

# Interactive city-map - opening a high-end restaurant in Rotterdam

Capstone Project

# General Aim and Deliverable of Project

- The aim of this data-analysis is to create a city-map visualisation of public data to generate insights helpful in determining a variety of questions.
- The deliverable of the project is an interactive city-map of a city of choice in the Netherlands stating the demographical and venue characteristics values per postcode.

# Project specific case for demonstration

- For this report the city-map will generate helpful insights in determining potential locations to open a new high-end restaurant in the Rotterdam.
- The restaurant customer segment will target customers aged 25-44.
- The criteria to determine the ideal area based on postalcode to open a high-end restaurant are:
  - Postalcode area with high population density
  - Postalcode area with high concentration of potential customers aged 24-44
  - Postalcode area with high average housing prizes
  - Postalcode area with high income (determined by low governmental financial aid)
  - Postalcode area with low competition by other restaurants (determined by # restaurants)

# Data collection

- Borough data
  - Primary source - Dutch Central Bureau Statistics
- Demographic data
  - Primary source - Dutch Central Bureau Statistics
- Venue data
  - Primary source - FourSquare IPA
- Map latitude and longitude data
  - Primary source -  
[https://raw.githubusercontent.com/openstate/hackdetoekomst/master/datalog/nlmaps-stages/cbs\\_pc4\\_2017.geo.json](https://raw.githubusercontent.com/openstate/hackdetoekomst/master/datalog/nlmaps-stages/cbs_pc4_2017.geo.json)
  - Secondary source - <https://github.com/bobdenotter/4pp>

# Methodology

1. # PART A - PREPARE THE DATASET FOR [CITY]
  - The first part is created to prepare the dataset for the city.
2. # PART B - CREATE CHOROPLETH MAP TO VISUALISE THE DATASET FOR [CITY]
  - In the second part of the code the map is created and the first visualisation technique ‘choropleth mapping’ is coded to visualise the demographics of each postalcode of the city.
3. # PART C - ADD MARKERS TO [CITY] MAP
  - In the third part of the code the venue data is derived from FourSquare and based on this dataset the markers are added to the city-map.
4. # PART D - SHOW RESULTS
  - In the last part of the code the interactive city-map is saved as .html and opened in the webbrowser.

# Results

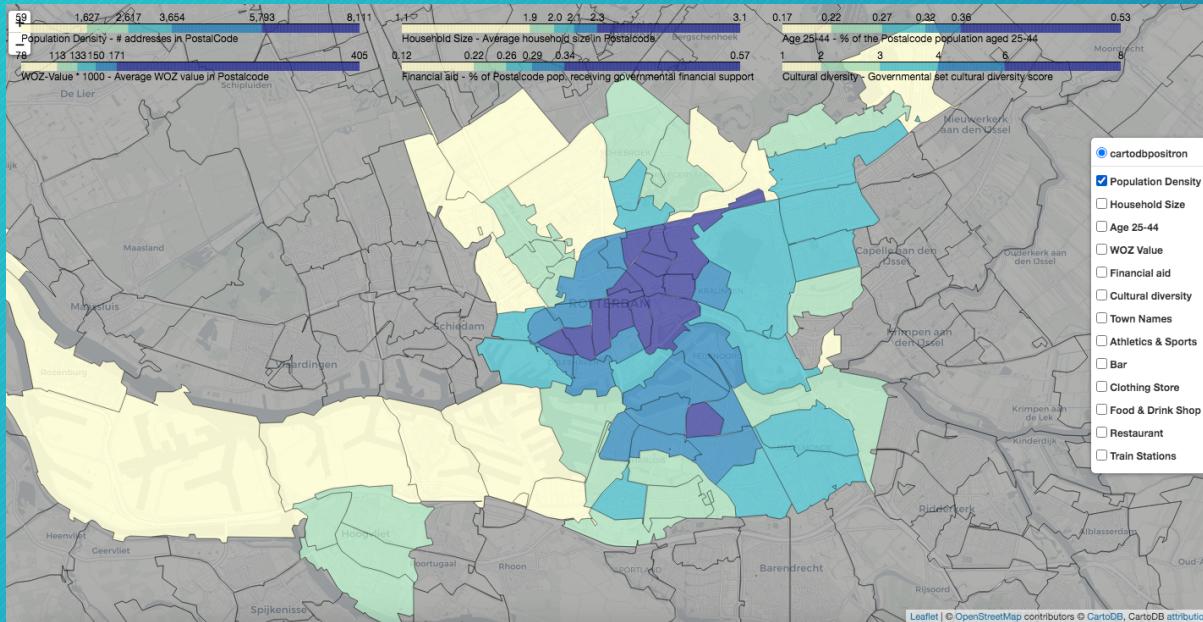


Figure 1. Choropleth - Rotterdam - Population Denisty

# Results

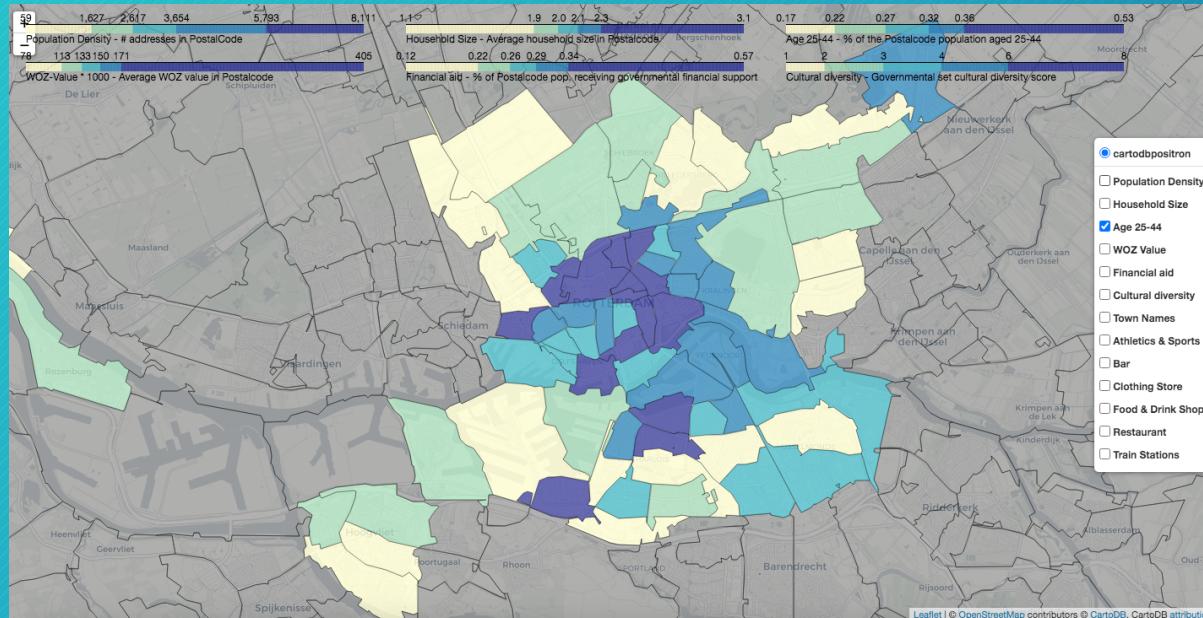


Figure 2. Choropleth - Rotterdam - Age 25-44

# Results

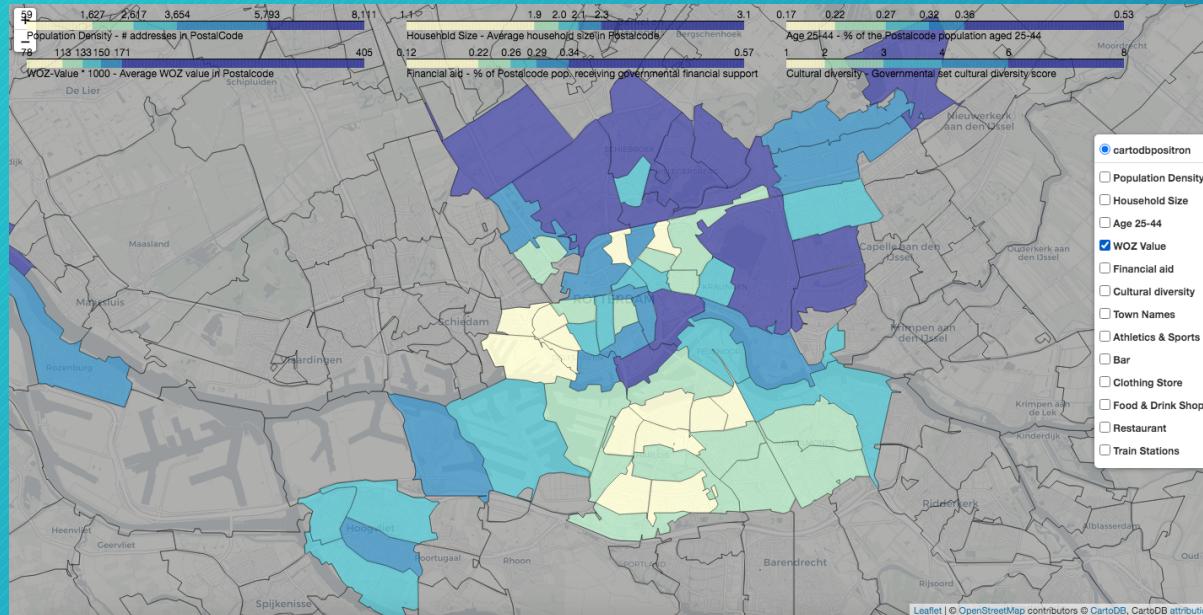


Figure 3. Choropleth - Rotterdam - House prize

# Results

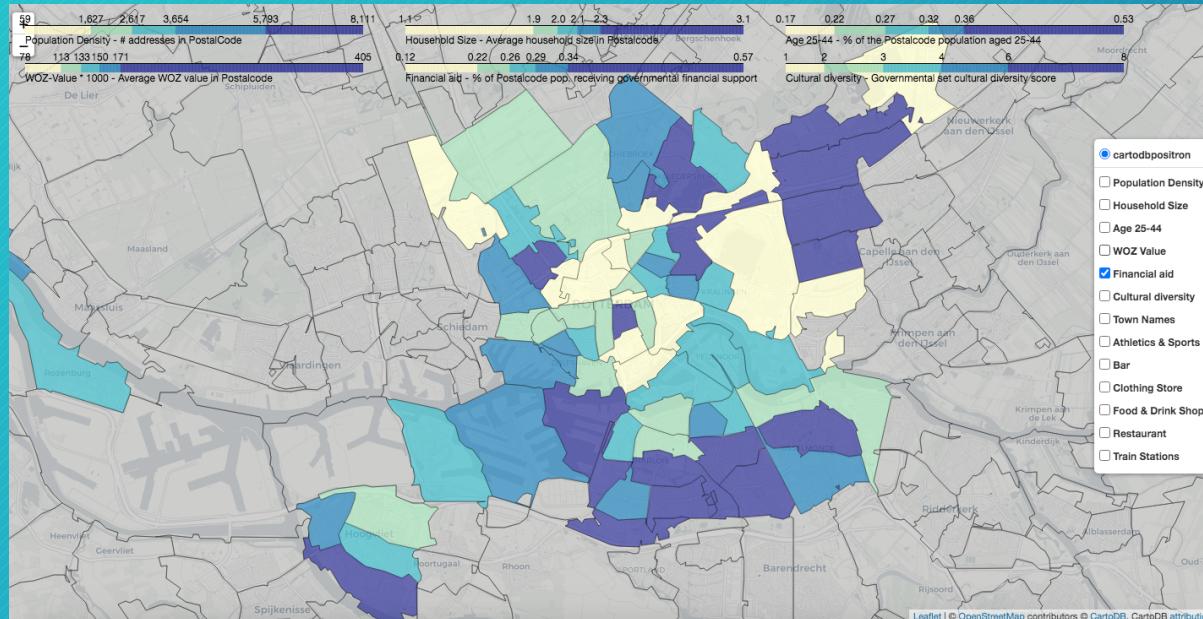


Figure 4. Choropleth - Rotterdam - Financial aid

# Results

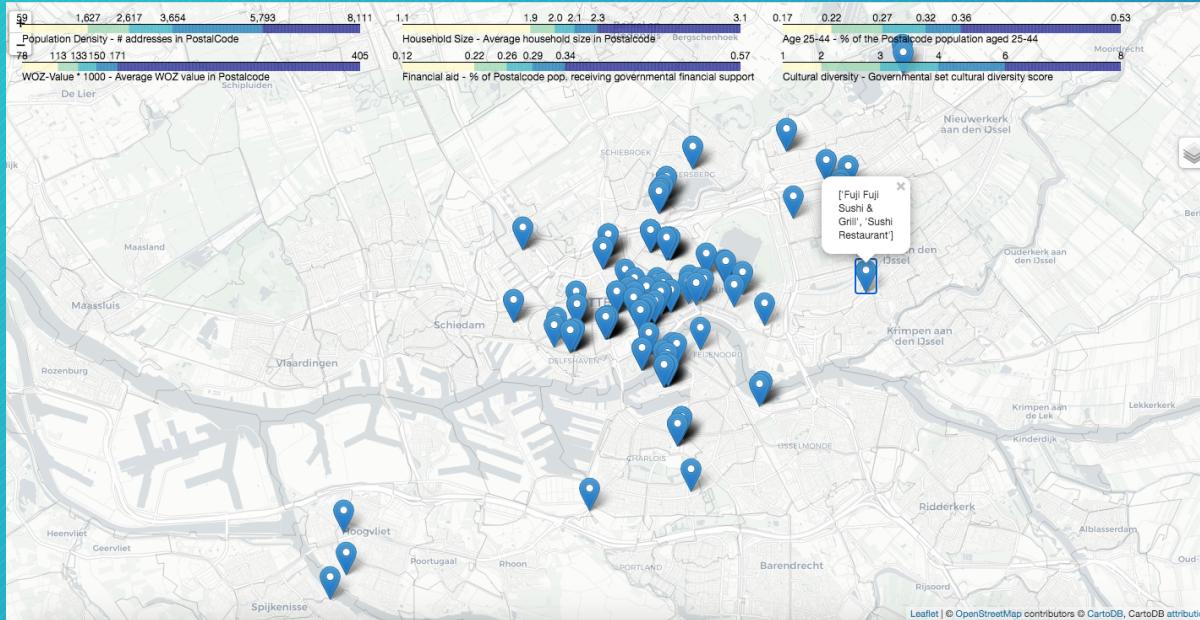


Figure 5. Choropleth - Rotterdam - Restaurants

# Conclusion (1/2)

- All the postalcodes are inspected and not one of the postalcodes actually did satisfy all criteria
- As the allure of the area is of vital importance in the location of a high-end restaurant the housing price and income of the area is placed highest priority
- Having that set, the criteria were then prioritized as below with priority from high to low
  1. Postalcode area with high average housing prizes
  2. Postalcode area with high income (determined by low governmental financial aid)
  3. Postalcode area with low competition by other restaurants (determined by # restaurants)
  4. Postalcode area with high population density
  5. Postalcode area with high concentration of potential customers aged 24-44

## Conclusion (2/2)

- According to the analysis it is stated to best open the high-end restaurant is postalcode area 3016
- This is derived from comparing the outcomes on the map with the desired demographics and competition