

Introduction/Business Problem

Gyms in Canada have seen significant growth, due to, but not limited to a sudden ambitious surge towards fitness. A company wants to build a gym in the city of Longueuil (Quebec),

Canada. The company is looking for the best place in one of Longueuil's four boroughs.

To this end, the shareholders consider diverse criteria such as, for each borough, the density of the targeted age group 25-60 years old, the number of competitors, the distance to competitors, the average individual annual income and many more.

To summarize, we will need to answer the following question.

Where to build a new competitive gym in Longueuil?

Analytic Approach

We will use a descriptive model to determine if a borough is likely to be chosen or not. For simplicity in advising the shareholders, we will use the following single criterion, the distance to any competitors. Our model will look at information about a competitor location and distances to possible locations to recommend to shareholders.

Data Requirements and Collection

In order to build our model, we will get information such as name, geocoordinates, location of gym venues from the Foursquare data. We can only get up to 50 venues for each Foursquare call with our free account. Therefore, we will get the gym venues for each borough and append the list to the city data. We will also use Nominatim to reverse geocoding to find missing city (borough) in the Foursquare data. We will disqualify gyms that are in surrounding cities. We want content, formats, representations suitable for creating maps.

One record per gym with columns representing features (name, geocoordinates, others).

To show the city of Longueuil borough delimitation, we will need its geoJSON file available at the city website at:

<https://www.longueuil.quebec/en/file/limite-municipalite-arrondissement.json>