

Girl Scouts Cookie Booth Locations

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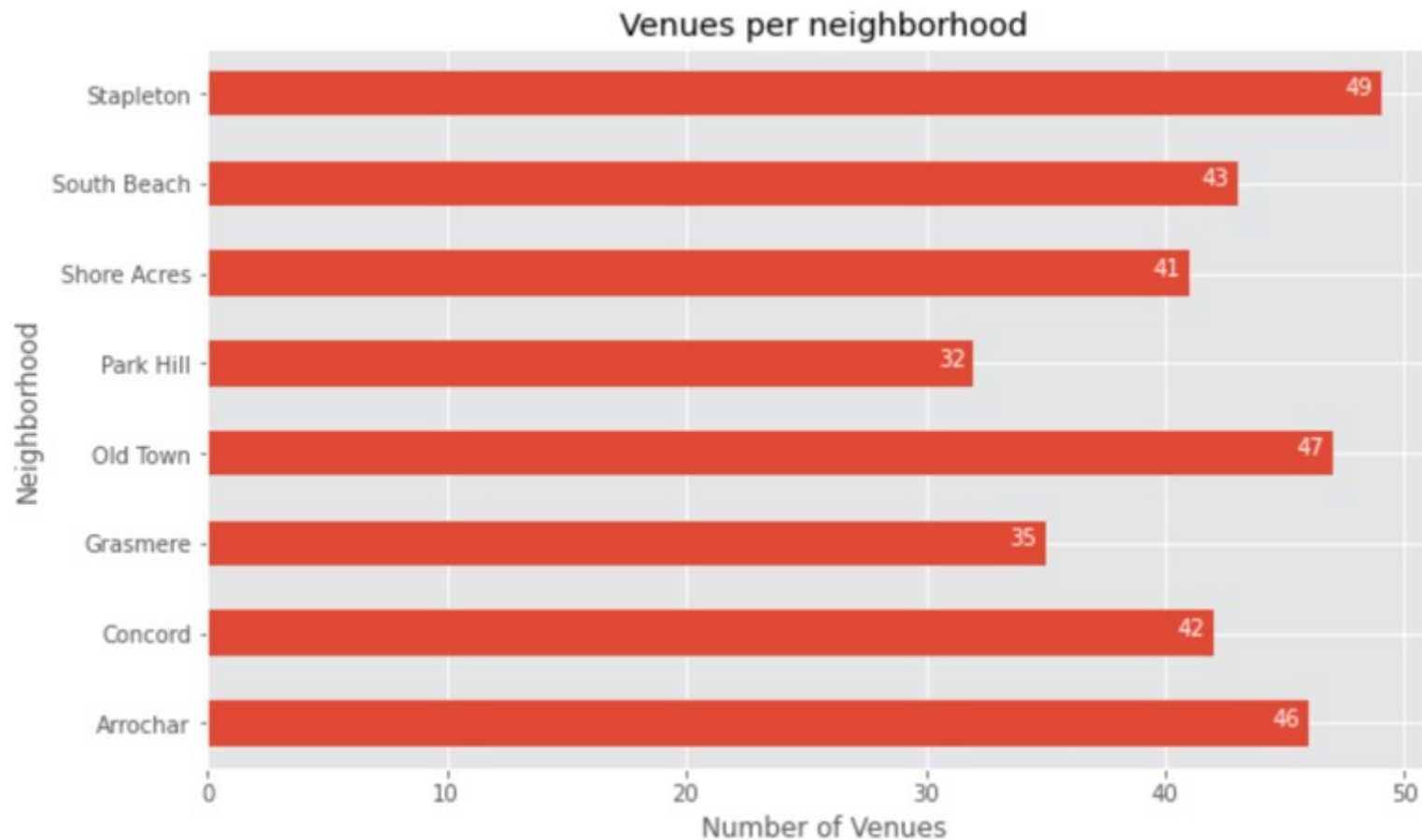
Cookie booth locations = Happy troopers

- ▶ With Covid-19, door-to-door sales have become impossible
- ▶ Cookie booth is a great alternative solution
- ▶ Objective - Top 10 locations to set up Cookie booths
- ▶ Interest:
 - ▶ My daughter's troop
 - ▶ Other Girl Scout troops in town

Data acquisition and cleaning

- ▶ Geospatial coordinates of NY - 5 boroughs and 306 neighborhoods
- ▶ 8 Neighborhoods within 3-mile radius of Grasmere, Staten Island, NY
- ▶ Location data from Foursquare,
 - ▶ 3150 venues in Staten Island Borough
 - ▶ 400 venues in neighborhoods of interest
 - ▶ 65 missing venue categories were dropped
 - ▶ Cleaned dataset had 135 unique categories
- ▶ Foursquare Recovery Index for foot traffic data

Count of venues by neighborhood



Each of the neighborhoods have similar number of venues though they vary in category.

Top 5 common venues by frequency

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Arrochar	Deli / Bodega	Bus Stop	Bagel Shop	Beach	Italian Restaurant
1	Concord	Peruvian Restaurant	Martial Arts School	Office	Automotive Shop	Doctor's Office
2	Grasmere	Doctor's Office	Bus Stop	Bank	Office	Dentist's Office
3	Old Town	Medical Center	Italian Restaurant	Auto Dealership	Bank	Bakery
4	Park Hill	Doctor's Office	Other Great Outdoors	Office	Thrift / Vintage Store	Medical Center
5	Shore Acres	Deli / Bodega	Dentist's Office	Chinese Restaurant	Building	Office
6	South Beach	Doctor's Office	Hospital	Pier	Beach	Dentist's Office
7	Stapleton	Salon / Barbershop	Bank	Pizza Place	Bus Line	Sandwich Place

Based on frequency, the above lists the venues for each neighborhood.

Most visited venues after COVID-19 stay-at-home orders lifted

Venue Category	Ranking
Airports	7.705882
Skiing	9.941176
Bars	10.000000
Apparel Retail	10.529412
Beaches	11.882353
Discount	12.294118
Hotels	12.882353
Bank	13.058824
Metro	13.529412
Medical	13.588235
School	13.588235

The above is the mean ranking of the foot traffic data from Foursquare Recovery Index. Low score indicative of venue that is most visited.

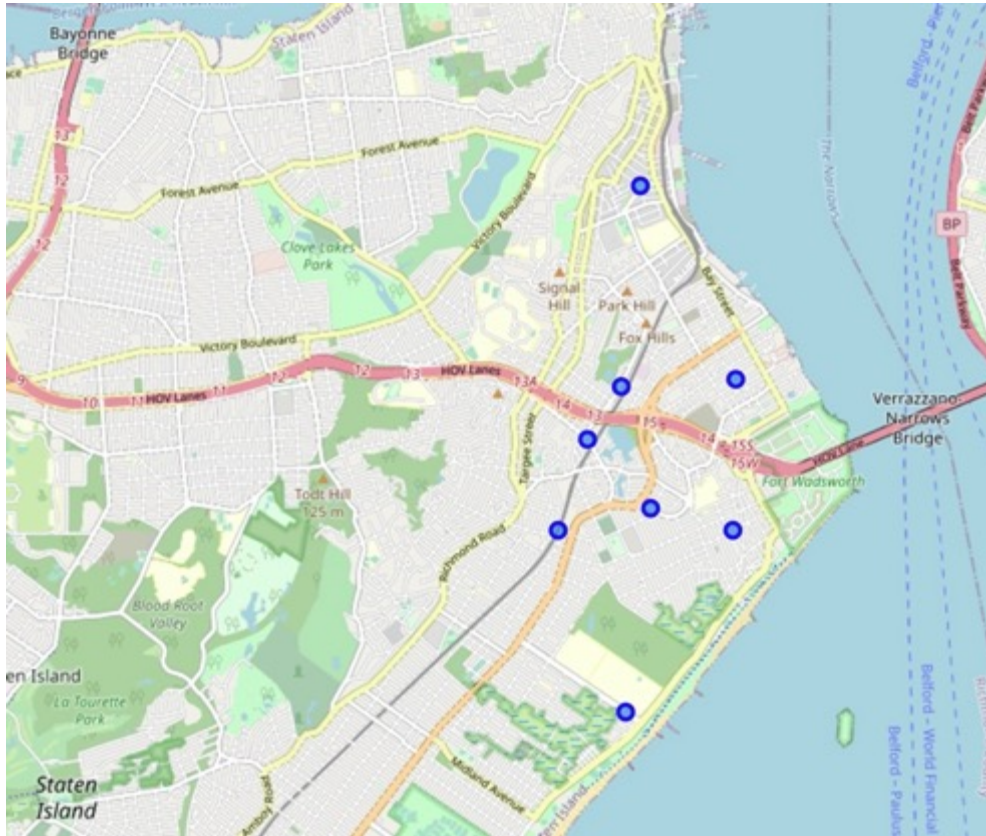
Mapping of Recovery Index category to Neighborhood venue category

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Category	Venue Address	Venue Latitude	Venue Longitude	Venue Category Orig
15	Stapleton	40.626928	-74.077902	Tappen Park	Outdoors	Bay St (btwn Water & Canal St)	40.626872	-74.076857	Park
64	Arrochar	40.596313	-74.067124	Swing Life Away Swings	Outdoors	71 Sand Ln	40.597928	-74.070138	Playground
66	Arrochar	40.596313	-74.067124	Gateway National Recreation Area	Outdoors	Staten Island, NY 10305	40.592428	-74.065373	Outdoors & Recreation
89	Arrochar	40.596313	-74.067124	The monument	Outdoors	115 lily pond ave	40.600412	-74.064524	Sculpture Garden
180	Shore Acres	40.609719	-74.066678	Poolside At The Dawson's	Outdoors	New York	40.610948	-74.066410	Art Gallery

Focus on ‘Venue Category’ and ‘Venue Category Orig’.

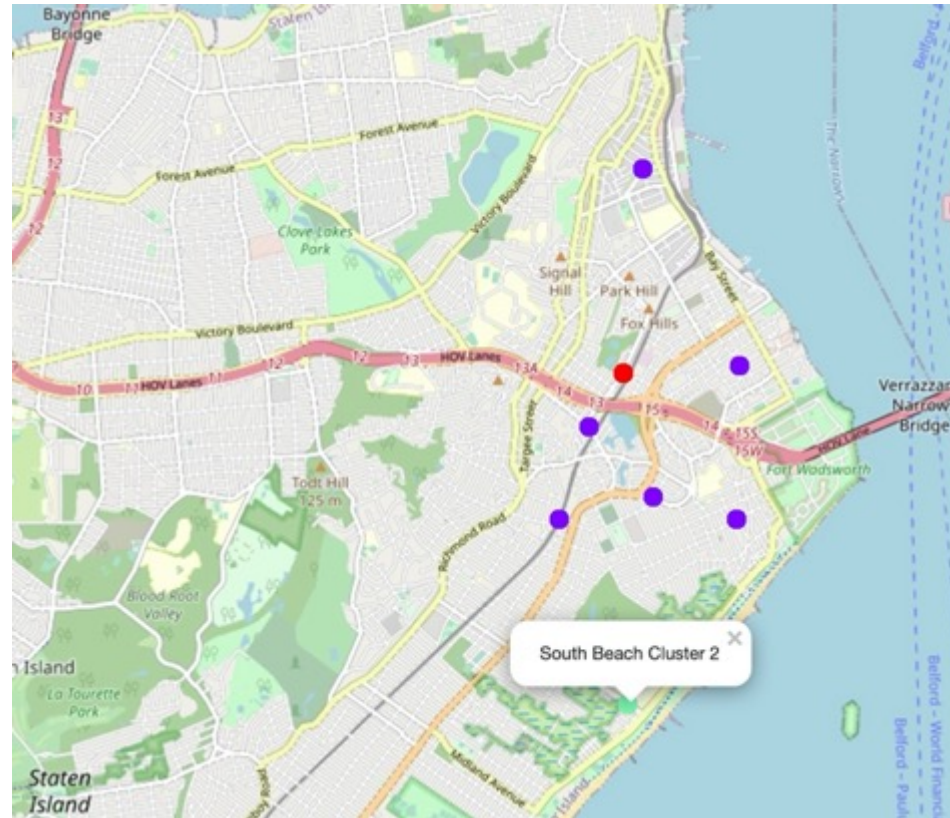
The above is an example of the ‘Outdoors’ category found in Recovery Index. The categories in the neighborhoods of interest vary from Park, Playground and Outdoors & Recreation. They are consolidated into ‘Outdoors’ category.

Clustering of neighborhoods of interest



Before Clustering

After Clustering



After clustering, the target towns were set to 6 neighborhoods.

Results

Venue	Venue Category	Venue Address	Venue Latitude	Venue Longitude	Ranking
The Coupe	Bars	379 Van Duzer St (Beach Street)	40.628754	-74.079730	10.000000
The Phunky Elephant Gastropub	Bars	1271 Bay St (Scarboro Ave)	40.612489	-74.064894	10.000000
Island Chatau	Bars	900 W Fingerboard Rd	40.601069	-74.085779	10.000000
Danny Blaines	Bars	1384 Bay St	40.609820	-74.063232	10.000000
Apple Department Store	Apparel Retail	112 Canal St (Wright Street)	40.626328	-74.077391	10.529412
Dollar General	Apparel Retail	135 Canal St (Water Street)	40.626935	-74.078271	10.529412
Family Dollar	Discount	135 Canal St	40.627018	-74.078461	12.294118
Family Dollar	Discount	40 Prospect St (Prospect Street)	40.628318	-74.075875	12.294118

Interesting : Venues in the target towns reveal that 'Bars' are the most frequented venue. The undesired locations will be filtered to reveal the top 10 preferred locations.

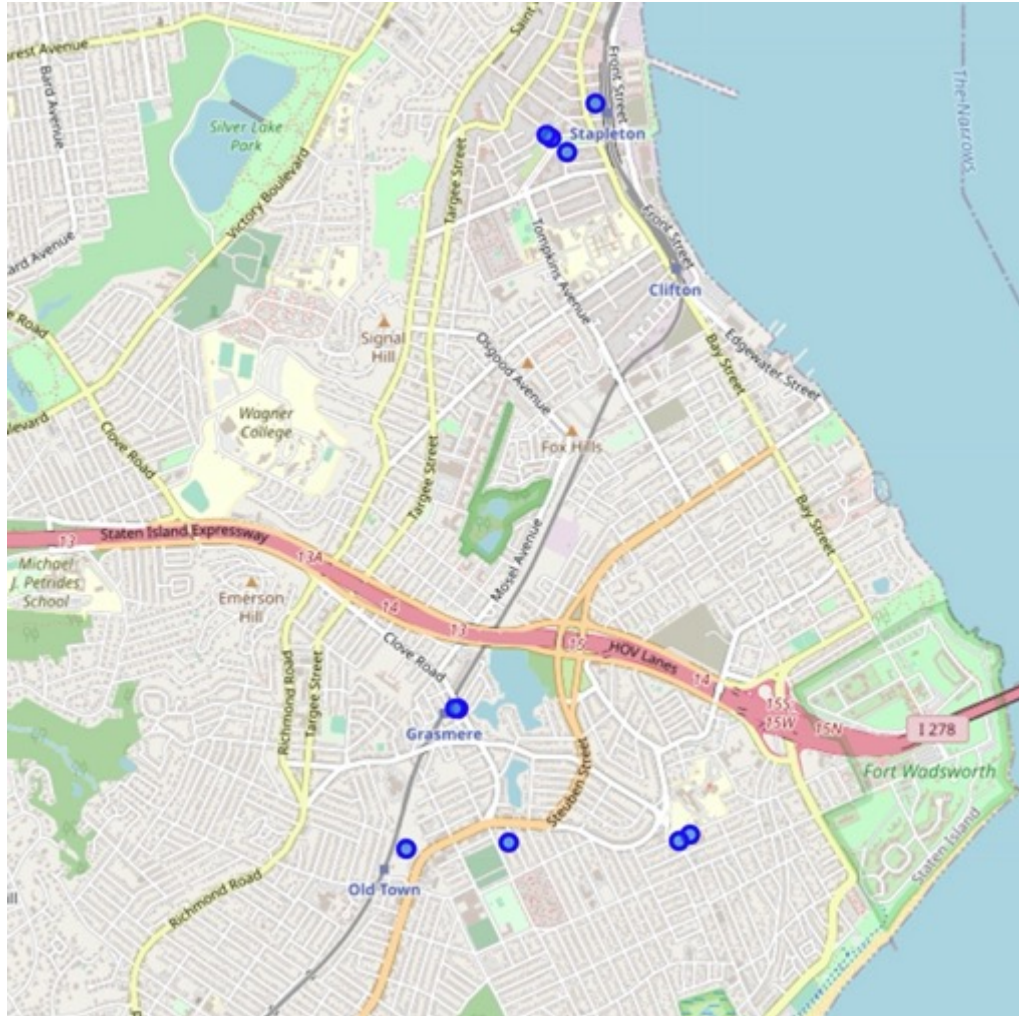
Results after clean-up

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Category	Venue Address	Venue Latitude	Venue Longitude	Venue Category Orig	
Stapleton	40.626928	-74.077902	Apple Department Store	Apparel Retail	112 Canal St (Wright Street)	40.626328	-74.077391	Department Store	1
Stapleton	40.626928	-74.077902	Dollar General	Apparel Retail	135 Canal St (Water Street)	40.626935	-74.078271	Department Store	1
Stapleton	40.626928	-74.077902	Family Dollar	Discount	135 Canal St	40.627018	-74.078461	Discount Store	1
Stapleton	40.626928	-74.077902	Family Dollar	Discount	40 Prospect St (Prospect Street)	40.628318	-74.075875	Discount Store	1
Concord	40.604473	-74.084024	2098 clove rd.	School	2098 Clove Rd, Concord, NY 10305	40.603340	-74.083298	Martial Arts School	1
Concord	40.604473	-74.084024	Longview Academy Extreme MMA	School	2098 Clove Rd, Concord, NY 10305	40.603362	-74.083442	Martial Arts School	1
Old Town	40.596329	-74.087511	Academy Of St. Dorothy	School	1305 Hylan Blvd	40.597556	-74.086168	School	1
Grasmere	40.598268	-74.076674	Elite Daycare	School	Staten Island, NY 10305	40.597788	-74.080581	Nursery School	1
Grasmere	40.598268	-74.076674	Saint Joseph Hill	School	850 Hylan Blvd, Staten Island, NY 10305	40.598146	-74.070645	University	1
Arrochar	40.596313	-74.067124	P.S. 39 Francis J. Murphy Jr.	School	71 Sand Ln (btwn Major & MacFarland Ave)	40.597828	-74.071243	Elementary School	1

The above are the preferred top 10 locations to target to maximize cookie sales.

- First venue: Apparel Retail
- Second venue: Discount stores
- Third venue: Schools

Locations



The above marks the locations of the preferred venues.

Future Directions

- ▶ Real-time foot traffic data will improve predictions
- ▶ Weather data may be combined