BACKGROUND

- **COVID-19 lockdowns and restrictions have impacted anxiety and depression rates**

- **93% increase in anxiety screens from Jan-Sept 2020, compared to total number in 2019**

- **62% increase in depression screens**

- **Difficult for patients to seek assistance from health professionals face-to-face**

- **Mobile apps can provide an alternative solution**

BUSINESS PROBLEM

- The mental wellness app market is highly competitive with over 300K health apps available worldwide

- Evaluate what users enjoy or dislike most about mental wellness apps currently on the market

- Develop a strategy to build a new mental wellness app to compete with existing top performers

4 MILLION

FIRST-TIME DOWNLOADS OF TOP 20 MENTAL WELLNESS APPS IN THE U.S. IN APRIL 2020

MARKET WILL REACH $3.3 B VALUE BY 2027 PREDICTED CAGR OF 20.5%

MARKET WATCH

DATA OVERVIEW

- **44,698 total text reviews and ratings obtained from iOS US App Store**

- **Includes reviews written for 31 popular mental wellness apps recommended by multiple blogs**

- **All reviews were written after January 1, 2020**

- **Overall sentiment indicated by rating:**
  - **1-3 Stars: Negative**
  - **4-5 Stars: Positive**

- **Mean average rating across all reviews: 4.15**

Distribution of Ratings for Top 5 Apps
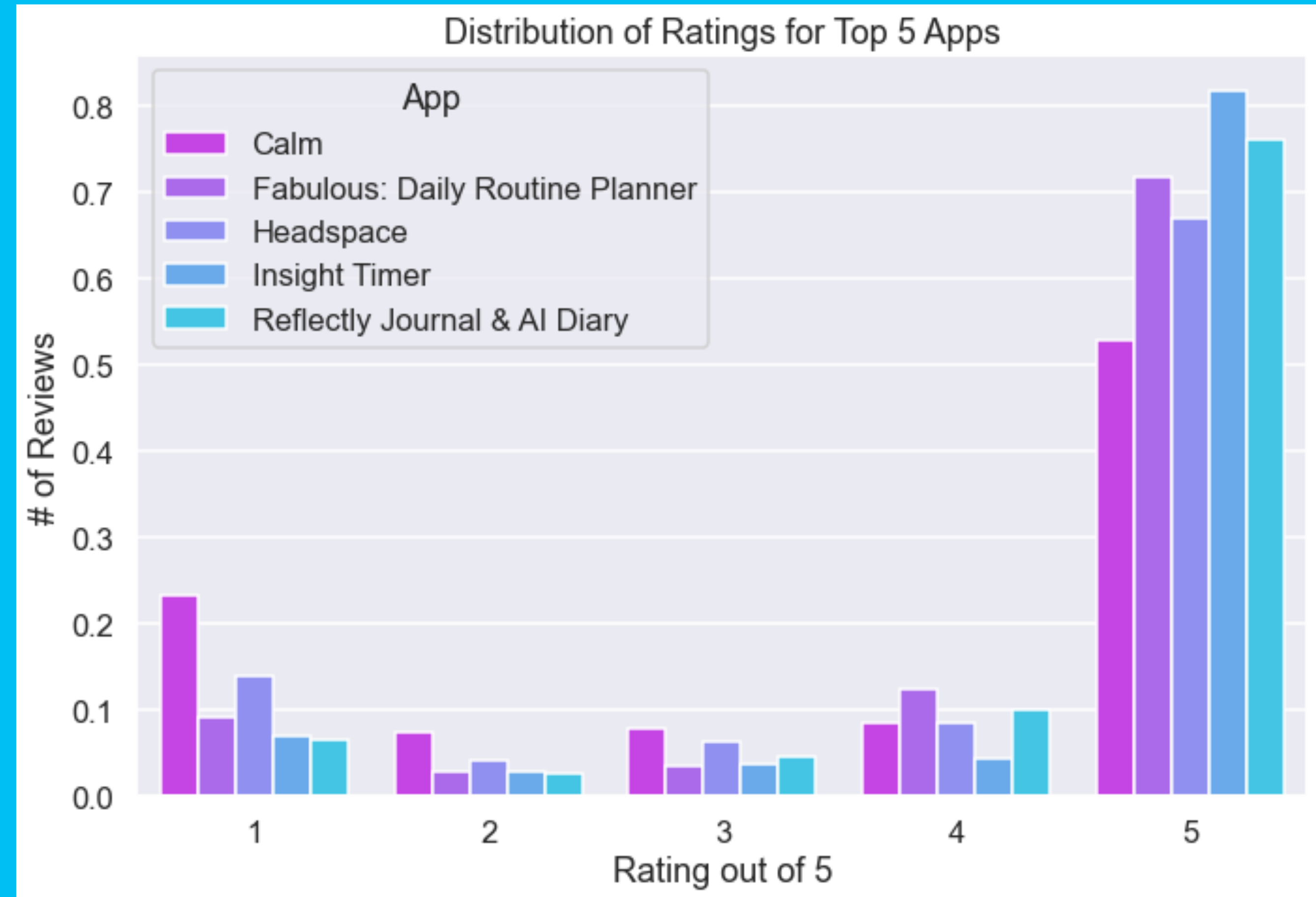
THE MODEL

Document id: 17187
Probability(Positive) = 0.020999261127576607
True class: Negative

Prediction probabilities

Negative 0.98
Positive 0.02

Negative   Positive

nothing
0.06
t
0.06
subscription
0.05
paid
0.04
stopped
0.04
Won
0.03

Text with highlighted words

Won't let me log in. This app was great until it stopped letting me log in. Now I have a subscription I paid for until next year that I can't use.. there is nothing about the error code in the help section. So that's not cool..

Probability(Positive) = 0.9423697140038891
True class: Positive

Prediction probabilities

Negative 0.06
Positive 0.94

Negative   Positive

mind
0.06
trying
0.04
sleeping
0.04
forward
0.03
asleep
0.03
used
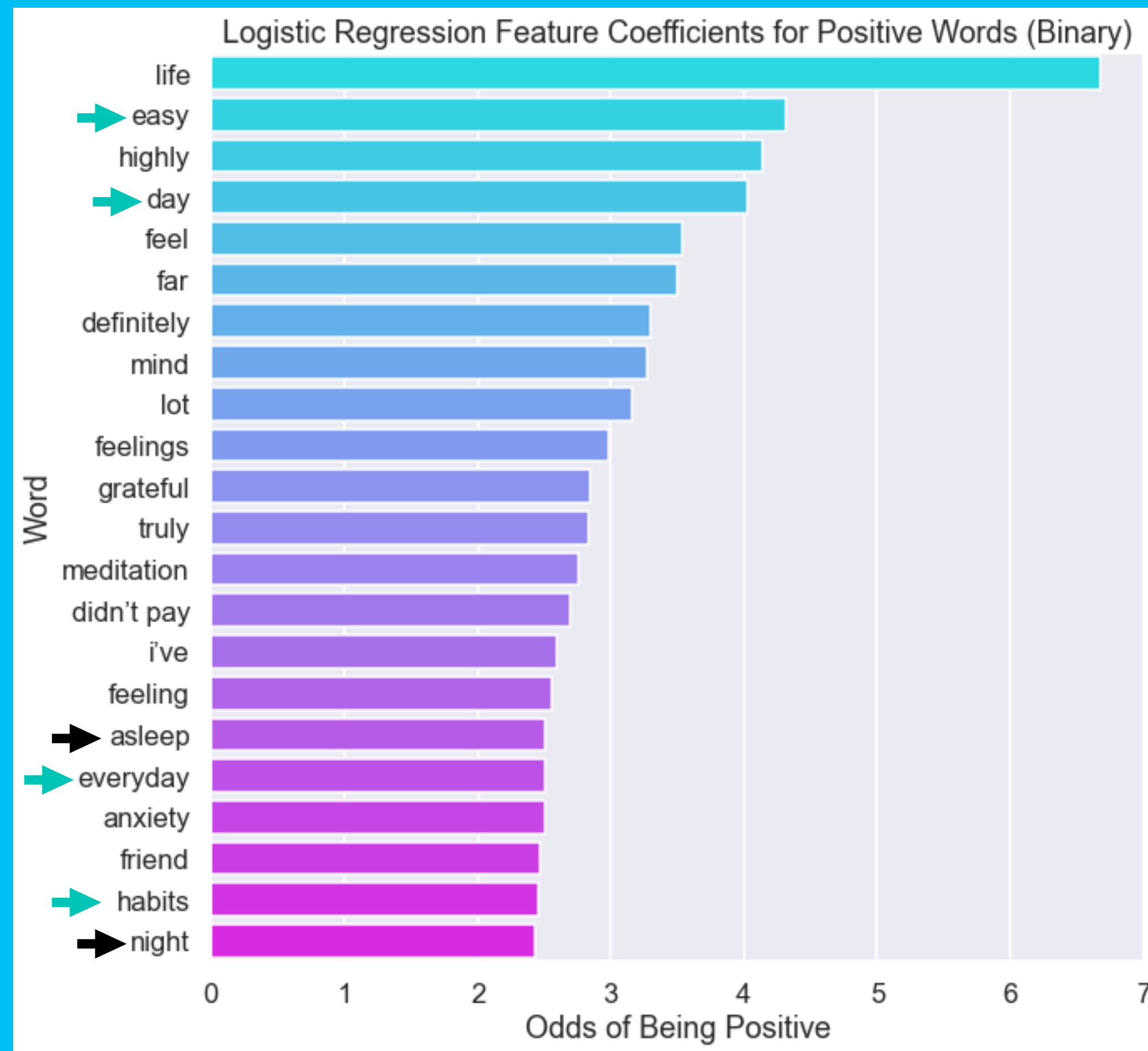
Text with highlighted words

Peaceful. Between chronic neck pain and just plain restlessness, I'm pretty used to not sleeping that great. With Calm, I am sleeping much sounder. Just put on a soundscape and I instantly feel calmer. I also struggle with my mind racing when I'm trying to fall asleep. I started listening to meditations before my sound scape... it's been helping my mind calm down! Love this app! I look forward to going to sleep so I can relax and be peaceful!

Confusion Matrix

	Negative	Positive
Negative	0.86	0.14
Positive	0.096	0.9
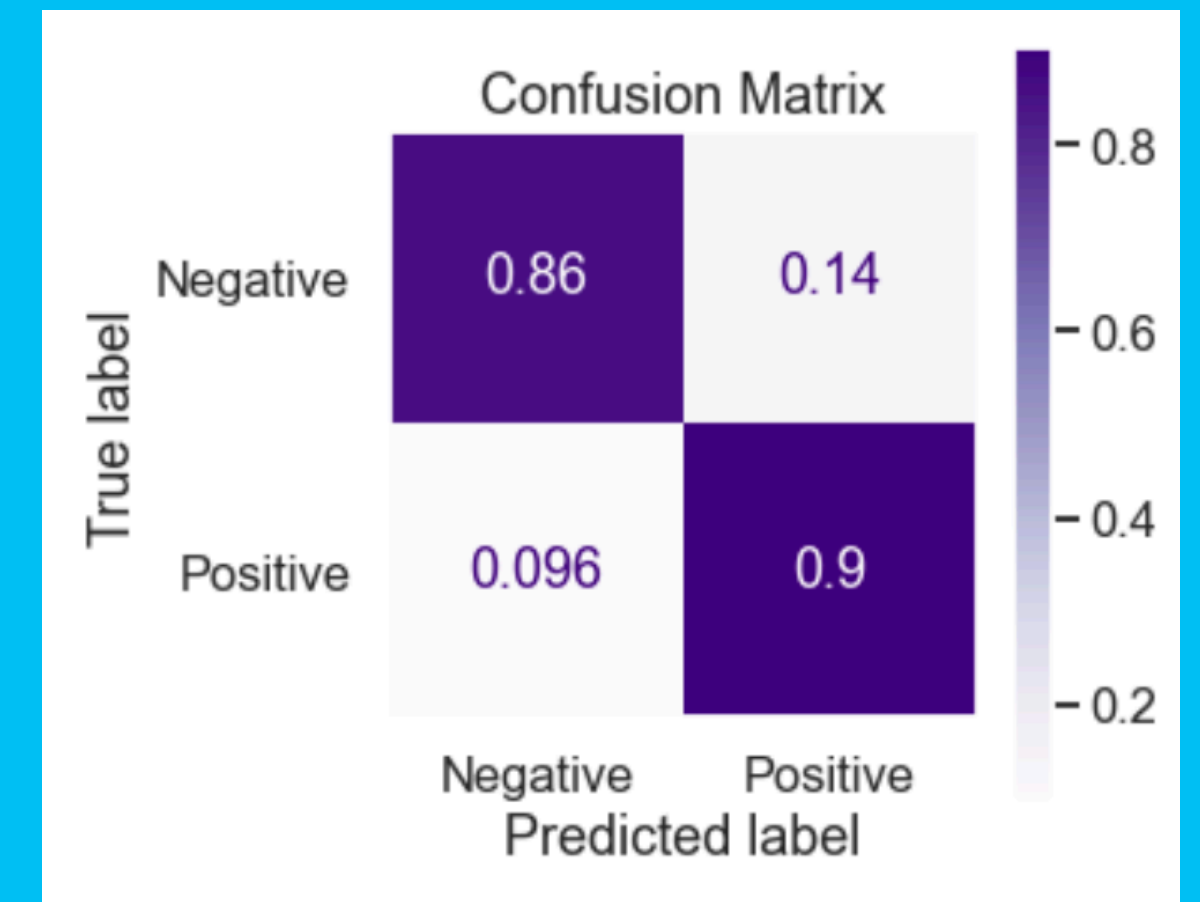
- 89% overall accuracy
- 86% of negative reviews predicted correctly
- 90% of positive reviews predicted correctly

LOGISTIC REGRESSION

WHAT DID USERS LIKE?

Most frequently occurring words found in positive (4-5 star) reviews

POSITIVE SENTIMENT

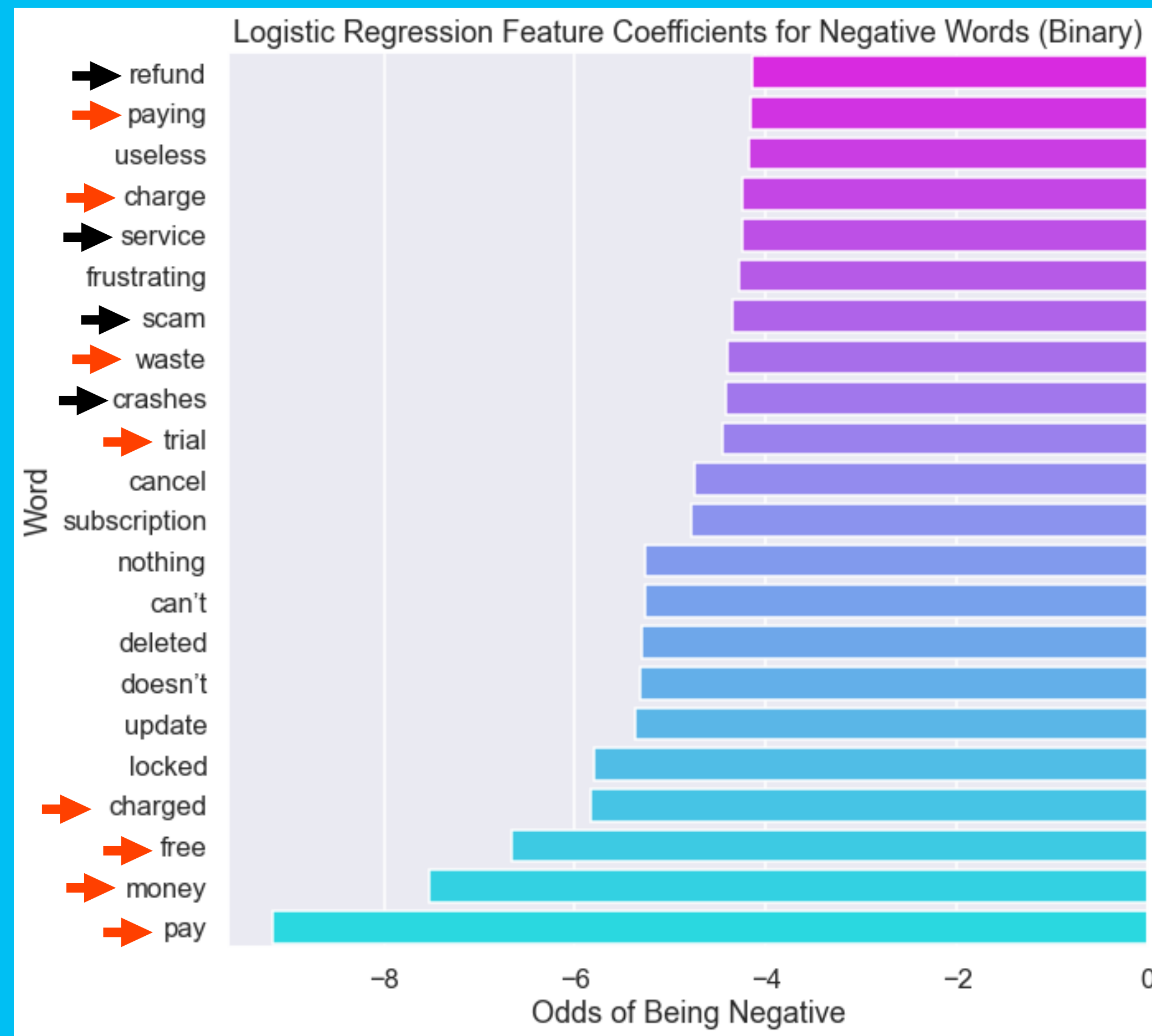Logistic Regression Feature Coefficients for Positive Words (Binary)

→ Words related to ease of use and daily content
→ Words related to sleeping aid functionality

POSITIVE SENTIMENT

WHAT DID USERS DISLIKE?

Most frequently occurring words found in negative (1-3 star) reviews

NEGATIVE SENTIMENT

Logistic Regression Feature Coefficients for Negative Words (Binary)

Words related to payment and costs

Words related to customer support issues

NEGATIVE SENTIMENT

FINDINGS

- Topics correlated with negative sentiment:
  - Payment and costs
  - Technical and customer support
- Topics correlated with positive sentiment:
  - Ease of use
  - Sleep-aid functionality

FINAL RECOMMENDATIONS

- **Thoroughly research pricing scheme and be transparent about free vs premium features**

- **Thoroughly train customer support team on how to diagnose and address any technical or payment-related complaints**

- **Develop app interface to make it aesthetically pleasing and ease to use**

- **Invest in R&D of sleep-aid functionality**

LIMITATIONS AND FURTHER ANALYSIS

- **Obtain and analyze pricing data to identify optimal pricing scheme**

- **Include Google Play Store app reviews**

- **Implement Latent Dirichlet Allocation topic modeling to extract further insights on what topics are considered negative vs positive**

THANK YOU!