

Capstone Project - The Battle of Neighborhoods REPORT



Background

For the entrepreneur, New York offers a stable environment, a large economy, and access to one of the world's busiest regions. Small business owners in the state don't expect that to change and are largely optimistic about what the future holds. That means plenty of business opportunity, in New York City neighborhood. New Yorkers are, on average, wealthier than their national counterparts as well, meaning more money to spend on the goods and services small businesses have to offer. However, the heightened cost of living can prove difficult to manage. Still, entrepreneurs said that if they can overcome the steep expenses associated with payroll and rent, not to mention a tangled web of taxes and fees, operating in New York is an investment that pays off in the end. Starting a new business in New York City will be a tough work.

Problem

One of the biggest challenges for any New York City business is going to be the wide array of competition. In a city of eight million plus, there is going to be competition around every corner. The New York City market has become overly saturated in almost every single industry from doctor practices to restaurants. Businesses now have to go beyond just serving their customers and focus on marketing and reputation in order to improve customer acquisition and grow their businesses. With Queens having one of the most diverse places in the nation. Half of the neighborhood's residents speak Spanish. Others speak Chinese, Urdu, Hindi, Russian, Portuguese, Greek or Korean. Altogether, the neighborhood is said to be the home of 167 languages. It will be a challenges on what business to start and offer these culture diverse in one of the five boroughs of New York City with it having the largest borough geographically.

Solving the Problem Using Data Science

To solve the existing problems, we will recommend to new business by collecting location data from Foursquare and apply data science techniques and tools. We are going to cluster New York neighborhoods in order to find existing business establishments and venues in order to scope out the competition and create a new trendy business

Data section

We extracted the ZIP Code Definitions of New York City Neighborhoods which is available from <https://www.health.ny.gov/statistics/cancer/registry/appendix/neighborhoods.htm>. Created a csv file and uploaded to own server. To explore and target recommended locations across different venues according to the presence of amenities and essential facilities, we will access data through FourSquare API interface and arrange them as a dataframe for visualization. By merging data on New York City Zip Codes by neighborhood and data on venues and essential facilities surrounding such properties from FourSquare API interface.

Methodology

1. Collect Data
2. Explore and Understand Data
3. Data Preparation and Preprocessing
4. Modeling

Results and Discussion

All clusters have 20 restaurants and food places on the area that caters to specific cuisines.

Cluster 1 has 1 neighborhood with 3 restaurants as common venues and 2 stores.

Cluster 2 has 6 neighborhoods with 13 diverse food places and restaurants but has different types of stores.

Cluster 3 has 1 neighborhood with 2 restaurants and food places has a bus station

Cluster 4 has 1 neighborhood with 1 restaurant a supermarket and a bus station.

Cluster 5 has 1 neighborhood with 2 restaurants as common venues a hotel and a stadium.

The geographic location does give us a decent view on where to open the new businesses as the thought is to begin with there are a lot of restaurants and cater to the diverse culture of the borough. It looks like the neighborhood of Cluster 1 are the greater ones and the vast majority of the neighborhood of Cluster 2 are progressively based on the number of neighborhood.

Conclusion

The KMeans classification technique gives a new entrepreneur a good idea on what type of trendy business he/she can start with based on the type of venues identified using Foursquare api.

Anyway this sort of examination does not particularly recognize the best neighborhood to begin new business however it gives a really smart that it thought of how the neighborhood inside Queens can be sectioned dependent on the criteria set forward by the financial specialist. This will keep the financial specialist of opening 2 shops in a similar kind of neighborhood, having a similar type that will be adjacent to each other.