



Battle of The Neighborhoods

COFFEE SHOP ANALYSIS
JACKSONVILLE, FL

Scott Brown | Applied Data Science Capstone | 5/12/2019

Introduction

Jacksonville is one of the largest land mass cities in the U.S. When people move to the city it's difficult to identify the areas that are most ideal for either remotely working in coffee shops or collaborating with others in a coffee shop setting. I will analyze the city and identify the areas that have the heaviest concentration of coffee shops. I have some initial expectations based on my experience with the city, but it will be interesting to see if those expectations are consistent with the results.

There are also some preferences among those that work frequently in coffee shops to avoid the national chain coffee shops. This is due to a variety of reasons that won't be explored in this study.

Data

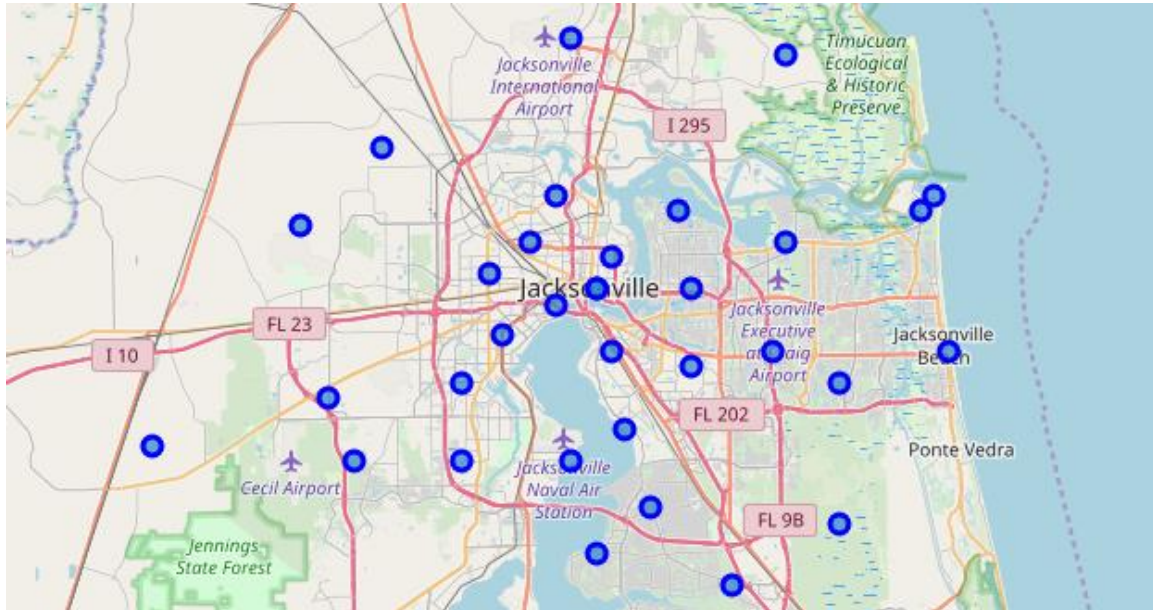
There isn't a good list of neighborhoods that is accessible for free related to Jacksonville, FL. So I retrieved a list of the zip codes in the city and the latitude and longitude coordinates for those zip codes. These were retrieved from the following website: <https://www.unitedstateszipcodes.org/zip-code-database/>

Then I used these coordinates to perform a 5 mile radius search of venues from the Four Square API. Using this data, I was able determine which venue categories had the highest frequency for each zip code and then identified the zip codes with Coffee Shops in their top venue categories.

The Four Square data was also used to identify the name/brand of the coffee shop so that we can determine how saturated the market is with national chain coffee shops.

Methodology

The zip code data was imported into a data frame. See below for the centroid coordinates related to each zip code.



Then using these centroids, the Four Square API was used to retrieve venues within a 5 mile radius of the centroid. The initial data had all venue categories and returned almost 3,000 records. See below for a sample of the data.

	Zip	Zip Latitude	Zip Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	32099	30.33	-81.65	The Florida Theatre	30.326393	-81.655704	Theater
1	32099	30.33	-81.65	Jacksonville Veterans Memorial Arena	30.325776	-81.644960	General Entertainment
2	32099	30.33	-81.65	Intuition Ale Works (Bay St)	30.323364	-81.644578	Brewery
3	32099	30.33	-81.65	Jax Truckies	30.327994	-81.657088	Food Truck
4	32099	30.33	-81.65	Olio	30.325401	-81.654320	Café

Then we filtered the data for the coffee shops as identified in the venue category. These results were summarized by zip code and by venue name. See a sample of the results below.

Filtered for coffee shop category

	Zip	Zip Latitude	Zip Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
6	32099	30.33	-81.65	Chamblin's Uptown	30.328552	-81.658890	Coffee Shop
21	32099	30.33	-81.65	The Brick	30.328458	-81.660795	Coffee Shop
24	32099	30.33	-81.65	Urban Grind Coffee Company	30.326413	-81.659212	Coffee Shop
53	32099	30.33	-81.65	Bold Bean Coffee	30.306463	-81.653809	Coffee Shop
106	32202	30.33	-81.65	Chamblin's Uptown	30.328552	-81.658890	Coffee Shop

Count by zip code

Zip			
32099	4		
32202	4		
32204	6		
32205	5		
32206	4		
32207	6		
32208	4		
32209	5		
32210	4		
32211	4		
32212	5	32246	1
32216	4	32250	3
32217	5	32254	6
32218	3	32256	3
32221	1	32257	2
32222	1	32258	4
32223	3	32267	1
32224	3	32277	2

Count by name

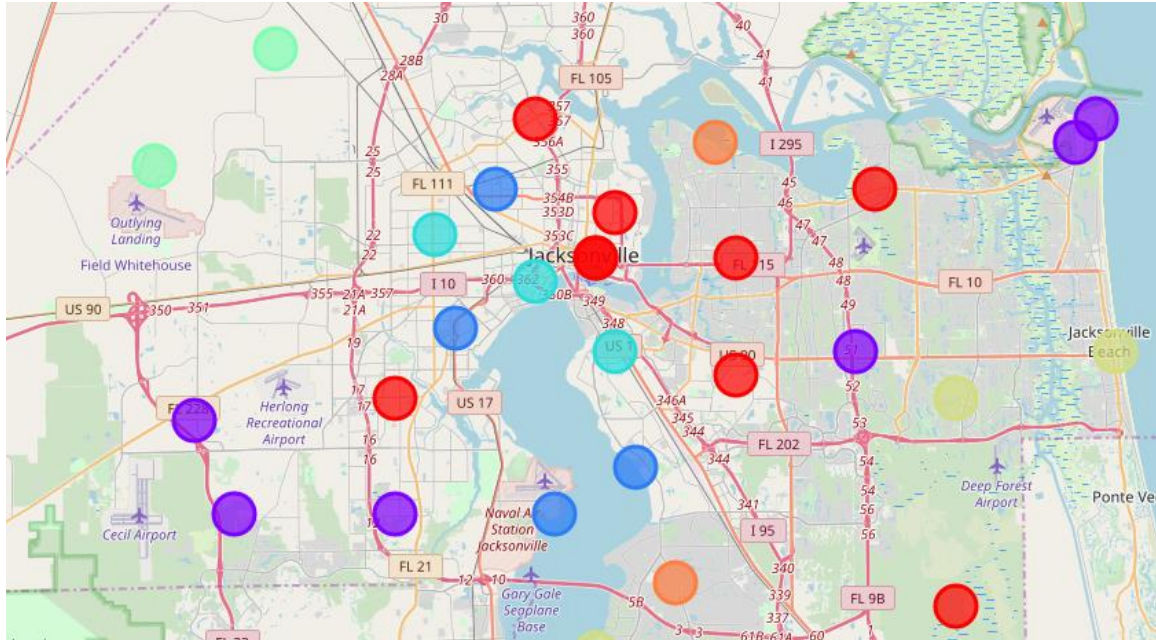
	Zip
Venue	
Starbucks	46
Bold Bean Coffee	12
Chamblin's Uptown	9
Urban Grind Coffee Company	7
The Brick	6
Vagabond Coffee Co	4
Aroma Corner	3
Ellianos Coffee Company	3
Southern Roots Filling Station	2
BREW Five Points	1
Breezy Coffee Shop Cafe	1
Gastronome Cafe	1
Sipper's Coffee	1
Starbucks - Jacksonville University	1
The Loft At The Celebration Arena	1
The Urban Bean Coffeehouse Cafe	1

Then we applied Kmeans to cluster the zip codes based on frequency of coffee shops. Here's a sample of the results in table format with cluster labels identified for the top portion:

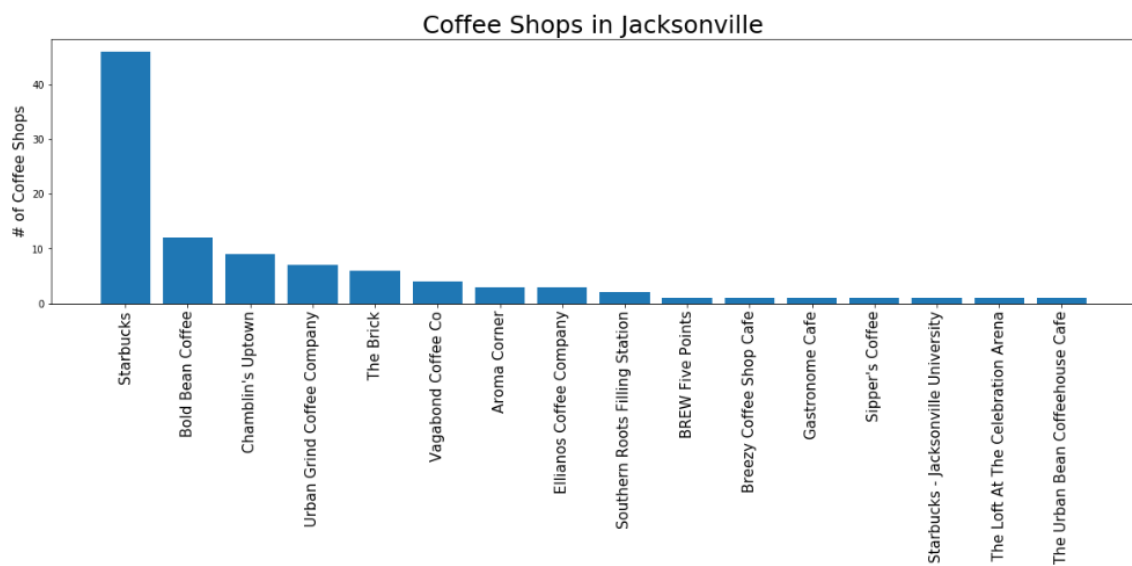
	Cluster Labels	Zip	Coffee Shop
27	3	32254	0.060000
2	3	32204	0.060000
5	3	32207	0.060000
12	2	32217	0.050000
3	2	32205	0.050000
7	2	32209	0.050000
10	2	32212	0.050000
28	0	32256	0.041667
20	0	32225	0.040000
1	0	32202	0.040000

Results

The Kmeans results were mapped and visualized as follows:



An analysis was also performed to identify which portion of the coffee shops in Jacksonville are associated with national chains like Starbucks.



Discussion/Conclusion

Zip Code Analysis

The Jacksonville zip code with the heaviest concentration of coffee shops is 32204 (Riverside), 32207 (San Marco), and 32254 (Westside). These areas are more historic and tend to attract a younger and trendy population. This result makes a lot of sense given my knowledge of the city.

The zip codes that also have a heavy concentration of coffee shops are the following:

32205 (Westside near Riverside)
32209 (North part of Downtown)
32217 (San Jose)
32212 (NAS Jax)
32225 (Intracoastal area)

Several of these make a lot of sense based on my initial expectations. However, it was surprising to see the 32209 (North part of Downtown) zip code on these results. Perhaps some of the revitalization of downtown projects have encouraged growth in these areas.

Most of these zip codes are in the more historical areas with the exception of the 32212 (NAS Jax). However, this is an area with a military base and not a lot of venues, so perhaps the data is skewed because there isn't much data within that particular zip code.

Clusters

The cluster map seems to indicate that most of the coffee shops are heavily concentrated in the historic areas of the city. This makes sense given the fact that the residents in these areas are affluent and others that aren't affluent are generally a younger and trendier population that frequents local coffee shops.

Brand – National vs Local

As expected, Starbucks has the heaviest presence of coffee shops in the market. However, approximately half of the population are local coffee shops so there is plenty of local presence for anyone that's looking to avoid a national chain coffee shop.

Conclusion

Hopefully this data noted above will provide relevant information for individuals moving to the Jacksonville, FL market who are very interested in locating near a heavy population of coffee shops. This report shows you the areas that should be considered in your search for a residence.