

Product Review Analysis



Hello!

I'm Leah Pope - Data Scientist by
way of Software Engineering

You can check out more my work on:

<https://github.com/lspope>

<https://leahspope7.medium.com>



“What product insights
can we discover by
analysing customer
reviews?”



Data Details

- ✓ Sourced from Trust Pilot (open platform) product reviews
- ✓ Included only necessary data:
 - Review text
 - Star rating (1-5)
 - Date and time
 - Country
- ✓ Omitted any potential PI data:
 - Reviewer name
 - Review ID

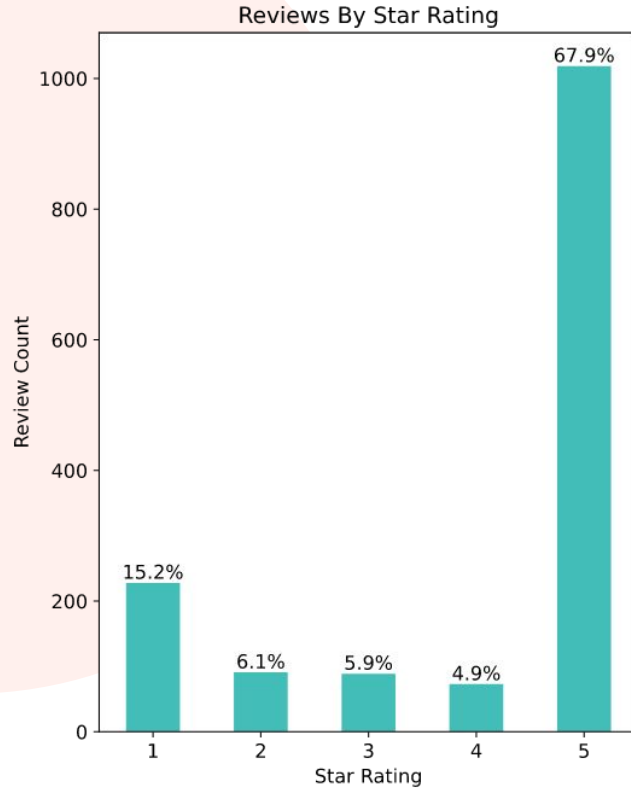


Data Analysis Techniques

- ✓ Review Counts
 - By Star Ratings
 - By Location
 - Over Time
- ✓ Most Frequent Words
 - By Star Ratings

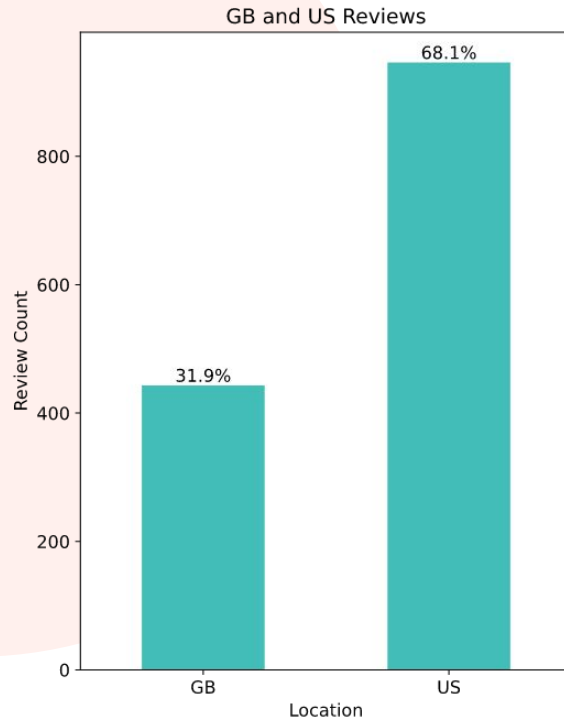


Review Counts – by Star Rating



- ✓ Majority of reviews (67.9%) are 5-star rated
- ✓ Second most prevalent reviews (15.2%) are 1-star rated

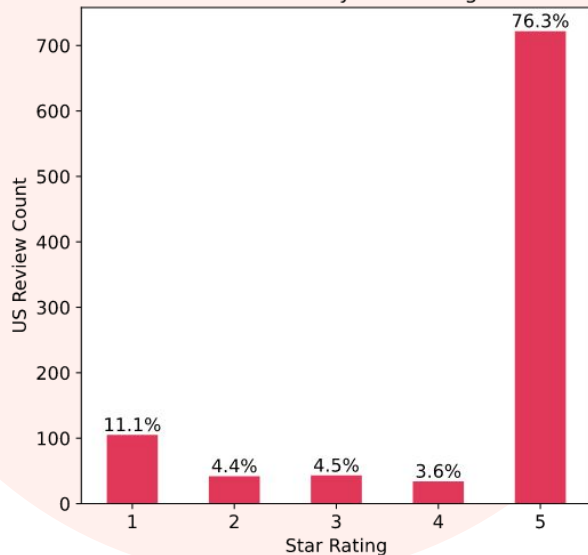
Review Counts – by Top Countries



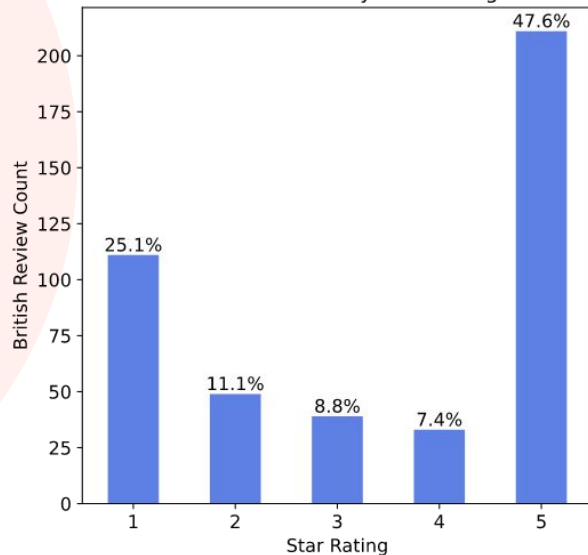
- ✓ US and GB account for the vast majority of views
- ✓ Over **twice** as many US reviews as British reviews

Comparing US and British Reviews

US Reviews By Star Rating



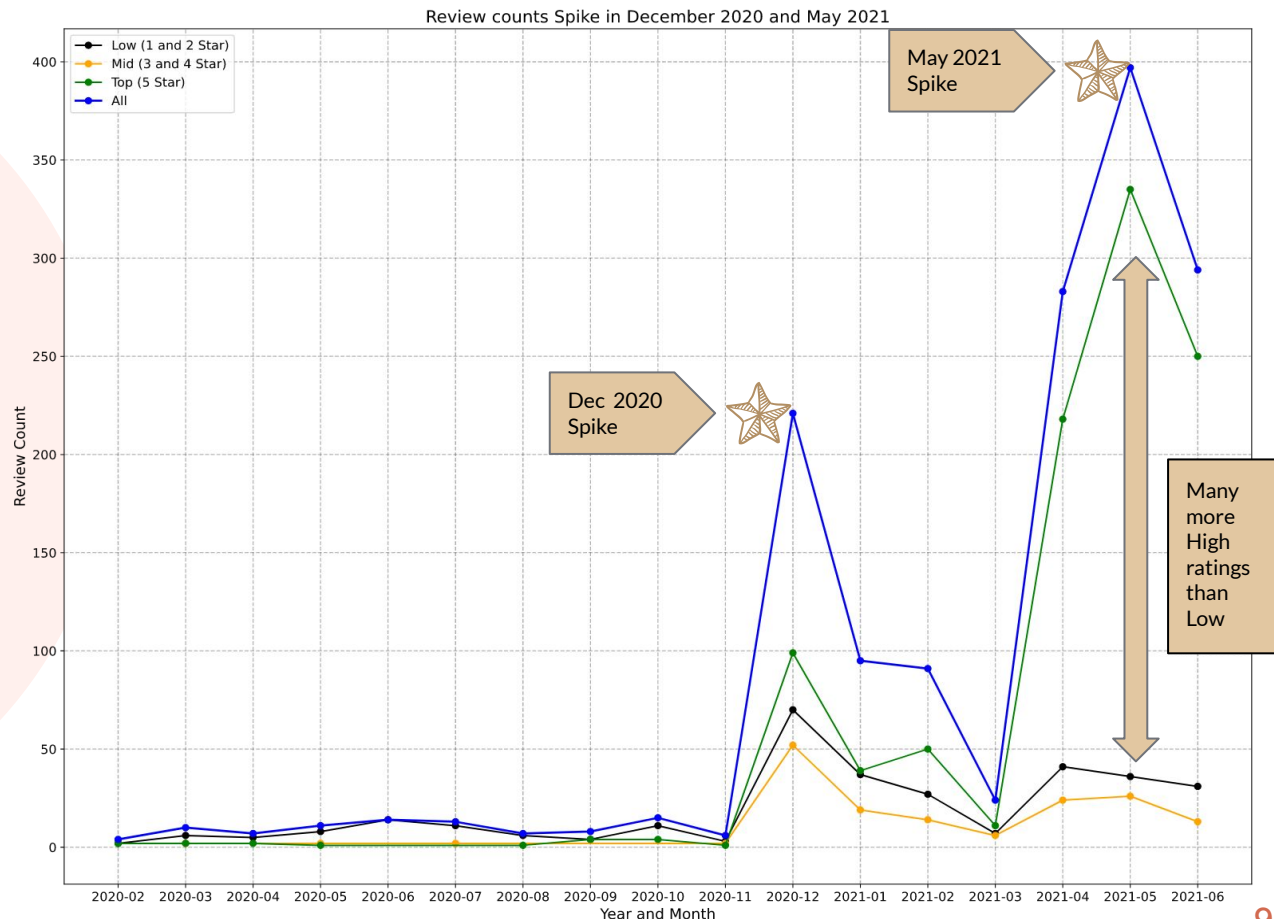
British Reviews By Star Rating



- ✓ US reviews had a higher percentage of 5-star reviews than British reviews
- ✓ British reviews had a higher percentage of 1-star reviews than the US reviews

Review Spikes

- ✓ Flatline until Dec 2020
- ✓ Decline then another, larger spike in May 2021
- ✓ Gap between High and Low review counts **widens** in April 2021



Observations and Questions

Dec 2020 Spike

Increased to ~220 reviews

Internet research reveals a 15% discount on the Elvie Pump was offered in September 2020 and the Elvie Curve and Elvie Catch products were launched in October. Related to the increase in reviews?

Where any marketing campaigns launched during this time? Where processes or policies changed to improve customer experience?

May 2021 Spike

Increased to ~400 reviews.

Gap between Top (5 star) and Low (2-1 star) reviews widens dramatically in April.

Internet research reveals a 15% discount on the Elvie Pump was offered in March 2021. Related to increased reviews?

Where any marketing campaigns launched during this time? Where processes or policies changed to improve customer experience?



[illegible]

- ✓ Positive “happy”, “easy”, “love”) and negative (“issue”, “stopped working”) words/terms
- ✓ "pump" product mentioned
- ✓ Multiple, positive Customer Service mentions with emphasis on issue resolution

Frequently Used Words in 4-3 Star Reviews



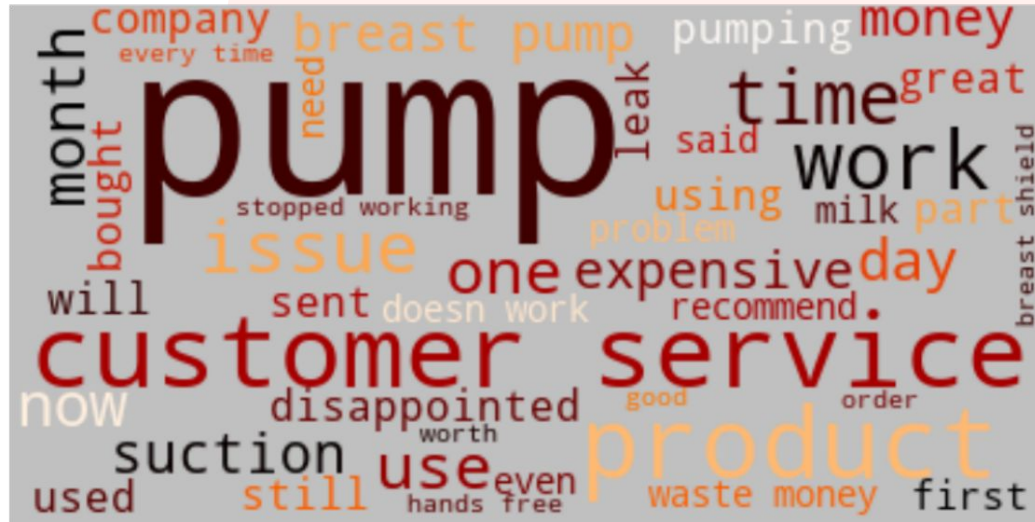
- ✓ Positive (“great”, “love”, “good”) and negative (“issue”, “stopped working”, “problem”) words/terms appear
- ✓ “pump” and “pelvic floor” products mentioned
- ✓ Mainly positive but reviewers had fewer positive adjectives for customer service

Most Frequently Used Words in 1-2 Star Reviews



A word cloud visualization of frequently used words in 1-2 star reviews for breast pumps. The words are arranged in a circular pattern, with the most prominent words in the center. The words include: pump, time, work, service, product, issue, money, great, leak, said, using, milk, part, breast shield, expensive, day, recommend, doesn't work, disappointed, worth, use, even, waste, money, first, still, hands free, good, order, sent, one, problem, stopped working, need, and breast pump. The words are in various colors (red, orange, yellow, green, blue, purple) and sizes, indicating their frequency of use.

- ✓ Strongly negative words/terms: "disappointed", "not working"
- ✓ "pump" and "breast shield" prominently mentioned
- ✓ Product quality concerns: "leak", "not working", "waste money", "first"



- ✓ Strongly negative words/terms: “disappointed”, “stopped working”, “waste money”
- ✓ “pump” and “breast shield” products mentioned
- ✓ Product cost may be a concern as well as product performance

Recommendations

- ✓ Perform more detailed analysis of review text to include topic modeling and sentiment analysis using tools like VADER or TextBlob
- ✓ Research internal data for potential influences for the rating "spikes" (ex: product sales history, marketing campaign rollouts, and customer service records)
- ✓ Reduce bias by combining this dataset with additional customer review datasets sourced from other channels (ex: other review websites and direct-to-customer surveys)



Thanks!

Any questions?

You can find me at:

- ✓ leahspope7@gmail.com
- ✓ <https://www.linkedin.com/in/leahspope>

Credits

Special thanks to all the people who made and released these awesome resources for free:

- ✓ [Fresh Folk](#) illustrations by [Leni Kauffman](#)
- ✓ Presentation template by [SlidesCarnival](#)
- ✓ Photographs by [Unsplash](#)

