

Coursera Capstone Project

Analysis of Sioux Falls restaurants



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Introduction

The city of Sioux Falls, SD has been one of the highest rated cities in the United States for opening a business for many years. The state of South Dakota has no individual or corporate income tax, and business costs are more than 20 percent below the national average. Sioux Falls is also a rapidly growing city, in fact, its rate of population growth is nearly four times the national average. The healthcare sector is the cities biggest industry, but a close second is the financial sector, which consists of Citibank and Wells Fargo at the spearhead of this area. South Dakota has \$3 trillion in bank assets, which is higher than any other state in the United States. Many secondary areas receive benefits from a growing and secure economy, one of which is the restaurant industry. This is especially important to an aspiring small business owner who may be cautious about creating a new restaurant without knowing what the future holds.

Business Problem

The intent of this project is to investigate the area of Sioux Falls SD while keeping several parameters in mind. These parameters that I will investigate in this report are:

1. What ratings are restaurants given as far as food safety is concerned?
2. Where are highest rated restaurants of Sioux Falls located?
3. Where would be the best location for the establishment of a new restaurant in the city?

Throughout this project, I will use many of the techniques and methods that I have learned in the data science courses. I will use webscraping, geographic data location via Foursquare, clustering models, and data analysis (kNN and logarithmic regression models) to create machine learning models to try to find the best location of a new restaurant.

My aim in this project is to help provide a new restaurant business with information to help them determine a possible location for a new business, whether the business owner intends to move a business to a new location, or start a business from scratch. The primary question that I wish to answer is: "Where is the absolute best location to open a new business based primarily on restaurant ratings?"

Target Audience

The primary audience in this report is any prospective business owners who would like to open a new restaurant in Sioux Falls. Also, any restaurant owners who wish to either expand or relocate their current business will find value in this report as well.

Data

For the food safety information of the report, the information will be primarily extracted from the state health department located at the web address [:http://webapps.sioxford.org/inspections/restaurants.aspx](http://webapps.sioxford.org/inspections/restaurants.aspx). This site consists of all businesses in Sioux Falls that sell prepared food as well as bar establishments that sell alcoholic drinks. According to the state health department website, inspections are performed every 30 days, which would give a fairly accurate depiction of current conditions of the restaurants that are being evaluated. For the consumer ratings portion, I will be using Foursquare to find data about the various restaurants in the city. This will require web scraping, data cleaning and wrangling, K-means clustering, and map visualization using Folium.