The Battle of Neighborhoods Los Angeles

Analyzing Race and Ethnicity similarities and differences in the neighborhoods of Los Angeles

Introduction

▶ Generally, people do not understand how neighborhoods venues are influenced by cultures such as Hispanic population, White population among others.

▶ It is not clear how the distribution of the population are among neighborhoods.

▶ Comprehend the number of citizens by race and ethnicity in Los Angeles.

▶ Potential investors need to understand where they have opportunities to introduce their products and services based on common venues in the neighborhoods

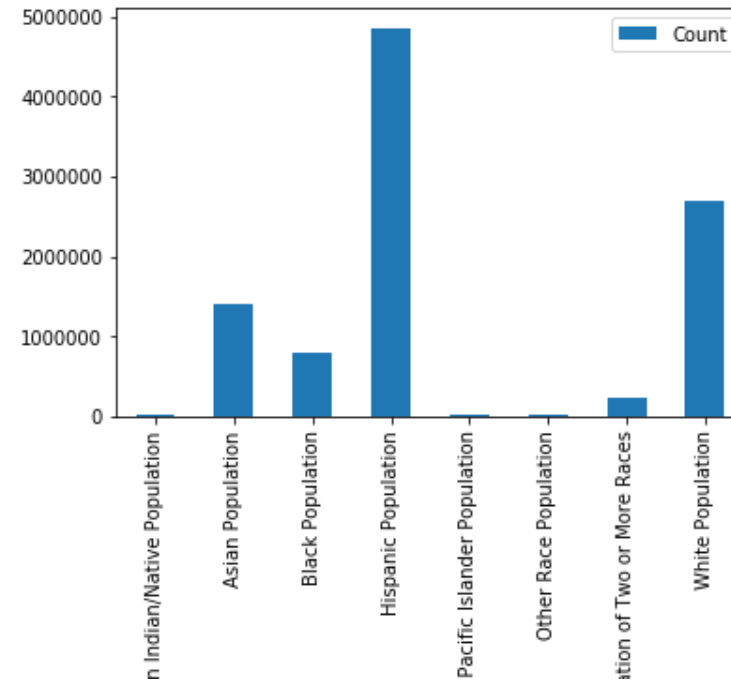▶ Newcomers or Citizens who want to translate to Los Angeles need to know what offers each neighborhood.

Data acquisition and cleaning

▶ The Neighborhood Data for Social Change (NDSC) platform offers the Race and Ethnicity dataset from 2010 to 2016.

   ▶ https://usc.data.socrata.com/api/views/jxw5-xxv5/rows.csv

▶ The Foursquare API is a source for developers who want to search for a specific type of venue around a given location.

   ▶ https://api.foursquare.com/v2/venues/search?client_id=CLIENT_ID&client_secret=CLIENT_SECRET&ll=LATITUDE,LONGITUDE&v=VERSION&query=QUERY&radius=RADIUS&limit=LIMIT

   ▶ Where

      ▶ CLIENT_ID = your Foursquare ID

      ▶ CLIENT_SECRET = your Foursquare Secret

      ▶ LATITUDE = latitude of the given place

      ▶ LONGITUDE = longitude of the given place

      ▶ VERSION = date of the database version 'yyyymmdd'

      ▶ QUERY = the value you want to search

      ▶ RADIUS = number of metter from the given place

      ▶ LIMIT = number of records in the answer

Population Distribution by Races

▶ Identify the two largest population groups to compare each other

	Variable	Count
3	Hispanic Population	4861648.0
7	White Population	2687787.0
1	Asian Population	1413105.0
2	Black Population	801182.0
6	Population of Two or More Races	220878.0
5	Other Race Population	29351.0
4	Native Hawaiian/Other Pacific Islander Population	24439.0
0	American Indian/Native Population	18765.0

Identify Top 10 Neighborhoods for Hispanic Population

▶ Select the top 10 neighborhoods by identifying the highest participation rate in each neighborhood.

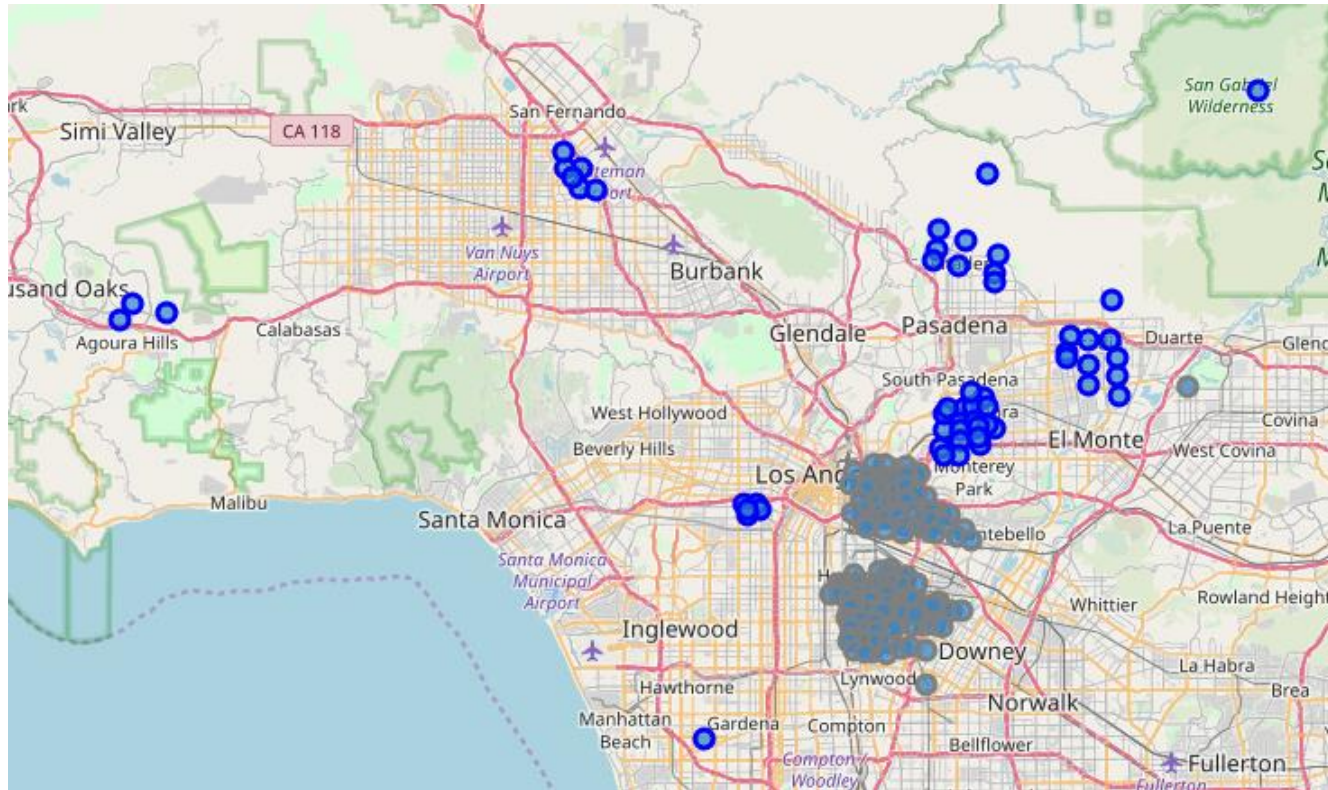|	Neighborhood	Count_x	Count_y	Percentage
140	Maywood	27672.0	27094.0	0.979112
104	Huntington Park	61630.0	59789.0	0.970128
65	East Los Angeles	121361.0	117396.0	0.967329
239	Walnut Park	15791.0	15197.0	0.962384
52	Cudahy	24106.0	23170.0	0.961171
21	Bell Gardens	42805.0	40867.0	0.954725
201	South Gate	97380.0	92865.0	0.953635
108	Irwindale	1319.0	1250.0	0.947688
20	Bell	35386.0	33091.0	0.935144
27	Boyle Heights	93164.0	86783.0	0.931508

Identify Top 10 Neighborhoods for White Population

▶ Select the top 10 neighborhoods by identifying the highest participation rate in each neighborhood.

	Neighborhood	Count_x	Count_y	Percentage
216	Topanga	9822.0	8328.0	0.847892
26	Beverlywood	4215.0	3551.0	0.842467
157	Pacific Palisades	24903.0	20644.0	0.828976
134	Malibu	7195.0	5909.0	0.821265
252	Westlake Village	4330.0	3546.0	0.818938
97	Hermosa Beach	19726.0	16127.0	0.817550
29	Brentwood	32463.0	26238.0	0.808243
23	Beverly Crest	11068.0	8884.0	0.802674
103	Hollywood Hills West	14218.0	11383.0	0.800605
25	Beverly Hills	34520.0	27610.0	0.799826

Plot with the neighborhoods selected

- Plot the neighborhoods selected for both population groups the
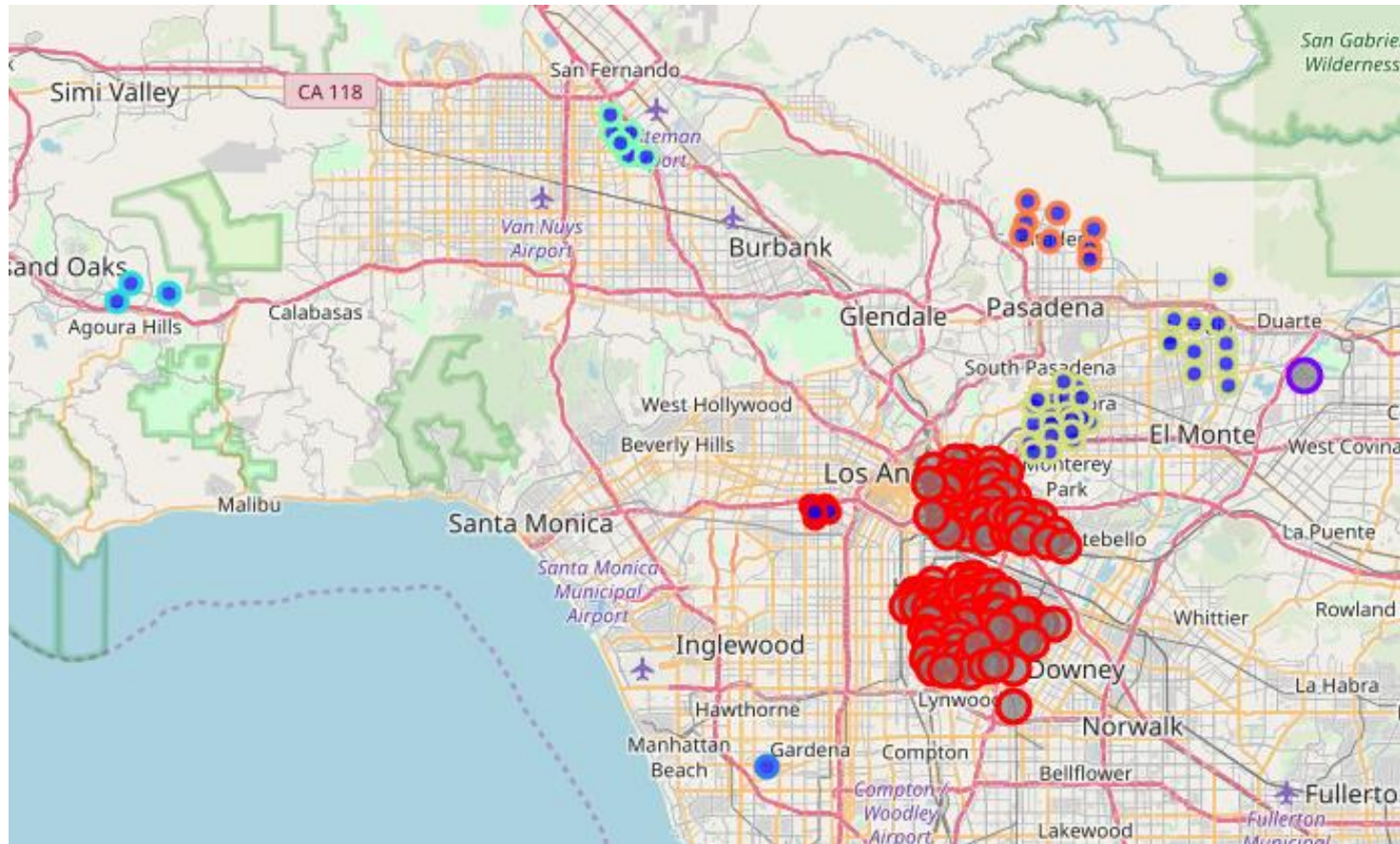 - White population in blue
  - Hispanic population in gray

Clustering Neighborhoods

▶ Cluster neighborhoods by using the **K-means clustering.**

Variable	Count	Neighborhood	latitude	longitude	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
White Population	1407.0	Arcadia	34.162478	-118.024155	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
White Population	2119.0	Altadena	34.200921	-118.136652	6	Cosmetics Shop	Mexican Restaurant	Middle Eastern Restaurant	Coffee Shop	Grocery Store	Liquor Store	American Restaurant	Sandwich Place	Chinese Restaurant	Garden Center
White Population	348.0	Arleta	34.233766	-118.429943	4	Mexican Restaurant	Liquor Store	Yoga Studio	Park	Bus Station	Food	Playground	Locksmith	Movie Theater	Beach Bar
White Population	426.0	Arleta	34.232289	-118.418041	4	Mexican Restaurant	Liquor Store	Yoga Studio	Park	Bus Station	Food	Playground	Locksmith	Movie Theater	Beach Bar
White Population	404.0	Arleta	34.245902	-118.428032	4	Mexican Restaurant	Liquor Store	Yoga Studio	Park	Bus Station	Food	Playground	Locksmith	Movie Theater	Beach Bar
White						Mexican								Movie	

Plot clusters (7) identified

▶ Neighborhoods with background in blue are White population

▶ Neighborhoods with background in gray are Hispanic population

Compairing the two biggest clusters

▶ The biggest Hispanic cluster

Count	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
57.0	0	Sushi Restaurant	Mexican Restaurant	Taco Place	Playground	Seafood Restaurant	Ice Cream Shop	Café	Fried Chicken Joint	Restaurant	Fast Food Restaurant
179.0	0	Sushi Restaurant	Mexican Restaurant	Taco Place	Playground	Seafood Restaurant	Ice Cream Shop	Café	Fried Chicken Joint	Restaurant	Fast Food Restaurant
518.0	0	Sushi Restaurant	Mexican Restaurant	Taco Place	Playground	Seafood Restaurant	Ice Cream Shop	Café	Fried Chicken Joint	Restaurant	Fast Food Restaurant
212.0	0	Sushi Restaurant	Mexican Restaurant	Taco Place	Playground	Seafood Restaurant	Ice Cream Shop	Café	Fried Chicken Joint	Restaurant	Fast Food Restaurant
177.0	0	Sushi Restaurant	Mexican Restaurant	Taco Place	Playground	Seafood Restaurant	Ice Cream Shop	Café	Fried Chicken Joint	Restaurant	Fast Food Restaurant
		Mexican	Fast Food			Convenience			Seafood		

▶ The biggest White cluster

Count	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
1407.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
1595.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
1192.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
899.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
852.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank
842.0	5	Chinese Restaurant	Tea Room	Japanese Restaurant	Bakery	Noodle House	Dessert Shop	American Restaurant	Mobile Phone Shop	Asian Restaurant	Bank

Conclusions

▶ The results obtained showed an impressive neighborhood segregation among Hispanic population and White population

▶ Clear cluster classification

▶ Potential investments such as Asian food and Italian food in Hispanic neighborhoods which according to the clusters, those are no common places there.

▶ It is necessary further analysis to be sure about investments, however the resultant clusters serve as a starting analysis.

▶ White group cluster is very influenced by Asian food such as Chinese, Japanese, and Sea food.

▶ Hispanic group is influenced by Mexican Restaurant, Fast Food Restaurant, Food Truck, Pizza Place, and Convenience Store.

▶ Only one White neighborhood appears in a Hispanic cluster which denotes how different those races are.