

# Capstone Project – The Battle of Neighborhoods | Finding a Better Place Angeles City, Pampanga, Philippines

## 1. Introduction:

The purpose of this Capstone Project is to help people in exploring better facilities around their neighborhood.

Angeles City, Pampanga, where I stayed for 14 years, I was assigned in this neighborhood because of my work from previous company. The city is a 1st class highly urbanized city in the province of Pampanga, where it is geographically situated but remains politically independent. It is located in the region of Central Luzon, Philippines.

Due to new development in the region. Angeles City will be the main hub to Mega City in Central Luzon, with Clark International Airport under construction and is expected to be finished this year 2020.

Problem statement: Prospects of a Business establishment specially restaurant, close to office areas, and urban areas in Angeles City, Philippines.

During the daytime, especially in the lunch and dinner hours, office areas provide huge opportunities for restaurants. Reasonably priced Php150 – Php250 pesos shops are usually always full during the lunch hours (11 am — 2 pm) and, given this scenario, we will go through the benefits and pitfalls of opening a breakfast cum lunch restaurant in highly dense urban places.

The core of Angeles City is made of 33 barangay but, we will only concentrate on 10 most populated barangay.

### Target Audience

1. Business personnel who wants to invest or open a restaurant. This analysis will be a comprehensive guide to start or expand restaurants targeting the large pool of office workers in Angeles City and adjacent cities during lunch hours.
2. Freelancer who loves to have their own restaurant as a side business. This analysis will give an idea, how beneficial it is to open a restaurant and what are the pros and cons of this business.
3. New graduates, to find reasonable lunch/breakfast place close to office.
4. Budding Data Scientists, who want to implement some of the most used Exploratory Data Analysis techniques to obtain necessary data, analyze it, and, finally be able to tell a story out of it.

## 2. Data Preparation:

- 2.1. Get the barangay names, Population and Land Area of each barangay from citypopulation and government website in the Philippines.

First make use of barangay population table of Angeles City page from City Population. I have used Pandas, Lxml and BeautifulSoup4 library to create the initial data-frame. And use same library for land area of each barangay from Philippines government website. For a clean and understandable data-frame, I renamed some of the barangay for data-frame merging. Using top 10 populated barangay, this will be use to get the most venues within 2 kilometers radius of each area later on.

## 2.2. Get the coordinates of the top 10 barangay.

Some of the coordinates returned by Geopy library are wrong and some are missing using Nominatim and I have to correct using their barangay hall address and correct also the naming of each barangay and get the correct coordinates using Google API.

## 2.3. Foursquare Data

Finally I make use of Foursquare API to obtain the most common venues within 2 kilometers of each top 10 barangay.