Finding best location to open a Food Court in Paris, France

M.G APRIL 2020

Introduction / Business understanding

- Client is a Food Court owner in paris

- He is wiling to open another one

- He want for his new food court to be the same as the one he already have in Paris 14eme. That means he want to provide the same food offer exactly.

- He provided a list of neighborhood he is prospecting for

Question to be answer by this study:

From those 19 places provided the client, what are those that looks the more like his actual business, based on the restaurant offer in the neighborhood?

Client provided locations

Place	Corresponding to
Paris 1er	Prospection for new business
Paris 2eme	Prospection for new business
Paris 3eme	Prospection for new business
Paris 4eme	Prospection for new business
Paris 5eme	Prospection for new business
Paris 6eme	Prospection for new business
Paris 7eme	Prospection for new business
Paris 8eme	Prospection for new business
Paris 9eme	Prospection for new business
Paris 10eme	Prospection for new business
Paris 11eme	Prospection for new business
Paris 13eme	Prospection for new business
Paris 14eme	Actual business
Paris 15eme	Prospection for new business
Paris 16eme	Prospection for new business
Paris 17eme	Prospection for new business
Paris 18eme	Prospection for new business
Paris 19eme	Prospection for new business
Paris 20eme	Prospection for new business

Data

The necessary data for this project, based on the above stated requirements, are:

1) The name of the place my client have is actual Food Court.

2) The list of the name of the places my client prospect to open his new business.

3) GPS coordinates for each place mentioned above.

4) The list of all restaurant categories near each of the places mentioned above

place_name	latitude	longitude
Paris 1er	48.8621	2.33621
Paris 2eme	48.8677	2.34116
Paris 3eme	48.8625	2.35932
Paris 4eme	48.8544	2.35692
Paris 5eme	48.8453	2.35058
Paris 6eme	48.8491	2.33049
Paris 7eme	48.8547	2.31208
Paris 8eme	48.8736	2.3116
Paris 9eme	48.877	2.33789
Paris 10eme	48.8761	2.36227
Paris 11eme	48.8602	2.38184
Paris 13eme	48.8302	2.365
Paris 14eme	48.8301	2.32303
Paris 15eme	48.842	2.29477
Paris 16eme	48.8564	2.26482
Paris 17eme	48.8878	2.30484
Paris 18eme	48.892	2.34868
Paris 19eme	48.8873	2.38771
Paris 20eme	48.8626	2.39675

	0	1	2	3	4	...
Paris 1er	Italian Restaurant	Café	Café	Italian Restaurant	Bakery	...
Paris 2eme	French Restaurant	Bistro	Italian Restaurant	French Restaurant	Pizza Place	...
Paris 3eme	Sandwich Place	Sandwich Place	Okonomiyaki Restaurant	Sandwich Place	Burger Joint	...
...	...	...	...	...	...	...

Analytics approach

Using the collected data, I will calculate the number of restaurant by category for each localization. After data preparation I will the resulting dataframe as input to K-Means clustering algorithm in order to obtain the clusters of the neighborhood including the one of my client actual business.
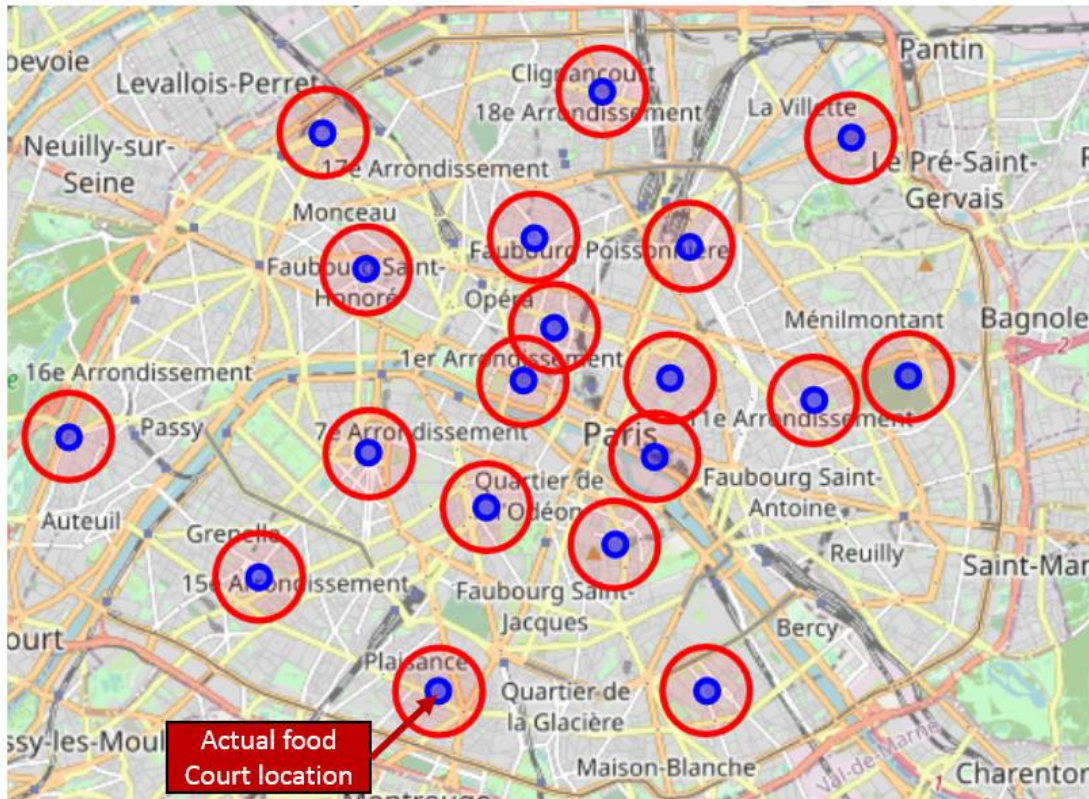
Methodology – Data preparation

Data preparation has consisted in transforming the features columns into dummies variables and applying a function to each raw to get the probability for each features (so that the sum of each row is equal to 1).

|	Afghan Restaurant	African Restaurant	American Restaurant	Argentinian Restaurant	Asian Restaurant	Auvergne Restaurant	...
Paris 1er	0	0	0	0	0	0	...
Paris 2eme	0	0	0	0	0	0	...
Paris 3eme	0	0	0	0	0.014706	0.014706	...
Paris 4eme	0	0	0	0	0.014706	0	...
Paris 5eme	0	0	0	0.014706	0	0.014706	...
Paris 6eme	0	0	0	0	0	0	...
Paris 7eme	0	0	0	0	0.039216	0	...
Paris 8eme	0	0	0	0	0.021277	0	...
...	...	...	...	...	...	...	...

Methodology – Data exploratory

Location data visualization on a folium map:

● Place localisation
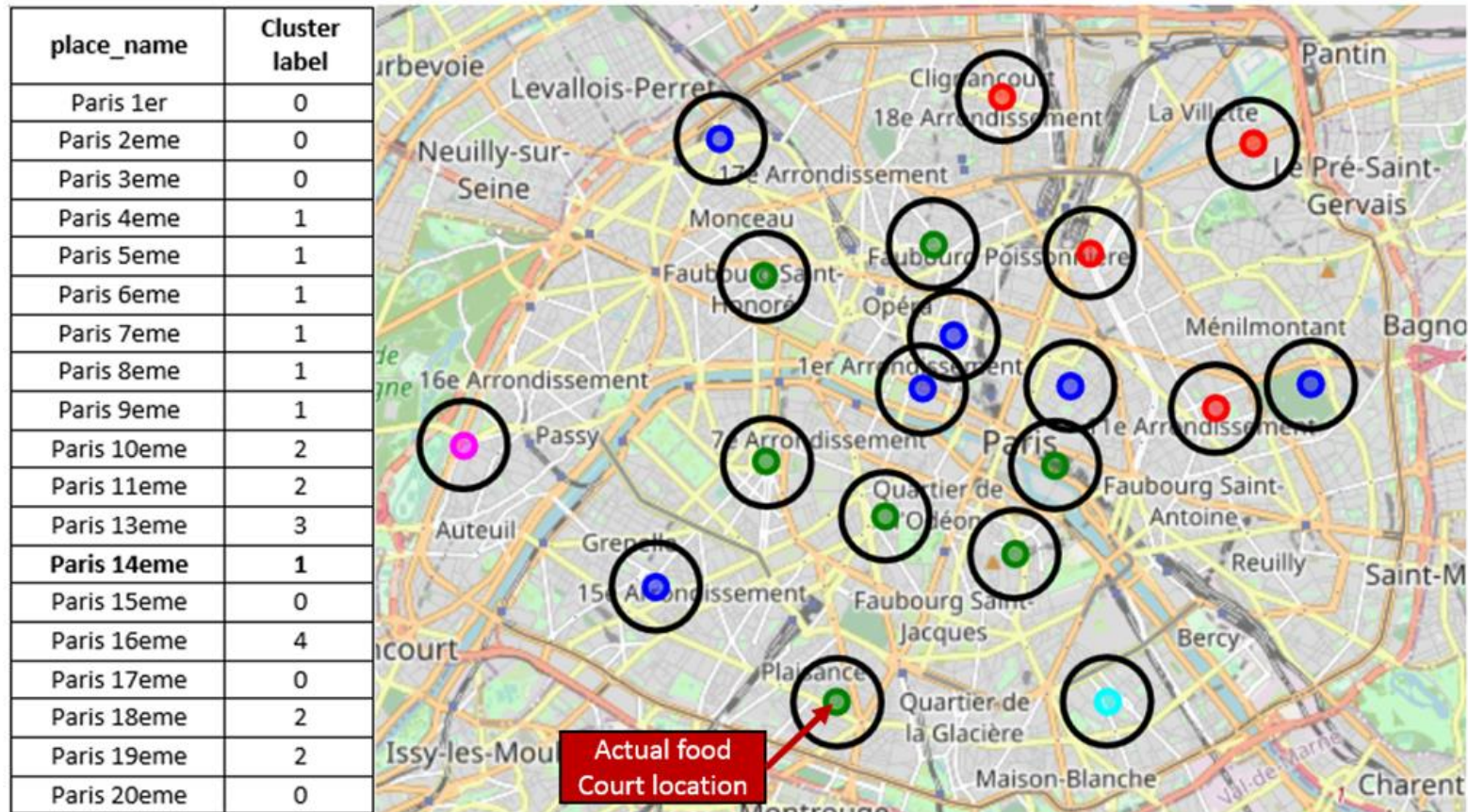
⬤ Neighborhood area

Methodology – Data exploratory
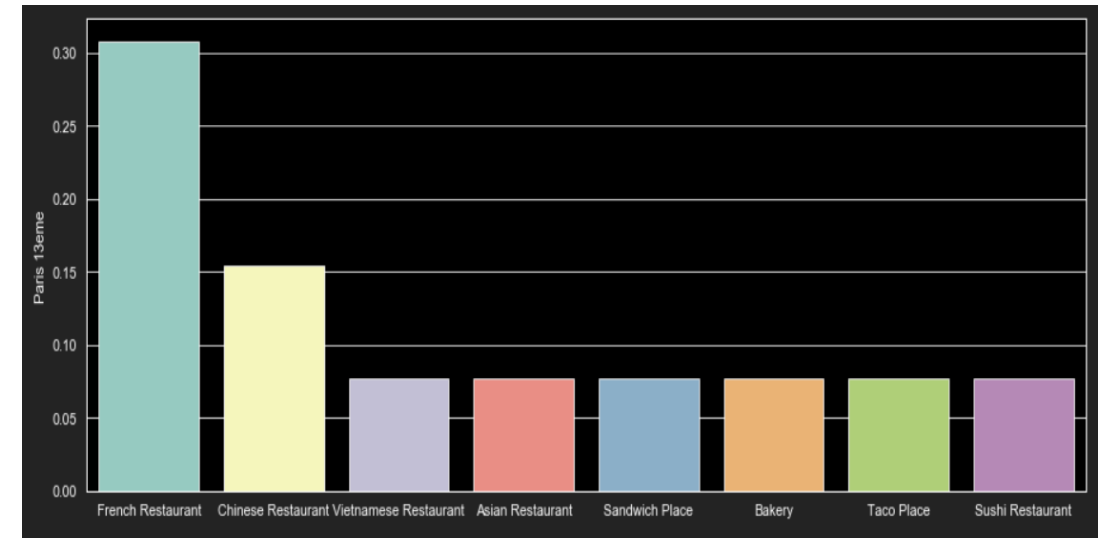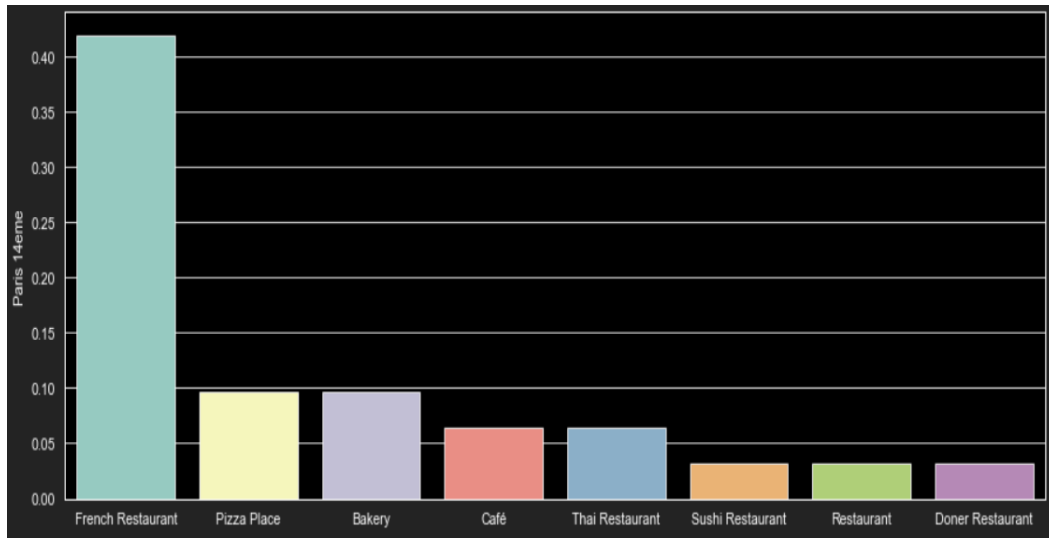
Current business neighborhood compare to other neighborhood in the client list

Clustering results

Conclusion

Aim of this study was to find similar neighborhood as the one that contain the current food court of my client, based on its restaurant offer.

The clustering method used here, permitted to cluster client current business neighborhood with 6 other neighborhoods.

→ among the 19 places prospected by my client, 6 of them would be a good place to open a new restaurant based on client strategy explained in the introduction.