
Customer Reviews of Amazon Products

DATA512 Fall2019

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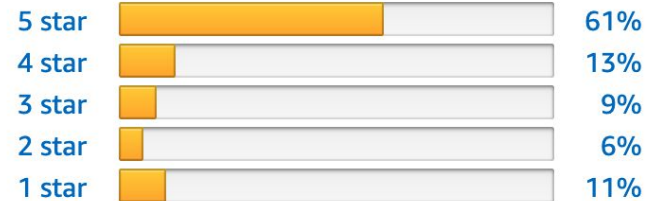
12/05/2019

Motivation

- Fan of consumer electronics
- Shopping season - online
- How to read review ratings?

★★★★☆ 4.1 out of 5

18,632 customer ratings



Goal

- Analyze customer reviews
 - Combine both quantitative and qualitative analysis
 - Reproduce the research for future dataset
 - Inform purchase decision
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Research questions

- What are the most reviewed Amazon products?
- What are the highly rated Amazon products?
- Why do customers give this rating?
- Identify the keywords in reviews against the review ratings to perform sentiment analysis

Stretch goal:

- Predict ratings/recommendation/etc
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Data Background

- Sample data 2015/01 - 2018/09
 - 99MB, csv file
 - 5000 reviews
 - Amazon product reviews from multiple online retailers
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Column	Description
asins	ASINs (Amazon identifiers) for the product
brand	brand name of the product
colors	color of the product
manufacturer	manufacturer of the product
reviews.doRecommend	A true/false for whether or not the reviewer recommends the product
reviews.numHelpful	the number of people that found this review helpful
reviews.rating	a 1 to 5 star value for the review
reviews.title	the review's title

Steps

- Data preparation
 - Quick view - preliminary aggregation
 - Identify one product and dive deep
 - In-person testing, reading reviews
 - WordCloud visualization
 - Sentiment analysis
 - Iteration
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Quick view

- Rating distribution
 - Most reviewed products
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Rating	Count	Percentage
5	3478	69.56%
4	1208	24.16%
3	197	3.94%
2	54	1.08%
1	63	1.26%



Top 10 reviewed products

Amazon Echo Show Alexa-enabled Bluetooth Speaker with 7" Screen	845
All-New Fire HD 8 Tablet, 8" HD Display, Wi-Fi, 16 GB - Includes Special Offers, Magenta	797
Amazon - Echo Plus w/ Built-In Hub - Silver	590
Fire Kids Edition Tablet, 7 Display, Wi-Fi, 16 GB, Blue Kid-Proof Case	561
Brand New Amazon Kindle Fire 16gb 7" Ips Display Tablet Wifi 16 Gb Blue	467
Fire Tablet, 7 Display, Wi-Fi, 16 GB - Includes Special Offers, Black	371
Amazon Tap - Alexa-Enabled Portable Bluetooth Speaker	225
Fire Kids Edition Tablet, 7 Display, Wi-Fi, 16 GB, Green Kid-Proof Case	217
Kindle E-reader - White, 6 Glare-Free Touchscreen Display, Wi-Fi - Includes Special Offers	159
Fire HD 10 Tablet, 10.1 HD Display, Wi-Fi, 16 GB - Includes Special Offers, Silver Aluminum	106

Amazon Echo Show

1st Gen

Average
score:
4.67/5



Net Promoter Score (NPS)

Derived from Amazon's rating category:

- 5-star rating - Promoters
- 4-star rating - Passives
- 1~3-star rating - Detractors

Definition of each role:

- Promoters: likely to exhibit value-creating behaviors
- Detractors: less likely to exhibit value-creating behaviors
- Passives: falls in between

$\text{NetPromotorScore(NPS)} = (\text{Promoters} - \text{Detractors}) / \text{Total ratings} * 100$

NPS for Echo Show

Overall: 69.47

Whether the customer recommend the product:

- Recommended: 76.02
 - Not recommended: -77.78
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Next steps

Format review text

Sentiment analysis on reviews (WIP)

Try to predict rating score

Facts

- Most reviews from Nov to Jan
 - Latest products receive more reviews
 - 3-star reviews receive many +1s
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Before purchase

- Look for the most popular positive and negative reviews
 - Read more 3-star reviews
 - Pick product with high Net Promoter Score
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Questions
