



Fitbit Comments Sentiment Analysis

**A Web Scraping and Sentiment
Analysis**

By- Vinit Vasant Bhanushali



Overview

- **Objective:** This project aims to analyze Fitbit product reviews to extract customer sentiment and identify key areas for improvement.
- **Significance:**
 - Customer feedback is critical for improving user experience.
 - Sentiment analysis can help Fitbit address pain points and improve satisfaction.
- **Overview:** Natural Language Processing (NLP) is used as a tool for extracting meaningful insights from textual data.



Data Collection

- Used Selenium for web scraping to collect reviews from Fitbit's community product pages.
- Data was extracted from Fitbit's community website using Chrome Webdriver.
- 900 comments were extracted

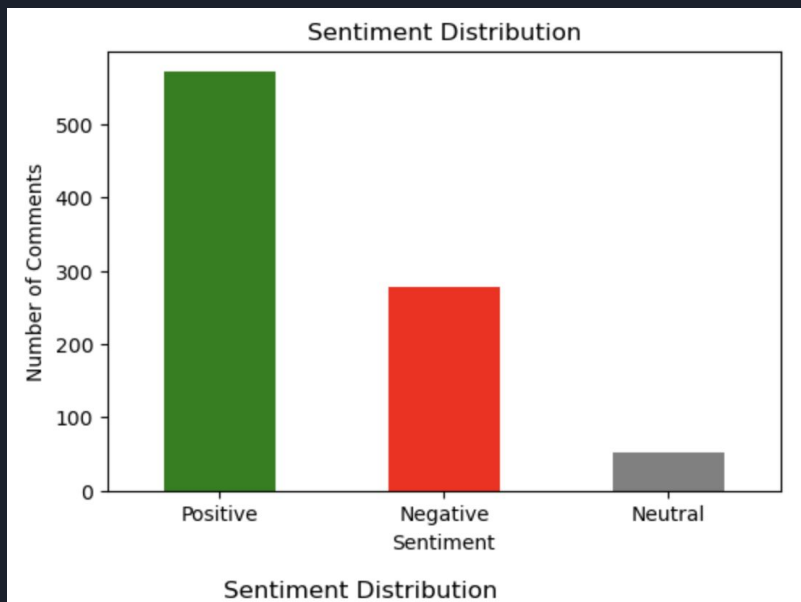


Sentiment Analysis

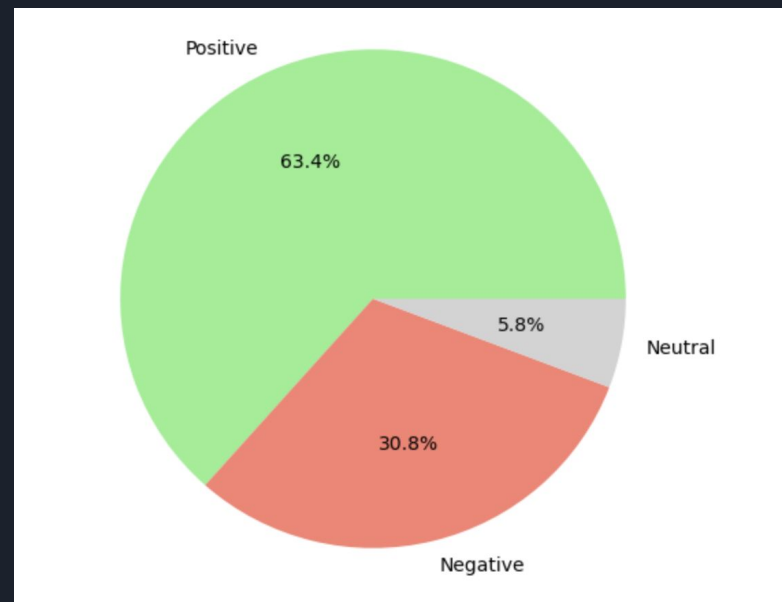
- **Preprocessing Steps:**
 - Cleaning: Remove special characters, stopwords, etc.
 - Tokenization: Break text into words or sentences.
 - Lemmatization: Convert words to their base forms.
- **Sentiment Classification:**
 - TextBlob assigns polarity scores (positive, negative, neutral) between -1 and 1 by analyzing the text for positive and negative words, leveraging an internal lexicon. For example, words like "great" contribute positively, while words like "poor" contribute negatively. A neutral score is assigned when the sentiment is balanced.
- **Tools:** Python libraries used include Pandas, NLTK, and TextBlob.

Visualization

Bar chart:

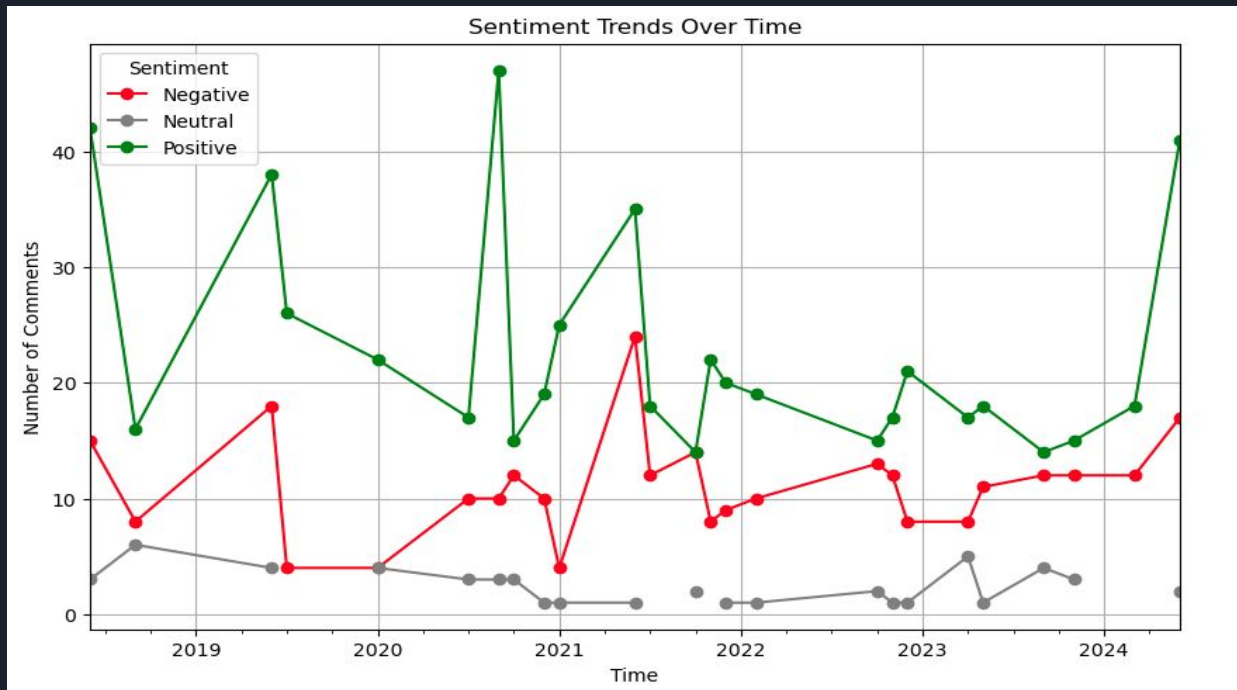


Pie chart:



Visualization

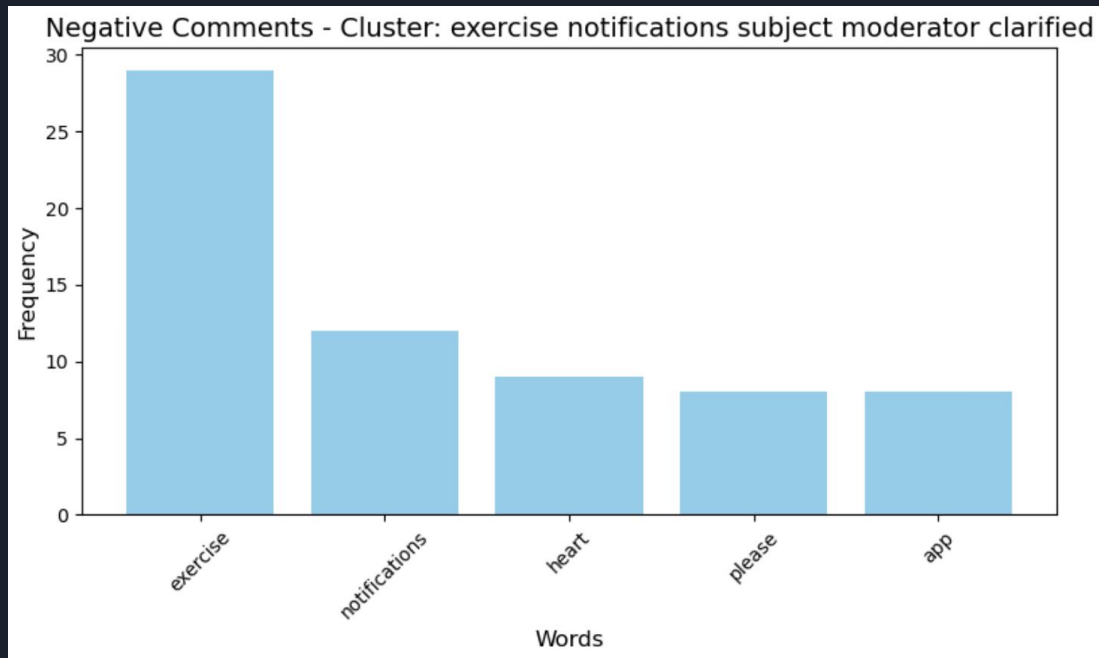
Trend over time:



Negative Comments Analysis

Example Comments:

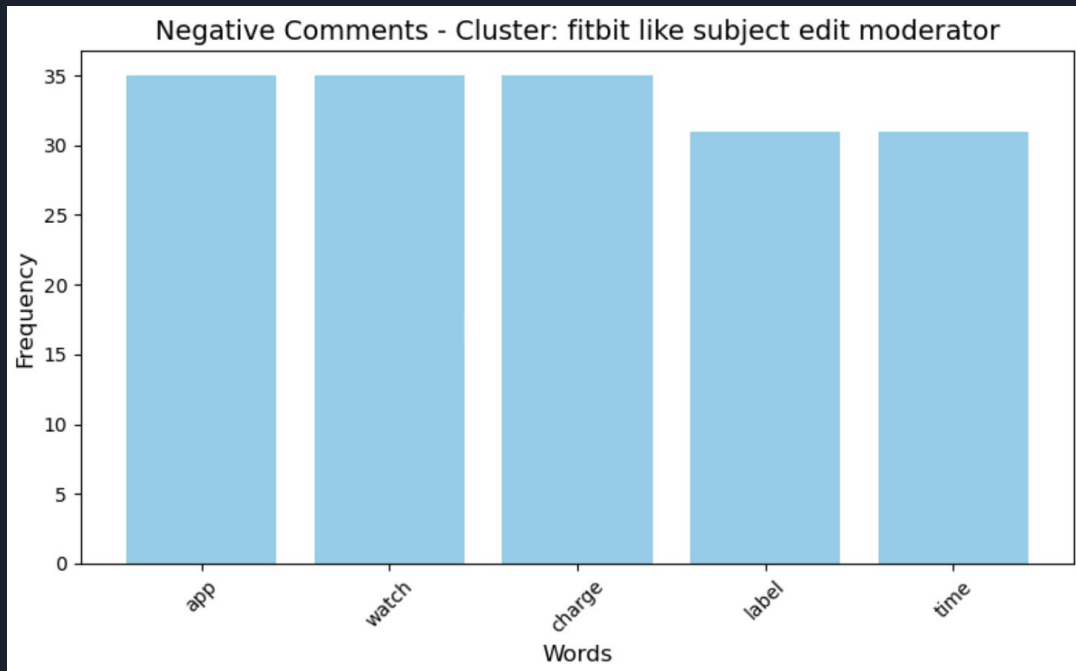
- When you are walking and then you stop walking, Fitbit should not wait 15 min to send a reminder to end the exercise. At the very least, it should go on pause. What could possibly be the reason to leave such a gap? LizzyFitbit: PLEASE DO NOT CHANGE MY TITLE! Your "edits" make my posts not come up in searches.
- The device should track oxygen saturation during exercise, both for auto-detected exercise and manually tracked exercise activities. Moderator Edit: Clarified subject and updated label
- Is anyone looking into this problem of exercise days disappearing?



Negative Comments Analysis

Example Comments:

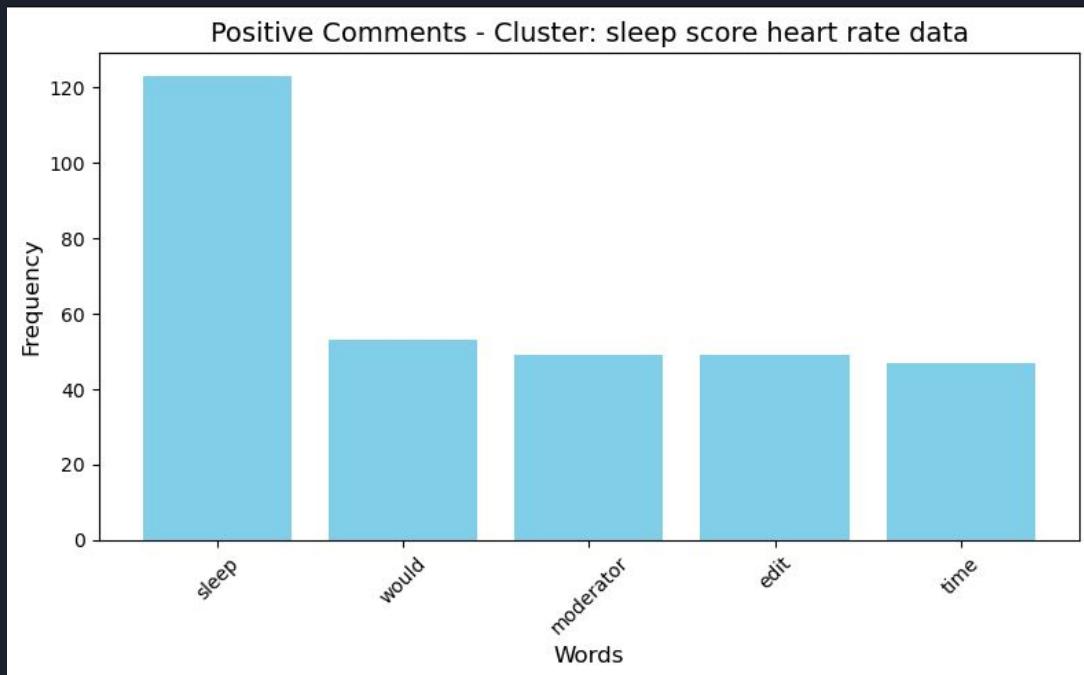
- Given that the community has been asking for this for 10 years, and now you will no longer have access to "create a meal" via the web version of the dashboard, it's making it harder for me to a fan and supporter of Fitbit, and I've been a fan for more than a decade. Please have the app have at least the same features as the web version (e.g., create a meal), but since it doesn't already exist, add the feature for # of servings to make our lives easier please!
Moderator Edit: Clarified subject and updated label
- Fitbit sometimes does not capture all the the sleep info for the night. On the dashboard one could manually add the time and it would self correct. No longer possible. As others have commented, I missed the dashboard the the ability to view on a larger screen. Moderator Edit: Clarified subject
- I always look at my lifetime steps. At one time I thought of switching to another device. But I would have to start over with lifetime steps where I went.



Positive Comments Analysis

Example Comments:

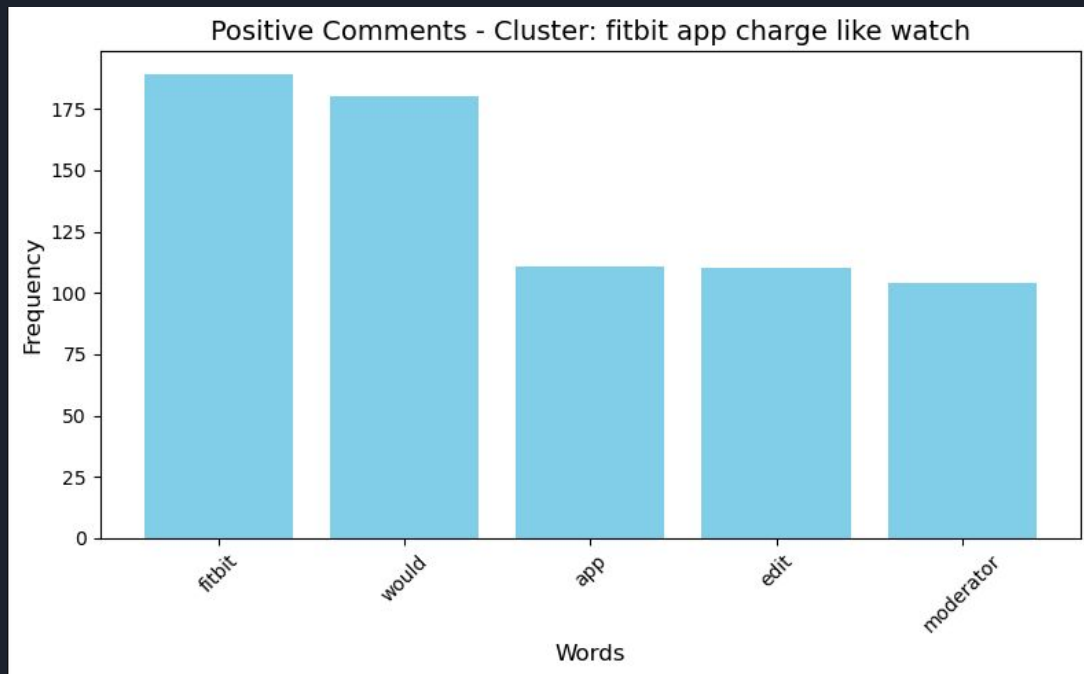
- When I had my Charge 5 and the first few weeks of having my Charge 6 the app would give me a sleep summary page with, Sleep Stages, Time in each stage, Oxygen levels and Bedtime and wakeup all on a handy page. Since a recent update I now seem to get a much more basic three tiles and I have to open each one and look through for all the information.
- With the updated sleep UI, I'm missing the amount in each segment. I can hover and see I was in REM from 3:43a - 4:09a, but I have to manually calculate that it was 26 minutes of REM sleep during that time. Previous UI would show that 26 mins. It would be great if the segment time was next to the actual time of night. Moderator Edit: Clarified subject
- I used to be able to see the history of sleep hours and scores in a scrolling format, where EVERY DAY was listed on the page, and I could scroll back through all of my recorded sleep. Now, I can only see daily sleep for just the current week, or sleep averages by week/month (the previous format gave weekly averages, but also all daily data). Moderator Edit: Clarified subject and updated label



Positive Comments Analysis

Example Comments:

- As an older user, my eyesight and hand eye coordination are poor. So, I prefer the website dashboard on my PC. That dashboard keeps directing us to the mobile app. Please assure you will continue maintaining both as I cannot rely solely on the mobile app. Please consider all of your customers when providing tools. Many thanks!
- The latest app upgrade removed the ability to edit activity information (again). This impacts app generated activities & manually added activities. Since dashboard access has also been removed, there is no way to change/update an activity start/end date/time, duration, distance, energy burn, name (standard or custom), & active/impact minutes/zones.
- Since the removal of the web based dashboard it is no longer possible to create Custom Workouts or to access most of the previously available database workouts. Please make it possible in the app to create custom workouts so that users can track a wide range of activities (e.g. Badminton, Pickle Ball, Roller blading, etc)





Conclusion

- **Sentiment Overview:** While many users appreciate Fitbit's core features, such as tracking accuracy and user interface, negative feedback highlights critical issues. Common concerns include delayed notifications, missing features from the web dashboard, and incomplete sleep tracking.
- **Actionable Insights:** Prioritize addressing long-standing user requests, such as integrating web dashboard features into the app, improving exercise and sleep tracking accuracy, and enhancing overall usability to retain loyal customers.
- **Customer-Centric Value:** Proactively resolving pain points and introducing requested features can deepen user loyalty, ensuring that Fitbit remains a trusted choice for long-term users and attracts new ones.



Future Work

Potential Extensions:

- Expand analysis to include reviews from platforms like Amazon or social media.
- Use advanced NLP models like BERT or GPT for more nuanced sentiment analysis.

Tech Improvements: Explore automation in scraping and analysis for real-time insights.