The best area to open a new Brazilian Restaurant in London

Larissa Roberta Teixeira

Business Problem

- London is one of the most attractive tourism cities in Europe and the most visited city in 2010. In 2009 there were 151,000 Brazilian visitors to the UK and 2010 there were 177,000 Brazilian visitors.
- The objective of this project is to analyse and select the best area to open a new Brazilian Restaurant in London.
- For this analysis, the concepts of data science and machine learning algorithm are used as clustering to answer the business question:
  - What is the best area to build a Brazilian restaurant in London, if a developer is looking for a new business to open?

Data

- The dataset used for this problem were extracted from London datastore (https://data.london.gov.uk/dataset/land-area-and-population-density-ward-and-borough), where contains the neighborhoods, borough and the population of each neighborhood.
- For each neighborhood of London, we will get the latitude and longitude through the library GeoPy.
- To explore and recommend the best places to open a Brazilian restaurant, we will access the data through the FourSquare API interface.
- To achieve the answer for this problem, we need clean e filter the dataset based on some criteria..
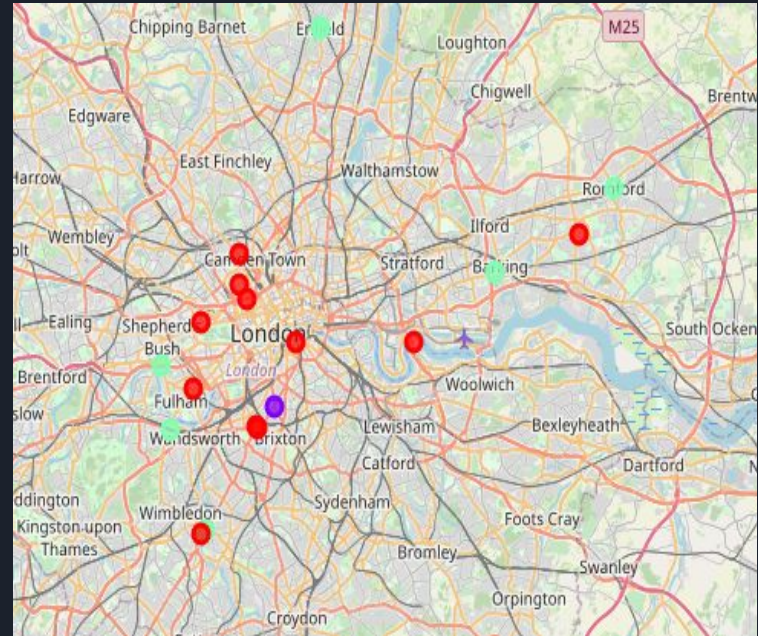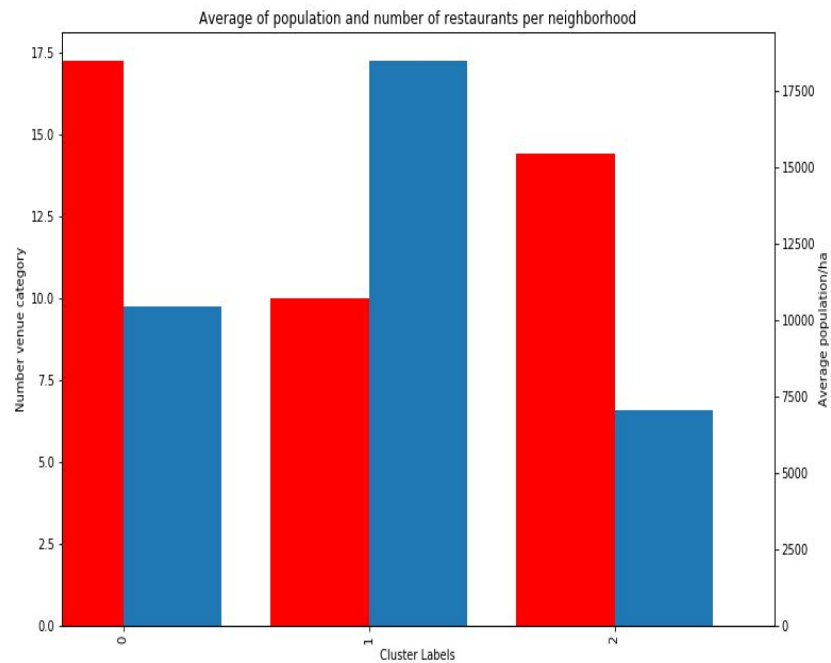
Methodology

- Pandas library to read the dataset.
- Get latitude and longitude coordinates using the GeoPy python library.
- Use Foursquare API to get top 100 venue category of each neighborhood.
- Explore the dataset and create visualizations
- Get the most common venue category for each neighborhood.
- Filter venue category by Brazilian Restaurants and get from the original data only neighborhoods where contains Brazilians Restaurants.
- Apply k-means algorithm to cluster the data by similarity.
- Map using folium of clusters resulting from k-means.

Results

- Cluster 0: Neighborhoods with the largest population of the three clusters and average restaurants equal to ten. This cluster contains one neighborhood with Brazilian restaurants.
- Cluster 1: Neighborhoods with the highest average of restaurants and the lowest population of the three clusters.
- Cluster 2: Neighborhoods with a large population and an average of fewer than 10 restaurants. This cluster contains two neighborhoods with Brazilian restaurants.

Average of population and number of restaurants per neighborhood

	Neighborhood	Population_per_hectares	Venue Category	Latitude	Longitude	Cluster Labels
0	Abbey	10171.781437	20	51.474371	-0.053908	2
1	Bayswater	22509.652510	10	51.512276	-0.188385	0
2	Chase	865.380076	10	51.652085	-0.081017	2
3	Clapham Common	10704.393150	10	51.462075	-0.137359	0
4	Clapham Town	13845.535714	10	51.462292	-0.138856	0
5	Fulham Broadway	18371.814093	10	51.480883	-0.194349	0
6	Haverstock	19370.218579	10	51.544868	-0.153213	0
7	Peninsula	5228.469433	10	51.502931	0.003197	0
8	Regent's Park	8097.615086	20	51.526930	-0.150284	0
9	Romford Town	6473.831124	10	51.576046	0.182265	2
10	Town	9381.200139	20	51.572105	-0.152579	2
11	Uxbridge North	3509.605008	10	51.546655	-0.477511	2
12	Uxbridge South	5110.683349	10	51.546655	-0.477511	2
13	Village	2945.899874	30	51.489281	-0.047017	0
14	West Putney	8371.614301	10	51.460934	-0.215348	2

Discussion

- The number of Brazilian Restaurants around London is too low. Many of the neighborhoods do not have Brazilian restaurants, even though the population is high.
- The neighborhoods where it is recommended to open a Brazilian Restaurant belongs to cluster 0 and 2.
- One detail that was not taken into account for this analysis was the data from the neighborhoods most visited by tourists. This data can be added in future works to have a more accurate recommendation.

Conclusion

- The recommendation to open a new Brazilian restaurant in London is in the neighborhoods in cluster 0 and 2 because they have the highest average population per square kilometers and an average of fewer than 10 restaurants.
- Also, exist just three Brazilian restaurants around this neighborhoods.
- This project is important to avoid investors and people that would like to open a new business overcrowded areas in their decisions to open a new Brazilian Restaurant and understanding the best location for starts this new business.