The battle of Neighborhood Where to eat in Paris?

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Business Problem

Paris is a multicultural city, where people from different parts of the world live. Therefore, there is a wide variety of food offers and from many nationalities. It may be overwhelming to choose where to eat and what kind of food to eat.

→ This project is particularly useful for tourists who want to know where to eat some kind of specific food. This way they will know what arrondissement offers which kind of food.



Data

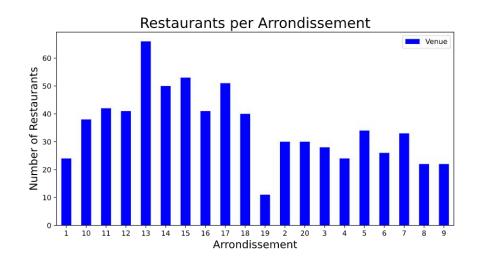
- → Data sources:
 - a. Foursquare API
 - b. Geopy package
 - c. Paris arrondissements'[1]
- → Data required:
 - a. Location of each arrondissements
 - b. Restaurants data.

Data

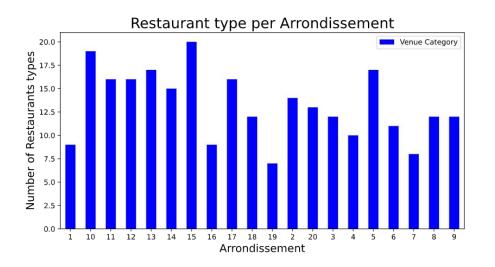
Arrondissement	Arrondissement Latitude	Arrondissement Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
1	48.864671	2.330138	Librairie Galignani	48.864989	2.328570	Bookstore
1	48.864671	2.330138	Grand Bassin Rond	48.862880	2.329295	Fountain
1	48.864671	2.330138	Balagan	48.865432	2.329680	Israeli Restaurant
1	48.864671	2.330138	Le Dalí	48.865333	2.328137	French Restaurant
1	48.864671	2.330138	Ladurée	48.866121	2.328449	Dessert Shop
1	48.864671	2.330138	Place des Pyramides	48.863924	2.332224	Plaza
1	48.864671	2.330138	Balenciaga	48.865927	2.330284	Women's Store
1	48.864671	2.330138	Hôtel Le Meurice	48.865333	2.328137	Hotel
1	48.864671	2.330138	Angelina	48.865090	2.328443	Tea Room
1	48.864671	2.330138	Hôtel Le Pradey	48.864459	2.331654	Hotel

Methodology

k-Means **Analysis Extraction** Use k-means to group the Extract the location data of Get basic statistics about the arrondissements by the type of Paris and the venues data restaurants per arrondissement food they offer. **Extraction and processing Exploratory analysis** Clustering **Filter** Elbow method Use the elbow method to choose Filter the venue data to get the restaurants, and most common the correct number of partitions. restaurants per arrondissement

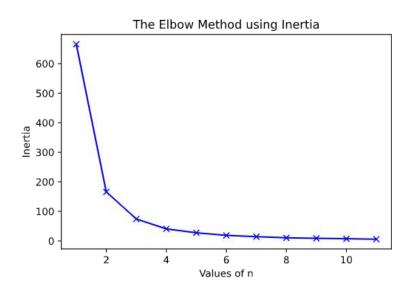


- → 19th Arrondissement is the one with less restaurants, with 11 restaurants.
- → 13th Arrondissement is the one with more restaurants, with 66 restaurants.
- → The mean of restaurants per Arrondissement is 35.3.

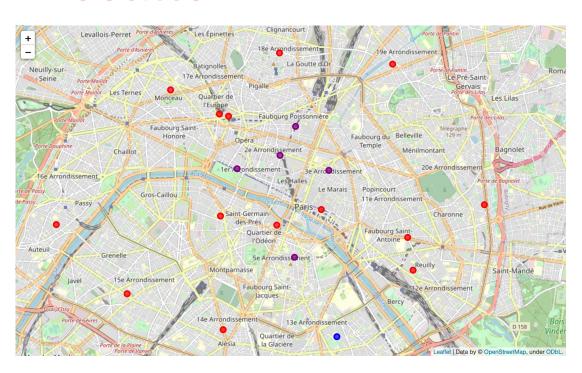


- → 19th Arrondissement is the one with less variety, with 7 different types of restaurants.
- → 15th Arrondissement is the one with more variety, with 20 different types of restaurants.
- → The mean of types of restaurants per Arrondissement is 13.25.

- → The most common type of restaurant is French in almost all arrondissement, except the 13th.
- → In most districts more than 35% of the restaurants are French.
- → The second most common type of restaurants is Japanese.



→ The number of partitions selected is 3, because in the the elbow might be in 2 or 3, and to get more information I selected 3.



- → Cluster purple (1,2,3,5,10):

 Most common restaurants are
 French and Japanese. The
 percentage of French
 restaurants is less than in the
 others arrondissements.
- → Cluster blue (13): The Asian arrondissement, the most common type of restaurants are Asian, like Vietnamese or Chinese.
- → Cluster red: This arrondissements have large presence of French Restaurants.

Discussion

As shown in the results, 3 groups of arrondissements were found according to the food they offer.

However, all the groups had a large number of French restaurants, being the most popular food in all of Paris.

Conclusion

Paris could be divided in 3 according to the food that its restaurants offer. The first group for people who like Japanese and Italian food, the second group for people who like Asian food, and the last group for people who like French food.

Even though Paris is a multicultural and diverse city, the main gastronomic menu offered is French, so you could find French food in any arrondissement.