

Coursera Capstone

IBM Applied Data Science Capstone

Opening a New Fitness Center / Gym in Munich, Germany

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Business Problem

- ▶ Decision about the location of a new fitness center / gym plays a crucial role for its success
- ▶ Objective: Analyse and select the best locations in the city of Munich, Germany to open a new fitness center / gym
- ▶ This project is timely, as the city has already a wide range of fitness centers. But regarding the statistics from Statista, the fitness hype still persists
- ▶ Business question:
 - ▶ If a studio operator is looking to open a new Fitness Center / Gym in Munich, where would you recommend it?

Data

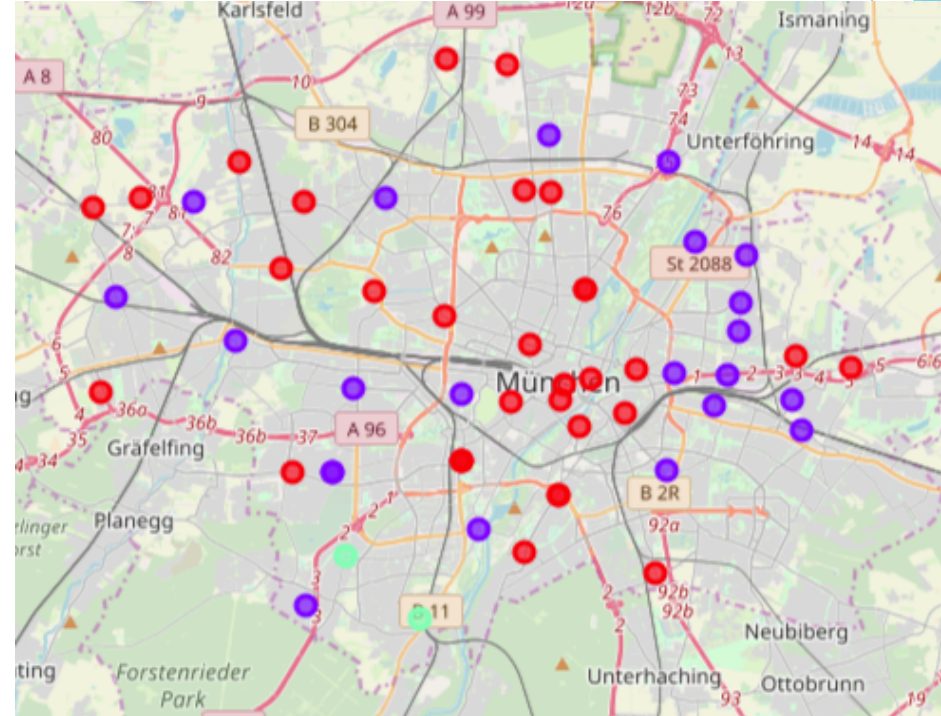
- ▶ Data required:
 - ▶ A list of boroughs in Munich
 - ▶ Latitude and Longitude coordinates of those boroughs
 - ▶ Venue data, particularly data related to Fitness Centers and gyms
- ▶ Sources of data:
 - ▶ Wikipedia page for boroughs:
(https://de.wikipedia.org/wiki/Liste_der_Stadtteile_M%C3%BCnchens)
 - ▶ Geocoder package for latitude and longitude coordinates
 - ▶ Foursquare API for venue data

Methodology

- ▶ Web scraping Wikipedia page for boroughs list
- ▶ Get latitude and longitude coordinates using Geocoder
- ▶ Use Foursquare API to get venue data
- ▶ Group data by boroughs and taking the mean of frequency of occurrence of each venue category
- ▶ Filter venue category by fitness center / gym
- ▶ Perform clustering on the data by using k-means clustering
- ▶ Visualize the clusters in a map using Folium

Results

- ▶ Categorized the Boroughs in 3 clusters:
 - ▶ **Cluster 0:** Boroughs with low to no existence of number of fitness centers / gyms
 - ▶ **Cluster 1:** Boroughs with moderate number fitness centers / gyms
 - ▶ **Cluster 3:** Boroughs with high concentration of fitness centers / gyms



Discussion

- ▶ Most of the fitness centers / gyms are concentrated in the surrounding area of Munich city
- ▶ Highest number in cluster 2 and moderate number in cluster 1
- ▶ cluster 0 has very low number to no fitness centers in the boroughs closed to the city center
- ▶ oversupply of gyms mostly happened in the surrounding area of the city, with the center area still have very few gyms

Recommendations

- ▶ Open ne fitness centers / gyms in boroughs in cluster 0 with little to no competition
- ▶ Can also open in boroughs in cluster 1 with moderate competition if have unique selling propositions to stand out from the competition
- ▶ Avoid boroughs in cluster 2, already high concentration of fitness centers / gyms and intense competition

Conclusion

- ▶ Answer business question: The boroughs in cluster 0 are the most preferred locations to open a new fitness center
- ▶ Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new fitness center / gym