

IBM Applied Data Science Capstone Course

Opening a Take-Away Indian Restaurant in Christchurch City of New Zealand

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Introduction

Business Problem/Objective

Data Requirement

Data Source

1. Introduction

I am always fascinated by food and particularly Indian food. You can travel anywhere in the world you will find at-least one Indian restaurant. While the taste and quality might differ from place to place and restaurant to restaurant it has never stopped me from trying every Indian restaurant in town.

Christchurch is one of the major cities in New Zealand which is in redevelopment phase since the major earthquake in 2011. It is rapidly growing and attracts many student and immigrants to come and settle down in the city. Indian population in Christchurch has steadily grown in the past few years.

These past couple of months as the world is suffering from Coronavirus it has changed the way people live their lives. It has affected many businesses especially restaurants around the world. They had to change the way they operate which in most cases have increased the cost of running the restaurants. Some restaurants might not be able to keep up with cost of additional cleaning and maintaining high standards for customers and in turn shut down. People nowadays think twice before going out to eat in public because of the virus and may end up ordering food online using UberEats.

At the moment there are around 20 Indian Restaurants in the city most of which are franchise of the same. While the **cost** of running a take-away restaurants will be much **lower** compared to a dine-in restaurant, moreover there are no Indian Restaurants which solely focus on Take-Away, for those reasons **my suggestion** is to open a Take-Away Indian restaurant. Future expansion will be much easier as well if one decides to turn it into a franchise. (*The business details will be decided by the investor or entrepreneur*).

2. Business Problem/Objective

Question: What are the recommended locations in the city of Christchurch if one is looking to open or invest in a take-away Indian restaurant?

This project will solely focus on analysing and selecting best locations in the city of Christchurch to open a Take-away Indian restaurant. We will be using data science and machine learning techniques.

Target Audience: The project findings will be useful for investors, entrepreneurs, or food enthusiast looking to get into the restaurant business.

3. Data Requirement

The requirement for this project are:

1. List of Suburbs for the city of Christchurch in New Zealand.
2. Geographical location such as longitude and latitude data of Christchurch and all the suburbs
3. List of Venue categories in the city
4. Venue Data relating to Indian restaurants such as Location

4. Data Source

With the help of Beautiful soup package in python a web-scraping technique, we will obtain data for “List of Suburbs name” from the Wikipedia page (https://en.wikipedia.org/wiki/Category:Suburbs_of_Christchurch). Further cleaning of this data was done on the local network to work as required for the project. Further with the help of Geocoder package we will retrieve geographical coordinates i.e. Longitude and Latitude for each suburb in the city.

The data about different venues in different Suburbs of the city will be obtained by using Foursquare location data. Foursquare has one of the largest database of locations with over 100 million venues. The data includes venue names, locations, menus, photos, review and more. As such, the Foursquare location platform will be used as the sole data source since all the stated required information can be obtained through the API.

The data acquired from Foursquare API will have the information of venues within a specified radius of the longitude and latitude of the suburbs. The data will be as follows:

1. Suburbs: Name of the Suburb
2. Suburbs Latitude: Latitude of the Suburb
3. Suburbs Longitude: Longitude of the Suburb
4. Venue: Name of the Venue
5. Venue Latitude: Latitude of Venue
6. Venue Longitude: Longitude of Venue
7. Venue Category: Category of Venue

The data described above will have substantial information to build our model. Later we will be clustering the suburbs together based on our objective. We then present our observations and findings. With the help of those findings our stakeholders can take the necessary decision.

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