Copenhagen Expansion

Moving a coffee chain into Copenhagen

The business problem

Our client asked…

- Should we expand to Copenhagen?

- How should we make this decision?

This study is a first step meant to be followed-up with on-the-ground research. To help our client make this decision we will…

- Survey the neighborhoods of Copenhagen

- Look at the mix of businesses in those neighborhoods

- Look for ways to prioritize which neighborhoods to scout out first and evaluate for potential locations

Data to be used

- The data has been compiled from several websites.

- The names of the neighborhoods are derived from google searches, wikipedia, and local knowledge.

- GPS coordinates for the neighborhoods came from the website latitude.to.

- Unfortunately, no tables were found online with any data to scrape so the initial dataframe was built manually.

- Venue data was all collected from Foursquare through their API.

- Sources

- https://www.citypopulation.de/php/denmark-admin.php?adm2id=147

- https://www.citypopulation.de/php/denmark-copenhagen.php

- https://en.wikipedia.org/wiki/Districts_of_Copenhagen

Background facts

- Copenhagen is an historic Nordic city and is a big attraction for tourists

- It has a population of about 1.3 million people

- It is governed by 10 Municipal districts with the exception of Fredriksberg which is located with Copenhagen's districts

- Fredriksberg is technically its own city but is included in our data because it is geographically part of Copenhagen

Map overview

Blue markers show neighborhoods
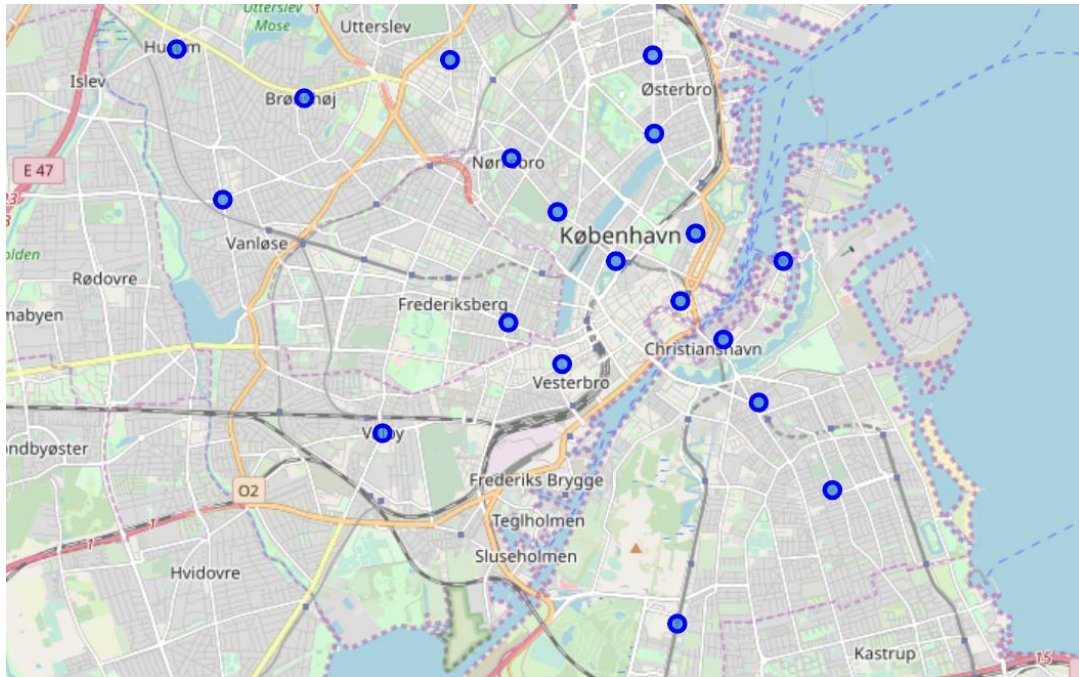
- A map of Copenhagen shows us our neighborhoods and their locations.

- Christianshavn, Kongens Nytorv, Nørreport, Fredriksstaden, Fredriksholm/Nyholm, Kødbyen/Saxopark, København N, Nørrebro, Trianglen, København Øst, Amagerbro, Sundbyøster, Sundby, Valby, Nordvest, Vanløse, Brønshøj, Husum, Fredriksberg C

Methodology

- After collecting our data, we started with an exploratory analysis.

- Foursquare returned 1042 venues spread across 19 neighborhoods (see next slide).

- We start by taking a closer look at cafes and coffee shops. We will include bakeries in our coffee related venues. Bakeries could also be considered a competitor. Our client also serves fresh pastries and many bakeries serve coffee as well as provide a cafe experience.

- We will then look at number of venues per neighborhood and distance of the venue from the city center.

- We will also use kmeans to explore any other relationships there might be in the total data including all venues by creating clusters which tell us some characteristics of some of the neighborhoods
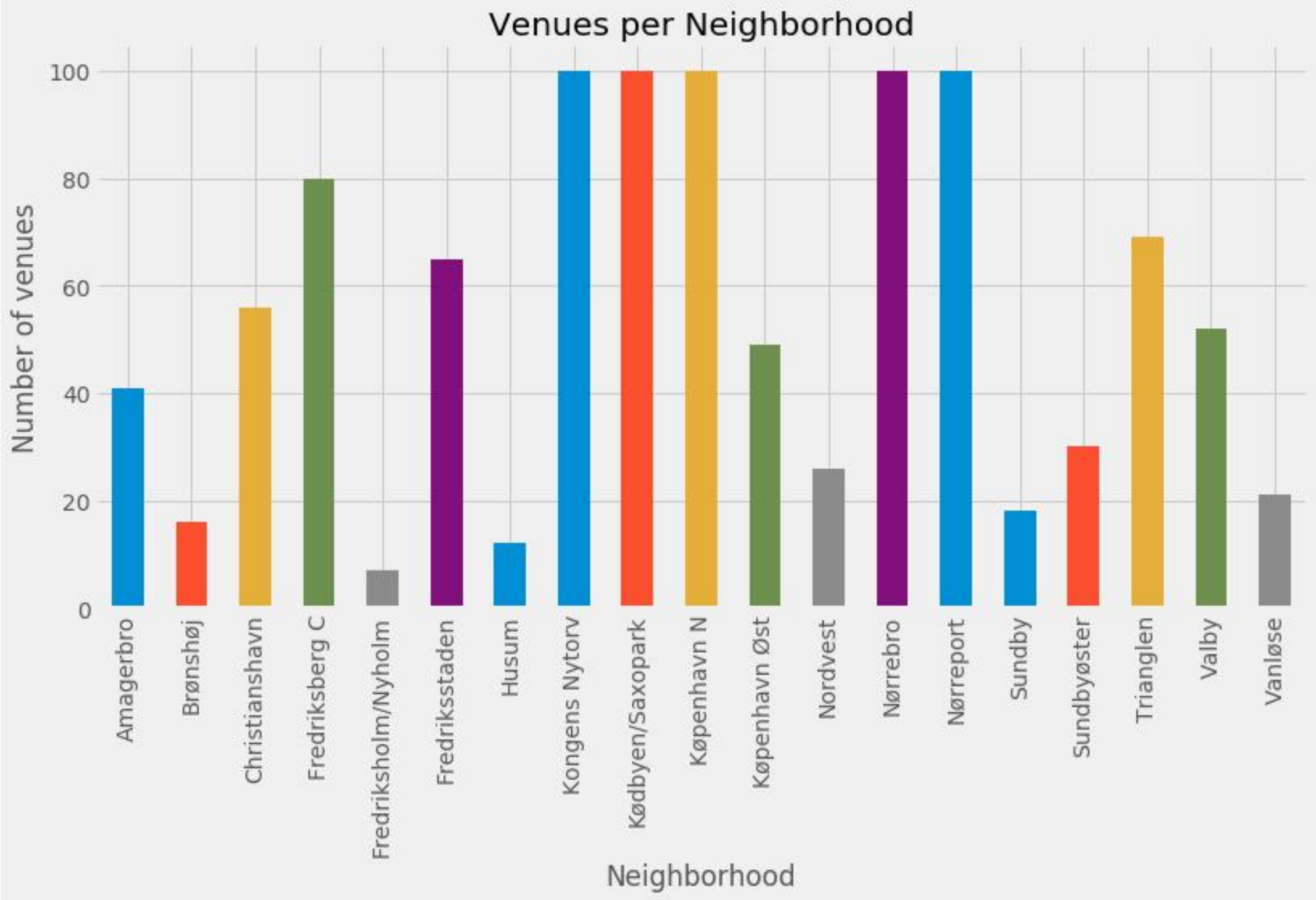
# Coffee related venues (cafes, coffee shops, and bakeries)
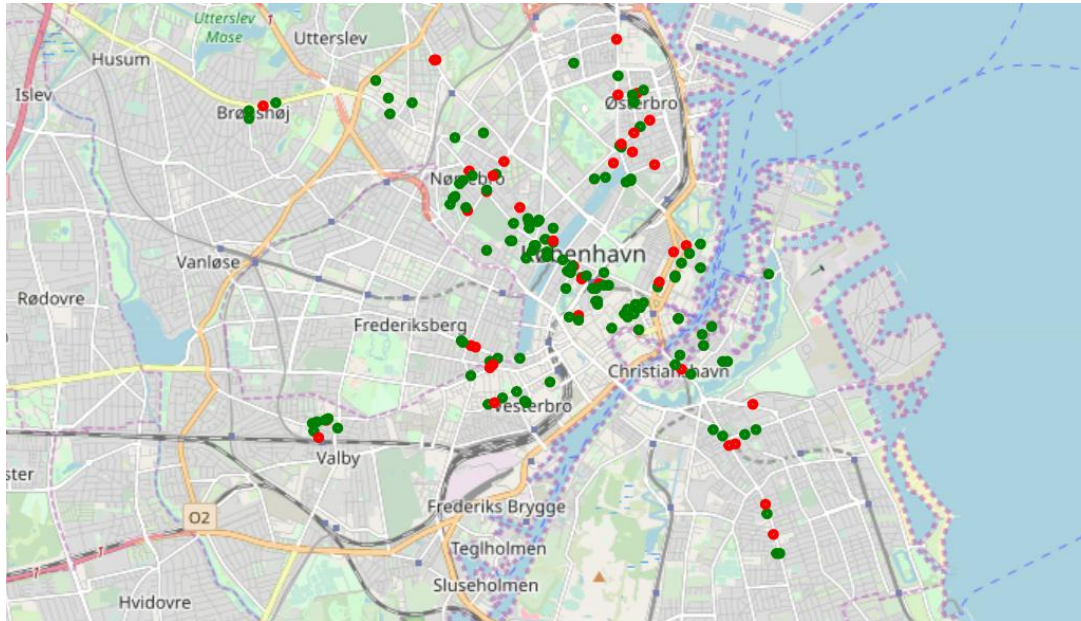
Cafes and coffee shops shown in green making up about 75% of the venues (about 12% of all venues). Bakeries shown in red make up 25% of coffee related venues (4% of all venues)

|	Neighborhood	Dist from center	Venue count
0	Amagerbro	1.175714	7
1	Brønshøj	6.772500	4
2	Christianshavn	0.348000	10
3	Fredriksberg C	2.862000	10
4	Fredriksholm/Nyholm	1.590000	1
5	Fredriksstaden	1.327000	10
6	Kongens Nytorv	0.989000	10
7	Kødbyen/Saxopark	2.452222	9
8	Køpenhavn N	2.742857	21
9	Køpenhavn Øst	3.870000	9
10	Nordvest	5.380000	6
11	Nørrebro	3.846875	16
12	Nørreport	1.763182	22
13	Sundbyøster	2.572000	5
14	Trianglen	2.907857	14
15	Valby	5.066250	8

Kmeans Clusters
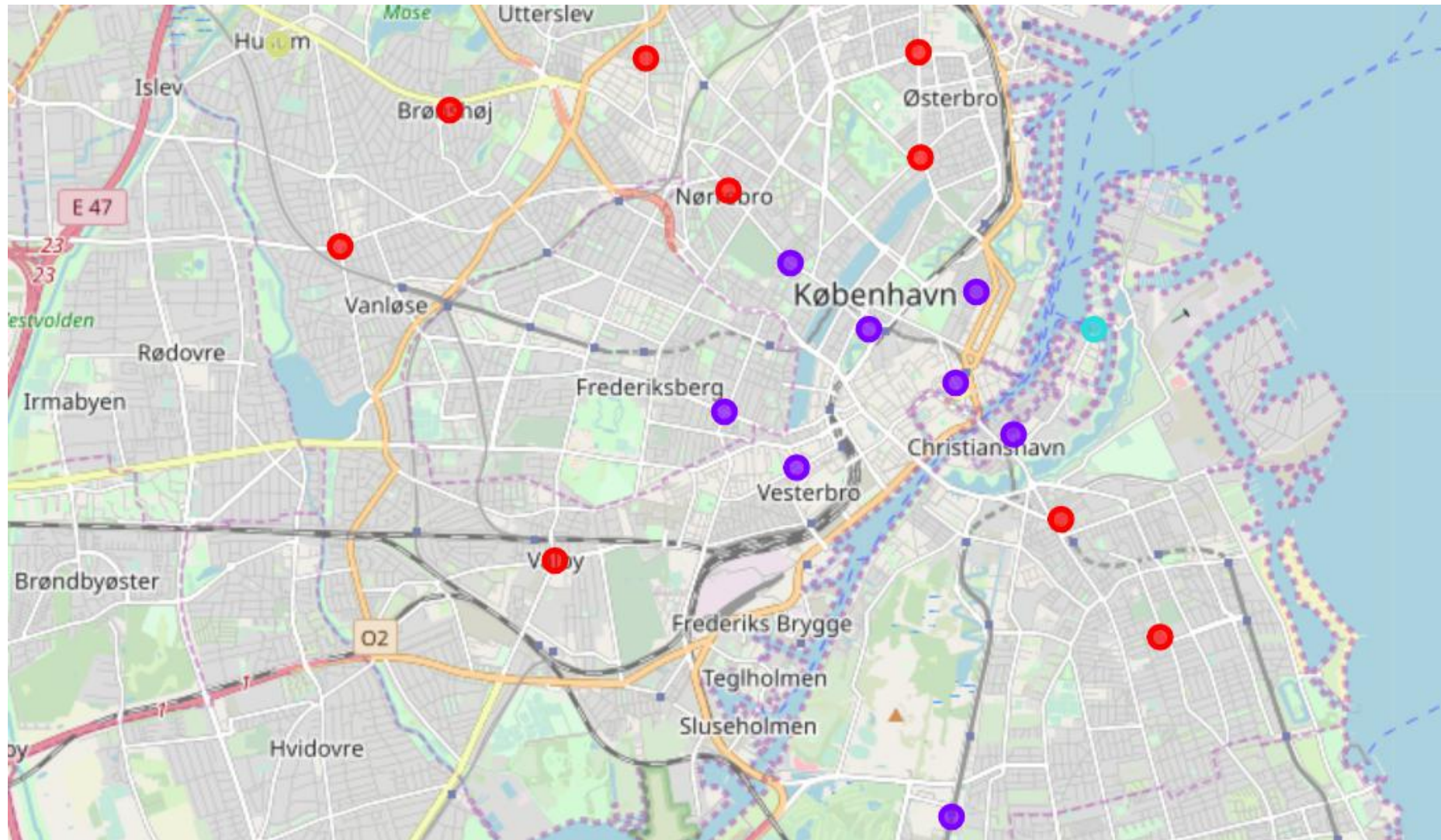
Results

From clusters 0 and 1 we can see that the inner neighborhoods around the city center form one cluster and the outer neighborhoods form another. Since we didn't use any locational with kmeans we can see there is a difference in the mix of venues in these neighborhoods.

Cluster 0: This cluster surrounds the city center, shown in red on the map above. It is characterized by a very high frequency of cafe, coffee shops, and bakeries and pizza places. In 6 out of 9 of the neighborhoods in this cluster, cafe, coffee shop, or bakery is the first or second most frequent venue. In 4 of the neighborhoods, pizza place is the most frequent venue.

This cluster also has a high frequency and variety of restaurants including Thai, Indian, Italian, Sushi, and Chinese. This makes sense as these neighborhoods are located close to, or in, the suburbs and represent more diverse communities.

Cluster 1: This cluster also has a high frequency of coffee shops, but not to the extent of cluster 0. Instead we see hotels, hotel bars, and cocktail bars among the top venue. Also interesting is the much higher frequency of Scandinavian restaurants. All but one neighborhood has Scandinavian restaurant in its top 10 venue categories. We also see some more diversity in the venues overall but less diversity in the type of restaurant than we saw in cluster 0. These neighborhoods are near or in the city center which is heavily trafficked by tourists. That would explain, not only the hotels, but the higher frequency of Scandinavian restaurants as tourists would likely prefer to try local cuisine.

A scatter plot shows relation of # of venues to distance from the city center
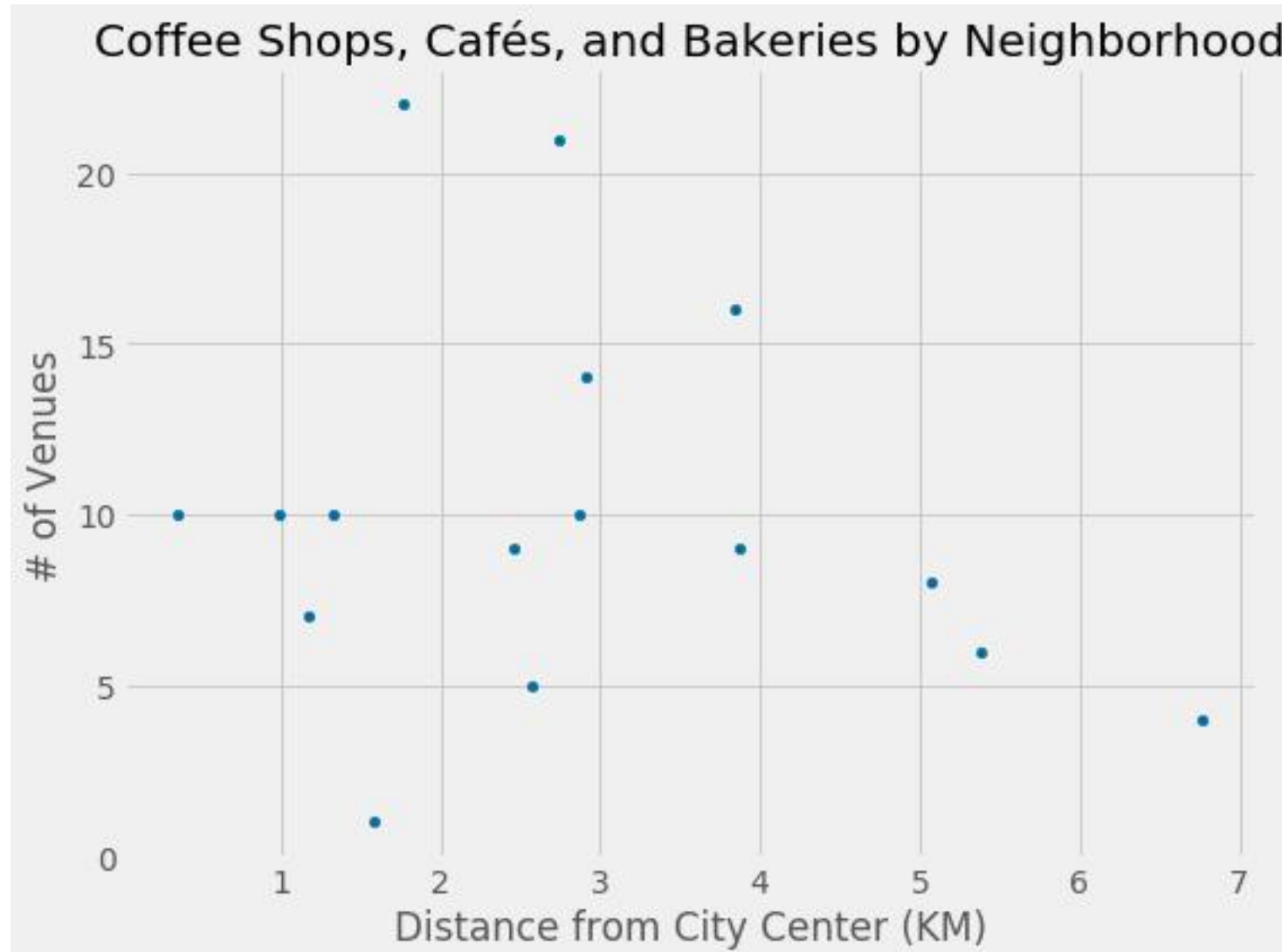
Conclusion

From this scatter plot we can see that the average number of venues tends to be around 10 venues per neighborhood. There are 4 neighborhoods that stand out with an above the average: Nørrebro, Trianglen, København N, and Nørreport. These 4 neighborhoods sit between about 1.7km and 3.9km from the city center.

One other neighborhood, Kødbyen/Saxopark (also known as the former meatpacking district) has a slightly less than average number of coffee shops, just 9. But it is located within the 1.7-3.9km radius which the most popular neighborhoods are located in. It was one of the 5 city neighborhoods with 100+ venues and was clustered in cluster 1, making it more similar to the downtown neighborhoods.

One final note is Fredriksholm/Nyholm neighborhood, shown on as the lowest # of venues on the scatter plot above, is a bit of an outlier. While the neighborhood is close to the city center it is located on an island with very few shops. It does have tourist attractions such as an opera house and some museums, but it is largely a sight seeing location and not a place with restaurants, cafes, or nightlife. This explains its unusually low number of venues.

København N and Nørreport are densely populated hip areas with a lot of competition (the highest number of coffee related venues). But Nørrebro and Trianglen are still up and coming neighborhoods and may have room for growth. These two neighborhoods would be good places to scout for possible locations and get a feel for their potential.

The meatpacking district is one of the most popular areas in the city, housing a lot of bars, clubs, and restaurants as well as small businesses. This is likely one of the best places to scout for a location as it appears to be overlooked by coffee shops and bakeries.

This study was intended as an exploratory analysis to be followed up by more in-depth analysis of the high-prospect neighborhoods: Nørrebro, Trianglen, and Kødbyen/Saxopark.