Capstone Project - The Battle of Neighborhoods

Where to open a Bar-B-Que(BBQ) restaurant in North Texas?

Introduction

Texas BBQ refers to the segment of Texan cuisine that specializes in grilled and smoked meats along with the many side dishes that traditionally accompany them. Beef brisket and various pork products are considered the state specialties. In some instances, Texas-style BBQ has merged with another state mainstay, Tex-Mex cuisine. It's quite plausible to find a BBQ restaurant that offers tacos alongside spare ribs and brisket sandwiches.

Central European Immigrants traditions placed a heavy emphasis on meats and sausages. Their meats were sold fresh in markets, but the merchants were aware that meat could be preserved far longer if it was smoked. They began smoking and slow cooking meats that did not promptly sell. The rich, smoky flavor of those meats became desirable in and of itself. Over time, the Central European smokey meat tradition influence spread throughout Texas. While Central Texas remains its epicenter, you can easily find BBQ restaurants from Tyler in the east to El Paso in the west as well as in big cities like Dallas, Fort Worth, Houston, Austin, and San Antonio.

Because BBQ restaurants are so popular in Texas, finding an available corner or street that does not have one is challenging. The question I want to answer is: 'Which North Texas city has the best location for opening a BBQ restaurant?' The main target is North Texas locals with minimum choices for BBQ restaurants.

Data section

I will use the FourSquare API to collect data about locations of BBQ restaurants in 4 US cities in North Texas: Fort Worth, Dallas, Arlington, Burleson. In order to answer the above question, data on BBQ restaurants, city density for BBQ restaurants, latitude, longitude, restaurants, are required.

All data related to locations will be obtained via the FourSquare API utilized via the Request library in Python.

Methodology

My project will asses which city has the best location for opening a BBQ restaurant . I used the Four Square API through the venues channel. I used the near query to get venues in the cities. Also, I use the CategoryID to show only BBQ restaurants. An Example of my request:

https://api.foursquare.com/v2/venues/explore?
&client_id=&client_secret=&v=20180605&New
York,NY&limit=100&categoryId=4bf58dd8d48988d1df9e1735

4bf58dd8d48988d1df931735 is the Id of the BBQ Category. Also, Foursquare returns a maximum of 100 venues per query.

Moreover, I repeated this request for the 4 cities and got their top 100 venues. I saved the name and coordinate data only from the result and plotted them on the map for visual inspection.

Next, to get an indicator of the location of the BBQ restaurants, I calculated a center coordinate of the venues to get the mean longitude and latitude values. Then I calculated the mean of the Euclidean distance from each venue to the mean coordinates. That was my indicator; mean distance to the mean coordinate.