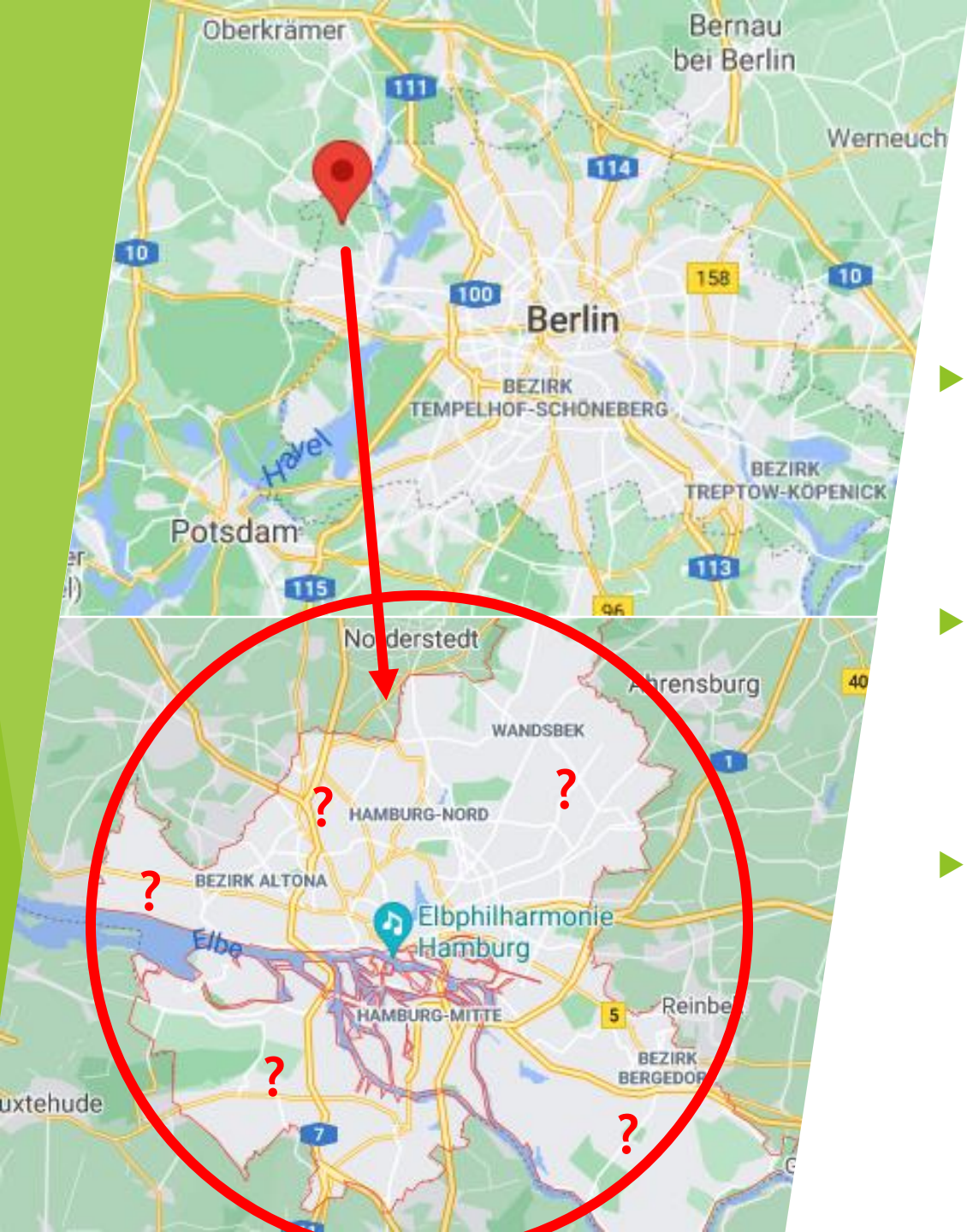
Comparison of neighborhoods in Hamburg and Berlin

IBM Data Science – Capstone project



Motivation

- Restaurant owner in Berlin plans to open a new branch in Hamburg, but doesn't know the city
- The neighborhood in Hamburg should be mostly similar to the given location in Berlin
- **Aim of the project:** Find a location in Hamburg, that is comparable to a given location in Berlin to open a branch of a restaurant

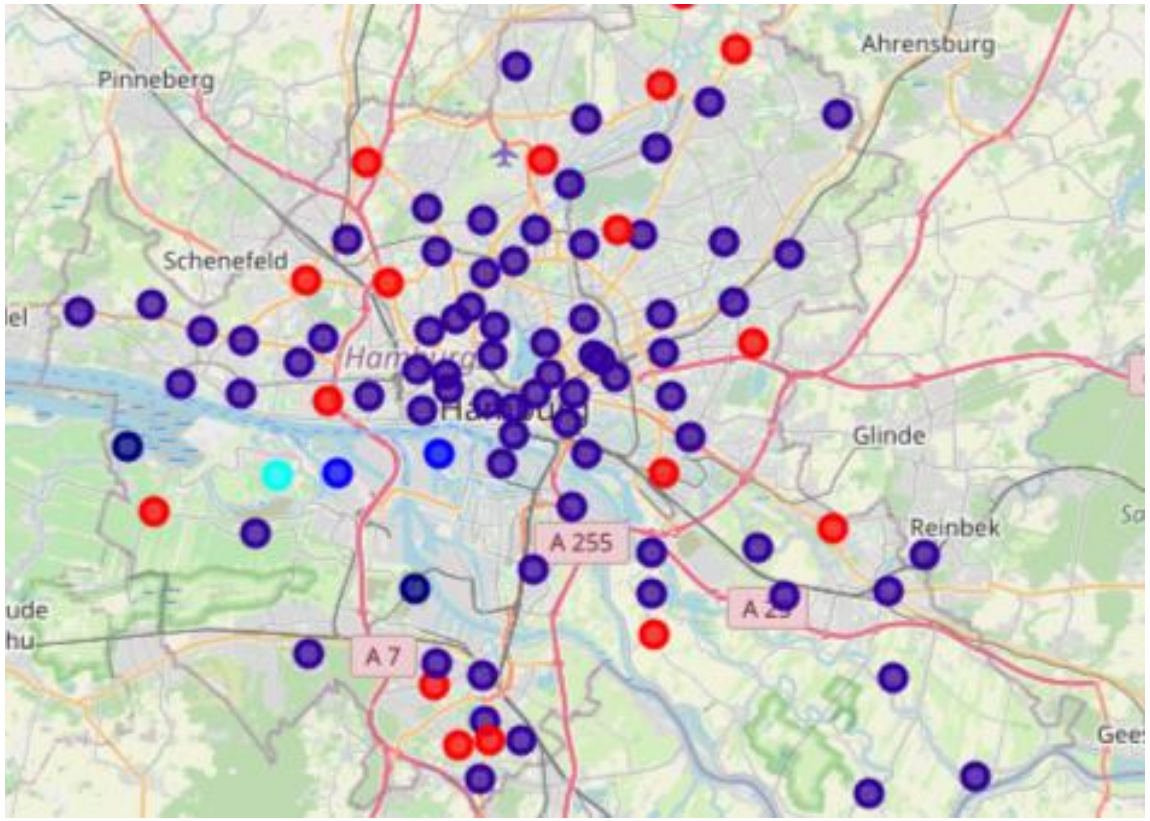
Opening a branch of a restaurant in another town

- Location is a crucial factor for restaurants
  - Defines the clients
  - Sets costs like rent
- A branch tends to aim for common clients and business strategies
  - Reduces costs
  - Transferability saves time and enables an overall marketing plan

Data acquisition and cleaning

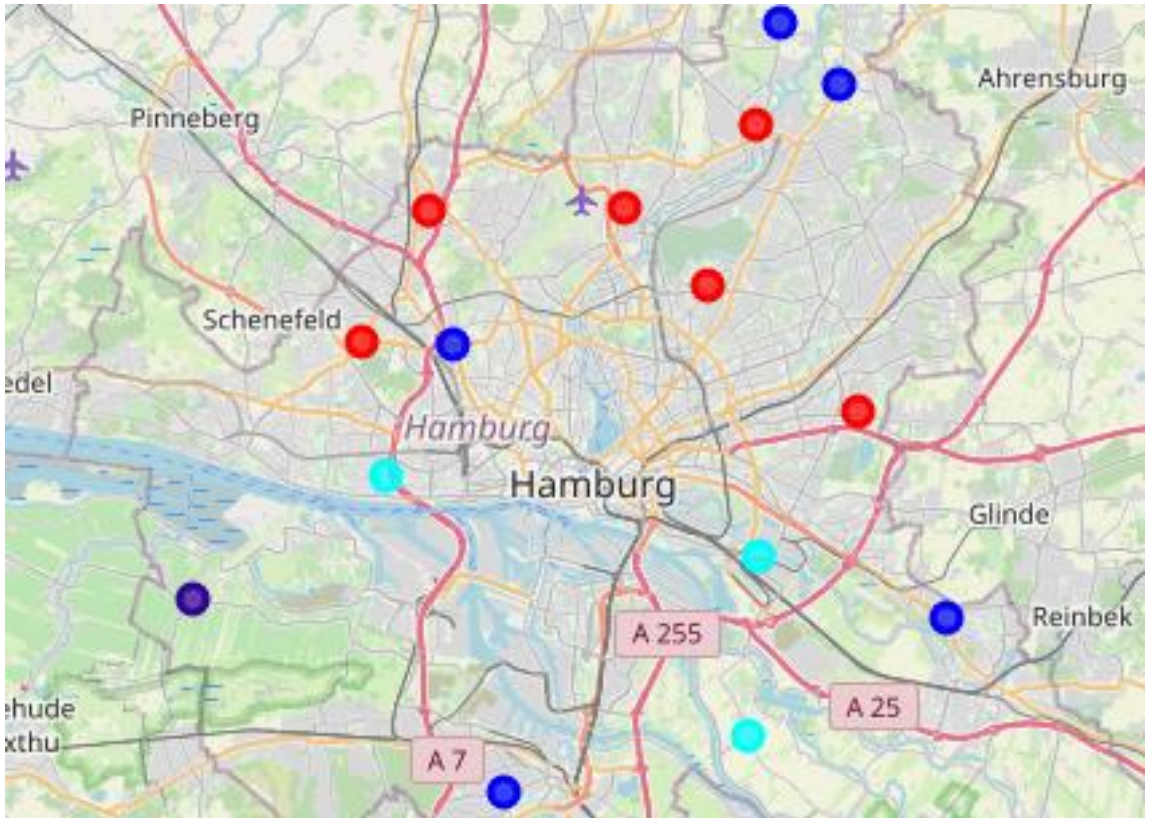
- Neighborhoods of Hamburg, including names, population density and coordinates, scraped from wikipedia.org (2020)
- Rental prices of Hamburg scraped from mietspiegeltabelle.de (2017)
- The restaurants location determined by a given address using geopy
- Venues per neighborhood extracted from Foursquare API
- Separate Dataframes were merged for further investigatoin
- Venue infomration reduced to venue category and one-hot-encoded
- 1514 venues and 105 neighborhoods are used for analysis

Clustering of Hamburg's neighborhoods



- Using KMeans with 5 Clusters
- Red Cluster is similar to the restaurant's neigbborhood in Berlin
- Relevant neighborhoods are more likey to be placed outside of the center

Further clustering

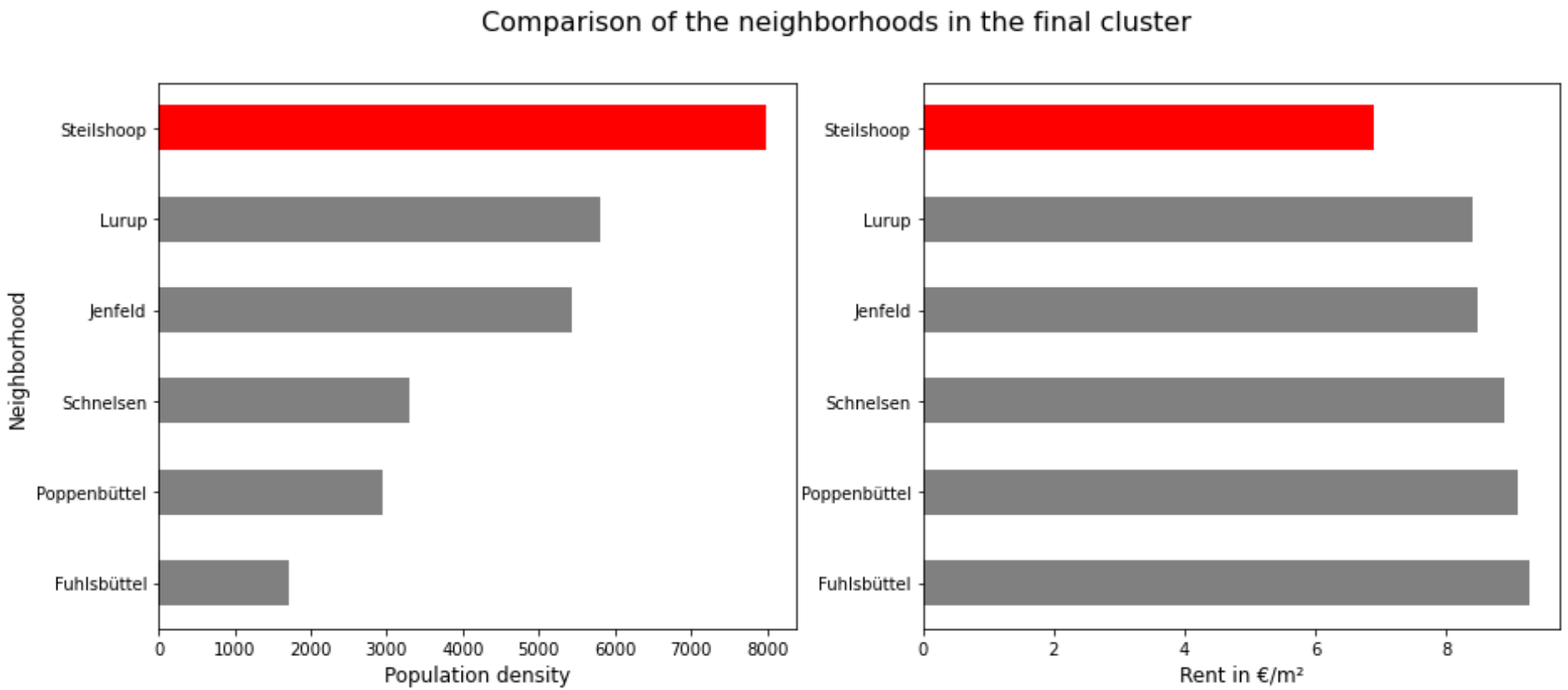


- Using KMeans with 5 Clusters on previous relevant cluster
- 6 most similar neighborhoods are placed in the north of Hamburg

Comparison of final neighborhoods

- Comparing the neighborhoods of the last cluster using demographic and economic data
  - Population density
  - Rental prices
- The number of possible customers is increased with a high population density
- The fixed costs are reduced with low rental prices

Comparison of final neighborhoods



Conclusion

- Clustering of the neighborhoods of Hamburg by venues show that comparable neighborhoods to the location in Berlin can be found outside the center in the north of Hamburg
- Considering population density and rental prices comparable neighborhoods can be further distinguished

- Based on the given data, "Steilshoop" seems to be a fitting neighborhood for the branch
  - Similar venues to the restaurant in Berlin
  - Highest population density and lowest rental prices