

A Bierhaus in Atlanta

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1. Introduction

There are over 200 named neighborhoods in Atlanta, each with a unique history and culture. Sadly, for a long time these neighborhoods were isolated from each other. The Atlanta Beltline project aims to correct that by providing easy walking paths around the city. These pathways have seen exploding business and cultural growth since construction. I am from Atlanta, GA and have always loved beer, so I am always on the lookout for new beer serving establishments. But what would it look like to start my own? Would the Beltline help? Would I get drowned out by other bars or restaurants?

2. Business Problem

If I want to open a beer taproom in Atlanta, where should I put it? Where would I get the best value for my money while also reaching the most popular neighborhoods. By using population and FourSquare data, can I see which neighborhoods have the fewest beer serving establishments per capita?

3. Data Description

3.1 Atlanta Neighborhood Data

The City of Atlanta publishes geographic data for each of the neighborhoods within the city limits. This shapefile includes geometries. We will use only two columns from this data set:

- Name
- geometry

3.2 Atlanta Neighborhood Population

Wikipedia has an article with population values for Atlanta neighborhoods with populations over 500 people. Since I probably do not want to open a bierhaus in a sparsely populated neighborhood, I accept this limitation. The page is here:

https://en.wikipedia.org/wiki/Table_of_Atlanta_neighborhoods_by_population.

3.3 FourSquare API Data

Using the FourSquare API, I will gather the number of beer serving venues in each Neighborhood. Since I am using a free license with FourSquare I will limit the queries to venues and not menus. Expected data we will retrieve is:

- Neighbourhood : Name of the Neighbourhood
- Neighbourhood Latitude : Latitude of the Neighbourhood
- Neighbourhood Longitude : Longitude of the Neighbourhood
- Venue : Name of the Venue

- Venue Latitude : Latitude of Venue
- Venue Longitude : Longitude of Venue
- Venue Category : Category of Venue

4. Method

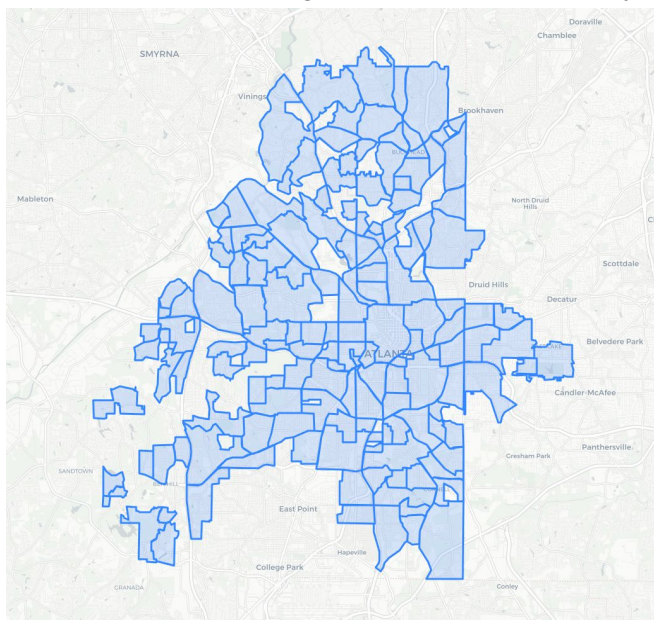
My analytical approach to this problem will be to determine the best neighborhoods based on population and the most popular venues in that neighborhood. I will then determine which neighborhood to open my bierhaus in based on the highest venue per capita of those clustered together as high beer drinking neighborhoods.

4.1 Library and Data Import

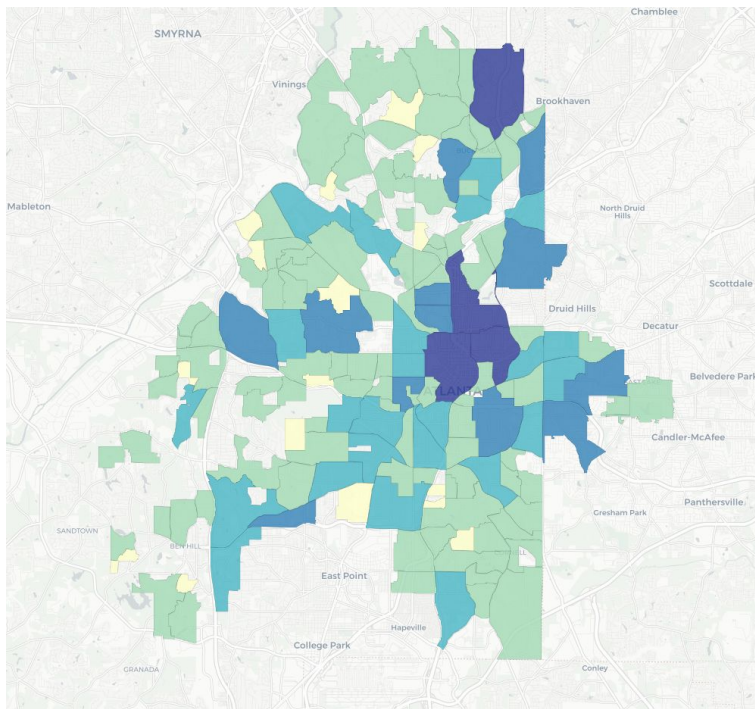
I will be using python and a jupyter notebook for this so I will first start by importing the proper packages and libraries for my analysis.

4.2 Data preprocessing

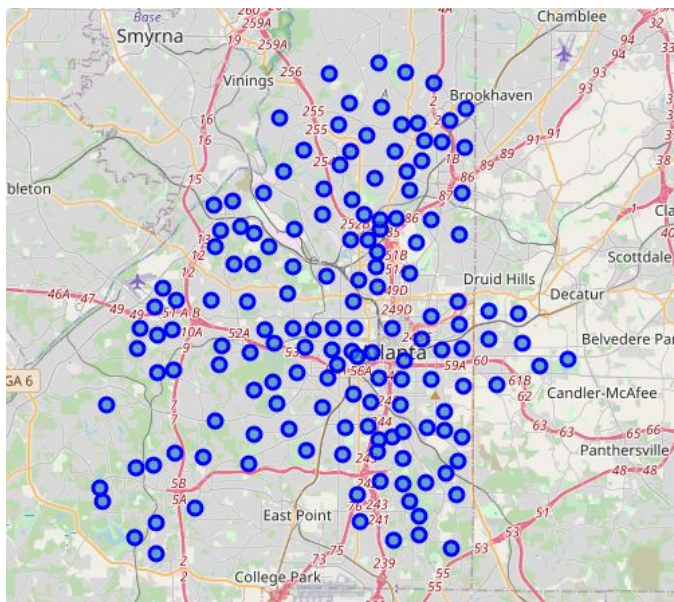
The data does not need much preprocessing since the structures are already fairly clean. But I do want to map the neighborhood population to the geographic data. The population by neighborhood list only includes neighborhoods with populations over 500 in 2010. I will simply remove the other, low population neighborhoods as I probably do not want to open a bierhaus in those anyway. We also want to add the latitude and longitudes of the centers of each neighborhood. This results in 153 potential target neighborhoods, and the following image shows where those neighborhoods are in the city.



Now, we want to see the population in each neighborhood compared to the other, so the below image is a choropleth map of these same neighborhoods.



Finally, here is a plot of the centroid points of each neighborhood which will serve as the target points in our FourSquare query.



4.3 Get Venues from FourSquare

In order to best use the FourSquare API, I tried using the neighborhood name as a search criteria, but most did not return any results, so we will use the central points combined with a

radius limit as our search criteria. The following table is a sample of the venues returned from the FourSquare call.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Atlanta University Center	33.749471	-84.411252	The Strip	33.750272	-84.415233	Nightlife Spot
1	English Avenue	33.770703	-84.410991	595 North Event Center	33.770202	-84.406874	Nightclub
2	English Avenue	33.770703	-84.410991	Archive Gallery	33.770164	-84.407364	Art Gallery
3	English Avenue	33.770703	-84.410991	Spreadlove 80's Boogie Edition <3	33.770164	-84.406952	Nightclub
4	English Avenue	33.770703	-84.410991	Club 595	33.770201	-84.406949	Nightclub

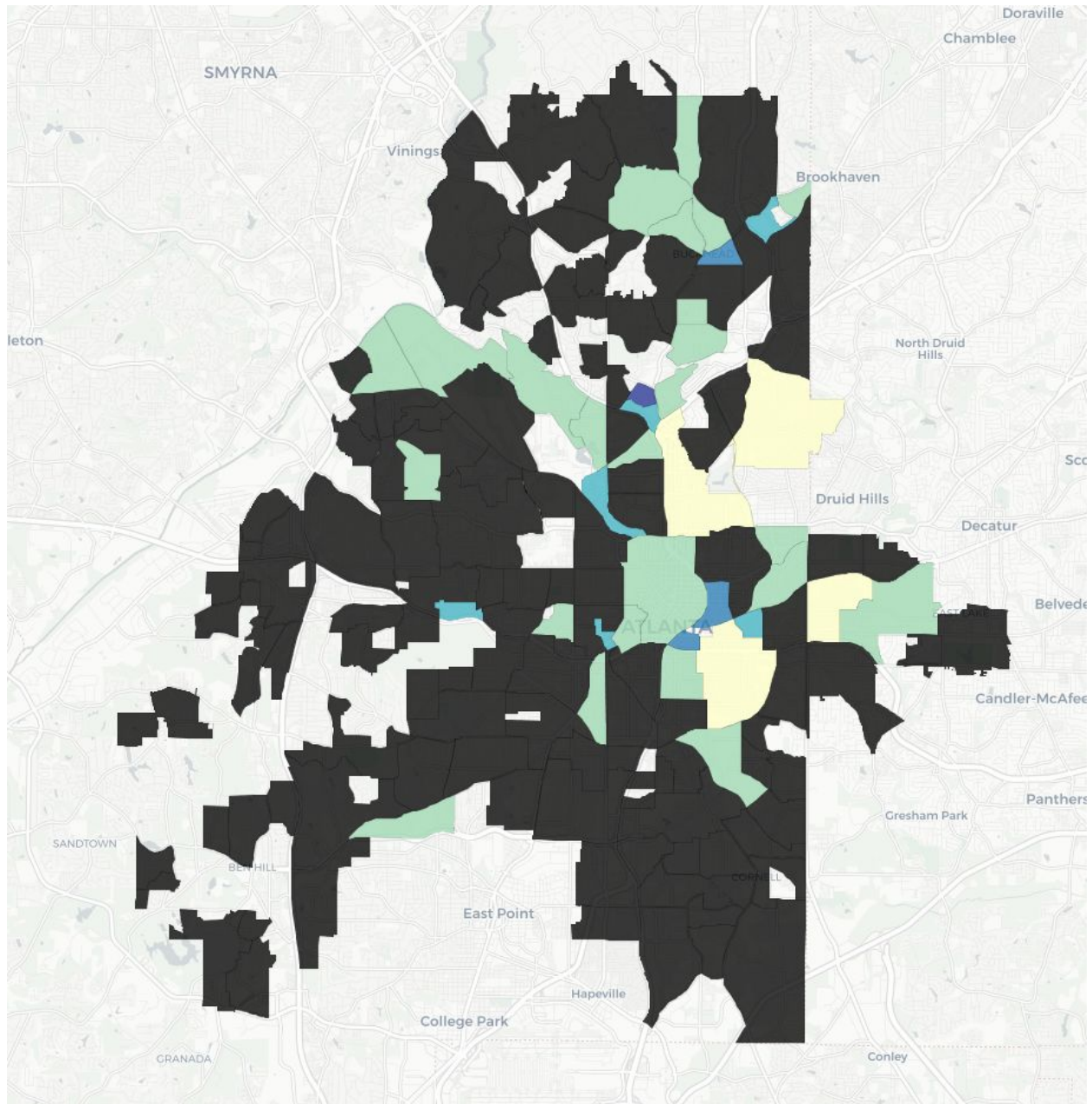
Of these venues, I only want to evaluate a neighborhood based on similar venues. So I will use Bar, Beer Bar, Gastropub, Irish Pub, Pub, Sports Bar, Whiskey Bar, and Wine Bar as the types of venues that my Bierhaus would compete with. Reducing the results for only these venue types and grouping by the Neighborhood to count how many of these venues exist results in the following output.

Neighborhood	Venue Category
Adair Park	2
Almond Park	1
Ardmore	3
Ashview Heights	1
Atlantic Station	3
Berkeley Park	1
Bolton	2
Brookwood	3
Brookwood Hills	1
Buckhead Forest	2
Buckhead Village	5
Cabbagetown	3

5. Results and Making the decision

The table above only resulted in 18 of the Neighborhoods having venues we would compete with. As I said before, we do not want to be the first into a new market so these are now the new list of target neighborhoods.

To make a decision, I will map these venue counts to the original data and find venues per 1,000 people and select the neighborhood with the highest value. The choropleth map below shows the new target neighborhoods and their relative venues per 1,000 people.



Most of the neighborhoods are black because they have no venues like ours. But it is hard to tell which neighborhood we want to go into exactly. But by sorting our table in python, we see which neighborhood is our best area to target for our Bierhaus.

The Ardmore neighborhood is ripe for a Bierhaus with 3.97 venues per 1,000 people, and being an Atlanta native, I can confirm this would be a great place for a Bierhaus as it sits right on the Beltline!

6. Discussion

This analysis is designed to give general recommendations for where to put my Bierhaus. But there are some assumptions we made and shortcuts taken.

6.1 Assumptions

The biggest assumption we made in this analysis is that the best place to put a Bierhaus is simply the neighborhood with the highest beer-like drinks venues per 1000 people. Obviously, there are other things to consider like space availability, rent, access, etc. This analysis was designed to be more of a first pass on which neighborhoods show a density of venues like the one I would like to open.

Another assumption we made was that the FourSquare data included all venues similar to my Bierhaus concept. There are many different types of drinks venues so we would want to investigate that further.

6.2 Areas for improvement

Ideally, I would have searched FourSquare using the neighborhood names themselves. I tried this but got many errors and saw that there was a misalignment with the names of Atlanta neighborhoods as the city sees them and what is reported in FourSquare. To overcome this, I simply used the central latitudes and longitudes for each neighborhood and searched around a certain radius from those points. We probably missed some venues using this method. Finally, Atlanta is known as a sprawling city with many people driving in and out of the city-proper and its neighborhoods to go about their lives. I also already mentioned the Atlanta Beltline project as a means to connect the various neighborhoods. Basing this decision on reported population is likely missing the true story of the average daily person count in a particular neighborhood. I would like to improve this model with this data if it were available.

7. Conclusion

The analysis contained in this report concludes that Ardmore is the best neighborhood in Atlanta where I should open a Bierhaus. Using python, FourSquare, and some visualization techniques, we have shown how some very easily accessible data can help aspiring business owners make smart decisions. Thank you for reading!