



IBM Applied Data Science Capstone

"Best place to open a Hotel in Paris"

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Introduction



Background:

In terms of tourism, Paris enjoys an exceptionally well-balanced mix of business and leisure demand, which allows the City of Lights to have both a broad seasonality and strong average rate.

Paris has remained, alongside London, one of the two most desirable destinations for hotel investment for more than a decade.

Business Problem:

Location of the Hotel is one of the most important decisions that will determine whether the business will be a success or a failure.

Objective:

Analyze and select the best locations in the city of Paris to open a new Hotel.

Question:

If a property developer is looking to open a new Hotel in Paris, what location would you recommend ?

Interest Group:

- This is one of more important questions for real estate and property companies wanting to expand footprint into an already competitive landscape.



Data Section

Data required

- List of neighborhoods in Paris
- Latitude and longitude coordinates of the neighborhoods
- Venue data, particularly data related to Hotels

Sources of data

- Wikipedia page for neighborhoods
https://en.wikipedia.org/wiki/Arrondissements_of_Paris
- Geocoder package for latitude and longitude coordinates
- Foursquare API for venue data



Methodology

- Web scraping Wikipedia page for neighborhoods list
- Get latitude and longitude coordinates using Geocoder
- Use Foursquare API to get venue data
- Group data by neighborhood and taking the mean of the frequency of occurrence of each venue category
- Filter venue category by Hotel
- Perform clustering on the data by using k-means clustering
- Visualize the clusters in a map using Folium



Results

Categorized the Neighborhoods into 3 clusters :

- **Cluster 0:**
Neighborhoods with moderate number of Hotels
- **Cluster 1:**
Neighborhoods with high concentration of Hotels
- **Cluster 2:**
Neighborhoods with low number to no existence of Hotels



Discussion

- Most of the Hotels are concentrated in the central & north of seine river area of the city
- Highest number in cluster 1 and moderate number in cluster 0
- Cluster 2 has very low number to no Hotels in the neighborhoods
- Oversupply of Hotels mostly happened in the central area of the city, with the south-west areas still have very few Hotels



Recommendations

- Open new Hotel in neighborhoods in cluster 2 with little to no competition
- Can also open in neighborhoods in cluster 0 with moderate competition if have unique offering propositions to stand out from the competition
- Avoid neighborhoods in cluster 1, already high concentration of Hotels and intense competition



Conclusion

- Answer to business question: The neighborhoods in cluster 2 are the most preferred locations to open a new Hotel.
- Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new Hotel.



Thank You !