Identify Location for Gourmet Bakery

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Introduction

Blue's Bakery is a successful gourmet cookie business located in Mooresville, North Carolina. The owner would like to expand into the neighboring Charlotte area market, which is composed of several different communities. The owner would like to identify the ideal market for the business. Using demographic and venue information, a suitable neighborhood/community and location will be recommended.

Business Problem

Blue's Bakery has a loyal following within its community but believes that there is a larger opportunity within the Charlotte market, which is a much larger, neighboring community about 20 miles south of the current location. To expand the business, a suitable location must be identified. Based on the current business and trends, an ideal location would be one with a higher than average concentration of performing arts venues, parks, and daycares. Also, the median household income should be above the regional average. The location should be in an area that has existing similar and complimentary businesses, such as coffee shops, ice cream shops, bakeries, pie shops, cupcake shots, and donut shots, but areas with significant market saturation should be avoided.

Data

There are two primary data sources that will be needed. The zip code data with the associated latitude and longitude, and the household income information for each zip code. That data will be obtained from the following source: http://zipatlas.com/us/nc/charlotte/zip-code-comparison/median-household-income.htm. I will also use Foursquare data to determine the types of venues in each zip code.

Methodology

After importing the detailed zip code data into a dataframe, I will look at the median household income for each area. Within this data, I will exclude all zip codes where the median household income is 20% or more below the state average since gourmet cookies are a non-essential/luxury food item.

Then, using the Foursquare API and the the latitude and longitude data for each zip code and a radius of 5000 meters (3.1 miles), each area will be analyzed to determine the types of venues within the area. Using the specific venue information, I will find and calculate the mean of the frequency for each category. Ranking the venue information will provide

information on what kinds of venues currently exist within each area and their relative prevalence. From this data, combined with the income data, a suitable location will be determined.

Results

Using BeautifulSoup, I was able to import zip code, income, and location data from http://zipatlas.com/us/nc/charlotte/zip-code-comparison/median-household-income.htm into a dataframe for further cleaning, refinement, and analysis.

	Zip Code	Location	City	Population	Avg. Income	National Rank
1	28277	35.053275, -80.816601	Charlotte, North Carolina	33,905	$86,713.00	#568
2	28207	35.194148, -80.824585	Charlotte, North Carolina	8,691	$84,232.00	#650
3	28270	35.114865, -80.761718	Charlotte, North Carolina	25,941	$76,795.00	#998
4	28278	35.130547, -81.002682	Charlotte, North Carolina	6,175	$71,420.00	#1,373
5	28226	35.102650, -80.822144	Charlotte, North Carolina	35,311	$68,636.00	#1,676

The first refinement that I made was to remove all rows where the average income, as measured by the median household income, was less than 80% of the state average. According to the Census Bureau (https://www.census.gov/quickfacts/NC), the median household income in 2019 in North Carolina was $54,602, so 80% is $43,681. Within the data, that leaves just 14 potential areas, as shown below:

	Zip Code	Location	City	Population	Avg. Income	National Rank
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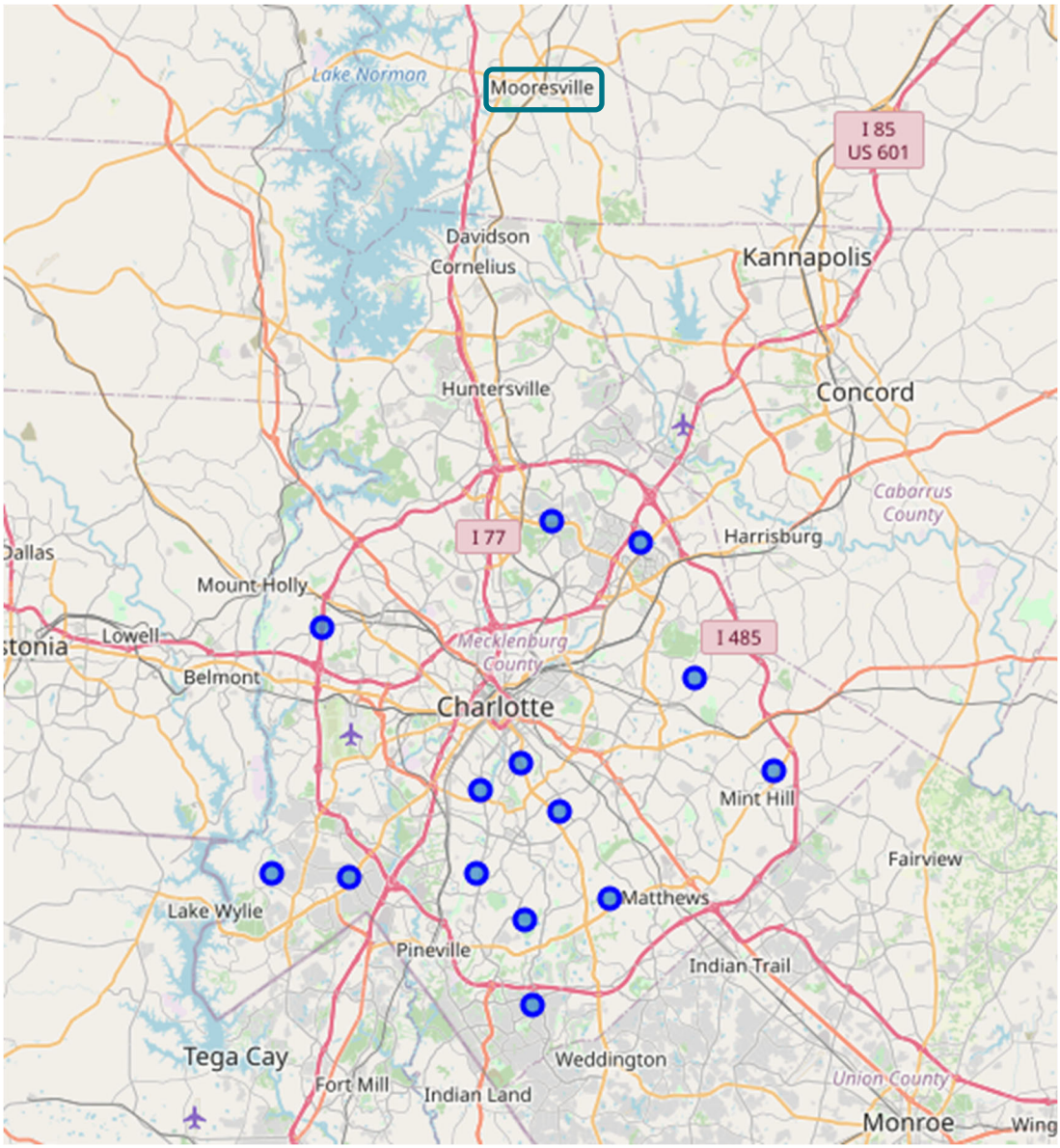
5	28226	35.102650, -80.822144	Charlotte, North Carolina	35,311	$68,636.00	#1,676
6	28211	35.166342, -80.797285	Charlotte, North Carolina	27,757	$62,371.00	#2,488
7	28269	35.334508, -80.803461	Charlotte, North Carolina	42,356	$61,899.00	#2,583
8	28273	35.127365, -80.946828	Charlotte, North Carolina	18,281	$56,437.00	#3,769
9	28210	35.129916, -80.856206	Charlotte, North Carolina	40,857	$52,286.00	#4,944
10	28227	35.189404, -80.645488	Charlotte, North Carolina	39,535	$51,189.00	#5,402
11	28262	35.322061, -80.739981	Charlotte, North Carolina	18,168	$50,538.00	#5,682
12	28214	35.272414, -80.967036	Charlotte, North Carolina	20,811	$49,534.00	#6,112
13	28215	35.243457, -80.701067	Charlotte, North Carolina	41,259	$46,729.00	#7,379
14	28209	35.178714, -80.853985	Charlotte, North Carolina	19,759	$46,175.00	#7,676

Next, I wanted to visualize where these zip codes were in the Charlotte area. Since the existing business is north of Charlotte, I wanted to ensure that the new location is far enough from the existing location so that customers do not migrate away from the existing business to the new business, allowing the business to attract new customers.

I plotted the locations of each zip code on a map.



Mooresville, the location of the existing store is shown on the map, directly north of Charlotte. The closest Charlotte zip code – 28269 is more than 20 miles from the current location, so there is little reason for concern that existing customers would migrate to the new location.

Using Foursquare data, I was able to generate a chart that shows the top ten venues by type for each zip code. Using this data, I was able to analyze the proximity to desirable venues, such as parks, daycares, and performing arts venues. Customers visiting these kinds of places, often buy cookies at the current shop (e.g., to enjoy at the park, for parties at daycare, and after performances). These are circled in blue in the chart that follows. Another consideration is proximity to similar, complimentary established businesses, proving that the area can support businesses selling luxury/non-essential food items.

These are circled in red in the chart that follows. The 10 most common venues by zip code is shown below:

	Zip Code	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	28207	American Restaurant	Pizza Place	Park	Bakery	Grocery Store	Peruvian Restaurant	Mexican Restaurant	Italian Restaurant	Southern / Soul Food Restaurant	Brewery
1	28209	Brewery	American Restaurant	Mediterranean Restaurant	Mexican Restaurant	Park	Burger Joint	Pizza Place	Bakery	BBQ Joint	Italian Restaurant
2	28210	American Restaurant	Mexican Restaurant	Furniture / Home Store	Clothing Store	Steakhouse	Department Store	Pizza Place	Chinese Restaurant	Mediterranean Restaurant	Sporting Goods Shop
3	28211	American Restaurant	Pizza Place	Mexican Restaurant	Steakhouse	Furniture / Home Store	Clothing Store	Department Store	Toy / Game Store	Grocery Store	Shopping Mall
4	28214	Gas Station	Pizza Place	Hotel	Convenience Store	Supermarket	Sandwich Place	Discount Store	Fast Food Restaurant	Pharmacy	Gastropub
5	28215	Pizza Place	Fast Food Restaurant	Discount Store	Convenience Store	Supermarket	Gas Station	Video Store	Chinese Restaurant	Fried Chicken Joint	Sandwich Place
6	28226	Pizza Place	Chinese Restaurant	Golf Course	Supermarket	Grocery Store	Japanese Restaurant	Mexican Restaurant	American Restaurant	Deli / Bodega	Cosmetics Shop
7	28227	Fast Food Restaurant	Pizza Place	Discount Store	American Restaurant	Sandwich Place	Convenience Store	Supermarket	Pharmacy	Ice Cream Shop	Gas Station
8	28262	Gym	American Restaurant	Coffee Shop	Sandwich Place	Bakery	Hotel	Ice Cream Shop	Furniture / Home Store	Fast Food Restaurant	Mexican Restaurant
9	28269	Pizza Place	Gym	Coffee Shop	Sandwich Place	Chinese Restaurant	Ice Cream Shop	Fast Food Restaurant	Trail	Supermarket	American Restaurant
10	28270	American Restaurant	Park	Mexican Restaurant	Pizza Place	Fast Food Restaurant	Grocery Store	Supermarket	Donut Shop	Ice Cream Shop	Clothing Store
11	28273	Theme Park Ride / Attraction	Pizza Place	Hotel	Grocery Store	Sandwich Place	Mexican Restaurant	American Restaurant	Fast Food Restaurant	BBQ Joint	Italian Restaurant
12	28277	Grocery Store	Pizza Place	American Restaurant	Breakfast Spot	Supermarket	Burger Joint	Seafood Restaurant	Cosmetics Shop	Golf Course	Pharmacy
13	28278	Sandwich Place	Pizza Place	Coffee Shop	Department Store	Discount Store	Pharmacy	Grocery Store	Fast Food Restaurant	Furniture / Home Store	Spa

Discussion

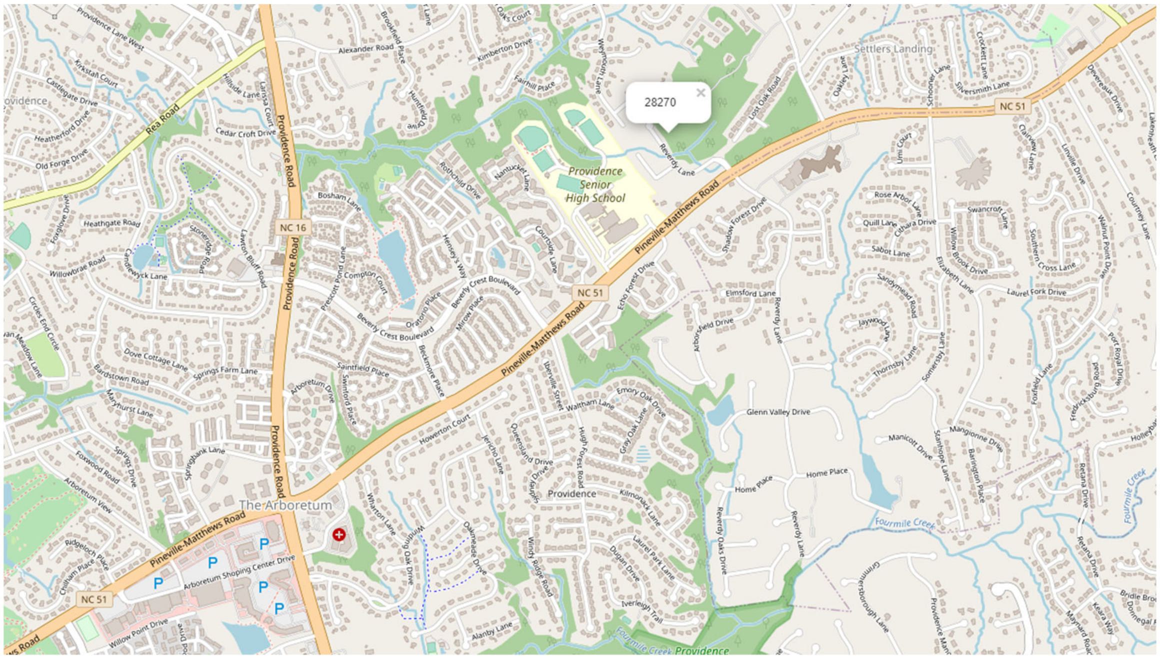
From the venue data, I can see that within the zip code 28270, the 2nd most common venue is Parks. Also, the 8th and 9th most popular venues are Donut Shops and Ice Cream Shops. No other zip code has more than one match to either the proximity to desirable venues or proximity to similar businesses.

Within the income data, the 28270 zip code ranks 3rd among Charlotte area zip codes and 998th in the nation, ranking it nationally at 2.3% - meaning that the median household income is greater in than in 97.3% of all other zip codes. The median household income for this area is $76,795, 34% above the median household income for the state. This means that there is sufficient disposable income to support luxury/non-essential purchases. This is further proven out by the prevalence of donut and ice cream shops within the area.

Recommendation

Based on the analysis above, the best zip code for the new business is 28270. This location has multiple parks and supports multiple donut and ice cream shops. Further, the median household income for this area is well above both the state and national average. This location in south Charlotte has concentrated residential areas and a nearby large public high school with over 2,000 students. The map below shows the concentration of neighborhoods. The location is 38 miles away from the current location, so there would be little to no customer overlap.

In looking at the area and neighborhoods, the Arboretum shopping center (red dot) may be an ideal spot and has space available for lease (https://www.loopnet.com/Listing/3333-3351-Pineville-Matthews-Rd-Charlotte-NC/11969586/).


28270
Providence Senior High School
Pineville-Matthews Road
Providence Road
NC 51
NC 16
Rea Road
The Arboretum
Providence
Settlers Landing
Fourmile Creek