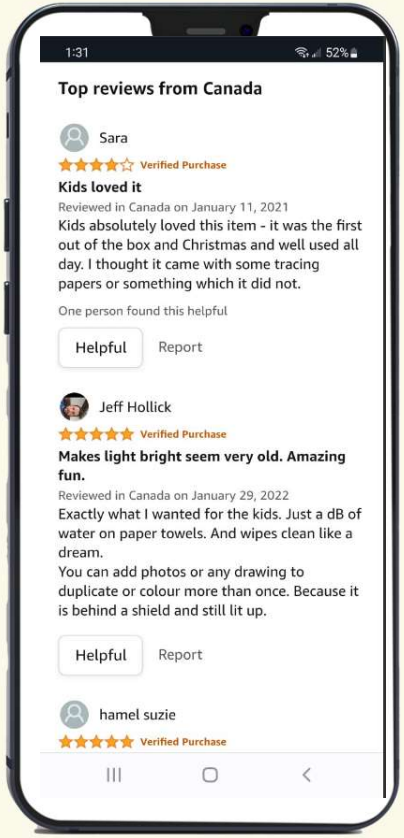
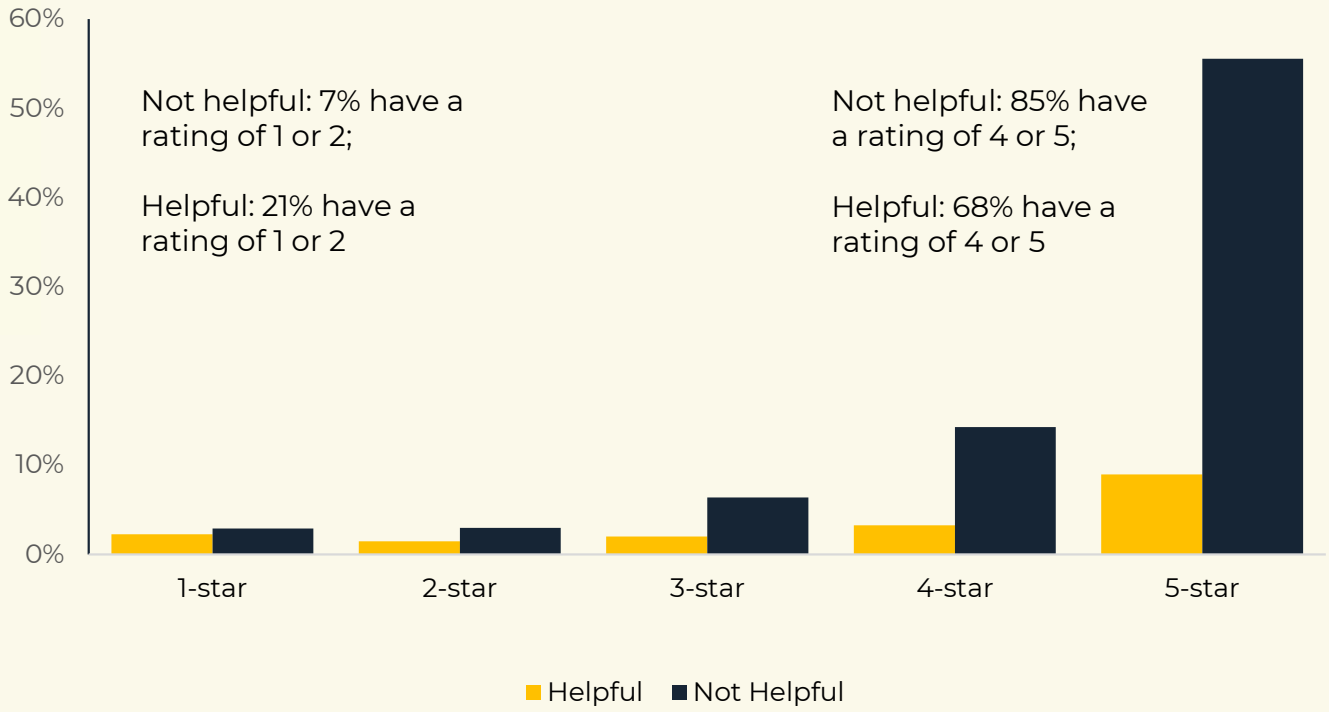
# Understanding Customer Reviews



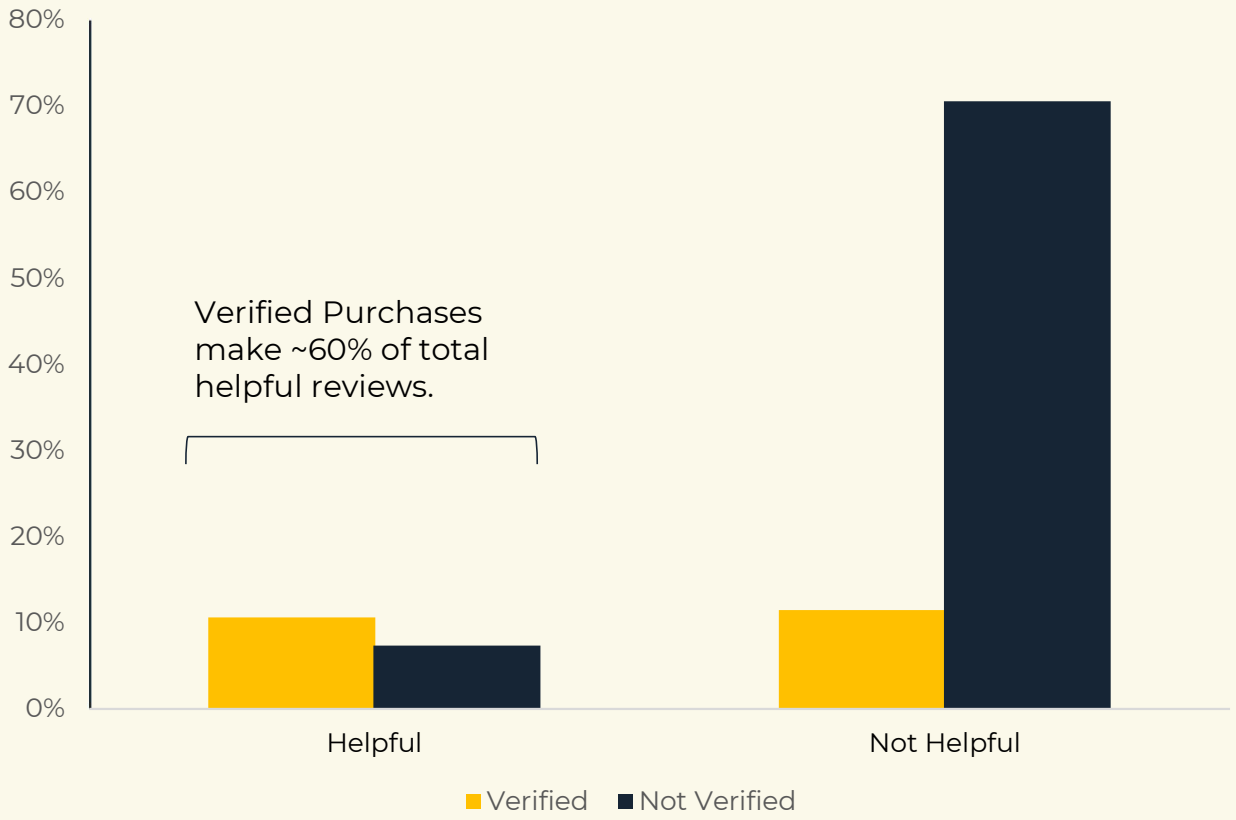
# Macro Trends: Breakdown of Ratings

A typical customer review:

# Macro Trends: Verified Purchases

A typical customer review:

# Product and Timeline Trends

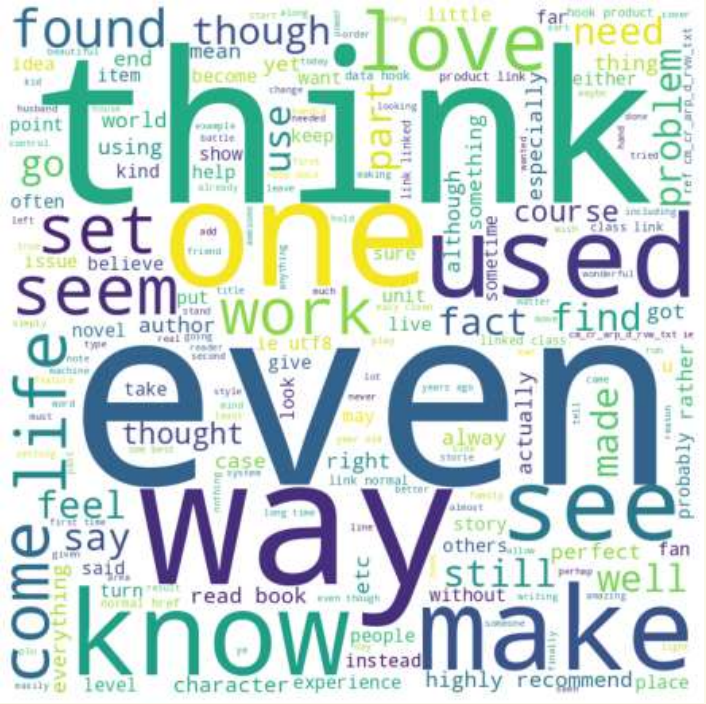
- 8 out of the Top 10 products reviewed were books for both datasets.

- Total number of reviews are declining since 2015.
- 2013 highest number of “helpful” reviews.

- Months with high reviews coincided with retail season: Jan, Dec, Mar

# Review Text Trends: Word Frequency

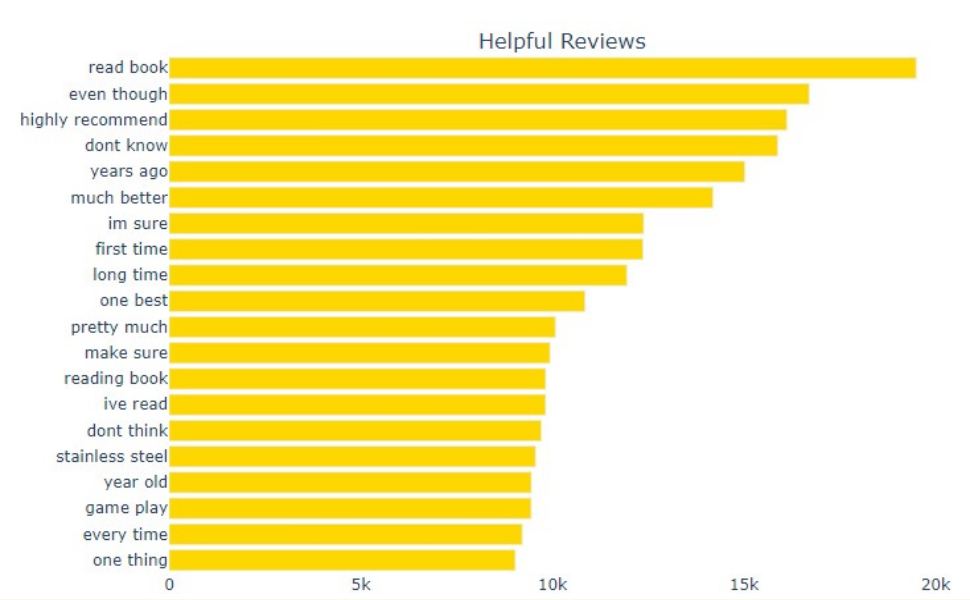
Helpful reviews with a rating of 5

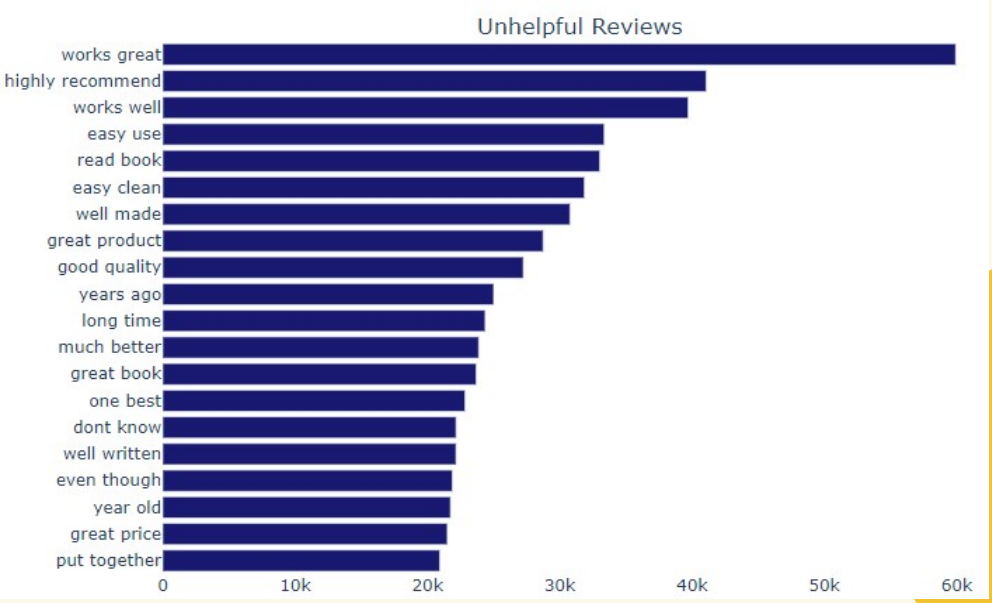



Not “helpful” reviews with a rating of 5

# Review Text Trends: Bigrams

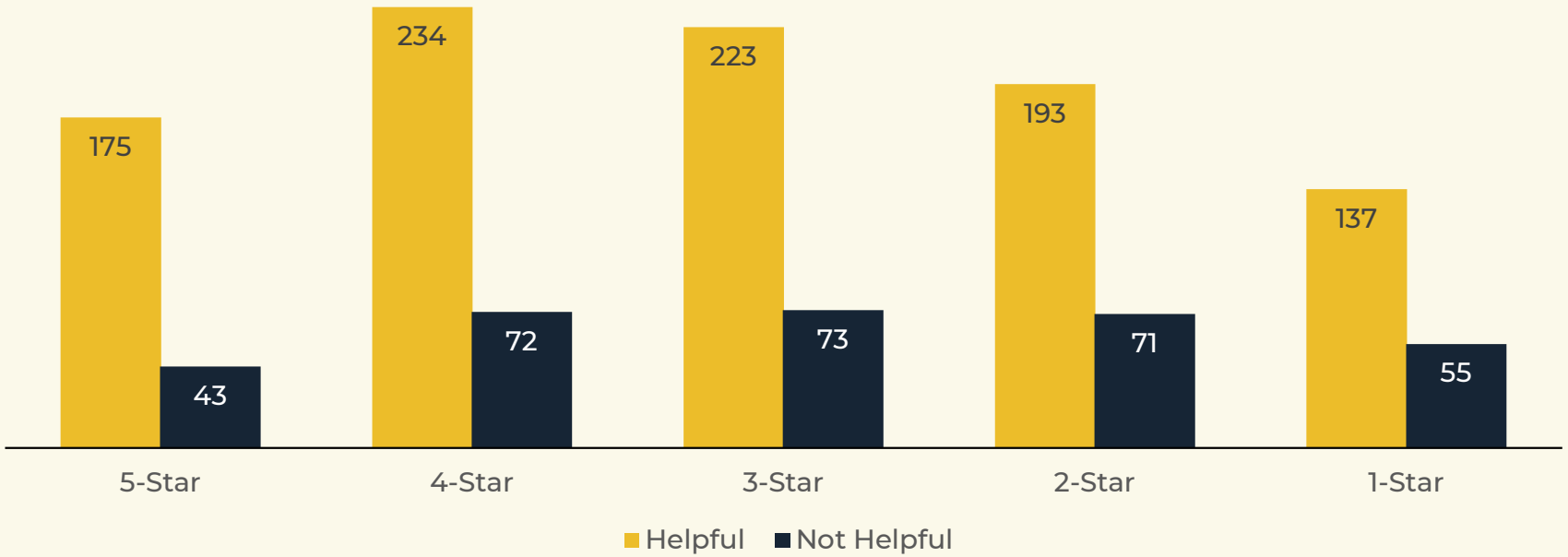
“Unhelpful” reviews: consists mostly of short generic phrases, offer fewer details as compared to helpful reviews.



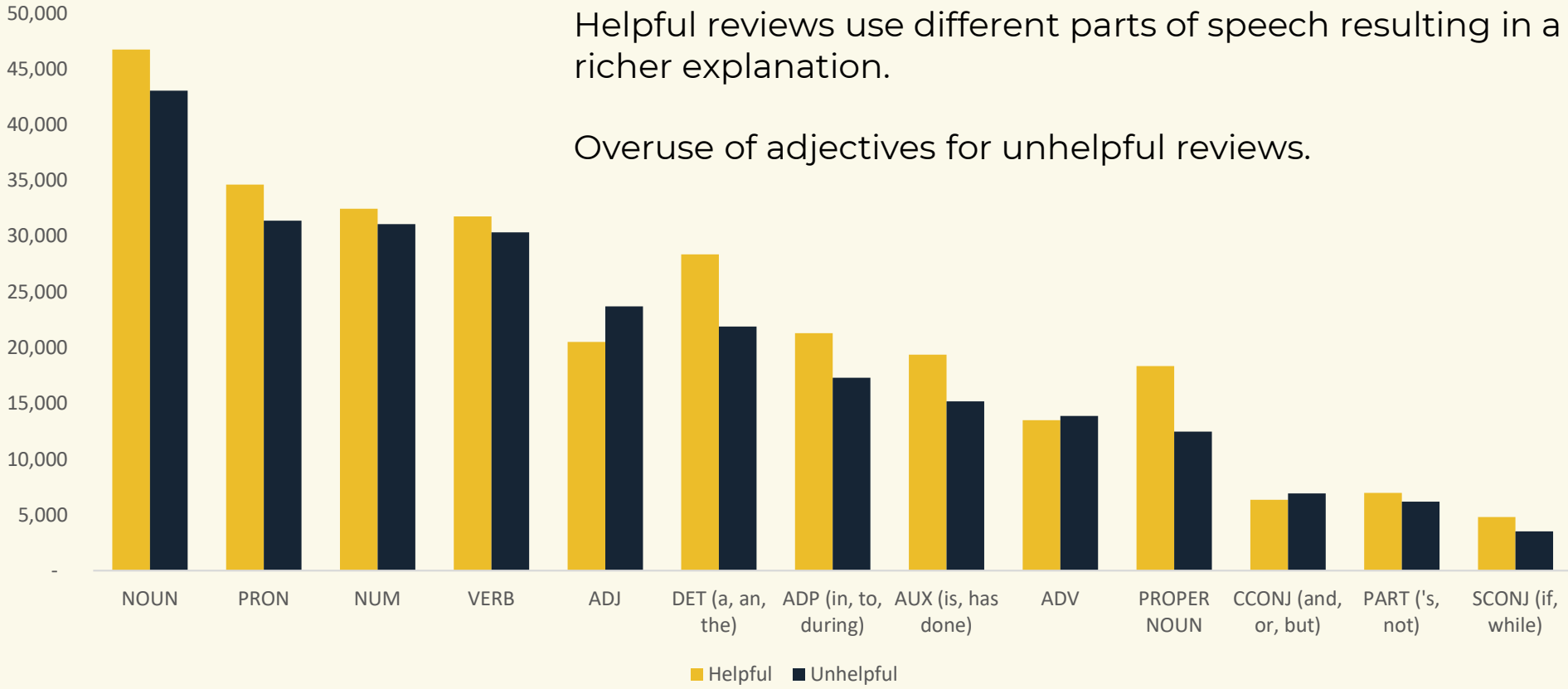



# Review Text Trends: Word Count

Helpful reviews consistently have are lengthier resulting in higher word count. These reviews tend to offer more details and explanation.



# Review Text Trends: Structure



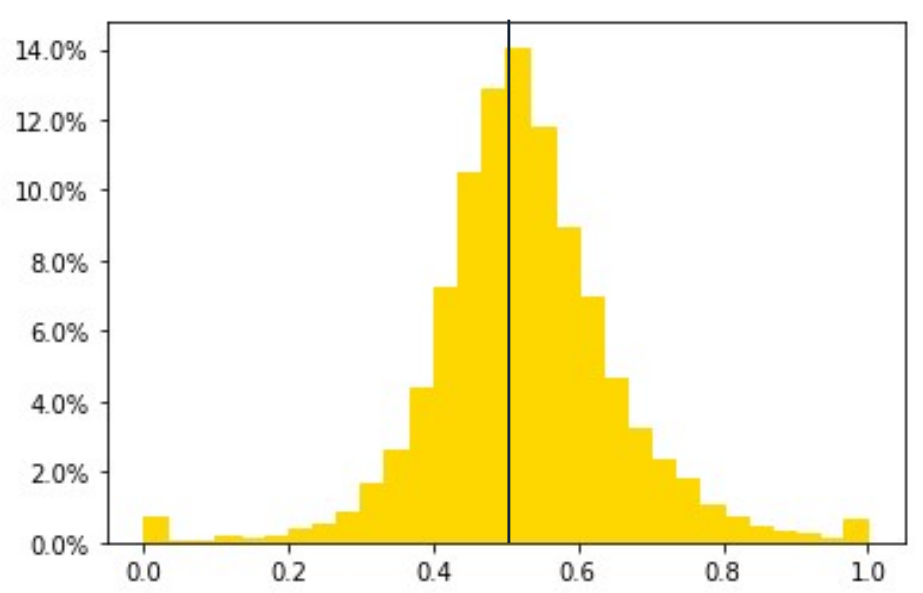

Helpful reviews use different parts of speech resulting in a richer explanation.

Overuse of adjectives for unhelpful reviews.

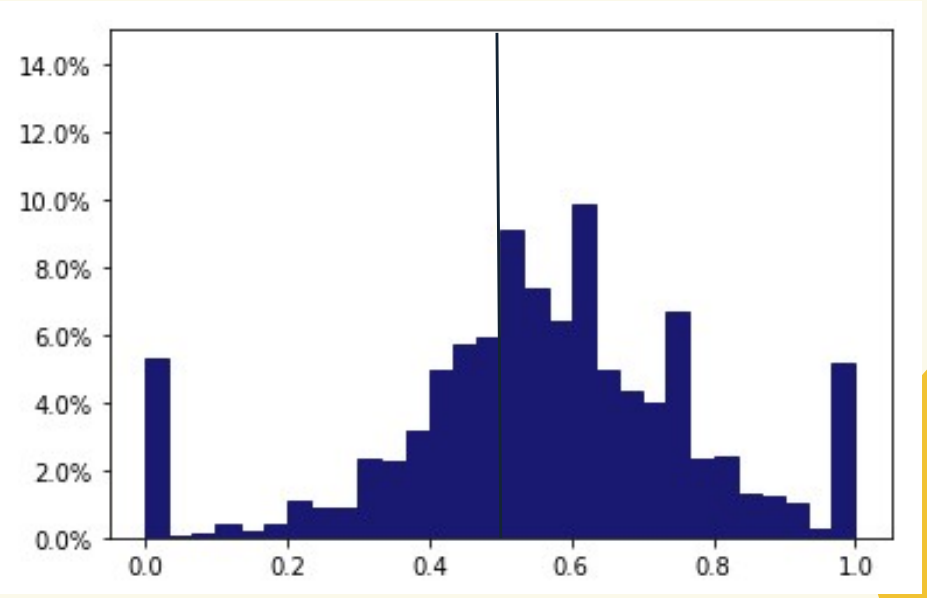
*Note: Above visualization is based on a small sample of data*

# Review Text Trends: Sentiment Analysis

Helpful reviews tend to have a good balance between fact and opinion.



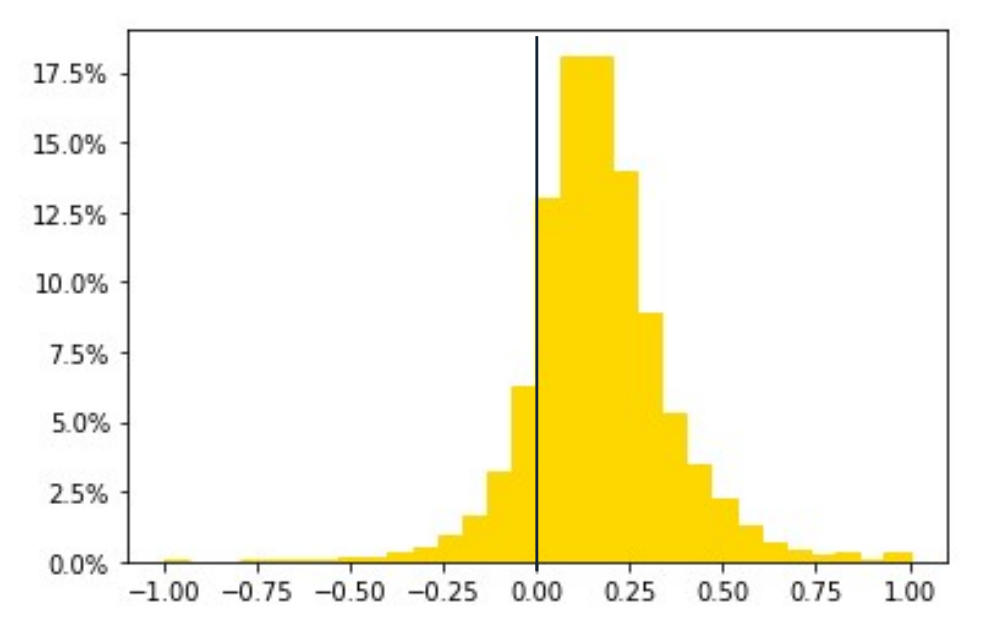

Subjectivity of Helpful Reviews



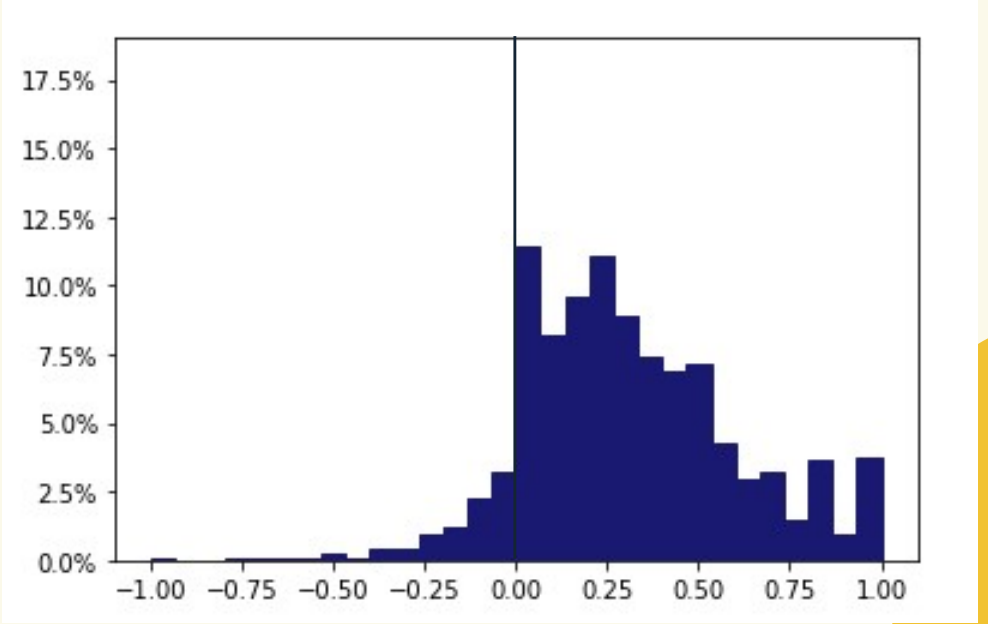

Subjectivity of “Unhelpful” Reviews

# Review Text Trends: Sentiment Analysis

Based on the polarity distribution, helpful reviews are less polarizing, utilize language that has less emotion or sentiment.



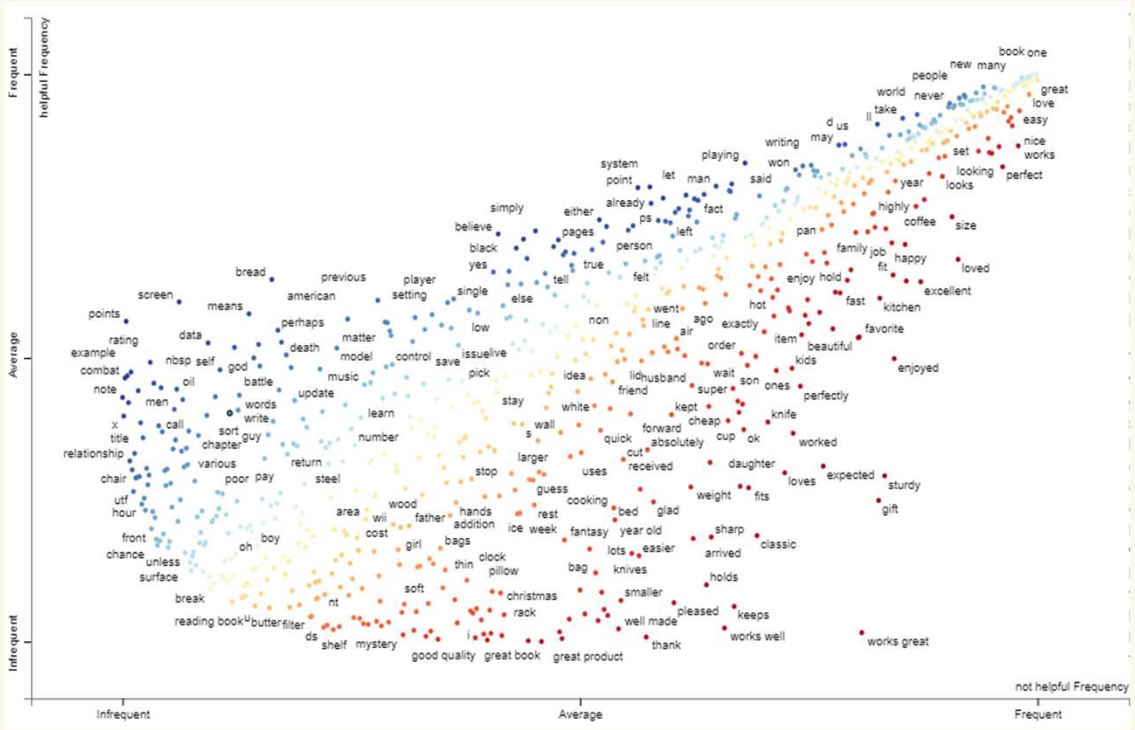

Polarity of Helpful Reviews




Polarity of “Unhelpful” Reviews

# Other Visualizations

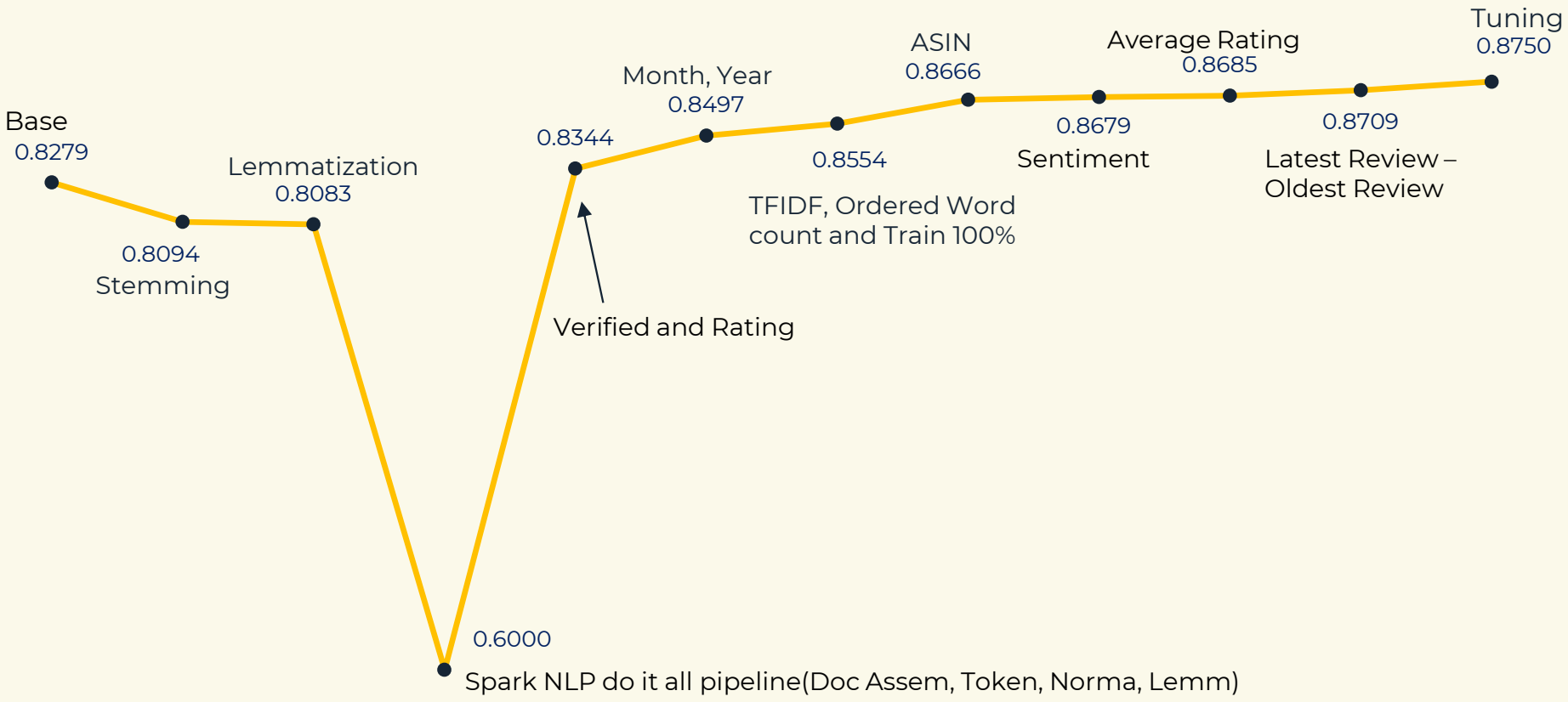
## Scatter Text




## Named Entity Recogition


*Note: Above visualizations are based on a small sample of data*

# Model Journey



# Cost Estimation

**Timeline assumptions:**
6 weeks

**Personnel assumptions:**

Senior Data manager
Data scientist

Total Hours worked: 350
Assumes data scientist is working FT, Manager only needs to be PT

| | |
|---|---|
| Employee Costs | $19,000 |
| Computing Costs | $730 |
| **Total Costs** | **$19,730** |

**Computing cost assumptions:**

Cluster: Standard_DS12_v2
$0.77 per hour

Hours used: 225

Usage
60% (1 driver + 4 workers)
40% (1 driver + 2 workers)

# Summary

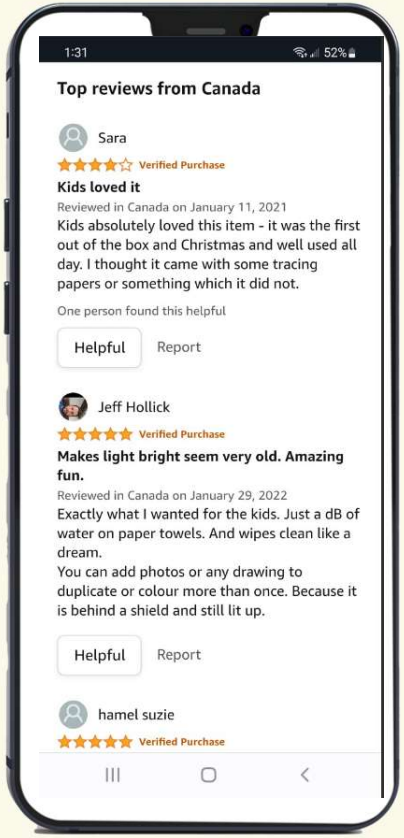
The following is what makes a review more helpful

- Verified purchases
- Higher word count - longer reviews
- More explanation
- A good balance between factual statements and opinions
- Not overtly positive reviews
- Recent reviews

# Next Steps

- Spell checking detector
- Translation to same language
- Utilizing more models from sklearn.

# Q&A


1:31
52%
Top reviews from Canada
Sara
Verified Purchase
Kids loved it
Reviewed in Canada on January 11, 2021
Kids absolutely loved this item - it was the first out of the box and Christmas and well used all day. I thought it came with some tracing papers or something which it did not.
One person found this helpful
Helpful
Report
Jeff Hollick
Verified Purchase
Makes light bright seem very old. Amazing fun.
Reviewed in Canada on January 29, 2022
Exactly what I wanted for the kids. Just a dB of water on paper towels. And wipes clean like a dream.
You can add photos or any drawing to duplicate or colour more than once. Because it is behind a shield and still lit up.
Helpful
Report
hamel suzie
Verified Purchase