ANALYSIS OF BROOKLYN NEIGHBORHOODS

Deciding where to open a new vegetarian/vegan restaurant

- New food habits all around the world → More demand for vegetarian and vegan restaurant options

- Numerous new restaurants are closing within a year time of opening

- GOAL: evaluation of different neighborhoods in Brooklyn, NY to determine the most suitable for the opening of a new vegetarian/vegan restaurant

- Interested parties: people in the restaurant business

INTRODUCTION AND PROBLEM DEFINITION

- Data Source: Foursquare data and web available data about new york boroughs and neighborhoods

- Data cleaning:

  - Filtering of New York dataset to obtain only Brookyn data

  - Extraction of Foursquare data on Brooklyn neighborhoods, for top venues and location data

DATA ACQUISITION AND CLEANING

- Brooklyn dataset used to get Frousquare dataset

- Calculation of correlation between the presence of vegetarian/vegan restaurants and other venue categories

- Clustering of the neighborhoods to find the ones with the appropriate target venues

- Analysis of each clustering to select the right one

METHODOLOGY

RESULTS

▶ Calculation of correlation:

The highest correlation obtained with the presence of vegetarian/vegan restaurants are gymnastic gym.

Other correlation values are not significant enough to select target venues this way.

	var1	var2	corr
59608	Gymnastics Gym	Vegetarian / Vegan Restaurant	0.810471
59167	Indie Theater	Vegetarian / Vegan Restaurant	0.568921
59163	Taiwanese Restaurant	Vegetarian / Vegan Restaurant	0.568921
59145	Lebanese Restaurant	Vegetarian / Vegan Restaurant	0.568921
59142	Laundry Service	Vegetarian / Vegan Restaurant	0.568921
59127	Gay Bar	Vegetarian / Vegan Restaurant	0.568921
59116	Polish Restaurant	Vegetarian / Vegan Restaurant	0.568921
59109	Nightclub	Vegetarian / Vegan Restaurant	0.568921
59096	Used Bookstore	Vegetarian / Vegan Restaurant	0.568921
58977	Concert Hall	Vegetarian / Vegan Restaurant	0.533997
58958	Bar	Vegetarian / Vegan Restaurant	0.525782
58879	French Restaurant	Vegetarian / Vegan Restaurant	0.489069
58577	Mexican Restaurant	Vegetarian / Vegan Restaurant	0.449413
58558	Coffee Shop	Vegetarian / Vegan Restaurant	0.439713
58331	Thrift / Vintage Store	Vegetarian / Vegan Restaurant	0.408870
58275	Record Shop	Vegetarian / Vegan Restaurant	0.399696
58078	Karaoke Bar	Vegetarian / Vegan Restaurant	0.387090
58070	Beer Store	Vegetarian / Vegan Restaurant	0.387090
57864	Cocktail Bar	Vegetarian / Vegan Restaurant	0.361756

- Nearest-neighbor clustering : 6 clusters of neighborhoods

Cluster 1: a single neighborhood cluster, combining a lot of types of restaurants (Turkish, sandwich place, pizza, Russian, Chinese, etc.).

Cluster 2: four neighborhoods, with tops venues that are either banks, pizza places, Asian restaurants or pharmacy.
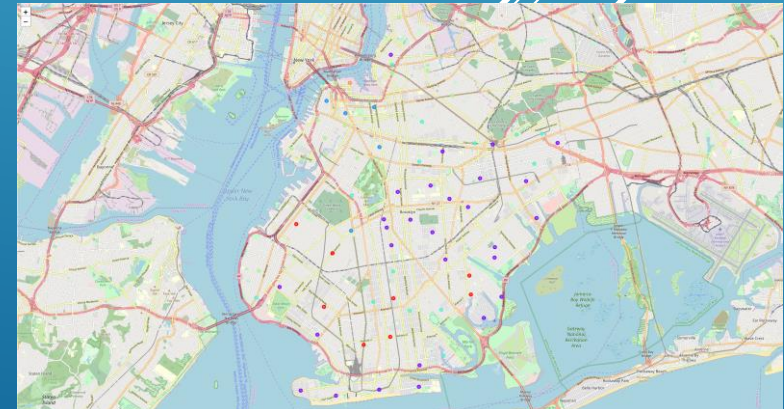
Cluster 3: 35 neighborhoods cluster, mostly exotic restaurants (Thai, Japanese, Chinese) but also a lot of different places for coffee or quick food stops.

Cluster 4: 17 neighborhoods cluster, the mains venues of the top five are spas, pizza places and bars.

Cluster 5: 10 neighborhoods cluster. Coffee shops, Caribbean restaurants, ice cream shops, donut shops and pizza places are the most present venues in the top five.

Cluster 6: 3 neighborhoods cluster. All three have a yoga studio in the top five venues as a common denominator.

RESULTS

- No Correlation between vegetarian/vegan restaurants and other venues

- Hypothesis: vegetarians or vegans tend to like certain lifestyles and the other way around, people that like certain activities like vegetarian food more than others

- New target venues: Yoga Studios, Pilates Studios, Art venues, sports venues

- **Cluster 6** → common venue = Yoga Studios, cluster of choice

DISCUSSION

- **Brooklyn Heights** :
    1. Most popular venue = Yoga Studio
    2. In the first five venues : a park (jogging and outside activities), a coffee shop, a scenic lookout and a pet store.
    3. In the ten most popular venues : a pilates studio
    4. In 15 top venues, only three are restaurants and none are vegetarian or vegan restaurant
- **Clinton Hills** :
    1. Yoga Studio as the third top venue of the neighborhood
    2. In the top 5, three venues are restaurants → already some competition
    3. In top 15 venues, 8 of the venues in total are restaurants and without other types of venues that we are targeting here.
- **Dumbo** :
    1. Most popular venue = Yoga Studio
    2. Second most popular venue is an Art gallery (target venue)
    3. In the top : an Antique Store and a Bookstore, attracting artistic and hipster clientiele.
    4. A Boxing Gym, Gym and a Climbing Gym present
    5. The only options for food in the top venues are a Bakery, a Salad Place and a Sandwich place

DISCUSSION

Based on clustering and data analysis of the venues of all Brooklyn neighborhoods, the recommended neighborhood for the openning of a vegetarian/vegan restaurant is **Dumbo.**

CONCLUSION