

Coursera Capstone

IBM Applied Data Science Capstone

Opening More Fitness Centers in Los Angeles, California

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Introduction

The age of big data has just begun and there is already an ocean of information on consumer interest, habits, and spending for the past decade. Now more than ever, businesses can leverage modern data science practices where they can truly measure what are ideal business ventures to pursue and where are the prime locations to target. That being said it doesn't take a data scientist to determine that the people of Los Angeles commute large distances often and spend a good portion of their day sitting in their vehicles for the inevitable traffic jams that occur on their way to and from work. It also doesn't take a data scientist to determine that the american workforce is becoming more sedentary with new collar jobs on the rise. In other words, sitting, lots of sitting, is happening throughout the daily lives of angelenos and that trend needs to be offset for the sake of maintaining a healthy population. For property developers searching for a lucrative opportunity, this sedentary population dilemma begs the question: is it time to build more gyms and fitness centers throughout the city of Los Angeles? More specifically, which neighborhoods in Los Angeles have yet to be tapped in regards to opening a community fitness center?

Business Problem

There is an unmet demand for the people of Los Angeles to conveniently access a local gym or fitness center without having to add another long commute to their daily routine. The goal is to determine optimal locations for a new gym or fitness centers within Los Angeles, California. Specifically, the end result is to compile a list of neighborhoods that can serve as target consumer areas for stakeholders interested in opening a gym or fitness center in Los Angeles, California. The neighborhoods of interest will be those with no gyms or fitness centers within 3000 meters from their center points.

Target Audience

The data within this report will be aimed at commercial property developers and real-estate investors that are in the market to open gyms or fitness centers in Los Angeles, California. Los Angeles City health officials can also benefit from having data on which neighborhoods lack sufficient recreational fitness resources as the city is still struggling with reducing the percentage of overweight individuals. According to data gathered by the Centers for Disease Control and Prevention, between the years 2011-2018, 35-36% of adults in California aged 18 years and older have consistently been classified as overweight. In addition, of that same group and time frame, 24-26% have obesity.

Data

The following data resources will be used for this project:

1. The official list of neighborhoods in Los Angeles.
 - Description: Names of each Los Angeles neighborhood are listed. The scope of this project does not extend to the greater Los Angeles area and is confined to the official neighborhood boundaries under Los Angeles.
 - Data Source: geohub.lacity.org
2. Coordinates for each Los Angeles neighborhood.
 - Description: Latitude and longitude coordinates for the center of each Los Angeles neighborhood. These coordinates will be used to plot circle markers over a map of Los Angeles and to explore each of them.
 - Source: geopy.geocoder package
3. Venue Data in proximity of each Los Angeles neighborhood.
 - Description: Using Foursquare API a search query will be done against the coordinates for each Los Angeles neighborhood and venue data that is within a radius of 3000 meters of each neighborhood will be generated. This venue data will then be filtered to account for only data related to gyms and fitness centers.
 - Data source: Foursquare API