ANALYSIS OF REAL ESTATE PRICES IN EGYPT

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Reasearch Question: Which factor has a greater impact on real estate prices in Egypt: the property's location or its physical features (area, number of bedrooms, and number of bathrooms)?

Introduction

Property prices in Egypt vary significantly across cities and developments, influenced by multiple factors. This project investigates how key physical features of a property such as area, number of bedrooms, and number of bathrooms impact its price. By analyzing housing data from different sub-cities, we aim to understand which features are most strongly associated with price differences and how consistent these relationships are across locations.

Objective

To analyze how property features such as area, number of bedrooms, and number of bathrooms affect real estate prices in Egypt, and to evaluate whether these physical features or the property's location have a greater influence on price variations across different sub-cities.

Methodology

Let people know how you did your study. Methods can vary depending on the subject or results you want to see. These methods can include:

Steps for Hypothesis Testing:
- **Step 1:Define the null (H0) and alternative(H1) hypotheses**
- **Step 2:Choosing the appropriate test**
- **Step 3:Calculate the p-value**
- **Step 4:Determine the statistical significance**

Population of Interest: Houses in Egypt
Dataset: Kaggle Dataset for houses in Egypt
**Programming Language: Python, and many powerful libraries.**

Hypothesis

Null Hypothesis (H_0): Property features (area, number of bedrooms, and number of bathrooms) have an equal or greater impact on real estate price than location.
Alternative Hypothesis (H_1): Location has a greater impact on real estate price than property features (area, number of bedrooms, and number of bathrooms)

Analysis

While property price shows moderate positive correlations with its features (bedrooms = 0.50, bathrooms = 0.59, area = 0.65), comparing properties with identical features across different developers and locations (North Coast vs. New Cairo) reveals significant price variations. This highlights that location-specific factors have a more substantial impact on property price than the analyzed features.

This heatmap displays the correlation coefficients between property price and its features (bedrooms, bathrooms, area)
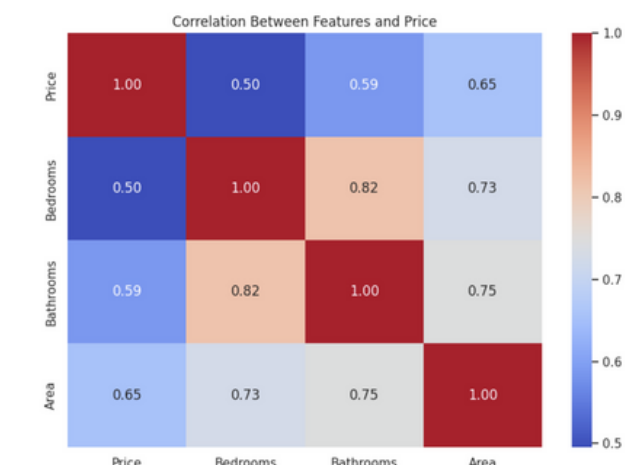
These bar charts compare the average property prices offered by different developers in the North Coast and El Tagamoa (New Cairo) for properties with fixed features: 3 bedrooms, 2 bathrooms, and an area between 140-240 sqm
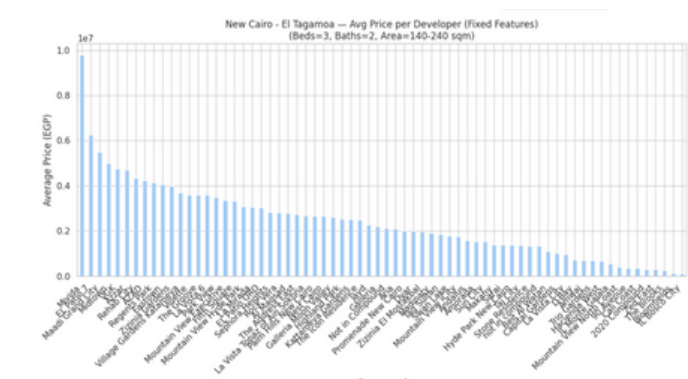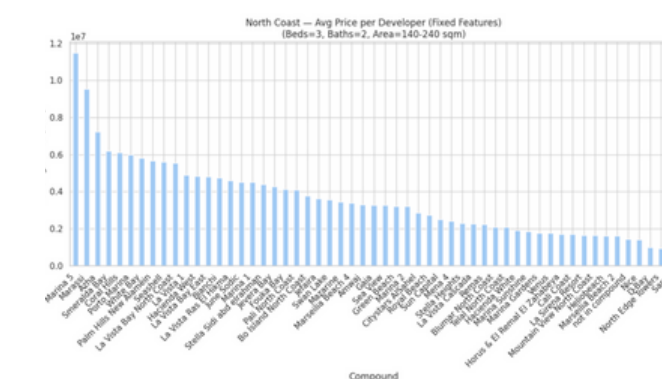
Results/Findings

- Features (beds, baths, area) have a positive but limited influence on price.
- Significant price variations for fixed features across locations and developers indicate a stronger impact of location.

- **Location significantly affects property price more than the analyzed features.**

Conclusion

Location is the most significant factor influencing real estate prices in Egypt, surpassing the impact of features such as area, number of bedrooms, and bathrooms. Properties in high-demand or prestigious neighborhoods consistently exhibit higher price points, regardless of their size or number of rooms. While physical features do contribute to pricing, their influence is secondary compared to geographic desirability. These insights highlight the critical role of location in the real estate market, guiding both buyers and investors to prioritize area over property features when evaluating value. Sellers and developers can also leverage this understanding to focus on prime locations for maximum return on investment.