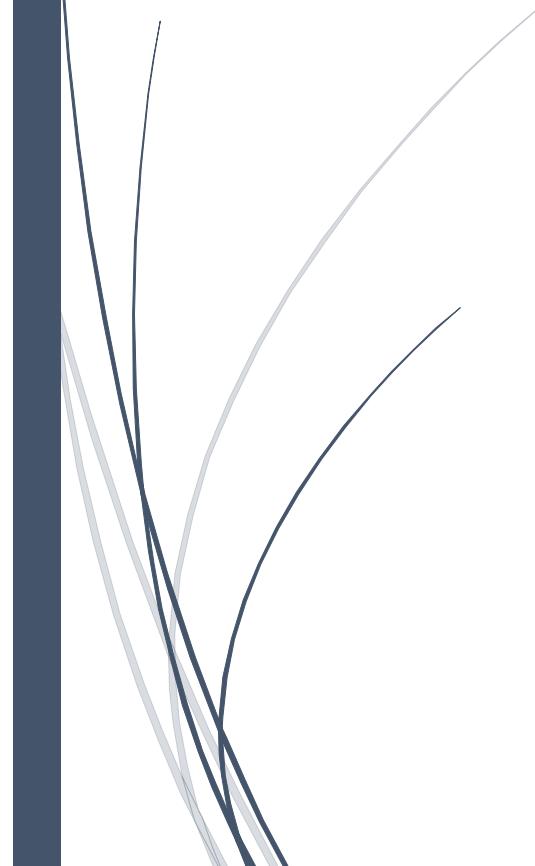




REAL ESTATE MARKET INSIGHTS: AN EXPLORATORY ANALYSIS OF ZAMEEN.COM



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Introduction

The real estate market in Pakistan is shaped by rapid urban expansion, shifting investment patterns, and large variations in property values across major and secondary cities. To understand these dynamics, this project conducts a structured exploratory data analysis (EDA) of property listings from Zameen.com, focusing on key factors such as price behavior, city-wise trends, area variations, and listing characteristics.

The key insights driven after conducting the data analysis are as follows:

1. Price Distribution of Properties:

The log-scaled price distribution reveals two clear clusters in the market. The first cluster around log values of 10–12 reflects lower- to mid-range properties, typically priced in the hundreds of thousands to a few million PKR. The second, denser cluster between log 15–18 represents high-value and luxury properties, indicating a strong concentration of listings in major urban centres where premium real estate dominates. The distinct separation between clusters suggests a segmented market, with fewer listings in the mid-price band and a notable skew toward high-end properties.

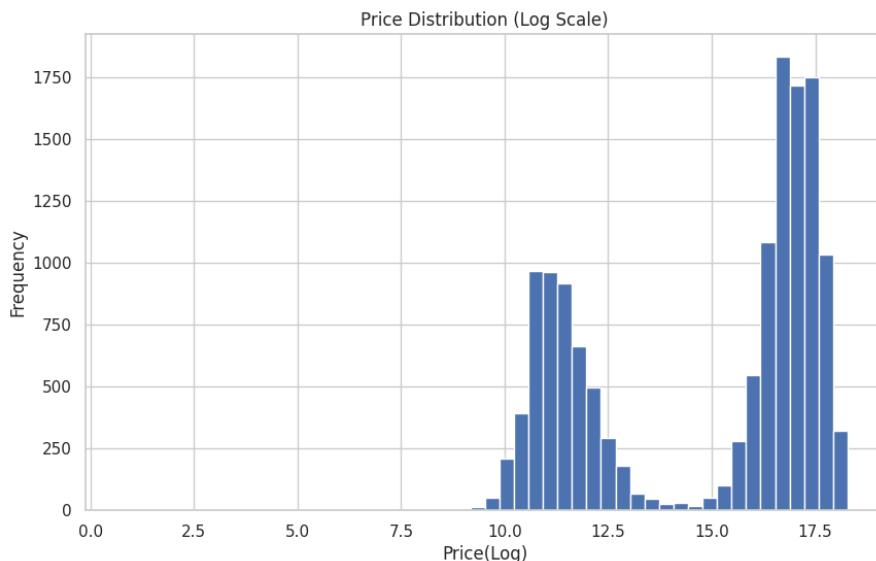


Figure 1: Log-scaled histogram showing clusters of property prices across Pakistan.

2. Distribution of Property types:

The distribution of property types indicates that houses overwhelmingly dominate the listings, forming the largest category by a wide margin. Flats are the second most common type, reflecting growing demand for apartment living in major cities. Upper and lower portions appear in much smaller numbers, suggesting either limited supply or niche demand compared to full houses and flats. The near absence of rooms highlights that standalone room rentals or sales are not a significant segment of the property market on this platform. Overall, the dataset is heavily skewed toward houses, indicating that most listings cater to buyers seeking complete residential units rather than subdivided or temporary accommodation.

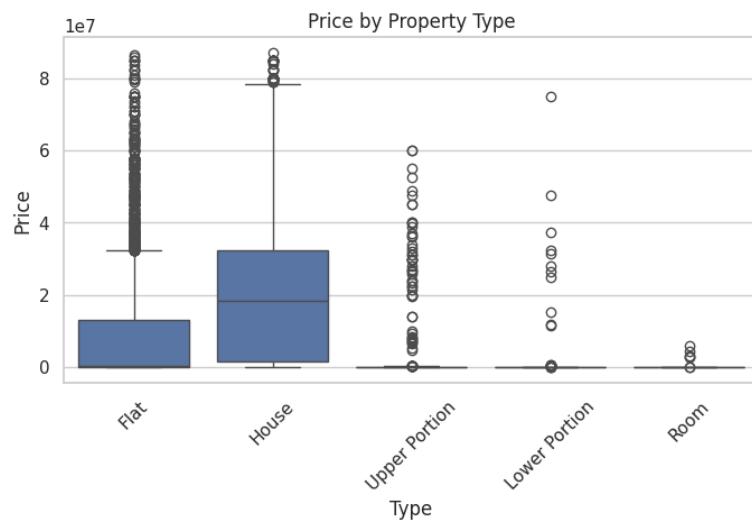


Figure 2: Countplot showing the frequency of different property types listed on Zameen.com.

3. Top 10 Cities by Property listing:

Karachi leads the platform with the highest number of listings, reflecting its position as Pakistan's largest and most active real estate market. Rawalpindi and Islamabad follow closely, indicating strong demand and ongoing development in the twin cities. Lahore, Multan, and Faisalabad also show substantial listing volumes, highlighting these cities as key regional hubs for residential investment. Towards the lower end of the top ten, cities like Gujranwala, Peshawar, Sialkot, and the repeated Gujranwala entry indicate moderate yet meaningful market activity. Overall, the distribution suggests that property searches and transactions are primarily concentrated in the

country's major metropolitan centers, with Karachi and the twin cities generating the highest listing volumes.



Figure 3: Bar chart showing the ten cities with the highest number of property listings

4. Price variation across Property types:

The boxplot reveals substantial price variation across property types, with houses commanding the widest price range and the highest upper-end values. Flats also show a broad distribution, though generally at lower price points compared to houses, reflecting their prevalence in urban apartment markets. Upper and lower portions exhibit moderate pricing but with noticeable outliers, suggesting that certain portion-based properties in prime locations can still reach premium valuations. Rooms remain the lowest-priced category with minimal variation, indicating limited market representation and a narrower affordability segment. Overall, the distribution highlights that full houses and flats dominate higher-value transactions, while portions and rooms account for more budget-conscious listings

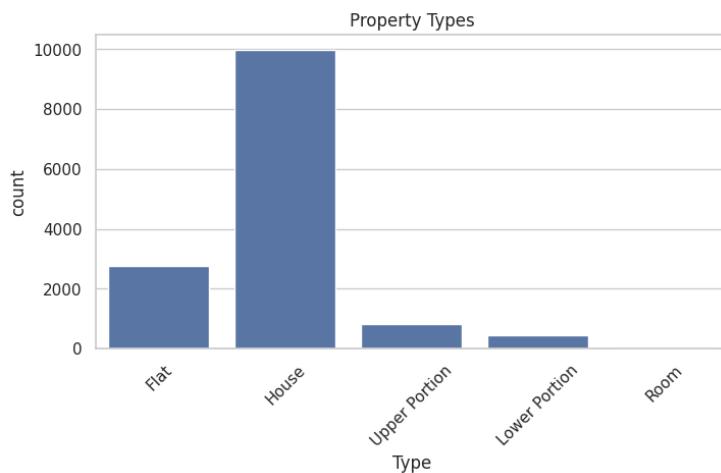


Figure 4: Boxplot comparing property prices across different property types.

5. Price distribution among Top 10 Cities:

The price distribution across major cities shows significant variability, reflecting diverse market conditions and demand-supply dynamics. Islamabad and Lahore exhibit the highest median prices, demonstrating strong demand for premium residential properties. Karachi, despite having the highest number of listings, shows a wide price range, reflecting its highly segmented market across different neighborhoods. Cities such as Faisalabad, Multan, Peshawar, and Sialkot display mid-range price distributions, indicating a mix of affordability and moderate investment opportunities. Gujranwala stands out as a relatively low-cost market, with a tight distribution of lower-priced listings and fewer high-value outliers. The differences across cities emphasize how location strongly shapes property valuations in Pakistan.

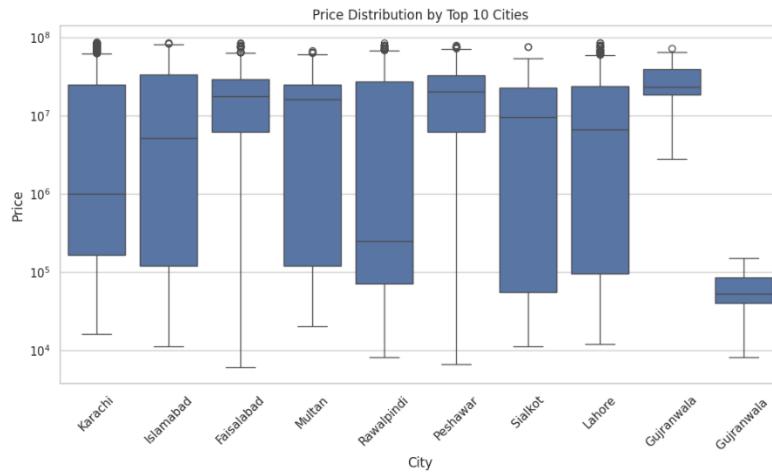


Figure 5: boxplot illustrating price variability across the top 10 Pakistani cities.

6. Relationship Between Property Area and Price:

The scatterplot demonstrates a positive but non-linear relationship between area and price. While larger properties generally have higher prices, the spread of points shows substantial variability within similar area ranges. Two distinct clusters are visible—one representing mid-range listings and another reflecting higher-end, luxury properties—indicating that area alone is not sufficient to predict price. Properties of similar sizes may have drastically different prices due to neighborhood desirability, property type, and construction quality. The log transformation highlights these patterns clearly, reinforcing the idea that multiple factors jointly influence property valuation.

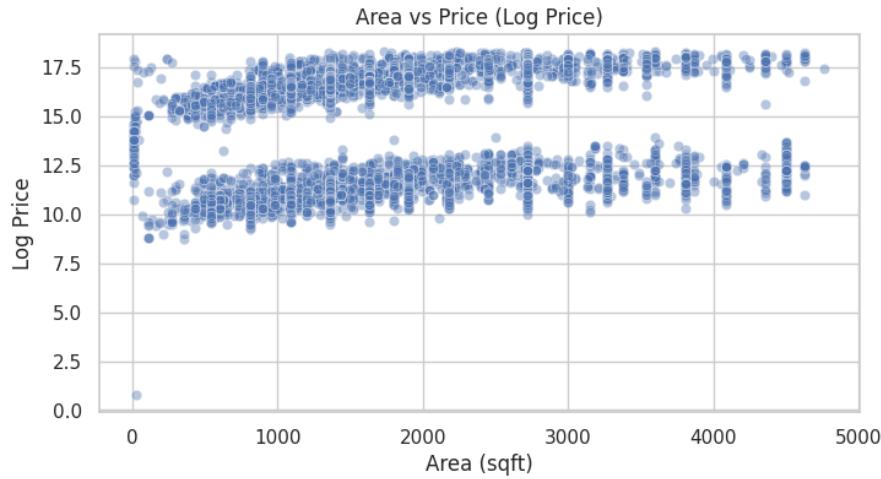


Figure 6: Scatterplot showing the relationship between property area (sqft) and log-transformed prices

7. Price Distribution by Number of Bedrooms:

The plot displays a clear upward trend between the number of bedrooms and property price. Properties with 1–3 bedrooms fall into the lower-price segment with relatively tighter spreads, while 4–6 bedroom homes show significantly higher median values and broader distributions, reflecting mid- to upper-tier residential markets. For homes with 7 or more bedrooms, prices become more variable, with multiple high-value outliers indicating luxury, large-family, or mansion-style properties. The widening variance with bedroom count shows that while bedroom number is a strong indicator of property value, it interacts with location and build quality to shape final prices.

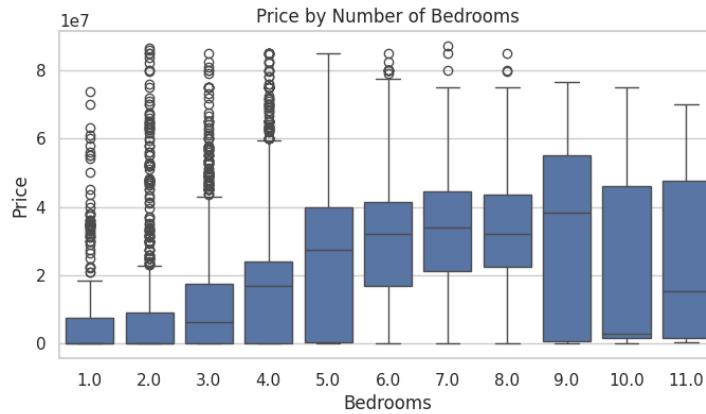


Figure 7: Boxplot illustrating how property prices vary with the number of bedrooms.

8. Correlation Between Key Property Features:

The heatmap highlights meaningful relationships between key numerical features. Price shows moderate positive correlations with area, bedrooms, and bathrooms, confirming that larger and

more spacious properties tend to command higher values. Bedrooms and bathrooms exhibit a strong correlation with each other, reflecting the typical layout pattern of larger properties having more amenities. Price_per_sqft shows a strong positive correlation with total price but a slight negative correlation with property area, suggesting that smaller properties generally attract higher per-square-foot pricing. Overall, the correlation structure indicates that while size and structural features influence price, they operate alongside non-quantified factors such as neighbourhood desirability, property age, and overall build quality.

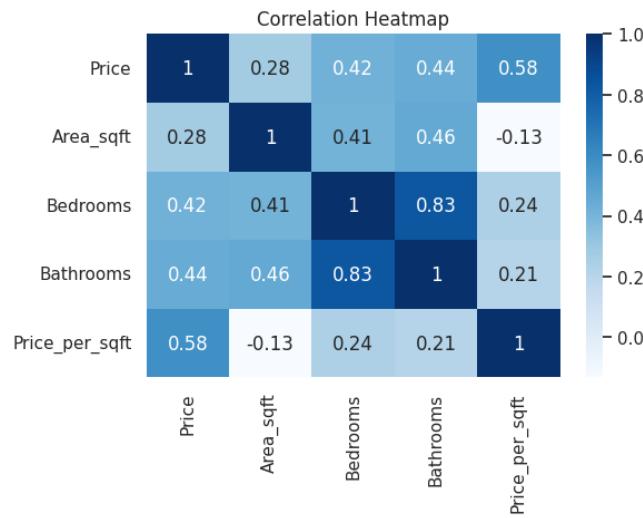


Figure 8: Heatmap showing correlations among price, size, and structural attributes of properties.

Conclusion:

Pakistan's property market shows strong segmentation, with prices influenced by a combination of city location, property type, and structural features such as area, bedrooms, and bathrooms. Larger cities like Karachi, Islamabad, and Lahore dominate both listing volume and price levels, while smaller cities remain more affordable. Although bigger homes with more rooms generally cost more, the analysis shows that area alone does not determine value; location and market tier play an equally important role. Overall, the findings highlight a diverse and multi-layered market where both size and geography shape real estate pricing trends.