Capstone Project - The Battle of Neighbourhoods (Week 1)

Introduction/Business Problem:

LIMIT)

As more Asians move to New York, there is an increased demand for restaurants that sell Asian food, specifically Chinese Restaurant.

If you ever tried to find a Chinese Restaurant around your neighbourhood, you would know that there aren't to many of them yet.

Thus, making this a great opportunity for entrepreneurs (target audience) looking to open a Chinese Restaurant.

In this case we will be looking at where to open a Chinese Restaurant in Manhattan, NY. **Data:**

We will be leveraging the already rich Foursquare location data, in combination with New York neighbourhood's

data(https://ibm.box.com/shared/static/fbpwbovar7lf8p5sgddm06cgipa2rxpe.json & https://geo.nyu.edu/catalog/nyu_2451_34572) to get the following features; borough, neighbourhood name, latitude and longitude coordinates

```
, by making an api call (
# create the API request URL

url =
'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={},{}&r
adius={}&llimit={}'.format(

CLIENT_ID,

CLIENT_SECRET,

VERSION,
lat,
lng,
radius,
```

make the GET request

results = requests.get(url).json()["response"]['groups'][0]['items']) to the Foursquare database to give us the following features; restaurant name, category, latitude and longitude coordinates.

Methodology:

We will be using the k-means clustering algorithm to group neighbourhoods with similar characteristics (i.e. look at neighbourhoods that already have successful (1st Most Common Venue) Chinese Restaurant and see what features they have, then look for neighbourhoods with the similar features to open a new Chinese Restaurant).

Before we can do all of this we have to load and explore the data by cleaning, defining new variables and transforming the data into a data frame. Also, one hot encoding to get the most common venues in each neighbourhood.

Results:

Manhattan, NY has two neighbourhoods, namely Chinatown and Lower East Side that already have Chinese Restaurant as the 1st Most Common Venue and they both belong to Cluster label 1/Cluster 2.

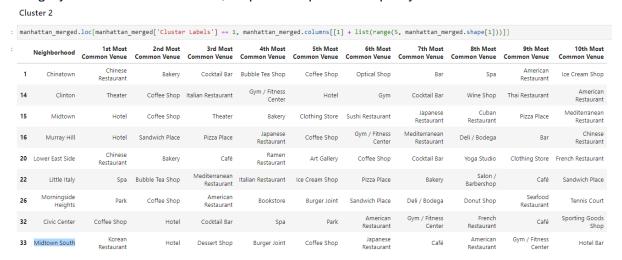


Discussion:

Even though the number of Asians moving to Manhattan, NY has increased over the years. There are still not enough Chinese restaurants around Manhattan, NY.

Thus, providing a great opportunity for entrepreneurs looking to open Chinese restaurants in neighbourhoods that belong to the same cluster as Chinatown and Lower East Side.

Look at the below neighbourhoods together with other factors such as Chinese population size in that neighbourhood, other restaurants that do not fall under the Chinese restaurant category but serve Chinese food, as potential places to open your restaurant.



Conclusion:

Neighbourhoods in Manhattan, NY that are like Chinatown and Lower East Side are the best place to open your Chinese restaurant. So, go open your restaurant in places like Clinton, Murray Hill, Midtown South etc.