

## **Data Science Capstone Project**

**Project name:** Top US Neighborhoods

This is a capstone project for IBM Data Science Professional Certificate.

The idea is to find top affluent neighborhoods in the US and compare those neighborhoods and determine how similar or dissimilar they are based on their revenue generating venues or businesses. This idea is interesting to business investors to decide on the next location or business to invest.

### **Introduction/Business Problem:**

Target audience: business investors who are interested in investing in the US local businesses

Every day, people's interest and activities change based on their personal preference and the neighborhood they choose to reside. Business investors need to know what are the main revenue streams in the US and how those are geographically segregated across different neighborhoods in different cities. The knowledge of what main hubs are in each neighborhood and what main business streams are in each neighborhood and in the US in the big picture are important as that guides business investors on how to invest at different locations/cities. Information on what types of business are booming and what are the main social hubs at different locations can be very useful prior to the investment. Hence, the question is what are the main revenue generating local businesses within the US? And how those top revenue generating businesses geographically change within the US for the most affluent cities?

### **Data Requirement:**

First, I need to find main income generators in the US. This requires the knowledge of most affluent cities/regions and the most popular businesses in a specific city. I am going to scrape Wikipedia for this step and government websites for different states in the US. I am going to rank the top most affluent states based on their income. Second, I need to find the latitude and longitude of the most affluent neighborhoods across the US using geolocator. Third, I need to get information/data about the venues and businesses for these neighborhoods based on their specific locations. I am going to use Foursquare API to extract data about venues/businesses. Fourth, I am going to compare the top revenue generating venues for the neighborhoods.

- List of affluent neighborhoods in the US (Wikipedia and State websites)
- The latitude and longitude of those neighborhoods (Geolocator)
- The average income for those neighborhoods (Wikipedia and State websites)
- Venue data for different neighborhoods (Foursquare API)

## Methodology:

In this section, I explain the methodology I used to gather the data and perform analysis. Here is the summary of the steps and methodology used in each step. A detailed explanation is provided after the summary of the methodology in below.

1. Scrape Data for the Highest Income Urban Neighborhoods in the US. Methodology: BeautifulSoup. Data source: Wikipedia<sup>1</sup>.
2. Get the Latitude and Longitude of the Neighborhoods. Methodology: Geolocator.
3. Plot the Neighborhoods on the US map based on their Latitudes and Longitudes. Methodology: Folium.
4. Retrieve Data for the Venues of the Neighborhoods. Methodology: Foursquare API.
5. Compare the Most Common Venues of the Neighborhoods.
6. Compare the Most Common Venues for top 3 most affluent states in the US.

First, I needed to gather data on the highest income urban neighborhoods in the US. For this purpose, I used a scraping method based on “BeautifulSoup” to scrape data from Wikipedia. Based on Wikipedia, there are 66 neighborhoods in that category. I constructed a dataframe that contains the following information about the neighborhoods: neighborhood, metropolitan area, state, income. The income is the average household income for the specific neighborhood. The list of top income urban neighborhoods in the United States is ranked by average household income, a measure of affluence.

Second, I used Geolocator to find the latitudes and longitudes for the neighborhoods. Geolocator failed to find the latitudes and longitudes for 6 neighborhoods out of the 66 total neighborhoods. I had to find the missing data by searching on google<sup>2</sup> and add these data into an Excel sheet containing all the data and read the data back. Now the dataframe includes: neighborhood, metropolitan area, state, income, latitude, and longitude.

Third, I added the neighborhoods on the US map based on their latitudes and longitudes using Folium.

Fourth, I retrieved data for the venues in each neighborhood using Foursquare API. In this step, I limited the number of venues to 30 for each neighborhood and set the search radius to 500m.

Fifth, I grouped the data based on the neighborhood and investigated the top 5 most common venues for each neighborhood. Then, I sorted the data based on income to find out the common venues for top affluent neighborhoods.

Sixth, I grouped the data based on the state where the neighborhood is located, and sorted the data based on the income to figure out the top 3 most affluent states. Then I compared the venues for these top 3 affluent states.

## Results:

In this section, I discuss the results of my analysis of venues in the highest-income urban neighborhoods in the United States. There is a total of 66 top income neighborhoods in the US based on the available data on Wikipedia<sup>1</sup>. The data is provided in Table 1. In this table, MSA stands for Metropolitan Statistical Area, St. stands for State, and income (mean) is the average household income.

**Table 1 – 66 Highest-Income Urban Neighborhoods (Wikipedia<sup>1</sup>)**

<b>Urban <sup>[1]</sup> Neighborhood</b>	<b>MSA</b>	<b>St.</b>	<b>Income (mean)<sup>[2]</sup></b>	<b>No. of Homes</b>
Grove Isle-Bayshore	Miami	FL	\$506,683	758
Cherry Hills Village	Denver	CO	\$390,750	2,160
Sutton Place	New York	NY	\$176,980	6,822
Old Town (Alexandria)	Washington	VA	\$169,658	2,057
Tribeca	New York	NY	\$163,425	4,013
Pacific Heights	San Francisco	CA	\$158,937	8,794
The Gold Coast	Chicago	IL	\$153,358	6,781
Georgetown	Washington	DC	\$152,209	2,724
Marina	Los Angeles	CA	\$151,934	2,449
Battery Park	New York	NY	\$150,075	4,440
Upper East Side	New York	NY	\$143,323	115,792
Central Park South	New York	NY	\$141,085	2,736
Kalorama Heights	Washington	DC	\$140,157	1,530
Dinner Key	Miami	FL	\$137,210	597
Telegraph Hill	San Francisco	CA	\$133,977	924
Midtown East	New York	NY	\$129,650	31,962
The Embarcadero	San Francisco	CA	\$129,610	1,543
Cobble Hill (Brooklyn)	New York	NY	\$128,123	2,423
Upper West Side	New York	NY	\$124,960	96,146
Marina	San Francisco	CA	\$124,750	5,413
Boston Harbor	Boston	MA	\$124,419	1,446
Buckhead	Atlanta	GA	\$122,747	34,018
Back Bay	Boston	MA	\$122,731	6,767
Lake Shore East	Chicago	IL	\$122,145	3,246
South of Market	San Francisco	CA	\$117,921	3,500
Brooklyn Heights (Brooklyn)	New York	NY	\$116,952	11,509
East Side	Providence	RI	\$116,158	3,569
Lincoln Park	Chicago	IL	\$115,856	35,069
Rittenhouse Square	Philadelphia	PA	\$115,773	1,222
SoHo	New York	NY	\$114,846	5,593
Russian Hill-North Beach	San Francisco	CA	\$114,645	8,292
Greenwich Village	New York	NY	\$112,546	40,775

Beacon Hill	Boston	MA	\$109,569	5,702
Nob Hill	San Francisco	CA	\$108,870	3,078
Society Hill	Philadelphia	PA	\$107,504	3,635
Streeterville	Chicago	IL	\$107,276	10,255
East Side	Milwaukee	WI	\$107,082	1,632
Downtown	New York	NY	\$106,745	3,526
Charleston Historic District	Charleston	SC	\$106,349	2,392
Murray Hill	New York	NY	\$105,821	22,096
The Near North	Chicago	IL	\$105,586	11,871
Noe Valley	San Francisco	CA	\$105,335	8,850
Old Town	Chicago	IL	\$104,060	2,610
Meridian Corridor	Indianapolis	IN	\$102,599	1,122
Chestnut Hill	Philadelphia	PA	\$101,471	4,267
River North	Chicago	IL	\$100,607	2,971
Point Breeze	Pittsburgh	PA	\$99,669	2,437
Squirrel Hill	Pittsburgh	PA	\$97,553	3,761
Park Slope (Brooklyn)	New York	NY	\$95,920	13,769
Sandberg Village	Chicago	IL	\$95,876	5,205
The Loop	Chicago	IL	\$91,033	1,025
Garden District	New Orleans	LA	\$90,702	1,130
Gramercy	New York	NY	\$90,000	39,151
Diamond Bar	Los Angeles	CA	\$89,845	17,690
Riverdale (Bronx)	New York	NY	\$88,890	4,855
Brickell Avenue	Miami	FL	\$88,772	5,487
Dearborn Park-Printers Row	Chicago	IL	\$88,482	3,652
South End	Boston	MA	\$86,601	9,059
Midtown	New York	NY	\$86,427	4,486
Near West Side-River West	Chicago	IL	\$86,168	4,372
Haight-Ashbury	San Francisco	CA	\$82,713	4,830
Central Gardens	Memphis	TN	\$82,620	2,210
Queen Anne Hill	Seattle	WA	\$82,420	14,719
Mount Adams	Cincinnati	OH	\$82,073	993
Summit Hill	St. Paul	MN	\$78,166	3,712
French Quarter	New Orleans	LA	\$58,571	2,909

I found the latitude and longitude of each neighborhood and added that data to the dataframe. Table 2 shows the data in Table 1 with the addition of geographical coordinate data (latitudes and longitudes).

**Table 2 – 66 Highest-Income Urban Neighborhoods with Geographical Coordinates**

Neighborhood	Metropolitan Area	State	Income	Latitude	Longitude
Grove Isle	Miami	FL	\$506,683	25.7354957	-80.21868029
Cherry Hills Village	Denver	CO	\$390,750	39.6416544	-104.9594253
Sutton Place	New York	NY	\$176,980	41.114852	-72.371285
Old Town	Washington	VA	\$169,658	48.1503708	-123.1512899
Tribeca	New York	NY	\$163,425	40.7153802	-74.0093063
Pacific Heights	San Francisco	CA	\$158,937	37.7927171	-122.4356445
The Gold Coast	Chicago	IL	\$153,358	41.9066994	-87.6253308
Georgetown	Washington	DC	\$152,209	38.9051994	-77.062785
Marina	Los Angeles	CA	\$151,934	33.9803	-118.4517
Battery Park	New York	NY	\$150,075	40.7030119	-74.01582494
Upper East Side	New York	NY	\$143,323	40.7737016	-73.9641196
Central Park South	New York	NY	\$141,085	40.7662809	-73.9776617
Kalorama Heights	Washington	DC	\$140,157	38.9167781	-77.0524773
Dinner Key	Miami	FL	\$137,210	25.7285131	-80.2346905
Telegraph Hill	San Francisco	CA	\$133,977	37.800785	-122.4040908
Midtown East	New York	NY	\$129,650	40.7598219	-73.9724708
The Embarcadero	San Francisco	CA	\$129,610	37.7928637	-122.396912
Cobble Hill	New York	NY	\$128,123	40.6875	-73.9980556
Upper West Side	New York	NY	\$124,960	40.7870455	-73.9754163
Marina	San Francisco	CA	\$124,750	37.8037	-122.4368
Boston Harbor	Boston	MA	\$124,419	42.3417649	-70.9661596
Buckhead	Atlanta	GA	\$122,747	33.8398137	-84.3795589
Back Bay	Boston	MA	\$122,731	42.3507067	-71.0797297
Lake Shore East	Chicago	IL	\$122,145	41.8874	-87.6184
South of Market	San Francisco	CA	\$117,921	37.7808925	-122.4009518
Brooklyn Heights	New York	NY	\$116,952	40.69608485	-73.99502784
East Side	Providence	RI	\$116,158	43.0814621	-87.888932
Lincoln Park	Chicago	IL	\$115,856	41.94029765	-87.63811711
Rittenhouse Square	Philadelphia	PA	\$115,773	39.9494699	-75.17188447
SoHo	New York	NY	\$114,846	40.72288	-73.9987505
Russian Hill	San Francisco	CA	\$114,645	37.8000729	-122.4170942
Greenwich Village	New York	NY	\$112,546	40.7335844	-74.0028172
Beacon Hill	Boston	MA	\$109,569	42.3587085	-71.067829
Nob Hill	San Francisco	CA	\$108,870	37.7932622	-122.415249
Society Hill	Philadelphia	PA	\$107,504	39.944368	-75.1474636
Streeterville	Chicago	IL	\$107,276	41.8933653	-87.6219967
East Side	Milwaukee	WI	\$107,082	43.06286945	-87.88186774
Downtown	New York	NY	\$106,745	43.0478743	-76.1499292
Charleston Historic Distric	Charleston	SC	\$106,349	32.7829544	-79.9345327
Murray Hill	New York	NY	\$105,821	40.76	-73.8130556
The Near North	Chicago	IL	\$105,586	41.8964706	-87.6357194
Noe Valley	San Francisco	CA	\$105,335	37.7515906	-122.4320814
Old Town	Chicago	IL	\$104,060	41.8961978	-87.6553579
Meridian Corridor	Indianapolis	IN	\$102,599	39.791	-86.148003
Chestnut Hill	Philadelphia	PA	\$101,471	40.0770553	-75.2074
River North	Chicago	IL	\$100,607	41.8924	-87.6341
Point Breeze	Pittsburgh	PA	\$99,669	40.4527086	-79.9112635
Squirrel Hill	Pittsburgh	PA	\$97,553	40.4381246	-79.9192175
Park Slope	New York	NY	\$95,920	40.6701033	-73.9859723
Sandberg Village	Chicago	IL	\$95,876	41.907	-87.6318
The Loop	Chicago	IL	\$91,033	41.8755616	-87.6244212
Garden District	New Orleans	LA	\$90,702	29.9296049	-90.0843875
Gramercy	New York	NY	\$90,000	40.7355189	-73.9840794
Diamond Bar	Los Angeles	CA	\$89,845	34.0286226	-117.8103367
Riverdale	New York	NY	\$88,890	40.90056	-73.90639
Brickell Avenue	Miami	FL	\$88,772	25.7575822	-80.1932716
Dearborn Park	Chicago	IL	\$88,482	41.8665526	-87.62895387
South End	Boston	MA	\$86,601	42.34131	-71.0772298
Midtown	New York	NY	\$86,427	40.7601085	-73.97816329
Near West Side	Chicago	IL	\$86,168	41.8800656	-87.6667624
Haight-Ashbury	San Francisco	CA	\$82,713	37.7700148	-122.4469519
Central Gardens	Memphis	TN	\$82,620	35.1490215	-90.0516285
Queen Anne Hill	Seattle	WA	\$82,420	47.631337	-122.3547527
Mount Adams	Cincinnati	OH	\$82,073	39.1075532	-84.4991114
Summit Hill	St. Paul	MN	\$78,166	44.9399	-93.1364
French Quarter	New Orleans	LA	\$58,571	29.9595056	-90.0655668

Based on the geographical coordinates of neighborhoods, I was able to plot them on the US map using Folium. Fig. 1 shows the US map with dots representative of neighborhoods. There might be several neighborhoods in one state. Fig. 2 shows the zoom-in map for New York state, showing Murray Hill neighborhood for illustration.

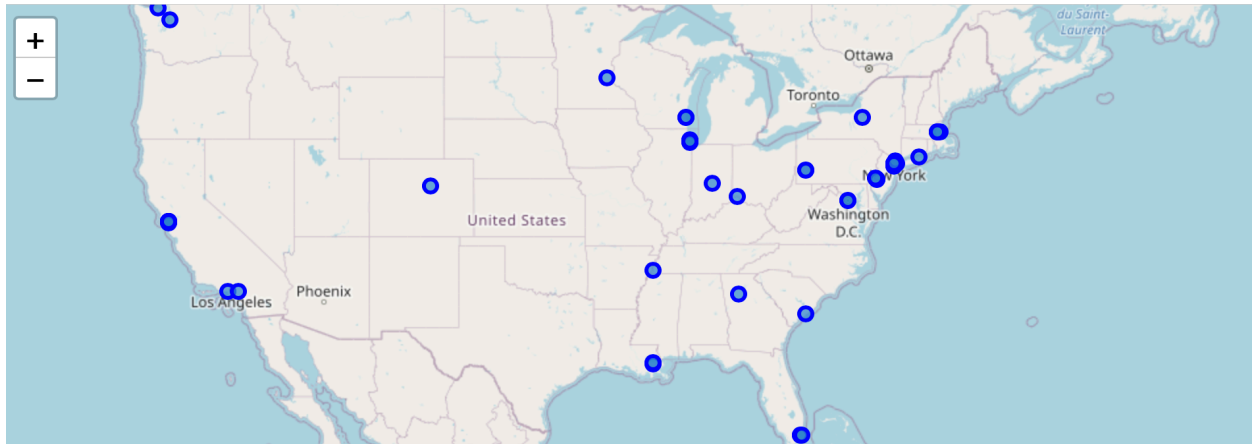


Fig. 1 – US map of the highest-income urban neighborhoods.

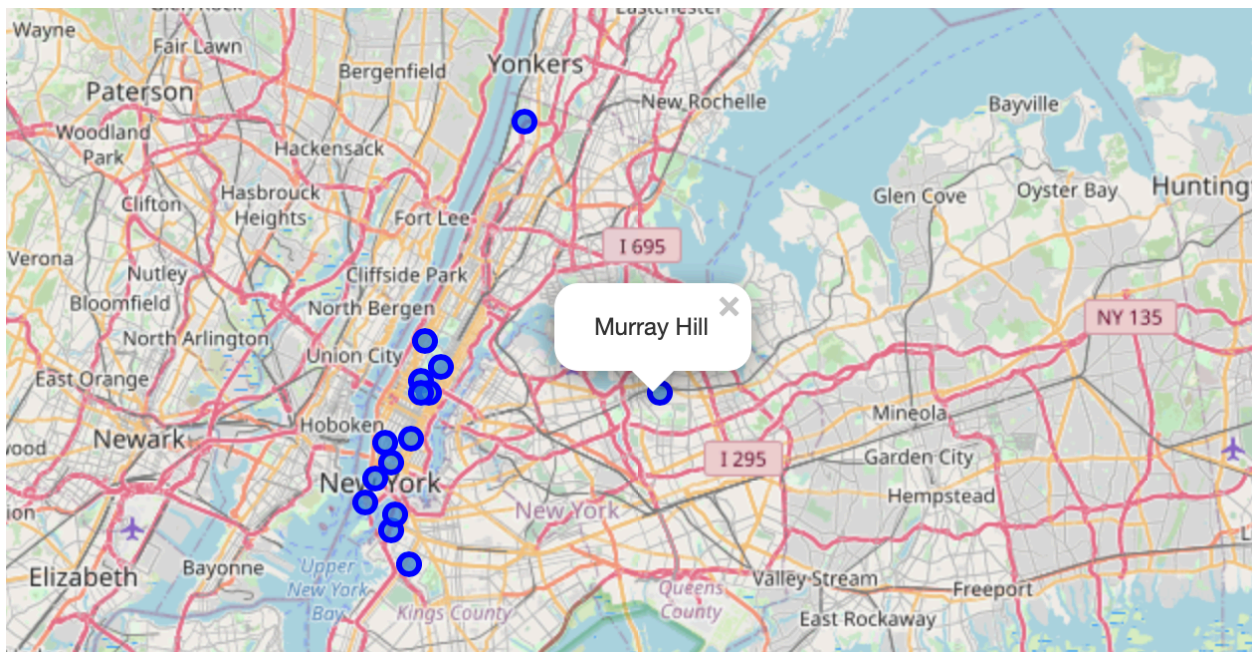


Fig. 2 – Map of New York state and the highest-income urban neighborhoods.



I retrieved data for the venues of the neighborhoods using Foursquare API. Then I selected the top 5 most common venues for each neighborhood, and I sorted the data based on the income in descending order. Table 3 shows the neighborhoods and the top 5 most common venues for each neighborhood along with the average household income and the geographical coordinates of the neighborhoods. For instance, the most common venues for the Grove Isle in Miami, which is the most affluent neighborhood in the US, are Mediterranean Restaurant, American Restaurant, Tennis Court, Resort, and Harbor/Marina, respectively.

**Table 3 – Top 5 Most Common Venues for the 66 Highest-Income Urban Neighborhoods**

Neighborhood	Metropolitan Area	State	Income	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	Latitude	Longitude
Grove Isle	Miami	FL	\$ 506,683	Mediterranean Restaurant	American Restaurant	Tennis Court	Resort	Harbor / Marina	25.7355	-80.2187
Cherry Hills Village	Denver	CO	\$ 390,750	Other Repair Shop	Food Service	Pool	Golf Course	Yoga Studio	39.64165	-104.959
Sutton Place	New York	NY	\$ 176,980	American Restaurant	Beach	Construction & Landscaping	Hotel	Yoga Studio	41.11485	-72.3713
Old Town	Washington	VA	\$ 169,658	Beach	Hotel	Yoga Studio	Flower Shop	Falafel Restaurant	48.15037	-123.151
Tribeca	New York	NY	\$ 163,425	Hotel	Coffee Shop	Cocktail Bar	Gym / Fitness Center	Park	40.71538	-74.0093
Pacific Heights	San Francisco	CA	\$ 158,937	Sandwich Place	Ice Cream Shop	Coffee Shop	Cosmetics Shop	Park	37.79272	-122.436
The Gold Coast	Chicago	IL	\$ 153,358	Italian Restaurant	Café	Coffee Shop	Yoga Studio	Non-Profit	41.9067	-87.6253
Georgetown	Washington	DC	\$ 152,209	Coffee Shop	Shoe Store	American Restaurant	Dessert Shop	Tea Room	38.9052	-77.0628
Marina	Los Angeles	CA	\$ 151,934	Gym / Fitness Center	Tennis Court	Harbor / Marina	Spa	French Restaurant	33.9803	-118.452
Battery Park	New York	NY	\$ 150,075	Park	Cocktail Bar	Seafood Restaurant	Monument / Landmark	Pizza Place	40.70301	-74.0158
Upper East Side	New York	NY	\$ 143,323	Hotel	Coffee Shop	Playground	French Restaurant	Italian Restaurant	40.7737	-73.9641
Central Park South	New York	NY	\$ 141,085	Hotel	Italian Restaurant	Concert Hall	Sandwich Place	Theater	40.76628	-73.9777
Kalorama Heights	Washington	DC	\$ 140,157	Park	History Museum	Scenic Lookout	Hotel	Sushi Restaurant	38.91678	-77.0525
Dinner Key	Miami	FL	\$ 137,210	Seafood Restaurant	Coffee Shop	Asian Restaurant	Grocery Store	Park	25.72851	-80.2347
Telegraph Hill	San Francisco	CA	\$ 133,977	Pizza Place	Coffee Shop	Scenic Lookout	Trail	Yoga Studio	37.80079	-122.404
Midtown East	New York	NY	\$ 129,650	Hotel	Coffee Shop	Salon / Barbershop	French Restaurant	Indie Theater	40.75982	-73.9725
The Embarcadero	San Francisco	CA	\$ 129,610	Coffee Shop	Gym	Mediterranean Restaurant	Office	Liquor Store	37.79286	-122.397
Cobble Hill	New York	NY	\$ 128,123	Yoga Studio	Food & Drink Shop	Bar	Italian Restaurant	Cocktail Bar	40.6875	-73.9981
Upper West Side	New York	NY	\$ 124,960	Wine Bar	Italian Restaurant	Bakery	American Restaurant	Yoga Studio	40.78705	-73.9754
Marina	San Francisco	CA	\$ 124,750	Gym / Fitness Center	Tennis Court	Harbor / Marina	Spa	French Restaurant	37.8037	-122.437
Boston Harbor	Boston	MA	\$ 124,419	Harbor / Marina	Boat or Ferry	English Restaurant	Fountain	Food Truck	42.34176	-70.9662
Buckhead	Atlanta	GA	\$ 122,747	Pizza Place	Steakhouse	Gastropub	Yoga Studio	Spanish Restaurant	33.83981	-84.3796
Back Bay	Boston	MA	\$ 122,731	Ice Cream Shop	Plaza	Spa	Seafood Restaurant	Hotel	42.35071	-71.0797
Lake Shore East	Chicago	IL	\$ 122,145	Hotel	Hotel Bar	Seafood Restaurant	Beer Garden	Steakhouse	41.8874	-87.6184
South of Market	San Francisco	CA	\$ 117,921	Pizza Place	Gym / Fitness Center	Coffee Shop	Marijuana Dispensary	French Restaurant	37.78089	-122.401
Brooklyn Heights	New York	NY	\$ 116,952	Yoga Studio	Pet Store	Mexican Restaurant	Gym / Fitness Center	Scenic Lookout	40.69608	-73.995
East Side	Providence	RI	\$ 116,158	Pizza Place	Park	Coffee Shop	Bar	Italian Restaurant	43.08146	-87.8889
Lincoln Park	Chicago	IL	\$ 115,856	Harbor / Marina	Boat or Ferry	Park	Bike Rental / Bike Share	Fish Market	41.9403	-87.6381
Rittenhouse Square	Philadelphia	PA	\$ 115,773	Bookstore	Seafood Restaurant	Coffee Shop	Vegetarian / Vegan Restaurant	Yoga Studio	39.94947	-75.1719
Soho	New York	NY	\$ 114,846	Mediterranean Restaurant	Italian Restaurant	Boutique	Seafood Restaurant	Gym	40.72288	-73.9988
Russian Hill	San Francisco	CA	\$ 114,645	Park	Italian Restaurant	Playground	Sushi Restaurant	Coffee Shop	37.80007	-122.417
Greenwich Village	New York	NY	\$ 112,546	Coffee Shop	Italian Restaurant	American Restaurant	Gay Bar	Jazz Club	40.73358	-74.0028
Beacon Hill	Boston	MA	\$ 109,569	Pizza Place	Italian Restaurant	French Restaurant	Yoga Studio	Plaza	42.35871	-71.0678
Nob Hill	San Francisco	CA	\$ 108,870	Italian Restaurant	Grocery Store	Hotel	French Restaurant	Bar	37.79326	-122.415
Society Hill	Philadelphia	PA	\$ 107,504	Italian Restaurant	Pizza Place	Café	History Museum	Sandwich Place	39.94437	-75.1475
Streetsville	Chicago	IL	\$ 107,276	Hotel	American Restaurant	Donut Shop	Coffee Shop	New American Restaurant	41.89337	-87.622
East Side	Milwaukee	WI	\$ 107,082	Pizza Place	Park	Coffee Shop	Bar	Italian Restaurant	43.06287	-87.8819
Downtown	New York	NY	\$ 106,745	Pizza Place	Pub	Gym	History Museum	Italian Restaurant	43.04787	-76.1499
Charleston Historic District	Charleston	SC	\$ 106,349	Coffee Shop	Clothing Store	Hotel	Southern / Soul Food Restaurant	Bar	32.78295	-79.9345
Murray Hill	New York	NY	\$ 105,821	Korean Restaurant	Asian Restaurant	Coffee Shop	Karaoke Bar	Bar	40.76	-73.8131
The Near North	Chicago	IL	\$ 105,586	Hotel	Coffee Shop	Steakhouse	Speakeasy	Bar	41.89647	-87.6357
Noe Valley	San Francisco	CA	\$ 105,335	Bookstore	Bakery	Sushi Restaurant	Farmers Market	Breakfast Spot	37.75159	-122.432
Old Town	Chicago	IL	\$ 104,060	Food Truck	Pizza Place	Gym	Gym / Fitness Center	Bus Station	41.8962	-87.6554
Meridian Corridor	Indianapolis	IN	\$ 102,599	Theater	Park	Video Store	Café	Gay Bar	39.791	-86.148
Chestnut Hill	Philadelphia	PA	\$ 101,471	American Restaurant	Bank	Pizza Place	Coffee Shop	Market	40.07706	-75.2074
River North	Chicago	IL	\$ 100,607	Sushi Restaurant	Hotel	Coffee Shop	Steakhouse	Mexican Restaurant	41.8924	-87.6341
Point Breeze	Pittsburgh	PA	\$ 99,669	New American Restaurant	Park	Playground	Italian Restaurant	Coffee Shop	40.45271	-79.9113
Squirrel Hill	Pittsburgh	PA	\$ 97,553	Thai Restaurant	Ice Cream Shop	Pizza Place	Taiwanese Restaurant	Tea Room	40.43812	-79.9192
Park Slope	New York	NY	\$ 95,920	Bar	Thai Restaurant	Wine Shop	Bakery	Bagel Shop	40.6701	-73.986
Sandberg Village	Chicago	IL	\$ 95,876	Italian Restaurant	Gym	Café	Pub	Middle Eastern Restaurant	41.907	-87.6318
The Loop	Chicago	IL	\$ 91,033	Hotel	Concert Hall	Museum	Liquor Store	Garden	41.87556	-87.6244
Garden District	New Orleans	LA	\$ 90,702	Coffee Shop	Public Art	Historic Site	Breakfast Spot	Furniture / Home Store	29.9296	-90.0844
Gramercy	New York	NY	\$ 90,000	Park	Ice Cream Shop	Pizza Place	Coffee Shop	Italian Restaurant	40.73552	-73.9841
Diamond Bar	Los Angeles	CA	\$ 89,845	Fast Food Restaurant	Fried Chicken Joint	American Restaurant	Convenience Store	Furniture / Home Store	34.02862	-117.81
Riverdale	New York	NY	\$ 88,890	Scenic Lookout	River	Wine Shop	Shopping Mall	Park	40.90056	-73.9064
Brickell Avenue	Miami	FL	\$ 88,772	Hotel	Argentinian Restaurant	Juice Bar	Café	Japanese Restaurant	25.75758	-80.1933
Dearborn Park	Chicago	IL	\$ 88,482	Yoga Studio	Pizza Place	Gym / Fitness Center	Burger Joint	Sports Bar	41.86655	-87.629
South End	Boston	MA	\$ 86,601	Italian Restaurant	Coffee Shop	Wine Shop	Gift Shop	Bar	42.34131	-71.0772
Midtown	New York	NY	\$ 86,427	Hotel	Art Museum	French Restaurant	Clothing Store	Seafood Restaurant	40.76011	-73.9782
Near West Side	Chicago	IL	\$ 86,168	Sports Bar	Bar	Donut Shop	Fried Chicken Joint	Taco Place	41.88007	-87.6668
Haight-Ashbury	San Francisco	CA	\$ 82,713	Bookstore	Breakfast Spot	Shoe Store	Thrift / Vintage Store	Boutique	37.77001	-122.447
Central Gardens	Memphis	TN	\$ 82,620	Hotel	Park	Coffee Shop	Southern / Soul Food Restaurant	Sandwich Place	35.14902	-90.0516
Queen Anne Hill	Seattle	WA	\$ 82,420	Bus Stop	Park	Playground	Bank	Vegetarian / Vegan Restaurant	47.63134	-122.355
Mount Adams	Cincinnati	OH	\$ 82,073	Bar	American Restaurant	Ice Cream Shop	Trail	Dive Bar	39.10755	-84.4991
Summit Hill	St. Paul	MN	\$ 78,166	Pizza Place	Arts & Crafts Store	Coffee Shop	Clothing Store	Café	44.9399	-93.1364
French Quarter	New Orleans	LA	\$ 58,571	Bar	Gift Shop	Jazz Club	Cajun / Creole Restaurant	Gay Bar	29.95951	-90.0656

Then, I grouped the data based on the states. Table 4 shows the top affluent neighborhoods in Chicago and the top 3 most common venues.

**Table 4 – Top Common Venues for The Highest-Income Urban Neighborhoods in Chicago, IL.**

Neighborhood	Metropolitan Area	State	Income	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
Dearborn Park	Chicago	IL	88482	Yoga Studio	Pizza Place	Gym / Fitness Center
Lake Shore East	Chicago	IL	122145	Hotel	Hotel Bar	Seafood Restaurant
Lincoln Park	Chicago	IL	115856	Harbor / Marina	Boat or Ferry	Park
Near West Side	Chicago	IL	86168	Sports Bar	Bar	Donut Shop
Old Town	Chicago	IL	104060	Food Truck	Pizza Place	Gym
River North	Chicago	IL	100607	Sushi Restaurant	Hotel	Coffee Shop
Sandberg Village	Chicago	IL	95876	Italian Restaurant	Gym	Café
Streeterville	Chicago	IL	107276	Hotel	American Restaurant	Donut Shop
The Gold Coast	Chicago	IL	153358	Italian Restaurant	Café	Coffee Shop
The Loop	Chicago	IL	91033	Hotel	Concert Hall	Museum
The Near North	Chicago	IL	105586	Hotel	Coffee Shop	Steakhouse

Finally, I grouped the data based on states and sorted the data based on income in the descending order to find out the richest states. Table 5 shows the order of states based on the total income in descending order. Based on the data, here are the top 3 richest states: New York, California, and Illinois.

**Table 5 – Top Affluent States in the US.**

Income	
State	
NY	2075768
CA	1318537
IL	1170447
PA	521970
FL	506683
MA	443320
CO	390750
DC	292366
FL	225982
VA	169658
LA	149273
GA	122747
RI	116158
WI	107082
SC	106349
IN	102599
TN	82620
WA	82420
OH	82073
MN	78166



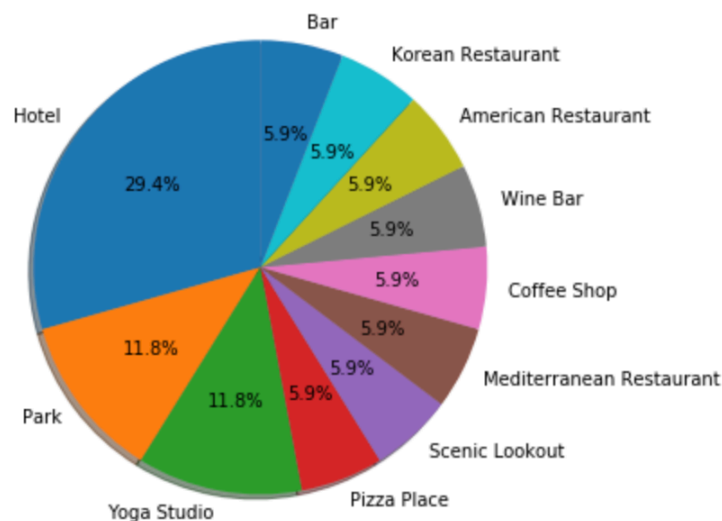
## Discussion:

I investigated the top 3 most common venues for the top 3 most affluent states in the US. Table 6 shows the top 3 most common venues for New York. Fig. 3 show the pie chart for the most common venues in this state.

**Table 6 – Top 3 Common Venues in New York.**

Neighborhood	Metropolitan Area	State	Income	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
Battery Park	New York	NY	150075	Park	Cocktail Bar	Seafood Restaurant
Brooklyn Heights	New York	NY	116952	Yoga Studio	Pet Store	Mexican Restaurant
Central Park South	New York	NY	141085	Hotel	Italian Restaurant	Concert Hall
Cobble Hill	New York	NY	128123	Yoga Studio	Food & Drink Shop	Bar
Downtown	New York	NY	106745	Pizza Place	Pub	Gym
Gramercy	New York	NY	90000	Park	Ice Cream Shop	Pizza Place
Greenwich Village	New York	NY	112546	Coffee Shop	Italian Restaurant	American Restaurant
Midtown	New York	NY	86427	Hotel	Art Museum	French Restaurant
Midtown East	New York	NY	129650	Hotel	Coffee Shop	Salon / Barbershop
Murray Hill	New York	NY	105821	Korean Restaurant	Asian Restaurant	Coffee Shop
Park Slope	New York	NY	95920	Bar	Thai Restaurant	Wine Shop
Riverdale	New York	NY	88890	Scenic Lookout	River	Wine Shop
SoHo	New York	NY	114846	Mediterranean Restaurant	Italian Restaurant	Boutique
Sutton Place	New York	NY	176980	American Restaurant	Beach	Construction & Landscaping
Tribeca	New York	NY	163425	Hotel	Coffee Shop	Cocktail Bar
Upper East Side	New York	NY	143323	Hotel	Coffee Shop	Playground
Upper West Side	New York	NY	124960	Wine Bar	Italian Restaurant	Bakery

**Most Common Venues in New York**



**Fig. 3 – Pie chart of the most common venues in New York.**

Similarly, Table 7 shows the top 3 most common venues for California state. Fig. 4 show the pie chart for the most common venues in this state.

**Table 7 – Top 3 Common Venues in California.**

Neighborhood	Metropolitan Area	State	Income	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
Diamond Bar	Los Angeles	CA	89845	Fast Food Restaurant	Fried Chicken Joint	American Restaurant
Haight-Ashbury	San Francisco	CA	82713	Bookstore	Breakfast Spot	Shoe Store
Marina	Los Angeles	CA	151934	Gym / Fitness Center	Tennis Court	Harbor / Marina
Marina	San Francisco	CA	124750	Gym / Fitness Center	Tennis Court	Harbor / Marina
Nob Hill	San Francisco	CA	108870	Italian Restaurant	Grocery Store	Hotel
Noe Valley	San Francisco	CA	105335	Bookstore	Bakery	Sushi Restaurant
Pacific Heights	San Francisco	CA	158937	Sandwich Place	Ice Cream Shop	Coffee Shop
Russian Hill	San Francisco	CA	114645	Park	Italian Restaurant	Playground
South of Market	San Francisco	CA	117921	Pizza Place	Gym / Fitness Center	Coffee Shop
Telegraph Hill	San Francisco	CA	133977	Pizza Place	Coffee Shop	Scenic Lookout
The Embarcadero	San Francisco	CA	129610	Coffee Shop	Gym	Mediterranean Restaurant

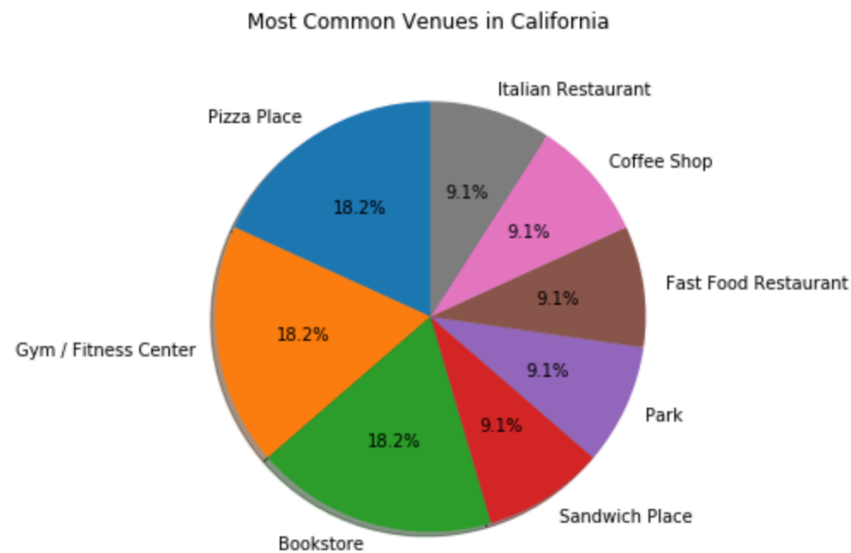


Fig. 4 – Pie chart of the most common venues in California.

Finally, Table 8 shows the top 3 most common venues for state of Illinois. Fig. 5 show the pie chart for the most common venues in this state.

**Table 8 – Top 3 Common Venues in Illinois.**

Neighborhood	Metropolitan Area	State	Income	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
Dearborn Park	Chicago	IL	88482	Yoga Studio	Pizza Place	Gym / Fitness Center
Lake Shore East	Chicago	IL	122145	Hotel	Hotel Bar	Seafood Restaurant
Lincoln Park	Chicago	IL	115856	Harbor / Marina	Boat or Ferry	Park
Near West Side	Chicago	IL	86168	Sports Bar	Bar	Donut Shop
Old Town	Chicago	IL	104060	Food Truck	Pizza Place	Gym
River North	Chicago	IL	100607	Sushi Restaurant	Hotel	Coffee Shop
Sandberg Village	Chicago	IL	95876	Italian Restaurant	Gym	Café
Streeterville	Chicago	IL	107276	Hotel	American Restaurant	Donut Shop
The Gold Coast	Chicago	IL	153358	Italian Restaurant	Café	Coffee Shop
The Loop	Chicago	IL	91033	Hotel	Concert Hall	Museum
The Near North	Chicago	IL	105586	Hotel	Coffee Shop	Steakhouse

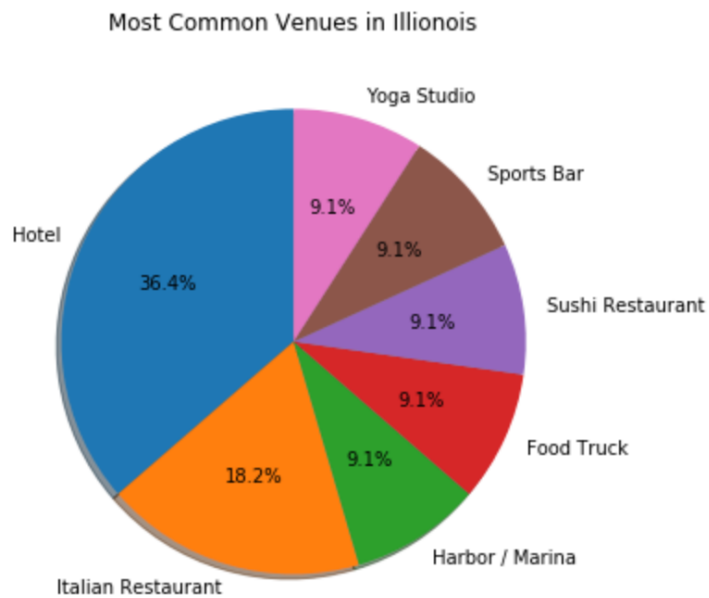


Fig. 5 – Pie chart of the most common venues in Illinois.

## Conclusions:

In this study, I investigated the most common neighborhoods of the 66 Highest-Income Urban Neighborhoods in the US. This information is useful for business investors to decide on the next location or business to invest.

For example, if the business investor is interested to invest in top 3 affluent states of the US. The hotel industry is recommended because the data for New York and Illinois show that hotels are the most common venues in these states. And if the business investor is in restaurant industry, Italian restaurant is recommended because the Italian restaurant is the second most important venue in Illinois and one of the top-10 venues in California. Besides, pizza place that could be a part of an Italian restaurant is in the top-10 most common venues of New York and California.

Similar conclusions can be made based on preference of the business investor about the business industry or location. A separate market study must be taken into account to figure out the main competitors in each industry and neighborhood to find out the likelihood of success for the specific business.

## References:

1. Wikipedia. [https://en.wikipedia.org/wiki/List\\_of\\_highest-income\\_urban\\_neighborhoods\\_in\\_the\\_United\\_States](https://en.wikipedia.org/wiki/List_of_highest-income_urban_neighborhoods_in_the_United_States)
2. Google search. <https://www.google.com/>