

Exploration of Venues in the State Capitals of the USA

IBM Capstone Project

By Zeynep Akca

April 5, 2020

Introduction

In this final project, I will explore popular venues in 50 state capitals. I target travel agencies who aim to attract tourists to the US Capitals. The aim is to find popular spots in the state capitals. I also aim to both distinguish them in their uniqueness and find similarities among them. This will help agencies to guide their customers better. They can offer destinations diverse enough to satisfy their customers, so that customers would have a satisfying US experience.

Data

1. Latitudes and Longitudes of the state capitals taken from a Github user
2. Venues and Details pulled from Foursquare

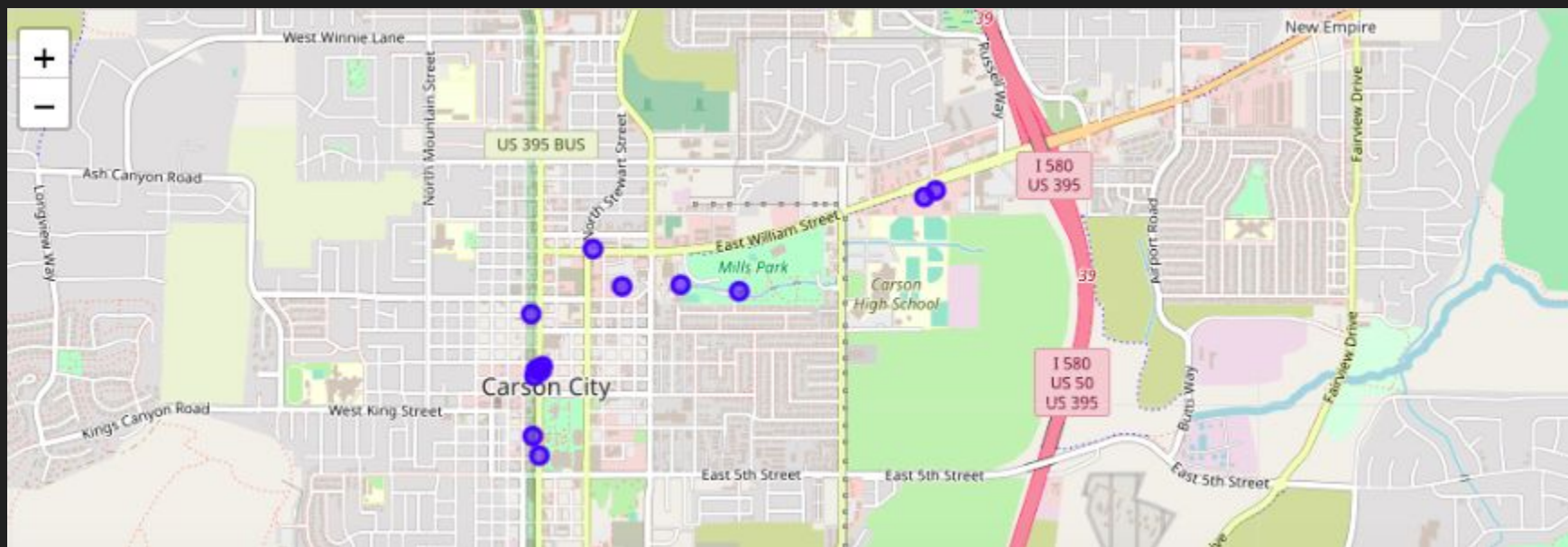
Below the data of state capitals and how many venues pulled for each of them

| | Capital Latitude | Capital Longitude | Venue | Venue ID | Venue Latitude | Venue Longitude | Venue Category |
|----------------|------------------|-------------------|-------|----------|----------------|-----------------|----------------|
| Capital | | | | | | | |
| Albany | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Annapolis | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Atlanta | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Augusta | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Austin | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Baton Rouge | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Boise | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Boston | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Carson City | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Charleston | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Cheyenne | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Columbia | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Columbus | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Concord | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Denver | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Des Moines | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Dover | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Frankfort | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Harrisburg | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Hartford | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Helena | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Honolulu | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Indianapolis | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Jackson | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Jefferson City | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Juneau | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

| | | | | | | | |
|----------------|----|----|----|----|----|----|----|
| Lansing | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Lincoln | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Little Rock | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Madison | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Montgomery | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Montpelier | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Nashville | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Oklahoma City | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Olympia | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Phoenix | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Pierre | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Providence | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Raleigh | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Richmond | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Sacramento | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Saint Paul | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Salem | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Salt Lake City | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Santa Fe | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Springfield | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Tallahassee | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Topeka | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Trenton | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

An example of venues in Carson City

| | Capital | Capital Latitude | Capital Longitude | Venue | Venue ID | Venue Latitude | Venue Longitude | Venue Category |
|-----|-------------|------------------|-------------------|------------------------------|--------------------------|----------------|-----------------|----------------------|
| 526 | Carson City | 39.160949 | -119.753877 | Paul Schat's Bakery | 4b92881cf964a520970134e3 | 39.156239 | -119.765484 | Bakery |
| 527 | Carson City | 39.160949 | -119.753877 | Carson City Aquatic Facility | 4bfaf977bbb7c92873830743 | 39.169057 | -119.759542 | Gym Pool |
| 528 | Carson City | 39.160949 | -119.753877 | Dutch Bros. Coffee | 4c6d42d96af58cfacae58817 | 39.156386 | -119.766733 | Coffee Shop |
| 529 | Carson City | 39.160949 | -119.753877 | Sportsman's Warehouse | 5339acbd498e75abcda555c8 | 39.154992 | -119.765967 | Outdoor Supply Store |
| 530 | Carson City | 39.160949 | -119.753877 | Comma Coffee | 4b844baff964a5200a2d31e3 | 39.162055 | -119.767024 | Coffee Shop |



In total, I ended up with 956 venues from 49 state capitals (Excluding Bismarck since no venues returned from Foursquare pull). Below an example from the dataset I used for the analysis. Each venue has details regarding ratings, number of likes, number of tips, number of photos, and price category (1-4). There are 20 ratings and 349 price categories missing in our data set.

| | Capital | Venue ID | Venue Name | Categories | Rating | # of Likes | # of Tips | # of Photos | Price Category | Latitude | Longitude |
|---|------------|--------------------------|---|----------------------|--------|------------|-----------|-------------|----------------|-----------|------------|
| 0 | Montgomery | 4dcabad652b1c2222a89cc50 | Shashy's Bakery & Fine Foods | Bakery | 8.4 | 21 | 9 | 7 | 1.0 | 32.362289 | -86.283226 |
| 1 | Montgomery | 4b9fc51af964a520ff3c37e3 | Martin's Restaurant | Fried Chicken Joint | 7.9 | 19 | 11 | 26 | 1.0 | 32.357262 | -86.282862 |
| 2 | Montgomery | 4b50c761f964a520133227e3 | Chick-fil-A | Fast Food Restaurant | 9.0 | 57 | 21 | 21 | 1.0 | 32.368860 | -86.270454 |
| 3 | Montgomery | 4bb234ec35f0c9b6b3f4ba83 | Zaxby's Chicken Fingers & Buffalo Wings | Fried Chicken Joint | 8.2 | 24 | 6 | 15 | 2.0 | 32.364406 | -86.268742 |
| 4 | Montgomery | 4ba2d789f964a520721d38e3 | Subway | Sandwich Place | 7.5 | 4 | 1 | 1 | 1.0 | 32.357502 | -86.283664 |
| 5 | Montgomery | 4bad3674f964a520d3393be3 | La Zona Rosa | Mexican Restaurant | 8.5 | 52 | 29 | 57 | 2.0 | 32.359185 | -86.265233 |
| 6 | Montgomery | 4da855c293a021ab13c6d644 | Midtown Pizza Kitchen | Pizza Place | 8.7 | 45 | 29 | 118 | 2.0 | 32.357174 | -86.265484 |
| 7 | Montgomery | 576b2c85cd10f350e1b9006b | First Watch - Montgomery | Breakfast Spot | 8.7 | 18 | 5 | 10 | 1.0 | 32.357405 | -86.265341 |

Methodology

In this project, I will limit the analysis to this dataset above.

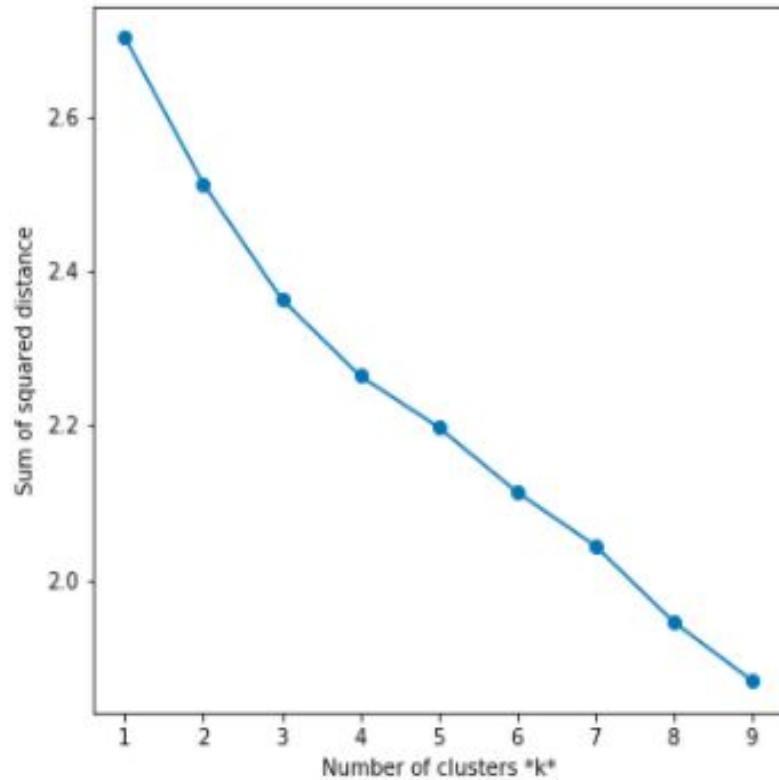
- In the initial step, I will try to cluster capitals, this will help to see which capitals are similar and which capitals are different. I will first create a list of most common venue categories in each capital and then cluster them. I will use k means and elbow methods to do clustering.
- As a second step, I will do in depth exploration of capitals by various factors such as ratings, number of likes etc. I will compare them and try to see if there is a significant difference between the coasts and capitals in general

Analysis

Clustering (Step 1)

First I got the most common venues for each capital.

| | Capital | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|---|-----------|---------------------------|-----------------------|---------------------------|-----------------------|-----------------------|
| 0 | Albany | Latin American Restaurant | Burger Joint | Sandwich Place | Bar | Sushi Restaurant |
| 1 | Annapolis | Bar | Thai Restaurant | Spa | French Restaurant | Gastropub |
| 2 | Atlanta | Hotel Bar | Music Venue | Cajun / Creole Restaurant | History Museum | Poke Place |
| 3 | Augusta | Pharmacy | American Restaurant | Convenience Store | History Museum | Thai Restaurant |
| 4 | Austin | Coffee Shop | Mexican Restaurant | Garden | Dance Studio | Restaurant |



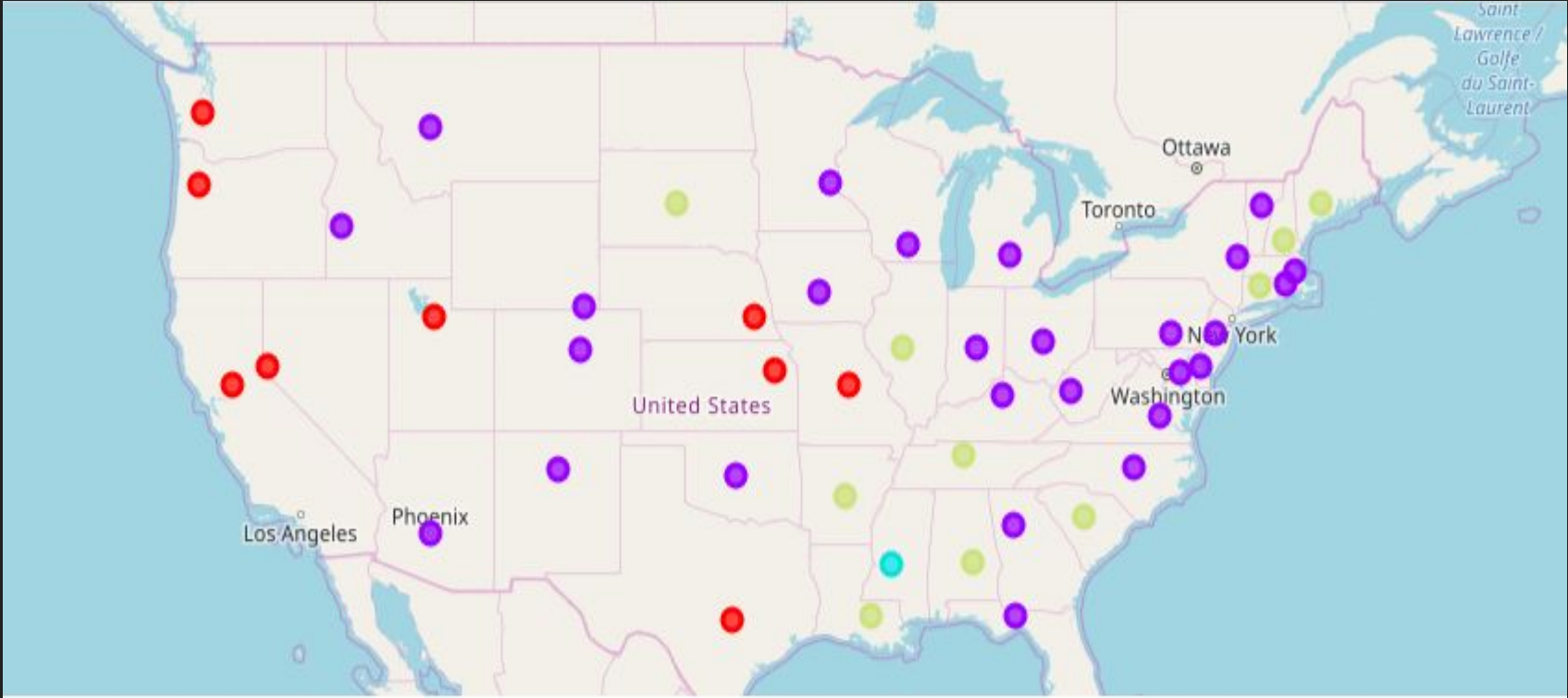
As you can see from the left hand side, the elbow method did not give a clear cutoff point. After I tried different k's,

I decided to proceed with $k=4$, the reason is it is the number of cluster

that shows the clear distinction between the coasts.

I thought that I can reach meaningful conclusions from here to present travel agencies.

The map that shows the clustering result



Cluster 1 (Red circles on the map)

| | Capital | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|----------------|-----------------------|-----------------------|-----------------------|-------------------------|-------------------------|
| 4 | Sacramento | Coffee Shop | Vietnamese Restaurant | Pet Store | Café | Marijuana Dispensary |
| 10 | Honolulu | Japanese Restaurant | Coffee Shop | Scenic Lookout | Mexican Restaurant | State / Provincial Park |
| 15 | Topeka | Mexican Restaurant | Coffee Shop | Indian Restaurant | Gym | Breakfast Spot |
| 24 | Jefferson City | Pizza Place | Coffee Shop | Mexican Restaurant | Pub | Sandwich Place |
| 26 | Lincoln | Mexican Restaurant | Park | Coffee Shop | Zoo | Garden |
| 27 | Carson City | Coffee Shop | Thai Restaurant | History Museum | Park | Mexican Restaurant |
| 36 | Salem | Coffee Shop | American Restaurant | Theater | State / Provincial Park | Farmers Market |
| 42 | Austin | Coffee Shop | Mexican Restaurant | Garden | Dance Studio | Restaurant |
| 43 | Salt Lake City | Coffee Shop | Food Stand | Hotel | Food Truck | Burger Joint |
| 46 | Olympia | Coffee Shop | Sandwich Place | Park | Brewery | Diner |

Cluster 2 (Purple circles on the map)

| | Capital | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|--------------|---------------------------|-------------------------|---------------------------|---------------------------------|-----------------------|
| 1 | Juneau | Bar | Coffee Shop | Food Truck | Taco Place | Russian Restaurant |
| 2 | Phoenix | Salon / Barbershop | Pub | Theater | Opera House | Breakfast Spot |
| 5 | Denver | Yoga Studio | Breakfast Spot | History Museum | Jewelry Store | Park |
| 7 | Dover | Pizza Place | BBQ Joint | Flea Market | Monument / Landmark | Seafood Restaurant |
| 8 | Tallahassee | Cosmetics Shop | New American Restaurant | Japanese Restaurant | Beer Bar | Cocktail Bar |
| 9 | Atlanta | Hotel Bar | Music Venue | Cajun / Creole Restaurant | History Museum | Poke Place |
| 11 | Boise | Pub | Chinese Restaurant | Seafood Restaurant | Park | Dive Bar |
| 13 | Indianapolis | Brewery | Yoga Studio | Gay Bar | New American Restaurant | Advertising Agency |
| 14 | Des Moines | Hotel | Music Venue | Tapas Restaurant | Café | Skating Rink |
| 16 | Frankfort | Pizza Place | History Museum | Café | Food Court | Bookstore |
| 19 | Annapolis | Bar | Thai Restaurant | Spa | French Restaurant | Gastropub |
| 20 | Boston | Breakfast Spot | Clothing Store | Bakery | Donut Shop | Coffee Shop |
| 21 | Lansing | Bar | Bakery | Snack Place | Soup Place | Burger Joint |
| 22 | Saint Paul | Pizza Place | Brewery | Coffee Shop | Southern / Soul Food Restaurant | Farmers Market |
| 25 | Helena | Coffee Shop | Café | Dessert Shop | Taco Place | Pharmacy |
| 29 | Trenton | Art Gallery | Bar | Pizza Place | Italian Restaurant | Caribbean Restaurant |
| 30 | Santa Fe | Pizza Place | Mexican Restaurant | New American Restaurant | Brewery | Automotive Shop |
| 31 | Albany | Latin American Restaurant | Burger Joint | Sandwich Place | Bar | Sushi Restaurant |

Cluster 2 continued

| | | | | | | |
|----|---------------|-----------------------|------------------|---------------------------------|---------------------|--------------------|
| 32 | Raleigh | Performing Arts Venue | Sushi Restaurant | Southern / Soul Food Restaurant | BBQ Joint | Cocktail Bar |
| 34 | Columbus | Park | Coffee Shop | Theater | Café | Capitol Building |
| 35 | Oklahoma City | Bar | Ice Cream Shop | Ramen Restaurant | Sushi Restaurant | Pizza Place |
| 37 | Harrisburg | American Restaurant | Brewery | Italian Restaurant | French Restaurant | Speakeasy |
| 38 | Providence | Italian Restaurant | Gourmet Shop | Hockey Arena | Theater | Dessert Shop |
| 44 | Montpelier | Thai Restaurant | Bar | Italian Restaurant | Steakhouse | Taco Place |
| 45 | Richmond | American Restaurant | Dessert Shop | Italian Restaurant | Pizza Place | Tea Room |
| 47 | Charleston | Pizza Place | Farmers Market | Bakery | Park | Sandwich Place |
| 48 | Madison | Pizza Place | Café | Gastropub | American Restaurant | Italian Restaurant |
| 49 | Cheyenne | Pizza Place | Ice Cream Shop | Diner | Mexican Restaurant | Italian Restaurant |

Cluster 3 (Blue circle on the map)

| | Capital | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|---------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 23 | Jackson | Zoo | Sandwich Place | Moving Target | Fast Food Restaurant | BBQ Joint |

Cluster 4 (Yellow circles on the map)

| | Capital | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue |
|----|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 0 | Montgomery | Fried Chicken Joint | Fast Food Restaurant | Sandwich Place | Mexican Restaurant | Breakfast Spot |
| 3 | Little Rock | Hotel | Mexican Restaurant | Pharmacy | Zoo | Bank |
| 6 | Hartford | Theater | American Restaurant | Boutique | Mexican Restaurant | Sandwich Place |
| 12 | Springfield | Pharmacy | Restaurant | Diner | Italian Restaurant | Donut Shop |
| 17 | Baton Rouge | Gas Station | Discount Store | Convenience Store | Grocery Store | Fast Food Restaurant |
| 18 | Augusta | Pharmacy | American Restaurant | Convenience Store | History Museum | Thai Restaurant |
| 28 | Concord | Science Museum | Sandwich Place | Pizza Place | Sporting Goods Shop | Storage Facility |
| 39 | Columbia | American Restaurant | Seafood Restaurant | Pizza Place | Bakery | Burger Joint |
| 40 | Pierre | Mobile Phone Shop | Pizza Place | Liquor Store | Restaurant | Movie Theater |
| 41 | Nashville | Hotel | Music Venue | Sandwich Place | Park | Steakhouse |

Even if we did not get a clear cutoff point from elbow method, clustering by 4 shows that there is a clear distinction between the coasts. Before diving into that, we should be aware of the fact that there is only one capital in the third cluster. The reason might be that there are only 6 venues returned for Jackson and all of them belong to different venue categories, therefore the order does not reflect the most common venues in the city. And the k-means could not put it into any other cluster. The fourth cluster looks different than the first two but it does not have a distinct feature as the other two have.

From the map it is clear that there is a difference between the West and East Coasts of the country. The West Coast capitals have concentrated more on coffee shops and the East Coast capitals more pizza places and bars.

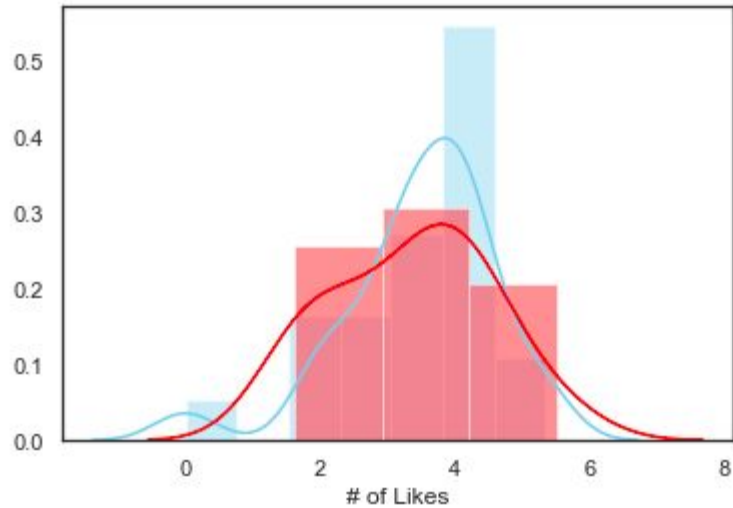
Comparison of the Two Coasts (Step 2)

In order to see if there is a significant difference between how people engage in places on the coasts, I will compare them by various factors.

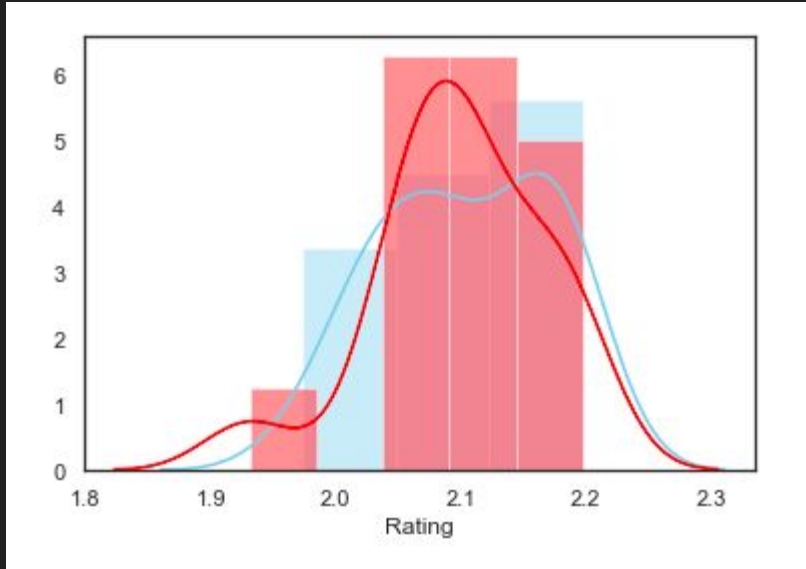
I will compare coffee shops, pizza places and bars on two coasts. Since this analysis is based on coasts, I decided to exclude certain capitals. The capital which is included to the Cluster 1 but location-wise counted as the east (based on the middle meridian); Jefferson, and the capitals which are included to the Cluster 2 but location-wise counted as the west; Boise, Helene, Cheyenne, Phoenix, Santa Fe, Oklahoma City, and Denver are excluded from the analysis.

Coffee Shops

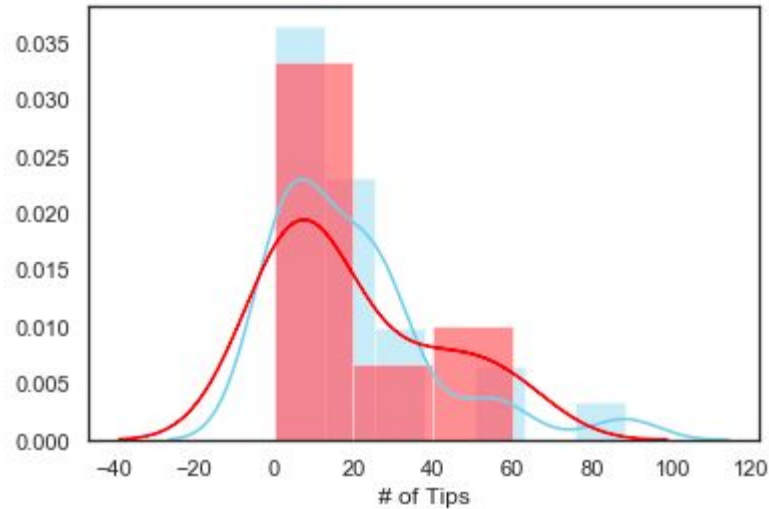
Firstly, I got descriptive stats for coffee shops in each coast. There are 24 coffee shops in the west, and 15 in the east. At the first glance, means and stds for each factor are pretty similar to each other except the number of photos.



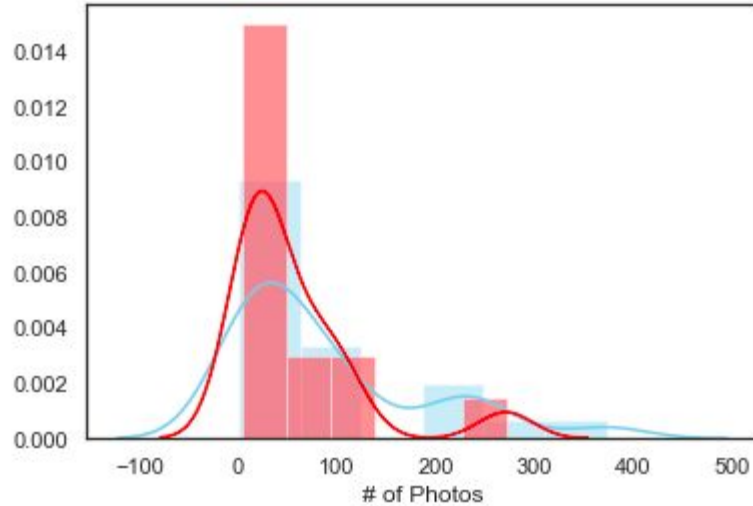
T-test did not give a significant result for the number of likes ($p\text{-value}=0.75$). This means that there is no significant difference between the coasts in terms of how many times people liked the coffee shops.



T-test did not give a significant result for ratings ($p\text{-value}=0.80$). This means that there is no significant difference between the coasts in terms of how much people rated the coffee shops.



T-test did not give a significant result for the number of tips ($p\text{-value}=0.99$). This means that there is no significant difference between the coasts in terms of how much they engaged with the coffee shops and left tips for other people.



Lastly, the number of photos uploaded is not significantly different either. Here I used Mann-Whitney U Test (the non parametric version of student-t test), because log transformation was inapplicable. And I got p-value=0.24.

Bars

Since there is no bar returned from our sample in the west coast, there is no further analysis done for bars.

Pizza Places

There are 3 pizza places in our sample for the West Coast, compared to 17 returned for the East Coast. The sample is not enough to do a comparison.

Comparing the Coasts

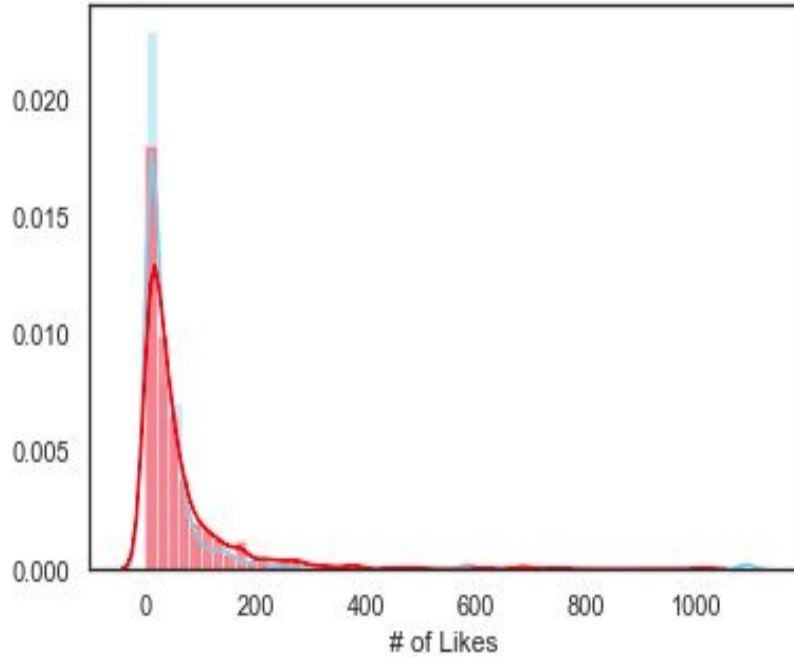
I decided to do a comparison between coasts in terms of the number of likes in general, rather than doing a venue category-wise comparison. This would be helpful to see if there is a popularity difference between capitals in each coast.

West Coast Venues sorted by the number of likes

| | Capital | Venue ID | Venue Name | Categories | Rating | # of Likes | # of Tips | # of Photos | Price Category | Latitude | Longitude |
|----|------------|--------------------------|--------------------------------|-----------------------|--------|------------|-----------|-------------|----------------|-----------|-------------|
| 6 | Austin | 4c77cbe5947ca1cd90694837 | Austin City Limits Live | Performing Arts Venue | 9.4 | 1092 | 98 | 3212 | NaN | 30.265288 | -97.747260 |
| 15 | Austin | 49e32bbaf964a52068621fe3 | La Condesa | Mexican Restaurant | 8.6 | 586 | 269 | 808 | 3.0 | 30.265466 | -97.747734 |
| 3 | Austin | 4db8a87c6a2334682d9809a9 | Violet Crown Cinema | Indie Movie Theater | 8.9 | 330 | 75 | 331 | NaN | 30.265524 | -97.748189 |
| 2 | Sacramento | 4b0586b4f964a520816a22e3 | Gunther's Quality Ice Cream | Ice Cream Shop | 9.2 | 251 | 79 | 288 | 1.0 | 38.553600 | -121.475792 |
| 4 | Austin | 554377bc498e6cb88b23f4bf | Trader Joe's | Grocery Store | 9.2 | 208 | 8 | 195 | NaN | 30.267585 | -97.752687 |
| 7 | Sacramento | 4b1c1d5ff964a520680224e3 | Temple Coffee & Tea | Coffee Shop | 9.0 | 208 | 88 | 373 | 2.0 | 38.563899 | -121.472408 |
| 2 | Austin | 4a61f288f964a520b1c21fe3 | Juan Pelota Café | Coffee Shop | 8.9 | 177 | 58 | 255 | 1.0 | 30.267953 | -97.749365 |
| 8 | Sacramento | 4b0586b9f964a520386b22e3 | Sacramento Natural Foods Co-op | Grocery Store | 9.1 | 163 | 32 | 156 | NaN | 38.564475 | -121.472676 |

East Coast Venues sorted by the number of likes

| | Capital | Venue ID | Venue Name | Categories | Rating | # of Likes | # of Tips | # of Photos | Price Category | Latitude | Longitude |
|----|------------|--------------------------|---------------------------------------|---------------------------------|--------|------------|-----------|-------------|----------------|-----------|------------|
| 3 | Atlanta | 4a05d34ef964a52083721fe3 | Centennial Olympic Park | Park | 9.2 | 1012 | 209 | 3505 | NaN | 33.760356 | -84.393507 |
| 13 | Des Moines | 4df4d43522718759f8245edd | Zombie Burger + Drink Lab | Burger Joint | 8.7 | 749 | 317 | 1310 | 2.0 | 41.590380 | -93.613471 |
| 12 | Atlanta | 4aa08dedf964a520094020e3 | Atlanta Marriott Marquis | Hotel | 8.6 | 695 | 128 | 2267 | NaN | 33.761600 | -84.385929 |
| 0 | Atlanta | 40e0b100f964a5209b071fe3 | The Tabernacle | Music Venue | 9.1 | 678 | 93 | 1746 | NaN | 33.758719 | -84.391455 |
| 3 | Madison | 4afcc582f964a520bc2522e3 | The Old Fashioned Tavern & Restaurant | Gastropub | 9.0 | 614 | 259 | 906 | 2.0 | 43.076153 | -89.383526 |
| 10 | Boston | 4a5c1457f964a5202fbc1fe3 | South Shore Plaza | Shopping Mall | 8.0 | 493 | 82 | 256 | NaN | 42.221995 | -71.023768 |
| 13 | Raleigh | 4e091acc1f6e21103396e069 | Beasley's Chicken + Honey | Southern / Soul Food Restaurant | 9.2 | 453 | 173 | 590 | 2.0 | 35.776968 | -78.638175 |
| 8 | Des Moines | 4b43e42ef964a52058ed25e3 | Fong's Pizza | Pizza Place | 9.0 | 388 | 198 | 532 | 2.0 | 41.585925 | -93.621893 |



There is indeed a significant difference between the coasts ($p\text{-value} = 0.004$) in terms of the number of likes. We can also observe that the East Coast capitals are richer in terms of venue categories, such as parks, stadiums, museums, arenas, markets etc. However, when we check the sorted list for the West, we can see that capital centers do not provide that many variety to people.

Results

- Coffee Shops are more common in the West Coast whereas bars and pizza places are common in the East.
- The comparison of coffee shops in the two coasts in terms of the number of likes, ratings, the number of tips, the number of photos did not give significant results.
- The capital centers in the East Coast are richer in content. There are more variety of venues on this coast.

Discussion

- Only 20 venues for each capital
- Bismarck is excluded
- Centers limited to 1500 m radius
- Records of the venues which are registered in Foursquare only
- Ratings, likes, photos, and tips are the only factors considered

Conclusion

My aim in this project is to see the differences and similarities in the capitals in terms of venue categories and have meaningful insights for the travel agencies to attract their customers with appealing recommendations. I believe this project is helpful to travel agencies for creating an itinerary on each coast. The results showed that it is better if they have unique travel recommendations for each coast. They can look more into the substitutes of bar and pizza places in the West Coast closely. Also they can investigate more closely the places in the East, and calculate how much time is needed to have an extensive trip compared to the West.