

Coursera Capstone – “The Battle of the Neighbourhoods”

Expanding into Europe – Zurich Neighbourhood Analysis

Problem Statement

An Analytics Consulting firm based in New York, is looking to expand into Europe by opening a small office in Zurich, Switzerland. The City of Zürich is divided into 12 districts and 34 quarters. The Zürich Metropolitan Area has some 1.9 million inhabitants and 900,000 employees spread across 238 municipalities in eight cantons¹.

The firm has already noted Zurich’s advantages in relation to its solid transport links. Zürich central station is one of Europe’s main railway intersections, with over 1,900 connections every day. Intercity trains leave every half-hour to various hubs in Switzerland and Europe, and the city is only a matter of hours by train from Paris (4.5 hours), Milan (3.5 hours), Munich (5 hours) and Hamburg (7 hours). Air journey times from the international airport to these destinations are around one hour².

This project aims to use Foursquare location data to explore and cluster Zurich’s 12 districts to assist the firm’s partners in deciding which districts to shortlist based on surrounding venues and prospective rental costs. The firm has detailed its priority criteria for its current and forthcoming employees and clients: transport accessibility, proximity to clients, local hospitality, shopping, and dining possibilities.

Data Description

To present the firm’s partners with the projects resulting clustering analysis, the data that will be used is a CSV file prepared from multiple sources (Zurich_districts.csv) which includes geolocation data as well as location and venue information from FourSquare:

1. Data about Zurich and its 12 districts including their respective latitudes and longitudes (these will be scraped and cleansed accordingly)³
2. Data from Swiss real estate company JLL to append median rents (CHF/m² per annum) in all 12 districts for further analysis in clustering (these will be appended in the CSV file)⁴
3. FourSquare API will be queried using the “explore” endpoint and will provide the surrounding venues of a given coordinates including restaurants, hotels and coffee shops, which will then be converted into counts to apply one hot encoding to cluster the districts.

¹ https://www.stadt-zuerich.ch/portal/en/index/portraet_der_stadt_zuerich/zahlen_u_fakten.html

² https://www.stadt-zuerich.ch/portal/en/index/portraet_der_stadt_zuerich/zahlen_u_fakten.html

³ https://en.wikipedia.org/wiki/Subdivisions_of_Z%C3%BCrich

⁴ <http://www.jll.ch/switzerland/en-gb/Research/jll-switzerland-office-market-2019.pdf>