

Dubai House Price Analysis

Project Type - Power BI

Project Objectives

- Analyze real estate trends in Dubai using historical property listing data.
- Derive key metrics like average price, property size, price per square foot, and maximum listing price.
- Uncover how factors such as bedroom count, year built, and listing category (Budget, Mid-Range, High-End) influence pricing.
- Provide actionable insights to stakeholders or investors interested in Dubai's housing market.

Data Preparation & Cleaning

1. **Import Raw CSV**
 - Loaded the raw dataset containing property listings (location, size, price, year built, number of bedrooms, listing category, etc.).
2. **Remove Duplicates**
 - Identified and eliminated duplicate rows to avoid skewed analysis.
3. **Handle Missing/Null Values**
 - Removed or imputed entries with null values in critical columns (Price, SquareFeet, YearBuilt, Bedrooms, ListingCategory).
4. **Create Custom Columns**

- **PricePerSqFt** = Price ÷ SquareFeet
- **PropertyAge** = Current Year – YearBuilt
- **ListingCategoryNormalized** = cleaned-up category values (e.g., Budget, Mid-Range, High-End)

Data Modeling

- Ensured correct data types:
 - Price, PricePerSqFt, SquareFeet as **Decimal/Whole numbers**
 - Bedrooms and YearBuilt as **Whole numbers**
 - PropertyAge as **Calculated column**
 - ListingCategory as **Text/Category**
- No additional tables or relationships were required since it's a single flat table.

Key Measures and KPIs

Created the following DAX measures (or used built-in aggregations):

- **AveragePrice** (AVG of Price)
- **AverageSize** (AVG of SquareFeet)
- **AvgPricePerSqFt**
- **MaxPrice** (MAX of Price)

These were displayed as high-level key metrics at the top of the report.

Dashboard Layout & Visualizations

1. **KPIs (Cards):**
 - Average Price, Average Size, Avg Price/SqFt, Maximum Price
2. **Filters / Slicers:**
 - Two slicers: ListingCategory and Bedrooms, allowing users to filter the entire report
3. **Charts and Visuals:**
 - **Column Chart:** *Average Price by Bedrooms* – shows how price trends with bedroom count.
 - **Line Chart:** *Average Price by YearBuilt* – tracks average prices over time (compiled by year).

- **Bar Chart** (stacked): *Count of ListingCategory by Neighborhood and ListingCategory* – compares category counts across urban, suburban, rural areas.
 - **Pie Chart**: *Distribution of Listing Category* – percentage breakdown of Budget, Mid-Range, High-End listings.
 - **Scatter Chart**: *SquareFeet vs. Price colored by ListingCategory* – visualizes price vs size with category differentiation.
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7. Insights & Findings

- **Price vs Bedrooms**: Average price increases steadily with more bedrooms (e.g., 2-bed vs 5-bedrooms).
- **Historical Price Trend**: Price fluctuations over the decades reflect periods of market activity, but hover around ~AED 220–230K.
- **Category Distribution**: Most listings fall into the Mid-Range category, with fewer Budget and High-End listings.
- **Size vs Price Relationship**: Scatter plot reveals a strong positive correlation between square footage and price across all categories. High-End listings tend to cluster at high size and price.
- **Geographic Distribution** (if city-level filters used): Urban areas likely have higher counts of mid and high-end listings versus rural/suburban markets.

Technical Details

- **Tool**: Power BI Desktop (latest version as of report creation)
- **Data Source**: CSV file—manually refreshed
- **Transformations & Modeling**: Done in Power Query & Data view using calculated columns and measures
- **Deployment**: Local dashboard; can be published to Power BI Service

Conclusion

This analysis provides a clear view of Dubai's housing market dynamics. The combination of price trends, sizing, property age, and distribution by listing categories offers actionable intelligence to support investment decisions.

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