Tackling COVID

A DataScience approach to re-opening
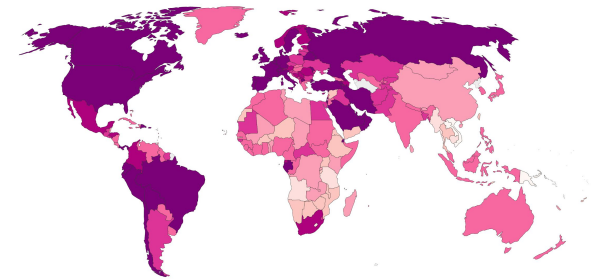
COVID-19

COVID-19 has had unprecedented impacts to the global economy. Many industries have lost $M' and $B's in revenue.

Locally, we have seen small businesses close due to restrictions. As we tackle COVID and reduce the active cases, we can safely re-open businesses.

I am seeking to see which gyms and health clubs can open in the middle of a global pandemic.

Total confirmed COVID-19 cases per million people, Jun 24, 2020
The number of confirmed cases is lower than the number of total cases. The main reason for this is limited testing.

Our World in Data

No data   0   5   10   50   100   500   1,000 2,000 >5,000

Source: European CDC – Situation Update Worldwide – Last updated 24th June, 11:00 (London time)   OurWorldInData.org/coronavirus • CC BY

Business Problem

In this project we will try to find an optimal location for a gym to open based on impacts of COVID-19. Specifically, this report will be targeted to fitness fanatics interested in going to a gym or fitness centre in Melbourne, Victoria.

Since there are lots of gyms in Melbourne we will try to detect locations that were impacted by high cases of COVID-19. We are also particularly interested in areas with high case counts. We would also prefer locations as close to city center as possible, assuming that most people are located near the CBD.

I will use my Data Science learnings to create map of the gyms in high impacted areas.

Data Inputs

Based on definition of our problem, factors that will influence our discussion are:

- Number of total cases of COVID-19 in Victorian municipalities (any type of positive test recorded as of June 7th 2020)
- Number of active cases of COVID-19 in Victorian municipalities (as of June 7th 2020)
- Gym and fitness centres locations in municipalities across Victoria

Following data sources will be needed to extract/generate the required information:

- Department of Health and Human Services COVID-19
- Daily Briefings report from the Department of Health and Human Services website.

Number of gyms and fitness centres and their type and location in every municipality will be obtained using Foursquare API

Coordinate of Melbourne CBD center will be obtained using Foursquare API geocoding of locations

Methodology

➔ Collect data source/inputs/inspect the data/set up environments

➔ Explore and understand the data

➔ Cleanse and enhance the data

➔ Model the data

Results

Gyms in the Melbourne CBD

Confirmed cases of COVID in Melbourne CBD suggests gyms should not re-open until case counts are reduced

Rural Areas are safer

Rural areas are safe to re-open with very few confirmed cases

Clustered gyms near CBD should be avoided

Case counts appear to be clustered in similar LGA's. 15km from a high case count appears to be safe

Conclusions

Mapping COVID cases requires a seamless and integrated data source as case number change rapidly

➔ **Gyms pose high risk**
Transmission of COVID in gyms is highly probable, gym's should only re-open when case count is low

➔ **Locations**
There appears to be more gyms in high case count areas

➔ **Clusters**
The high case count were clustered closer to the CBD