Report

Problem and Audience

I am going to use data science to help a group of entrepreneurs in Chicago determine the best location to start a new high end ice cream shop. There are already many high end ice cream shops in the city of Chicago, so location will be an important factor in this decision. In order to maximize profits, I will first determine the neighborhoods in Chicago that are most to be able to afford regularly shopping at this ice cream shop. This will help me determine which areas likely have the most disposable income to make purchases such as expensive ice cream. I will then choose the top 3 neighborhoods to evaluate using the Foursquare API to determine which neighborhoods have the least amount of existing ice cream shops.

Data

I will first use data from the City of Chicago (https://data.cityofchicago.org/Health-Human-Services/Per-Capita-Income/r6ad-wvtk) to determine the annual household income for various neighborhoods. I will also use the Foursquare API to determine which of these neighborhoods have the least amount of existing ice cream shops.

Methodology

I first downloaded the data from the City of Chicago website and converted it to a data frame. I then sorted each neighborhood by hardship index to determine the top three neighborhoods that have the smallest hardship index.

I then accessed the Foursquare API so that I could further analyze the top neighborhoods. I searched for a list of ice cream shops in each of these three shops and then calculated the amount of results in each of these neighborhoods to determine which neighborhoods are more or less saturated with ice cream shops.

Results

When I analyzed the economic data, I found three neighborhoods that have the lowest hardship index and high per capita income. Those neighborhoods were Near North Side, Lincoln Park, and the Loop.

When analyzing the saturation of ice cream shops in these neighborhoods, I found that there was one neighborhood that was clearly less saturated with ice cream shops. While both the loop and Lincoln Park each had 12 results in each neighborhood, Near North Side neighborhood only had 4 shops.

Discussion

The data showed that one neighborhood was clearly less saturated with ice cream shops than the others. Therefore, I recommend that further study into this neighborhood might be helpful. For example, data that showed other food establishments that opened in this neighborhood in the last five years and their current status would be tremendously helpful if available. While this data does show that the Near North neighborhood is best, it would also be helpful to explore the reasons why this neighborhood might have less ice cream shops than others.

However, I would still feel confident recommending this neighborhood as an excellent choice for opening up a high end ice cream shop due to the overall wealth, economic ease of life, and lack of competition.

Conclusion

For this project I determined the wealthiest neighborhoods in Chicago and used the hardship index to determine which neighborhoods a high end ice cream shop would be most profitable in. I then explored these top neighborhoods to determine where there would be the least competition for a high end ice cream shop. This data would be very important to a group of entrepreneurs hoping to open a new high end ice cream shop.