**1: Introduction**

The city of New York is the most populous city and most densely populated in the United States. Being a global power city It have provides and attracted many players into the market. The city is well establish and known for its cultural, financial and media capital of the world which have significant impact on commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. We can derive from the information above that New York City is highly competitive which influence the cost of doing business over here. But it also represents the potential it may bring. Therefore any venture towards New York City have to be analysis and proper execution. The information gather from my analysis will determine and provide a good understanding of how we can strategically enter into the market, while increasing our return and reducing our risk.

**2: Business Problem**

The city of New York is known for it diverse culture that plays a crucial role in influencing to the New York City we have today. Lets say for example, the large variety of cuisine avaliable in the United States. Along with it, Boba Tea is a popular drink now a days. Having a relatively high level of profit margin, it can be a excellent business opportunity, but you need to establish yourself from other brands in order to have competitive advantage.

To plan for a Boba Tea Store, you first need to focus on the neighborhood where there is a signifcant amount of human traffic passing by for example Shoppings Malls, and Business district as this will signicantly reduce the need for marketing, as humans have a curious nature.

My partner have decided to focus on Brooklyn to open his business as Brooklyn as Brooklyn is the most populous borough of New York City, with an estimated 2,648,771 residents in 2017

Hence I focus my analysis on Brooklyn as we derive from the number of Boba Tea store are operating right in each neighborhood. Being able to open a Boba Tea Store here will assist us to attract customer and curiousity as we are not close to other places that are serving Boba Tea.

**3: Data**

I have downloaded the data of New York City, including the five boroughs and 306 neighbourhoods from the link (<https://cocl.us/new_york_dataset>). Afterwards converting the data into a pandas data frame into columns containing Borough, Neighbourhood, Latitude and Longitude.

|  | **Borough** | **Neighbourhood** | **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 | Fieldstone | 40.895437 | -73.905643 |
| **4** | Bronx | Riverdale | 40.890834 | -73.912585 |

In additional, I will utilise FourSquare API to obtain the geographical coordinates of information of the various venues in the neighbourhood belonging to the Borough.

**4: Methodology**

I will be utilising what I have learn on the previous chapter taught in the lab. Where I uses the FourSquare API to obtain the information as shown below.

|  | **Neighbourhood** | **Neighbourhood Latitude** | **Neighbourhood Longitude** | **Venue** | **Venue Latitude** | **Venue Longitude** | **Venue Category** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | Bay Ridge | 40.625801 | -74.030621 | Vivi Bubble Tea | 40.621969 | -74.025889 | Bubble Tea Shop |
| **1** | Bay Ridge | 40.625801 | -74.030621 | Coco fresh teA | 40.621193 | -74.026464 | Bubble Tea Shop |
| **2** | Bay Ridge | 40.625801 | -74.030621 | Cheesecake Diva | 40.632288 | -74.027103 | Dessert Shop |
| **3** | Bay Ridge | 40.625801 | -74.030621 | Kung Fu Tea | 40.620819 | -74.026521 | Bubble Tea Shop |
| **4** | Bensonhurst | 40.611009 | -73.995180 | G & J Bubble Tea | 40.613322 | -74.000761 | Bubble Tea Shop |

**5: Results**

K-Mean Clustering was use to cluster areas with fewer number of Boba Tea Store.

Cluster 1

|  | **Neighbourhood** | **1st Most Common Venue** | **2nd Most Common Venue** | **3rd Most Common Venue** | **4th Most Common Venue** | **5th Most Common Venue** | **6th Most Common Venue** | **7th Most Common Venue** | **8th Most Common Venue** | **9th Most Common Venue** | **10th Most Common Venue** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **13** | Prospect Heights | Vietnamese Restaurant | Bubble Tea Shop | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |
| **18** | Brooklyn Heights | Bubble Tea Shop | Vietnamese Restaurant | Juice Bar | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |
| **19** | Cobble Hill | Bubble Tea Shop | Vietnamese Restaurant | Juice Bar | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |
| **20** | Carroll Gardens | Vietnamese Restaurant | Bubble Tea Shop | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |

**Cluster 2**

|  | **Neighbourhood** | **1st Most Common Venue** | **2nd Most Common Venue** | **3rd Most Common Venue** | **4th Most Common Venue** | **5th Most Common Venue** | **6th Most Common Venue** | **7th Most Common Venue** | **8th Most Common Venue** | **9th Most Common Venue** | **10th Most Common Venue** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **8** | Flatbush | Juice Bar | Vietnamese Restaurant | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bubble Tea Shop | Bakery | American Restaurant |
| **46** | Midwood | Juice Bar | Vietnamese Restaurant | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bubble Tea Shop | Bakery | American Restaurant |
| **47** | Prospect Park South | Juice Bar | Vietnamese Restaurant | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bubble Tea Shop | Bakery | American Restaurant |
| **54** | Ditmas Park | Juice Bar | Vietnamese Restaurant | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bubble Tea Shop | Bakery | American Restaurant |

**Cluster 3**

|  | **Neighbourhood** | **1st Most Common Venue** | **2nd Most Common Venue** | **3rd Most Common Venue** | **4th Most Common Venue** | **5th Most Common Venue** | **6th Most Common Venue** | **7th Most Common Venue** | **8th Most Common Venue** | **9th Most Common Venue** | **10th Most Common Venue** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | Bay Ridge | Bubble Tea Shop | Dessert Shop | Vietnamese Restaurant | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Café | Bakery | American Restaurant |
| **1** | Bensonhurst | Bubble Tea Shop | Tea Room | Frozen Yogurt Shop | Bakery | American Restaurant | Vietnamese Restaurant | Juice Bar | Japanese Restaurant | Dessert Shop | Café |
| **2** | Sunset Park | Bubble Tea Shop | Tea Room | Dessert Shop | Café | Vietnamese Restaurant | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Bakery | American Restaurant |
| **3** | Greenpoint | Bubble Tea Shop | Vietnamese Restaurant | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |
| **15** | Williamsburg | Bubble Tea Shop | Vietnamese Restaurant | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |

**Cluster 4**

|  | **Neighbourhood** | **1st Most Common Venue** | **2nd Most Common Venue** | **3rd Most Common Venue** | **4th Most Common Venue** | **5th Most Common Venue** | **6th Most Common Venue** | **7th Most Common Venue** | **8th Most Common Venue** | **9th Most Common Venue** | **10th Most Common Venue** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **65** | Dumbo | Vietnamese Restaurant | Tea Room | Juice Bar | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bubble Tea Shop | Bakery | American Restaurant |

**Cluster 5**

|  | **Neighbourhood** | **1st Most Common Venue** | **2nd Most Common Venue** | **3rd Most Common Venue** | **4th Most Common Venue** | **5th Most Common Venue** | **6th Most Common Venue** | **7th Most Common Venue** | **8th Most Common Venue** | **9th Most Common Venue** | **10th Most Common Venue** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **62** | Vinegar Hill | Juice Bar | Bubble Tea Shop | Vietnamese Restaurant | Tea Room | Japanese Restaurant | Frozen Yogurt Shop | Dessert Shop | Café | Bakery | American Restaurant |

Based on the above analysis perform, Cluster 2 areas are the ideal places to open a Boba Tea Store in Brooklyn due to less competition.

**6: Conclusion**

The goal of this project was achieved, to open a Boba Tea Store in Cluster 2 where competition is not as steep compared to another neighbourhood. However, due to the lack of data and not physically being able to Reece the area. But this proposal is equipped with the necessary information to allow to you to determine the potential of the area while there is always room for discussion.