

MSBA FALL 2023



LORD OF THE SLICES: TASTE OF THE PIZZA

Analytics for Unstructured Data – Project Assignment

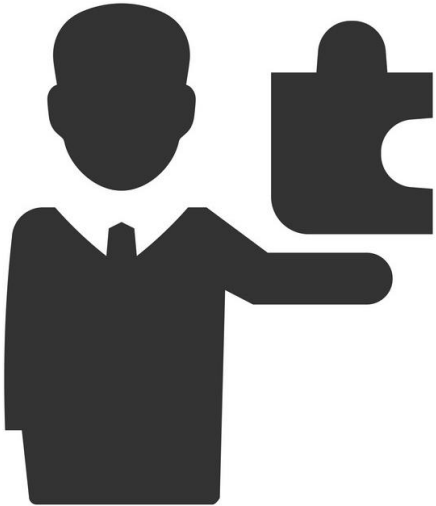
Cohort A, Group 8

The University of Texas at Austin

OUR TEAM

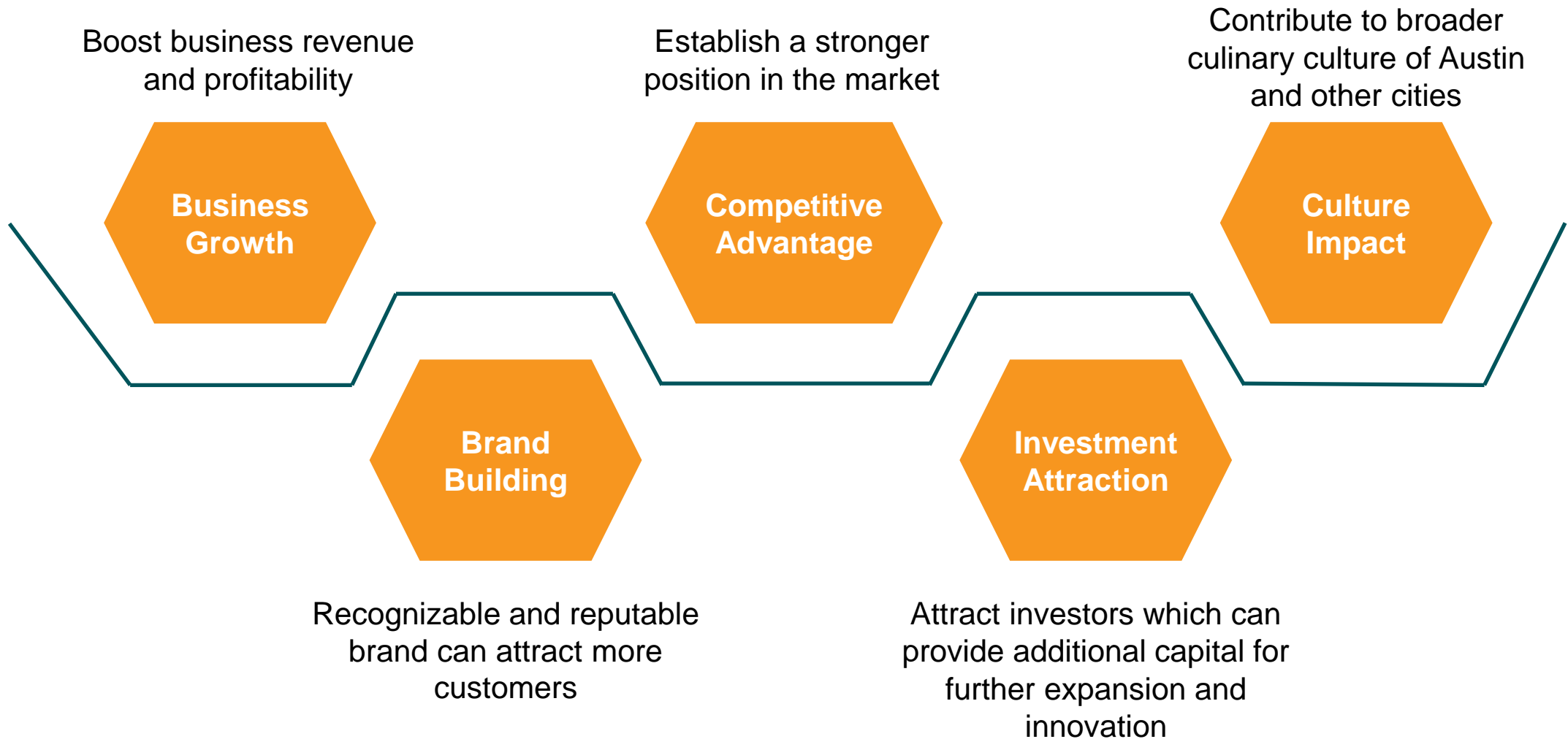
- **Milind Bhatia**
- **Mansi Sharma**
- **Meghavi Singhaniya**
- **Meenakshi Sundaram**
- **Udit Dhand**

Problem Description



We are consultants for a **newly opened** pizzeria "**Slice of Heaven**" in Austin who are looking to **increase their popularity in Austin** and, also **explore opportunities to expand in other regions of US** in the next 2 years.

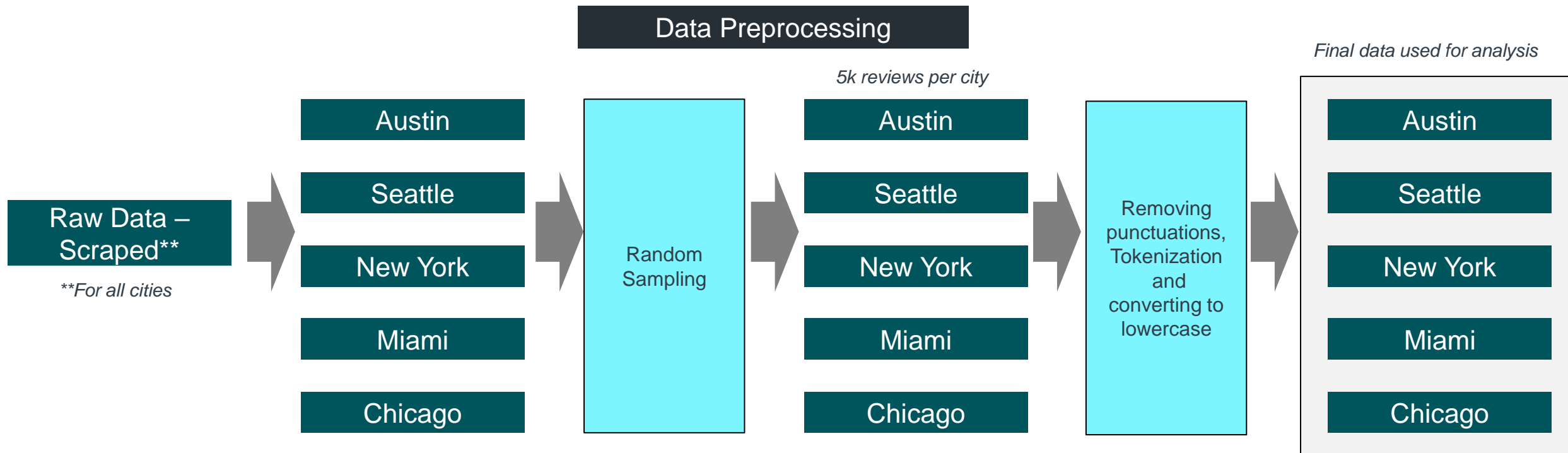
Why the problem statement matters?



We scraped reviews from Yelp* for pizza restaurants from different cities

Our Baseline: Since our clients are based in Austin, we keep it as baseline and try to find similarities & differences between the type of pizza that people like in Austin vs different cities

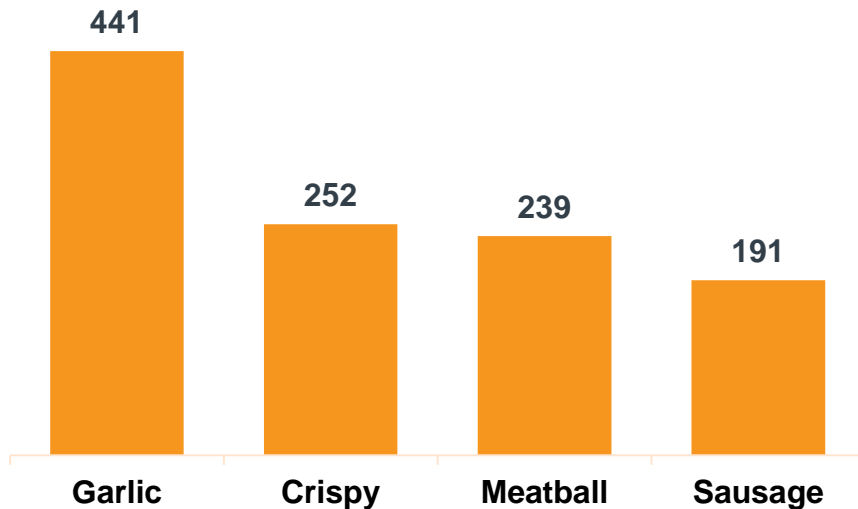
Cities we tested – Chicago, New York, LA, Seattle, Miami (Essentially, we're trying to compare pizza for different regions of the US to have the most representative sample)



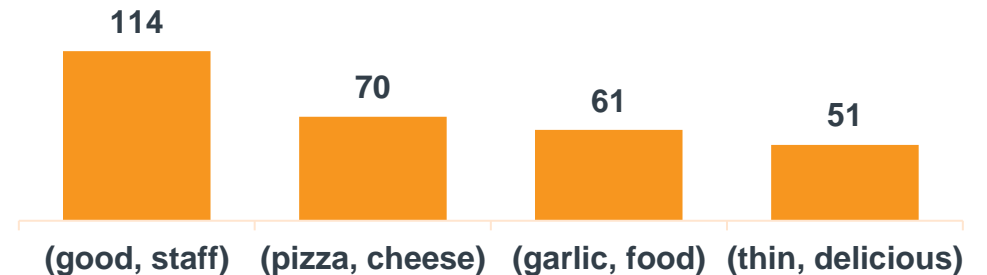
*We have added all the links in speaker notes

Based on our count frequency analysis – Garlic, Pepperoni and Meatball are the top attributes mentioned in Austin

Baseline Count Frequency – Top Pizza Attributes



Baseline Count Frequency – Top Pizza Bigrams



Final Austin Attributes
(to be checked for similarity with different cities)



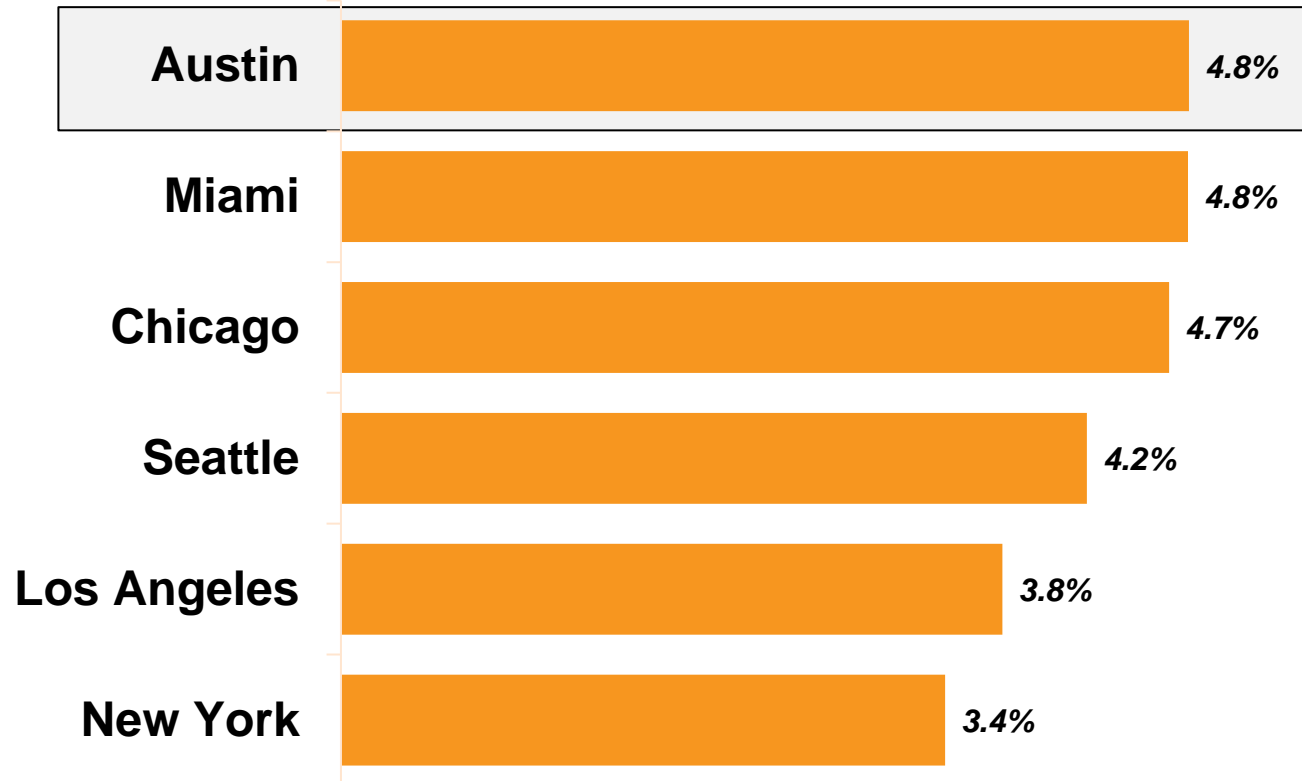
['garlic', 'meatball', 'sausage', 'thin', 'crispy', 'good', 'staff']

We did not include 'pizza' or 'cheese' because these attributes are too mainstream

We calculated similarity between our top attributes in Austin with pizza reviews from different cities

Pizza Similarities – Austin vs Other Cities*

Baseline

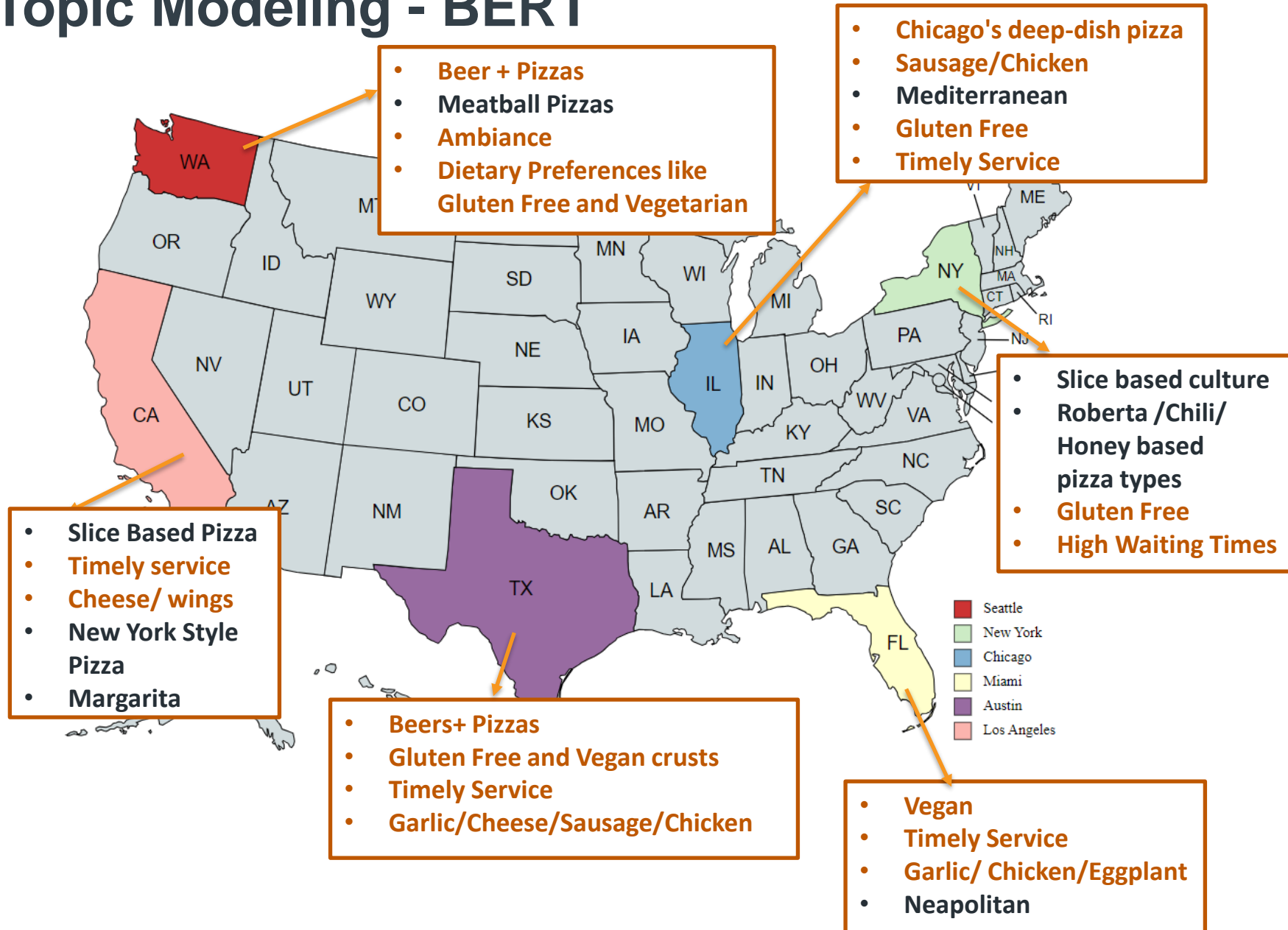


Key Takeaways

1. Despite similarity scores*, our exact matching methodology ensures precision.
2. Miami and Chicago exhibit pizza preferences akin to Austin, potentially shaping our launch strategy, which warrants further investigation through topic modeling.
3. Notably, Miami and Chicago residents seem to favor restaurants with stellar customer service and pizzas adorned with garlic, sausage, and meatballs.
4. Conversely, New York's distinctive pizza culture, evident in our data, highlights a contrast with Austin's pizza preferences.

*Similarity scores are calculated using cosine similarity * sentiment score

Topic Modeling - BERT



Similarity to Austin!

1. Preference for **gluten-free and vegan** options in almost all parts of the country
2. Preference for **garlic and chicken** in Miami and Austin
3. Preference for **sausage** on pizzas in Chicago and Austin
4. Preference for **beer with pizza** in Seattle and Austin

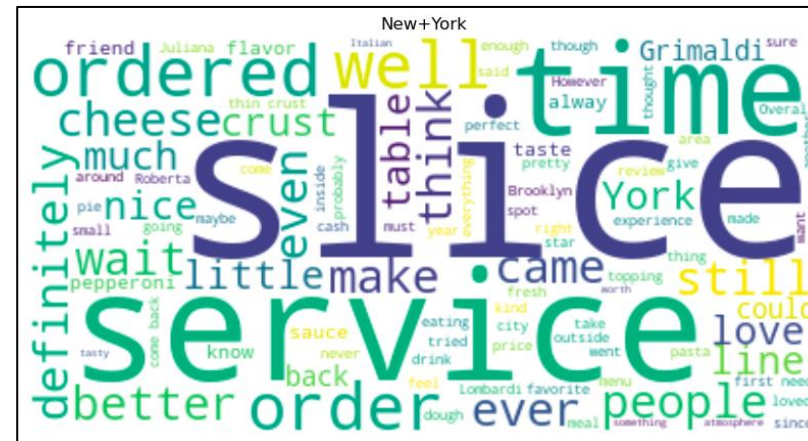
What Stands Out!

1. **Neapolitan** pizzas liked in Miami
2. **Mediterranean** pizzas preferred in Chicago
3. Interestingly, California and New York both have **slice-based pizza culture** paired with peculiar **flavor preferences**
4. Preference for **meatball pizzas** in Seattle

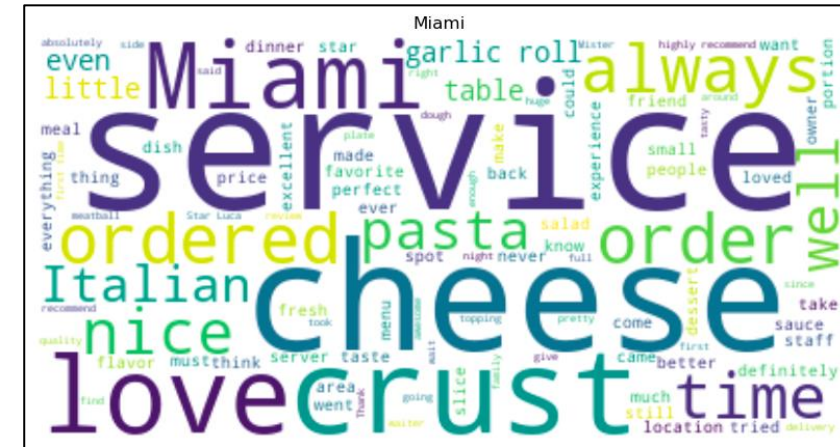
Topic Modeling - Word Cloud



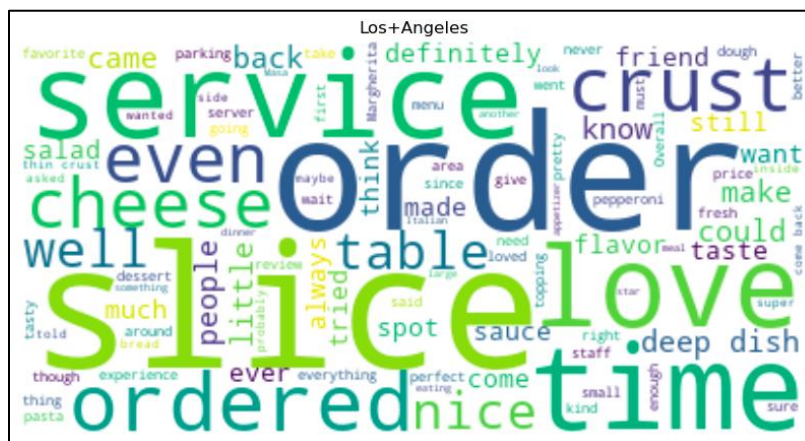
Austin



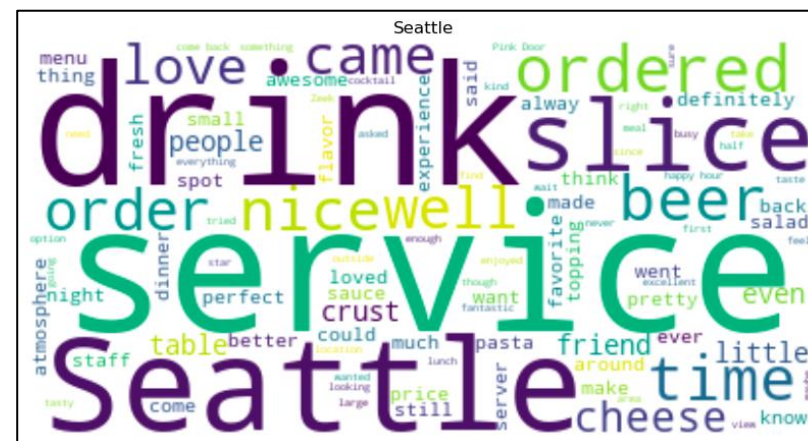
New York



Miami



Los Angeles

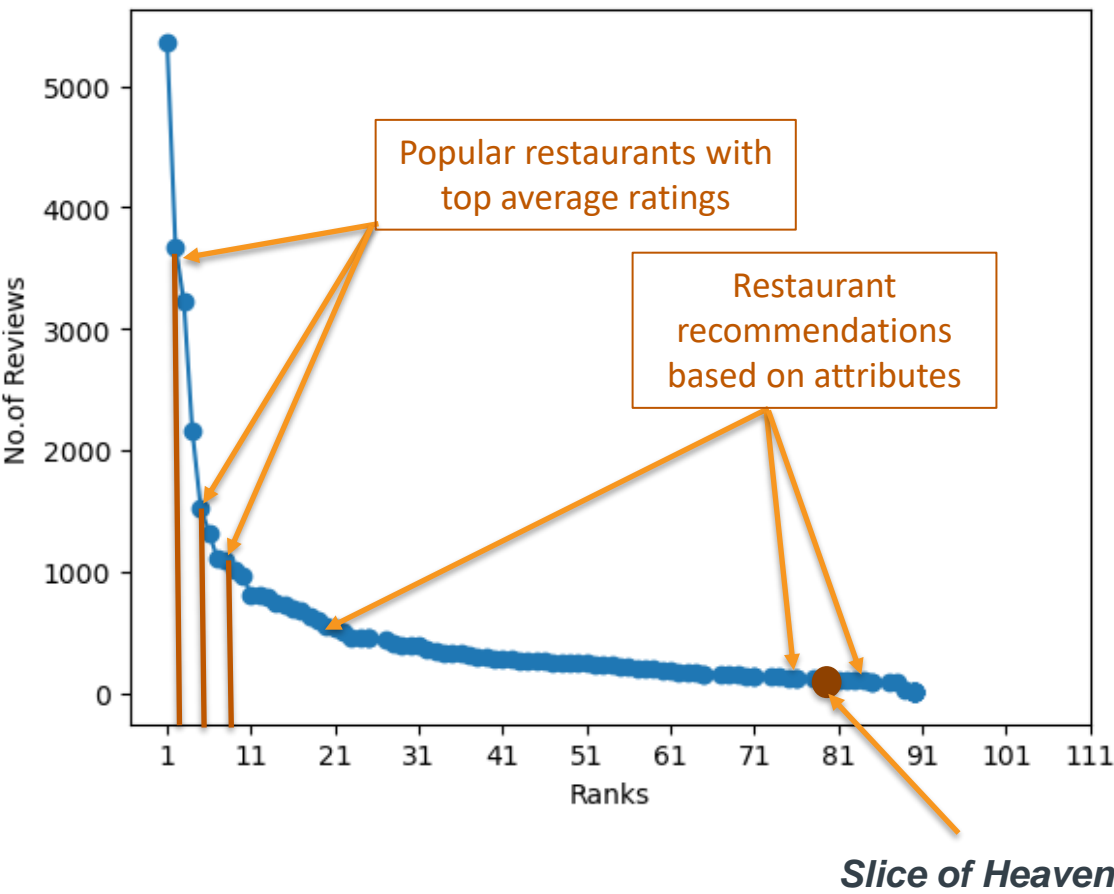


Seattle

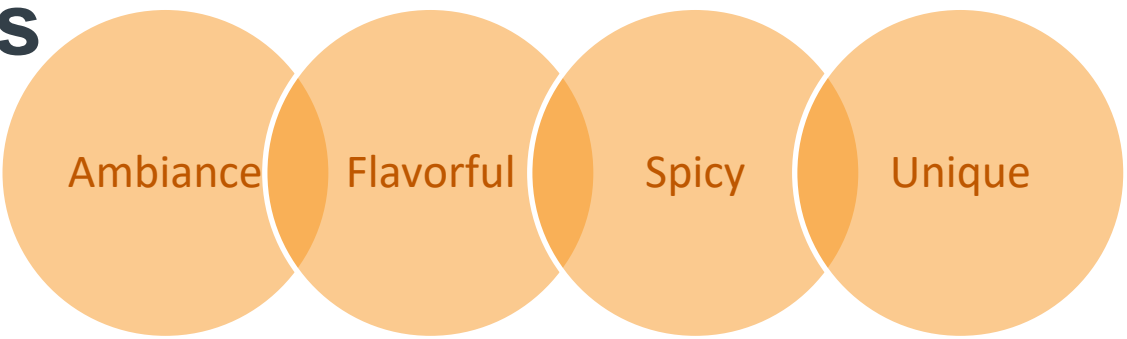


Chicago

Long Tail – Preliminary Analysis



- Little Deli & Pizzeria : 4.5
- Desano Pizzeria : 4.5
- Home Slice Pizza : 4.45
- Food heads : 4.3
- Baldinucci Pizza : 4.7
- Bad City Pies : 4.45



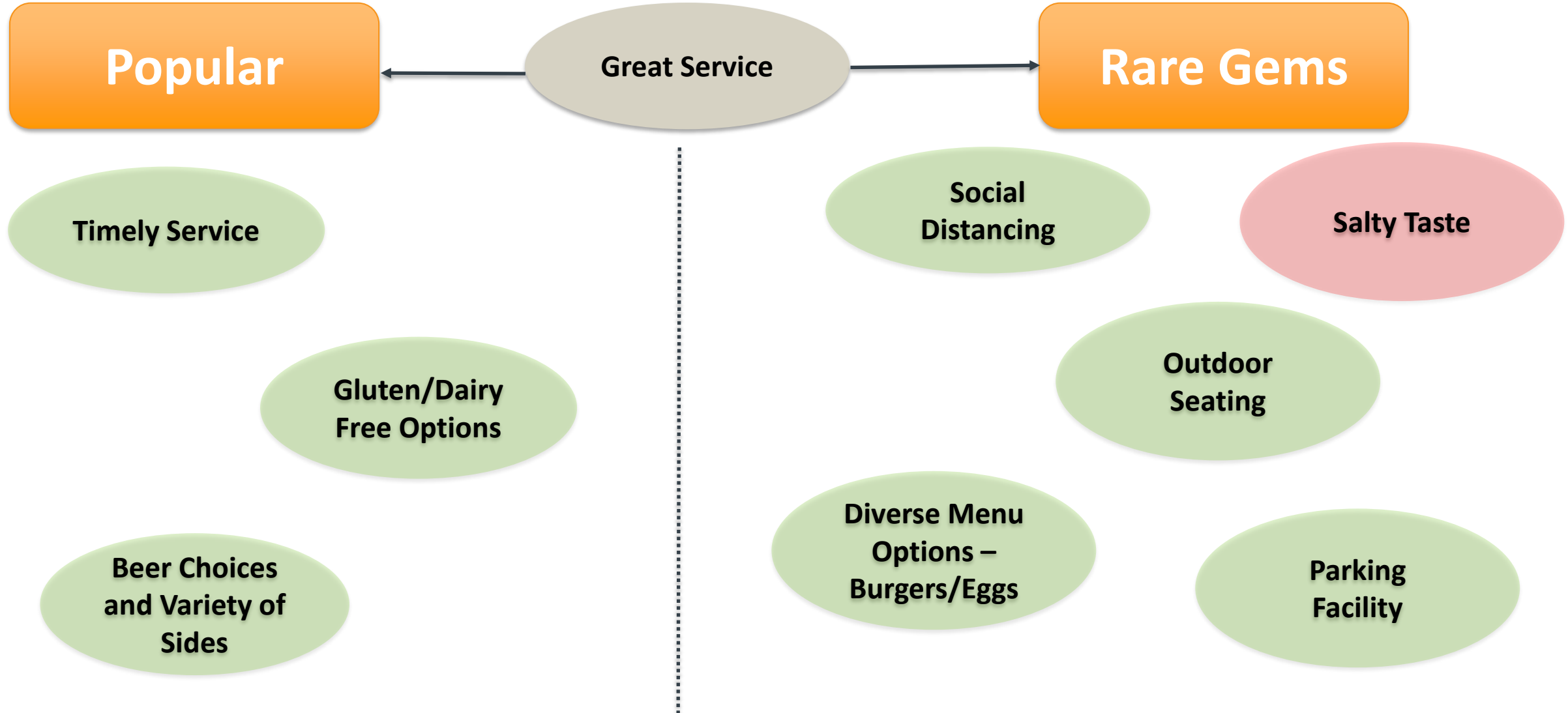
Lift

Word2Vec

Restaurant	Rank	Rating
Baldinucci	76	4.7
Foodheads	18	4.3
Olive & June	16	3.8
Patrizi's	8	4.5
Revue	70	3.9

Restaurant	Rank	Rating
Bad City Pies	90	5
Fast Friends Beer	90	4.3
South Flo Pizza In H-E-B	90	4.1
FoodHeads	18	4.3
Baldinucci	76	4.7

Long Tail – Topic Modelling using BERT



Conclusion and Recommendation

Phase 1 – Gain Popularity in Austin



GMO FREE



GLUTEN FREE



SUGAR FREE



LACTOSE FREE



Establish restaurant branches in low cost, student dense locations within Texas based on market feasibility

Offer variety of toppings and sides to identify preferred options

Experiment tasting menus and new varieties for launch in other cities

Phase 2 – Expansion within Texas

Expansion of Pizza chain to Los Angeles, Seattle and New York

Ensure short order-to-delivery times to win in these markets

Cater to the unique tastes and preferences of each location and focus on those pizza varieties

Phase 4 – Expansion to other regions in US

Phase 3 – Expansion to Chicago and Miami

Cater to the local taste and preferences of each city

Inclusion of flavorful vegan menu options is crucial for success in these regions

Sell the best chicken pizza's in Miami and sausage pizza's in Chicago!

Questions