

Data:

Following datasets are used for the analysis

1. Borough and Neighborhood Data:

We use a free online dataset that has the latitude and longitude coordinates for all neighborhoods in the 5 New York borough. The source of the dataset is: https://geo.nyu.edu/catalog/nyu_2451_34572

2. Population Projection by Age Group:

The target demographic for the pre-school and after-school care business is children under 9 years of age. We need to understand what are the growth projections for this target demographic for each borough to focus our analysis in the areas where there is growth. The dataset for the population projection is obtained from the following source:

<https://data.cityofnewyork.us/City-Government/Projected-Population-2010-2040-Total-By-Age-Groups/97pn-acdf>

Following is a snapshot of the data:

	Borough	Age	2020	2025	2030	2035	2040
0	Bronx	0-4	109972	111127	110880	110982	112571
1	Bronx	5-9	105775	109843	111137	110893	110942
2	Brooklyn	0-4	186886	184273	182152	182974	186465
3	Brooklyn	5-9	180252	182013	179508	177289	178081
4	Manhattan	0-4	82096	83225	80452	77272	76687
5	Manhattan	5-9	68243	72011	72942	69971	66801
6	Queens	0-4	138141	139574	139958	140733	142459
7	Queens	5-9	132342	133933	135413	135764	136512
8	Staten Island	0-4	28683	29137	28984	28562	28244
9	Staten Island	5-9	29394	29890	30397	30253	29816

3. New York City Pre-Schools:

We need to map the existing pre-schools and child care services in New York City. We will use the Foursquare API query pre-schools in each neighborhood and use the information to create clusters. Following is an example of the data obtained from the Foursquare API:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Wakefield	40.894705	-73.847201	Anna's Group Family Daycare and Preschool	40.8875	-73.8507	Daycare
1	Wakefield	40.894705	-73.847201	Tender Tots Day Care, Preschool & After School...	40.877	-73.8728	Daycare
2	Wakefield	40.894705	-73.847201	The Lifeskills Preschool	40.8636	-73.8341	Nursery School
3	Co-op City	40.874294	-73.829939	The Lifeskills Preschool	40.8636	-73.8341	Nursery School
4	Co-op City	40.874294	-73.829939	Anna's Group Family Daycare and Preschool	40.8875	-73.8507	Daycare