The Battle of Neighborhoods Report

By Kam Hin Ho

1. Introduction
   1.1. Background

   The University of Maryland, Baltimore County (often referred to as UMBC) is a public research university in Baltimore County, Maryland. It has a fall 2018 enrollment of 13,767 students, 48 undergraduate majors, over 60 graduate programs (36 master, 24 doctoral, and 17 graduate certificate programs) and the first university research park in Maryland.

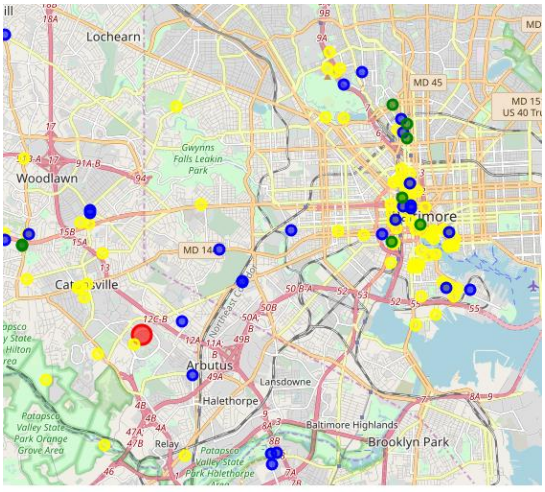
   1.2. Problem

   Location for opening a new restaurant is critical to a business. This project aims to provide a recommended area around UMBC for opening the new Korean restaurant. The result is also applicable to other restaurant types as well.
2. Data acquisition and cleaning
   2.1. Data sources

   Foursquare data will be used to get information on venues near UMBC, such as location information, categories, and business information.

   2.2. Data cleaning

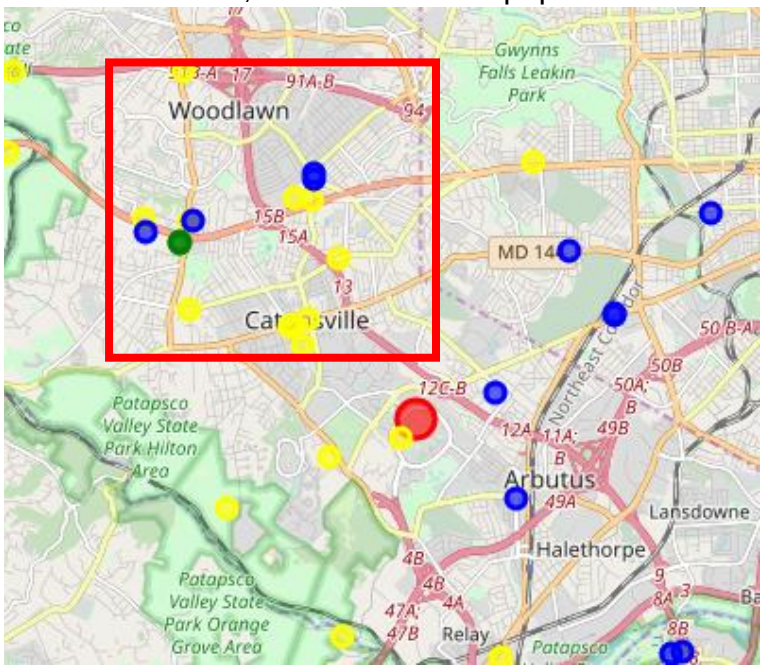
   Data downloaded from foursquare were combined into one data frame. There are some irrelevant venue data was included, such as church. Therefore, the irrelevant venue data was dropped and extract the location related data. Also, we downloaded top 100 popular locations within 8 miles of UMBC. The dataset was structured, and it doesn't have any problems. After data cleaning, there are total 17 Korean restaurants, and total 50 restaurants within the radius of 8 miles from UMBC.
3. Exploratory Data Analysis
   3.1. UMBC, The Korean restaurants, other restaurants, and top 100 popular venues were plotted on a map using folium library. It is indicated with red for UMBC, green for potential Korean restaurant, blue for potential restaurant competitors, and yellow for top 100 popular venues.



   3.2. Findings

   We noticed downtown Baltimore area has a lot of popular venues along with relatively higher competitions and longer distance from UMBC. On the other hand, the result shows that the density of competition around Woodlawn and

Catonsville area is relatively low with enough popular venues around. As a result, it is recommended to open a new restaurant/Korean restaurant around Catonsville and Woodlawn area because of the relatively low competition, shorter distance from UMBC, and existence of popular venues nearby.



4. Conclusions

   In this project, we have performed data collection, data cleaning, exploratory data analysis and visualization using library and database such as Foursquare and Folium. Based on competition, number of surrounding popular attractions, the distance between UMBC and the target are, the area between Woodlawn and Catonsville are considered as the best area within 8 miles of UMBC.