



Exploring Restaurants in Los Angeles

Business Direction : Two-fold

Goal : To investigate some relevant location factors by exploring the restaurants based in the various neighborhoods of LA. Could help answering the following -

- ▶ Finding restaurants based on individual preferences. Could also help people looking for places to rent based on restaurant types or frequency
- ▶ Corporations/individuals looking for an optimal location to set up a new restaurant



Plan Outline

- ▶ Two ways of Clustering –
 - ▶ Segmenting neighborhoods based on the density of restaurants.
Defining clusters with low, medium and high densities.
 - ▶ Segregation based on frequency of restaurants based on their type.
- ▶ Combining the above two clusters and find intersections between to fine tune the location for the new restaurant.

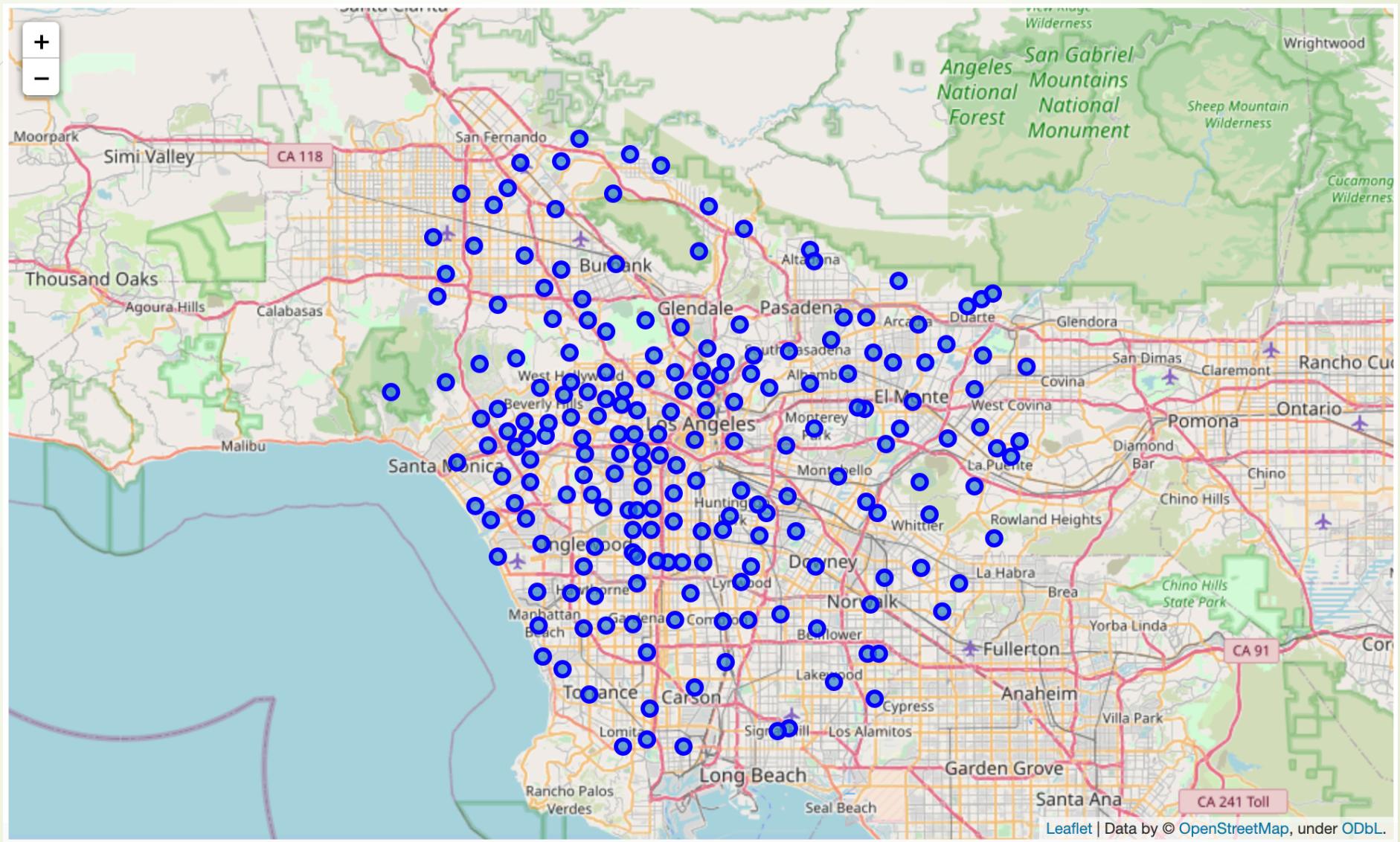
Data Source

- ▶ Link -
<https://usc.data.socrata.com/dataset/Los-Angeles-Neighborhood-Map/r8qd-yxsr>.
- ▶ Used the json file in the link above to gather neighborhood location data.

A sample of the data

	Neighbourhood	sqmi	Longitude	Latitude
0	Acton	39.3391089485	-118.16981019229348	34.497355239240846
1	Adams-Normandie	0.805350187789	-118.30020800000011	34.031461499124156
2	Agoura Hills	8.14676029818	-118.75988450000015	34.146736499122795
3	Agua Dulce	31.4626319451	-118.3171036690717	34.504926999796837
4	Alhambra	7.62381430605	-118.13651200000021	34.085538999123571

Neighborhoods in LA



Retrieving venues

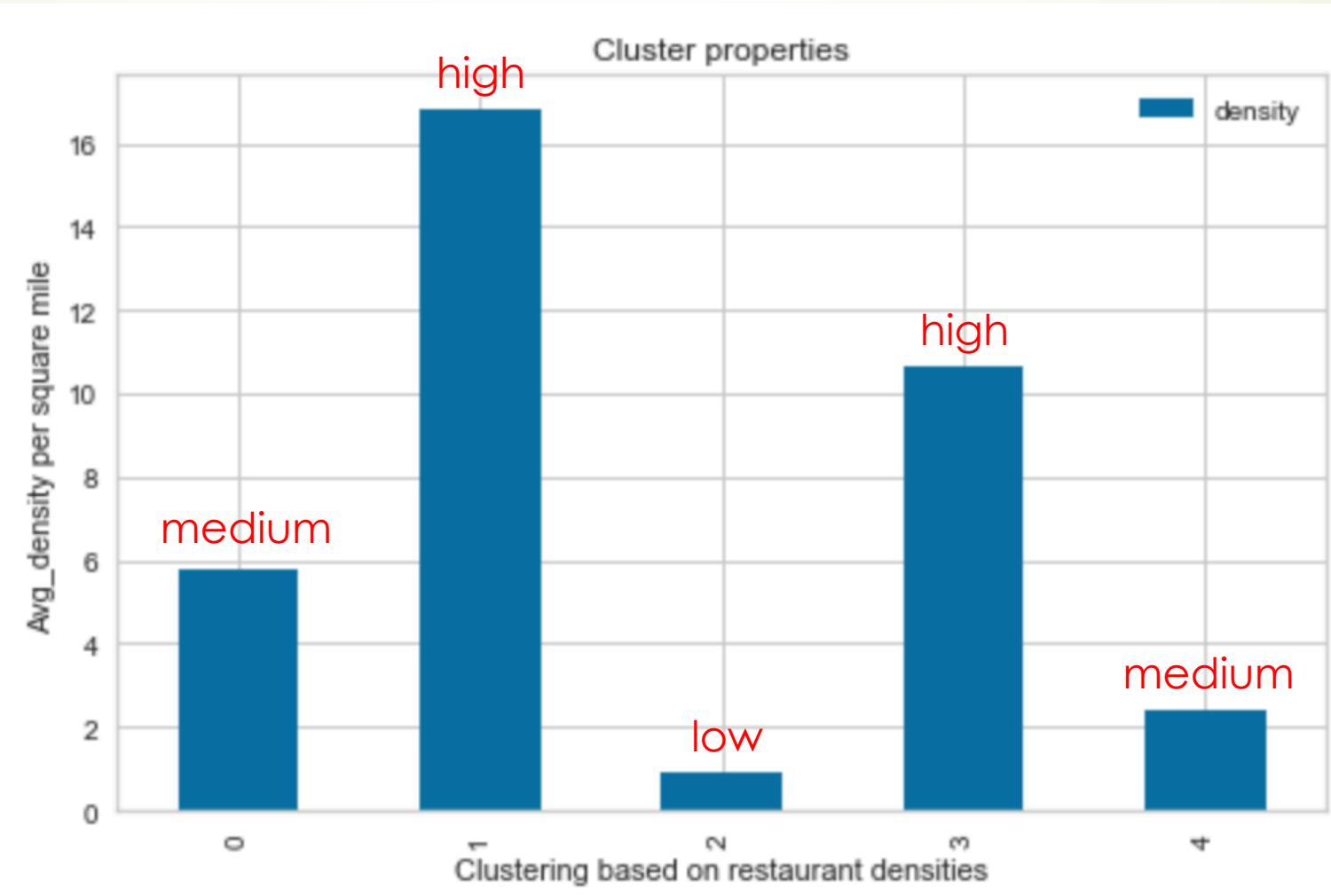
- ▶ **Foursquare** location data was used for this purpose.
- ▶ Only Restaurant venues were kept for further analysis.



A sample of the final data to analyze

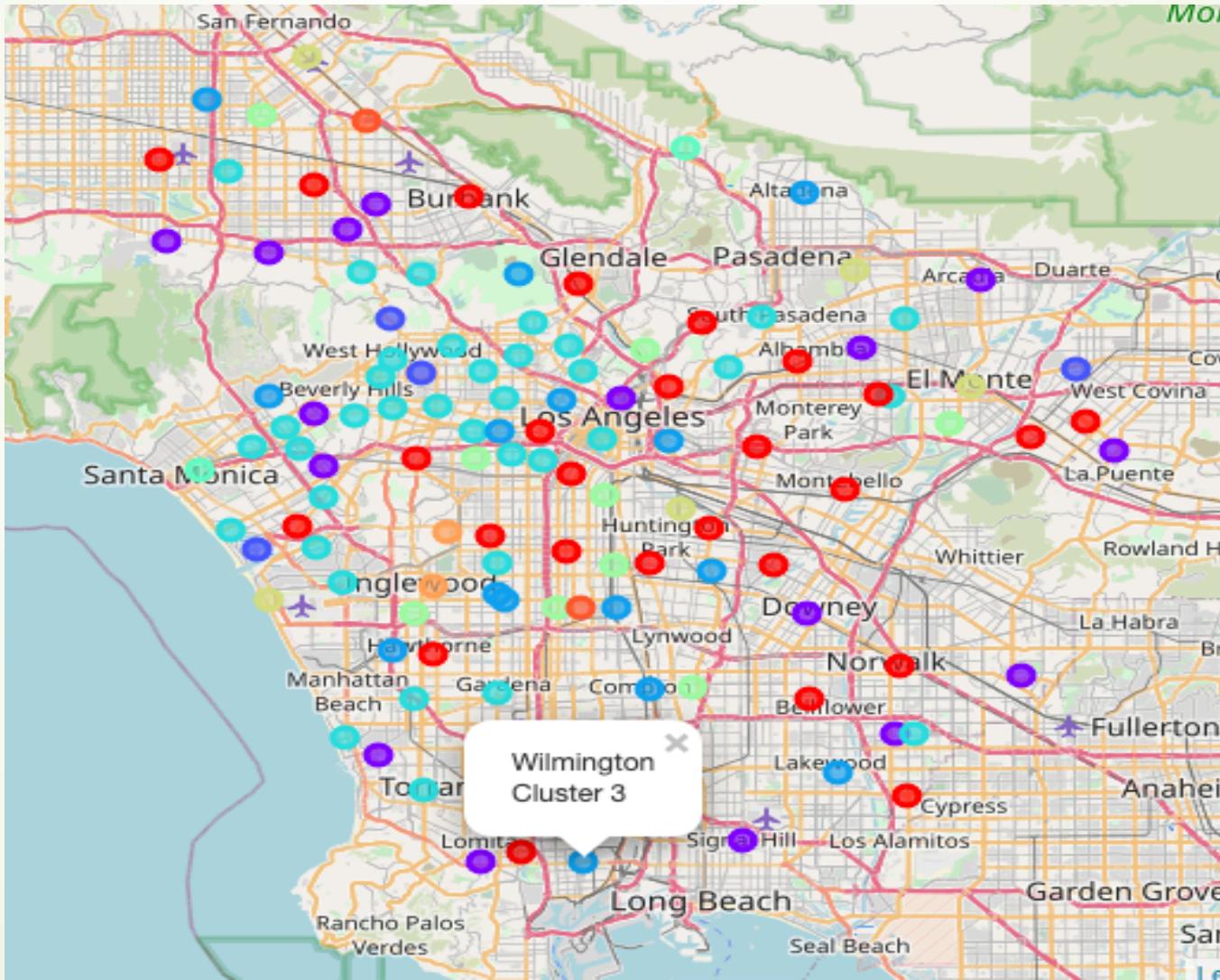
	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Adams-Normandie	34.031461	-118.300208	Orange Door Sushi	34.032485	-118.299368	Sushi Restaurant
1	Adams-Normandie	34.031461	-118.300208	Little Xian	34.032292	-118.299465	Sushi Restaurant
2	Adams-Normandie	34.031461	-118.300208	Sushi Delight	34.032501	-118.299454	Sushi Restaurant
3	Alhambra	34.085539	-118.136512	Manny's Tacos	34.087148	-118.135275	Mexican Restaurant
4	Alhambra	34.085539	-118.136512	Wendy's	34.087705	-118.135010	Fast Food Restaurant

Clustering based on restaurant densities

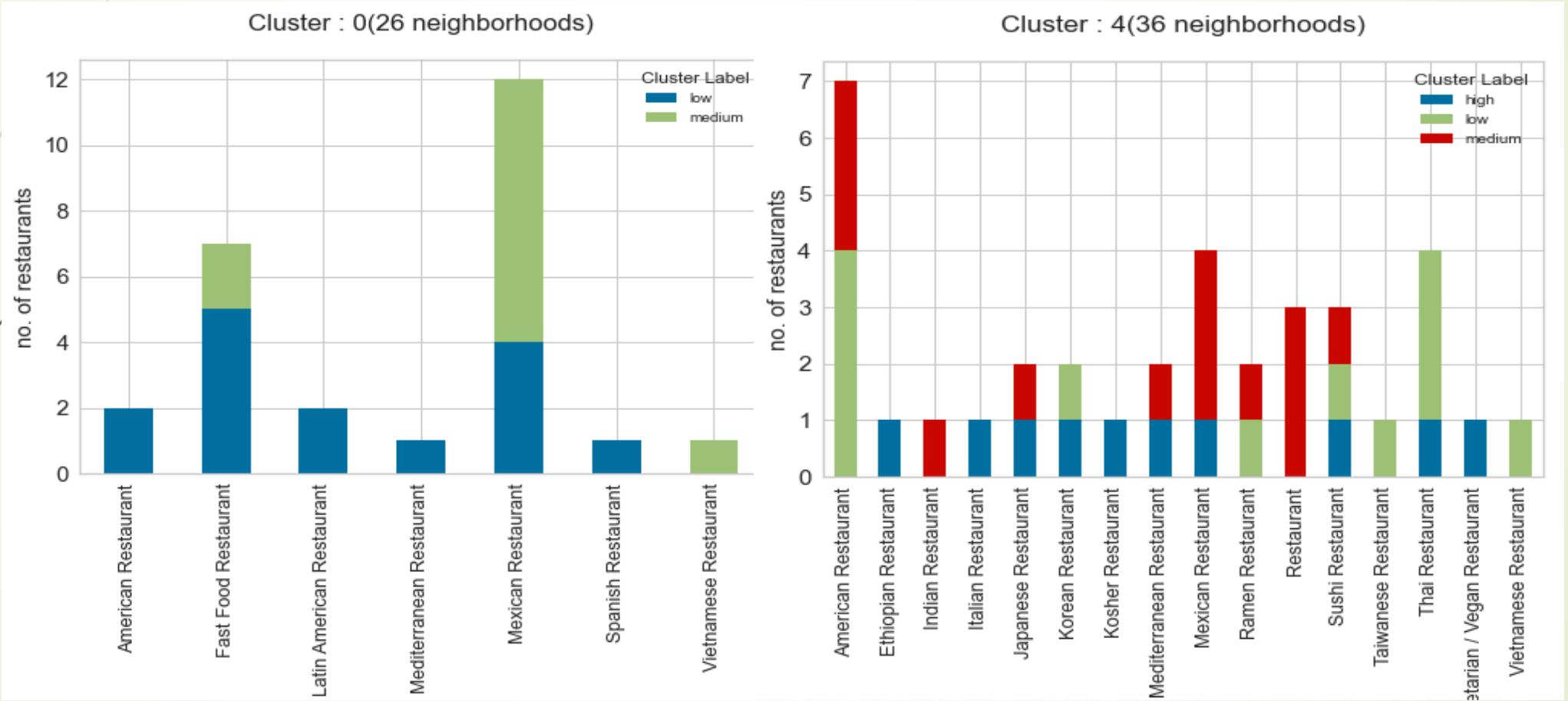


Clustering based on frequency

Neighborhoods segregated into 10 clusters

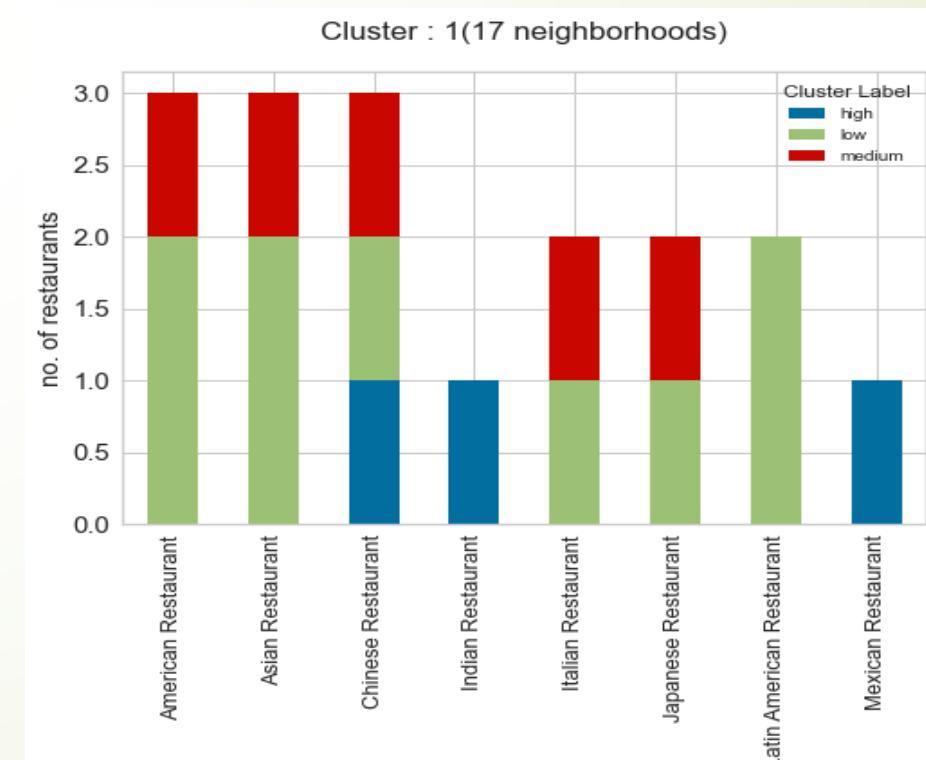
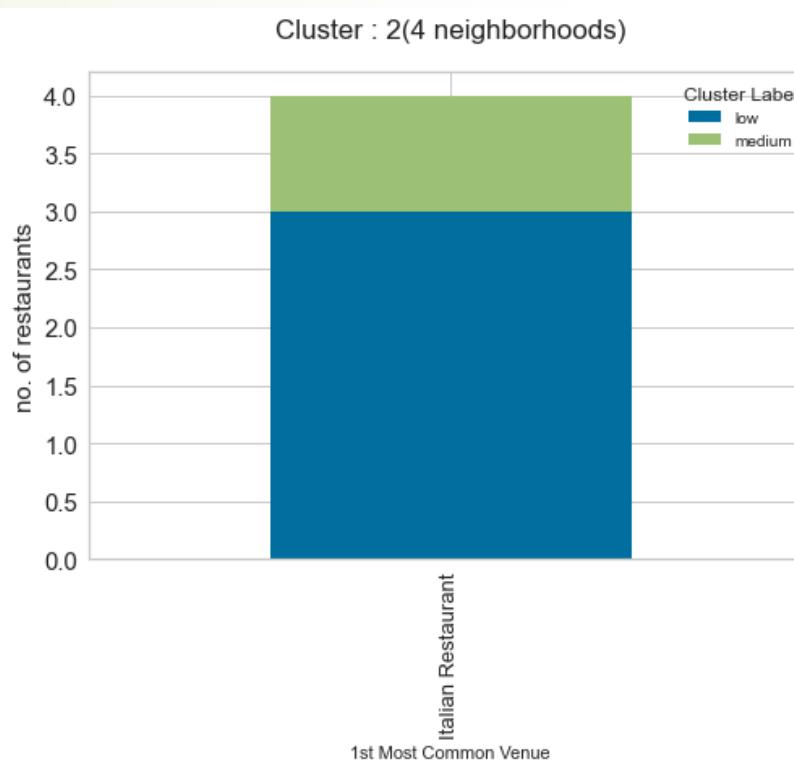


Results



Example : Setting up an Italian restaurant

- Could certainly avoid Cluster 2. Low density regions could mean less popular.
- Cluster 1 is a good option. Diverse option of cuisines (could correspond to a diverse audience in the vicinity)
- Only 2 Italian restaurants one each in medium and low-density regions - good tradeoff between competition and popularity.



Conclusion

- ▶ Similar conclusions can be derived for other restaurants as well.
- ▶ One can also look at the second most common venues to gain some additional information about the clusters.
- ▶ A follow up analysis could also be looking at the distance of a particular restaurant from neighborhood center and cluster regions based on their proximity to a particular kind of restaurant.
- ▶ Further, one can look at things like distance from public transport, availability of parking lots, population, etc.