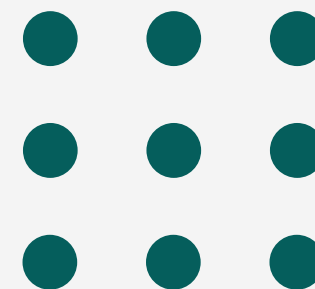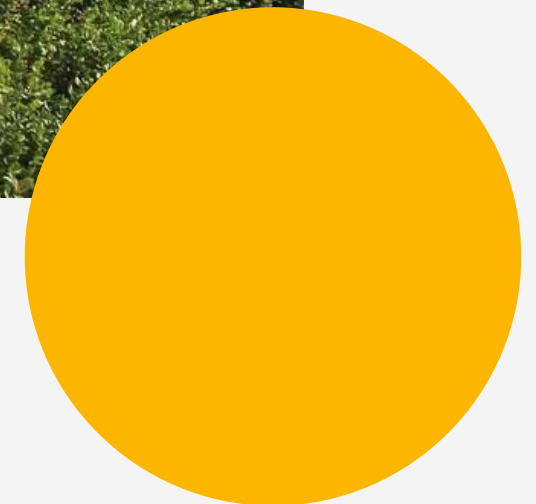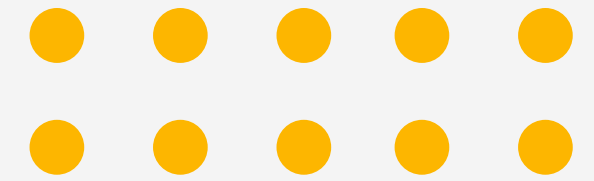# Team Rank Killer

**Joshua Liao,
Ruiying Liu,
Yicheng Li,
Gabor Szabo,
John Liao**

Problem & Methodology

Problem

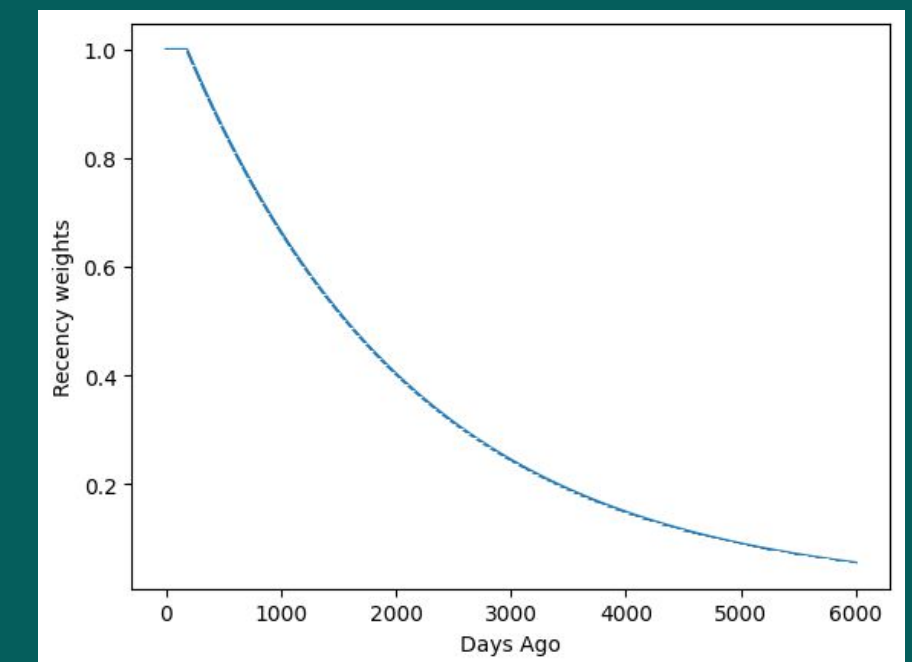- What type of restaurant should a prospective business owner open in Santa Barbara?

Data Sources

- Yelp's Kaggle Dataset (SOCALRUG Version)

Methodology

- Collect relevant data for restaurants
- Create a scoring function
  - Weighted Average
  - Bayesian Average with recency adjustment
- Compare the results
- Rank the categories

Recency Curve

Weight of reviews after 180 days decline exponentially

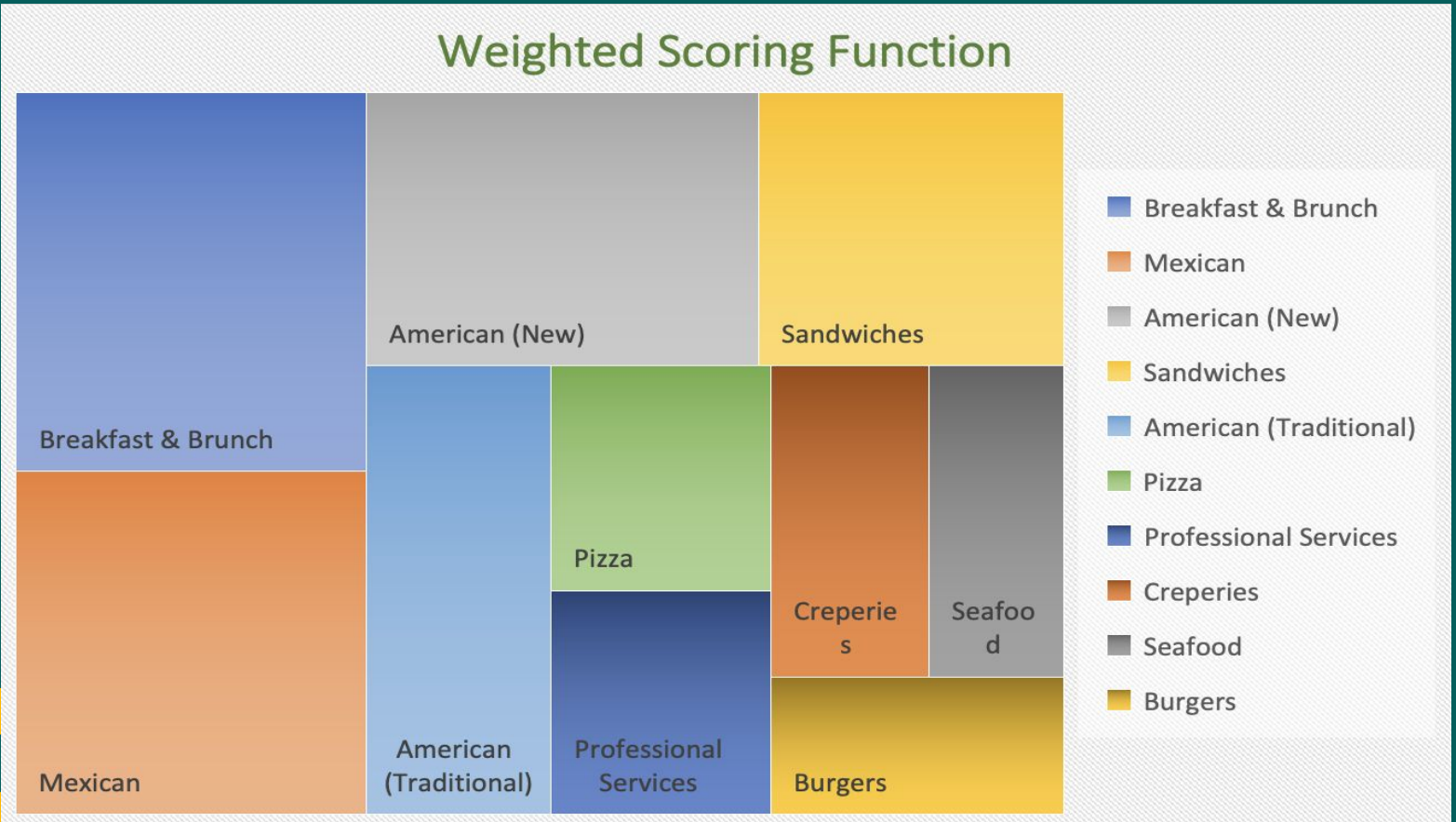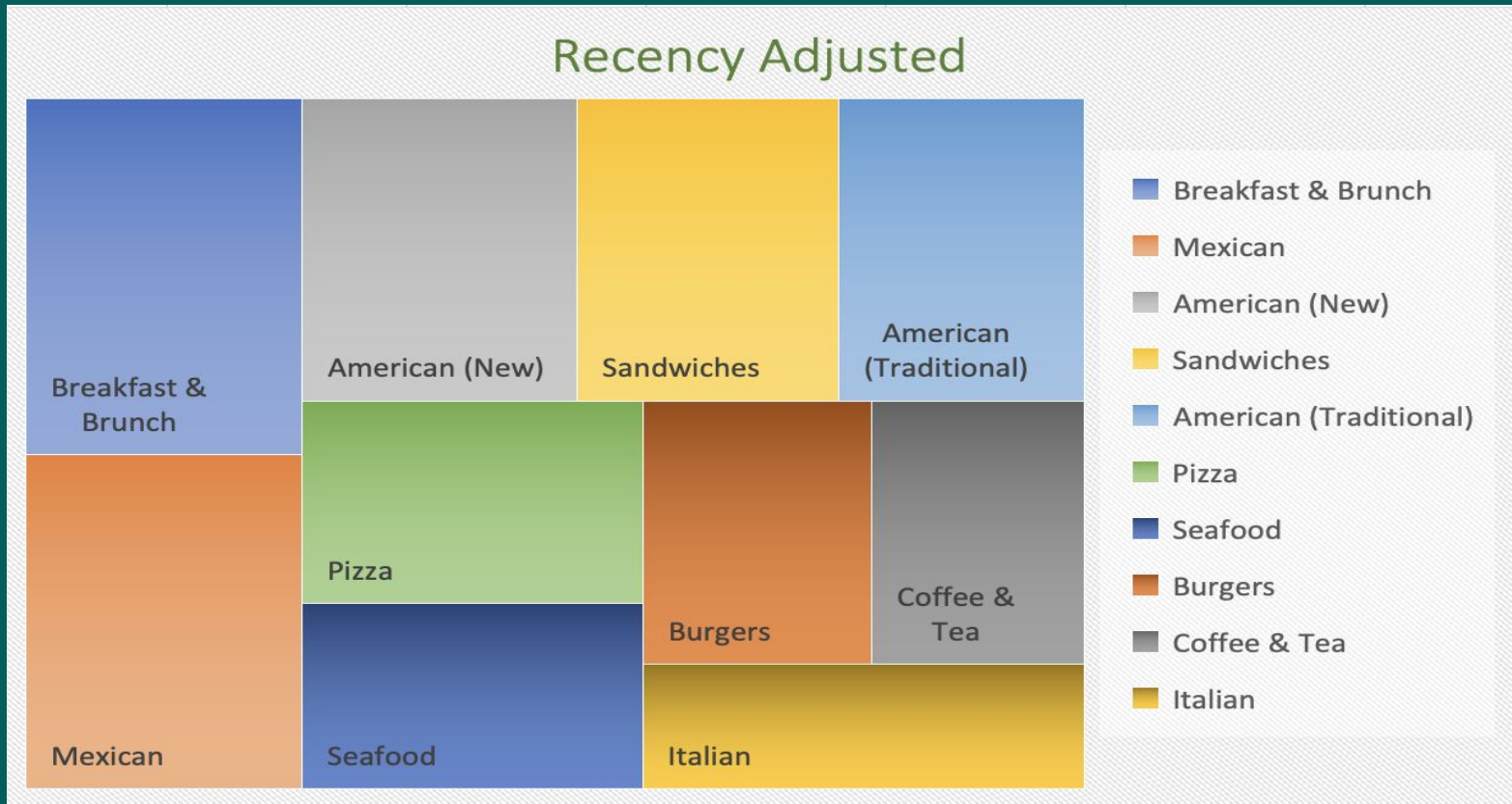## Bayes Average Ranking Formula

$$\text{Bayes Average Ranking} = \frac{\text{Average Star Review} \times \text{Review Count} + C \times m}{\text{Review Count} + C}$$
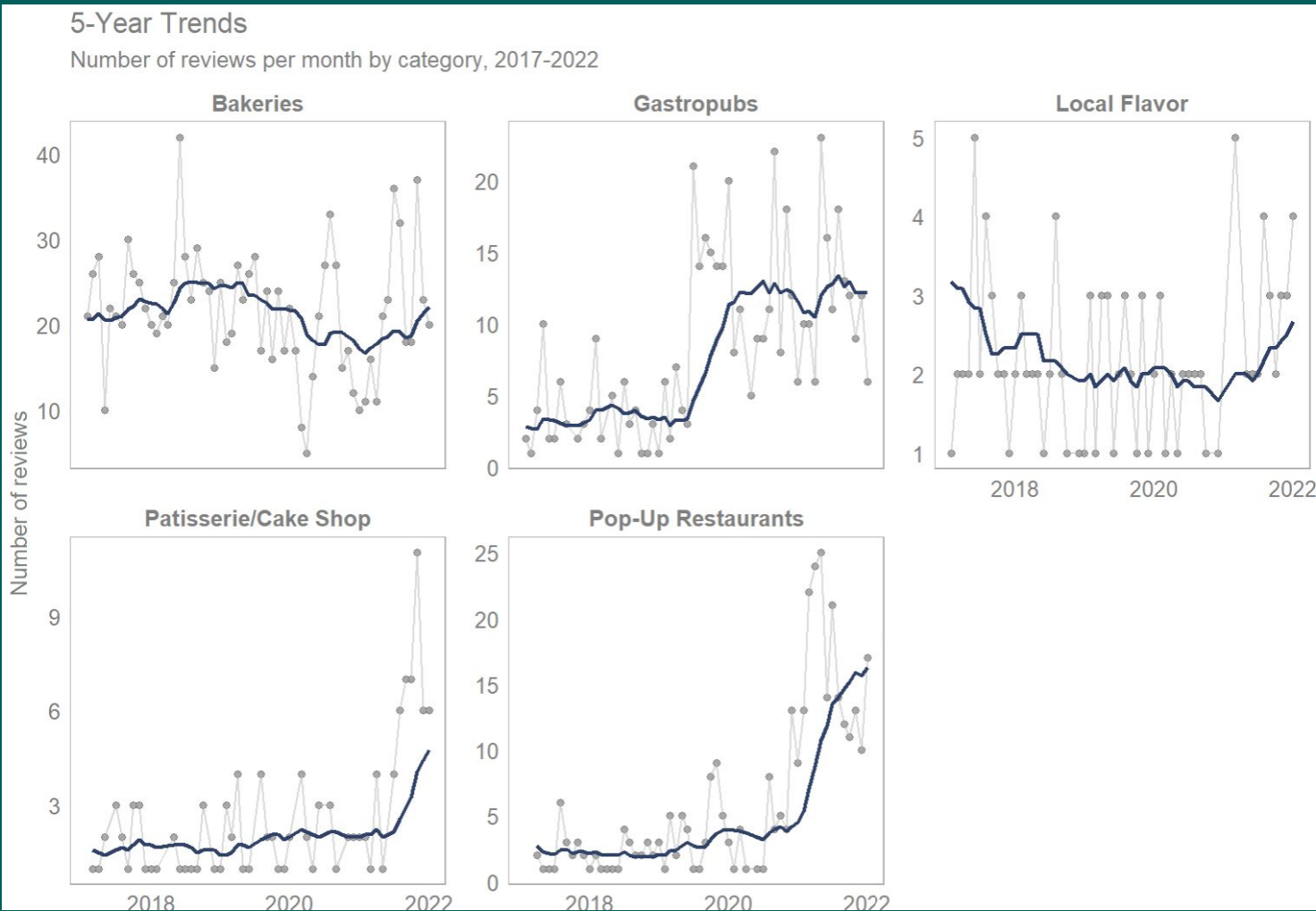
where

- C = Review count at 25 percentile rank
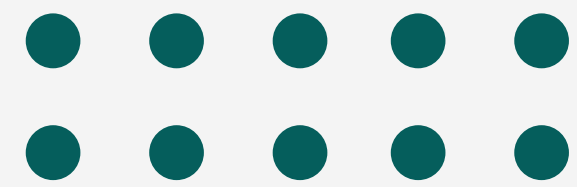- m = Average rating across all restaurant type

Recency Adjusted vs. Weight Adjusted

Growth trend over 5 years

Restaurant Category	Five year trend [%]
Pop-Up Restaurants	628.6%
Patisserie/Cake Shop	217.6%
Gastropubs	83.3%
Local Flavor	71.4%
Bakeries	12.3%

Recommendations

2. Mexican

1. Breakfast and Brunch

With Santa Barbara being a retirement community, Breakfast and Brunch seems to be most popular

3. American (new)