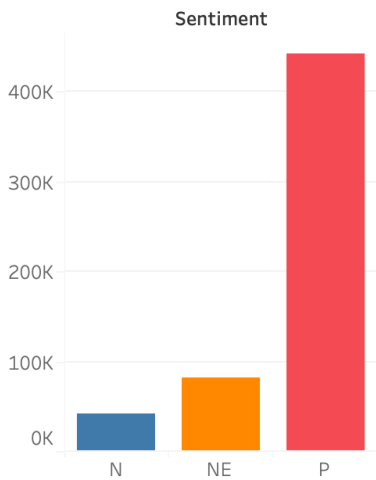
Rating Distribution



Rating over Time



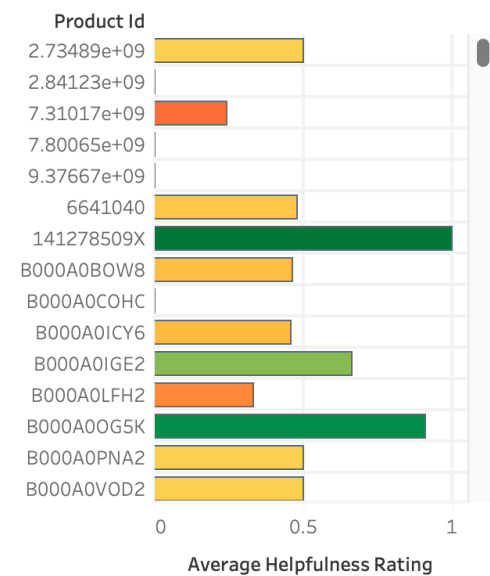
Sentiment Breakdown



Sentiment



Helpfulness Rate by Product



Product Recommendation Dashboard

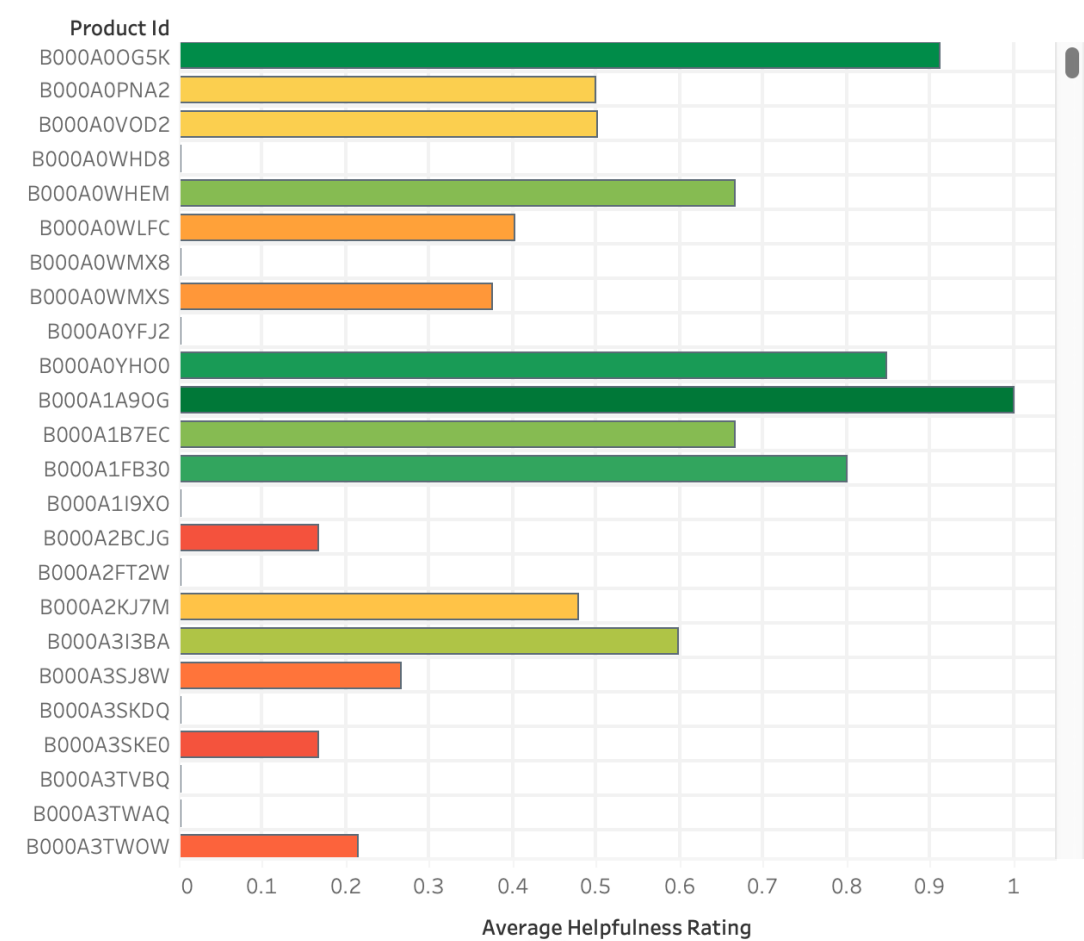
Recommended items

Product Recommendation category	
Highly Recommended	204,461
Needs Improvement	4,635
Recommended	22,117

Average Helpfulness Rating



Helpfulness Rate by Product



Report Summary – Product Recommendation Dashboard

This dashboard leverages customer review data to assess product performance based on **helpfulness ratings**. Through **calculated fields**, **KPI indicators**, and **A/B testing logic**, products are segmented into **Highly Recommended**, **Recommended**, and **Needs Improvement** categories.

Key performance indicators such as **Total Recommended Products**, **Average Helpfulness Score**, and **% of Highly Recommended Products** are featured to guide decision-making. The dashboard includes dynamic filters, visual hierarchy, and icon-based KPI tiles, providing a clean and interactive analytical experience. This solution aids product teams in enhancing offerings, improving customer satisfaction, and prioritizing feature development based on data.