



IBM APPLIED DATA SCIENCE CAPSTONE PROJECT

A SHOPPING MALL FOR SANTO DOMINGO ESTE, DOMINICAN REPUBLIC

17.JAN.2021

José Luis D'Andrade

Distrito Nacional, Dominican Republic



Introduction

Shopping malls have been increasingly important in modern society. Our visits are not limited to buying things any more. They have become the children's playground. Adults spent the day walking through elegant alleys equipped with benches, flowers and even palms as a means of exercising. Today, most shopping malls have many restaurants, bars, cafes or even hairdressers, beauty salons, gyms, cinemas and other entertainment attractions which enables us to fulfil a lot of different needs in the area of a single building. Social life is gradually transferring from the areas of old towns and main streets to shopping centres.

Business Problem

The province of Santo Domingo has two competing municipalities. There is the National District, and there is Santo Domingo Este, a booming economy which is rapidly attracting the interest of many in the National District not just for investing purposes, but as a living destination.

The objective of this work is to analyze and select the best location to open a new shopping mall in the city of Santo Domingo Este. Following a data science methodology and utilizing machine learning techniques, this work aims to provide a guide to answer the business question: Considering the similarities with the National District, where in the city of Santo Domingo Este would be the best location to build a new shopping mall?

Description of the data

I. List of neighbourhoods in Santo Domingo Este

The scope of this project is constrained to the city of Santo Domingo Este, the second most important municipality of the province of Santo Domingo.

II. Latitude and longitude coordinates of neighbourhood

This is required in order to plot the map and also to get venues data.

III. Venue data

Data of shopping malls. We will use this data to perform clustering on the neighbourhoods.

Government. I have worked with government data in the past and I am familiar with this government page <https://www.one.gob.do/> . It is Dominican Republic's head department in charge of statistics. There are several databases. One of such databases contains demographic information about every province, municipality down to neighbourhoods in the country.

After obtaining geolocation data, we will use Foursquare API and, if necessary, Google Places API, to get the venue data for those neighbourhoods. Foursquare has one of the largest databases of places and is used by over 125,000 developers.

Cluster Analysis

Map of Dominican Republic

Geographic Area of Interest

The following image shows the nation's Capital, on the left, namely National District ("Distrito Nacional" in Spanish) and on the right Santo Domingo Este.



The left side is our National District municipality. With approximately 91 square kilometers it has the majority of shopping malls, banks and restaurants in the Dominican Republic. But with 106 square kilometers, rapid growth and only a short distance away to the main airport, tourism destinations, and many opportunities there lies Santo Domingo Este, our focus of interest in this study.