Capstone Project - Housing Sales Prices & Venues Data Analysis of Casablanca-Morocco

Table of contents

Introduction: Business Problem

Casablanca is a port city on the Atlantic coast of western Morocco. It is Morocco's biggest city, principal port, and economic capital. The town of Casablanca was founded in 1515. It was an important strategic port during World War II and hosted the Anglo-American Summit in 1943. The city is served by Mohammed V International Airport. Casablanca covers the richest and most sophisticated aspects of Morocco life, style, and architecture. Casablanca boasts one of the most extensive and diverse displays of art deco architecture in the world.
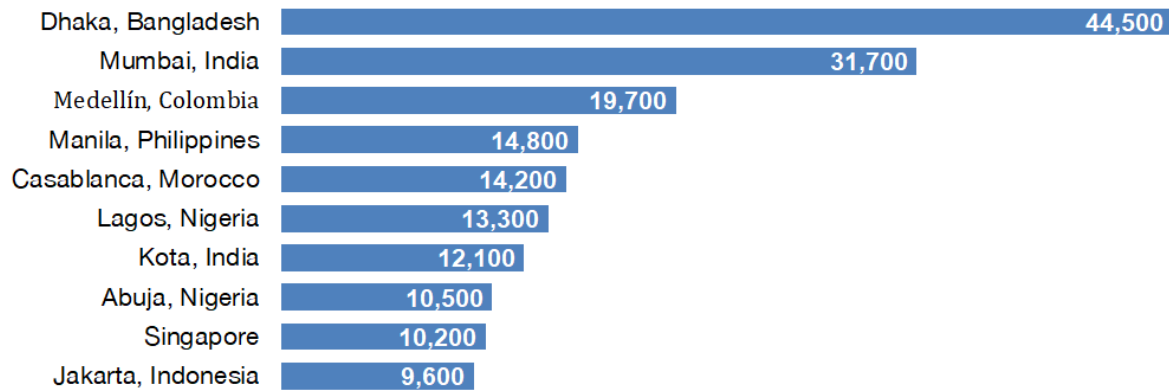
At the center of the former 'Great Casablanca' region (currently part of the Casablanca-Settat administrative region), this metropole is considered the locomotive of the development of the Moroccan economy. It attracts 32% of the country's production units and 56% of industrial labor. The region uses 30% of the national electricity production. The region contributes to 44% of the industrial production of the kingdom of Morocco. About 33% of national industrial exports, MAD 27 billion, comes from the Grand Casablanca; 30% of the Moroccan banking network is concentrated in Casablanca. [1]
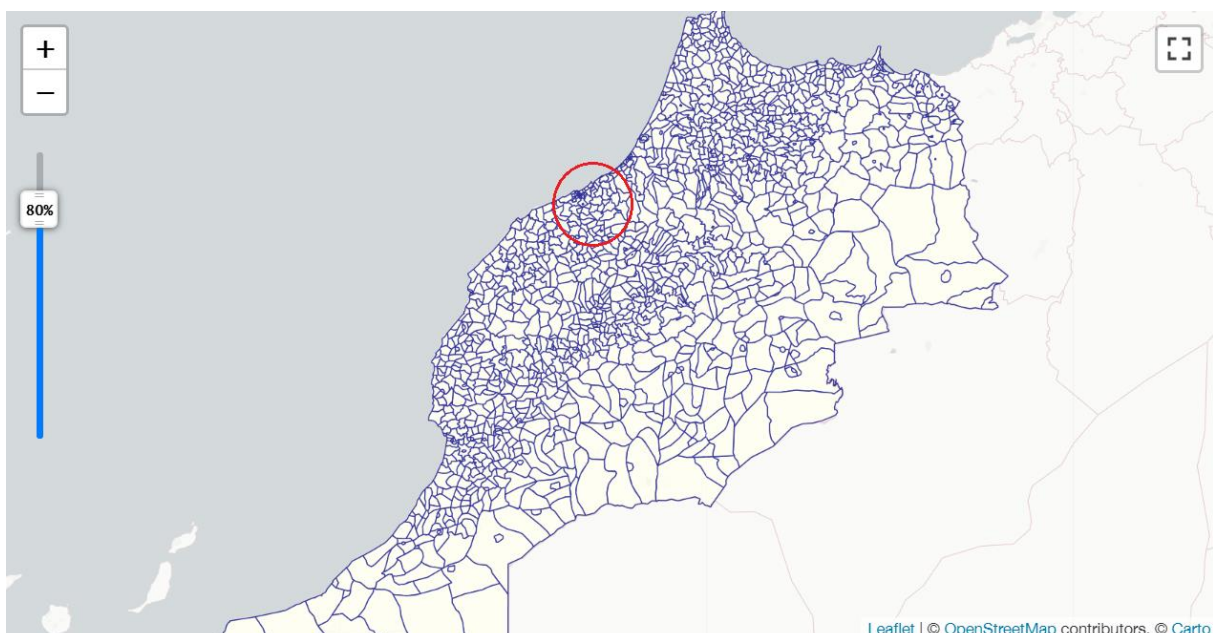
Based on a recent report released by the World Economic Forum (WEF), Casablanca is amongst the world's most crowded cities. With a population density of 14,200 inhabitants per square kilometer, Casablanca came fifth in the world and first in Africa [2].

The world's most crowded cities
Number of people per square kilometre, 2013

City	People per km²
Dhaka, Bangladesh	44,500
Mumbai, India	31,700
Medellín, Colombia	19,700
Manila, Philippines	14,800
Casablanca, Morocco	14,200
Lagos, Nigeria	13,300
Kota, India	12,100
Abuja, Nigeria	10,500
Singapore	10,200
Jakarta, Indonesia	9,600

Source: UN UrbanData

The idea behind this project is to combine venue data with house sales pricing (apartment per square meter price) and try to analyze, index and cluster the results for better understanding of what could motivate a future home owner in Casablanca in his or her choice of district/neighborhood.

Data

In order to answer the main business problem, various data sources were used to collect relevant data, namely:

- Fourth level administrative divisions of Morocco from the spatial data repository of NYU [3]. The GeoJson file wasn't available for download, instead we used the shapefile that was converted later to a csv file and cleaned to reflect Boroughs of the region of 'Great Casablanca'.

- Foursquare API was used to get the most common venues of boroughs of 'Great Casablanca' [4].

- Per square meter housing average prices of boroughs of Casablanca as published by the Directorate-General for Taxation in Morocco (raw data was cleaned and processed to be integrated in our dataset) [5]. Data was wrangled to reflect our need for average per square meter prices of apartments in Casablanca.

References

[1] https://en.wikipedia.org/wiki/Economy_of_Casablanca

[2] https://www.weforum.org/agenda/2017/05/these-are-the-world-s-most-crowded-cities/

[3] https://geo.nyu.edu/catalog/stanford-fd597jf1799

[4] https://developer.foursquare.com/

[5] https://portail.tax.gov.ma/wps/portal/DGI/Referentiels-des-prix-de-l_immobilier?classic=1