IBM Applied Data Science Capstone

Restaurant Analysis in Charlotte, NC, USA

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1. Introduction

1.1 Background

Charlotte, North Carolina is a growing city with approximately 873,000+ residents residing in its many neighborhoods. In recent years Charlotte has seen a dramatic increase in population dude to becoming a new banking capitol attracting many businesses to the city. With this surge in business, Charlotte has become a diverse city home to many restaurants of various cuisines with newer restaurants opening frequently. Thanks to apps such as UberEats, DoorDash, Postmates, etc. it has never been easier to enjoy these restaurants from the comfort of your home especially during Covid-19 pandemic where the safest measures are social distancing and enjoying these meals at one's home.

1.2 Business Problem

For consumers looking to enjoy a variety of options for cuisines moving to Charlotte and for entrepreneurs looking to open business in this city, can we determine what areas in the city are hot spots for multinational cuisine and locations in need of more variety using data driven analysis?

2. Data

2.1 Data Preparation

The Data Necessary to complete this project is as follows:

- Neighborhood Data for Charlotte NC
    - This was procured from Wikipedia from the following site: https://en.wikipedia.org/wiki/Category:Neighborhoods_in_Charlotte,_North_Carolina using the BeautifulSoup package
    - Then take some necessary steps to clean the data so that only the names of each neighborhood remain
- Geographical Coordinate Data for each of the Neighborhoods

    - Using the geocoder package we are able to procure each of the Longitude and Latitudes for the perspective Neighborhoods
    - Then attach this location data to the existing Neighborhoods dataframe so now we have three columns; Neighborhood, Latitude, Longitude
- Restaurant Venue Data based on Neighborhoods
    - This where the API use comes into play as we use our developer credential to make a GET request for restaurant venues by specifying the categoryId for food: “4d4b7105d754a06374d81259” as well as setting a custom radius and limit of results
    - After this API call we now have a dataframe with 480 venues denoted with their perspective venue category and neighborhood location