Selecting a Suitable Neighbourhood For an Organic Grocery Store

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Introduction

Background

Toronto is considered the financial and industrial capital of Canada, as well as being the capital city of the province of Ontario. Located on the north shore of Lake Ontario, the city has seen a large amount of population growth and is one of the most diverse cities in the world. To feed this large and growing population, the city is served by a variety of grocery stores, in addition to the vibrant restaurant scene. Demand for organic food is on the rise, but conventional grocery stores are still more common than dedicated organic grocery stores.

Problem

This project aims to identify the best neighbourhoods within the Downtown, East, West, and North Toronto boroughs to start a new organic grocery store, based on the locations of existing organic and conventional grocery stores.

Interest

Starting a new business is risky, so any prospective organic grocery store owner will benefit from this information to assist in the crucial choice of location.

Data

Geographical Data and Cleaning

The first dataset is the postal codes, neighbourhoods, and boroughs in Toronto, scraped from the Wikipedia page. An existing CSV file from a previous week's assignment was used to add a columns for latitude and longitude by postal code to allow the neighbourhoods to be mapped. Then the dataset was reduced to the target area of Downtown, East, West, and North Toronto boroughs.

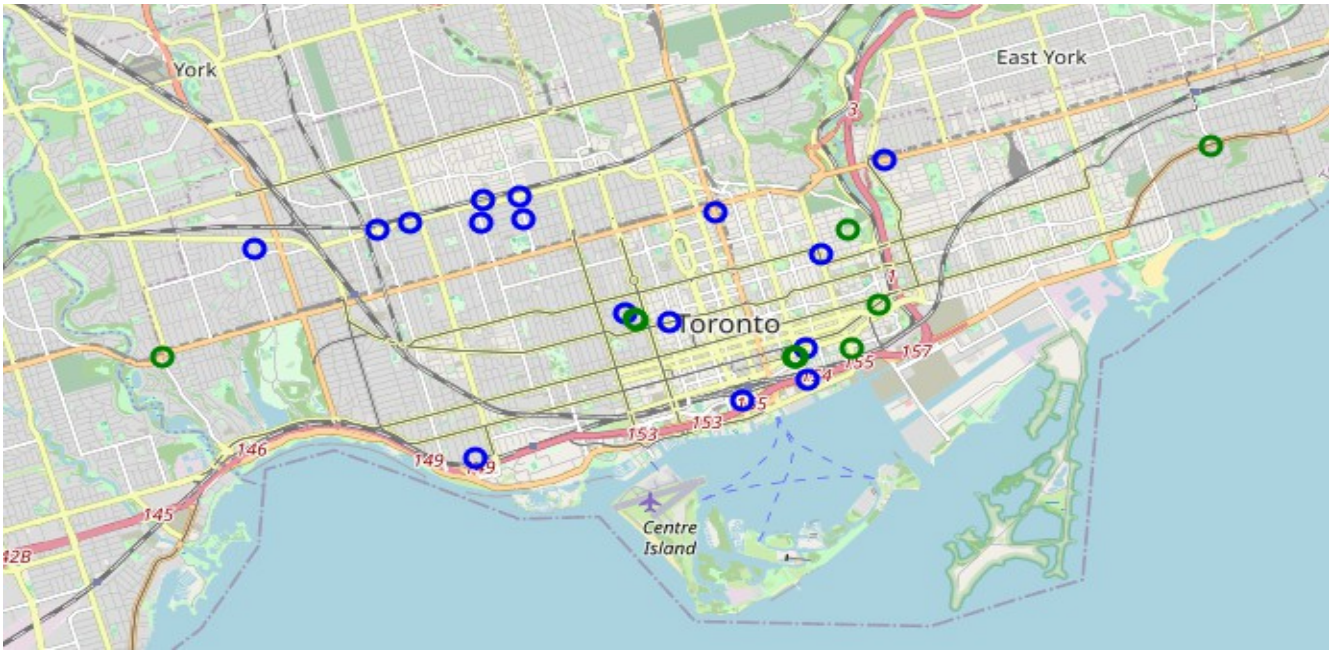
Venue Data and Cleaning

The second dataset is the venues in the Toronto neighbourhoods from the Four Square API. The category of organic grocery store was defined as venues in the categories Organic Grocery, Health Food Store, Farmers Market, and Fruit & Vegetable Store in the dataset. The category of conventional grocery store was defined as venues in the categories Grocery Store, and Supermarket in the dataset.

Methodology

Exploratory Analysis

As an exploratory analysis, the organic and conventional data was plotted on a map of Toronto in green and blue respectively to confirm the expected uneven distribution. As shown below, there are some outlying stores, but many stores are clustered in areas and there are gaps in the coverage of organic as compared to conventional placement.



Neighbourhood Selection

As the problem is to find the best neighbourhood, the method of choice was the ratio of organic to conventional counted by neighbourhood. This method was chosen based on the assumption that people would prefer to shop in the same area that they normally do for groceries and that the presence of conventional grocery stores indicates a demand for groceries in that neighbourhood. This prevents industrial parks and other non-residential areas from being over-represented. And while this approach will not alleviate the problem of food deserts (areas where people live that lack adequate grocery store access), this problem is typically seen in lower-income areas that are less likely to have as strong a market for the more expensive organic grocery stores.

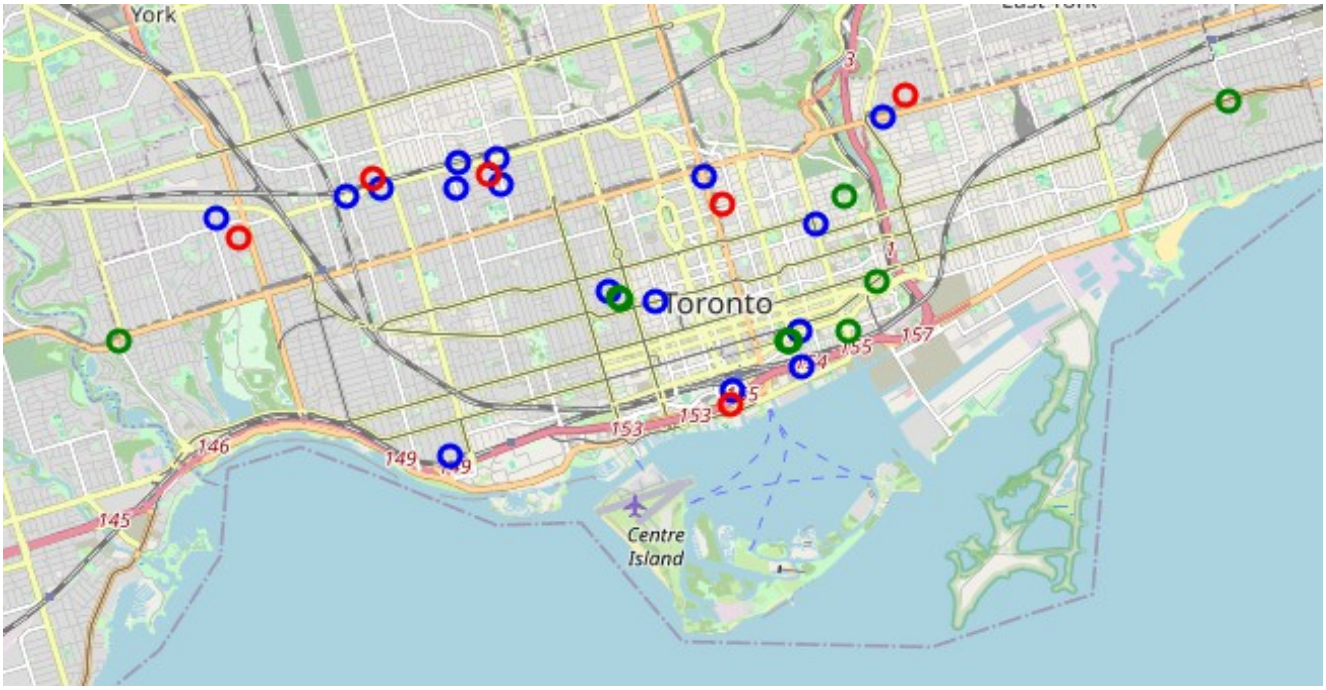
Results

The following table shows the results of the ratio analysis, sorted in ascending order of ratio and descending order of conventional store count.

Neighbourhood	Organic	Conventional	Ratio
Christie	0	4	0
Dufferin, Dovercourt Village	0	2	0
Brockton, Parkdale Village, Exhibition Place	0	1	0

Church and Wellesley	0	1	0
Harbourfront East, Union Station, Toronto Islands	0	1	0
High Park, The Junction South	0	1	0
The Danforth West, Riverdale	0	1	0
Kensington Market, Chinatown, Grange Park	2	2	1
St. James Town, Cabbagetown	1	1	1
Berczy Park	2	1	2
St. James Town	2	1	2
Regent Park, Harbourfront	2	0	Nil
Runnymede, Swansea	1	0	Nil
The Beaches	1	0	Nil

After examining the ratios by neighbourhood in those neighbourhoods with conventional stores, those neighbourhoods with a ratio of zero (no organic and one or more conventional stores) were plotted. As previously, the conventional stores are shown in blue, organic stores in green, and now the neighbourhoods with a ratio of zero are plotted in red. Recall that the neighbourhoods are located by the postal code coordinates, they are only plotted to confirm the assessment visually and do not represent precise recommendations for location.



Discussion

One of the limitations of the venue dataset is whether it is a representative sample of the existing grocery stores. The data is user-generated from check-ins at the locations and it is likely that

not all the grocery stores are shown, as it is a social media platform and grocery stores are likely to garner less interest than other types of venues. It is unknown if those data gaps are even across neighbourhoods or types of stores.

However, based on this data, the best neighbourhoods for a new organic grocery store are shown in the table below.

Christie
Dufferin, Dovercourt Village
Brockton, Parkdale Village, Exhibition Place
Church and Wellesley
Harbourfront East, Union Station, Toronto Islands
High Park, The Junction South
The Danforth West, Riverdale

Conclusion

Demand for organic groceries is on the rise in cities like Toronto. A new business would do well to carefully examine the existing grocery store infrastructure in order to capitalize on that demand while reducing the risk of business losses due to poor location. This analysis can assist in the decision-making process for anyone intending to enter this exciting business.