Coursera Capstone

IBM Applied Data Science Capstone

Opening a New Bakery in Vancouver, BC

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Introduction

Vancouver is a beautiful city which attracts many tourists from all over the world each year. Trying out new food places such as restaurants, cafes and bakeries are one of the favorite activities that tourists do. Among these places, bakeries with special treats and sweets bring many people in the store. From tourists to locals, no one can resist the smell of freshly baked pastries. Therefore, there are many bakeries around Vancouver, with possibility of building more of them. This can be particularly a good opportunity to collaborate with big artisan bakeries from other countries and bring them to Vancouver as a new business.

Business Problem

When deciding to open a new bakery, there are many questions that need to be answered to guarantee a successful and profitable business. One of these questions is about the location of the bakery. Which neighborhood is the most suitable one? How are different bakeries distributed in the area? The objective of this report is to explore the neighborhoods in Vancouver to find out the best possible locations to open a new bakery by using data science methodology and machine learning techniques such as clustering.

Data

The following data are used to find the best possible locations for opening a new bakery in Vancouver:

- List of neighborhoods in Vancouver with their coordinates. This list can be found and downloaded from:
  https://data.vancouver.ca/datacatalogue/localAreaBoundary.htm
  The file formats available on this website are KML, SHP, Google Map, XLS and CSV. In order to read the data in Jupyter Notebook, an online file converter was used to first convert KML to GeoJSON, which is a form of JSON file that can be easily loaded and represented as dataframe. The file contains name of neighborhoods in Vancouver and their geometry coordinates. In order to represent each neighborhood with only one latitude and longitude rather that its polygon shape, the data can be manipulated to find the average of latitudes and longitudes for each neighborhood (discussed in detail later).

- List of bakeries in Vancouver. This data was obtained using Foursquare developer account. For more information, please refer to https://developer.foursquare.com