

The background of the slide is a photograph of four teal-colored spheres, each marked with a white grid pattern, resting on a dark wooden tray. The tray is placed on a wooden surface. In the background, there is a blurred outdoor scene featuring a green lawn, a wooden fence, and some trees, suggesting a park or garden setting.

A Study of Neighborhoods in Zurich

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Business Problem

The city of Zurich is splitted into 34 neighborhoods (German: "Quartier") for administrative purposes. We are interested in the following questions:

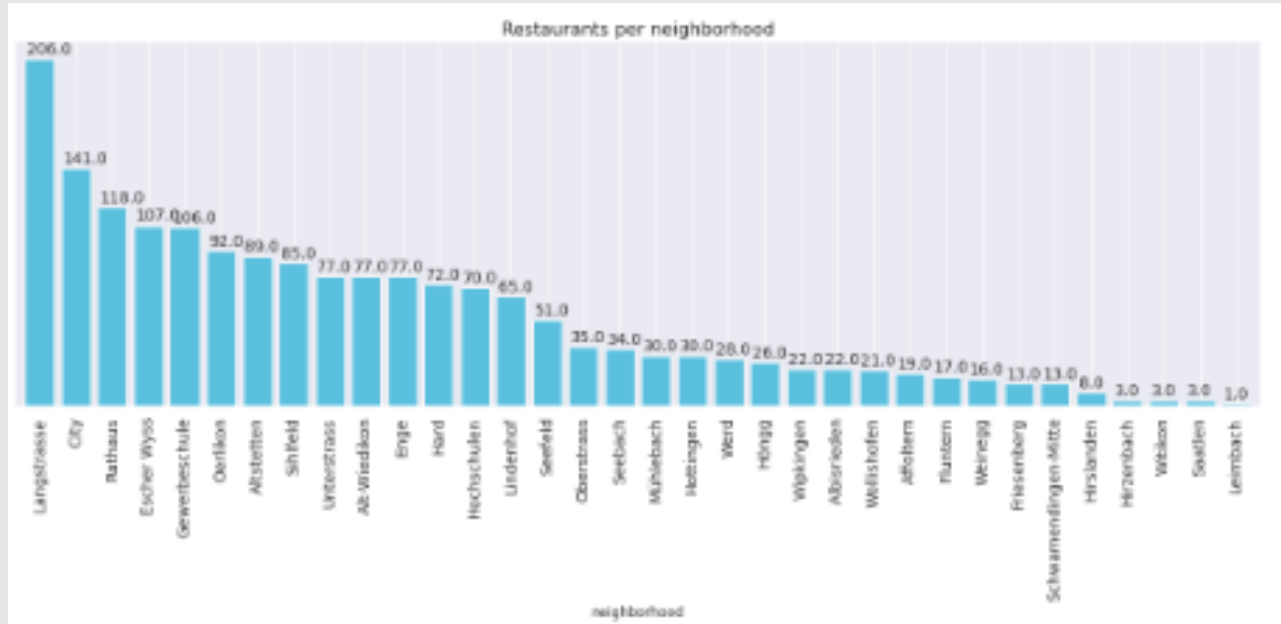
- What characteristics do different neighborhoods have?
- Which neighborhood should I go to if I want to hang out in bars or clubs?
- Which neighborhoods are similar, and in what way?

The answers to these questions could help tourists decide how to explore the city; residents choose a neighborhood to live; and city planners make decisions.

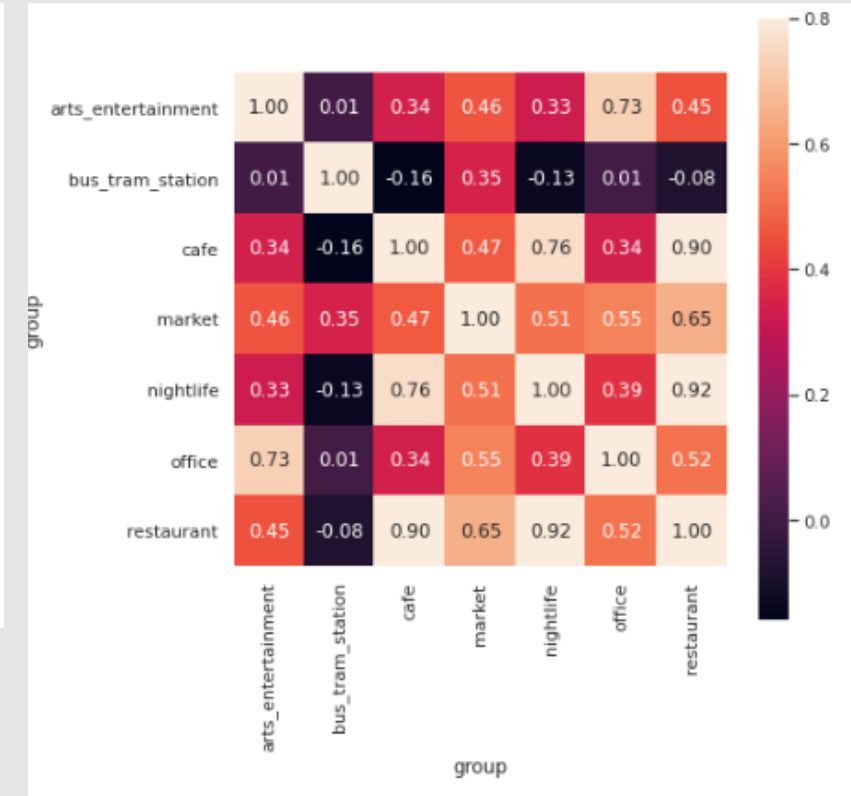
Methodology and Data

- Data collection: Foursquare.
- Exploratory analysis.
- Cluster analysis
 - PCA
 - K-Means

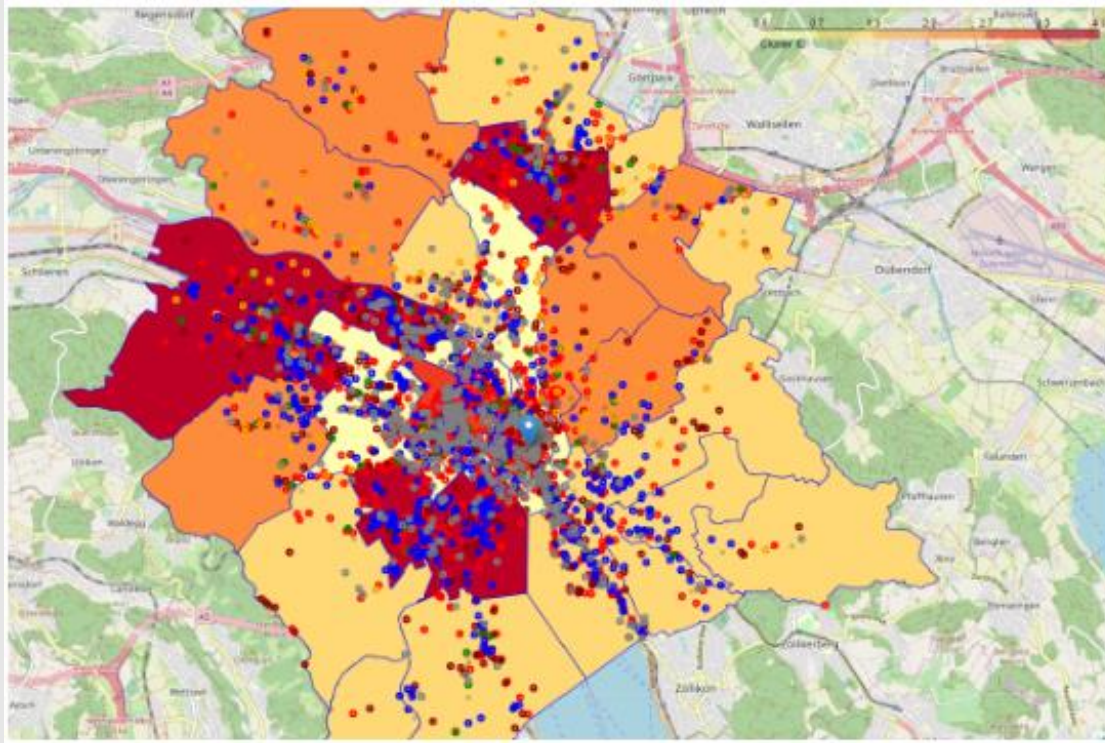
Results - I



- Langstrasse is the most popular district for restaurants.
- There is high correlation between nightlife, restaurant and cafe; as well as between office and arts_entertainment.
- Correlations between market and other categories are low.



Results - III



- Cluster 3 (red) consists of only one neighborhood: Langstrasse. No surprise as this is the well-know district for food, drinks and clubs.
- Cluster 0 (light yellow) consists of 8 neighborhoods that are located around the city center. They are featured by high density of art and entertainment venues.
- Cluster 4 (dard red) consists of 5 neighborhoods that are a bit away from the center but with rich facilities due to their proximity to respective train stations.
- Cluster 2 (orange) consists of 6 neighborhoods that are a bit further away from the city center. They are in fact mostly relatively quite residential areas but still with public transportation to connect to other parts of the city.
- Cluster 1 (yellow) consists of the rest of 14 neighborhoods that are less populated. They are mostly on the outskirts of the city with limited public transportation options.

Discussion

Applications

- A tourist can use the results of this analysis to plan his or her city visit.
- A residence who is about to move home can use the clustering results to help determine potential neighborhoods to consider.
- City planners and administrators can consider applying initiatives that are proven successful in one neighborhood to other neighborhoods in the same cluster.

Limitations:

- The choice of venue categories was limited to the accuracy and completeness of Foursquare data in Zurich. Crowd-sourced data might have smaller coverage for certain categories (e.g. offices) compared to others (e.g. restaurants). Using Google Map data might solve this issue.
- We used absolute number of venues as features in this analysis. Venue density with regards to area size or population of neighborhoods might describe better the 'feeling' of a district.
- We limited our study to the official 34 administrative neighborhoods for simplicity. In fact, the analysis could be easily extended to much smaller grids or blocks.