New Chinese restaurant locations in Paris

1 Introduction and Discussion of the Business Objective and Problem

The Task At Hand

There are many Chinese or Chinese food lover in the captical city of France - Paris.

I've been given the exciting task of assisting one Chinese chain restaurant owner to make data-driven decisions on the new locations that are most suitable for openning a new Chinese restaurant in Paris.

We believe that in high traffic areas where consumers go for shopping, restaurants and entertainment will be ideal place for the new restaurant. Foursquare data will be very helpful in making data-driven decisions about the best of those areas.

Criteria

Qualitative data from another retailer that they know, suggests that the best locations to open new restaurant may not only be where other restaurant is located. This data strongly suggests that the best places are in fact areas that are near ***French Restaurants, Cafés and Wine Bars***. Parisians are very social people that frequent these place often, so opening new restaurant in these locations is becoming popular.

The analysis and recommendations for new restaurant locations will focus on general districts with these establishments, not on specific addresses.

Why Data?

Without leveraging data to make decisions about new store locations, the restaurant owner could spend countless hours walking around districts, consulting many real estate agents with their own district biases, and end up opening in yet another location that is not ideal.

Data will provide better answers and better solutions to their task at hand.

Outcomes

The goal is to identify the best districts - *Arrondissements* - to open new restaurant.

2 The Data Science Workflow

Data Requirements

The main districts in Paris are divided into 20 *Arrondissements Municipaux* (administrative districts), shortened to *arrondissements*.

The data regarding the districts in Paris needs to be researched and a suitable useable source identified. If it is found but is not in a useable form, data wrangling and cleaning will have to be performed.

The cleansed data will then be used alongside Foursquare data, which is readily available. Foursquare location data will be leveraged to explore or compare districts around Paris, identifying the high traffic areas where consumers go for shopping, dining and entertainment.

3 Methodology and Exploratory Data Analysis

Foursquare location data will be leveraged to explore or compare districts around Paris. Data manipulation and analysis to derive subsets of the initial data. Analysis and plotting visualizations. Recommendations and results based on the data analysis. Discussion of any limitations and how the results can be used, and any conclusions that can be drawn.

4 Results

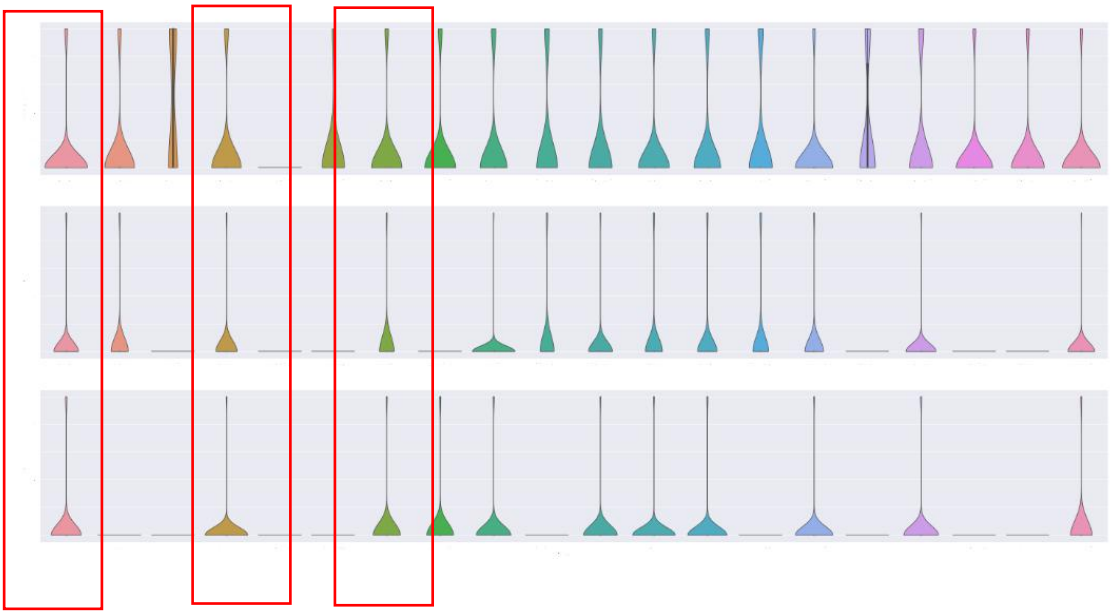
These are the venue types that the owner wants to have an abundant density of in the ideal restaurant locations. We've used a violin plot from the seaborn library - it is a great way to visualize frequency distribution data, they display a density estimation of the underlying distribution.

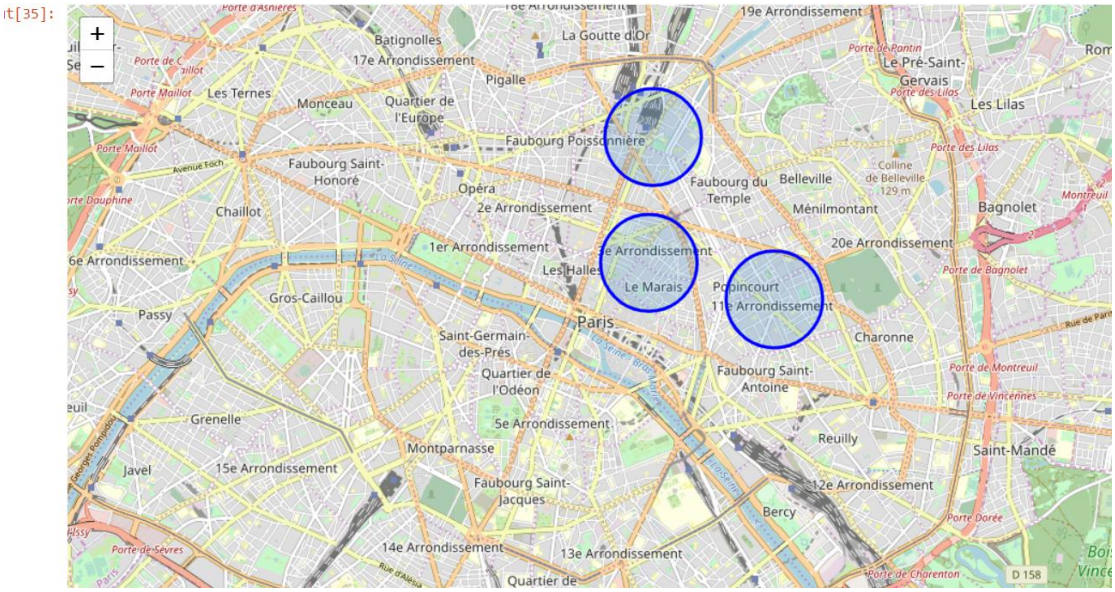
Based on above analysis result as below graphic, we identy 3 best neighborhoods where there are lively with Restaurants, Cafés and Wine Bars.

So the final 3 prospective neighborhoods for new store locations are where 4 criteria are met:

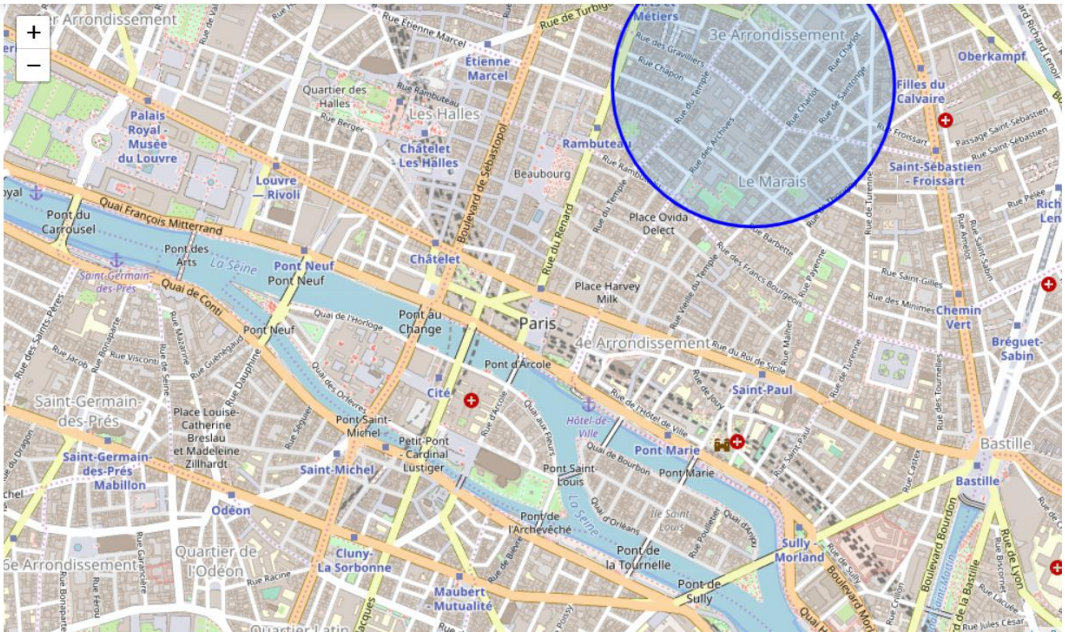
	Arrondissement_Num	Neighborhood	French_Name	Latitude	Longitude
0	3	Temple	3eme Ardt	48.862872	2.360001
1	10	Entrepot	10eme Ardt	48.876130	2.360728
2	11	Popincourt	11eme Ardt	48.859059	2.380058

Frequency distribution for the top 3 venue categories for each neighborhood (click to enlage)





36]:



5 Conclusions

It's not a surprise that these districts are all very centrally located in the circular arrangement of Paris's arrondissements. Locations fitting the criteria for popular venues would normally be in central locations in many cities of the world.

This analysis model can successfully find the best location for new Chinese restaurant in the most high traffic places surrended with shopping centers, restaurants, bars and cafes in Paris.

As extension, we can adapt this methodology to other kinds of location peoblem in paris. Restaurant, store, bar, cafe etc. in everywhere in the world.

And we can take more factors into consideration according to client's request.

There are many ways this analysis could have been performed based on different methodolgy, machine learning algorithms and different data sources.