**Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods**

For this week, you will required to submit the following:

1. A description of the problem and a discussion of the background. (15 marks)
2. A description of the data and how it will be used to solve the problem. (15 marks)

**INTRODUCTION / BUSINESS PROBLEM:**

*1. A description of the problem and a discussion of the background. (15 marks)*

**Problem Exploration:**  With current COVID-19 issues, we are faced with an issue as warmer weather transitions to cooler and out-right cold climates. This will push us to spend more time indoors, especially in a climate like Toronto.

**Background of the Solution:** Due to less ventilation and tighter spaces, health experts everywhere, even in areas that have already flattened their initial outbreaks, predict a reoccurrence once activities are forced indoors.

There is a two-approach solution that can be implemented separately or together:

1) Bigger or More Space - Expand the area of the business for social distancing

2) Improved COVID-19 Ventilation – HVAC filers have been identified that are more effective than standard use HVAC filters. There are also design features that can be built into a portable unit, like a two-layer ceiling that better allows for increased airflow. Additionally, more efficient heating systems complement the air filtering capabilities to work in the coldest climates.

**Problem/Solution Overview:** This new business opportunity for “Pop-up Outside Spaces” would be an extension to the current portable structure products offered by modular builders and higher-end tent systems, such as those used for wedding receptions and corporate retreats.

The building units would have to meet COVID-19 prevention standards providing necessary additional space to meet social distancing requirements with featuring heating and ventilation that met new COVID-19 standards. The pop-up spaces will be modular to allow for adjustments from larger to smaller spaces, as needed. They can be used for additional rooms for schools or offices that need more space due to social distancing requirements.

**Three product offerings and the target businesses:**

1) **Require improved ventilation**: Gym or fitness businesses that require improved ventilation and airflow

2) **Event spaces**: Large event rooms that would provide space for conventions, banquets, parties, and concerts

3) **Large empty spaces**: Public spaces that are unlikely ever used in winter that can be built into community gathering centers

**Economy Assumptions:** The data we are using is a blend of geo-information for postal codes and FourSquare, a location-based business listings and reviews directory. It does not include business performance (i.e., revenue vs. expenses) or planning information. This would include projected occupancy rates of the local area, commerce activity, city revenues, economic development plans, and health department reports – to name some of the data outside of this project scope.

One primary assumption that is the foundation of this project that needs to be acknowledged is that COVID-19 is a significant disruptor to local economies. So analysis using pre-2020 data to rank the “most popular businesses in each neighborhood” will likely swing considerably, especially for small local-owned.

**DATA PLANNING**

*2. A description of the data and how it will be used to solve the problem. (15 marks)*

**Using the Data:** The goal for clustering data, in this case, is to identify neighborhoods that have the right business or locations in place that can benefit from “Pop-up Outside Spaces,” since the pop-up structures are an add-on to a current site.

It can also help identify the type of marketing plan based on the number of locations that match up for each product/neighborhood mix. For groups with a larger number of locations, like gyms, the plan would be to use direct and digital marketing. For smaller target groups, like parks and hotels, it would identify that using a personal sales manager may be the better choice.

The first step would be to build the target businesses by identifying venue categories that would match up for each product. For instance, the categories “gym” and “Gym/fitness” are just starters; we also need to find other businesses where people do physical exercise.

**My data analysis approach to the data:**

There are two approaches to using the data. First, analyze neighborhoods against each other using all 229 categories. If our target categories show up at the top of these lists, then these will be are Tier 1 targets since they are the top for this category in the city. Then, second, analyze the neighborhoods using a sub-set of the categories that we selected. This will still identify key target areas but at a Tier 2 level.

**NEXT STEPS - WHAT TO DO WITH THE DATA**

The key to the clustering data provides me insights into where I should market my new company based on the highest concentration of the business types listed below. I then chose venue categories that fell into these categories. Note – I’m sure we can debate ALL of the categories that can be included under each business type, but I chose a selection to make sure that I could generate actionable data.