

Battle of Neighborhoods

(Week 1 & Week 2)

Motivation

- Investigate the prospect of opening an Italian restaurant in Munich
- Munich is the most important center of commerce and industry in Germany and among top in Europe
- Munich will increase by more than 10% within the next 20 years ([source](#))



(By Reinald Kirchner - originally posted to Flickr as Frauenkirche in München, [CC BY-SA 2.0](#))

Data

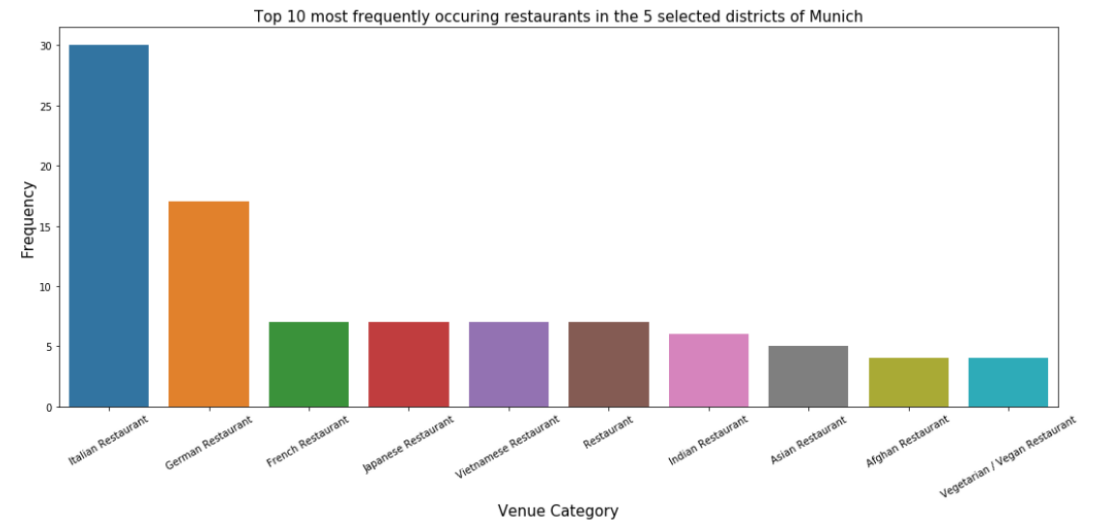
- BeautifulSoup package was used to scrap data on the districts of Munich from Wikipedia
- Foursquare data will be used to get information on venues in each district
- Analysis will focus on the 5 major business districts in Munich:
 - Altstadt-Lehel
 - Schwabing-West
 - Au-Haidhausen
 - Ludwigsvorstadt-Isarvorstadt
 - Maxvorstadt

No.		district	area	population	Latitude	Longitude
0	1	Altstadt-Lehel	315	21.100	48.143648	11.589579
1	2	Ludwigsvorstadt-Isarvorstadt	440	51.644	48.130722	11.566526
2	3	Maxvorstadt	430	51.402	48.146570	11.571445
3	4	Schwabing-West	436	68.527	48.166354	11.566191
4	5	Au-Haidhausen	422	61.356	48.130274	11.598334
5	6	Sendling	394	40.983	48.115921	11.548387
6	7	Sendling-Westpark	781	59.643	48.118031	11.519333
7	8	Schwanthalerhöhe	207	29.743	48.134589	11.538013
8	9	Neuhausen-Nymphenburg	1291	98.814	48.156626	11.518016
9	10	Munich	1109	51.223	48.185126	11.515504



Exploratory analysis

- Only the 10 most frequent restaurant categories will be considered
- Italian and German restaurants are predominate in the selected districts



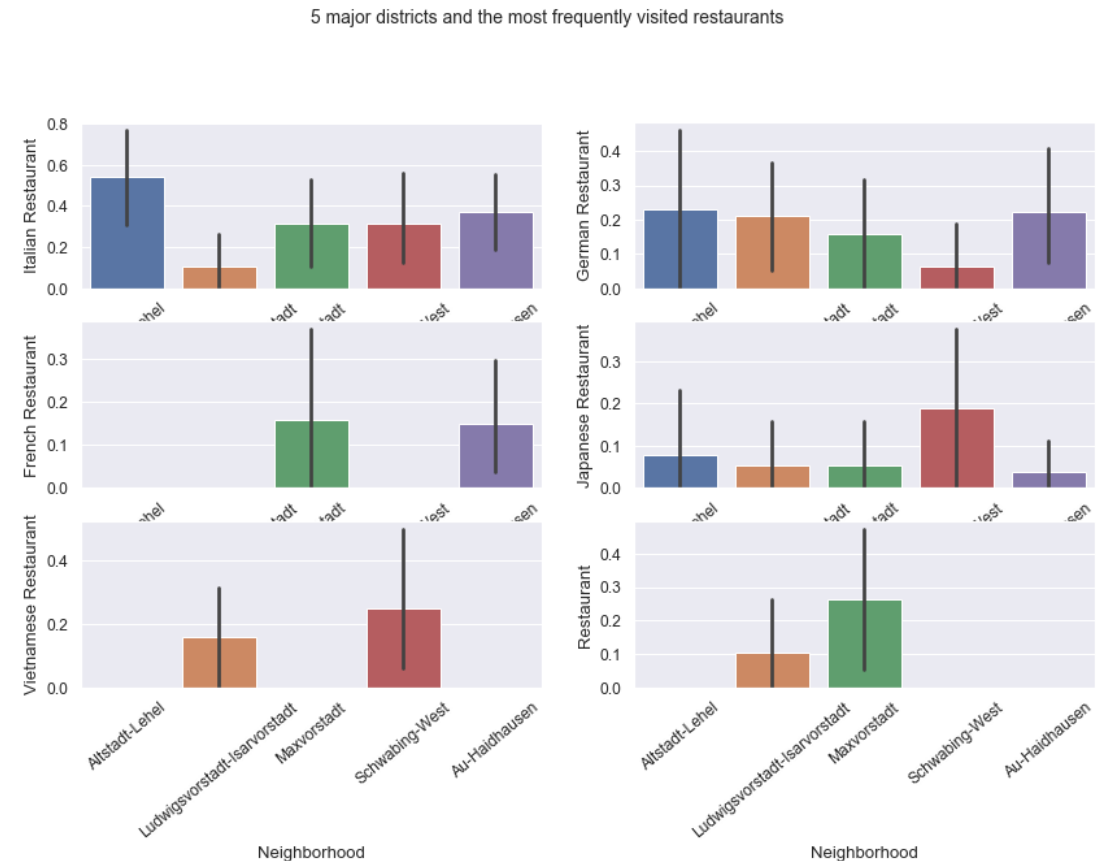
Exploratory analysis

- *Ludwigsvorstadt-Isarvorstadt* is the only district where Italian is not the most frequent category

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	Altstadt-Lehel	Italian Restaurant	German Restaurant	Japanese Restaurant	Indian Restaurant	Afghan Restaurant	Vietnamese Restaurant	Vegetarian / Vegan Restaurant	Restaurant	French Restaurant	Asian Restaurant
2	Au-Haidhausen	Italian Restaurant	German Restaurant	French Restaurant	Vegetarian / Vegan Restaurant	Indian Restaurant	Japanese Restaurant	Asian Restaurant	Afghan Restaurant	Vietnamese Restaurant	Restaurant
3	Ludwigsvorstadt-Isarvorstadt	German Restaurant	Vietnamese Restaurant	Asian Restaurant	Restaurant	Italian Restaurant	Afghan Restaurant	Vegetarian / Vegan Restaurant	Japanese Restaurant	Indian Restaurant	French Restaurant
4	Maxvorstadt	Italian Restaurant	Restaurant	German Restaurant	French Restaurant	Vegetarian / Vegan Restaurant	Japanese Restaurant	Vietnamese Restaurant	Indian Restaurant	Asian Restaurant	Afghan Restaurant
5	Schwabing-West	Italian Restaurant	Vietnamese Restaurant	Japanese Restaurant	Indian Restaurant	German Restaurant	Asian Restaurant	Vegetarian / Vegan Restaurant	Restaurant	French Restaurant	Afghan Restaurant

Exploratory analysis

- *Vietnamese* restaurants are only belonging to *Ludwigvorstadt-Isarvorstadt* and *Schwabing-West*
- *French* restaurants are only belonging to *Maxvorstadt* and *Au-Haidhausen*
- Large share of generic 'Restaurant' in Maxvorstadt may corrupt the data



Exploratory analysis

- 3 clusters are identified by k-means



Conclusions

- Almost 1/3 of the restaurants in Munich are Italian
- Least competition with other Italian restaurants can be expected in *Ludwigvorstadt-Isarvorstadt*.