

Data

The data of the report consists of two parts: 1.) Amsterdam borough information scraped from the Wikipedia page: https://en.wikipedia.org/wiki/Boroughs_of_Amsterdam; and 2.) Amsterdam venue information provided by Foursquare API.

1.) Amsterdam borough information

The Amsterdam borough data in the aforementioned Wikipedia page include 4 parts: Borough name, Area, Population and Population Density. The data are load into a pandas dataframe and are processed subsequently, e.g., trimming contents inside brackets, removing 'km²' and casting strings into numeric data types. Latitude, Longitude of each borough are obtained using geopy package and are concatenated to the borough dataframe (see Fig. 1). Note that the borough Westpoort is mainly a harbour and has very few permanent inhabitants. To this end, Westpoort is excluded from the analyses of this report.

	Borough	Area	Population	PopulationDensity	Latitude	Longitude
0	Centrum	8.04	86422	13748	52.373730	4.895691
1	Noord	49.01	94766	2269	52.401739	4.915352
2	Nieuw-West	32.38	151677	4478	52.363777	4.813812
3	Oost	30.56	135767	7635	52.356608	4.930577
4	West	9.89	143842	15252	52.376672	4.863724
5	Westpoort	10.00	192	10	52.411890	4.800289
6	Zuid	17.41	144432	9349	52.344470	4.878664
7	Zuidoost	22.08	87854	4391	52.310514	4.960695

Fig. 1. Web scraped Amsterdam borough dataframe, concatenated with the location latitude and longitude information.

2.) Amsterdam venue information provided by Foursquare API

Foursquare is a local search and recommender system. Its venue database contains more than 105 million places, with key descriptors such as venue names, categories, ratings, and reviews.

The venues within 1 km radius of each borough center are retrieved using Foursquare API, and are filtered based on venue category: only venues with category keyword 'Restaurant' are preserved. Moreover, 'Sushi Restaurant' and 'Ramen Restaurant' in the venue category are re-labelled with 'Japanese Restaurant'.

To address the questions aforementioned in the introduction section, venue ratings, price levels are retrieved as well for the restaurants of the 7 Amsterdam boroughs (see Fig. 2).

	Borough	Borough_Latitude	Borough_Longitude	Venue_Name	Venue_Latitude	Venue_Longitude	Venue_Category	Rating	Price	Price_Tier
0	Centrum	52.373730	4.895691	La Zoccola del Pacioccone	52.375297	4.893965	Italian Restaurant	8.8	Moderate	2.0
1	Centrum	52.373730	4.895691	Kaagman & Kortekaas	52.374878	4.892455	French Restaurant	9.0	Expensive	3.0
2	Centrum	52.373730	4.895691	Wok to Walk	52.372014	4.895579	Asian Restaurant	8.6	Moderate	2.0
3	Centrum	52.373730	4.895691	Oriental City	52.371912	4.895994	Chinese Restaurant	8.4	Moderate	2.0
4	Centrum	52.373730	4.895691	The Lobby	52.371159	4.893661	Restaurant	9.1	Moderate	2.0
5	Centrum	52.373730	4.895691	Ashoka Restaurant (Amsterdam Centrum)	52.376086	4.892356	Indian Restaurant	9.1	Moderate	2.0
6	Centrum	52.373730	4.895691	FuLu Mandarijn Amsterdam	52.371684	4.892720	Chinese Restaurant	8.7	Moderate	2.0
7	Centrum	52.373730	4.895691	Maenaam Thai	52.375184	4.891260	Thai Restaurant	8.7	Moderate	2.0

Fig. 2. Category, rating and price details of restaurants in Amsterdam boroughs