Exploration of the European restaurant market

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Intro: Investing in a restaurant

1. It costs a lot
2. Is a long term investment
3. Always the risk that locals do not like food offered
4. Competition is to strong

Goal: Reduce the risk

1. Identify areas in Europe where certain types of food are more appreciated than others, e.g. Asian food.

2. Identify areas in a city where there is not so much competition

Data acquisition and cleaning

1. Get list of cities
   http://www.citymayors.com/features/euro_cities1.html
2. Get coordinates
   Via geopy
3. Get venues
   Via foursquare
4. Clean to only relevant data like venues that contain restaurant in string

Data analysis

1st round

1. Get the percentage how often a type of restaurant appears compared to other restaurants

	City	Afghan Restaurant	African Restaurant	Alsatian Restaurant	American Restaurant	Arepa Restaurant	Argentinian Restaurant	Asian Restaurant	Australian Restaurant	Austrian Restaurant	Bavarian Restaurant	Belarusian Restaurant	Belgian Restaurant	R
0	AMSTERDAM	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	
1	ATHINAI (Athens)	0.0	0.0	0.0	0.0	0.0	0.0	0.066667	0.0	0.0	0.0	0.0	0.0	
2	Aachen	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	
3	Abakan	0.0	0.0	0.0	0.0	0.0	0.0	0.142857	0.0	0.0	0.0	0.0	0.0	
4	Aberdeen	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	

2. Find clusters or specific restaurants that often appear together
3. Cluster city related to its class on the map and identify geographical differences

Data analysis

2nd round

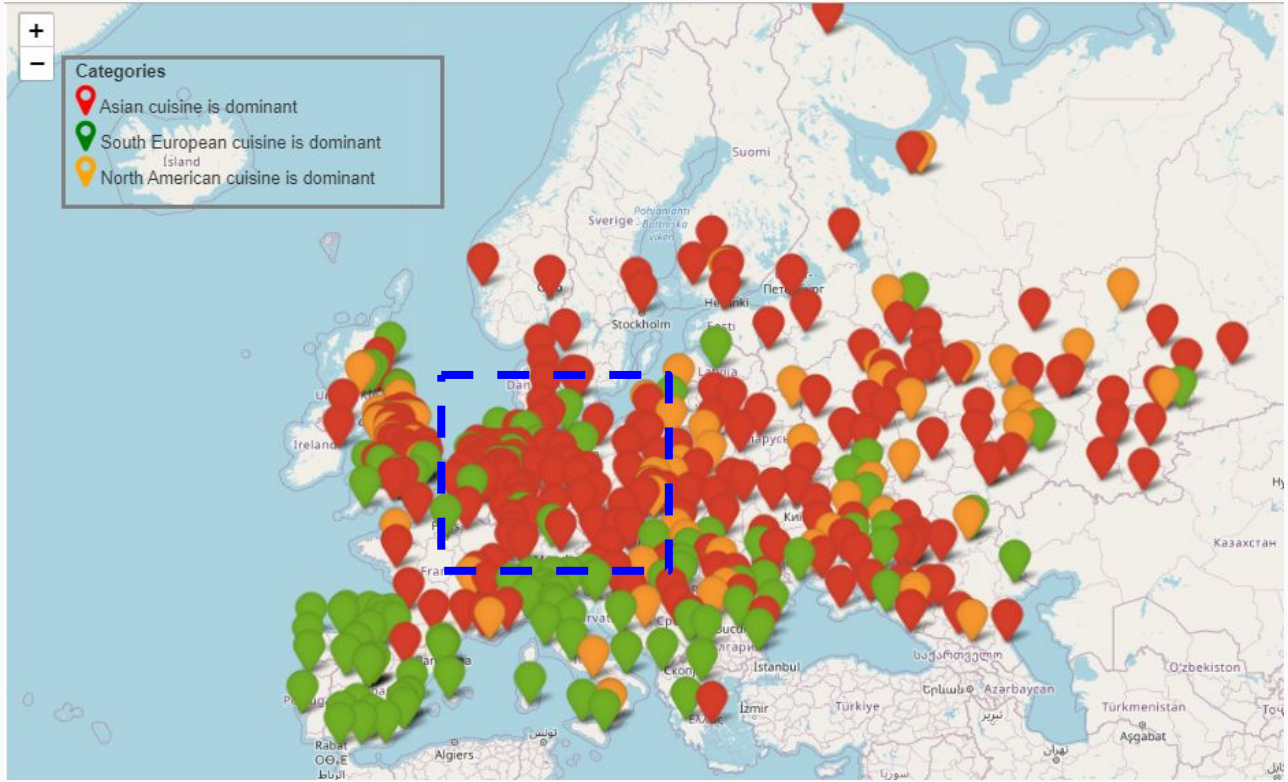
1. Reduce the number of features by grouping restaurants into larger groups

Preprep restaurants before for clustering

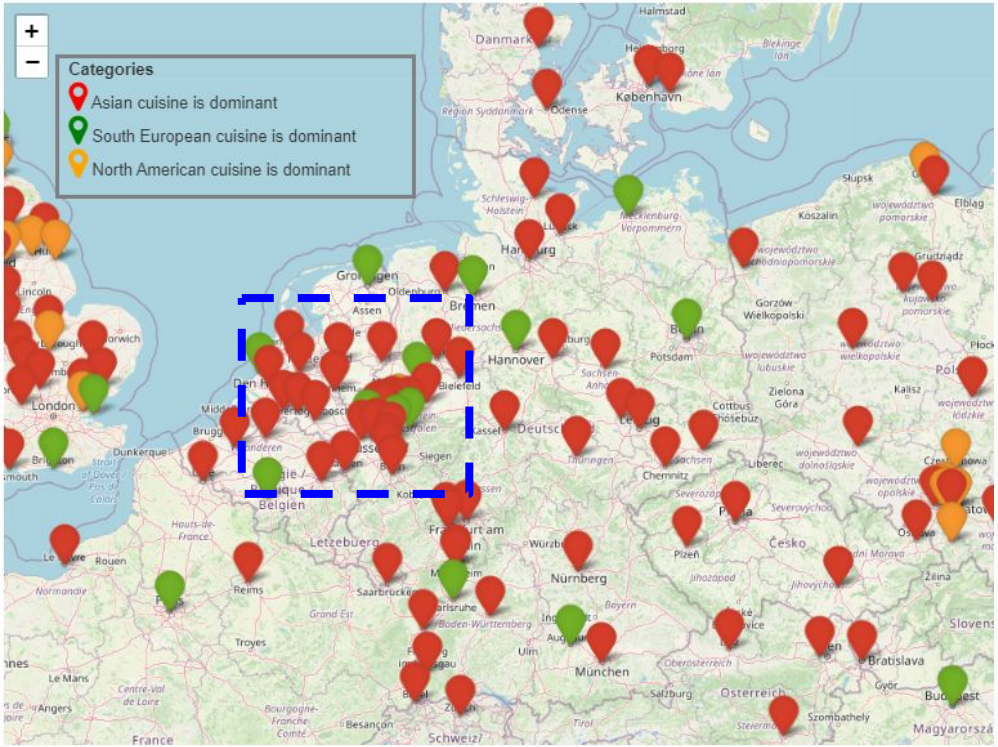
create dictionary for cuisines, this is highly subjective and for everyone different

```
cuisine_dict = {'North American cuisine' : ['New American Restaurant','Grilled Meat Restaurant','American Restaurant', 'Fast Food Restaurant'],
                'South American cuisine' : ['Mexican Restaurant','Caribbean Restaurant','Argentinian Restaurant', 'Latin American Restaurant'],
                'North European cuisine' : ['Scandinavian Restaurant','Polish Restaurant','Hungarian Restaurant','English Restaurant','Dutch Restauran
                'South European cuisine' : ['Sicilian Restaurant','Cretan Restaurant','Italian Restaurant', 'Greek Restaurant', 'Mediterranean Restaur
                'Far Eastern cuisine' : ['Middle Eastern Restaurant','Kebab Restaurant','Halal Restaurant','Eastern European Restaurant', 'Doner Resta
                'Asian cusine' : ['Ramen Restaurant','Asian Restaurant', 'Chinese Restaurant', 'Indian Restaurant', 'Japanese Restaurant', 'Sushi Rest
```

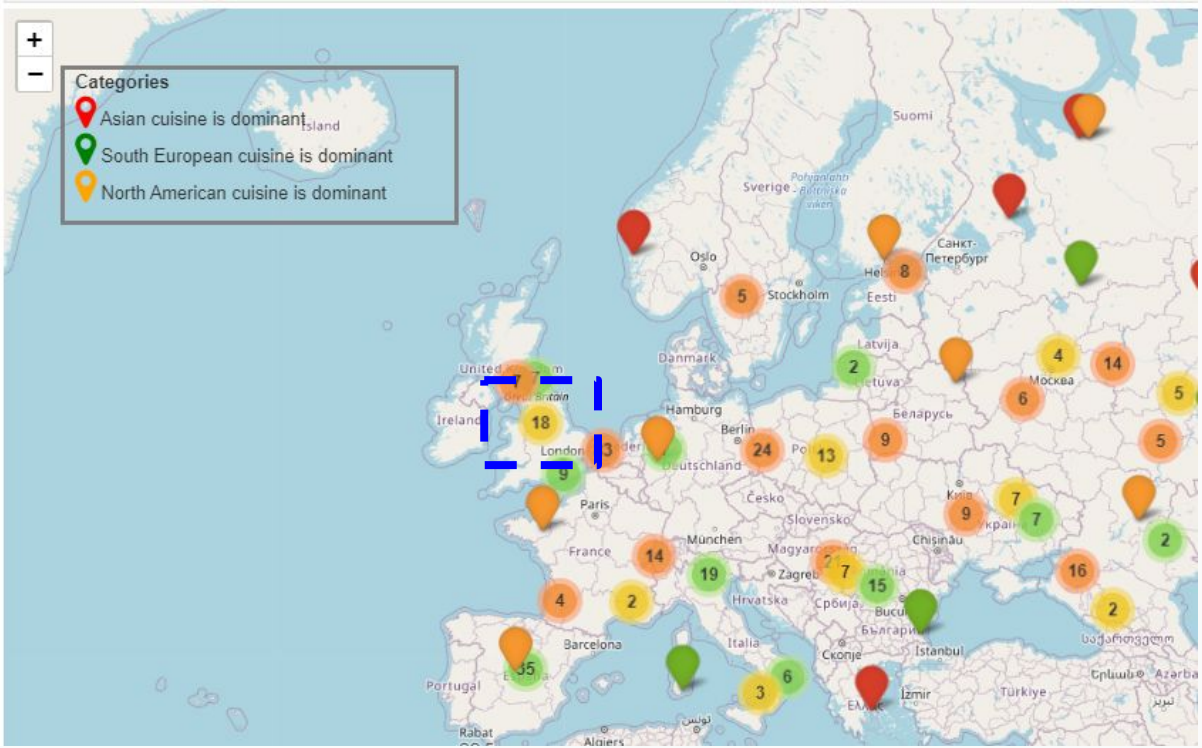
2. Cluster city related to its class on the map and identify geographical differences



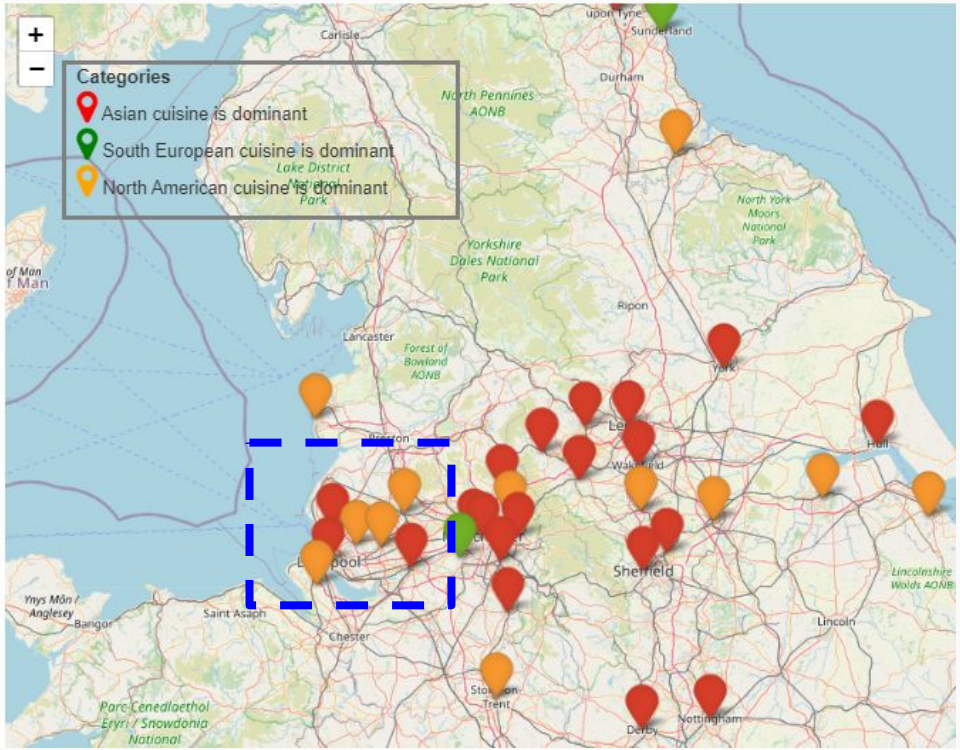
Hot spots for Asian cuisine identified.



Within this hot spot, the Netherlands and Belgium seem to be good places to open an Asian restaurant.



Hot spot for North American cuisine identified where fast food restaurants dominate.



This is particularly true for the Liverpool area, which could be a target for stakeholders who want to open a fast food restaurant.

Conclusion

Liverpool is an interesting place to open a fast food restaurant.

Belgium or the Netherlands for the opening of an Asian restaurant.

Follow-up, identifying specific cities and areas within the city for such restaurants.

The project was a success as it identified three areas that could be of great interest to stakeholders.