

Gyms in Stockholm and Gothenburg

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Date: April 25th, 2020

Introduction

In this report, we will investigate what gym chains are the most popular in the cities Stockholm and Gothenburg, which are the two largest cities in Sweden. We will also look at the cities' gym density. Lastly, we will look at where the gyms are located.

This kind of information will help any person who is interested in fitness and is planning to move to either Stockholm or Gothenburg, and wonders where there are most facilities. This helps the person to:

- a. Pick which city to move to.
- b. Locate areas in the city where there are the most gyms.
- c. Help in choosing a popular chain with many gyms available.

This report is part of the course “Applied Data Science Capstone” found at <https://www.coursera.org/learn/applied-data-science-capstone>.

Data

The data that we will use for this study will come from Foursquare, <https://foursquare.com/>. Foursquare offers APIs to fetch data about locations and places. With their APIs, we will do the following things:

- Look at the categories and find the ID of the “Gym / Fitness Center” category.
- Search for gyms in the cities “Stockholm” and “Göteborg” and get their names and coordinates (longitude and latitude).

The coordinates of the cities Stockholm and Gothenburg, where we will place the center of the maps, will be fetched from ArcGIS using the Python library geocoder:

<https://geocoder.readthedocs.io/providers/ArcGIS.html>

Methodology

The study was done in an exploratory manner in a Python Jupyter notebook.

100 gyms were selected from each city through Foursquare's API (100 was the limit of returned items). From these gyms, the properties that were used were their name and coordinate. Since some names could differ slightly, even if they belonged to the same chain, some cleaning of the names was done to make them consistent.

These gyms were plotted on maps, visualizing to the reader where it is the most dense. The gyms were also grouped into clusters, to visualize if they are located in separate regions; K-means clustering was used for this.

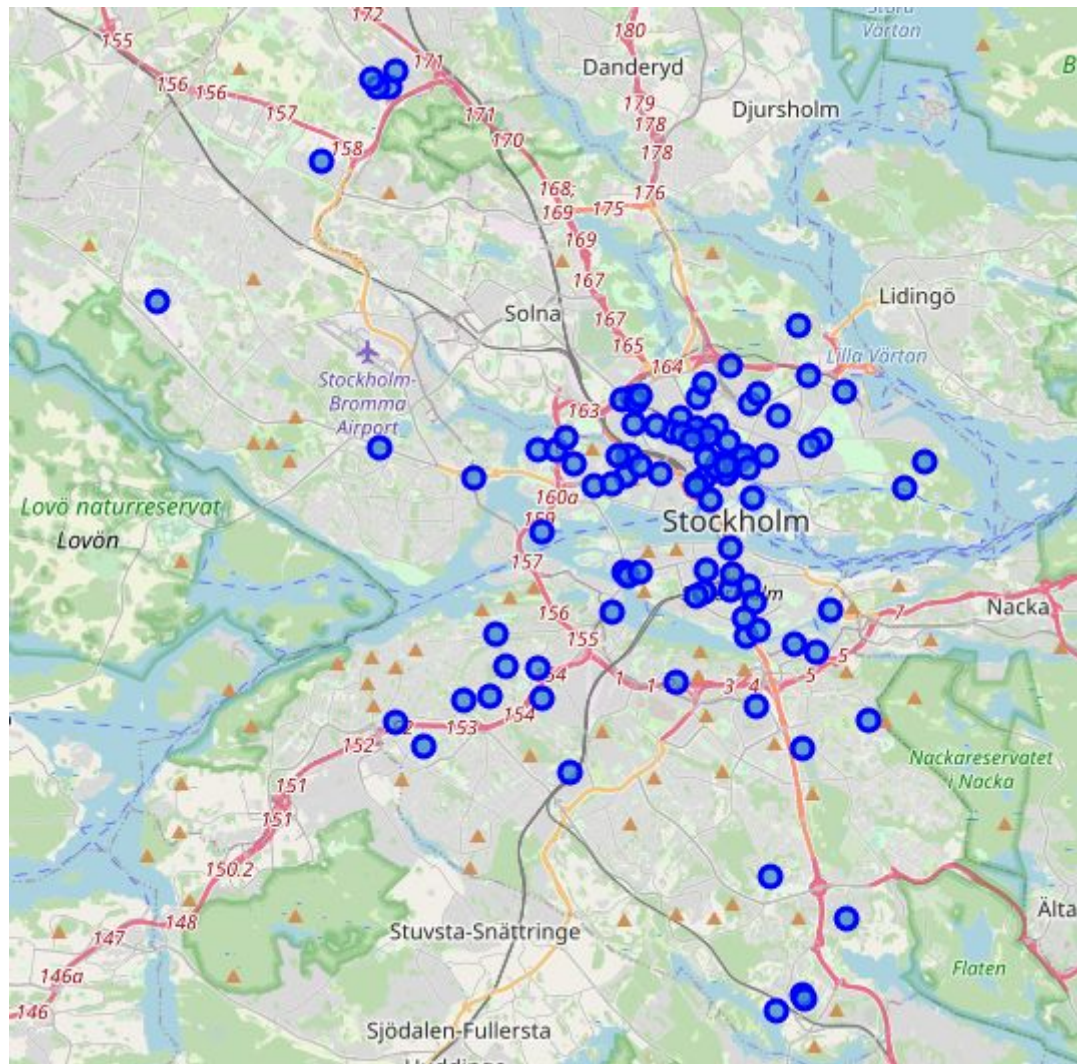
Some statistics were also collected. With this, the density of gyms per city was calculated.

The gyms were also grouped on their name, which made it possible to count how many gyms there were of each chain. All chains (all gyms that shared the same name with another gym were considered part of a chain).

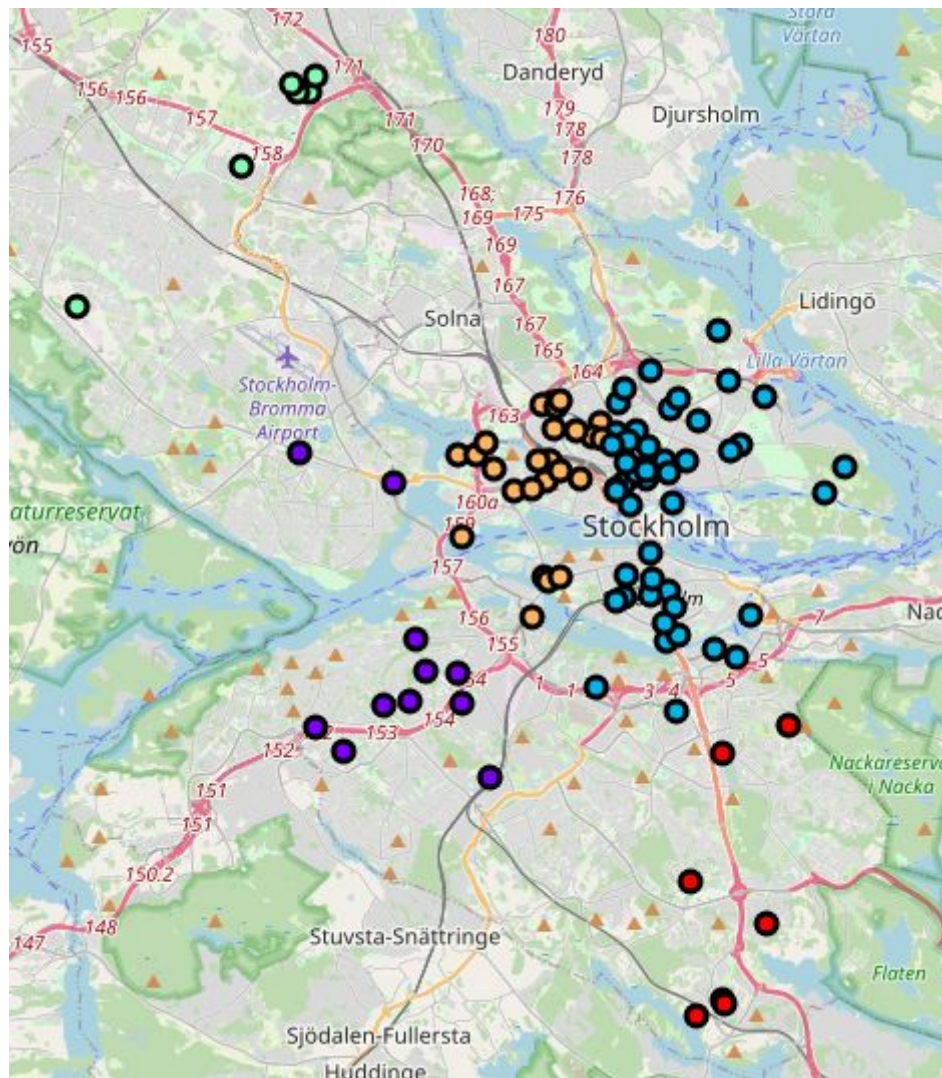
Results

Maps of Stockholm

This visualizes the 100 found gyms in Stockholm:



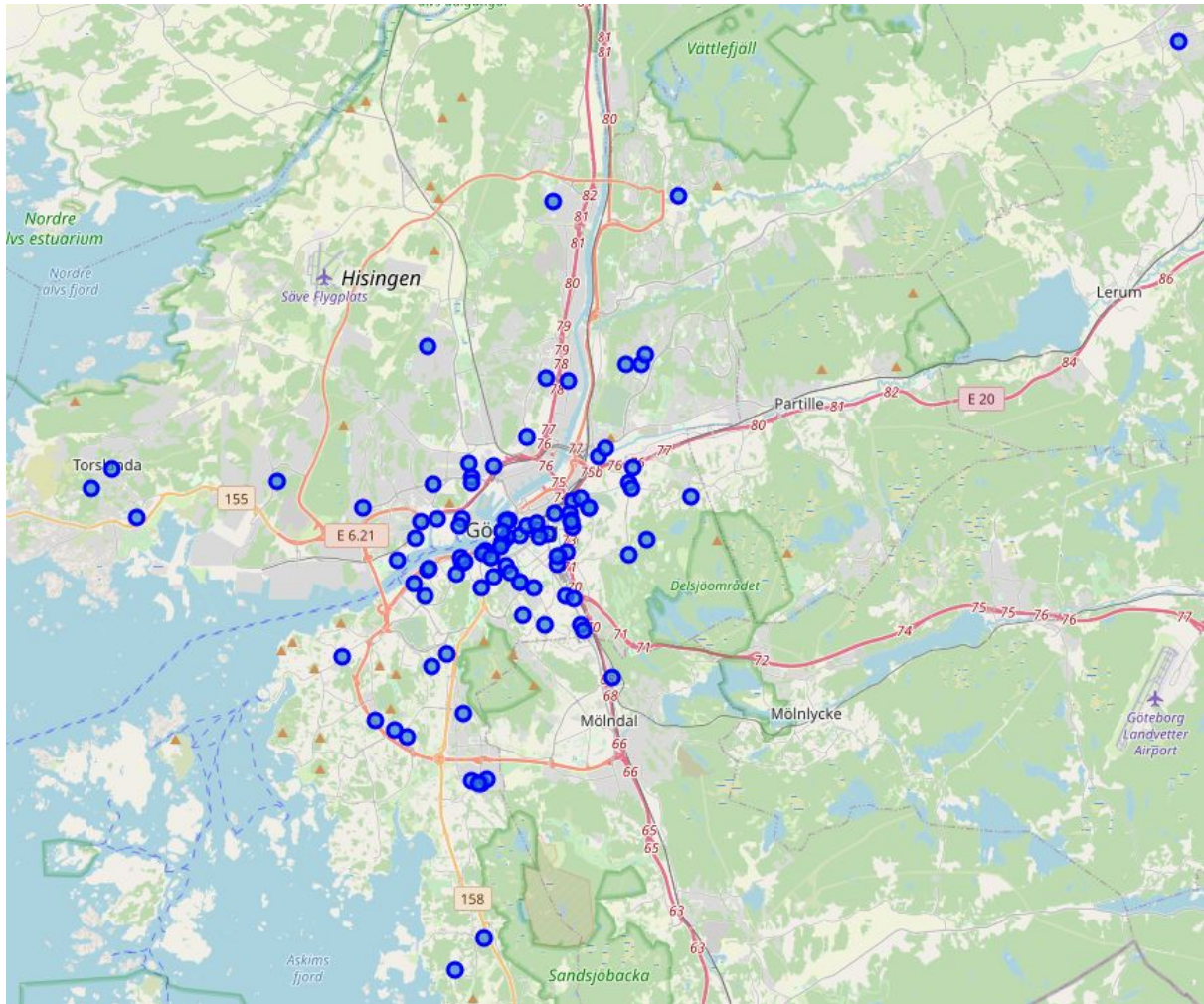
Here is another map where we can see how they cluster:



There are two clusters in the center of the city, and three outside the center.

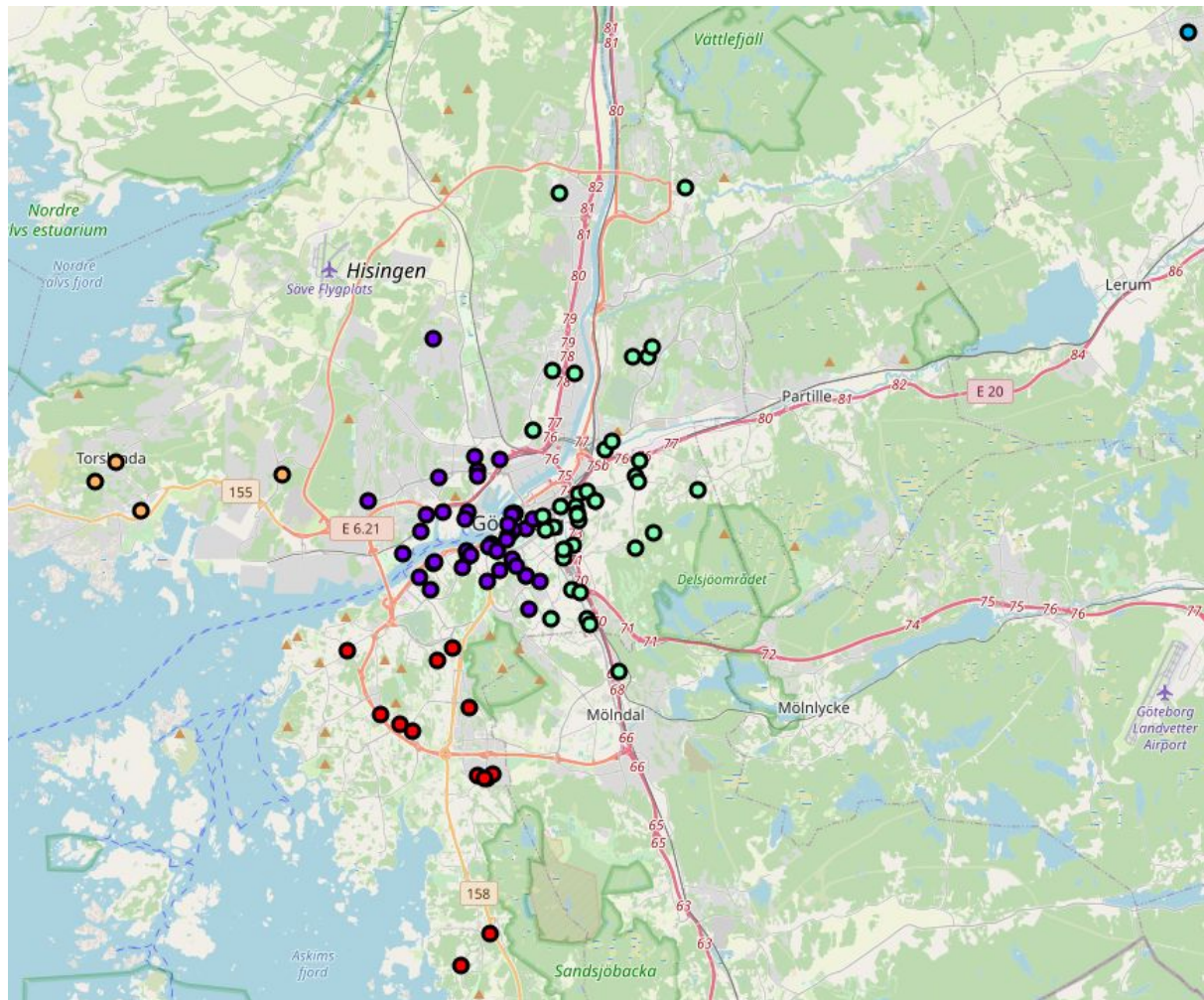
Maps of Gothenburg

This visualizes the 100 found gyms in Gothenburg:



We can already see that they are a lot less dense.

Here is another map where we can see how they cluster:



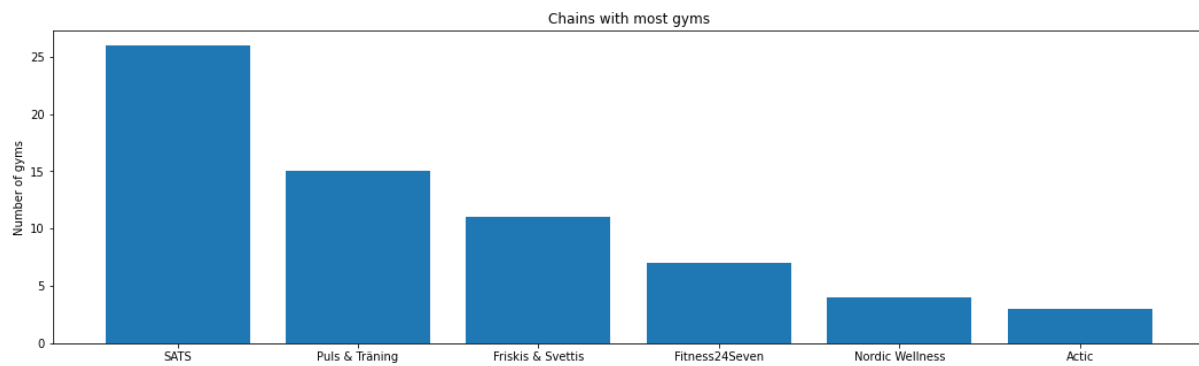
Again, there are two clusters in the center part of the city, and three outside. Interesting to note is that one cluster contains a single gym (in the upper-right corner of the map).

The most popular gym chains

Here are the most popular chains in Stockholm:

| Name | Number of gyms |
|-------------------|----------------|
| SATS | 26 |
| Puls & Träning | 15 |
| Friskis & Svettis | 11 |
| Fitness24Seven | 7 |
| Nordic Wellness | 4 |
| Actic | 3 |

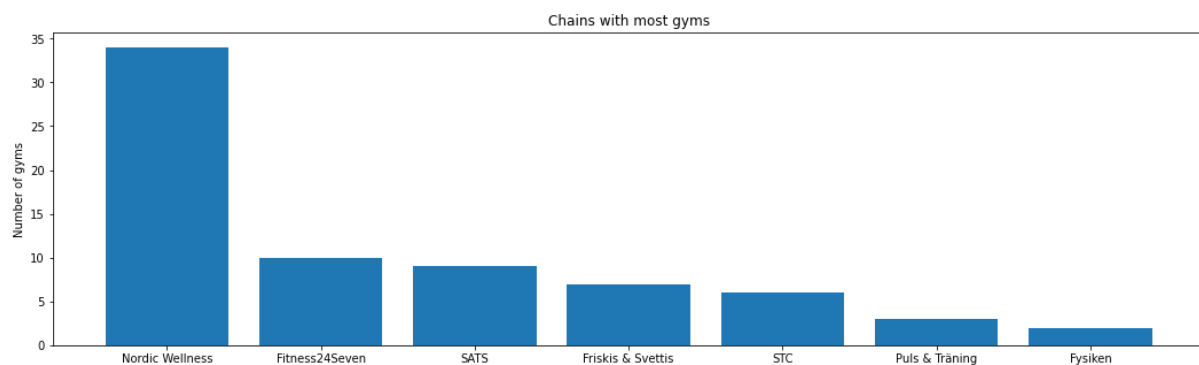
Bar chart with the most popular chains in Stockholm:



Here are the most popular chains in Gothenburg:

| Name | Number of gyms |
|-------------------|----------------|
| Nordic Wellness | 34 |
| Fitness24Seven | 10 |
| SATS | 9 |
| Friskis & Svettis | 7 |
| STC | 6 |
| Puls & Träning | 3 |
| Fysiken | 2 |

Bar chart with the most popular chains in Gothenburg:



Gym density

The gyms in Stockholm were found in an area that was 507.25 km², with a density of 0.20 gyms/km².

The gyms in Gothenburg were found in an area that was 1613.54 km², with a density of 0.06 gyms/km².

All results can be found and explored at

<https://colab.research.google.com/drive/1j5zdWqWcKbAZ6aKqMnZ0ZTI2mpzhmiZe>.

Discussion

Most gyms in both cities are found in the very centers of the cities, and become less dense the farther you come from the center of the cities.

In Stockholm, the most popular chain is SATS, followed by Puls & Träning. In Gothenburg on the other hand, Nordic Wellness is most popular, followed by Fitness24Seven. Most chains are found in both cities, however, it is obvious that they have focused on one or the other city. For instance, Nordic Wellness has 34 gyms in Gothenburg, while only 4 in Stockholm. On the other hand, SATS has 26 gyms in Stockholm, while only 9 in Gothenburg.

To make an even better recommendation for which chain to pick when you want to start to exercise, it would be a good addition to calculate the average rating of the gyms. However, to get a location's rating from Foursquare requires their premium API, which costs money. Therefore it was left out of this report, but it leaves room for future improvement.

Conclusion

Based on the finding in this report, it is best to live close to the center of Gothenburg or Stockholm if you want to live close to the gyms. In Gothenburg, the most common gym chain is Nordic Wellness, making it a safe bet when you want to start exercising. In Stockholm, the most common gym chain is SATS, making it preferable.