PROJECT TITLE

DUBAI HOUSING MARKET ANALYSIS

Project By: Siddhi Wagh

1. **Project Objective:** To Design a professional, interactive Power BI dashboard using Dubai housing data that helps users explore and understand property trends in Dubai based on features like price, property size, neighborhood, and year of construction.

2. **Problem Statement:** Real estate professionals often struggle with interpreting large datasets to identify trends in pricing, property distribution, and market segmentation. The challenge lies in converting raw property listings into a clear, user-friendly dashboard that provides actionable insights.

3. **Tool Used for Analysis:** Microsoft Power BI Desktop

4. **Dataset Description:** The dataset contains records of residential properties in Dubai, with the following columns:

- SquareFeet (Size of the property (in sqft))
- Bedrooms (Number of bedrooms)
- Bathrooms (Number of bathrooms)
- Neighborhood (Area type (Urban, Suburb, Rural))
- YearBuilt (Year the property was constructed)
- Price (Selling price of the property)

5. Data Preparation Steps (Using Power Query):

a) Opened Power BI Dashboard - Get Data - Text/CSV - Transform Data
b) Duplicate the dataset and named it “Dubai Dataset”. Unchecked ‘Enable Load’ option by right clicking “housing_price_dataset”
c) Checked all the datatypes
d) Checked for any missing values and Null values. (There are none)
e) Changed price column values into Absolute values as some of them were negative values.
f) Created 2 new columns with name ‘Price_per_Sqft’ (Price / SquareFeet) and ‘Property_Age’ (2025 – YearBuilt)
g) Created conditional column ‘Agewise’ by grouping Property_age column in age groups of 20.
h) Added a new column ‘Category’ by dividing ‘Price’ column in 3 ranges Budget, Mid-Range and High-End
i) Close and Apply.

6. Visualizations Created:

- **KPI Cards:** To Show Total Properties, Average Price, Average Price per SqFt , Average Size (SqFt) , Most Expensive Property
- **Line Chart:** To analyze a trend of average price over the years (Property Built).
- **Stacked Column chart:** To show properties distribution across neighborhood by Property Agee on x - axis.
- **Pie Chart:** To show proportions of Properties by Categories like Budget, Mid-range and High-End.
- **Treemap:** To show Average Price by Neighborhoods like Urban, Rural or Suburb.
- **Scatter Plot (Binned) :** To visualize trend of Average Price vs Property Size with size bins to avoid clutter.
- **Matrix:** To provide raw data for deeper inspection on count of properties per categories and neighborhoods.
- **Slicers:** To enable dynamic filtering by Number Bedrooms and Bathrooms and Year Built.
- **Text Box:** To mention the name of the Dashboard.
- **Buttons:** Reset button using Bookmark and Information button.

Dubai Housing Market Dashboard

Select Number of Bathrooms: 1 | 2 | 3

Select Number of Bedrooms: 2 | 3 | 4 | 5

Select Year Range: 1950 – 2021

50000
Total Properties

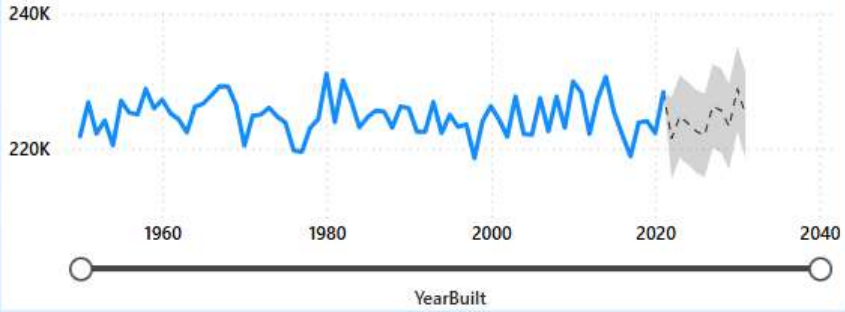
224.84K
Average Price

113.31
Average Price per SqFt

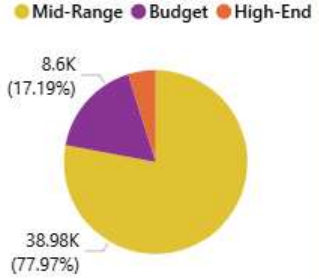
2006.37
Average Size (SqFt)

492.20K
Expensive Property

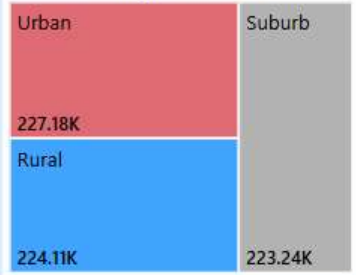
Average Price by Year Built



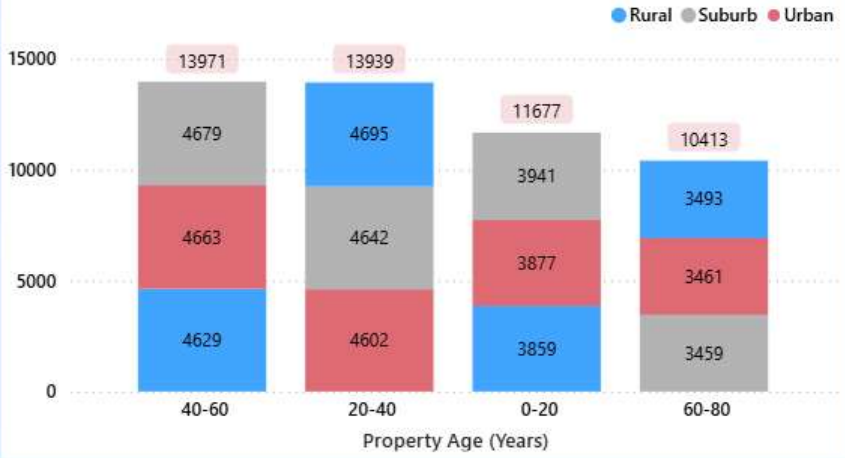
Total Properties by Category



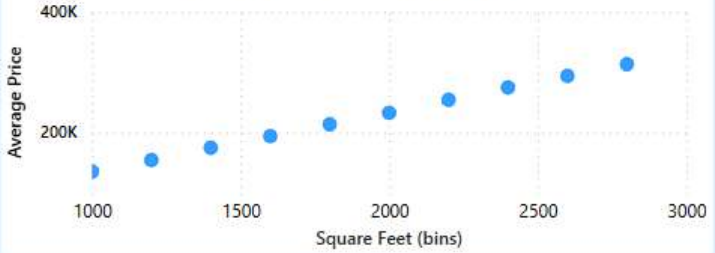
Average Price by Neighborhood



Total Properties by Age



Average Price vs Square Feet



Category	Rural	Suburb	Urban	Total
Budget	2905	2982	2708	**8595**
High-End	799	786	836	**2421**
Mid-Range	12972	12953	13059	**38984**
Total	16676	16721	16603	**50000**

8. Key Takeaways From the Data:

- **General Overview:**

Total Properties : 50,000
Average Price: AED 224.84K
Average Size: 2006.37 SqFt
Average Price per SqFt: AED 113.31
Highest Property Price: AED 492.20K

- On Average, Property prices have shown stable fluctuations since 1950 and prices hover around AED 220K–230K consistently.
- Mid-Range properties dominate the market with 77.97% (38.98K) of the entire properties.
- Urban areas have the highest average price at AED 227.18K, followed by Rural (AED 224.11K) and Suburb (AED 223.24K). The price difference across neighborhoods is relatively marginal, suggesting a balanced distribution.
- Highest property count (13971) is seen in 40–60 years group, across all neighborhoods. New properties (0–20 years) are fewer, indicating lower recent development or inclusion in this dataset.
- There's a strong positive correlation between property size and average price as size increase so does the price increases.

9. Suggested actions for a real estate investor or agent:

- **Invest in mid-range properties** as they make up nearly 78% of the market and offer the highest turnover potential.
- **Prioritize larger properties** (above 2000 SqFt) to maximize resale value and rental income.
- Focus on **urban locations** where average prices are slightly higher, indicating stronger demand.
- Explore opportunities in **newer properties** (0–20 years old), which are fewer and may offer appreciation potential.
- **Diversify investments** across rural, suburb, and urban areas to balance risk and reach varied buyer segments.
- Target properties priced **below the average price per SqFt** (AED 113.31) for better value and growth potential.

10. Conclusion:

This Dubai Housing Market Analysis project aimed to uncover valuable insights to guide investment and real estate decisions using a data-driven approach. The project began with the examination of a large dataset comprising **50,000** property listings. After cleaning and preprocessing the data, used Power BI to design an interactive dashboard. This dashboard reveals key trends in pricing, property categories, location preferences, and size-based valuations. The analysis highlights that mid-range properties dominate the market, while urban areas command slightly higher average prices. A strong positive relationship between property size and price was observed, making larger homes a lucrative investment. The relatively lower presence of newly built properties suggests untapped opportunities in recent developments.

This end-to-end project from raw data to actionable insights demonstrates the impact of combining data analytics with visual storytelling to drive smarter, evidence-based strategies in a dynamic and competitive housing market.

Thank You