Find the best place to open an Asian restaurant in Paris

Data Science Capstone Project – IBM Professional Certificate

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1. General presentation

▶ Purpose: help those who want to open a restaurant to analyse a city before taking the decision

▶ Context: An Asian has the plan to open a restaurant in Paris

▶ Question: How to find the best place in order to maximize the profit?

▶ Factors that can be considered:

    ▶ Population density and income

    ▶ Accessibility

    ▶ Land price

    ▶ Concurrence

    ▶ …

▶ In this project, population density and distribution of existing Asian restaurants in Paris will be studied
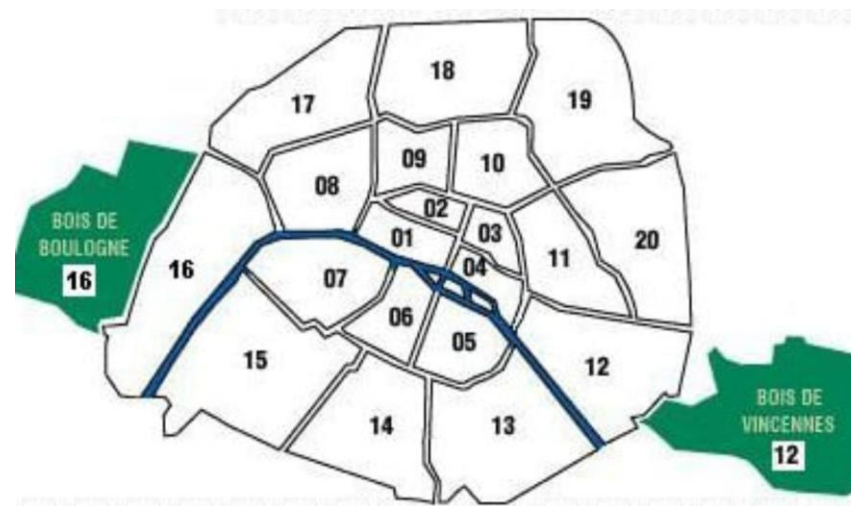

Fig 1. Scheme of arrondissements of Paris

2. Data acquisition

▶ Population of Paris on 2019 from https://www.statista.com/statistics/1046193/population-by-district-arrondissements-paris-france/

▶ Geographic location of all the neighborhoods of Paris (coordinates in format CSV, border in format JSON) from https://www.data.gouv.fr/fr/datasets/arrondissements-1/

▶ No major cleaning to be performed

3. Exploratory Data Analysis

▶ Use Foursquare API to get the venues of each neighbourhood

▶ Clustering of the 20 neighborhoods of Paris using the KMeans algorithm of the Scikit Learn library

▶ Observation:

    ▶ Most of the neighborhoods have French restaurants the most common venues

    ▶ The 13th arrondissement neighborhood: The most common venues are Asian restaurants → Constitute itself a cluster (orange point on the choropleth map)

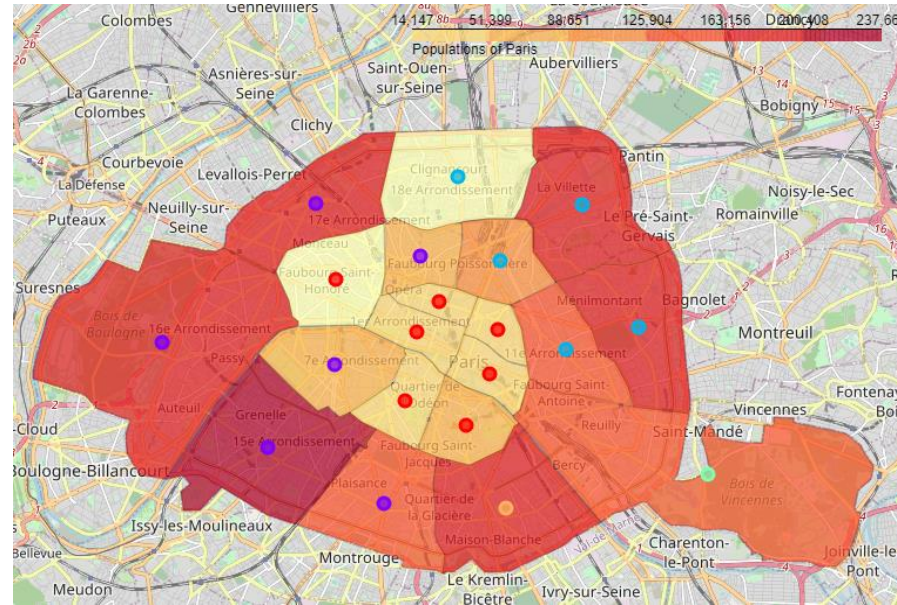   → This is the most famous neighborhood for Asian gastronomies in Paris

Fig 2. Five clusters of Paris

3. Exploratory Data Analysis

- Asian restaurants in Paris are retrieved and showed on the map

- Rating is requested using Foursquare API

  - Green: rating ≥ 8.5

  - Red: rating ≤ 7.5

  - Blue: 7.5<rating<8.5

- Observation: Most of the restaurants are in 13th arrondissement, but not many restaurants are well rated (only 2 green points)
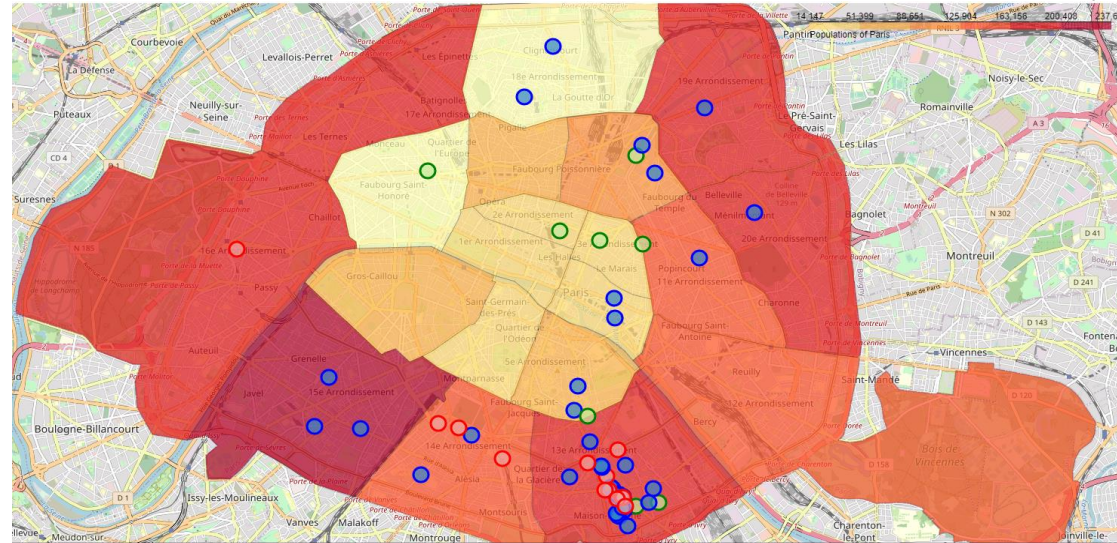

Fig 3. Map of distribution of the Asian restaurants in Paris

4. Conclusion

- The 13th arrondissement neighborhood is interesting to open an Asian restaurant because:

  - Population density here is high, so is the demand on food

  - The most famous area for Asian food in Paris → Attractive for tourists who want to taste Asian gastronomies

  - Many restaurants here but just a few is well rated, so the owner has the chance to become one of the best if he has a good service and a suitable marketing strategy

5. Future direction

▶ The number of check-ins and number of clients who come back to a restaurant are also good indicators, so it is worth getting these data and combine with the rating for a better evaluation

▶ Other factors should be also considered:

  ▶ Land price in each neighborhood

  ▶ Accessibility by public transport

  ▶ Income of inhabitants