

Courser capstone

Locations with few competitions to open a restaurant in the city of
Lagos, Nigeria

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Introduction

Lagos city is Nigeria's largest city and the most populous city in Africa with a population of over 21 million. The city is known for its liveliness caused by the hustle and struggle of busy residents giving it a commercial vibrancy as well as making it the land of entrepreneurship in Nigeria. Termed as 'the 7th fastest growing city in the world' by Heinrich-Boll Stiftung, Lagos' economy is diversified in manufacturing, transport, construction, service, wholesale, and retail sectors. The city is home to Africa's largest and busiest ports and it also accounts for over for over 60 percent of the industrial and commercial ventures of Nigeria. The Economist states that annually Lagos State, home to Lagos City, generates \$90 billion dollars in goods and services. The city is a major financial hub and has the highest GDP in the continent. If it were a country, Lagos State economy would be 7th in Africa, making it bigger than Kenya and Ghana.

Living and Working in the big city is a dream and also a nightmare for anyone who wants to take themselves out of a life of poverty. According to the World Bank, Africa's cities are quickly gaining in population with its urban areas containing up to 472 million people. The number is expected to double over the next 25 years. With a large population all vying to make money, these cities become the engine of the country, generating wealth, creating jobs and spurring innovation.

Citizens of a country who live in all of these big cities hardly have time to cater for themselves and their families, a large chunk of their time Is spent in the busy and long traffic, work and sleep, few of city people have time for rest, fun and sleep, they come back late for work and wake up early for work. They therefore depend on assistant on basic chores such as laundry, cooking, cleaning etc. Restaurants and fast food/drink shops are therefore a major business in big cities, they are found in every nook and cranny of every big cities, a prospective restaurateur need the

right location to open up a new restaurant to attract customers and make profit which is the objective of this capstone project.

Business Problem

The objective of this capstone project is to analyze and select the best locations in the city of Lagos, Nigeria to open a new restaurant. Using data science methodology this project aims to provide solutions to answer the business questions:

- Which Locations have more and less restaurants and fast food spots
- Which Locations are recommended to open up a new restaurant in the city of Lagos

Target Audience of this project

This project is particularly useful to property developers and investors looking to open or invest in restaurant business in Lagos state, it will also be useful for restaurant owners who just want to open up a new branch of their established business. This project is also important to town planners and ministries etc. as results of the project will give them an insight on the clusters and locations of restaurants around the state.

Data

To solve the problem, we will need the following data:

- List of neighborhoods in Lagos state.
- Latitude and longitude coordinates of those neighborhoods.
- Venue data i.e. data related to restaurants and fast food joints.

Methodology

The website '<https://nigeriapostcodes.com/category/lagos/page/>' contains a list of neighborhoods in Lagos, with a total of 101 neighborhoods. I used web scraping techniques with BeautifulSoup to extract the data from the website. Then I got the geographical coordinates of the neighborhoods using Python Geocoder package which gave the latitude and longitude coordinates of the neighborhoods.

After that, I used Foursquare API to get the venue data for those neighborhoods. Foursquare has one of the largest database of 105+ million places and is used by over 125,000 developers. Foursquare API will provide many categories of the venue data, we are particularly interested in the Restaurants category in order to help us to solve the business problem put forward. In the next section, we will present the Methodology section where we will discuss the steps taken in this project.

Results

The results from the binning of restaurant numbers in each category showed that:

1. Neighborhoods in the Islands of Lagos state contain the highest number of restaurants with Victoria Island being the highest
2. Areas around the capital city; Ikeja, contain moderate number of restaurants
3. While a lot of other neighborhoods have low to very low numbers of restaurants compared to the above categories.

Conclusion and Discussion

Alot of restaurants are concentrated on the island in lagos state with about 35 in victoria island which is the highest number in our analysis, 27 in marina another neighborhood on the island of lagos state, the next neighborhood with very high number of restaurants is obalende which is just about 5 minute drive from lagos island, so it suffice to say that from the analysis above, restaurants are concentrated in the islands of lagos and its environs this is due to the fact that the islands of lagos is the most affluent neighborhoods of lagos state and majority of business districts, headquarter of large businesses in Nigeria are located on the islands.

on the other hand moderate number of restaurants are in opebi and its environs, opebi which is situated in Ikeja the capital city of Lagos state, this number of restaurants is expected as ikeja houses some affluent locations and expensive destinations also. whereas alot of other neighborhoods have very low to low number of restaurants, infact some streets in lagos have one restaurant, these are the potential areas for investors and real estate managers to build prospective restaurants, neighborhoods like Eyita, Ikorodu,Olojo amongst others.