Choose the best place for Japanese restaurant in Paris

Interest of the project

The interest of this project is that I will be able to make the best choice to open my restaurant while minimizing competition, by providing a targeted service in relation to the population of the neighborhood, so I will be able to adapt my offers and be competitive.

Data

- Based on definition of our problem, factors that will influence our decision are:
  - **Number of Japanese restaurants in Borough**
  - **Characteristic of people in Borough**
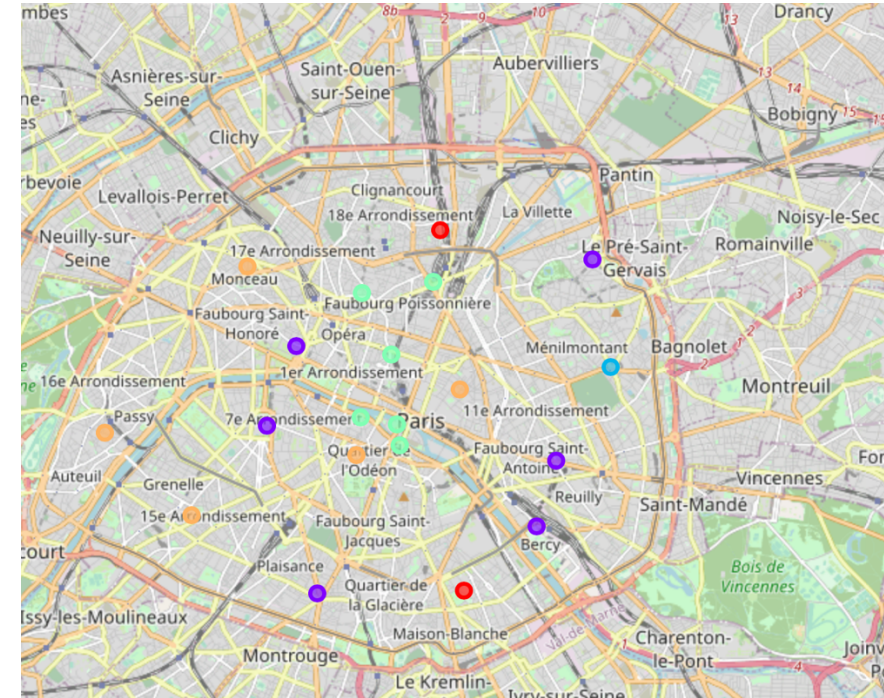 - **Price for the rental**
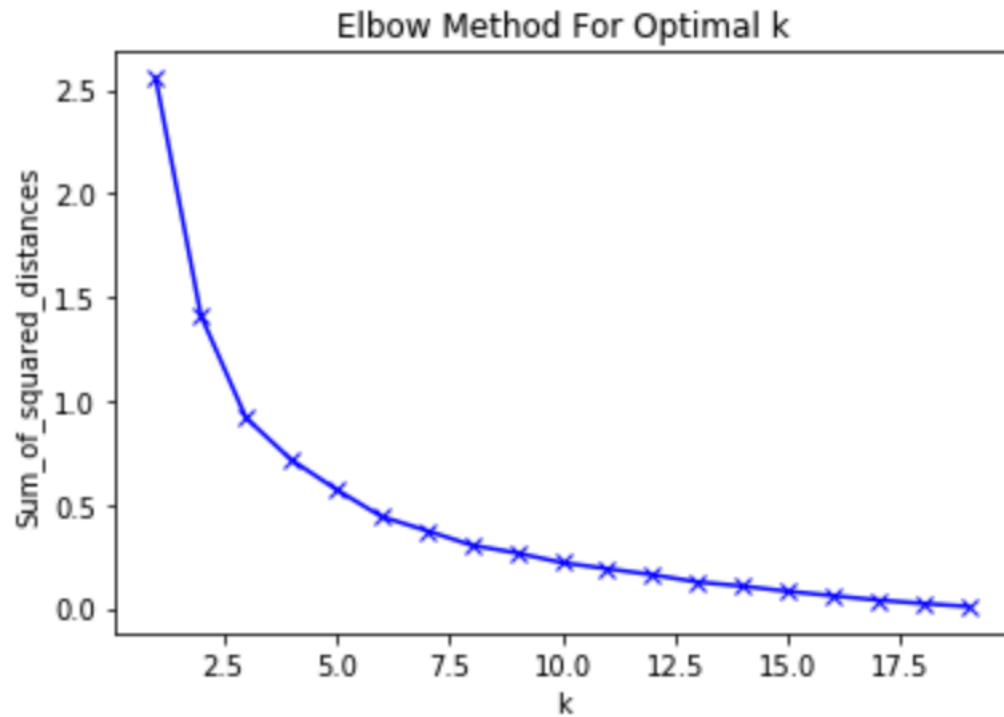
Borough people Characteristic

	Borough	Neighborhood	Postal Codes	Latitude	Longitude	Postal Code	Municipal population	Young people	Old people	Student	Median income	Employment density	Sale price
0	1er arrondissement de Paris	Quartier Saint-Germain-l'Auxerrois, Quartier d...	75001	48.857366	2.336815	75001	16545.0	15.3	18.7	8.5	31843.0	328.0	11290.0
1	2e arrondissement de Paris	Quartier Gaillon, Quartier Vivienne, Quartier ...	75002	48.867460	2.344156	75002	20796.0	15.7	10.1	8.9	30025.0	603.0	11270.0
2	3e arrondissement de Paris	Quartier des Arts-et-Métiers, Quartier des Enf...	75003	48.861751	2.361134	75003	35049.0	15.6	13.2	9.6	30988.0	267.0	11240.0
3	4e arrondissement de Paris	Quartier Saint-Merri, Quartier Saint-Gervais, ...	75004	48.856079	2.345537	75004	27146.0	15.7	17.1	10.1	30515.0	260.0	12300.0
4	5e arrondissement de Paris	Quartier Saint-Victor, Quartier du Jardin-des-...	75005	48.852752	2.346343	75005	59333.0	17.8	18.8	16.5	32950.0	211.0	11330.0

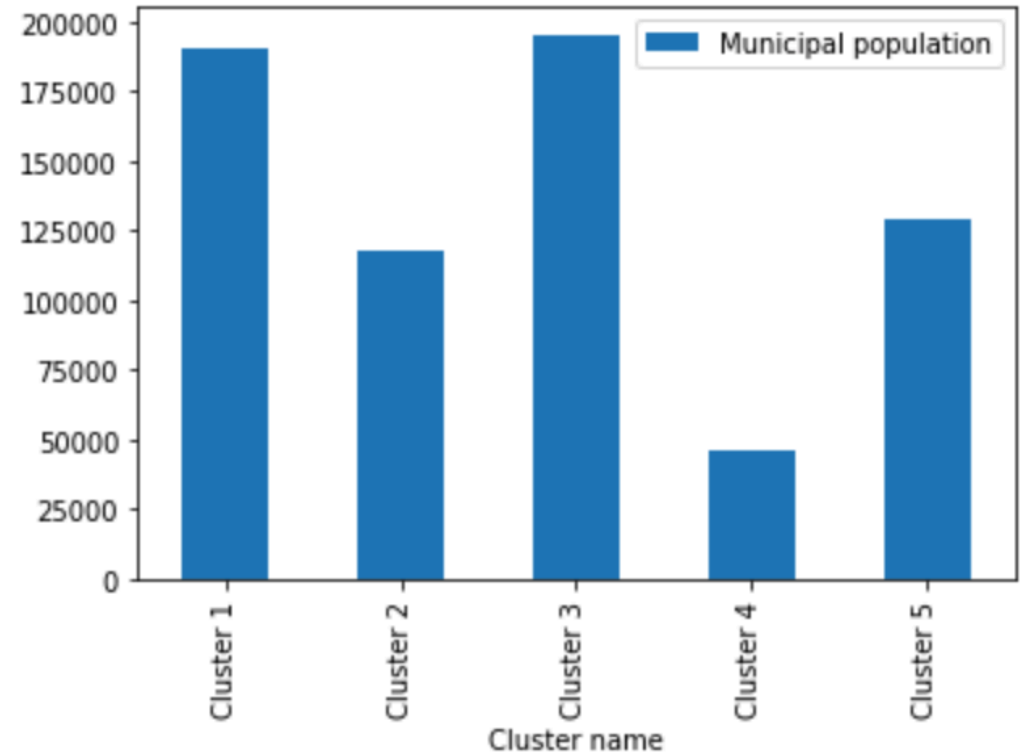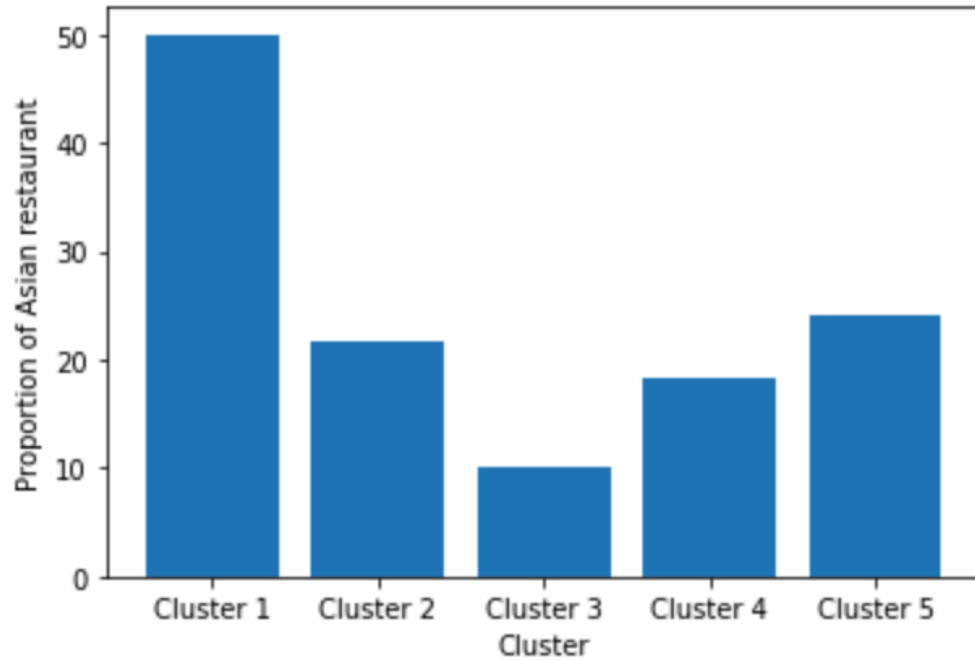# Select the most common restaurant on Foursquare

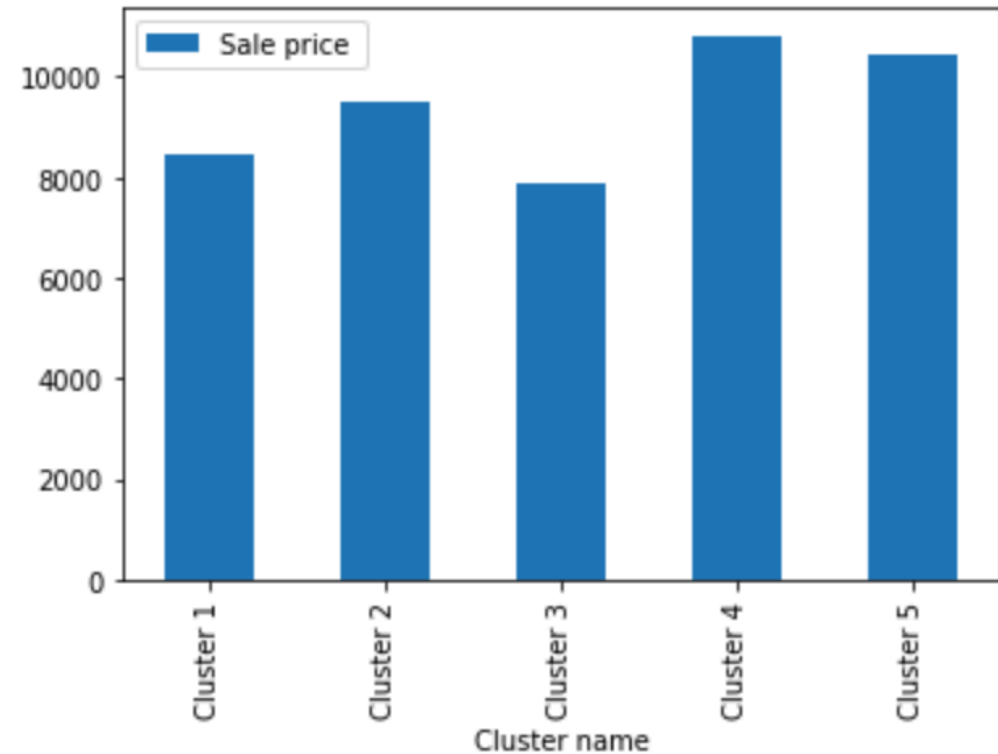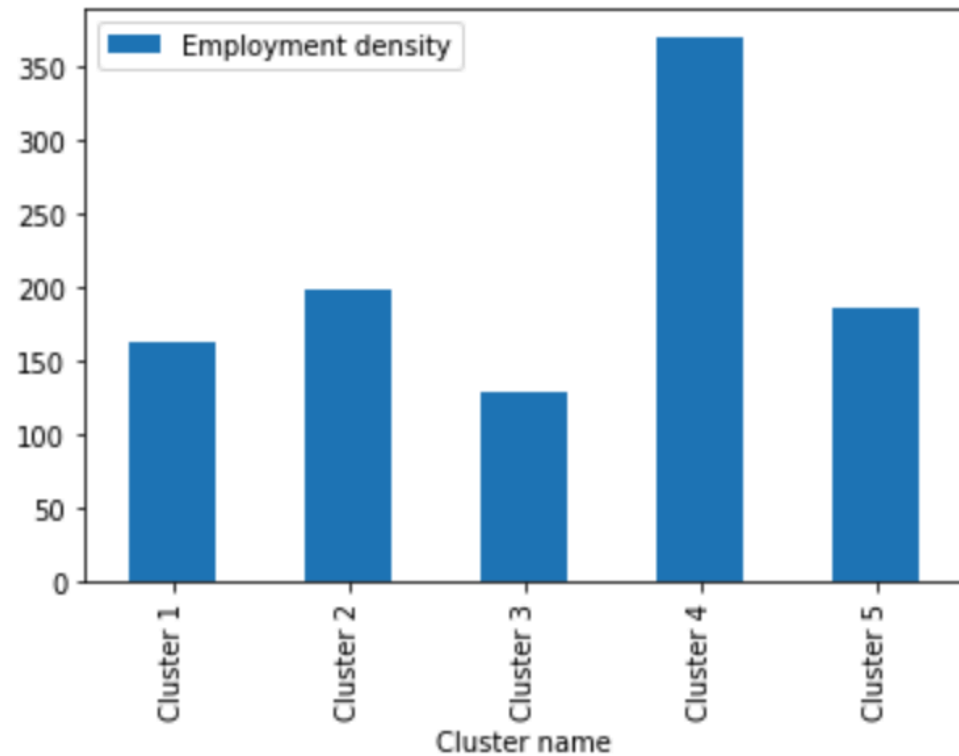|	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Quartier Gaillon, Quartier Vivienne, Quartier ...	French Restaurant	Italian Restaurant	Thai Restaurant	Japanese Restaurant	Restaurant	Indonesian Restaurant	Israeli Restaurant	Lebanese Restaurant	Mexican Restaurant	Ch'ti Restaurant
1	Quartier Saint-Georges (Paris), Quartier de la...	French Restaurant	Japanese Restaurant	Italian Restaurant	Vegetarian / Vegan Restaurant	Modern European Restaurant	Asian Restaurant	Brazilian Restaurant	Chinese Restaurant	Falafel Restaurant	Venezuelan Restaurant
2	Quartier Saint-Germain-l'Auxerrois, Quartier d...	French Restaurant	Japanese Restaurant	Restaurant	Seafood Restaurant	Ramen Restaurant	Breton Restaurant	Modern European Restaurant	Asian Restaurant	Tapas Restaurant	Argentinian Restaurant
3	Quartier Saint-Lambert, Quartier Necker, Quart...	French Restaurant	Italian Restaurant	Lebanese Restaurant	Indian Restaurant	Restaurant	Scandinavian Restaurant	Moroccan Restaurant	Persian Restaurant	Russian Restaurant	Japanese Restaurant
4	Quartier Saint-Merri, Quartier Saint-Gervais, ...	French Restaurant	Japanese Restaurant	Falafel Restaurant	Restaurant	Auvergne Restaurant	Lebanese Restaurant	Moroccan Restaurant	Portuguese Restaurant	Tapas Restaurant	Alsatian Restaurant
5	Quartier Saint-Thomas-d'Aquin, Quartier des In...	French Restaurant	Italian Restaurant	Basque Restaurant	Korean Restaurant	Restaurant	Japanese Restaurant	Vegetarian / Vegan Restaurant	Asian Restaurant	Auvergne Restaurant	Indonesian Restaurant
6	Quartier Saint-Victor, Quartier du Jardin-des-...	French Restaurant	Japanese Restaurant	Lebanese Restaurant	Restaurant	Tapas Restaurant	Mexican Restaurant	Falafel Restaurant	Chinese Restaurant	Indian Restaurant	Hawaiian Restaurant

Model and optimization : K means

Elbow Method For Optimal k

	Neighborhood	Municipal population	Young people	Old people	Student	Median income	Employment density	Sale price	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Co...
12	Quartier de la Salpêtrière, Quartier de la Gar...	183216.0	19.6	17.4	9.9	23538.0	177.0	8380.0	0	Vietnamese Restaurant	Asian Restaurant	Thai Restaurant	Chinese Restaurant	French Restaurant	Rest...
17	Quartier des Grandes-Carrières, Quartier de Cl...	197580.0	18.7	12.9	7.1	20942.0	147.0	8560.0	0	Indian Restaurant	French Restaurant	Fast Food Restaurant	Vegetarian / Vegan Restaurant	Asian Restaurant	Rest...

Statistic whose influe on our decision

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Conclusion

- If we want to reach people with low budgets, families with their children, and with low competition and cheap rent, we will choose the neighborhoods of cluster 3.

- On the other hand, if we want to create a gourmet Japanese restaurant , and touch the executives who work in the offices and who earn a very good living, we will rather choose the neighborhoods of cluster 4. Finally, several choices are possible depending on the type of restaurant we want to open