Best Location to Open a Chinese Restaurant in Amsterdam

Capstone Project – Final Assignment

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The Challenge & the Approach

The Challenge: Open a Chinese restaurant in the city proper of Amsterdam, one of the most populous cities in Europe

The Approach: A Cooperative Iterative Approach

The Business Questions

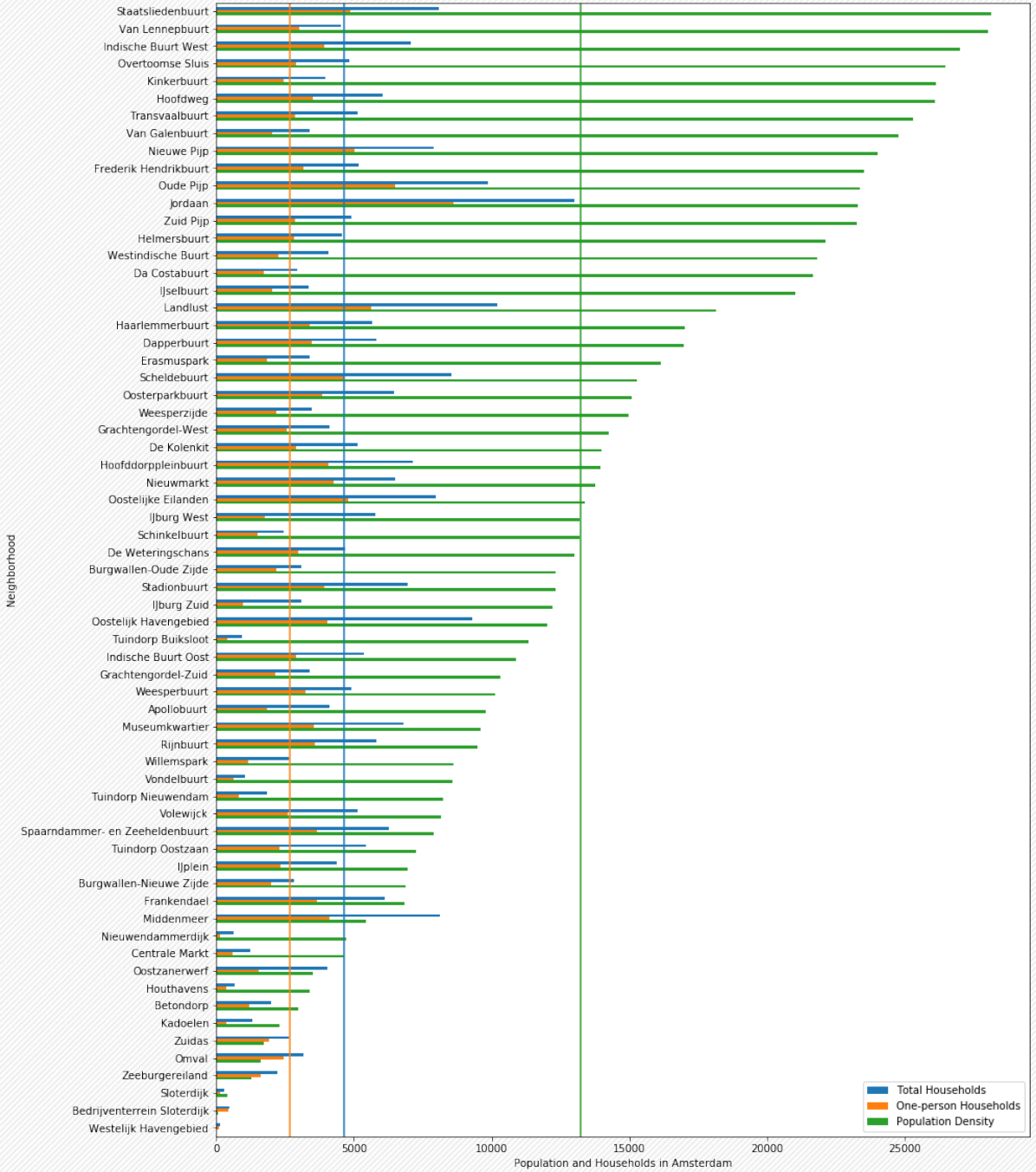
- Question 1: How many restaurants already exist?
- Question 2: How popular will Chinese food be in the neighborhood?
- Question 3: Who are the target customers and where do they live?

Data Requirements

- Data of the surroundings (density of similar restaurants nearby)
  - **Source: Foursquare API**.
  - Search: Returns a list of venues near the current location, optionally matching a search term.
  - Category ID: Crucial information to accurately query for one specific type of places.
  - Trending: Returns a list of venues near the current location with the most people currently checked in.
- Demographic data (per neighborhood in Amsterdam)
  - **Source**: The Central Bureau of Statistics of the Netherlands, CBS in short.
  - Neighborhood (name)
  - Total Households
  - One-person Households: Number of the households that with only one person.
  - Population density

Understand the Neighborhood

- Download information from CBS (CSV format)
- Process the dataframe to prepare for further analysis.
- Plot data in a bar chart to have a better understanding.
  (Please go to the next slide to see the bar chart)



Bar Chart of

- Total Households,
- One-person Households
- Population Density

Learnings

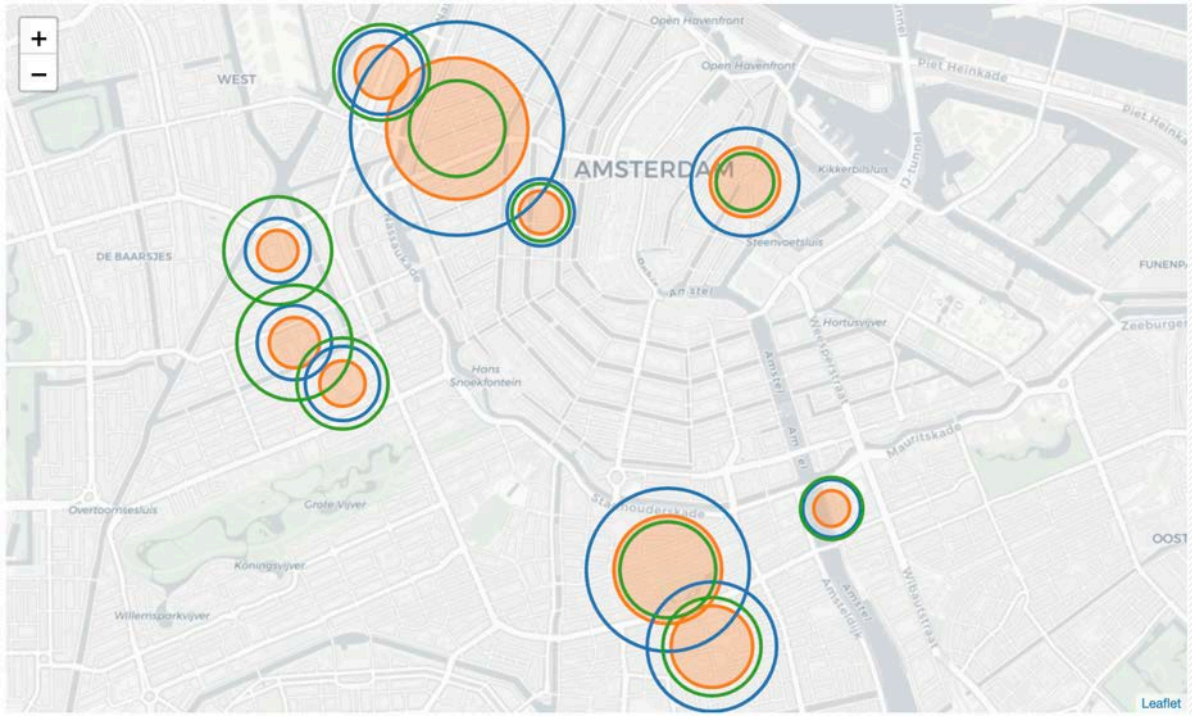
1. Many neighborhoods in Amsterdam has much lower population density than the average value.
2. Amongst the more densely populated neighborhoods, not all of them have above average total number of households and one-person households.
3. Further analysis is needed to filter out the neighborhoods that do not have enough one-person households.

Look into Percentage of One-person Households

Learnings

1. The percentage of one-person households seems to be rather consistent for the neighborhoods that have above average population density.
2. There are roughly three categories:
    1. **High**: 66% ~ 67%
    2. **Medium**: 59% ~ 63.5%
    3. **Low**: 53% ~ 59%
3. Further analysis will only apply to the **top 10** neighborhoods that have **over 61 percent of one-person households** (Marked by the red line)

View Candidate Neighborhoods on a Map



Legends

- **Orange circles:** the number of one-person households.
- **Blue circles:** the number of households in total.
- **Green circles:** the population density.
- **Center of circles**: center of the neighborhood.
- **Radius of a circle**: the number of the feature.

Conclusions

- The bigger the green circles the better.
- The less difference between the size of the blue circles and the orange circles the better.

Conclusion of Demographic Data Analysis

- **10** out of **65** neighborhoods in Amsterdam city proper are chosen as the candidate neighborhood to investigate further.

- In the next chapter we will further analyze the **10** neighborhoods by looking into the number of restaurants and the density of Chinese restaurants to further narrow down to **3 ~ 5** neighborhoods for future analysis.

Explore the Surroundings using Foursquare API

- Data of the surroundings (density of similar restaurants nearby)
  - **Source: Foursquare API**.
  - Search: Returns a list of venues near the current location, optionally matching a search term.
  - Category ID: Crucial information to accurately query for one specific type of places.
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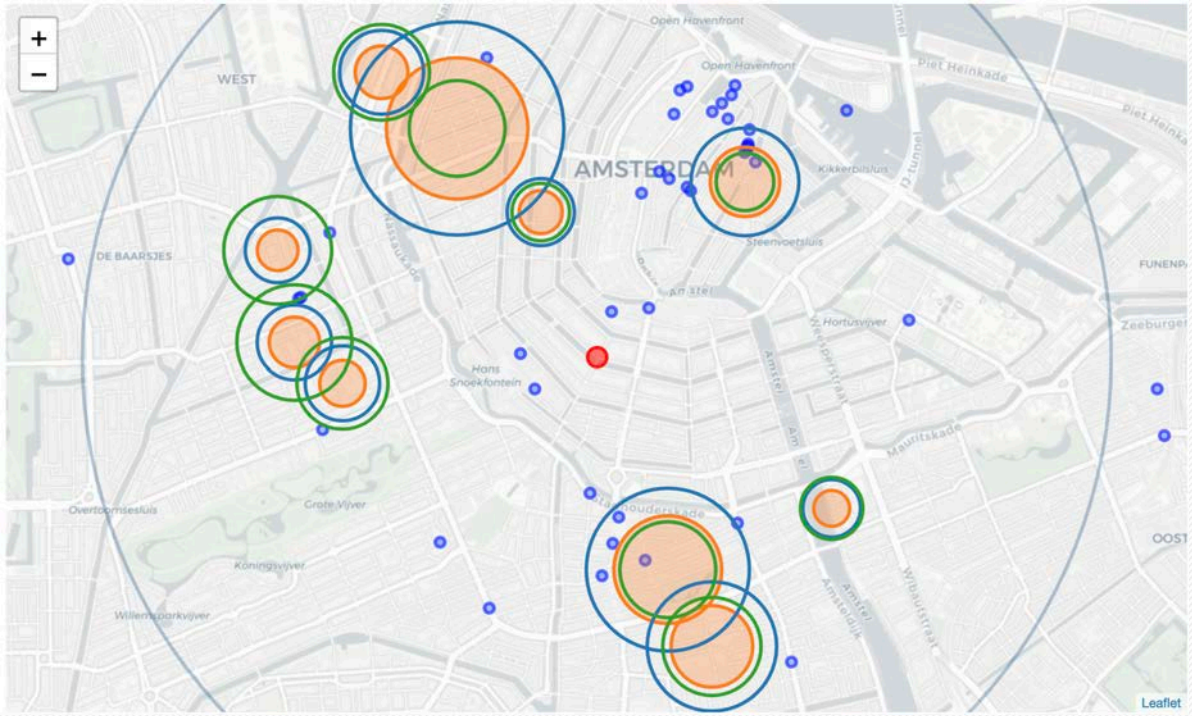
Chinese Restaurants in the neighborhoods



Legends

- **Blue dots**: Chinese restaurants
- **Red dot** in the center: the center of the map.

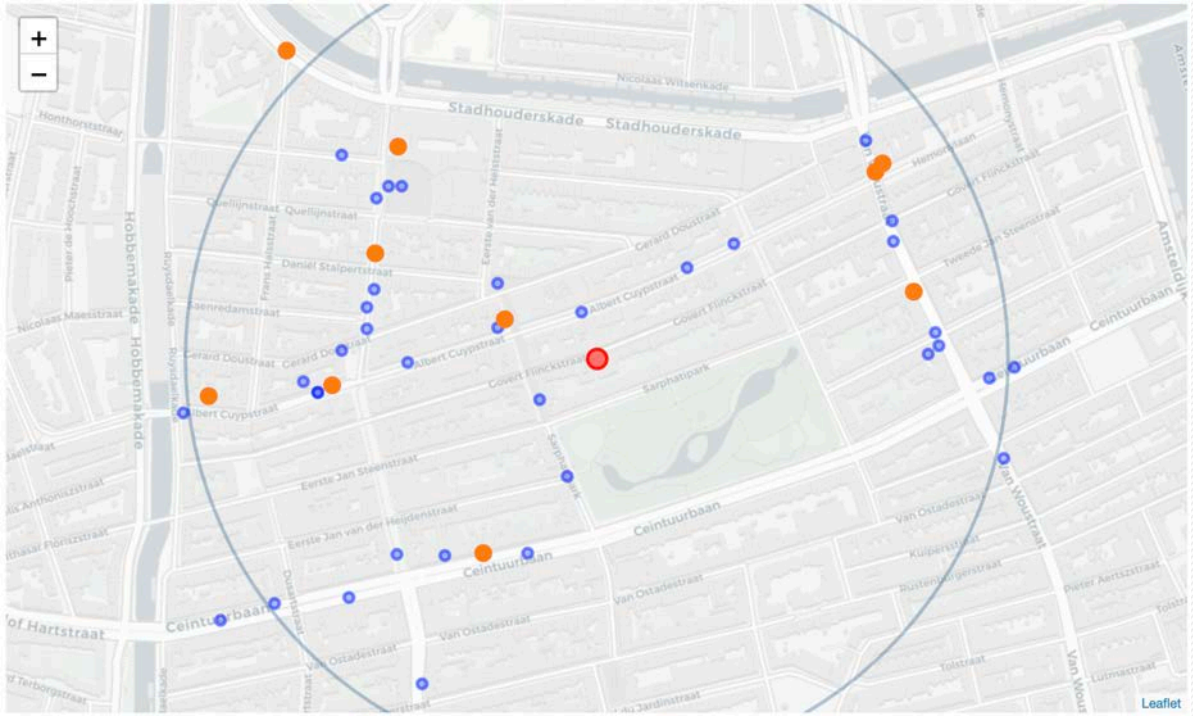
Exclude these neighborhoods

- Too many existing Chinese restaurants
  - Nieuwmarkt
- No existing Chinese restaurant in or near the neighborhood
  - Weesperzijde
  - Frederik Hendrikbuurt
  - Grachtengordel-West
  - Nieuwe Pijp

In-depth Analysis of a Neighborhood

- Get the coordinates of the center of one neighborhood
- Query for all Asian and Chinese restaurants within reachable distance
  - Reachable distance is set to be **500 meters (about 0.3 mile)**.
- Try to get the Most Popular Venues (via Trending offered by Foursquare)
  Unfortunately, the Get Trending Venues around Oude Pijp returns 0 result.
- Draw all the Asian and Chinese restaurants on the map

The In-depth Analysis of Oude Pijp



Legends

- **Orange dots**: Chinese restaurants.
- **Blue circles**: Asian restaurants.

Learnings

- There are 10 Chinese Restaurants within the range of 500 meters in Oude Pijp.
- Only 45 Asian restaurants are found due to the 45 limits. *The actual number could be higher.*
- The North and Southeast of Oude Pijp seems to be a void of all restaurants. Opening a Chinese restaurant there are more likely to be successful.

Conclusion and Future Work

- **The limitation of this project**
  - Only focus on residential information; no business venues are investigated due to lack of data.
  - Rent of a venue is not taken into consideration due to the lack of data
  - Lack of understanding of how popular existing Chinese restaurants are because Foursquare free account does not allow access to information such as:
    - **Likes**: how many people like a place
    - **Rating**: star rating of a place
- **The next steps:**
  - Continue to perform the same in-depth analysis to all neighborhoods.
  - Include rental price of each neighborhood in future analysis.

Thank you!