

Case study of the opening of a brewery in
the city of Denver using data science
method

The Battle of Craft Breweries in Denver

Applied Data Science Capstone

Introduction/Business Problem

In 2010 there were 1754 craft breweries in US up to 6266 in 2017. The craft beer market in US and in many places in the world is booming. It represents almost 13% of the market share with \$26 billion in value growth in 2017 in US and more and more breweries are opening every day. As a quick presentation a craft brewery is a brewery that beer on a small scale (6 million barrel of beer or less per year), independent (less 25 % of the brewery is owned by a beverage alcohol industry member who is not a brewer itself), is owned by a brewer which make beer with the 4 main ingredients: water, malt, hops and yeast.

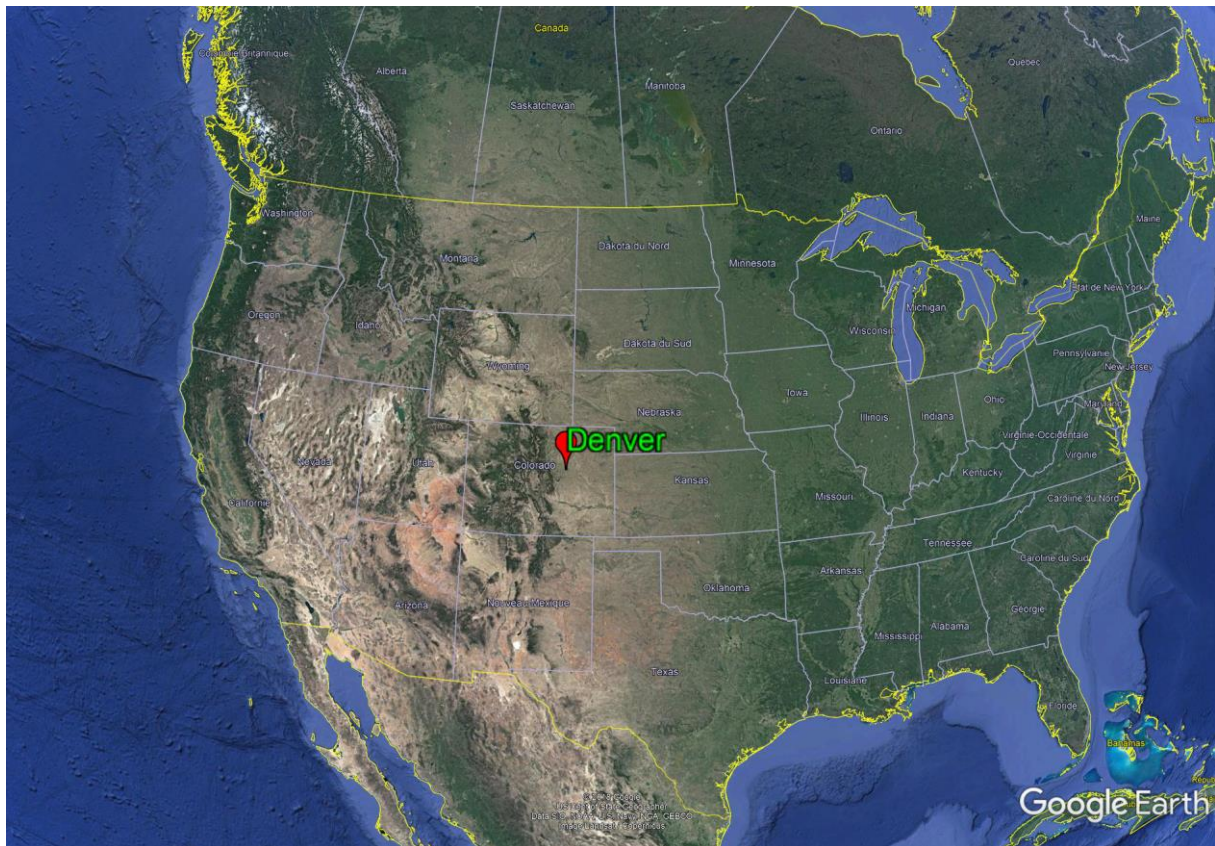


Figure 1 Location of Denver (Source: Google Earth)

In this crowded market it could become difficult to open a premise based on the competition that will suffer the company on day one.

On this craft market, the flagship city, with Portland, is undoubtedly Denver with more than 90 craft breweries in the city (96 in early 2019). With a population estimated in 2017 of 700,000 it results in one craft brewery for every 7300 inhabitants. This situation results in a very strong competition in Mile-High City.

In this project we will analyze the current craft beer situation in Denver and review where are located the craft breweries around the city. In a second time we will assess where should a newcomer open its premise to find the good spot and aim at the same time the target population for this business: the highly educated and high salary working population to promote high sales and revenues (Source of the data: Brewer Association).

Data

In this project several data are used. The first part is used to retrieve data, the second part is used as a complementary source to better explain what is obtained in the first part.

The main data consist of:

- Foursquare venues in the different neighborhoods of Denver to assess what are the different kind of venues that could be found around Denver. This includes venues like café, bar, hotel and so on. Foursquare is also used in a second time to assess where the breweries are situated in Denver. This includes brewing company, brewpub or taproom.
- Neighborhoods of Denver on Wikipedia. The Wikipedia page is used to obtain the different neighborhood of Denver using the web scrapping method. Some neighborhood will be discarded because they are common names used by the locals but do not actually represent a neighborhood per se.
- On the website of the US Census the Inhabitant revenues per neighborhood have been found and will be used to assess where are located the target customers for this study. A GeoJSON file converted from a shape file is used to delimit the neighborhoods (<https://www.census.gov/quickfacts/denvercountycolorado>).

The complementary data consist of two reports and are used as supportive informations:

- 2018 Q3 Denver Retail Market Report by Colliers International is used to support the data obtain during the analysis. The retail market is selected because the breweries belong to the eating and drinking market. The principal data retrieve here are the average rental rate per sector of Denver (<https://www2.colliers.com/en/Research/Denver/2018-Q3-Denver-Retail-Market-Report>).
- Denver Retail Conditions and Opportunities Study by the City and County of Denver (<https://www.denvergov.org/content/denvergov/en/denver-office-of-economic-development/reports-and-studies.html>) is also used because it contains a study of the underserved neighborhoods of Denver which is used to assess where the brewery of the stakeholder would be better open.

Methodology

Different statistical methodologies are used in this project.

The first method is exploratory data analysis to characterize each neighborhood and obtain the most frequent venues for each of them. To achieve this the Foursquare data are retrieved and then classify according to the neighborhood of the venue. The next step is then to group

the venues by type (hotel, restaurant, coffee shop, etc.) and calculate the frequency for each of the venue.

The second method concern Machine Learning. A Kmeans method is used to cluster the data and group them by similarity. It works by grouping the data to ensure that the center of gravity of each group is situated in the center of the group. For KMeans the number of clusters have to be selected manually and put into the model.

Results

Categorization of the neighborhoods of Denver

The first result obtained from the Foursquare database is the most common venues for each neighborhood. The full table for the three most common venues per neighborhood is too large to be shown here and is added in appendix of this report. What we observe for this result is that the neighborhoods are very diversify and the categories of venues are large. To cop with this problem a clustering method is applied to the dataset and put on a map.

By looking at the map (figure 2) we observe two main categories of venues spread around the city and one spot for the third category. The red category is mostly found in the west part of Denver and the purple category is found in the west part of the city except for the airport. A closer look at the results shows that the purple category regroups retail and coffee shop and the red category regroup bar, restaurant, convenience stores. One neighborhood is contained in the green category and seems to be related to the presence of farm in this area.

The purple category seems to contain venues use during the day by customer and the red one the venues use at night.

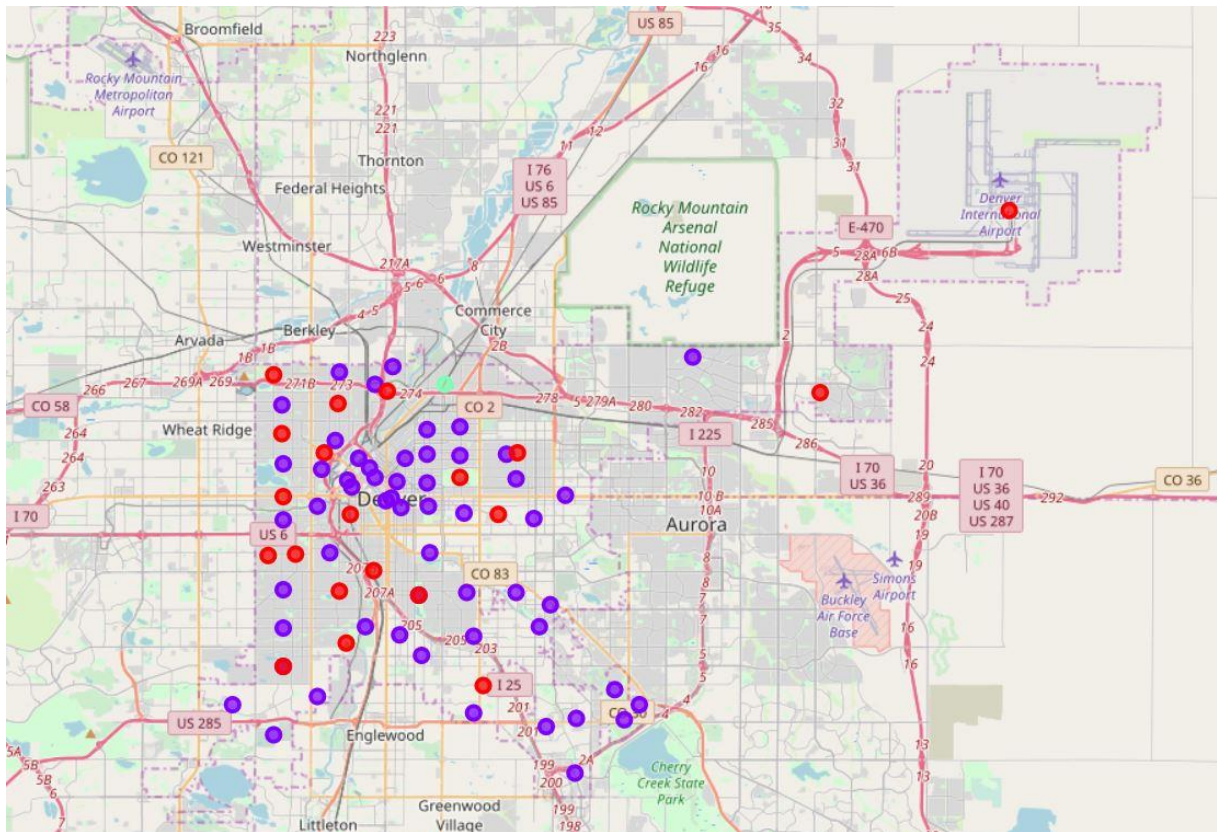


Figure 2 Clustering of neighborhood. Three groups are formed with three colors: red, purple and green

Breweries in Denver

Foursquare is used a second time to retrieve the breweries around the city of Denver. The query terms applied is “brewery” which included the factory locations but also the taprooms, the premises where people get in to have a beer.

It should be noted that the version of Foursquare here doesn’t allow to find the entire pool of breweries in Denver, but it is hypothesized that the number of breweries present in the report is representative of how breweries are spread in the city.

On the figure 3 it is represented the location of the breweries around the city, their location follows a northwest to southeast location passing through the center of the city where the abundance is higher than on each extremity of Denver.

A higher concentration of breweries is located near the Stadium and the University Campus of the city (figure 4).

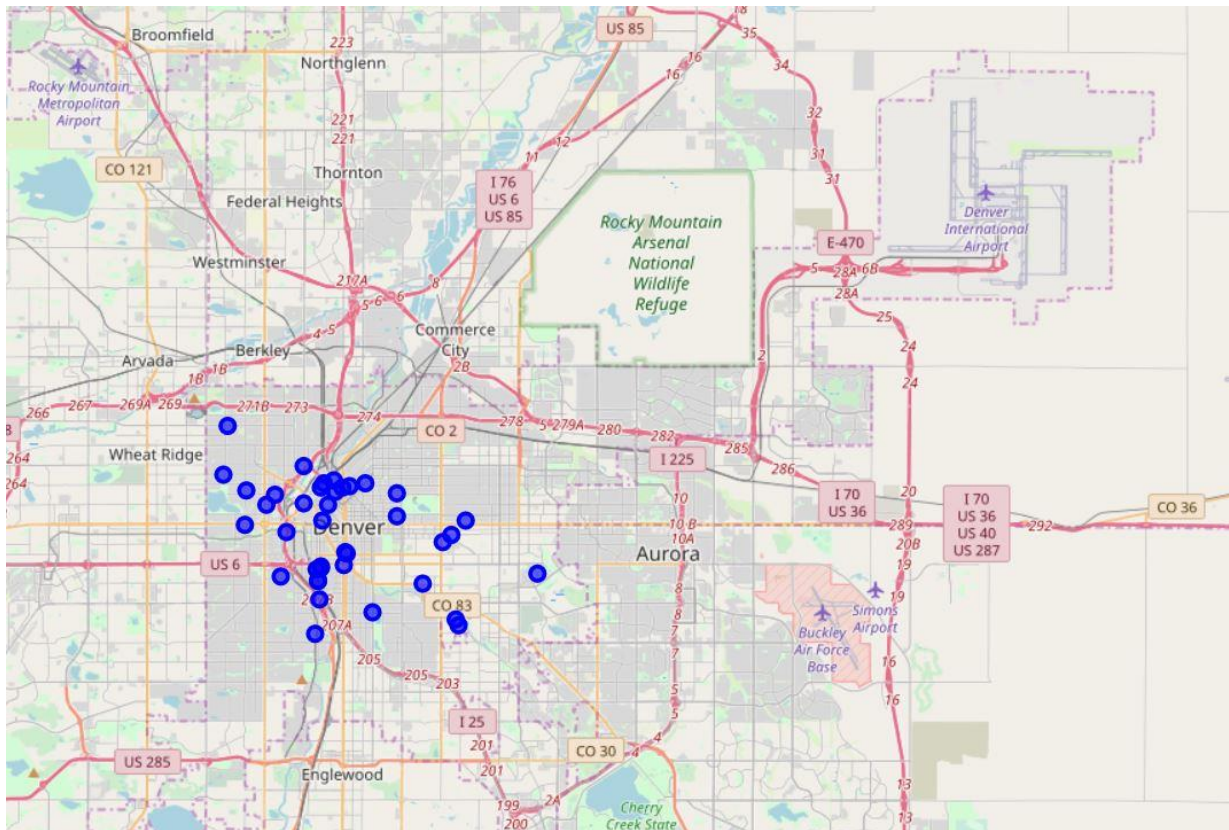


Figure 3 Breweries in Denver

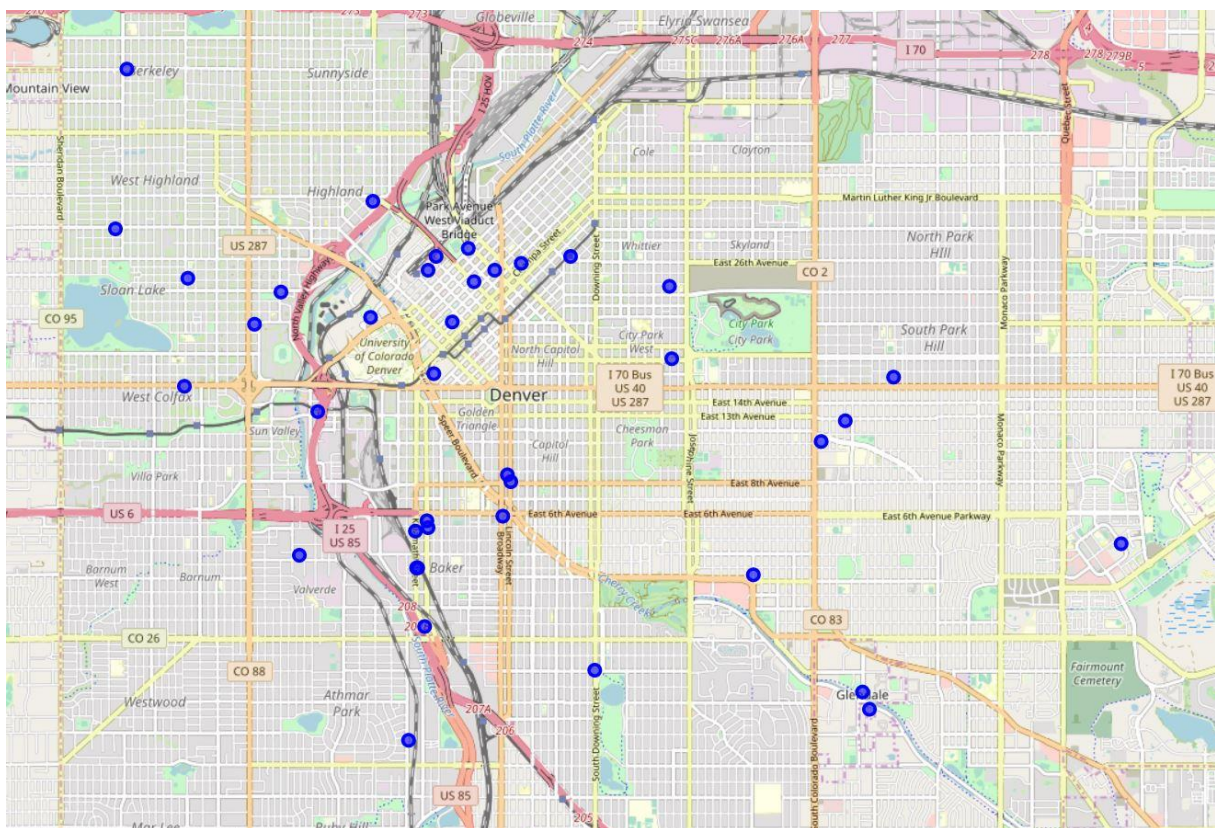


Figure 4 Focus on downtown of Denver

The two previous data are then shown on the same map (figure 5) it is observed that the breweries are mostly located in the neighborhood which are clustered in the purple categories. The result is discussed in the discussion part of the report.

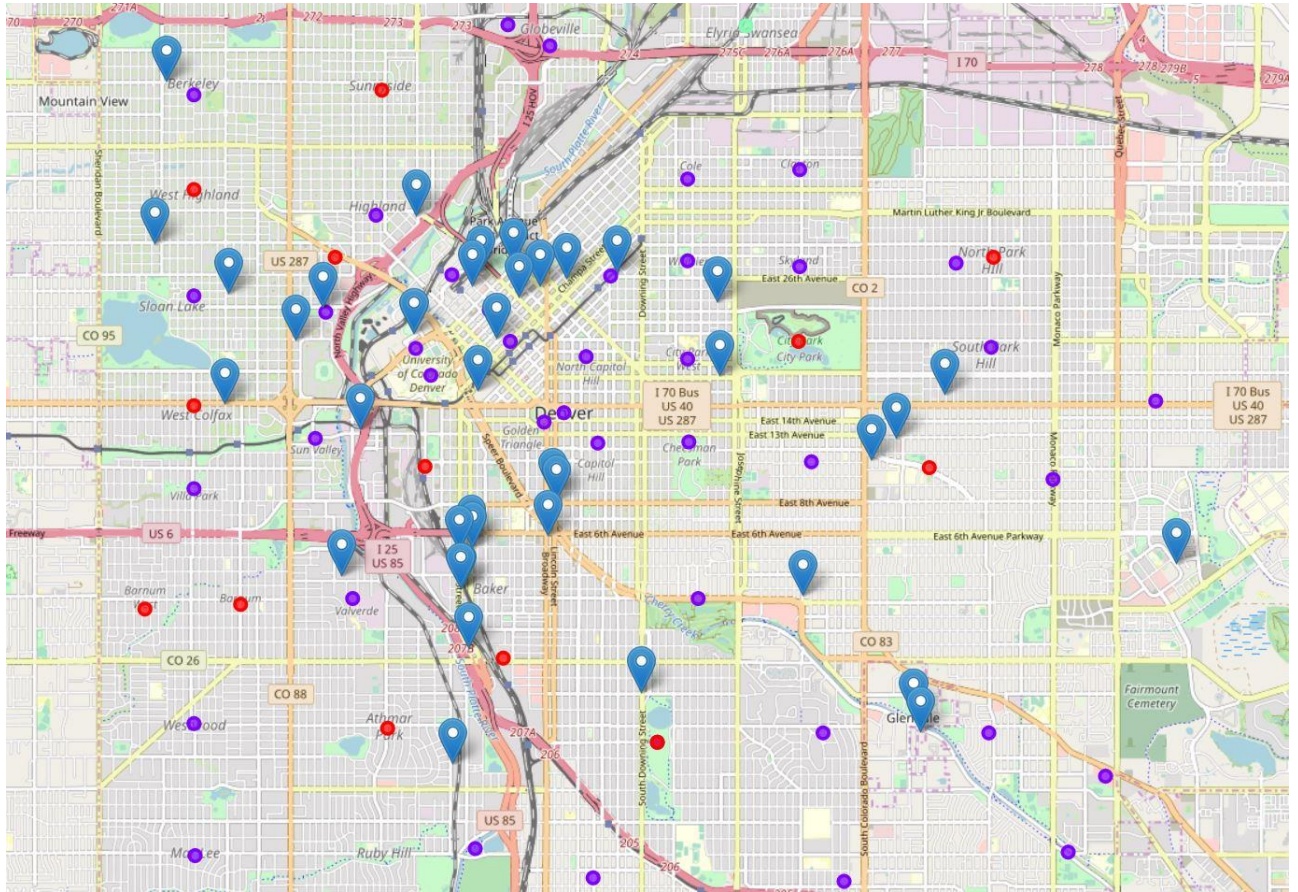


Figure 5 Clustering of neighborhood and breweries

Relation between the average income per neighborhood and the brewery location

The last result of this report is the comparison between the average income per neighborhood and the brewery location. The results are shown on the figure 6. It can be observed that any breweries are in the neighborhood of the richest people of the city. Only 4 are in the poorest part of the city. The rest of the breweries are in average income areas.

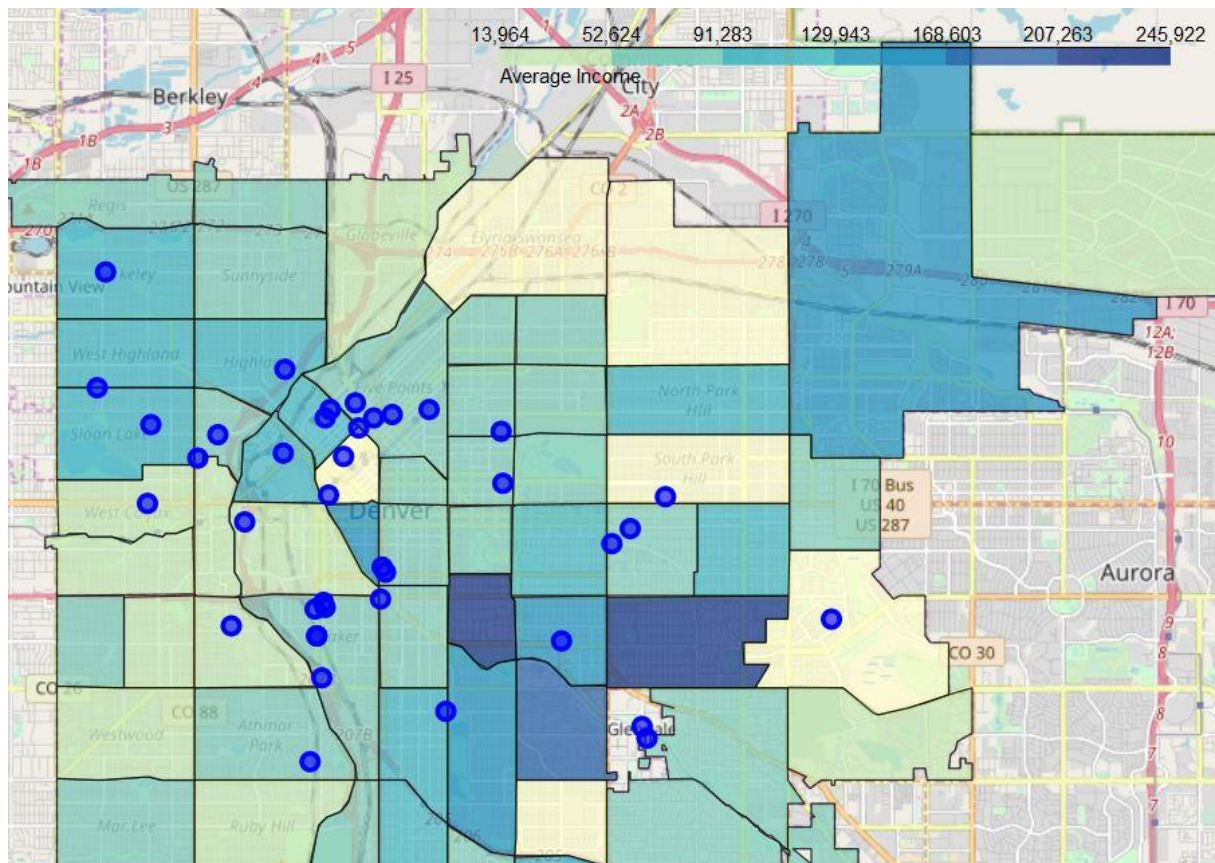


Figure 6 Average incomes versus brewery location

Discussions

The location of a venue as well as a brewery has a big impact on the revenue of the company. Therefore, it should be selected carefully to reach the right customer. In this report it is shown that there are two main type of neighborhood in Denver which regroup two principal type of venues: the day venues and the night venues. By looking at the maps the breweries are in the day venue neighborhood. This may be explained by the open hours choose by those premises. They mostly close before 22 pm even if some of them close at midnight.

It is also shown that the breweries are located on a northwest to southeast axis around Denver with a higher concentration in the center. On one hand it may be interesting to open breweries in the city on the northeast to southwest axis which avoid high competition. On the other hand, locating a brewery in an area where there are already other competitors allow attract customers who come to those places and might want to try the new brewery of the surrounding.

Regarding the average income it is shown that it is not a main factor of location for a brewery even if the main customers of craft beer are in the high spectrum of income.

As supportive information the following table is added, the data come from research made by Collier International of the retail market of Denver:

Neighborhood	Average rental rate
Aurora	\$14.33
Boulder	\$20.94
Central	\$20.51
Cherry Creek	\$29.89
Downtown	\$28.79
Northeast	\$16.58
Northwest	\$14.74
South	\$19.81
Southeast	\$20.70
Southwest	\$14.18
West	\$16.59

Table 1 Average rental rate per neighborhood

According to the data it might be interesting to open a brewery in the Northeast and Southwest where the rental rates are lower than for the other neighborhood of Denver. The Northwest is also a good option to open the brewery with rental rates lower than the center and the southeast.

Conclusion

To conclude this report there are many opportunities to open a brewery in Denver. According to the research of this report it might be interesting to look for premises in the Northeast, Northwest or Southwest of Denver.

It has been shown that the breweries in Denver are in the same area than the day venues of the city and that the neighborhood where they can be found concern areas with medium average incomes.

Appendix

Top5 of venues per neighborhood

----Athmar Park----

	venue	freq
0	Park	0.33
1	Home Service	0.33
2	Vacation Rental	0.33
3	ATM	0.00
4	Music Venue	0.00

----Auraria----

	venue	freq
0	Coffee Shop	0.16
1	American Restaurant	0.12
2	Fast Food Restaurant	0.08
3	Sports Bar	0.08
4	Stadium	0.08

----Baker----

	venue	freq
0	Intersection	0.1
1	Whisky Bar	0.1
2	Paper / Office Supplies Store	0.1
3	Bar	0.1
4	Food Truck	0.1

----Barnum----

	venue	freq
0	Insurance Office	0.17
1	Convenience Store	0.17
2	Food	0.17
3	Hookah Bar	0.17
4	Other Repair Shop	0.17

----Barnum West----

	venue	freq
0	Hotel	1.0
1	ATM	0.0
2	Park	0.0
3	Music Venue	0.0
4	Neighborhood	0.0

----Bear Valley----

	venue	freq
0	Park	0.67
1	Playground	0.33
2	ATM	0.00
3	Music Venue	0.00
4	Neighborhood	0.00

----Belcaro----

	venue	freq
0	Sushi Restaurant	0.17
1	Grocery Store	0.17
2	Bakery	0.17
3	Bank	0.17
4	Lawyer	0.17

----Berkeley----

	venue	freq
0	Italian Restaurant	0.06
1	Breakfast Spot	0.06
2	Brewery	0.06
3	Mexican Restaurant	0.06
4	Coffee Shop	0.06

----Capitol Hill----

	venue	freq
0	Pizza Place	0.08
1	Sandwich Place	0.08
2	Pub	0.06
3	Convenience Store	0.04
4	Mexican Restaurant	0.04

----Central Business District----

	venue	freq
0	Hotel	0.12
1	American Restaurant	0.05
2	Sandwich Place	0.05
3	Steakhouse	0.05
4	Coffee Shop	0.04

----Chaffee Park----

	venue	freq
0	Park	0.25
1	Convenience Store	0.25
2	Pizza Place	0.25
3	Bar	0.25
4	ATM	0.00

----Cheesman Park----

	venue	freq
0	Mexican Restaurant	0.12
1	Dive Bar	0.06
2	Lounge	0.06
3	Bar	0.06
4	Fast Food Restaurant	0.06

----Cherry Creek----

	venue	freq
0	Park	0.50
1	Rugby Pitch	0.25
2	Gym / Fitness Center	0.25
3	ATM	0.00
4	Music Venue	0.00

----City Park----

	venue	freq
0	Zoo Exhibit	0.57
1	American Restaurant	0.04
2	Gift Shop	0.04
3	Outdoor Sculpture	0.04
4	Exhibit	0.04

----City Park West----

	venue	freq
0	American Restaurant	0.14
1	Brewery	0.10
2	Coffee Shop	0.07
3	Mexican Restaurant	0.07
4	Pizza Place	0.07

----Civic Center----

	venue	freq
0	Sandwich Place	0.12
1	Bar	0.04
2	Hotel	0.04
3	Art Museum	0.03
4	Noodle House	0.03

----Clayton----

	venue	freq
0	Food	0.38
1	Market	0.12
2	Mexican Restaurant	0.12
3	Discount Store	0.12
4	Liquor Store	0.12

----Cole----

	venue	freq
0	Park	0.5
1	Ramen Restaurant	0.5
2	ATM	0.0
3	Music Venue	0.0
4	Neighborhood	0.0

----College View / South Platte----

	venue	freq
0	Parking	0.17
1	Marijuana Dispensary	0.17
2	Discount Store	0.17
3	Mexican Restaurant	0.17
4	Pizza Place	0.17

----Congress Park----

	venue	freq
0	Pizza Place	0.11
1	Gift Shop	0.11
2	Bus Station	0.11

3	Ice Cream Shop	0.11
4	Coffee Shop	0.11

----Cory-Merrill----

	venue	freq
0	Mexican Restaurant	0.08
1	Coffee Shop	0.06
2	Shoe Store	0.06
3	Asian Restaurant	0.06
4	Mobile Phone Shop	0.06

----Country Club----

	venue	freq
0	Salon / Barbershop	0.33
1	Shipping Store	0.33
2	Golf Course	0.33
3	ATM	0.00
4	Paper / Office Supplies Store	0.00

----Denver International Airport----

	venue	freq
0	Airport Service	0.09
1	Train Station	0.07
2	Airport Lounge	0.07
3	Coffee Shop	0.07
4	Bus Stop	0.05

----East Colfax----

	venue	freq
0	Fast Food Restaurant	0.11
1	Music Venue	0.06
2	Discount Store	0.06
3	Tattoo Parlor	0.06
4	Mexican Restaurant	0.06

----Elyria-Swansea----

	venue	freq
0	Food	0.21
1	Farm	0.14
2	Mexican Restaurant	0.14
3	Construction & Landscaping	0.07
4	Light Rail Station	0.07

----Five Points----

	venue	freq
0	Coffee Shop	0.11
1	Bar	0.11
2	ATM	0.05
3	Bagel Shop	0.05
4	Concert Hall	0.05

----Fort Logan----

	venue	freq
0	Moving Target	1.0

1	Music Store	0.0
2	Music Venue	0.0
3	Neighborhood	0.0
4	New American Restaurant	0.0

----Gateway / Green Valley Ranch----

	venue	freq
0	ATM	0.1
1	Video Store	0.1
2	Restaurant	0.1
3	Pizza Place	0.1
4	Pharmacy	0.1

----Globeville----

	venue	freq
0	Bar	0.43
1	Park	0.14
2	Breakfast Spot	0.14
3	Dive Bar	0.14
4	Music Venue	0.14

----Goldsmith----

	venue	freq
0	Park	0.25
1	Pool	0.25
2	Fast Food Restaurant	0.25
3	Food Service	0.25
4	Pub	0.00

----Hale----

	venue	freq
0	Coffee Shop	0.25
1	Donut Shop	0.12
2	Optical Shop	0.12
3	Auto Workshop	0.12
4	Park	0.12

----Hampden----

	venue	freq
0	Athletics & Sports	0.2
1	Assisted Living	0.2
2	Vietnamese Restaurant	0.2
3	Pizza Place	0.2
4	Gym	0.2

----Hampden South----

	venue	freq
0	Pet Store	0.15
1	Coffee Shop	0.08
2	Golf Course	0.08
3	Theme Park Ride / Attraction	0.08
4	Pharmacy	0.08

----Harvey Park----

	venue	freq
0	Construction & Landscaping	0.25
1	Park	0.25
2	Mexican Restaurant	0.25
3	Recreation Center	0.25
4	Ramen Restaurant	0.00

----Harvey Park South----

	venue	freq
0	Construction & Landscaping	0.25
1	Park	0.25
2	Mexican Restaurant	0.25
3	Recreation Center	0.25
4	Ramen Restaurant	0.00

----Highland----

	venue	freq
0	Bar	0.07
1	Italian Restaurant	0.05
2	Beer Garden	0.05
3	Sushi Restaurant	0.05
4	American Restaurant	0.05

----Hilltop----

	venue	freq
0	Marijuana Dispensary	0.17
1	Hotel	0.17
2	Breakfast Spot	0.17
3	Bar	0.17
4	Diner	0.17

----Jefferson Park----

	venue	freq
0	Mexican Restaurant	0.15
1	Café	0.08
2	Pizza Place	0.08
3	Brewery	0.08
4	Museum	0.08

----Kennedy----

	venue	freq
0	Mediterranean Restaurant	0.12
1	Asian Restaurant	0.12
2	Italian Restaurant	0.12
3	Coffee Shop	0.12
4	Convenience Store	0.12

----Lincoln Park----

	venue	freq
0	Steakhouse	0.17
1	American Restaurant	0.17
2	Baseball Field	0.17
3	Café	0.17
4	Kitchen Supply Store	0.17

----Lowry----

	venue	freq
0	Liquor Store	0.09
1	Fast Food Restaurant	0.09
2	Health & Beauty Service	0.04
3	Gym	0.04
4	Grocery Store	0.04

----Mar Lee----

	venue	freq
0	Grocery Store	0.2
1	Discount Store	0.2
2	Mobile Phone Shop	0.2
3	Liquor Store	0.2
4	Taco Place	0.2

----Montbello----

	venue	freq
0	Board Shop	0.5
1	Speakeasy	0.5
2	ATM	0.0
3	Music Venue	0.0
4	Neighborhood	0.0

----Montclair----

	venue	freq
0	Bus Stop	0.17
1	Boat or Ferry	0.17
2	Park	0.17
3	Clothing Store	0.17
4	American Restaurant	0.17

----North Capitol Hill----

	venue	freq
0	American Restaurant	0.14
1	Coffee Shop	0.10
2	Italian Restaurant	0.05
3	Lounge	0.05
4	Pizza Place	0.05

----North Park Hill----

	venue	freq
0	Business Service	0.2
1	Coffee Shop	0.2
2	Moving Target	0.2
3	Park	0.2
4	Scenic Lookout	0.2

----Northeast Park Hill----

	venue	freq
0	Park	0.33
1	Jazz Club	0.33
2	Trail	0.33
3	ATM	0.00

4 Music Venue 0.00

----Overland----

	venue	freq
0	Shop & Service	0.14
1	Convenience Store	0.14
2	Furniture / Home Store	0.14
3	Gas Station	0.14
4	Fast Food Restaurant	0.14

----Park Hill----

	venue	freq
0	Gym / Fitness Center	0.12
1	Brewery	0.12
2	Bistro	0.12
3	Ice Cream Shop	0.12
4	Business Service	0.12

----Platt Park----

	venue	freq
0	Sushi Restaurant	0.08
1	Japanese Restaurant	0.08
2	Mexican Restaurant	0.08
3	Coffee Shop	0.08
4	Pizza Place	0.08

----Regis----

	venue	freq
0	Golf Course	0.25
1	Convenience Store	0.25
2	Liquor Store	0.25
3	Thrift / Vintage Store	0.25
4	Optical Shop	0.00

----Rosedale----

	venue	freq
0	Sandwich Place	0.08
1	Coffee Shop	0.05
2	Convenience Store	0.05
3	Pizza Place	0.03
4	Yoga Studio	0.03

----Ruby Hill----

	venue	freq
0	Food Truck	0.2
1	Pool	0.2
2	Music Venue	0.2
3	Garden	0.2
4	Park	0.2

----Skyland----

	venue	freq
0	Shop & Service	0.33
1	Nightlife Spot	0.33

2	Home Service	0.33
3	ATM	0.00
4	Music Venue	0.00

-----Sloan Lake-----

	venue	freq
0	Art Gallery	0.17
1	Bus Stop	0.17
2	Bar	0.17
3	Garden	0.17
4	Garden Center	0.17

-----South Park Hill-----

	venue	freq
0	Park	0.2
1	Beer Garden	0.2
2	Bus Line	0.2
3	Track	0.2
4	Bakery	0.2

-----Southmoor Park-----

	venue	freq
0	Mexican Restaurant	0.08
1	Pizza Place	0.08
2	Convenience Store	0.04
3	Shopping Plaza	0.04
4	Bar	0.04

-----Speer-----

	venue	freq
0	Rental Car Location	0.17
1	Yoga Studio	0.17
2	Coffee Shop	0.17
3	Deli / Bodega	0.17
4	Southern / Soul Food Restaurant	0.17

-----Stapleton-----

	venue	freq
0	Gym	0.25
1	Spa	0.25
2	Home Service	0.25
3	Basketball Court	0.25
4	Park	0.00

-----Sun Valley-----

	venue	freq
0	Taco Place	0.12
1	Hot Dog Joint	0.12
2	Brewery	0.12
3	Sports Bar	0.12
4	Baseball Field	0.12

-----Sunnyside-----

	venue	freq
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0	Mexican Restaurant	0.13
1	Coffee Shop	0.13
2	Pet Store	0.04
3	Boutique	0.04
4	Spa	0.04

----Union Station----

	venue	freq
0	Restaurant	0.06
1	Hotel	0.06
2	Coffee Shop	0.05
3	American Restaurant	0.05
4	Cocktail Bar	0.04

----University----

	venue	freq
0	Theater	0.27
1	Fast Food Restaurant	0.13
2	Sports Bar	0.07
3	Hot Dog Joint	0.07
4	Performing Arts Venue	0.07

----University Hills----

	venue	freq
0	Sandwich Place	0.04
1	Pizza Place	0.04
2	Women's Store	0.04
3	Cosmetics Shop	0.04
4	Department Store	0.04

----University Park----

	venue	freq
0	Coffee Shop	0.13
1	Pizza Place	0.13
2	Video Store	0.09
3	Breakfast Spot	0.09
4	Bagel Shop	0.04

----Valverde----

	venue	freq
0	Brewery	0.33
1	Indie Theater	0.17
2	Park	0.17
3	Factory	0.17
4	Gym / Fitness Center	0.17

----Villa Park----

	venue	freq
0	Food & Drink Shop	0.33
1	Park	0.33
2	Light Rail Station	0.33
3	Music Venue	0.00
4	Neighborhood	0.00

----Washington Park----

	venue	freq
0	Park	0.25
1	Gym	0.12
2	Bike Rental / Bike Share	0.12
3	Tennis Court	0.12
4	Volleyball Court	0.12

----Washington Park West----

	venue	freq
0	Park	0.25
1	Gym	0.12
2	Bike Rental / Bike Share	0.12
3	Tennis Court	0.12
4	Volleyball Court	0.12

----Washington Virginia Vale----

	venue	freq
0	Pizza Place	0.18
1	Discount Store	0.09
2	Bakery	0.09
3	Mexican Restaurant	0.09
4	Furniture / Home Store	0.09

----Wellshire----

	venue	freq
0	Golf Course	0.50
1	Park	0.25
2	Sandwich Place	0.25
3	ATM	0.00
4	Music Venue	0.00

----West Colfax----

	venue	freq
0	Mexican Restaurant	0.11
1	Coffee Shop	0.11
2	American Restaurant	0.11
3	Construction & Landscaping	0.06
4	Liquor Store	0.06

----West Highland----

	venue	freq
0	Pizza Place	0.17
1	Coffee Shop	0.12
2	Mexican Restaurant	0.12
3	Clothing Store	0.08
4	Sushi Restaurant	0.08

----Westwood----

	venue	freq
0	Mexican Restaurant	0.33
1	Home Service	0.17
2	Liquor Store	0.17
3	Health & Beauty Service	0.17
4	Marijuana Dispensary	0.17

----Whittier----

	venue	freq
0	Park	0.33
1	Southern / Soul Food Restaurant	0.17
2	Bar	0.17
3	Dog Run	0.17
4	Café	0.17

----Windsor----

	venue	freq
0	Mexican Restaurant	0.05
1	Hotel	0.05
2	Steakhouse	0.04
3	Cocktail Bar	0.04
4	New American Restaurant	0.03

Clusters of neighborhoods – Cluster 1

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	Baker	Paper / Office Supplies Store	Whisky Bar	Distillery
5	City Park	Zoo Exhibit	Park	Exhibit
10	Lincoln Park	Steakhouse	Café	Intersection
12	Speer	Coffee Shop	Yoga Studio	Rental Car Location
17	Hale	Coffee Shop	Auto Workshop	Gym
28	Globeville	Bar	Music Venue	Breakfast Spot
29	North Park Hill	Coffee Shop	Scenic Lookout	Park
33	Denver International Airport	Airport Service	Airport Lounge	Train Station
34	Gateway / Green Valley Ranch	ATM	Pharmacy	Bank
43	Regis	Liquor Store	Golf Course	Convenience Store
45	Sunnyside	Coffee Shop	Mexican Restaurant	Flower Shop
46	West Highland	Pizza Place	Mexican Restaurant	Coffee Shop
52	University Hills	Department Store	Grocery Store	Women's Store
55	Washington Park West	Park	Volleyball Court	Tennis Court
65	Harvey Park South	Recreation Center	Construction & Landscaping	Mexican Restaurant
66	Athmar Park	Park	Vacation Rental	Home Service
67	Barnum	Other Repair Shop	Food	Convenience Store
68	Barnum West	Hotel	Zoo Exhibit	Dive Bar
70	Ruby Hill	Music Venue	Pool	Food Truck
74	West Colfax	Mexican Restaurant	Coffee Shop	American Restaurant

Clusters of neighborhoods – Cluster 2

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
1	Capitol Hill	Pizza Place	Sandwich Place	Pub
2	Central Business District	Hotel	American Restaurant	Sandwich Place
3	Cherry Creek	Park	Rugby Pitch	Gym / Fitness Center
4	Cheesman Park	Mexican Restaurant	Coffee Shop	Park
6	Congress Park	Coffee Shop	Arts & Crafts Store	Gift Shop
7	City Park West	American Restaurant	Brewery	Pizza Place
8	Civic Center	Sandwich Place	Hotel	Bar
9	Country Club	Golf Course	Salon / Barbershop	Shipping Store
11	North Capitol Hill	American Restaurant	Coffee Shop	Asian Restaurant
13	Union Station	Hotel	Restaurant	American Restaurant
14	Belcaro	Sushi Restaurant	Bakery	Lawyer
15	Cory-Merrill	Mexican Restaurant	Asian Restaurant	Mobile Phone Shop
16	East Colfax	Fast Food Restaurant	Mexican Restaurant	Sandwich Place
18	Hilltop	Hotel	Breakfast Spot	Marijuana Dispensary
19	Lowry	Fast Food Restaurant	Liquor Store	Indian Restaurant
20	Montclair	Dive Bar	American Restaurant	Bus Stop
21	Park Hill	Bistro	Arts & Crafts Store	Liquor Store
22	Washington Virginia Vale	Pizza Place	Tapas Restaurant	Arts & Crafts Store
23	Windsor	Hotel	Mexican Restaurant	Cocktail Bar
24	Clayton	Food	Liquor Store	Park

25	Cole	Ramen Restaurant	Park	Zoo Exhibit
27	Five Points	Coffee Shop	Bar	Bagel Shop
28	Globeville	Bar	Music Venue	Breakfast Spot
30	South Park Hill	Bus Line	Beer Garden	Bakery
31	Skyland	Home Service	Nightlife Spot	Shop & Service
32	Whittier	Park	Dog Run	Southern / Soul Food Restaurant
35	Montbello	Board Shop	Speakeasy	Food
36	Northeast Park Hill	Trail	Jazz Club	Park
37	Stapleton	Gym	Spa	Home Service
38	Auraria	Coffee Shop	American Restaurant	Fast Food Restaurant
39	Berkeley	Coffee Shop	Italian Restaurant	Breakfast Spot
40	Chaffee Park	Convenience Store	Park	Pizza Place
41	Highland	Bar	New American Restaurant	Beer Garden
42	Jefferson Park	Mexican Restaurant	Museum	Brewery
44	Sloan Lake	Garden Center	Wine Shop	Bar
47	College View / South Platte	Marijuana Dispensary	Discount Store	Parking
48	Overland	Theater	Fast Food Restaurant	Golf Course
49	Platt Park	Pizza Place	Mexican Restaurant	Sushi Restaurant
50	Rosedale	Sandwich Place	Convenience Store	Coffee Shop
51	University	Theater	Fast Food Restaurant	Hot Dog Joint
53	University Park	Coffee Shop	Pizza Place	Breakfast Spot
54	Washington Park	Park	Volleyball Court	Tennis Court

56	Wellshire	Golf Course	Park	Sandwich Place
57	Goldsmith	Food Service	Pool	Fast Food Restaurant
58	Hampden	Athletics & Sports	Vietnamese Restaurant	Assisted Living
59	Hampden South	Pet Store	Convenience Store	American Restaurant
60	Kennedy	Convenience Store	Asian Restaurant	Coffee Shop
61	Southmoor Park	Mexican Restaurant	Pizza Place	Financial or Legal Service
62	Bear Valley	Park	Playground	Zoo Exhibit
63	Fort Logan	Moving Target	Comedy Club	Food
64	Harvey Park	Recreation Center	Construction & Landscaping	Mexican Restaurant
69	Mar Lee	Taco Place	Mobile Phone Shop	Grocery Store
71	Sun Valley	Gym	Hot Dog Joint	Sports Bar
72	Valverde	Brewery	Factory	Gym / Fitness Center
73	Villa Park	Food & Drink Shop	Park	Light Rail Station
75	Westwood	Mexican Restaurant	Home Service	Marijuana Dispensary

Clusters of neighborhoods – Cluster 3

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
26	Elyria-Swansea	Food	Mexican Restaurant	Farm