

Dubai Housing Price Data Analysis

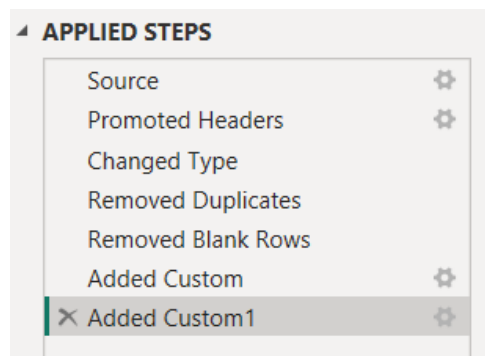
Let's look into a Power BI dashboard I created using a real estate dataset focused on the Dubai housing market. This dashboard is designed to serve three distinct audiences: investors, real estate agents, and policy planners. Our objective was to uncover actionable insights from property listings data to assist in decision-making related to pricing, inventory trends, and market segmentation.”

Data Preparation & Modeling :

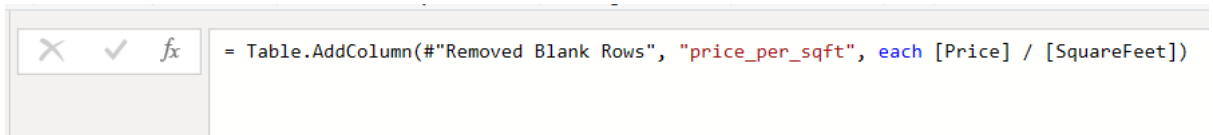
I used Power BI's Power Query Editor to clean and transform the dataset. The original file contained fields such as location, price, number of bedrooms and bathrooms, size in square feet, property type, and other optional fields like year built .

The first task was to ensure data quality. I handled missing values for example, removing rows where price or size was null, as these were critical for downstream calculations. I also checked for duplicates and removed any redundant entries.

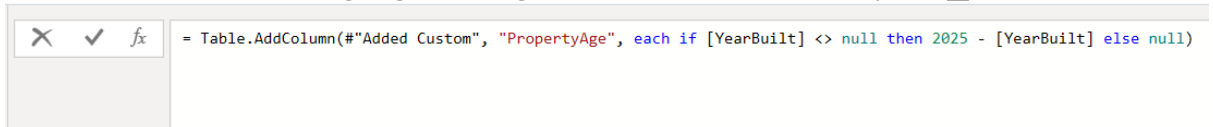
- Next, I converted data types appropriately: price and size to numeric, and categorical fields such as location and property type to text.
- To enrich the data and make it more analytically useful, I created several calculated columns:



- Price Per Square Foot : This was derived as price / size and gives a normalized view of property pricing across various sizes.



- **Property Age** : For listings that included the year built, I created a column calculating age using the formula `2025 - year_built`.



- **Listing Category** : One of the more advanced steps: I created a dynamic classification of properties into ‘Budget’, ‘Mid-Range’, and ‘High-End’ segments based on the 33rd and 66th percentiles of the price distribution. This segmentation helps stakeholders instantly grasp the distribution of listings by affordability.

listing_category
Mid-Range
Budget
Budget
Budget
High-End
Mid-Range
High-End
High-End
High-End
Mid-Range
High-End
Mid-Range
Budget
Budget
Mid-Range
High-End

These transformations allowed me to build a structured semantic model that supports slicing and dicing across multiple dimensions - location, price range, furnishing status, developer, and more.

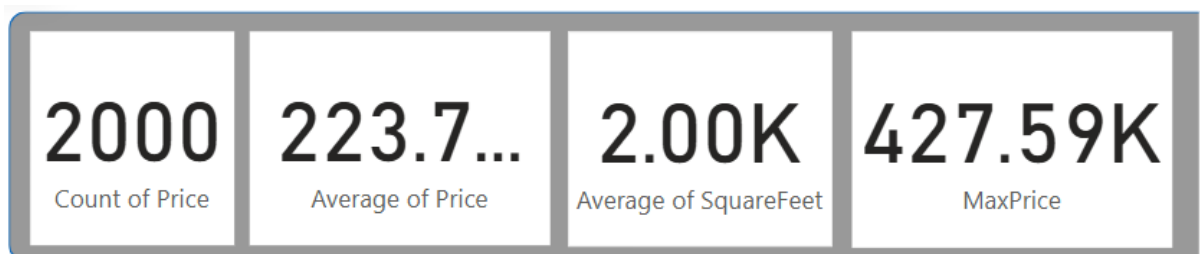
KPI Cards :

I used Card Visuals for four key indicators:

- **Total Listings:** This shows the count of all available properties in the dataset.
- **Average Price:** A basic but important measure for benchmarking.
- **Average Size (sqft):** Useful for comparing average apartment or villa sizes.
- **Highest Priced Property:** This gives agents and investors a sense of the luxury ceiling.

I grouped these cards visually within a rectangle shape. I formatted the shape with a soft gray background and a border to clearly delineate this section as 'Key Metrics'. I also sent the shape to the back layer so that the cards are prominently visible on top.

This layout makes it easier for any user , whether a novice agent or a senior policymaker to get an at-a-glance market snapshot.



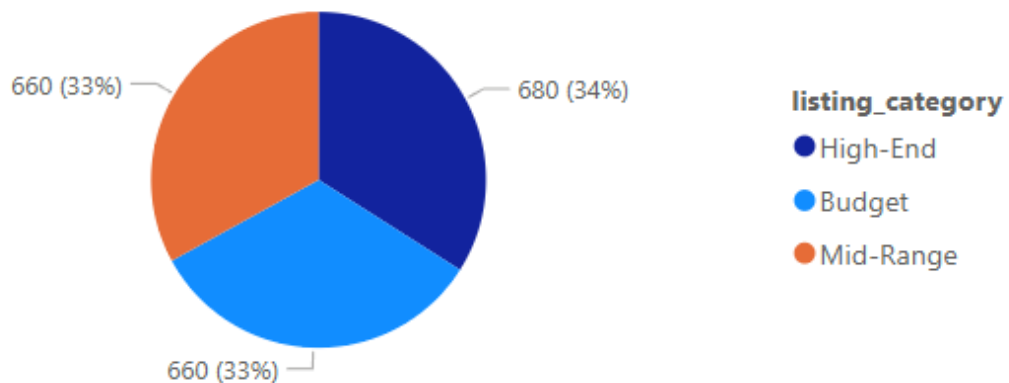
Pie Chart :

I implemented a Pie Chart to represent the proportion of properties in each listing category : Budget, Mid-Range, and High-End.

This visual is highly effective for summarizing market segmentation. For instance, if Budget listings dominate the share, it could indicate either low market affordability or oversupply of economy-grade housing. Conversely, if High-End properties dominate, it might be a signal of luxury-focused development.

I added data labels and percentage annotations for each slice to enhance readability. From the pie chart, we can visually deduce how the market skews , whether it's investment-friendly, balanced, or tilted toward a luxury audience.

Count of Price by listing_category



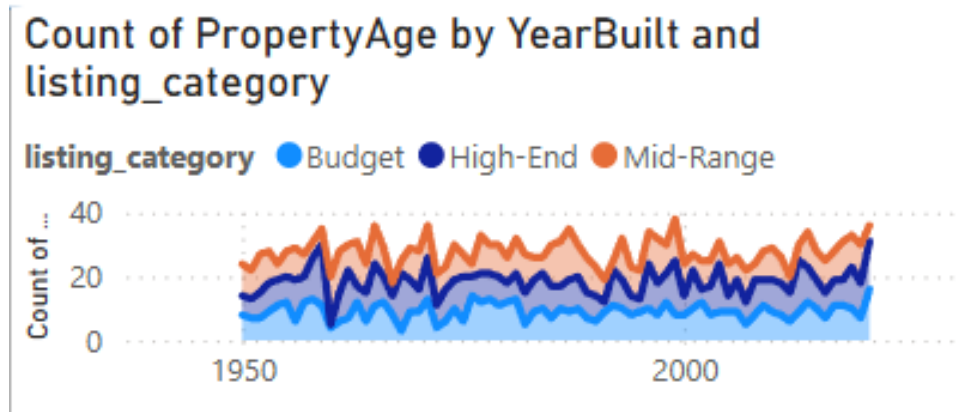
Stacked Area Chart :

I created a Stacked Area Chart showing the growth of listings over time by category.

Since our dataset may not have explicit time data like listing date, I used the `year_built` field as a proxy to simulate a time dimension. I plotted the number of properties over time, stacked by listing category.

This chart reveals development trends: for example, if High-End property listings surged after 2015, or if Budget housing has stagnated, this tells investors what's been in focus over the years.

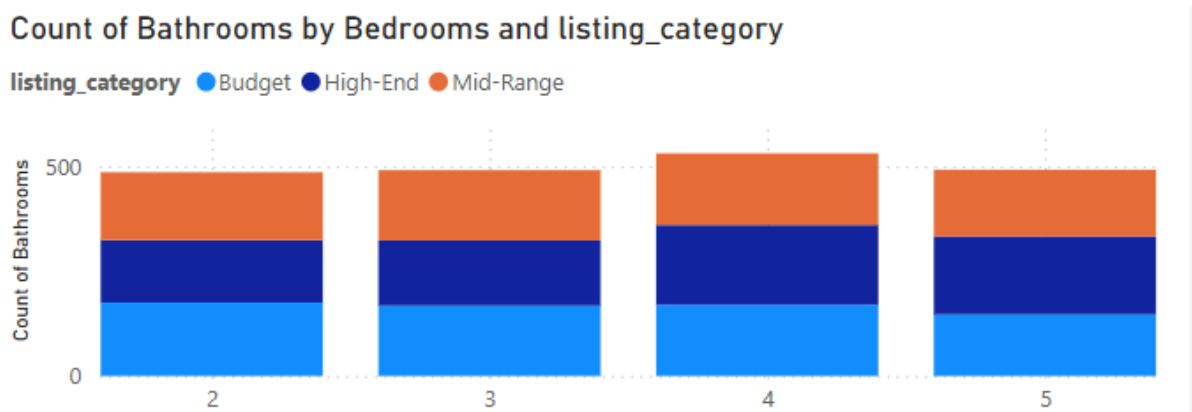
The stacked format also helps identify overlaps and market shifts, whether Mid-Range properties are gaining share, or if Budget properties are declining.



Stacked Column Chart :

Next, I used a Stacked Column Chart to show the distribution of listings by bedroom count, further broken down by property type.

Here, each column represents a specific number of bedrooms — say 2BHK, 3BHK, 4BHK — and the color-coded segments within each column indicate whether the properties are apartments, villas, townhouses, etc.



This visual is particularly valuable for real estate agents. It helps identify demand and supply gaps. For instance, if 4-bedroom apartments dominate the dataset, it could mean high buyer interest or an oversupply in that segment.

Line and Clustered Column Chart :

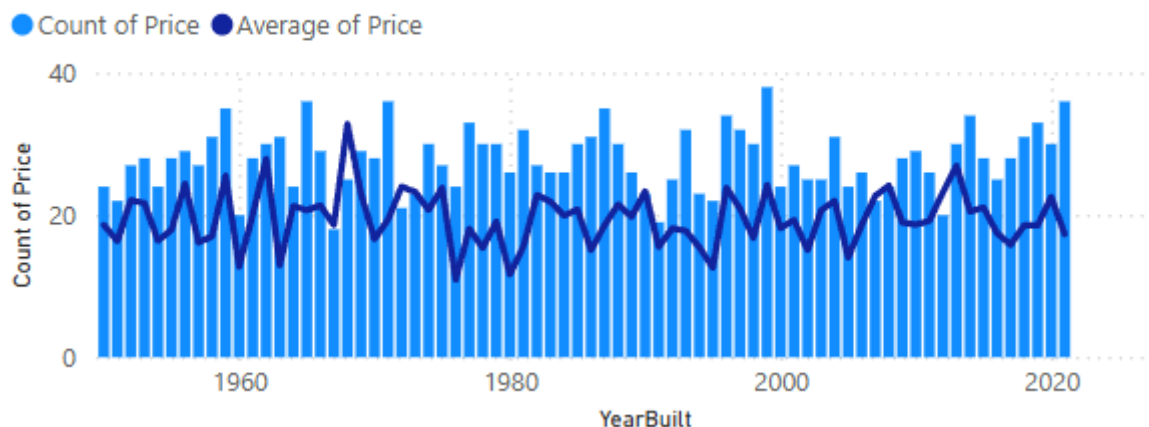
I integrated a Line and Clustered Column Chart, which overlays two different types of measures on a shared axis.

The columns represent the count of listings per year (or another grouping), while the line overlays average price trends over the same timeline.

This dual-axis visual helps policymakers and analysts correlate supply with pricing. For example, a sudden spike in property count followed by a plateau or decline in price might suggest oversaturation. Conversely, rising prices amidst stable inventory may point to strong demand.

I synchronized the axis labels, added tooltips, and used color coding to make the chart intuitive and data-rich.

Count of Price, Average of Price and First listing_category by YearBuilt



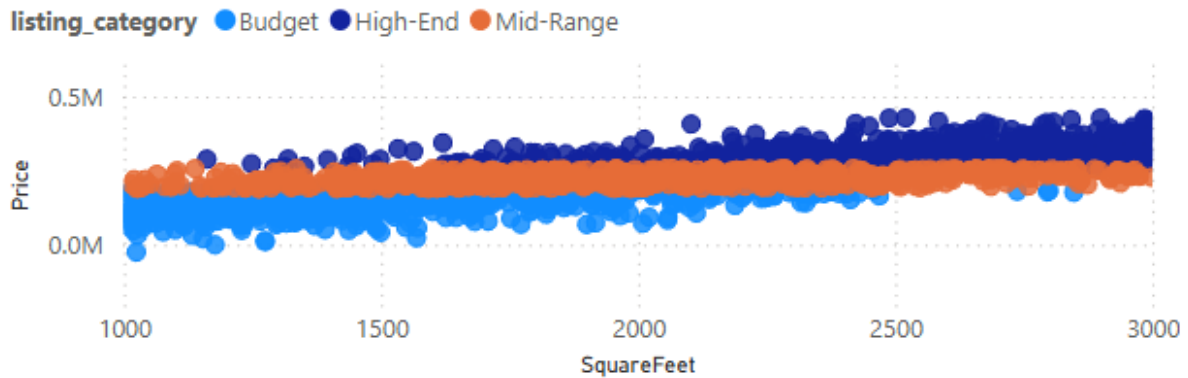
Scatter Plot :

I used a Scatter Plot to map Size (sqft) on the X-axis against Price on the Y-axis, colored by listing_category.

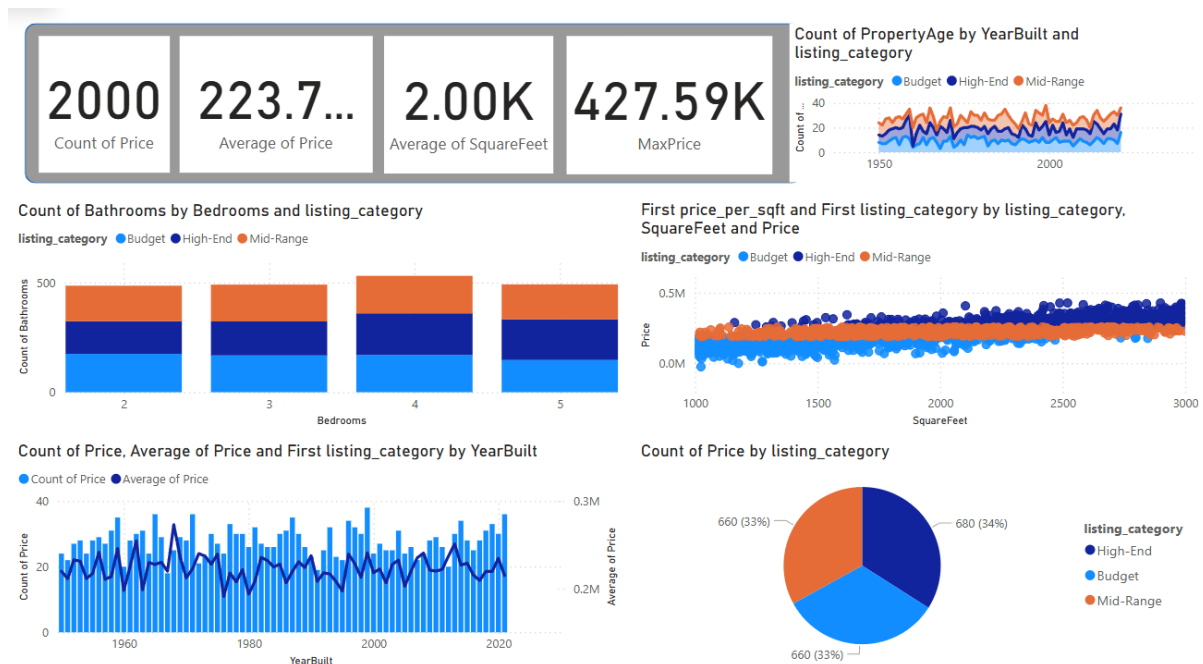
This visual is powerful for identifying outliers and pricing anomalies. For instance, a tiny property priced unusually high might indicate a prime location or ultra-luxury build. Meanwhile, large but inexpensive properties could be in less desirable areas.

Scatter plots also help investors spot value pocket - that is, properties that offer large size for below-average price.

First price_per_sqft and First listing_category by listing_category, SquareFeet and Price



Through these visuals and filters, the dashboard becomes a powerful storytelling tool.



- For investors, it identifies undervalued locations and segments with high ROI potential.
- For agents, it highlights which types of listings are most common and what configurations are in demand.

- For policymakers, the trends by year, price range, and furnishing status can inform housing policy and urban planning.

Additionally, tooltips were added across visuals to enhance interactivity. For instance, when hovering over a pie slice or scatter point, you'll see detailed price and size information.

This Power BI dashboard leverages clean data, calculated insights, and thoughtfully designed visuals to provide real-time, interactive analytics on Dubai's housing market.