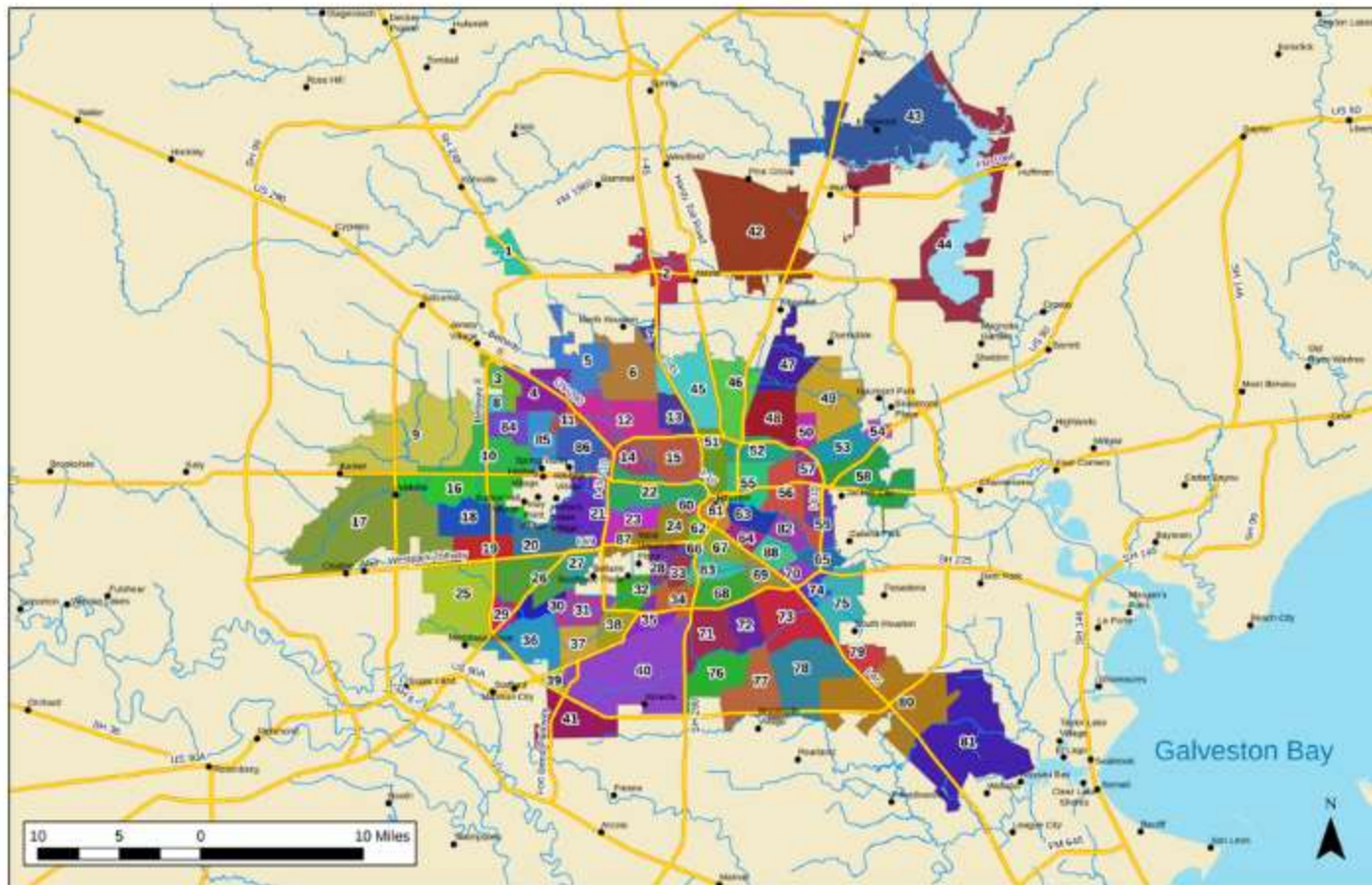


Identifying Fast Food Franchise Restaurants in Houston, Texas to Pursue for Purchase

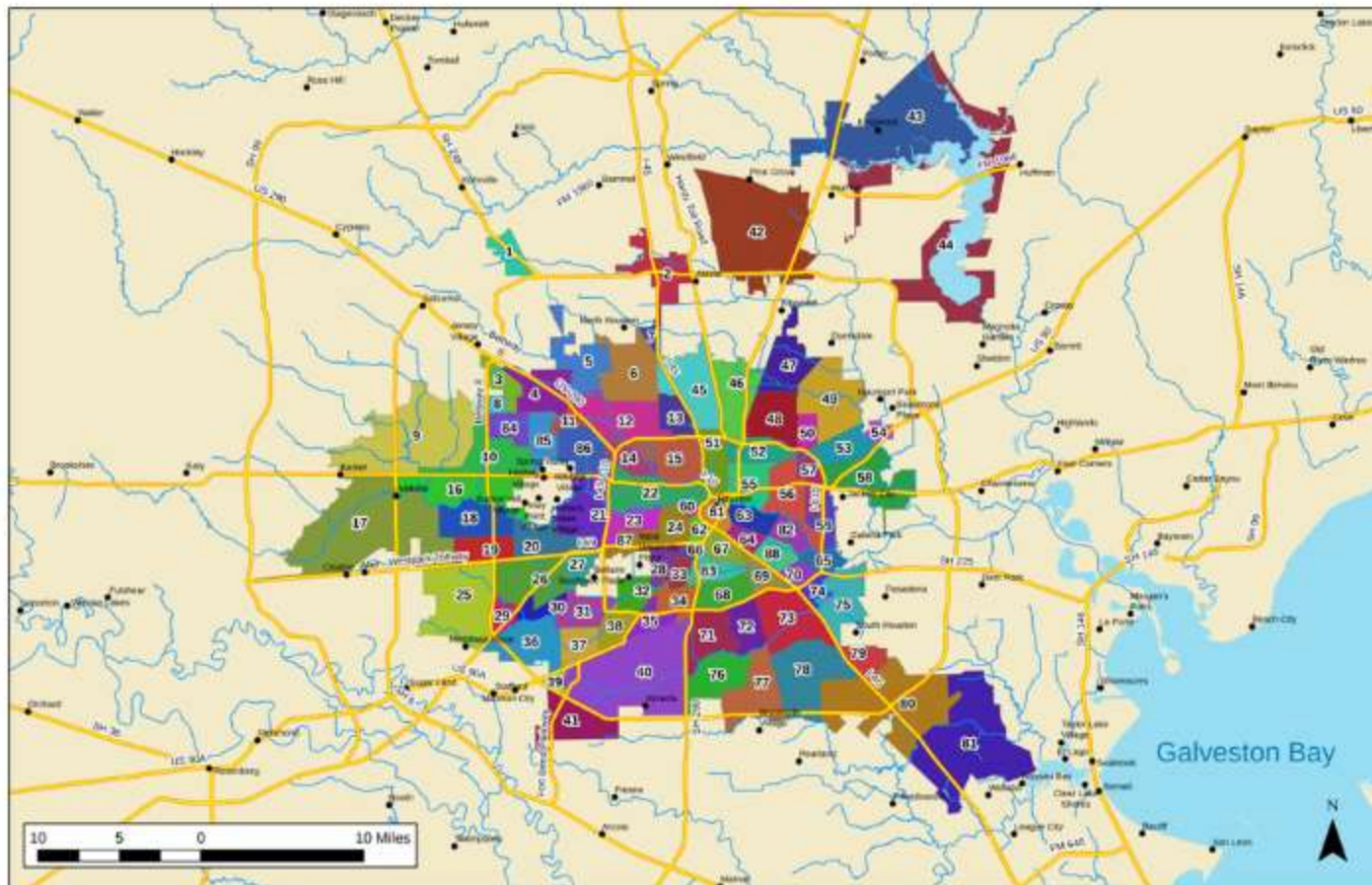
Applied Data Science Capstone
Project by Joe McReynolds ¶

Project Goal : Identify lower rated fast-food franchise restaurants as candidates for purchase and investment in Houston, TX area



DATA FOR PROJECT

1. City of Houston Neighborhood Polygons
2. Foursquare Venue Data Service



METHODOLOGY FOR PROJECT

Develop workflow for identifying underperforming fast food franchise restaurants in Houston, Texas for restaurant investors to purchase. It is a four part process.

PART 1. Neighborhood Polygon Preprocessing

Capture Polygon and centroids for analysis

PART 2. General Venue Category Neighborhood Comparison

Use K cluster analysis to group Neighborhoods with similar overall venue composition

PART 3. Fast Food Restaurant Franchise Neighborhood Comparison

Use K cluster analysis to group Neighborhoods with similar fast food venue composition

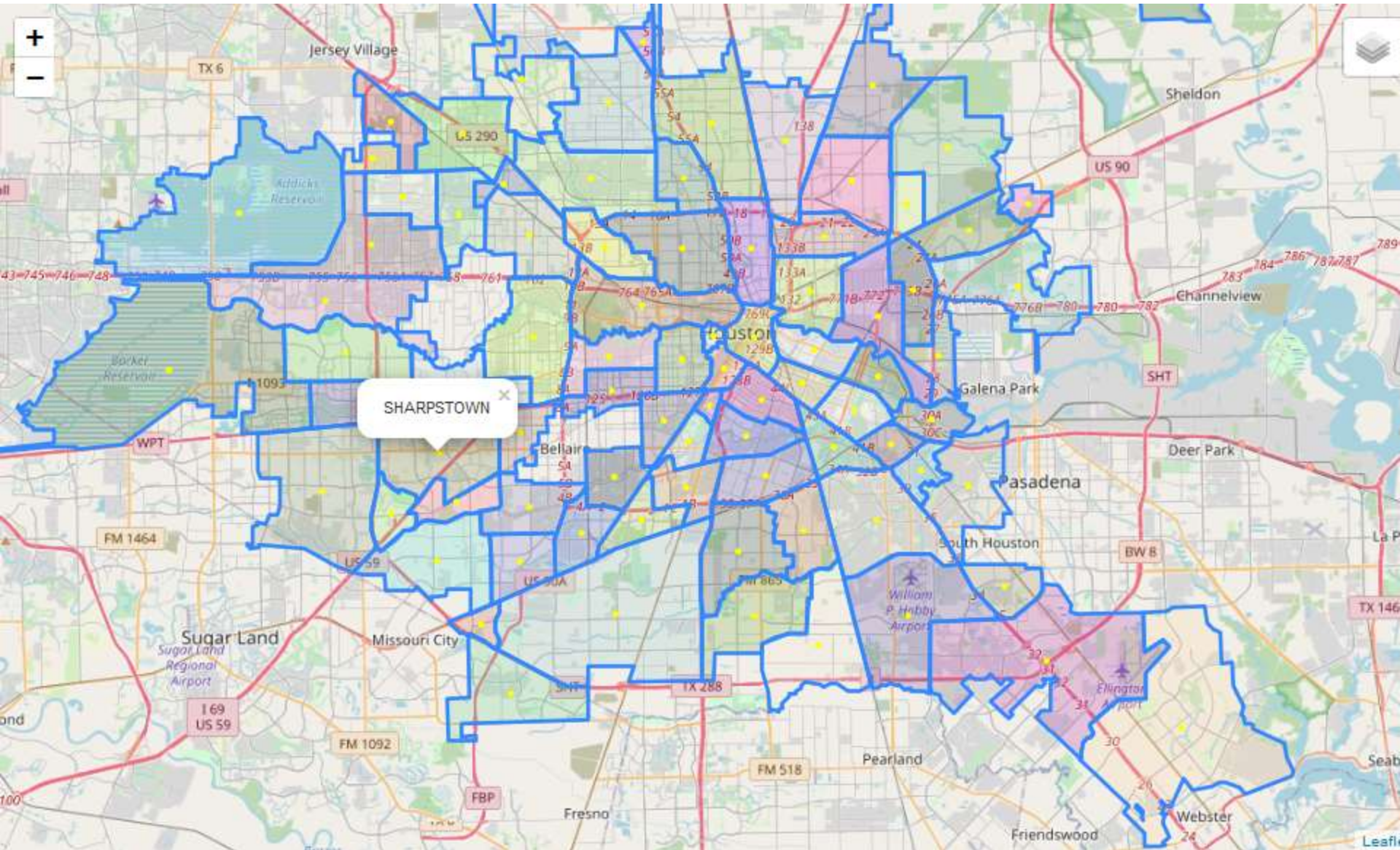
PART 4. Fast Food Restaurant Ratings Analysis for select Neighborhoods

Create 2 Reports for identifying lower rated venues.

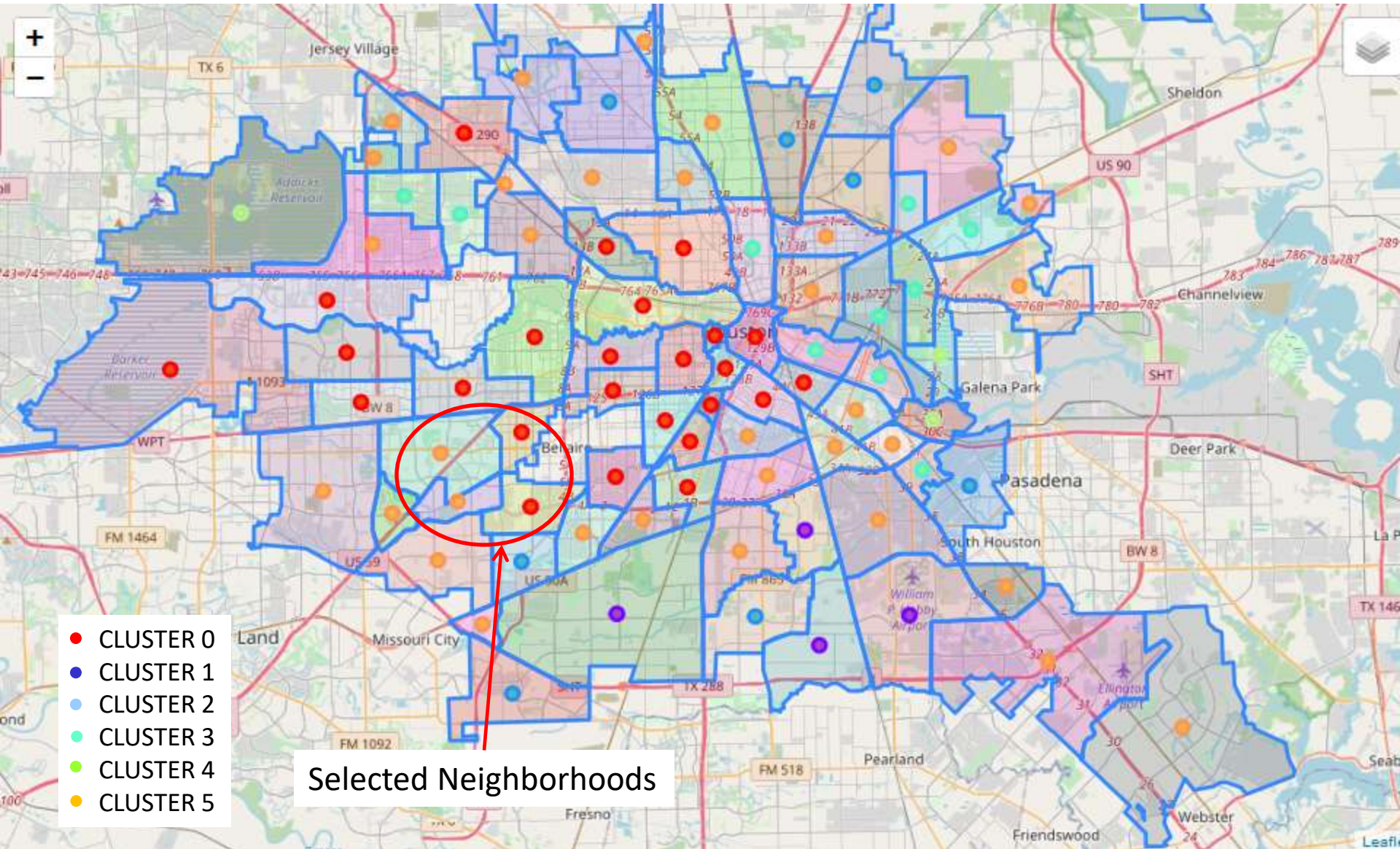
Report venue ratings grouped by neighborhood.

Report venue ratings grouped by fast food franchise.

PART 1. Map Polygons of Neighborhoods of Houston



PART 2. General Venue Category Neighborhood Comparison



K cluster analysis for all venue categories

PART 2. General Venue Category Neighborhood Comparison

	Neighborhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue	
65	GULFTON	0	Indian Restaurant	Mexican Restaurant	Coffee Shop	Fast Food Restaurant	Grocery Store	Taco Place	Sandwich Place	Burger Joint	Latin American Restaurant	Pizza Place	
69	UNIVERSITY PLACE	0	Coffee Shop	Zoo Exhibit	American Restaurant	Trail	Sandwich Place	Wine Bar	Bar	Ice Cream Shop	Bookstore	Boutique	
70	WESTCHASE	0	Hotel	Sandwich Place	Grocery Store	Coffee Shop	Bakery	Pharmacy	American Restaurant	Breakfast Spot	Pizza Place	French Restaurant	
78	BRAESWOOD	0	Mexican Restaurant	Coffee Shop	Donut Shop	Bakery	Sandwich Place	Burger Joint	Breakfast Spot	Fast Food Restaurant	Italian Restaurant	Pharmacy	
79	MEYERLAND AREA	0	Pizza Place	Coffee Shop	Department Store	Grocery Store	Sandwich Place	Pharmacy	Mexican Restaurant	Clothing Store	Fast Food Restaurant	Salon / Barbershop	
	Neighborhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue	
56	WILLOW MEADOWS / WILLOWBEND AREA	5	Gas Station	Burger Joint	Pizza Place	Video Store	Bar	Fast Food Restaurant	Restaurant	Rental Car Location	Discount Store	Supermarket	
57	BRAEBURN	5	Sandwich Place	Pharmacy	Discount Store	Pizza Place	Gym / Fitness Center	Bank	Donut Shop	Chinese Restaurant	Clothing Store	Gym	
43	SHARPSTOWN	5	Pharmacy	Mexican Restaurant	Bubble Tea Shop	Sandwich Place	Pizza Place	Fried Chicken Joint	Chinese Restaurant	Vietnamese Restaurant	Fast Food Restaurant	Convenience Store	
44	WESTWOOD	5	Mexican Restaurant	Mobile Phone Shop	Fried Chicken Joint	Fa Res	Cluster Labels	Bar on	Burger Joint	Convenience Store	Storage Facility	Grocery Store	Sandwich Place

0	28
1	4
2	8
3	10
4	3
5	35

Analyzed 5009 venues in 332 categories

28 in cluster 0 and 35 in cluster 5

PART 3. Fast Food Restaurant Franchise Neighborhood Comparison

	Neighborhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
57	BRAEBURN	1	SUBWAY	Whataburger	Churchs Chicken	Wendys	Taco Bell	SONIC Drive In	McDonalds	KFC	Jack in the Box	Burger King
59	SOUTH PARK	1	SUBWAY	Jack in the Box	Whataburger	Wendys	Taco Bell	SONIC Drive In	McDonalds	KFC	Churchs Chicken	Burger King
64	MEDICAL CENTER AREA	1	SUBWAY	Whataburger	Churchs Chicken	Wendys	Taco Bell	SONIC Drive In	McDonalds	KFC	Jack in the Box	Burger King
65	GULFTON	1	Whataburger	SUBWAY	Jack in the Box	Wendys	Taco Bell	SONIC Drive In	McDonalds	KFC	Churchs Chicken	Burger King
70	WESTCHASE	1	Whataburger	SUBWAY	Wendys	Taco Bell	SONIC Drive In	McDonalds	KFC	Jack in the Box	Churchs Chicken	Burger King
74	GREATER THIRD WARD	1	SUBWAY	Taco Bell	McDonalds	Churchs Chicken	Whataburger	Wendys	SONIC Drive In	KFC	Jack in the Box	Burger King
78	BRAESWOOD	1	SUBWAY	Whataburger	SONIC Drive In	Wendys	Taco Bell	McDonalds	KFC	Jack in the Box	Churchs Chicken	Burger King
79	MEYERLAND AREA	1	SUBWAY	Whataburger	McDonalds	Jack in the Box	Wendys	Taco Bell	SONIC Drive In	KFC	Churchs Chicken	Burger King
43	SHARPSTOWN	4	Churchs Chicken	Whataburger	SUBWAY	McDonalds	Burger King	Wendys	Taco Bell	SONIC Drive In	KFC	Jack in the Box

Analyzed 350 venues in 19 categories

Cluster Labels	
0	4
1	20
2	10
3	3
4	34

20 in cluster 1 and 34 in cluster 4

PART 4. Fast Food Restaurant Ratings Analysis for select Neighborhoods

Grouped by Neighborhood

SELECTED FAST FOOD RESAURANTS GROUPED BY FRANCHISE :

	Neighborhood	Venue	Rating	Likes
4	SHARPSTOWN	Burger King	6.2	6
	Neighborhood	Venue	Rating	Likes
1	SHARPSTOWN	Churchs Chicken	7.3	9
3	SHARPSTOWN	Churchs Chicken	6.6	3
9	BRAEBURN	Churchs Chicken	6.6	3
	Neighborhood	Venue	Rating	Likes
15	MEYERLAND AREA	Jack in the Box	7.2	7
13	GULFTON	Jack in the Box	7.1	8
	Neighborhood	Venue	Rating	Likes
17	MEYERLAND AREA	McDonalds	6.7	8
5	SHARPSTOWN	McDonalds	5.6	8
	Neighborhood	Venue	Rating	Likes
12	GULFTON	SUBWAY	6.8	2
2	SHARPSTOWN	SUBWAY	6.6	9
7	BRAEBURN	SUBWAY	6.6	0
8	BRAEBURN	SUBWAY	6.6	0
18	MEYERLAND AREA	SUBWAY	6.6	0
10	BRAEBURN	SUBWAY	6.3	3
16	MEYERLAND AREA	SUBWAY	6.3	5
	Neighborhood	Venue	Rating	Likes
11	GULFTON	Whataburger	8.1	32
14	MEYERLAND AREA	Whataburger	7.8	47
0	SHARPSTOWN	Whataburger	7.4	2
6	BRAEBURN	Whataburger	7.4	2

Grouped by Fast Food Venue

SELECTED FAST FOOD RESAURANTS GROUPED BY NEIGHBORHOOD

	Neighborhood	Venue	Rating	Likes
6	BRAEBURN	Whataburger	7.4	2
7	BRAEBURN	SUBWAY	6.6	0
8	BRAEBURN	SUBWAY	6.6	0
9	BRAEBURN	Churchs Chicken	6.6	3
10	BRAEBURN	SUBWAY	6.3	3
	Neighborhood	Venue	Rating	Likes
11	GULFTON	Whataburger	8.1	32
12	GULFTON	SUBWAY	6.8	2
13	GULFTON	Jack in the Box	7.1	8
	Neighborhood	Venue	Rating	Likes
14	MEYERLAND AREA	Whataburger	7.8	47
15	MEYERLAND AREA	Jack in the Box	7.2	7
16	MEYERLAND AREA	SUBWAY	6.3	5
17	MEYERLAND AREA	McDonalds	6.7	8
18	MEYERLAND AREA	SUBWAY	6.6	0
	Neighborhood	Venue	Rating	Likes
0	SHARPSTOWN	Whataburger	7.4	2
1	SHARPSTOWN	Churchs Chicken	7.3	9
2	SHARPSTOWN	SUBWAY	6.6	9
3	SHARPSTOWN	Churchs Chicken	6.6	3
4	SHARPSTOWN	Burger King	6.2	6
5	SHARPSTOWN	McDonalds	5.6	8

PROJECT CONCLUSION

- ❖ The McDonalds in Sharpstown was the lowest rated both for all fast food restaurants in Sharpstown and similar Neighborhoods analyzed. It is also the lowest rated of McDonalds. This venue should be on your list of underperformers.
- ❖ The lower rated Churchs Chicken in Sharpstown is also on the list of underperformers.
- ❖ Most restaurants had very similar ratings and no other venues stood out as low rated in our select area
- ❖ Whataburger stands out as best overall rated restaurant. Consider a New Whataburger in a Neighborhood lacking Whataburger.
- ❖ The "Likes" information was only useful in a qualitative sense and best identified the most popular individual restaurants such as the Whataburgers in Gulfton and Meyerland.