Professional Cleaning Salesperson Assignment

Introduction

My client is a professional cleaning firm, specialized in restaurants. They are open new business and seeking to take new clients in Ottawa-ON. THey requested me to build a list of potential clients to visit and offer their services. They have four salesperson and they want to assign them to different areas of the city. My job is to search for restaurants in Ottawa and group it in four areas to each salesperson visit.

Analytic approach

The fastest approach to address the problem is to load a dataset of restaurants from foursquare and cluster it using some clustering algorithms. Searching for restaurants at Foursquare is a pretty easy task. However, the client cannot operate in Quebec, so, the neighbouring city Gatineau-QC should not be visited by any salesperson. So, any restaurant in Quebec should be filtered from the list prior to clustering. The algorithm chosen to perform the clustering is BDSCAN, so the closest restaurants should be visited by the same salesperson. This algorithm was selected because it can cluster according to geographic shape and prevent outliers to be clustered together.

Data Requirements

The dataset is going to be collected using Foursquare API, using a area between two coordinates, that includes the city of Gatineau-QC. But, the dataset should contain only venues from Ottawa. The Dataset should contain the name of the venue, type of restaurant, GPS location and address.

Data Collection

The dataset was collected from Foursquare API, which results in 179 unique rows. But some cleaning should be made, such as, filtering the venues that is not in Ottawa, and removing duplicates.
The final dataset contains 160 inputs and 9 columns. There are information about the location, that is going to be used for clustering, name, and category, that is useful for the final report.