



# The Battle of the Neighborhoods

Neighborhoods of Paris and new York city :

**WHERE ARE THE BEST AREAS TO START A NEW BUSINESS LIKE RESTAURANT OR A BAR ?**

# Introduction

- ▶ **Paris** and **New York** are two major economical and multicultural cities. Both cities become a center of attention for business, job employment, tourism, residential, education, shopping and sports activities.
- ▶ This work will be focused on creating and visualizing neighborhood's profiles in boroughs of **Paris** and **New York City**.
- ▶ These profiles will be based on the numbers and categories of venues present in each neighborhood in these cities, classifying each neighborhood based on statistical data and automated analysis using classification algorithms (K-means).
- ▶ Giving valuable insights about the life and economy of each region.
- ▶ Making possible better-informed decision making for business and better public policymaking.

# Business Problem

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- ▶ **City profiles** : What are the main types of neighborhoods and what are their contribution to the overall makeup of city's venues ? Where the restaurants and bars are concentrated ?
- ▶ **Location of venues** : Where are located the already established restaurants and bars business ? How it is the distribution of restaurants through Paris and New York City

# Data Description

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- ▶ **Venues Names, Category and Geographical Coordinates** : Names and categories of top venues in each neighborhood, with their geographical coordinates (data to be extracted using the Foursquare API)
- ▶ **Neighborhoods Names and Geographical Coordinates** :
  - Names of all neighborhoods to be studied (in New York City and Paris, to be downloaded from official open data sources that are prepared in a CSV, Json, and GeoJson format)
  - Geographical coordinates of the central location of each neighborhood (to be extracted using Geopy Geocoder API)

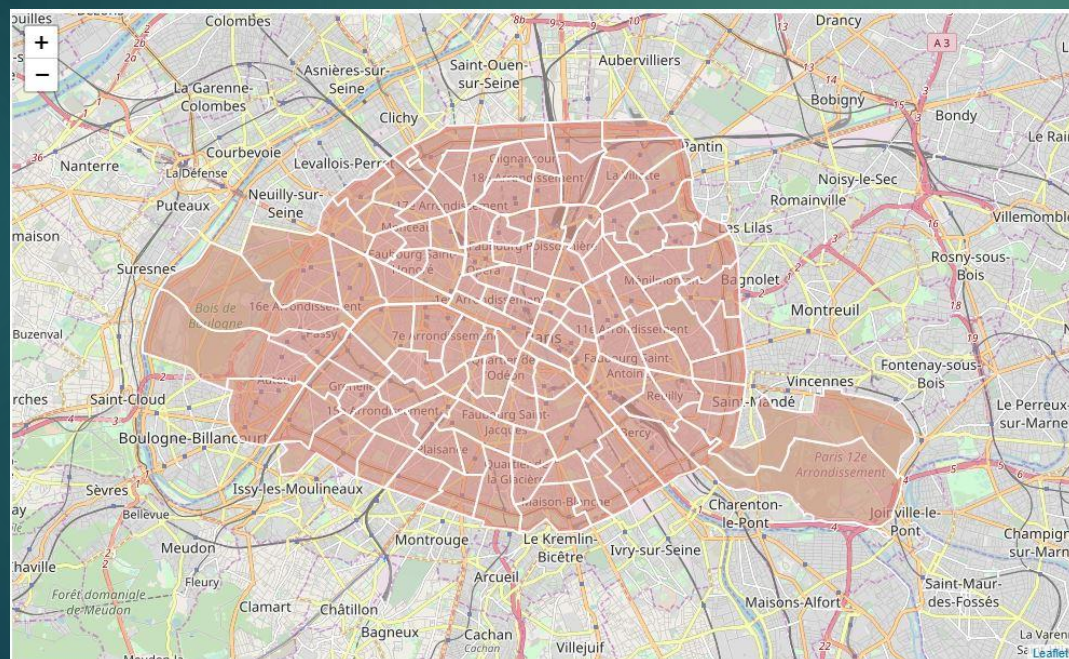


# Understanding Collected Data

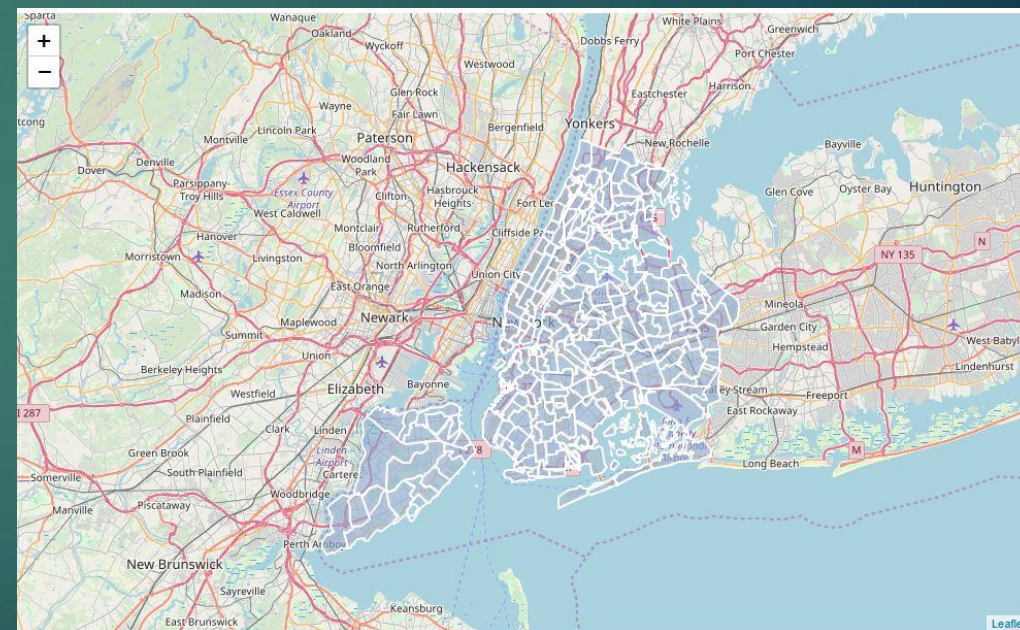
## Neighborhoods Tabulation Areas

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### Paris Neighborhoods



### New York City Neighborhoods



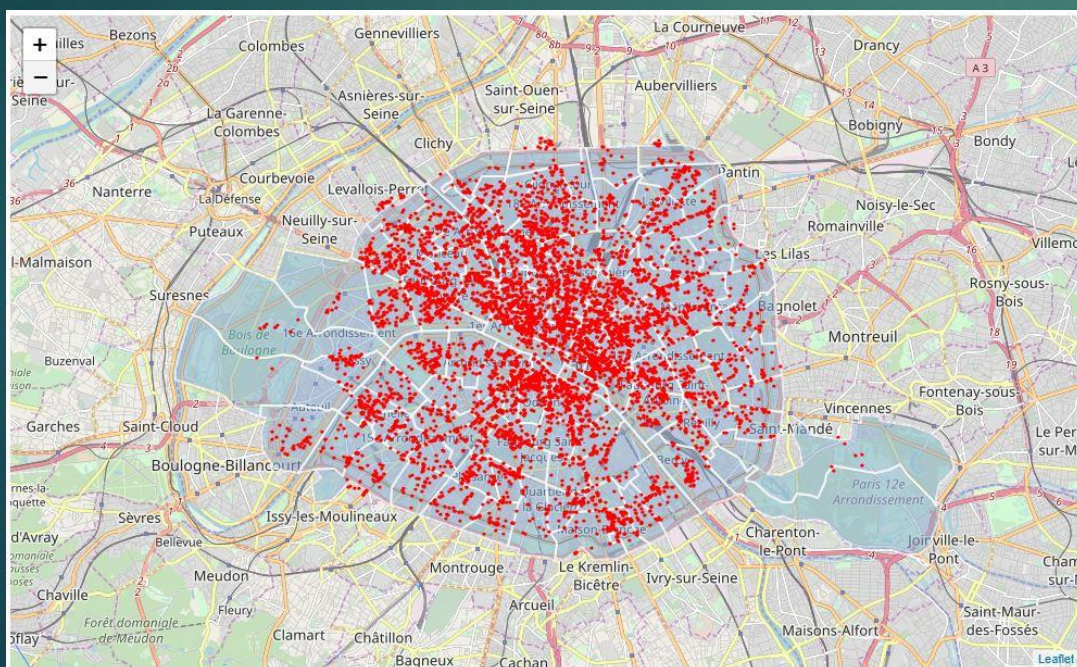


# Understanding Collected Data

## Venues Distribution

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### Paris Venues



### New York City Venus

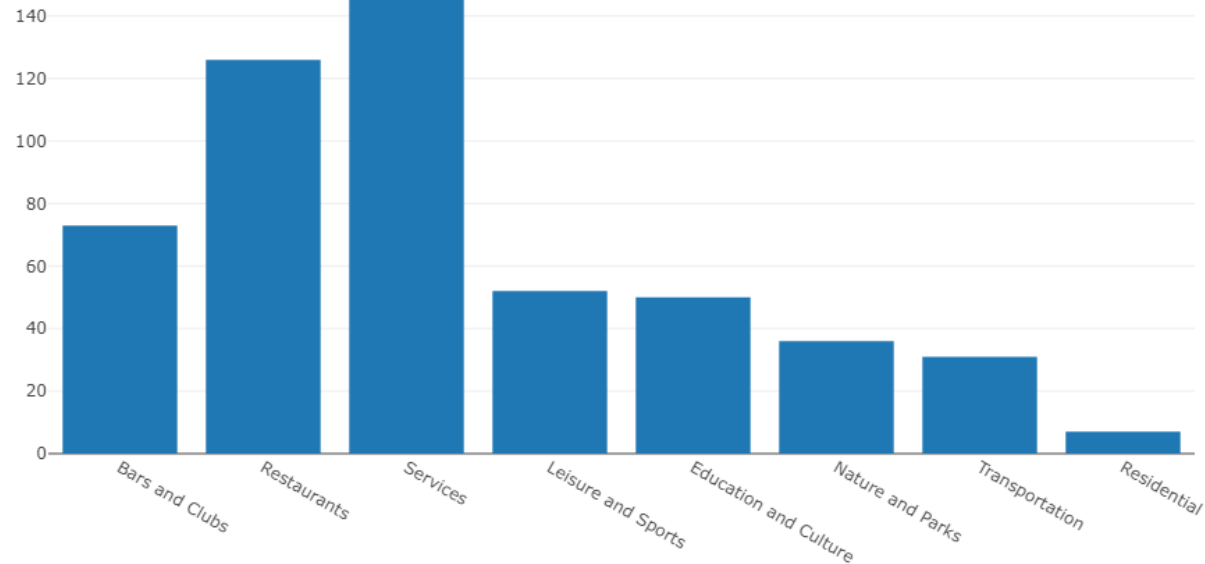


# Understanding Collected Data

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## Unique Venues Categories

Number of Venues Sub-Categories for each larger Category



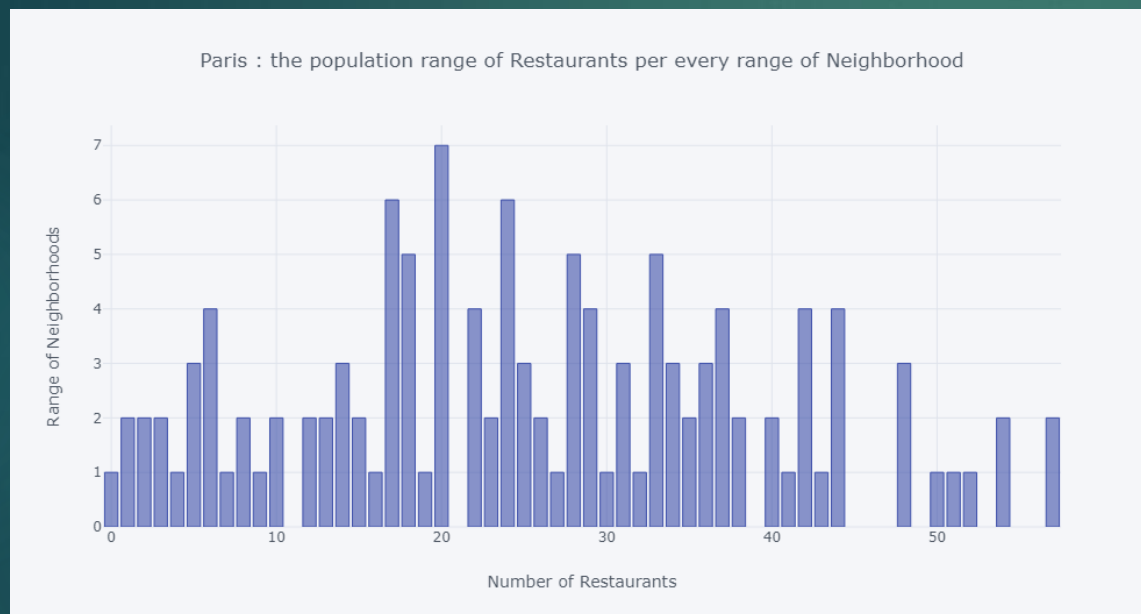
### Unique Venues :

- All the unique categories (324 for Paris, 429 for New York City) extracted with Foursquare API are grouped into 8 main types.
- New York City naturally has more kinds of venues (much larger population also)

# Understanding Collected Data

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## Paris Restaurants



### Restaurant Distribution in Paris Neighborhoods

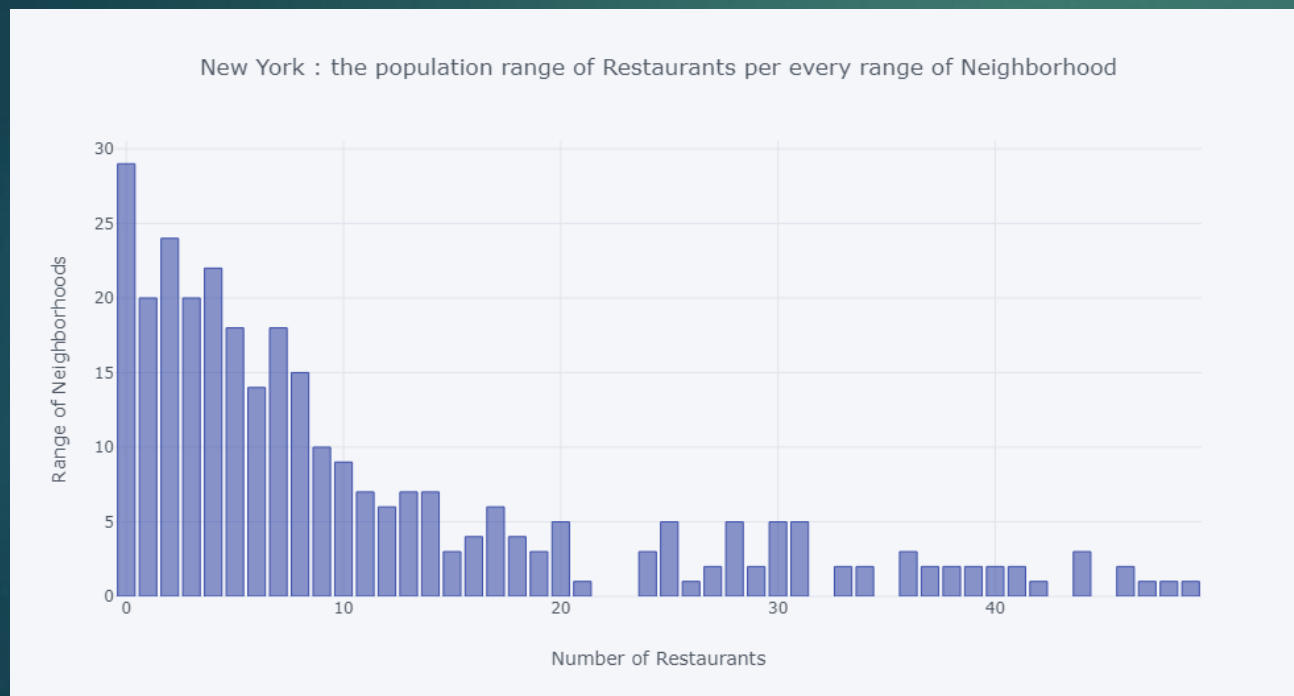
- ▶ High number of neighborhoods with 20 or more restaurants
- ▶ Seven neighborhoods with >50 restaurant venues!



# Understanding Collected Data

## New York City Restaurants

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### Restaurant Distribution in New York City Neighborhoods

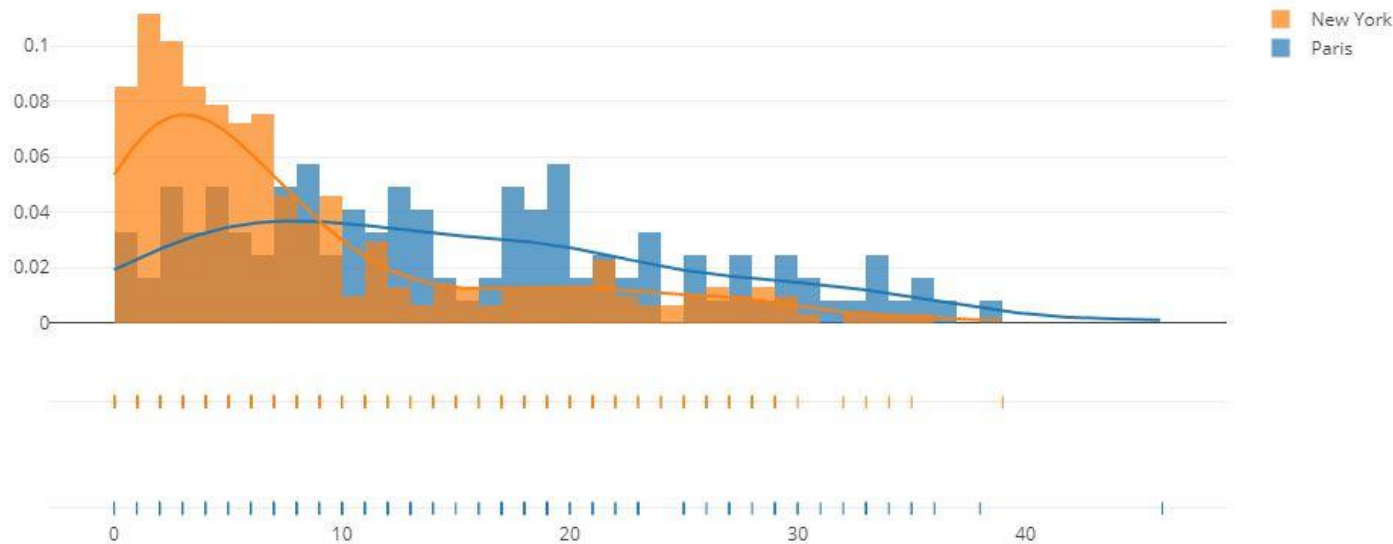
- ▶ Small number of neighborhoods with 20 or more restaurants
- ▶ Five neighborhoods >45 restaurant venues!
- ▶ No Neighborhoods has >50 restaurants
- ▶ Several neighborhoods doesn't have any restaurant at all, and several others have less than 5.

# Understanding Collected Data

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## Bars and Clubs Distribution

Distribution Comparison between Bars and Clubs in Paris and New York City



### Bars & Clubs Distribution

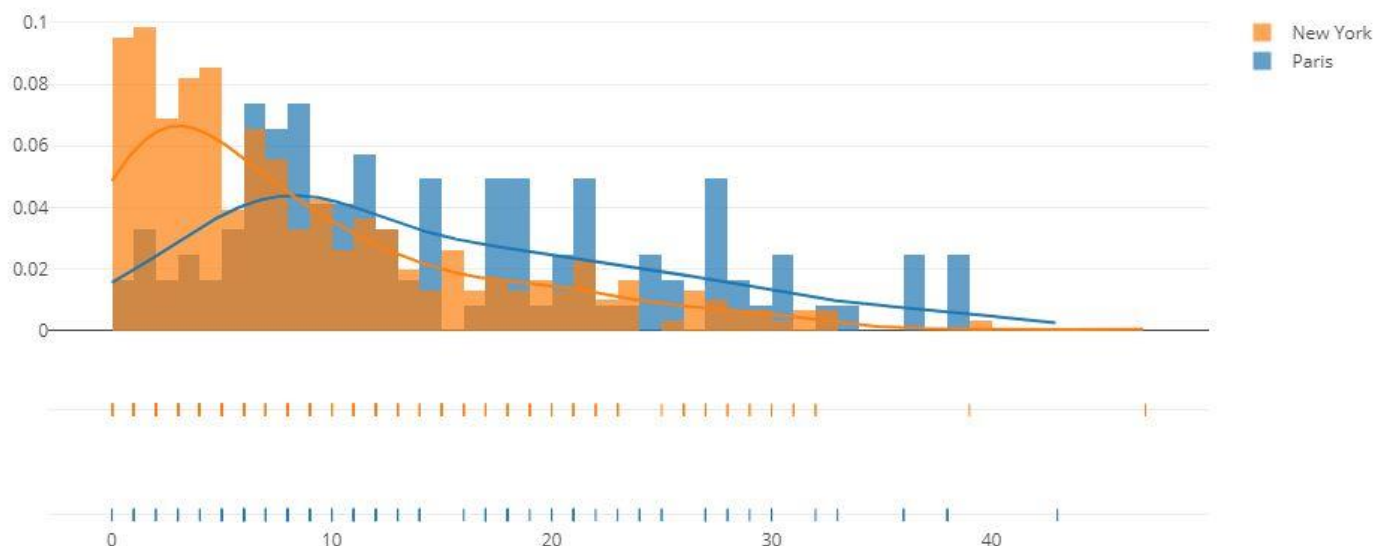
- ▶ Paris have a more even distribution of bars and clubs through the city.
- ▶ New York City concentrates the bars and clubs into a tiny group of neighborhoods, while the majority of neighborhoods have less than 10 bars.

# Understanding Collected Data

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## Bars and Clubs Distribution

Distribution Comparison between Services in Paris and New York City



## Services Distribution

- ▶ The services venues distribution is close in some intervals between the two cities.
- ▶ However, Paris seems to be more developed (more neighborhoods saturated with services) than New York City.



# Building the City Profiles

## Classifying Neighborhoods for Paris

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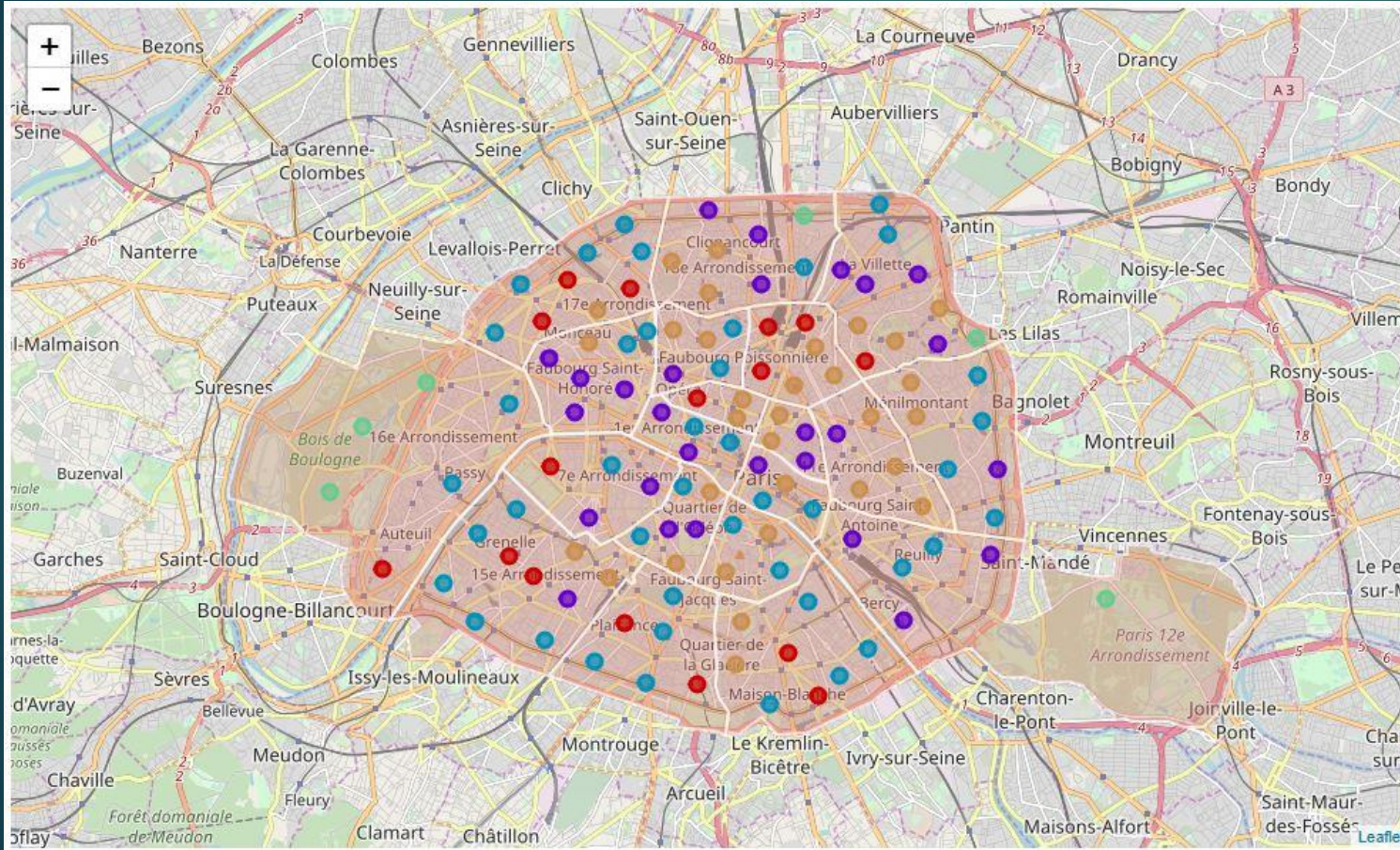
### Clusters Important to our Business Objective:

- ▶ Cluster 1,3 & 5 have a high share of Restaurants.
- ▶ Cluster 5 has a high share of Bars and Clubs.
- ▶ Cluster 2 has a balanced share between Restaurants & Bars and Clubs.

# Building the City Profiles

## Classifying Neighborhoods for Paris

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This is the clusters neighborhoods color representation in the Map of Paris:

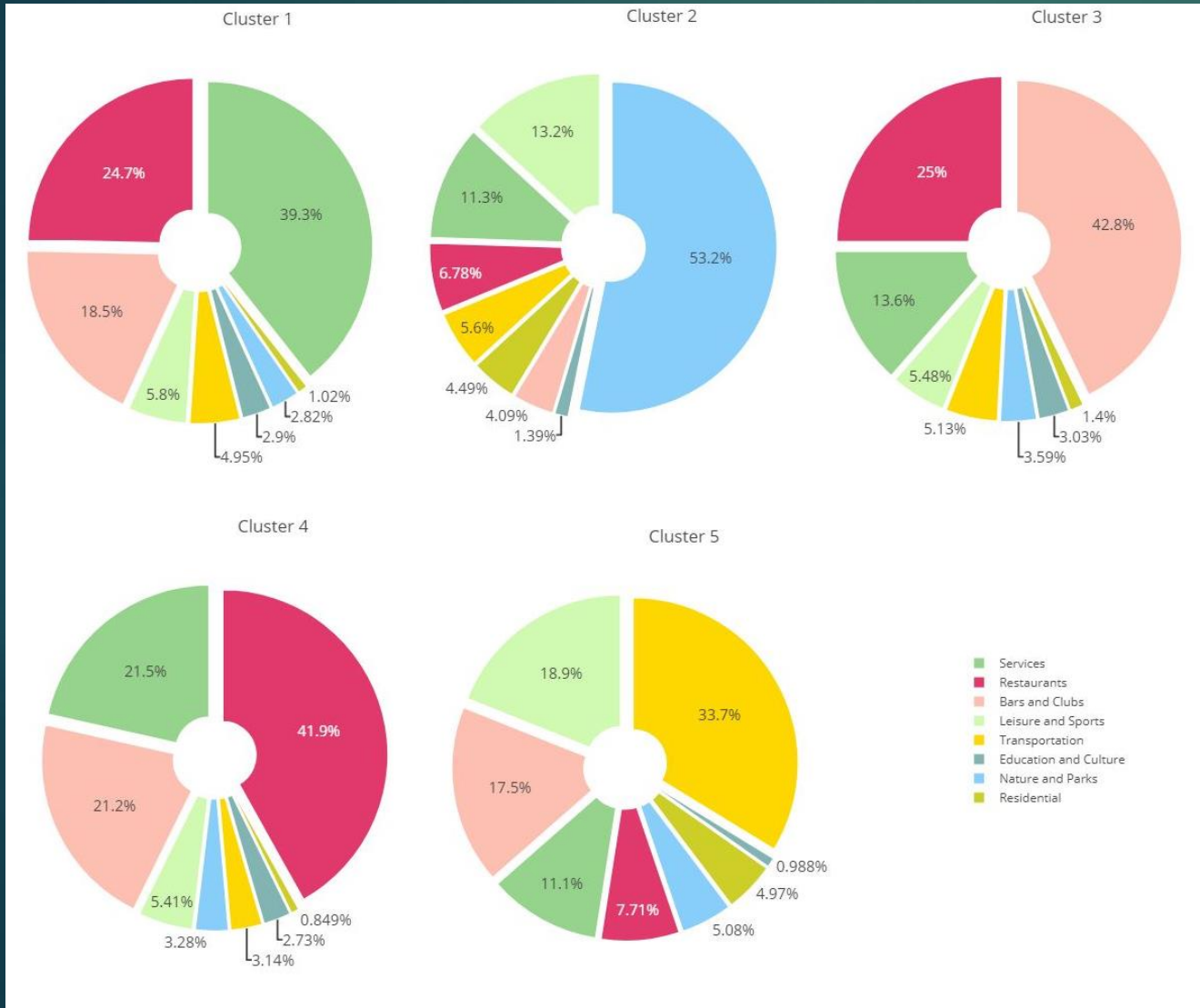
- ▶ Cluster 1 : **Red**
- ▶ Cluster 2 : **Purple**
- ▶ Cluster 3 : **Bleu**
- ▶ Cluster 4 : **Green**
- ▶ Cluster 5 : **Orange**



# Building the City Profiles

## Classifying Neighborhoods for New York City

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### Clusters Important to our Business Objective:

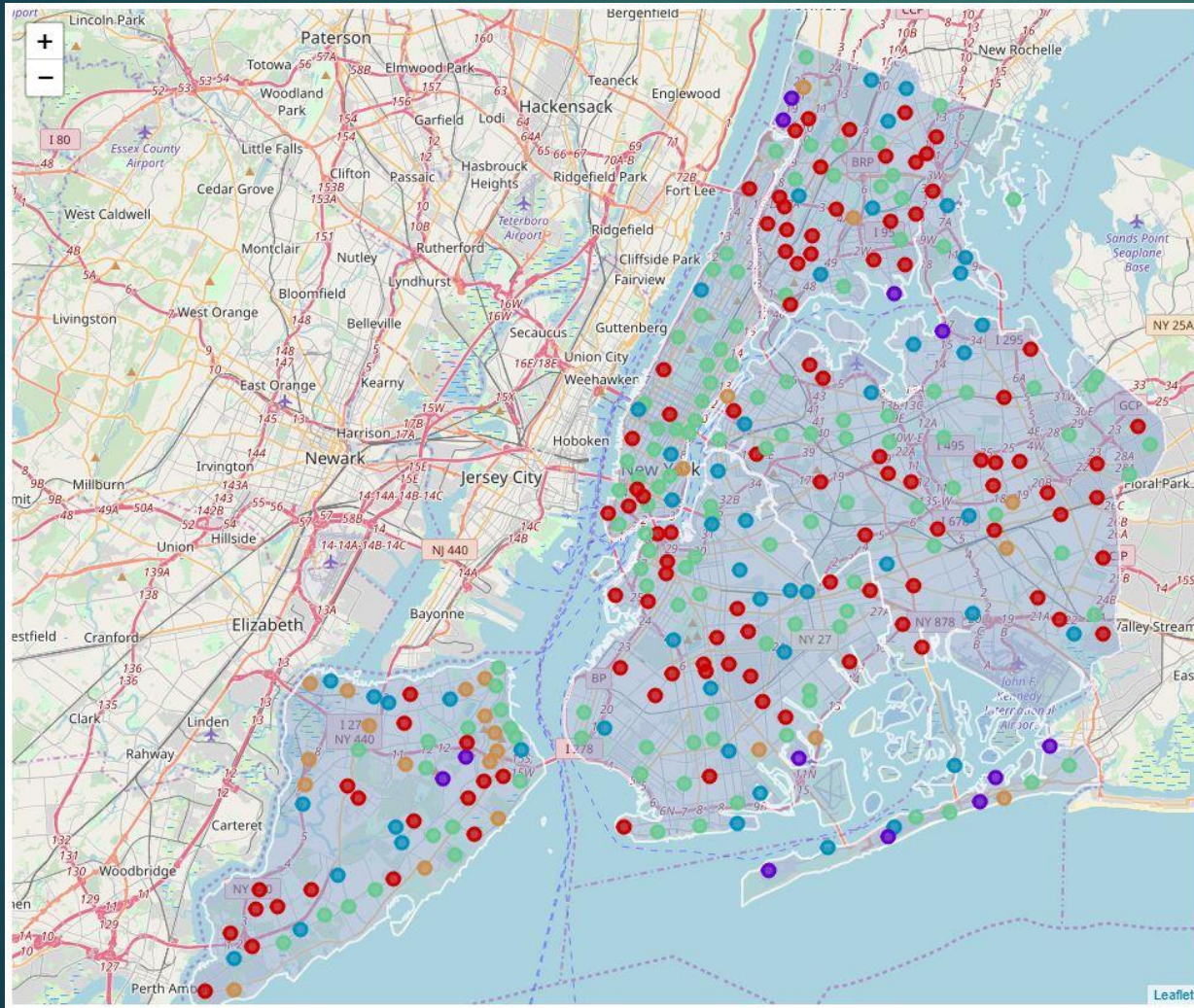
- ▶ Cluster 3 have a high share of Bars and Clubs.
- ▶ Cluster 4 have a high share of Restaurants.



# Building the City Profiles

## Classifying Neighborhoods for New York City

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This is the clusters neighborhoods color representation in the Map of Paris:

- ▶ Cluster 1 : **Red**
- ▶ Cluster 2 : **Purple**
- ▶ Cluster 3 : **Bleu**
- ▶ Cluster 4 : **Green**
- ▶ Cluster 5 : **Orange**

# Good neighborhoods for establishing new restaurant venues in Paris

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## **Most suited locations (with relative low competition and good demand):**

- ▶ BASSIN DE LA VILLETTE, ALIGRE - GARE DE LYON, SAINT - THOMAS D'AQUIN, TRIANGLE D'OR, SAINT - PHILIPPE DU ROULE, ALLERAY - PROCESSION, RENNES, HOCHÉ - FRIEDLAND, REPUBLIQUE - SAINT-AMBROISE, PLACE VENDÔME, ARCHIVES, GOUTTE D'OR - CHATEAU ROUGE, MANIN - JAURES, ECOLE MILITAIRE, ODEON, BERCY, SAINT - MERRI, ENFANTS ROUGES, ELYSEES - MADELEINE, SAINT BLAISE, AMIRAUX - SIMPLON - POISSONNIERS, MOSKOWA - PORTE MONTMARTRE - PORTE DE CLIGNANCOURT, FLANDRE - AUBERVILLIERS, SAINT - GERMAIN L'AUXERROIS, OPERA - CHAUSSEE D'ANTIN, PLACE DES FETES, BEL - AIR NORD, TERNES - MAILLOT, MASSENA - JEANNE D'ARC, SALPETRIERE - AUSTERLITZ, FAUBOURG MONTMARTRE, SAINT - PLACIDE, MOUTON - DUVERNET, ROSA PARKS - MACDONALD, GEORGES BRASSENS, LES HALLES, SAINT - GERMAIN DES PRES, LES ILES, CHAMPERRET - BERTHIER, DIDOT - PORTE DE VANVES, REUNION - PERE LACHAISE, MAIRIE, MUETTE SUD, EPINETTES - BESSIERES, VAUGIRARD - PARC DES EXPOSITIONS, NATION - PICPUS

## **Other Neighborhoods (with high demand but also high competitiveness):**

- ▶ NATIONALE - DEUX MOULINS, OLYMPIADES - CHOISY, MONTSOURIS - DAREAU, LOUIS BLANC - AQUEDUC, AUTEUIL SUD, VIOLET - COMMERCE, BATIGNOLLES - CARDINET, PORTE SAINT-DENIS - PARADIS, COURCELLES - WAGRAM, SAINT - VINCENT DE PAUL - LARIBOISIERE, BAS - BELLEVILLE, VIVIERNE - GAILLON, GROS CAILLOU, PERNETY, PEREIRE - MALESHERBES, SAINT - LAMBERT.



# Good neighborhoods for establishing new restaurant venues in New York City

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## **Most suited locations (with relative low competition and good demand):**

- ▶ Greenridge, Williamsbridge, Longwood, Edgewater Park, Broad Channel, Remsen Village, Broadway Junction, Williamsburg, Van Nest, Throgs Neck, College Point, West Brighton, Morningside Heights, Flatbush, Gramercy, Lower East Side, Richmond Valley, Elm Park, Windsor Terrace, Woodhaven, Greenpoint, Madison, Shore Acres, Bedford Stuyvesant, Long Island City, Hudson Yards, Dyker Heights, Lighthouse Hill, Briarwood, Mariner's Harbor, Roxbury, Beechhurst, Woodlawn, Richmond Town, Belle Harbor, Mount Hope, East Williamsburg, Ocean Hill, Manhattan Beach, Country Club, South Ozone Park.

## **Other Neighborhoods (with high demand but also high competitiveness):**

- ▶ Elmhurst, Paerdegat Basin, Cypress Hills, Prince's Bay, Olinville, Murray Hill, Canarsie, Floral Park, Ravenswood, Manhattanville, New Dorp, Laurelton, Hunts Point, Silver Lake, Jackson Heights, Greenwich Village, Sunnyside, Turtle Bay, Unionport, New Lots, Corona, South Side, Jamaica Hills, Midwood, Little Neck, Clinton Hill, Grant City, Chinatown, Mill Basin, University Heights, Tudor City, Bensonhurst, North Riverdale, Far Rockaway, Ridgewood, St. Albans, Annadale, Kingsbridge Heights, Manhattan Valley, East Village, Astoria, Belmont, Bronxdale, Schuylerville, Bedford Park, Bellerose, Bayside, Central Harlem, East Harlem, Manhattan Terrace, Bath Beach, Sheepshead Bay, Queensboro Hill, Great Kills, Upper West Side, Morris Park, New Dorp Beach, East New York, Oakland Gardens, Rockaway Beach, Bay Ridge



# Conclusion

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## **Assumptions made through the research**

- ▶ If there is a lot of restaurants in some area, it is probably because it exists demand in this place.
- ▶ However, the market can also be saturated, or a very expensive area - considerations that our business sponsor must take into account when deciding where he will open his new restaurant.
- ▶ The business client can safely choose one of the neighborhoods listed as best. For a more comprehensive decision, the specific venue type (if it is a Chinese restaurant, or Japanese one, etc.) can be checked - and the venue with the lowest competition can be chosen accordingly.

# Thank you for attention

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