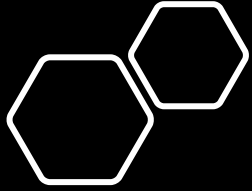


An aerial night photograph of Amsterdam, showing the city's dense architecture, including the prominent dome of the Basilica of St. Nicholas in the center. The city is illuminated by streetlights and building lights, with a canal and a bridge in the foreground. The sky is dark with some clouds.

OPENING A SECOND GYM LOCATION

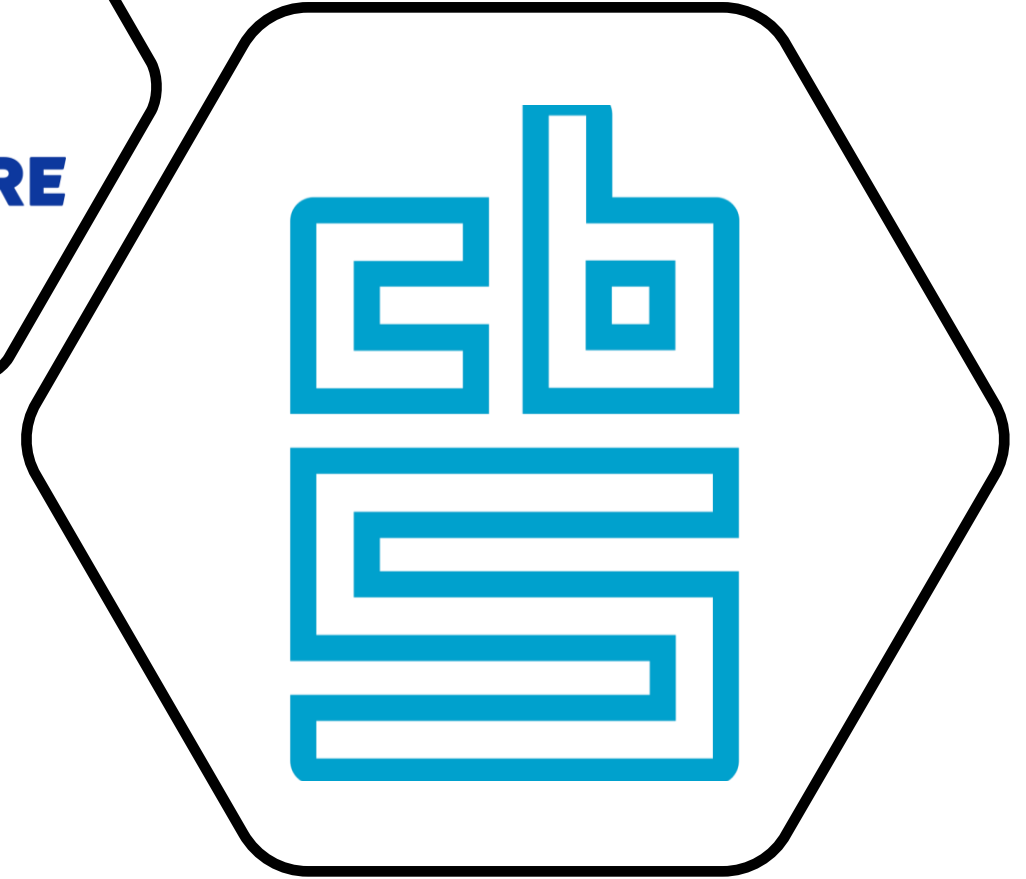
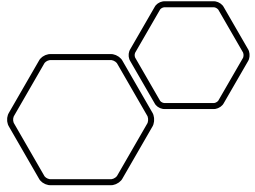
In Amsterdam, but *wait!*
Where in Amsterdam?



Business Problem

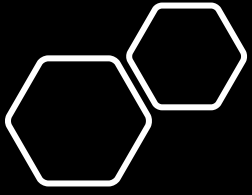
Which of the boroughs in Amsterdam are similar to Feijenoord, Rotterdam based on the target group of the gym (youths) and the presence of local enterprises (e.g. restaurants, bars and sport clubs)?

- New gym location
- Current area: Feijenoord, Rotterdam
- New area: Amsterdam
- Focussed on youth
- Initiatives with local venues:
 - Restaurants
 - Bars
 - Sport clubs



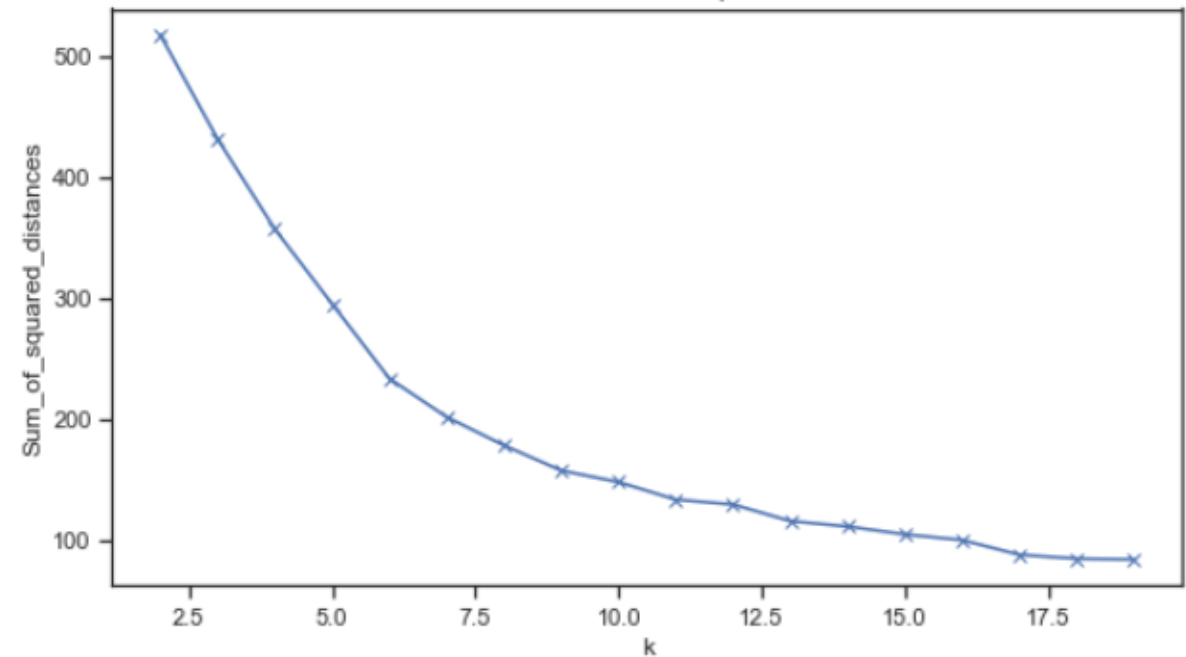
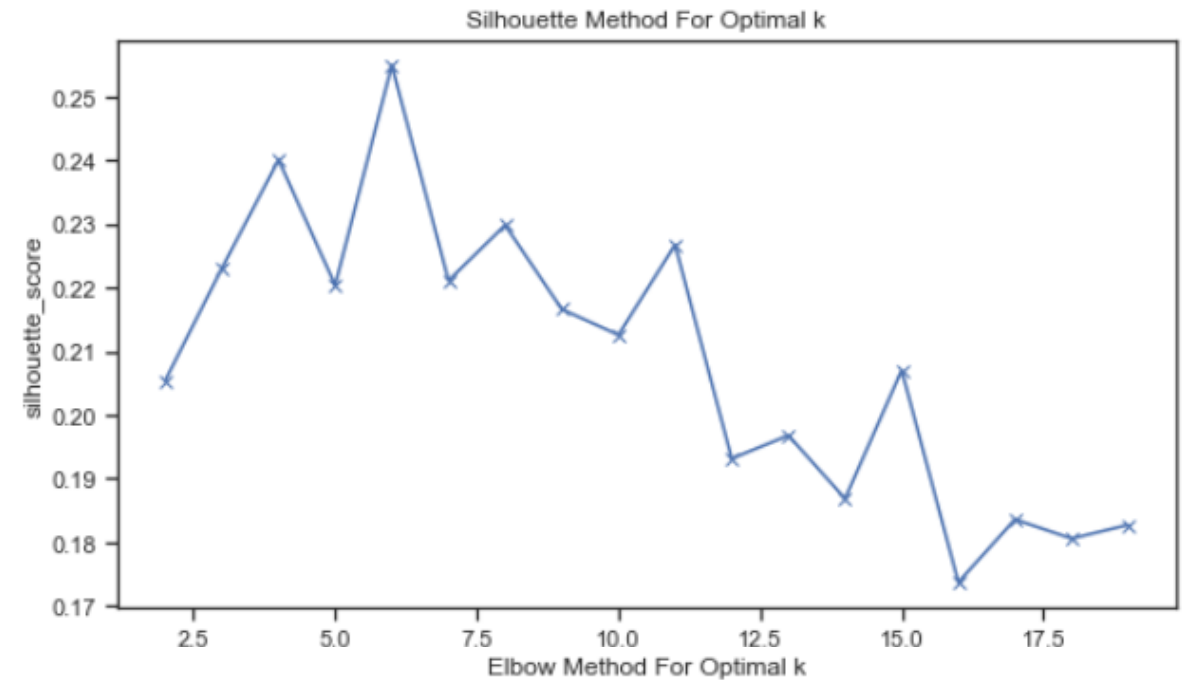
DATA SOURCES

- Population composition based on age and income
→ CBS data set
- Local venues
→ Foursquare



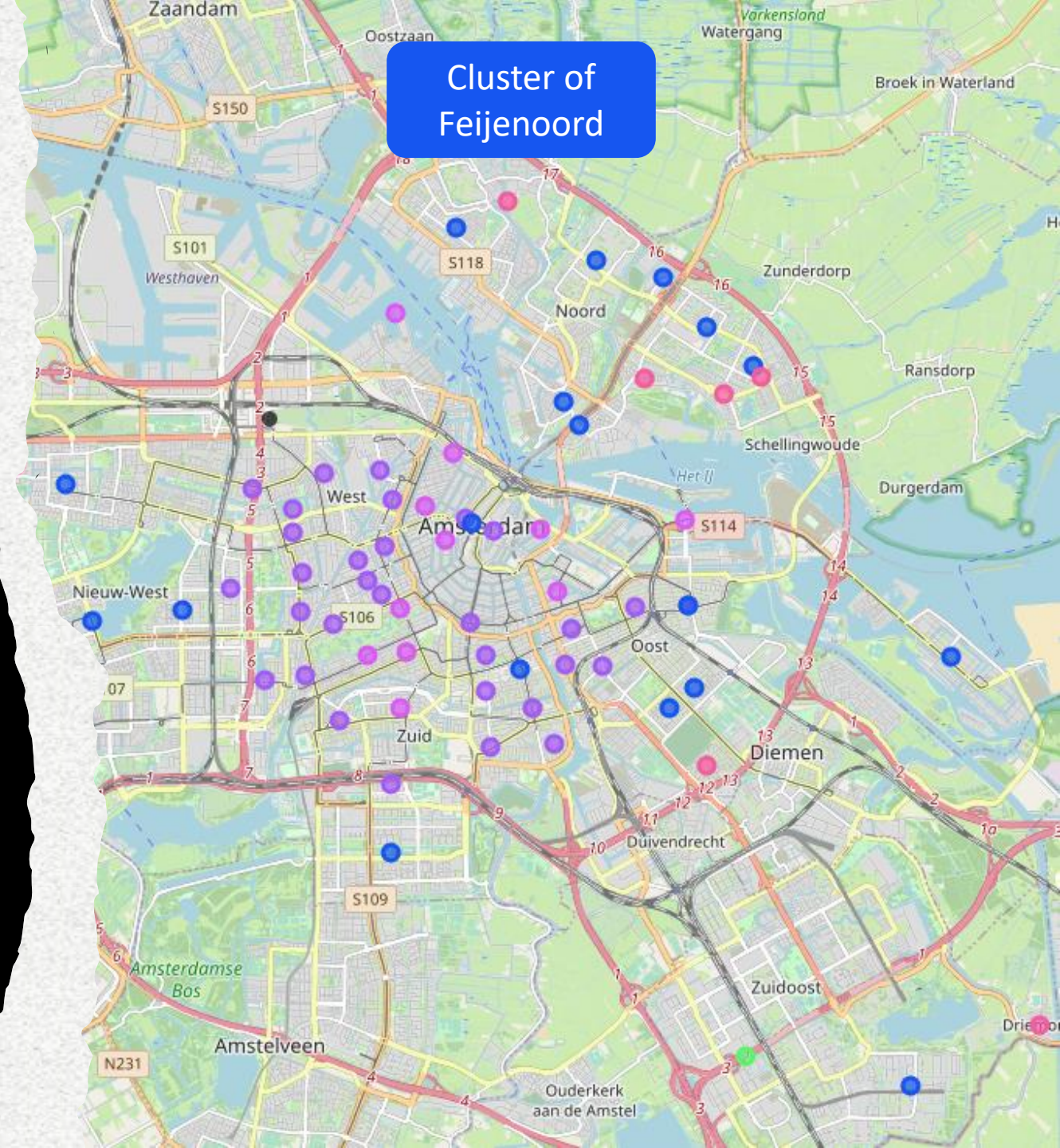
Modelling

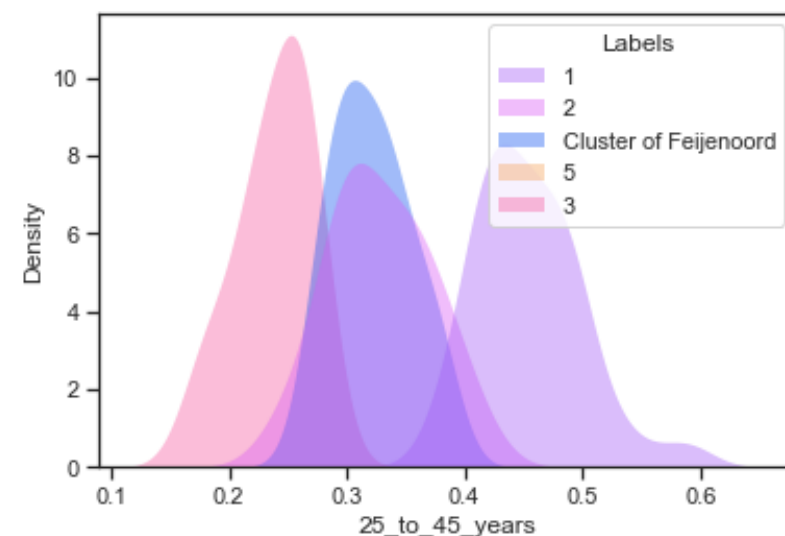
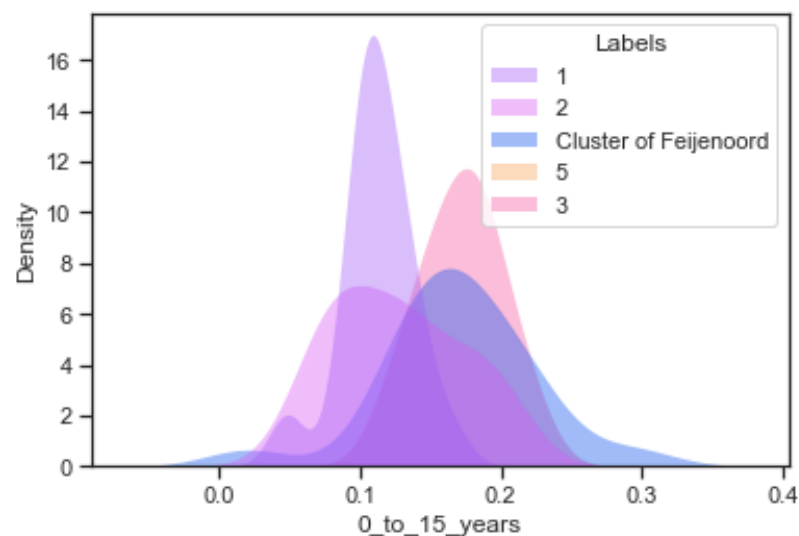
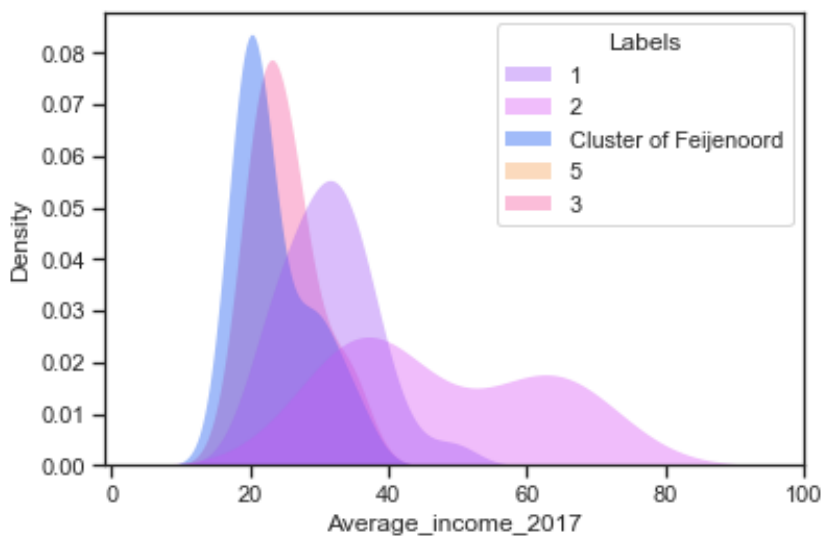
- Cluster algorithm:
 - Unlabeled data
 - K-means
- Optimal # of clusters:
 - Elbow method: 6 – 8
 - Silhouette method: 6
 - Optimal: 6 clusters



Clusters on map

- Neighbouring boroughs tend to cluster together
- Feijenoord cluster mostly in outskirts





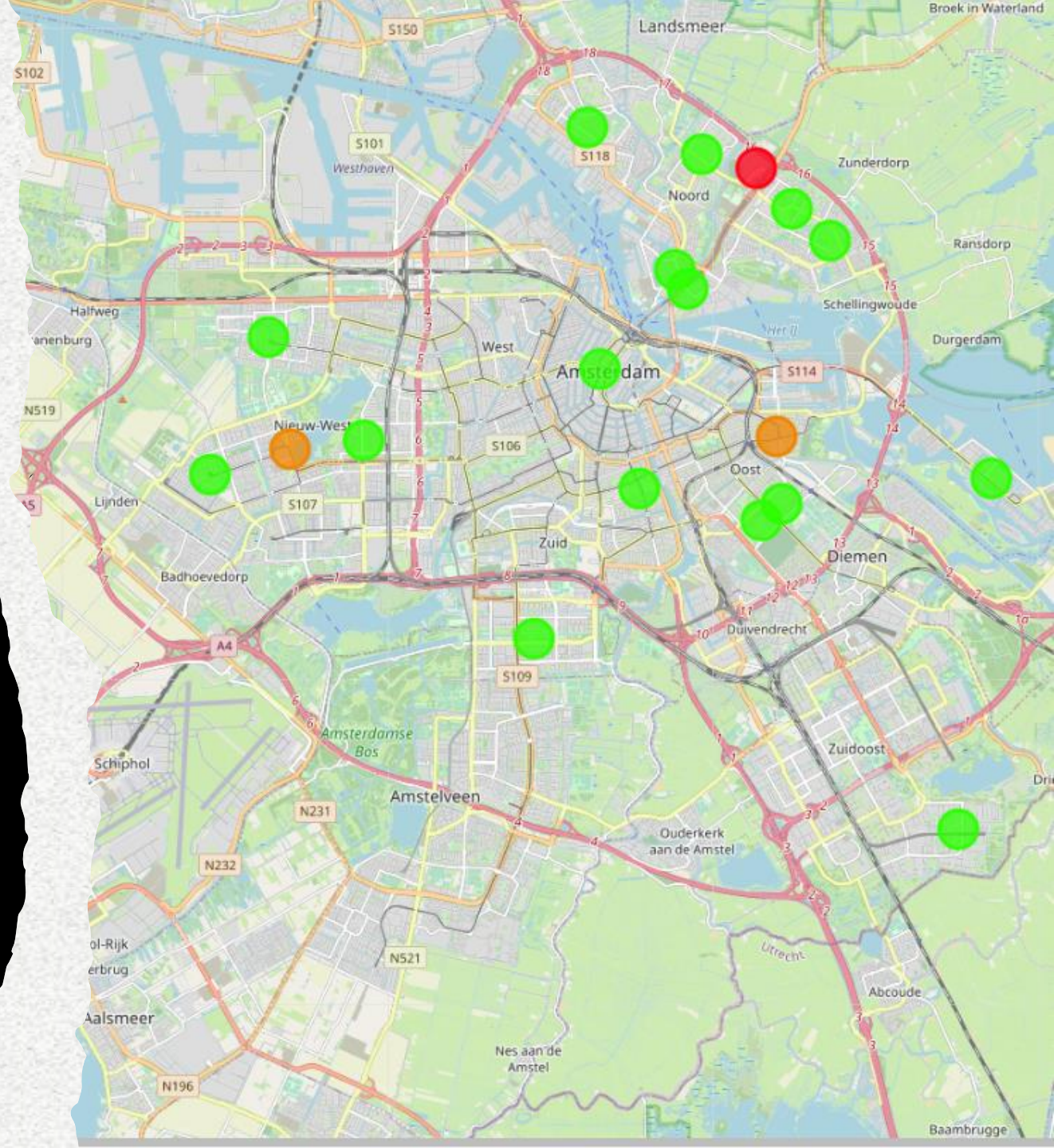
Distribution
features between
clusters

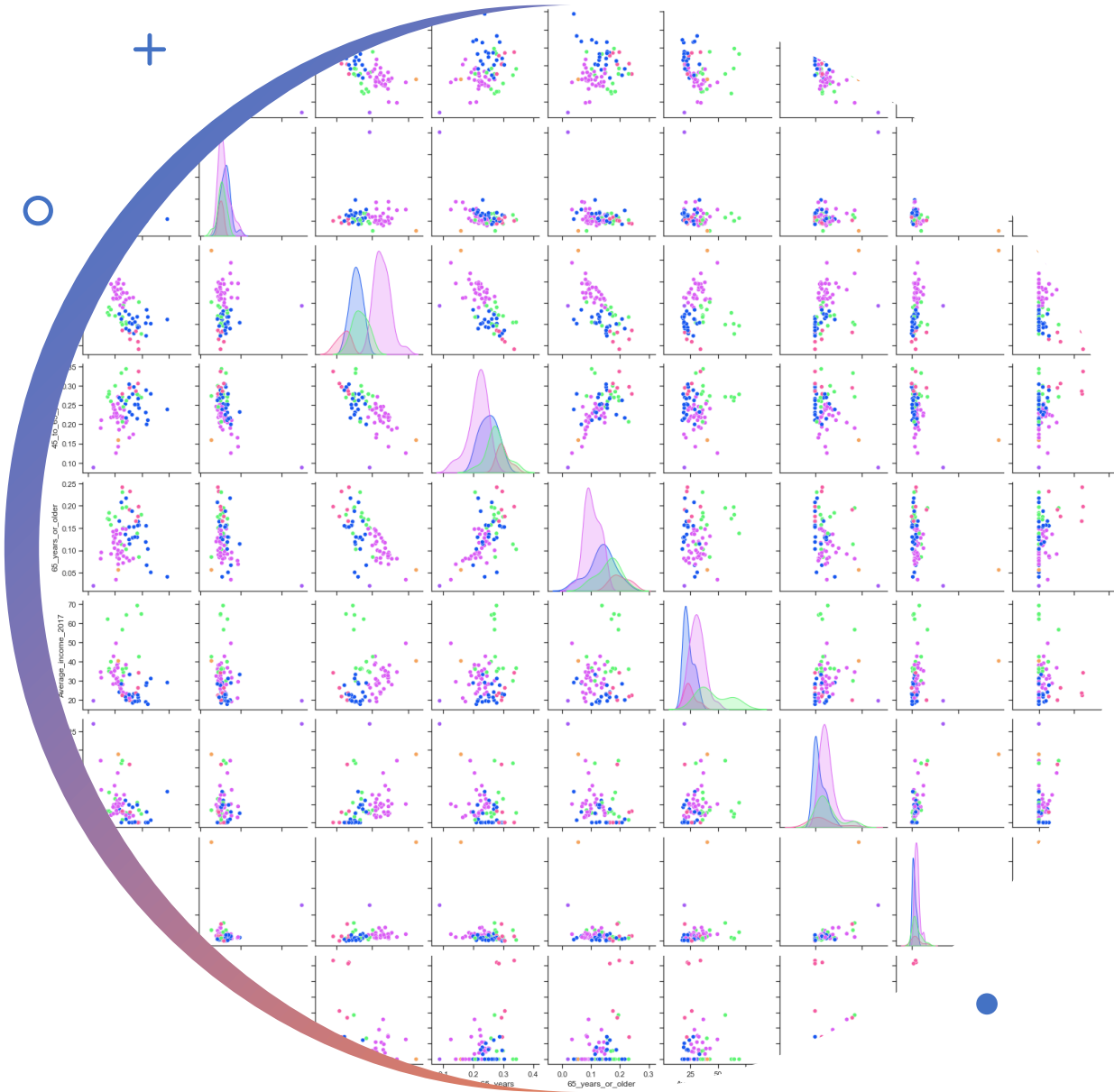
- Average income Feijenoord cluster lower
- Relatively young population



Similar borough to Feyenoord

- Competition:
 - Green: low competition
 - Orange: medium
 - Red: high
- Best suited areas





Conclusion

- Combination of features is necessary for comparisons
- Neighbouring boroughs tend to cluster together
- Average income and age Feijenoord cluster lower
- 16 suited areas found for new gym location:
 - Similar to Feijenoord
 - Low competition with other gyms