Yelp Coffee Shops

Group 3

Introduction & Goals

Introduction

In this analysis, we focus on figuring out what makes some coffee shops more attractive than its competitor, by using data from Yelp which contains information about coffee shops across the U.S. and ratings and comments they receive from the customers.

Our goals

- Provide useful analytics from the datasets.
- Build a Shiny app that makes the analytics easier to understand.
- Propose recommendations that help improve coffee shops' ratings on Yelp.

Data Cleaning

- Convert all the raw data to one data table
- Remove unnecessary columns
- Filter out all non-coffee businesses

After these steps, we found the remaining data are mostly in Pennsylvania(PA), so we narrow down our analysis to locations in PA.

Data Analysis

- **Sentiment Analysis**
  - Gave a sentiment score to every review
  - Categorized the scores into positive, neutral, and negative
- **Positive vs. Negative comparison**
  - Found topics and ideas that are more often referenced in positively scored reviews
    - Repeat the process for negatively scored reviews
  - Extract those top ideas to determine the prominent factors behind positive/negative sentiments

Key Findings

Average review sentiment is a good predictor for location star rating.

- Expected increase of 1.4 stars for every .1 increase in average sentiment rating
- Adjusted R^2 shows that 70% of variation in ratings is explained by the average sentiment score

Avg Sentiment vs. Business Star Rating
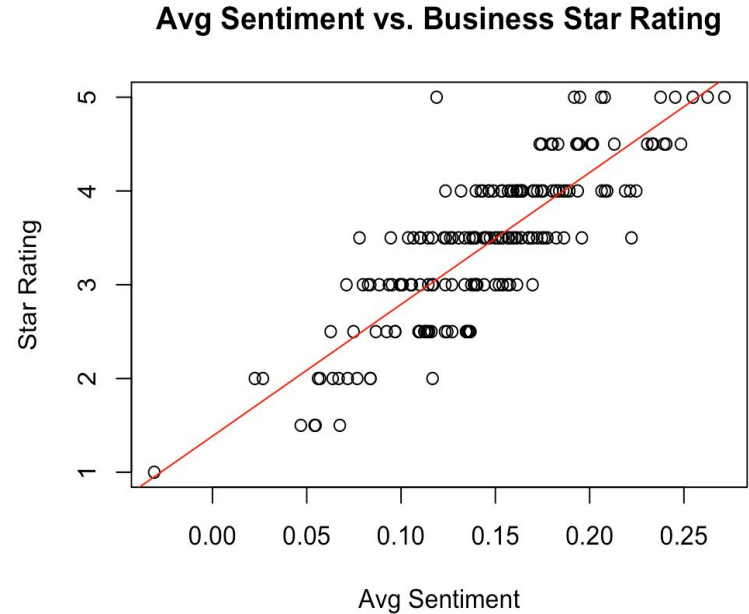
Key Findings

Minimizing bad reviews has a better effect on raising ratings than getting more positive reviews.

- ○ Locations with higher reviews did not necessarily receive stronger positive reviews
- ○ But they did receive fewer strong negative reviews

Review Sentiment Spread Across Ratings

Key Findings

Good service reduces bad reviews. Added benefits increases good reviews.

- Bad reviews more focus on service issues like customer service, and pre-food reception
- Good reviews take good service as a given and focus more on added benefits like atmosphere and environment

Positives	Positive Frequency	Negatives	Negative Frequency
hot	12	wrong	1
time	10	long	5
favorite	10	rude	1
delicious	9	cold	4
sweet	8	hard	4
friends	8	disappointing	4
fresh	6	bitter	0
cute	4	ill	3
helpful	4	miss	0
cool	3	limited	3

Demonstration of Shiny App

- The app includes a map where we can select coffee shops.
- For each selected coffee shop, the app shows its rating distribution/breakdown as well as its sentiment score.
- Also, the app shows how frequently the top 15 most important positive and negative words appear in their reviews.

Recommendations for Business Methods

- Pay attention to customer reviews, which play an important role in improving coffee shops' ratings.
- Minimizing bad reviews has a better effect on raising ratings than getting more positive reviews.
- Take good service as a basic requirement so as to reduce bad reviews, such as ensuring adequate staffing at peak rush hour times (typically early morning) and early preparation of stocked items.
- Provide added benefits such as a romantic atmosphere and a good environment to increase good reviews.

Thank you!