Capstone Project: The Battle of Neighborhoods

Finding a location for a new bakery in Cincinnati

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Clients want to open a new bakery in Greater Cincinnati area

Taking into account neighborhood characteristics and the locations of other successful bakeries in town, what are some neighborhoods that would be good candidates for the new bakery?

Data sources

- List of Cincinnati neighborhoods on Wikipedia to **web scrape** neighborhood names

- Google maps to also pull neighborhoods/city names from Northern Kentucky

- Foursquare API to extract **venues** in each neighborhood

- Foursquare API to **search** for all bakeries

- Foursquare API to get the number of **likes** for each bakery

Methods

EXTRACT POPULAR VENUES, ALL BAKERIES, AND NUMBER OF LIKES FOR ALL BAKERIES IN GREATER CINCINNATI USING FOURSQUARE API

FIND NEIGHBORHOODS THAT HAVE **BAKERIES WITH 10 OR MORE LIKES**

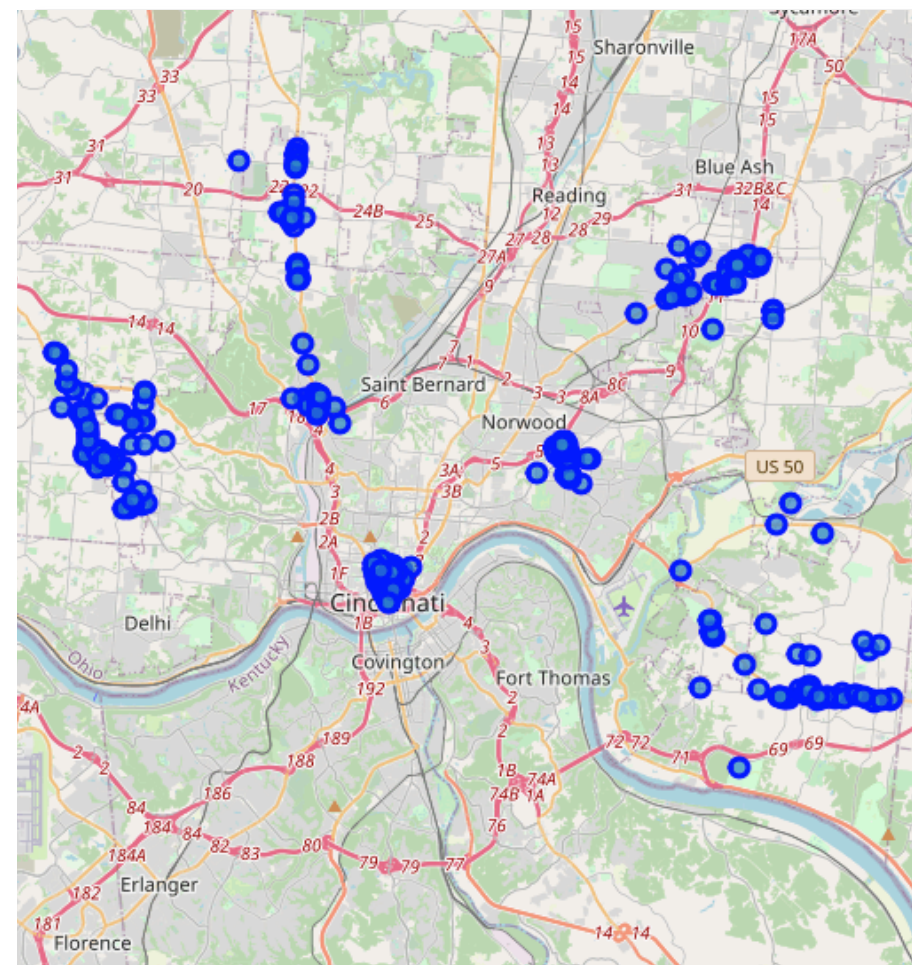CLUSTER NEIGHBORHOODS BASED ON VENUE FREQUENCY USING **K-MEANS CLUSTERING**

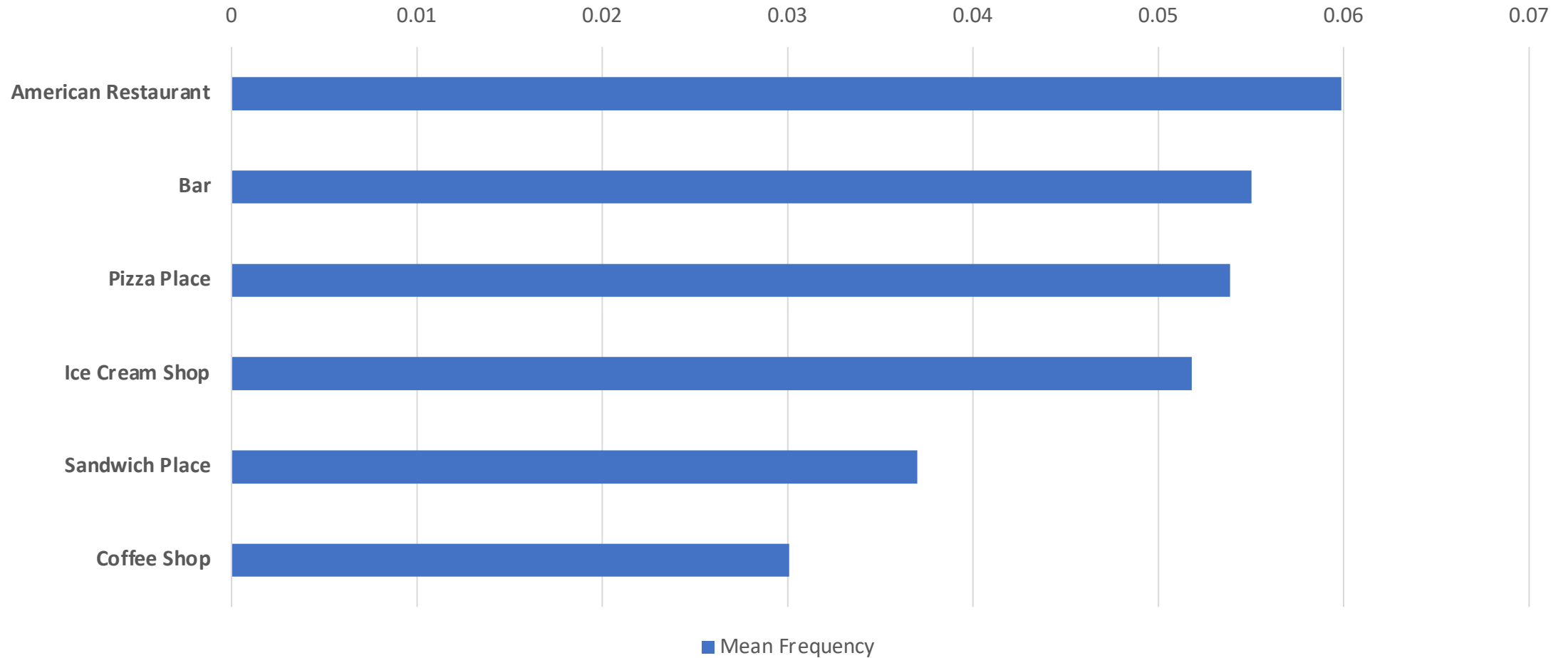IDENTIFY **CANDIDATE NEIGHBORHOODS** THAT BELONG TO SAME CLUSTER(S) AS THE POPULAR BAKERY NEIGHBORHOODS

REFINE CANDIDATE NEIGHBORHOODS WITH EUCLIDEAN DISTANCES

Results

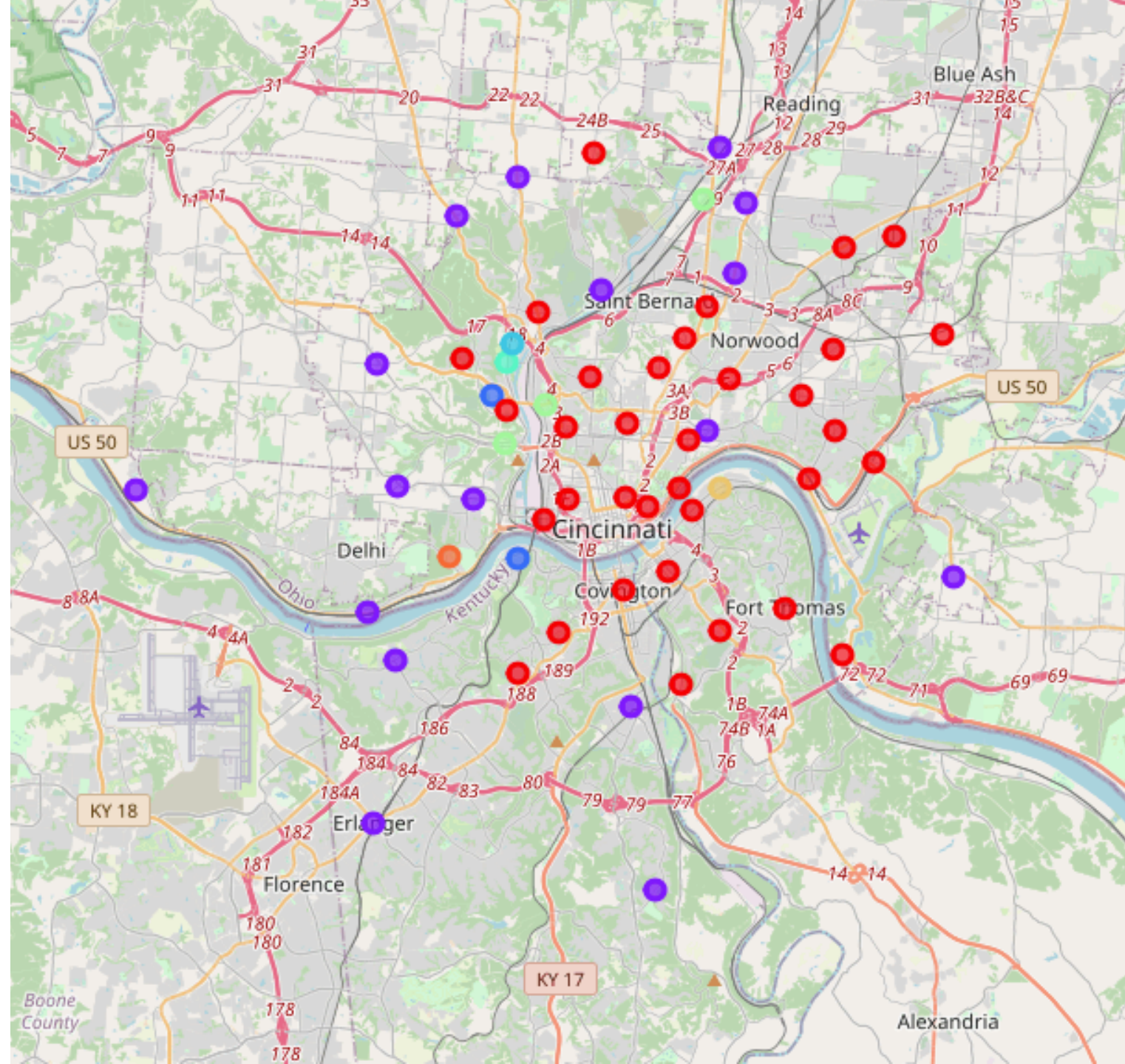| Neighborhood	Venue	Num Likes
Hyde Park	Busken Bakery	67
Kennedy Heights	Ferrari's Little Italy and Bakery	36
College Hill	Perkins Restaurant & Bakery	23
Westwood	Perkins Restaurant & Bakery	17
Pendleton	Brown Bear Bakery	16
College Hill	North College Hill Bakery	12
Mount Washington	Mt. Washington Creamy Whip	12
Northside	Bonomini Bakery	12
Pendleton	Shadeau Breads	10

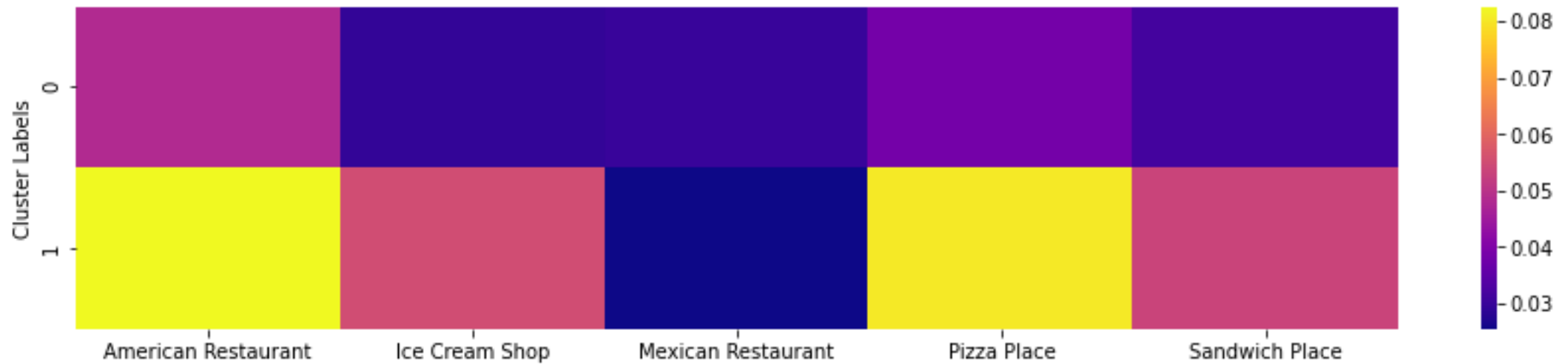# Shared traits of neighborhoods with popular bakeries
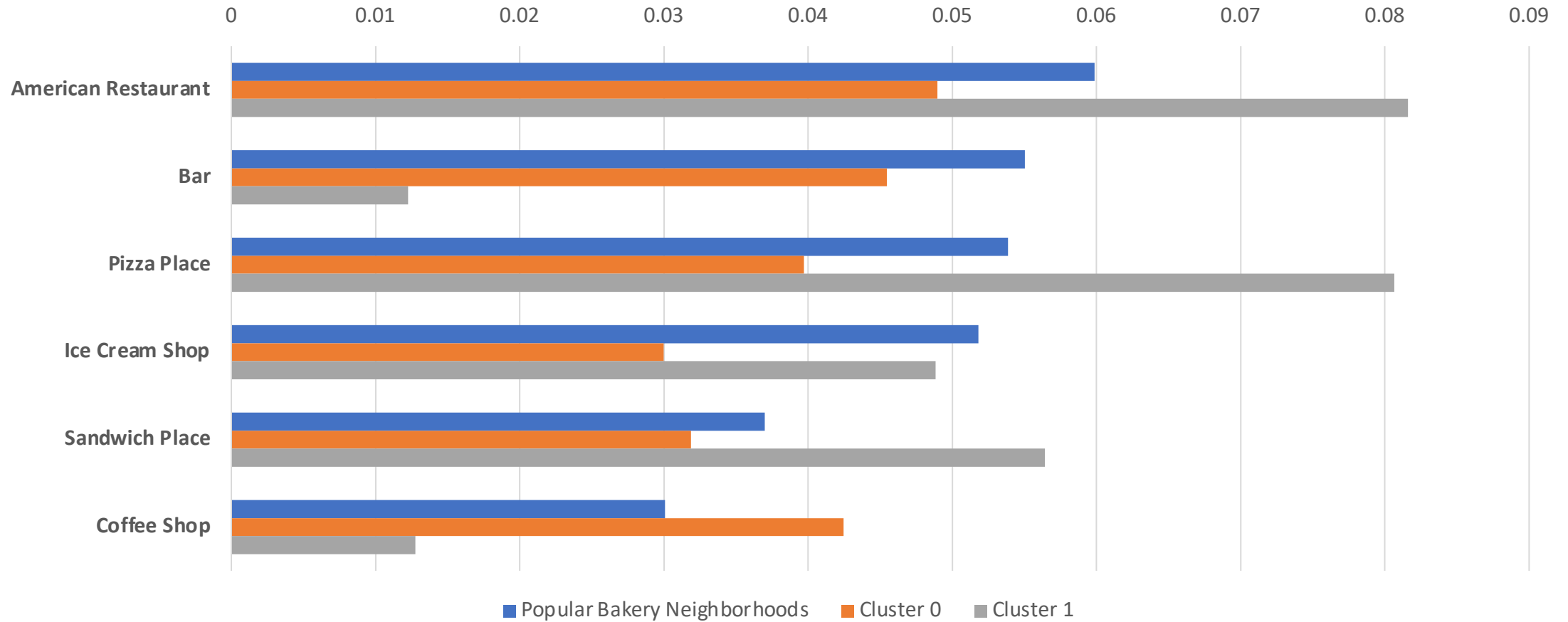

Mean Frequency

Neighborhood clusters

- 8 clusters total
- Clusters 0 and 1 contain the majority of neighborhoods and all neighborhoods with popular bakeries

Shared traits of clusters 0 and 1
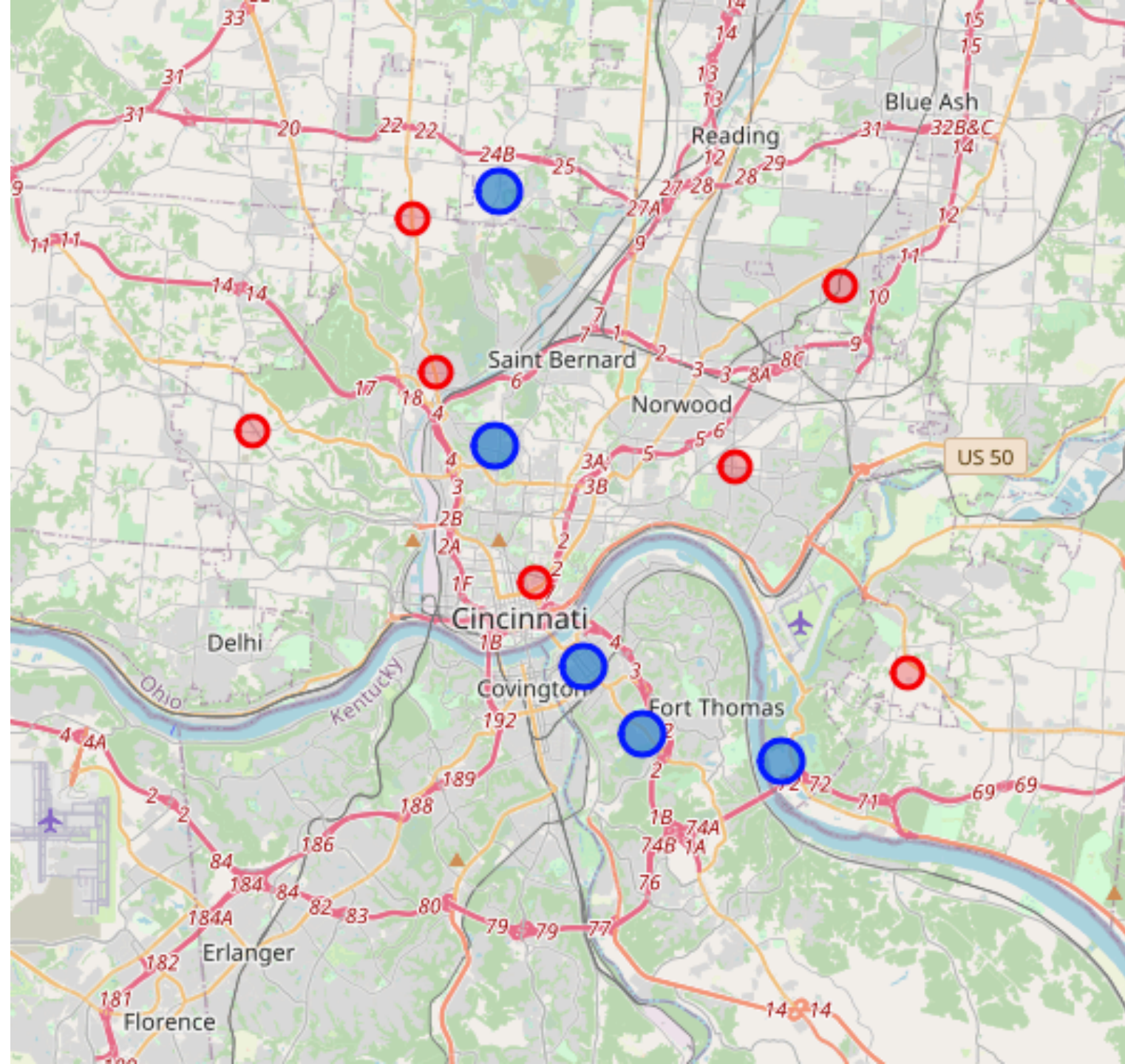
Shared traits across popular bakeries and clusters

Top 5 candidate neighborhoods

Based on Euclidean distance to mean frequency

- Winton Hills (d = 0.037)
- California (d = 0.052)
- Southgate (d = 0.052)
- Newport (d = 0.054)
- Clifton (d = 0.055)

(Blue dots are candidates; red are neighborhoods with popular bakeries)

Discussion & Conclusion

Seven neighborhoods contained the most popular bakeries in town

Candidate neighborhoods for a new local bakery were identified based on venue category similarity with the popular bakery neighborhoods

Identified five final neighborhood candidates across town that would be good options for opening the bakery