

Post Offices Analysis of Abu Dhabi City

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1. Introduction

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1.1. Background

Abu Dhabi is the largest emirate in the United Arab Emirates, occupying 84 per cent of the national landmass territory. It has 200 islands and a long coastline stretching 700km. Its total area is 67,340 sq. km. Abu Dhabi city in the emirate is the federal capital of the UAE. The emirate of Abu Dhabi lies on the coast of the Arabian Gulf and is bordered by Sultanate of Oman to the east, the Kingdom of Saudi Arabia to the south and the west and the emirate of Dubai to the northeast. The three main regions of the emirate are: The city of Abu Dhabi, Al Ain in the east, Al Dhafrah (earlier known as Al Gharbia) in the west. For this analysis I will concentrate in "The city of Abu Dhabi"

1.2. Problem

Determining the best location for new post office will require analysis of current post offices distribution, population distribution within The "city of Abu Dhabi" however I was not able to gather data for population distribution within The "city of Abu Dhabi" Neighborhood wise, so I will use current offices with 2.5Km radius as coverage area for the post office

1.3. Interest

Having more post office mean more coverage and less load for the currently operating offices, I will examine Neighborhoods with no post offices to try to determine best location with minimum office for the uncovered Neighborhoods

2. Data acquisition and cleaning

2.1. Data sources

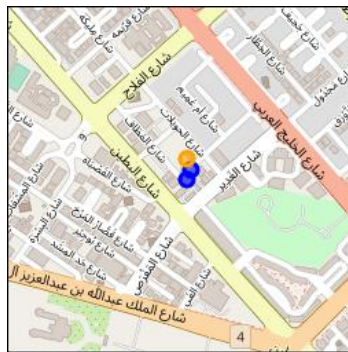
For the analysis I was able to gather data from post offices and Neighborhoods using:

- Bayanat.ae, the official open data source portal including post offices for Abu Dhabi emirate
- Forsquare API to get post offices of city of Abu Dhabi
- BeautifulSoup4 for pulling Neighborhoods from Wikipedia page containing list of Neighborhoods of the city of Abu Dhabi
- Nominatim to convert Neighborhoods address into latitude and longitude
- I used Google Map, to get the coordinates for some of Neighborhoods

2.2. Data Cleaning

I have obtained 25 post offices location from "bayanat.ae" covering Abu Dhabi emirate where our interest is within the city of Abu Dhabi, and since I was not able to obtain a Second-level Administrative Divisions of Abu Dhabi I have dropped locations located more than 50Km from Abu Dhabi City center and International Airport Post Office was dropped since it is limited for Airport usage so I ended up with 15 post Offices from "Bayanat.ae" and 16 from Forsquare

Plotted Post Office locations, **Blue circles** represent locations obtain using **Forsquare**, where **Orange circle** are locations obtain from “**Bayant.ae**” found out some duplicate and some missing locations from **Forsquare**



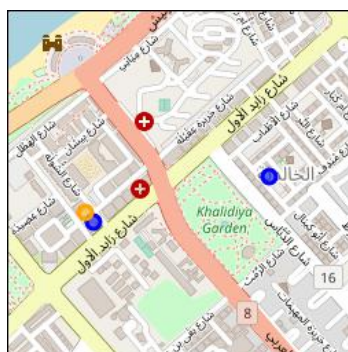
Al Buten Post Office



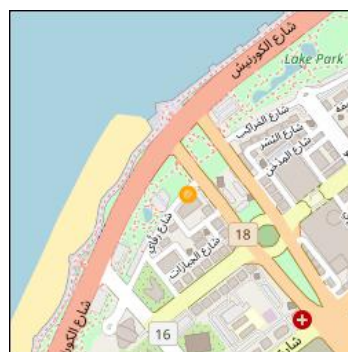
Abu Dhabi Central Post Office



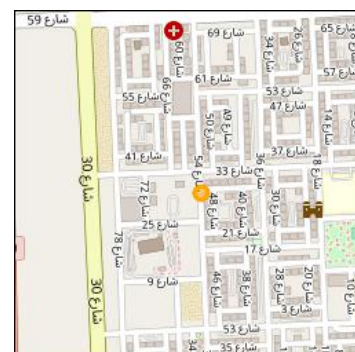
Hamdan Post Office



Al Khaldiyyah Post Office



Chamber of Commerce Post Office



Shabiyat Musafah Post Office

Since Bayanat.ae data was more accurate than Forsquare, I have decided to use “Bayanat.ae” data for the rest of my analysis,

To Obtain and Clean up Neighborhoods of the City of Abu Dhabi I have Used BeautifulSoup4 to pull data out of Wikipedia page contains list of Neighborhoods of the City of Abu Dhabi I ended up with 43 Neighborhoods

“ (page does not exist)” was found in some Neighborhoods names and it was clean up Dropped “Al Qubesat” and “Al Rehhan” as I was unable to obtain accurate or even clear location for them

For some Neighborhoods I was unable to get the Geolocation using Nominatim for 5 of them it was due to spelling differences, listed below Neighborhoods names was changed to be able to obtain Geolocation using Nominatim for them

Name	New Name
Al Karama	Al Karamah
Al Maqtaa	Al Maqta
Al Meena	Al Mina
Al Moroor	Al Muroor
Al Khalidyah	al khalidiya

For the rest of the i have used Google map to search and obtain the GeoLocations

Neighborhoods	Lat	Long
Al Manaseer	24.453333	54.363889
Al Muzoon	24.4081379	54.4338398
Al Ras Al Akhdar	24.4596244	54.3190142
Bani Yas	24.3063479	54.5995936
Al Zaab	24.4667598	54.356339
Hideriyyat	24.417739	54.3576465
Marina Village	24.4772307	54.3179553
Qasr El Shatie	24.4261292	54.380629
Al Samha	24.695833	54.676111
Missing Neighborhoods Added Manually		
Al Bahyah	24.547706	54.6628323
Al Shahama	24.524108	54.6770834
Al Rahbah	24.605807	54.6944333

3. Methodology

4. Results

5. Discussion

6. Conclusion

7. References