Capstone - Battle of the Neighbourhoods

Predicting the best place for a start-up Coffee Shop / Bookstore in Edmonton, Canada.

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Introduction

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Retail has always been shaped by shrewd merchants with a proclivity for taking risks and choosing the right products at the right time. This has always been considered more of an art than a science. However, with the tools to leverage consumer data, "Winning decisions are increasingly driven by analytics more than instinct, experience, or merchant 'art'. By leveraging smarter tools—those beyond backward-looking, "hind sighting" analysis—retailers can increasingly make forward-looking predictions that are quickly becoming the "table stakes" necessary to keep up", says Mckinsey.

In a rapidly evolving world where busy bustling cities are booming with opportunity, when opening a new business, it is of paramount importance to do your homework in order to decide if the location for consideration is going to prove a profitable exercise. As a data scientist, it is my job to assist my clients in their decision-making process.

Business Problem

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Lucy Finnigan has approached me with an idea to open a coffee shop / book store and has provided me with two possible locations of interest.

Although coffee has proven to be a favourite beverage of early morning go getters world-wide, there is massive competition where franchise brands are concerned. Lucy is not buying into a franchise, so location is of utmost importance to insure she becomes the forefront of her game in her new business venture to avoid her business plan folding before she's even established her brand.

Lucy has her heart set on Edmonton, Canada. Lucy is also fluent in English and French. It is now my task to leverage data from various sources in order to expose a gap in the market.

Data Section

Data Acquisition and Cleaning

Geonames will be used to obtain necessary data for the neighbourhoods, postal codes and geographic coordinates in Alberta. This website also offers the option of downloading the data into text files which enables one to format and import a CSV with the necessary dataset.

Foursquare will be used to leverage and explore venue data to target recommended locations for the prospective business venture.

By merging the data from Geonames and Foursquare we will be able to conclude where starting a non-franchised coffee shop / book store would prove most profitable.

Methodology Section

**K Means Segmentation & Clustering / Frequency Distribution**

According to an article published in 2016 which highlights 10 of Edmonton's best neighbourhoods, [Edmonton's Best Neighbourhoods](#) , I have suggested that Lucy pick the following two neighbourhoods against which to run the analysis, namely Strathcona and Bonnie Doon.

Using k means segmentation and clustering, along with analysis and visualisations of the frequency coffee shops appear in the selected neighbourhoods, we can provide recommendations to our client on the best neighbourhoods to consider this new business venture.

K Mean Clustering Visualisation
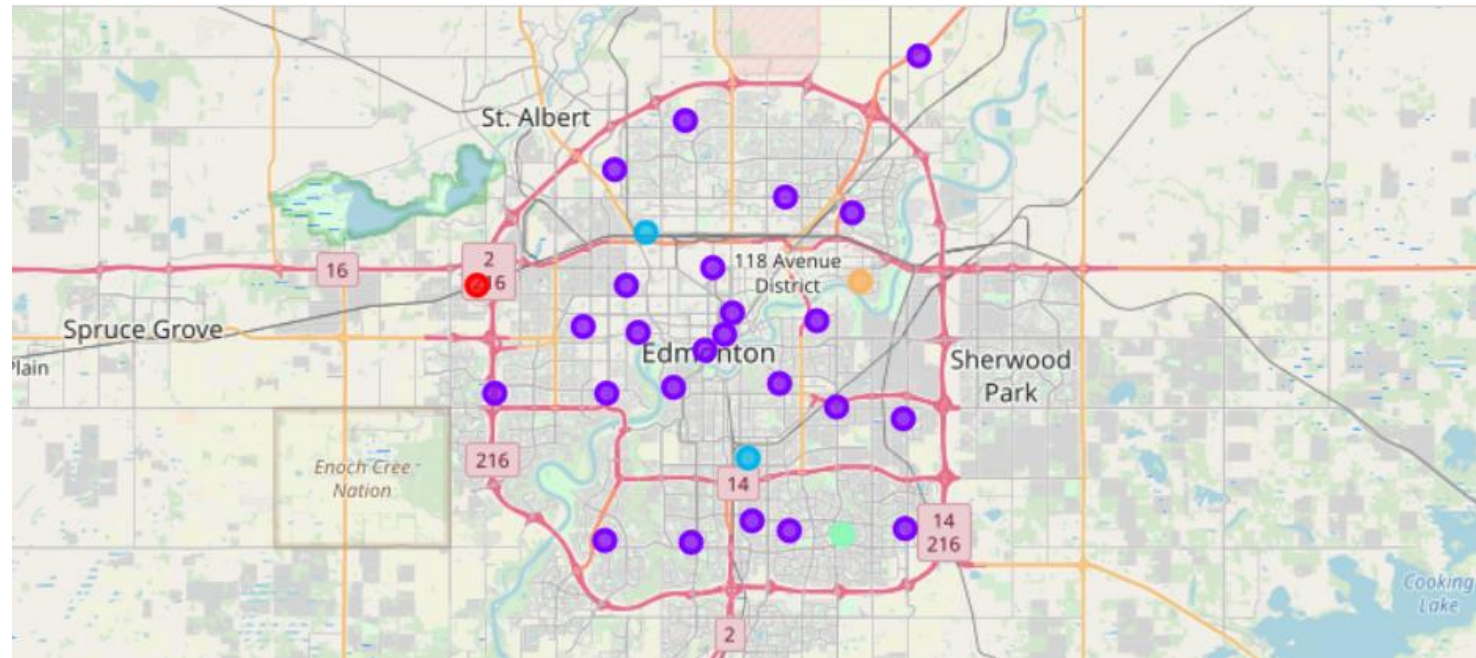
Frequency Distribution Visualisation

Coffee Shop Distribution
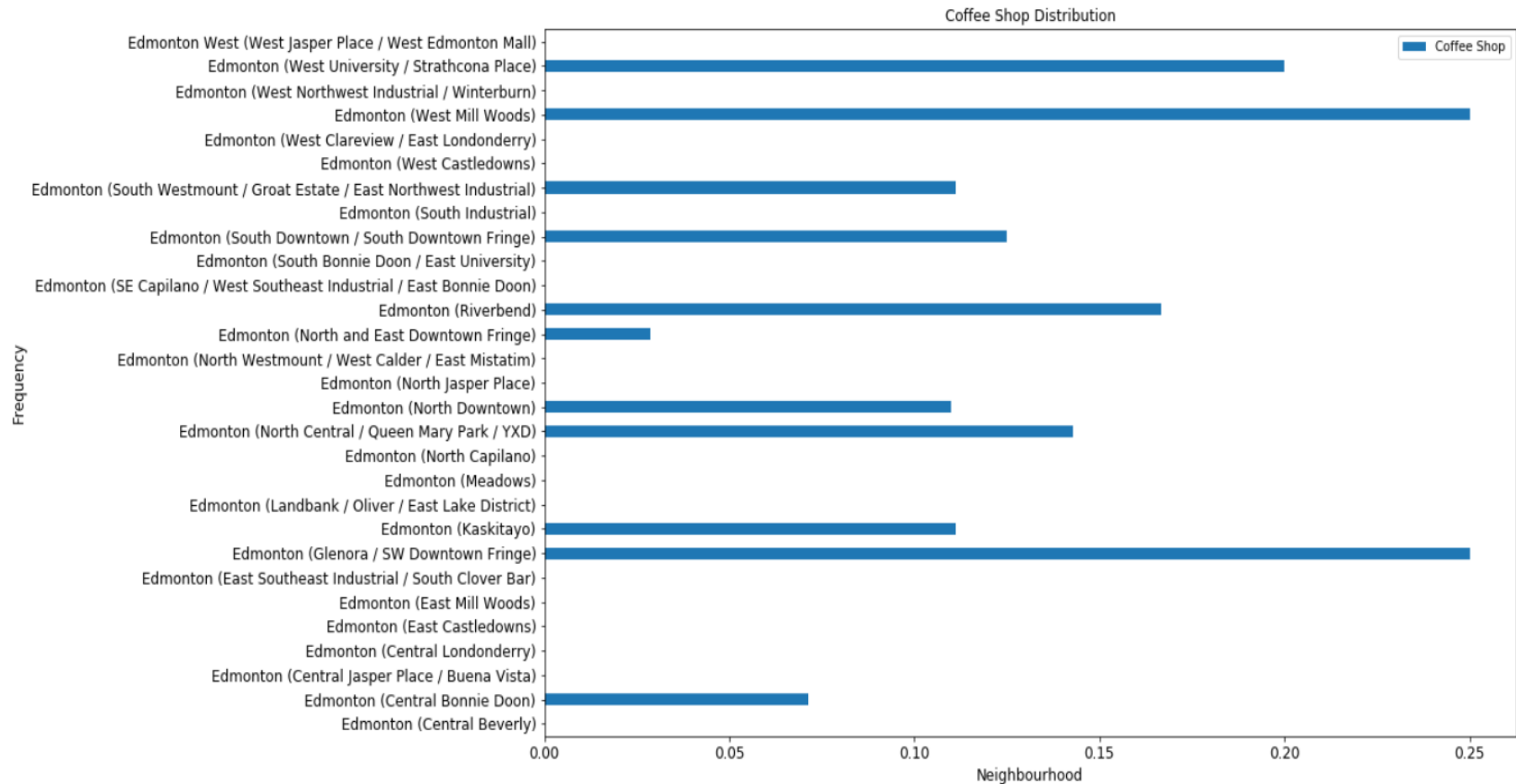
Results

Cluster 0: Does not appear to have a Coffee Shop as its most popular venue. Upon further investigation, the bar char above indicates that there are no coffee shops in this area either. Strathcona and Bonnie Doon do not appear in this cluster though.

Cluster 1: Strathcona, Central Bonnie Doon and East Bonnie Doon appear in this cluster. Strathcona has an array of popular coffee shops. Central Bonnie Doon has coffee shops as well but none that appear in the top 5 searches for popular venues. East Bonnie Doon does not contain any coffee shops at all.

Cluster 2: No popular coffee shops appear in either neighbourhood. South Bonnie Doon in particular does not contain any coffee shops.

Cluster 3: Does not contain any popular coffee shops. Does not contain Bonnie Doon or Strathcona as neighbourhoods.

Cluster 4: Does not contain any popular coffee shops. Does not contain Bonnie Doon or Strathcona as neighbourhoods.

Cluster 5: No information is provided for us in this cluster.

Discussions & Conclusions

Following this analysis of Edmonton's most popular coffee shops, it's clear that there is room to open new Coffee Shops in the city of Edmonton, particularly East and South Bonnie Doon. Although Central Bonnie Doon has coffee shops in its neighbourhood, none appear very popular so there is a gap in the market for Lucy to open her business here.

In my opinion, based on the plans to develop a new mall in Central Bonnie Doon, Lucy could inquire whether anyone has applied for a site to start a new coffee / shop bookstore.

 Although my client is quite insistent on opening her stores in Bonnie Doon and Strathcona, there is also definitely room outside of these two neighbourhoods to consider venture. One should not rule these other areas our for further investigation.