THE BATTLE OF NEIGHBORHOODS – WHERE TO OPEN A RESTAURANT IN NEW YORK

RODRIGO QUINTELLA – July 2019

Table of contents

1. Introduction

New York (NY) is one of the richest cities in the world. Businesses easily flourish, as the population and demand for services grow. But if stakeholders plan to open a restaurant in New York City (NYC), where would be the best place ¿ There are, apparently, a lot of options due to the city's huge population and occupied area. A restaurant, though, is a serious investment and implies in heavy periodical costs and aggressive competition, so to define the right place, and additionally, the right category (e.g. Italian Food, Chinese Food) are the first steps to ensure that a dream will come true.

This report intends to explore NY's neighborhoods and to show some of their characteristics to finally suggest better places and categories to open a restaurant.

2. Business Understanding and Analytic Approach

2.1. Restaurants

"A restaurant or an eatery, is a business which prepares and serves food and drinks to customers in exchange for money. Meals are generally served and eaten on the premises, but many restaurants also offer take-out and food delivery services. Restaurants vary greatly in appearance and offerings, including a wide variety of cuisines and service models ranging from inexpensive fast food restaurants and cafeterias, to mid-priced family restaurants, to high-priced luxury establishments." (Wikipedia, 2019)

If a business like a restaurant offers such variety of alternatives, is highly recommended a thorough study before any investment is made. It's important to understand the population characteristics of the target city, as well as their preferences.

2.2. New York City

" The City of New York, usually called either New York City (NYC) or simply New York (NY), is the most populous city in the United States. With an estimated 2018 population of 8,398,748 distributed over a land area of about 302.6 square miles (784 km2), New York is also the most densely populated major city in the United States. Located at the southern tip of the state of New York, the city is the center of the New York metropolitan area, the largest metropolitan area in the world by urban landmass and one of the world's most populous megacities, with an estimated 19,979,477 people in its 2018 Metropolitan Statistical Area and 22,679,948 residents in its Combined Statistical Area. A global power city, New York City has been described as the cultural, financial, and media capital of the world, and exerts a significant impact upon commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. The city's fast pace has inspired the term New York minute. Home to the headquarters of the United Nations, New York is an important center for international diplomacy." (Wikipedia, 2019)

Geography	April 1, 2010		Population Estimate (as of July 1)								
	Census	Estimates Base	2010	2011	2012	2013	2014	2015	2016	2017	2018
New York city, New York	8,175,133	8,174,988	8,190,355	8,272,963	8,348,032	8,398,739	8,437,387	8,468,181	8,475,976	8,438,271	8,398,748

Figure 1 – New York City population by year. Source: (Fact Finder, 2019)

New York City compared

2010 Census Data	New York City	Los Angeles	Chicago	New York State	United States
Total population	8,175,133	3,792,820	2,695,598	19,378,102	308,745,538
Population, percent change, 2000 to 2010	+2.1%	+2.6%	-6.9%	+2.1%	+9.7%
Population density	27,012 /sq. mi.	8,092 /sq. mi.	11,864 /sq. mi.	408.7 /sq. mi.	87.4 /sq. mi.
Median household income (1999)	$38,293	$36,687	$38,625	$43,393	$41,994
Per capita income (1999)	$22,402	$20,671	$20,175	$23,389	$21,587
Bachelor's degree or higher	27%	26%	26%	27%	24%
Foreign born	36%	41%	21.7%	20%	13%
White	44.6%	49.8%	45.0%[42]	66.4%	72.4%
Black	25.1%	9.6%	32.9%	15.5%	12.6%
Hispanic (any race)	27.5%	48.5%	28.9%	17.3%	16.3%
Asian	11.8%	11.3%	5.5%	5.9%	4.8%

Figure 2 – New York City compared. Source: (Wikipedia, 2010)

Figure 3 – Pictures from New York City. Source: (Wikipedia, 2019)

The demand for all kinds of services is huge but the competition for customer's attention is fierce and tough. New York is a city of neighborhoods, which offers lots of business options and different demographic features. Therefore, it's of great importance to explore all the alternatives and be sure of what are the goals to run any kind of businesses there and a restaurant is not an exception.

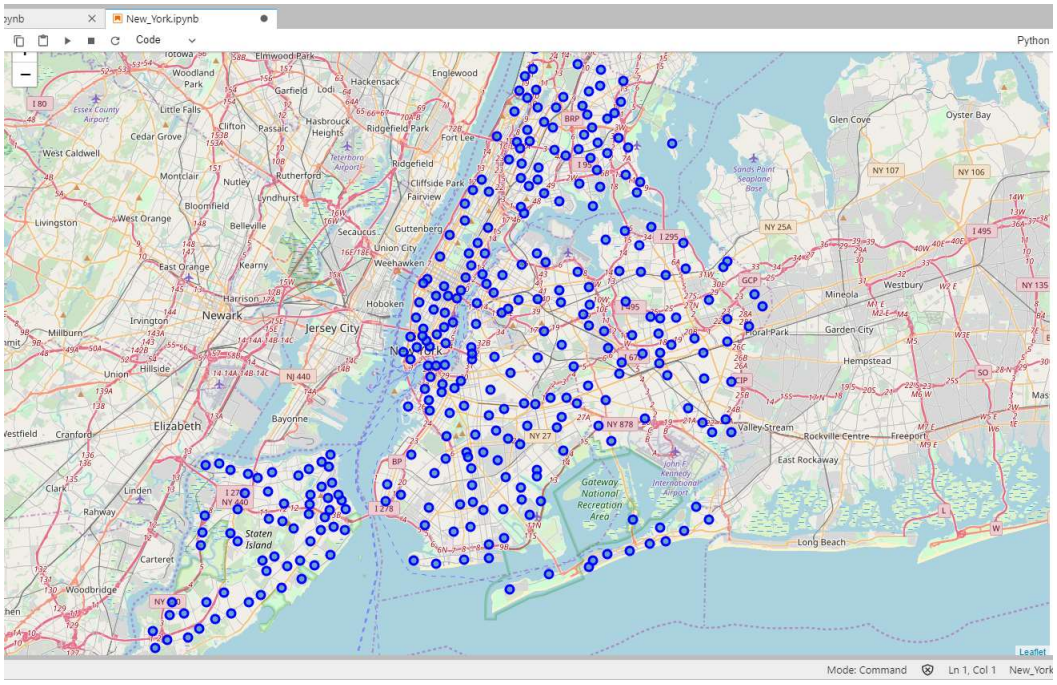

Figure 4 – Neighborhoods on New York Map. Source: Final assignment

3. Data Requirements

3.1. Geographic Data

Since the work involves to choose a place for a restaurant, it's essential to have geographic data in hands. This means to combine location coordinates with other kinds of information like population, income and so on.

Firstly, the basic information involves the New York City neighborhoods and their centroid latitude and longitude. Using the dataframe analyzed during the Capstone Project, it's possible do retrieve the necessary information.

```
[6]: neighborhoods.head()
```

[6]:

	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

Figure 5 – Initial geographic dataframe. Source: Final assignment

Then, the Foursquare tool will be necessary to explore the venues in each neighborhood. By using API queries, it's possible to aggregate venues location data and their categories, which means the kind of business of each venue (e.g. Hotel, Restaurant, School).

After retrieving the venues information and combining them with the neighborhoods data, it will be possible to filter the eatery venues and have interesting visualizations, like the different restaurant categories placed on their respective neighborhoods.

3.2. Demographic Data

To make more accurate analysis, it will be necessary to use demographic data, including population number, ethnical and income data. This information will be combined with the geographic data using the NTA (Neighborhood Tabulation Areas) codes. Since the NTA codes are not unique for each neighborhood in the basic dataframe, it will be necessary to perform some neighborhood combination by working with NTA codes geographic boundaries.

The goal of this project is to make statistical inferences in order to find correlations between population number, income, ethnical features and eatery categories in order to determine which is the best place to open a restaurant in New York. The demographic data will be downloaded from NYC Open Data website.

This study is of great interest of any stakeholder interested in investing on a restaurant in New York City.

4. References

(2010). Retrieved July 20, 2019, from Wikipedia: https://en.wikipedia.org/wiki/Demographics_of_New_York_City

(2019). Retrieved July 20, 2019, from Fact Finder: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

(2019). Retrieved July 20, 2019, from Wikipedia: https://en.wikipedia.org/wiki/Restaurant