

Finding Food Deserts in Toronto, ON

Introduction

For this project, I am searching for food deserts within Toronto, ON. Food deserts refer to areas that have limited access to supermarkets with fresh foods. People in urban or suburban areas that live more than 1.6 kilometers from a supermarket are considered as living in a food desert. For rural populations, the distance is adjusted to 16 kilometers.

Food deserts tend to be found where residents have low mobility (lack of access to transportation) and are low-income. For those reasons, these areas are less attractive to large supermarket chains.

For those same reasons, food deserts have health implications. Low-income person or those with low mobility and have low access to fresh fruits and vegetables, not surprisingly, eat less fresh fruits and vegetables. This in turn leads to poorer diet, health and increased obesity rates.

Urban planners, local councils and health officials can work on public initiatives to increase access to supermarkets in current food deserts. Once these desert areas are located, land parcels that can accommodate a grocery store can be identified and councils can work on plans and incentive packages to attract grocery stores to the neighborhoods.

Data and Methodology

Ideally a shortest-path analysis from each residence to the nearest supermarket would be run, but is very difficult using a street network. As a proxy, I'll be using the center of a postal code to create a buffer zone of 1.6 kilometers to aid in calculating access to supermarkets in Toronto, ON.

For this project, I used data to obtain postal code areas by extracting information from the Wikipedia page

("(https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)")

I also use data obtained from the Foursquare API to search for grocery stores within a radius of 1.6km from a given point.

Using the postal code coordinates, I can search each postal code for a grocery store and record its location. Then, I can do a left exclusive join on the dataframes to find which postal codes found no grocery stores within a radius of 1.6 kilometers.