KING COUNTY REAL ESTATE VALUATION

Beginning

Overview

Real estate stands as a pivotal avenue for financial investment and wealth accumulation. Within the realm of property, myriad factors from physical characteristics to locational attributes influence its valuation. King County, characterized by its dynamic and varied real estate market, displays stark valuation differences, making it essential for stakeholders, especially real estate investors and agents, to grasp these intricacies. Such knowledge is paramount for making astute decisions and offering insightful counsel to clientele.

Business and Data Understanding

The driving force of this project is a real estate investor and agent fueled by the desire to maximize investment returns and equip clients with profound knowledge regarding property valuations in King County. The primary objectives encompass:

1. Deciphering the interrelation between a property's state and its subsequent pricing.

2. Estimating the value addition offered by waterfront views in the county's properties.

3. Delving into the price influence wielded by property renovations and discerning the most value-adding refurbishments.

Middle

Modeling

A holistic understanding of the King County House Sales dataset is vital. It consists of sales information for houses within King County, Washington. The data, organized tabularly, represents each house sale as an individual record. Key features within this dataset that form the basis of our modeling include:

- Above-ground and basement square footage.

- History of renovations and construction dates.

- Geographical coordinates.

- Proximity to waterfront and the quality of views.

- Maintenance condition and construction grade.

- Size comparisons with neighboring properties.

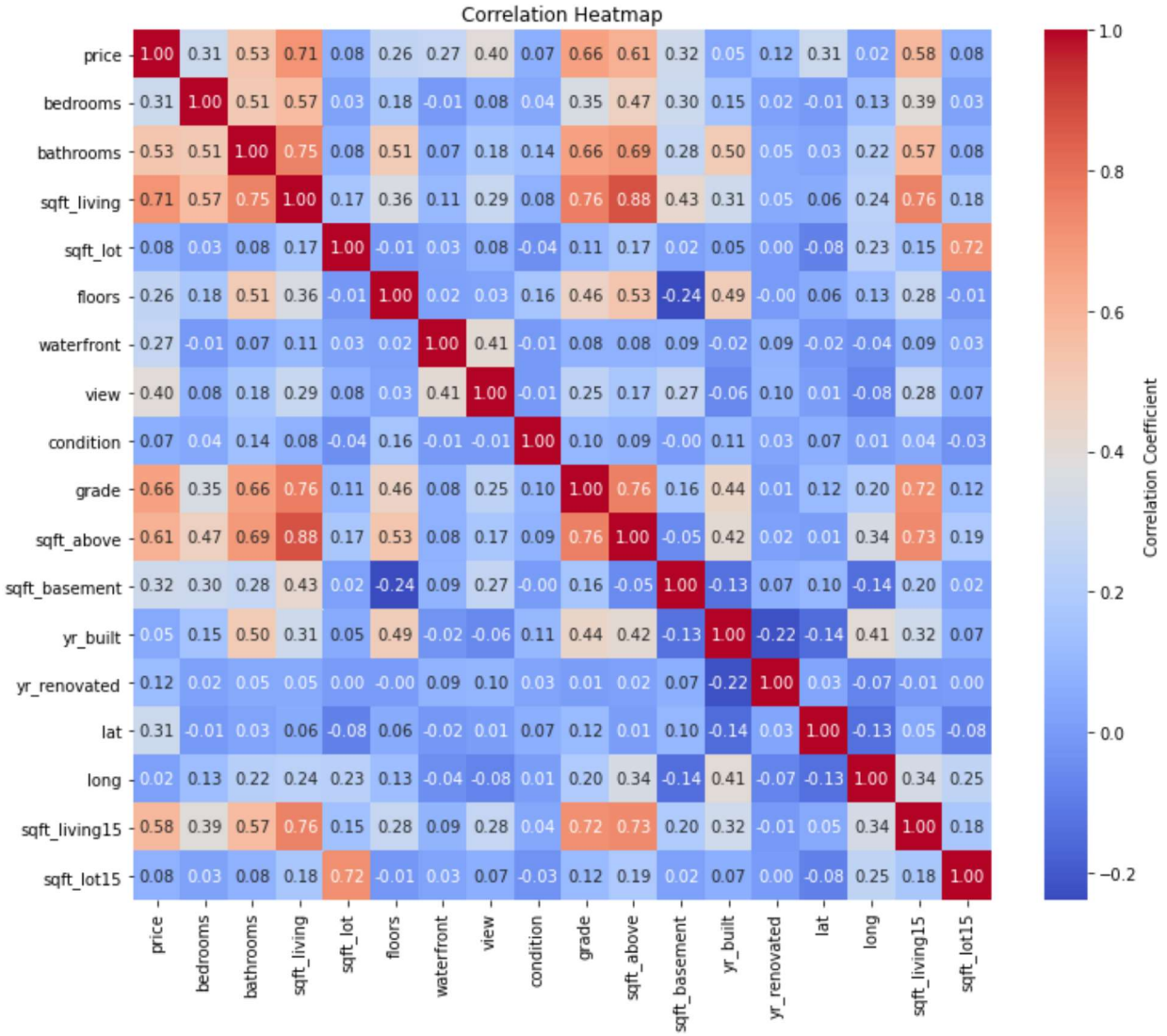
- Structural elements such as the number of bedrooms, bathrooms, living space dimensions, lot sizes, and floor count.

Preliminary correlation analyses indicate:

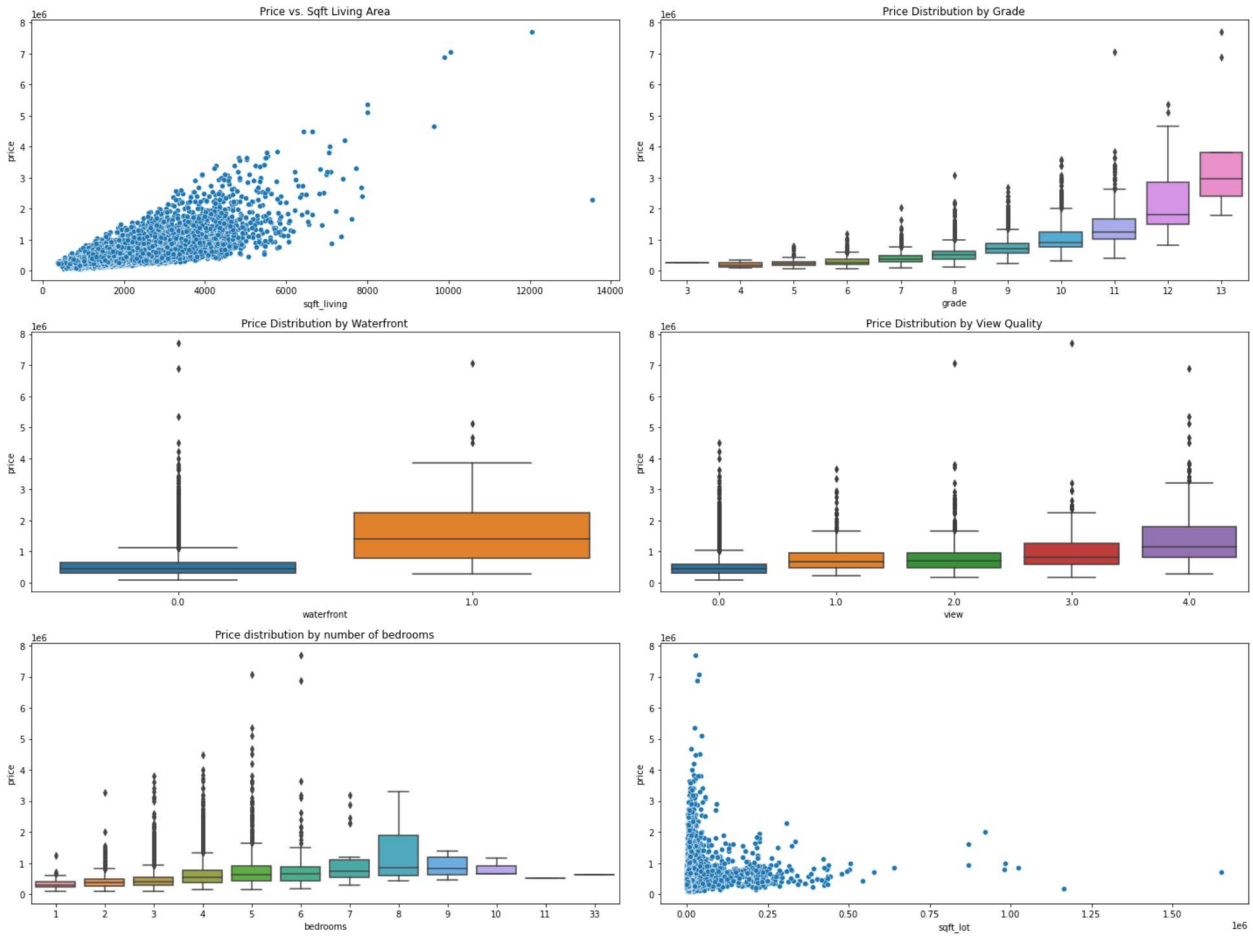
- Strong positive price correlations with living space, grade, and above-ground area.

- Location-specific (latitude) price variations.

- Weaker price relations with lot size, maintenance condition, and construction year.



Visual representations include scatter plots correlating living space with price and boxplots juxtaposing waterfront, view quality, and grade against pricing.



Regression Results

Statistical models have been employed for predicting house prices using the wealth of features provided. Reasons for adopting this analytical approach include:

- The ability of models like Linear Regression and tree-based constructs to consider multiple variable interactions and their collective impact on pricing.

- The quantifiable nature of regression coefficients offers precise interpretations over mere visual representations.

Upon analysis, the following results were derived;

- With the first method, called "Linear Regression," our average guess was off by about $194,197. This method got the guess right about 70% of the time.

- The second method, named "Random Forest," did better. On average, our guess was off by about $125,439, and it guessed correctly around 88% of the time.

- The third method, "XGBoost," was pretty similar to the second. The average error was about $125,569, and it also guessed right about 88% of the time.

Evidently, Random Forest and XGBoost models outperform Linear Regression in predicting house prices.

End

Recommendations

Stakeholders, while seeking the pinnacle of accuracy, should opt for Random Forest and XGBoost models. Yet, in scenarios demanding clear interpretability, the simplicity of Linear Regression could be favored. Key features to be spotlighted during investment strategies are 'waterfront', 'latitude', 'living space size', and 'condition' given their substantial influence over pricing.

Next Steps

To ensure the models remain current and accurate, it's vital to consistently update and retrain them, reflecting the ever-evolving real estate landscape.

Thank You

We are grateful for the opportunity to delve deep into the King County real estate market and believe the insights derived will serve stakeholders immensely in their investment decisions.