**Analysis of the Distribution of Financial Institutes in Brooklyn, NY.**

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1. Background

Banks are financial institutions play very important roles in the society by rendering various services to people and businesses. They not only keep the money safe by borrowing customer money but also provide lending services in terms of loans which are very important for expanding businesses, higher education, health and so on. Therefore they contribute immensely for the economy of the society. It would be interesting to look at the distribution of banking systems in different neighborhoods in the New York city to gain various insights that can in tern benefit the public. There are five main Boroughs in New York city namely Bronx, Brooklyn, Manhattan, Queens and Staten Island. Manhattan has the highest Gross Domestic Product (GDP) and the highest per capita (PC) out of the five. Brooklyn which is the most populated borough has a significantly less GDP (third highest) and a low PC. Since 2010 Brooklyn has evolved a lot with many amusements parks, marine parks and technological advances. So in this research project the main idea is to look into different boroughs in new York city and identify the areas which are strong in economic sense and the areas that need more attention in terms of finances. For city authorities It helps them determine which areas are more richer in an economical perspective just by looking at the information on how financial institutes are distributed and accessible to people. For the neighborhoods that Lack sufficient number of banking systems may require the attention of the city/state authorities not only because that makes the lives of the citizens less comfortable but also it is a key factor that predicts which areas need their attention to allocate more fundings for the development of the society. On another note it would be beneficial for the bank owners to look in to these information as it would yield them to gain insight as to where would be a better place to open a new branch. In today’s competitive economy it would be very interesting for different banks to look at this information to see which areas they need to have more coverage specially when their competitors already have branches and when they don’t It would be a setback for them as more customers get used to going to the ones that were there established for a longer period of times than the new ones. It is important in this perspective to be the first and especially in areas there are no banks would be ideal.

Data Requirement and Manipulation

In order to address the above mentioned research problem there are two types of data that we need to collect. Firstly and fore mostly we need the geographical data of the new York city. It is vital that we have all the information needed regarding the different borrows and neighborhoods in the New York city. This information can be found at <https://geo.nyu.edu/catalog/nyu_2451_34572> for free. The .jason file can be found at <https://cocl.us/new_york_dataset>.

It is also necessary to use the Foursquare API to request information on neighboring venues which are banks in this project to see how many and the density of the fanatical institutes in the neighborhoods of Brooklyn.

Upon preliminary investigations of the results it was apparent that there are 70 neighborhoods in the Brooklyn borough, 81 in Queens, 52 in Bronx, 63 in Staten Island and only 40 in Manhattan which is the smallest out of all the five. The next step is to find out how many financial institutes are present in each Borough. Latitude and Longitude values are needed for each neighborhood and the radius is defined for each neighborhood as 500 m2. For each neighborhood within this range of distance it is expected to request the information regarding the venues present in turn we can determine how many banks are present for each neighborhood and we can sum it up to find the total for the overall borough.