



Kings County Home Analysis

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Summary

Data was analyzed to unveil key factors influencing home prices in King County:

- 1. Square Footage**
- 2. View Quality**
- 3. Heat Source**
- 4. Waterfront Properties**
- 5. Above-Average Condition**
- 6. Grade Categories**

Outline

01 Business Problem

03 The Results

05 Conclusion

02 Data

04 Feature Analysis

06 Next Steps

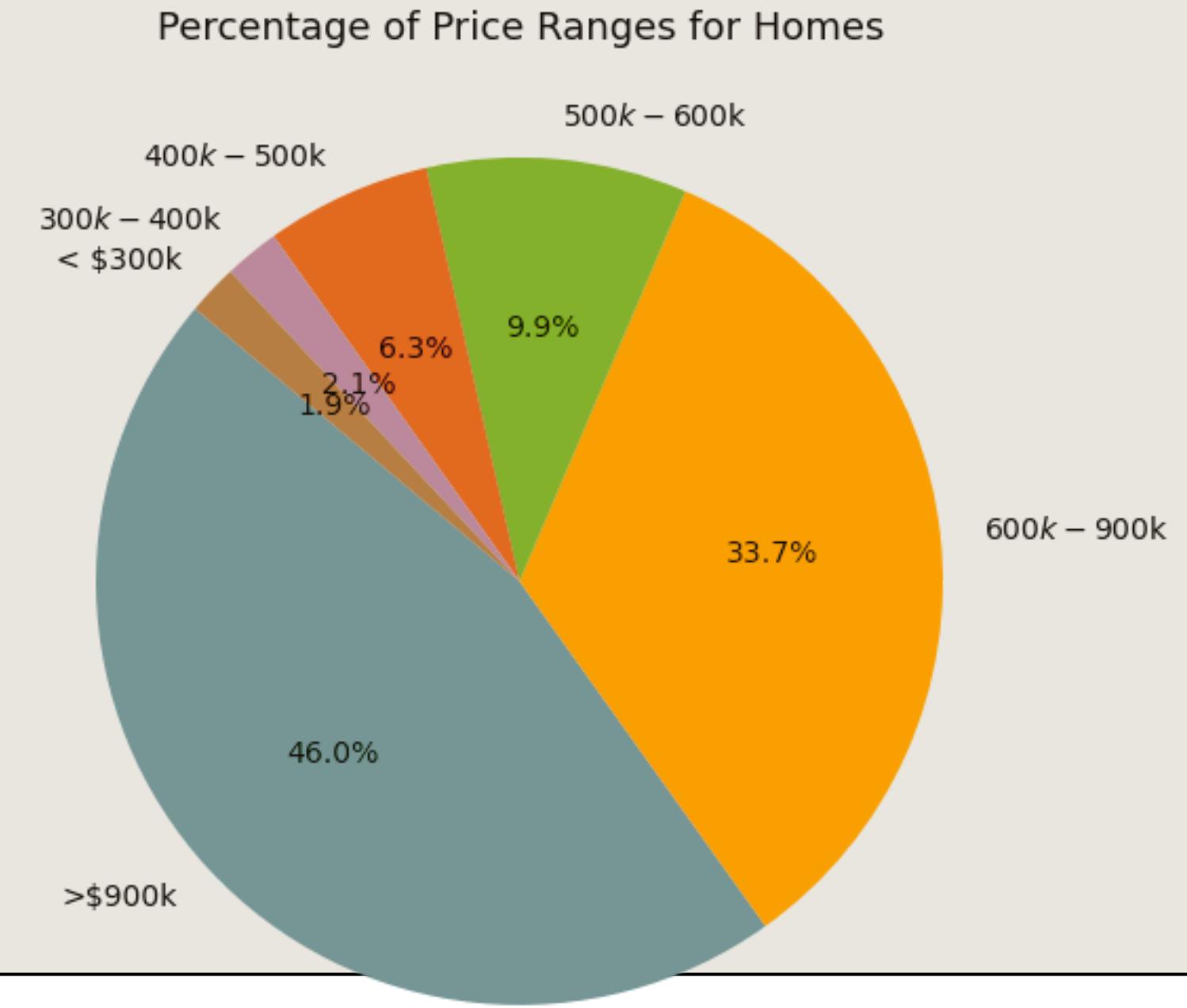
Business Problem



- **View:** How does the quality of the view impact home prices?
- **Size:** What role does the size of a home play in determining its price?
- **Heat Source:** How does heat source affect home prices?
- **Grade:** Does the grade of a property significantly influence its price?
- **Quality:** What impact does the quality of a home have on its selling price?



The Data



King County House Sales dataset: includes property characteristics such as square footage, the number of bedrooms and bathrooms, house condition, grade, and even aspects like views.

The Results



Final Model

OLS Regression Results						
Dep. Variable:	log_price	R-squared:	0.473			
Model:	OLS	Adj. R-squared:	0.473			
Method:	Least Squares	F-statistic:	1688.			
Date:	Tue, 19 Sep 2023	Prob (F-statistic):	0.00			
Time:	10:25:27	Log-Likelihood:	-16726.			
No. Observations:	30049	AIC:	3.349e+04			
Df Residuals:	30032	BIC:	3.363e+04			
Df Model:	16					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
const	12.2540	0.037	334.083	0.000	12.182	12.326
sqft_total	0.0002	3.44e-06	55.794	0.000	0.000	0.000
view	0.0550	0.003	16.736	0.000	0.049	0.061
heat_source_Gas	0.0172	0.006	3.127	0.002	0.006	0.028
waterfront_YES	0.2666	0.021	12.758	0.000	0.226	0.308
condition_Above Average	0.1381	0.008	17.457	0.000	0.123	0.154
grade_2.0	0.4992	0.390	1.280	0.201	-0.265	1.264
grade_4.0	0.6257	0.068	9.233	0.000	0.493	0.758
grade_5.0	0.6487	0.041	15.821	0.000	0.568	0.729
grade_6.0	0.6985	0.036	19.143	0.000	0.627	0.770
grade_7.0	0.8595	0.036	24.043	0.000	0.789	0.930
grade_7.65479360852197	0.3874	0.134	2.881	0.004	0.124	0.651
grade_8.0	1.0411	0.036	29.146	0.000	0.971	1.111
grade_9.0	1.2868	0.036	35.700	0.000	1.216	1.357
grade_10.0	1.4861	0.037	39.959	0.000	1.413	1.559
grade_11.0	1.6502	0.041	40.279	0.000	1.570	1.730
grade_12.0	1.7012	0.051	33.252	0.000	1.601	1.802
grade_13.0	1.3697	0.089	15.324	0.000	1.194	1.545
Omnibus:	7433.378	Durbin-Watson:		1.978		
Prob(Omnibus):	0.000	Jarque-Bera (JB):		73900.752		
Skew:	-0.906	Prob(JB):		0.00		
Kurtosis:	10.466	Cond. No.		2.20e+17		

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The smallest eigenvalue is 3.89e-24. This might indicate that there are strong multicollinearity problems or that the design matrix is singular.

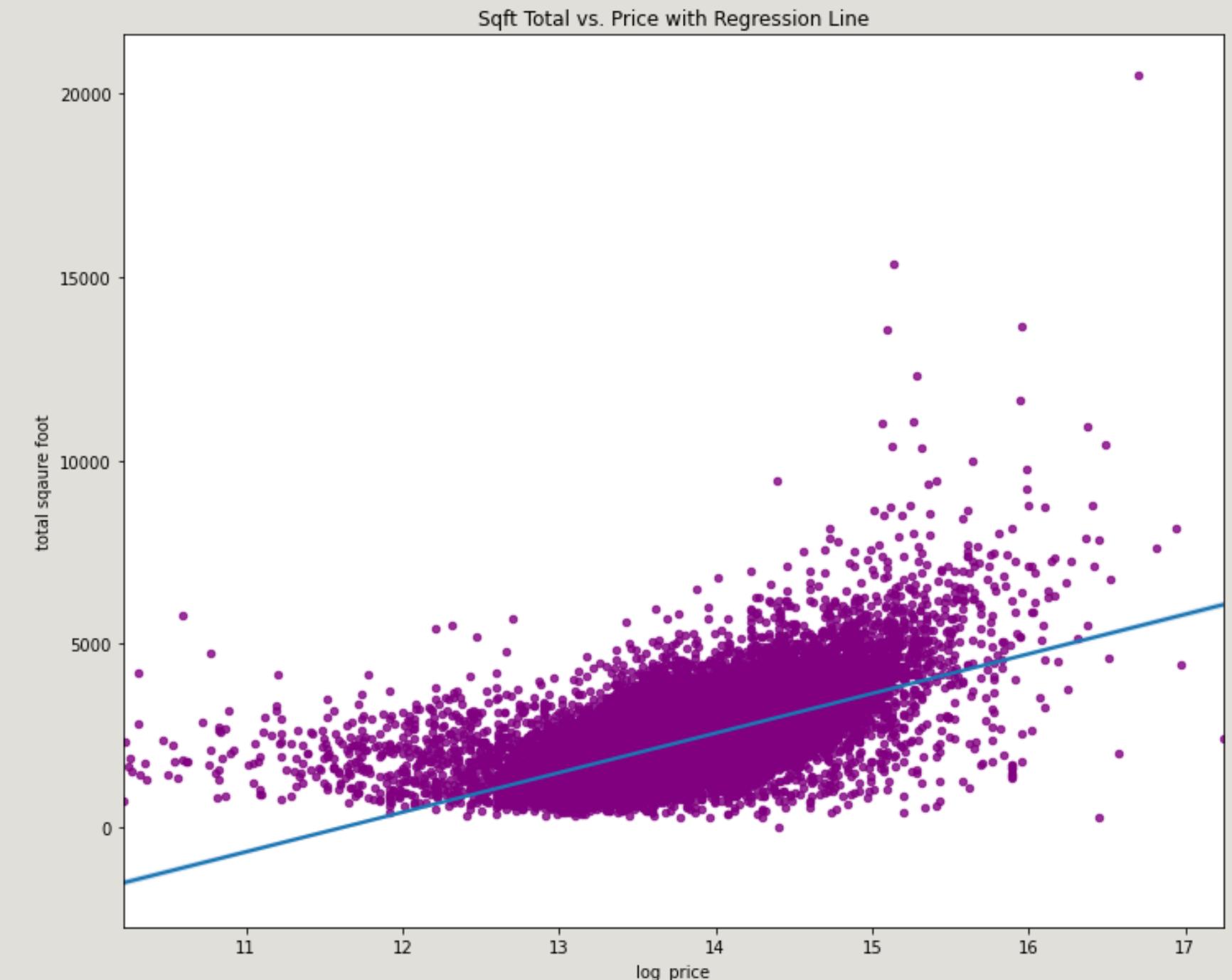


- The final regression model is like a blueprint for predicting home prices in King County, it explains nearly **48%** of the variance in home prices.
- They guide us in choosing the right properties and pricing strategies, **heres what we found...**

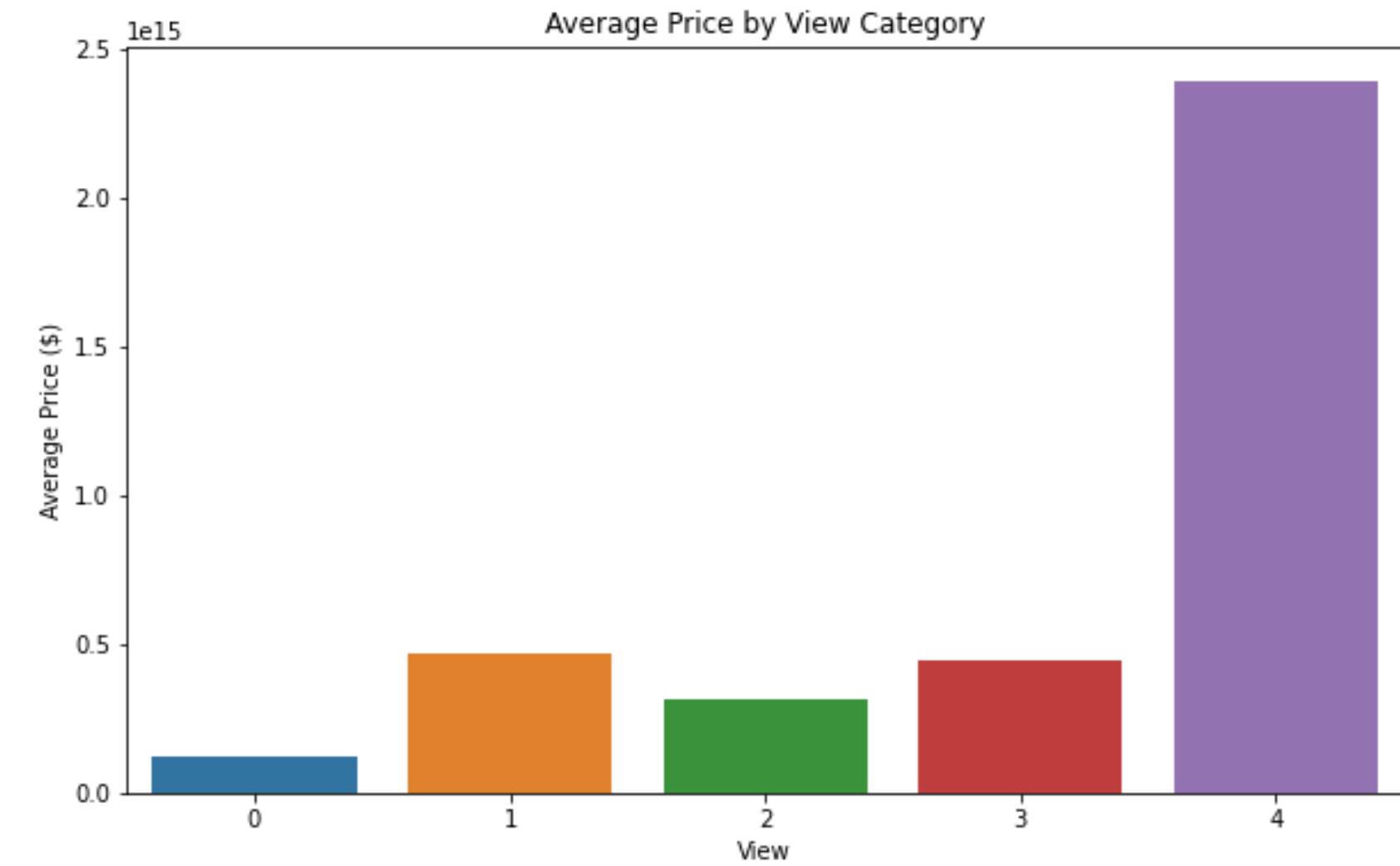
Sqaure Foot

Larger square footage positively impacts home prices.

For every extra 1,000 square feet, the estimated price increases by around **\$200,000**. So, more space means a higher price.



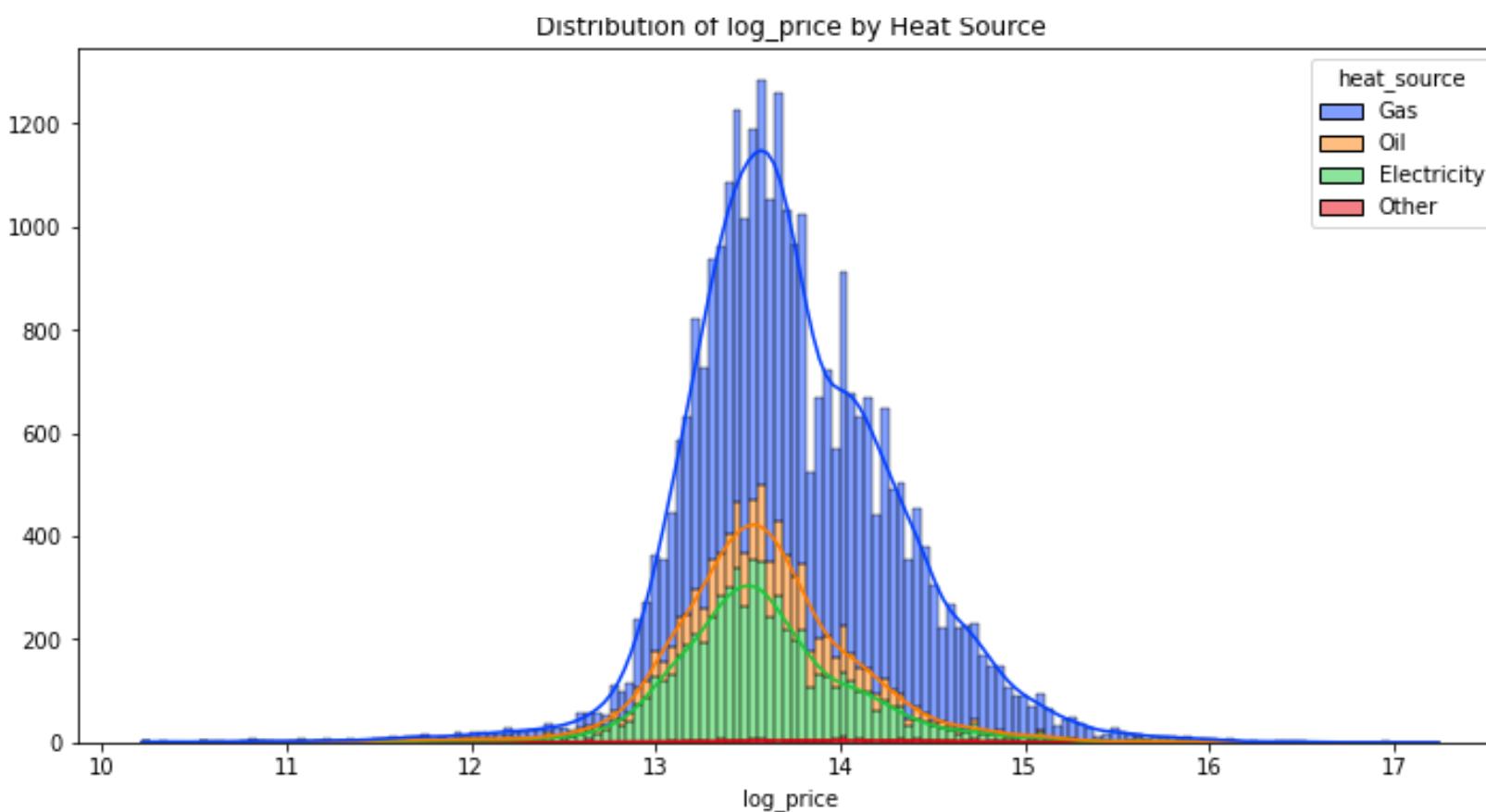
View



Superior views contribute to higher home prices.

- Upgrading from a lower-quality view to a better one theres an increase in estimated sale price by around **\$55,000**.

Heat Source (gas)

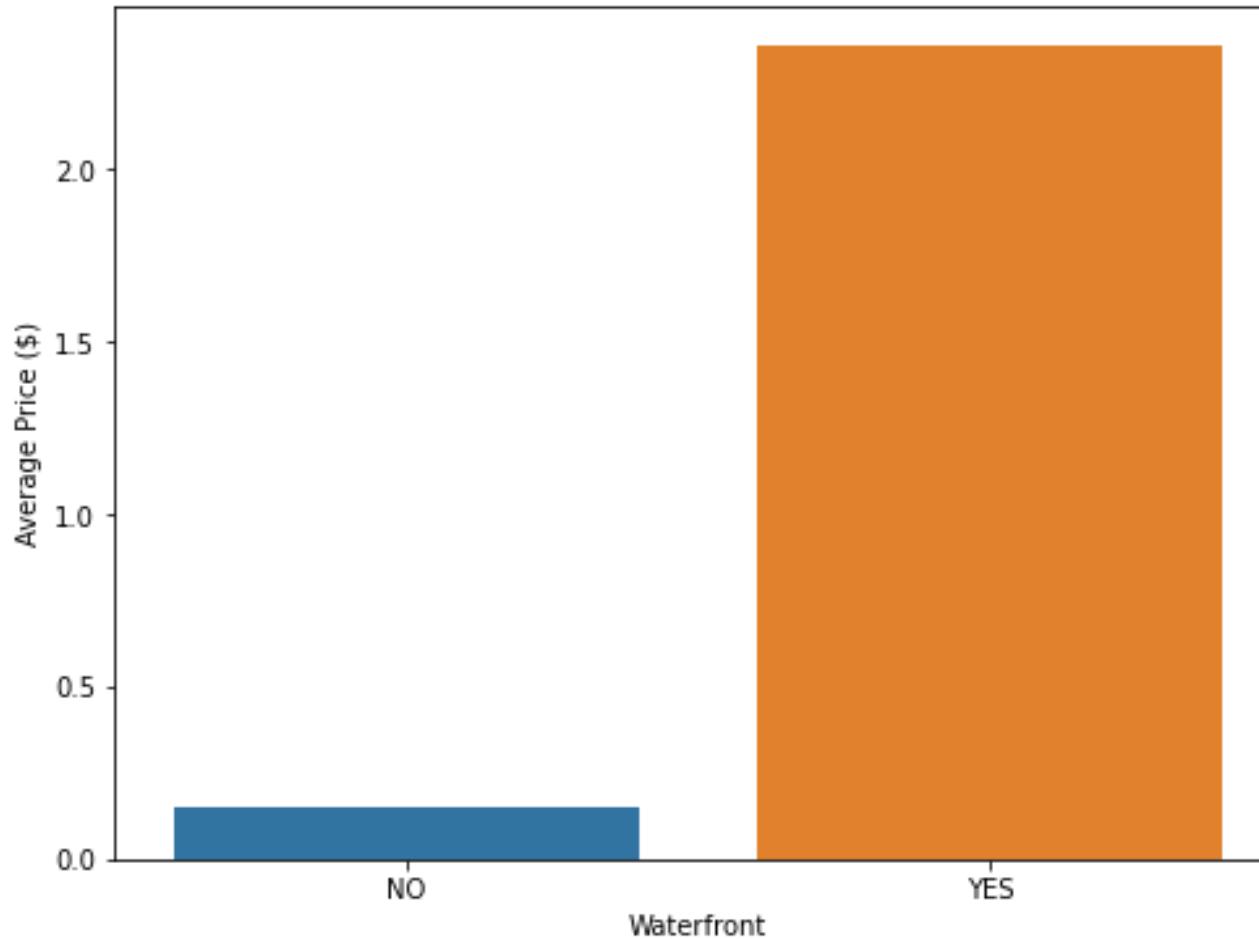


Homes with gas heating sources impact prices positively.

- Homes with a gas heating source, on average, contribute approximately **\$17,000** to the price.

Waterfront

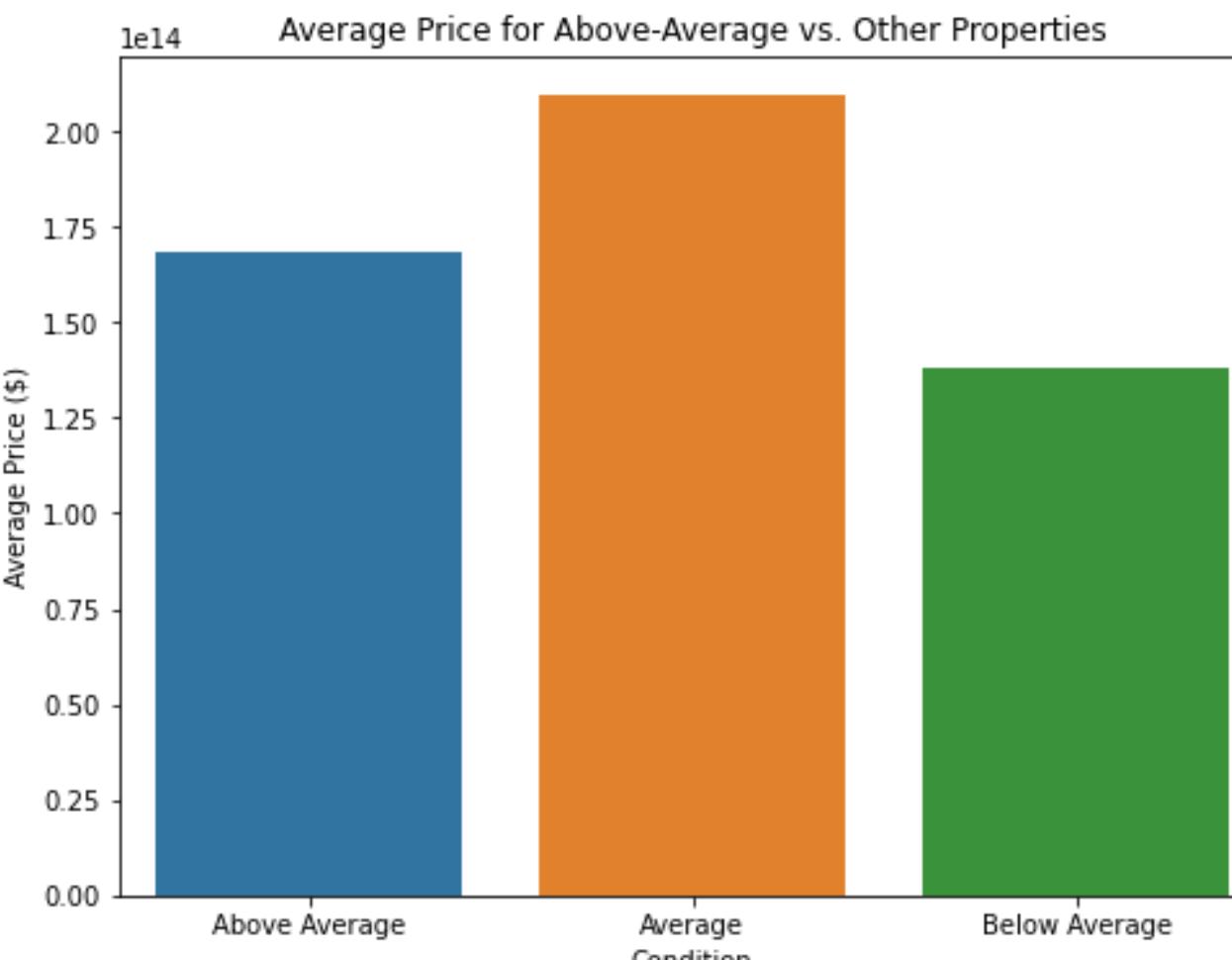
1e15 Average Price for Waterfront vs. Non-Waterfront Properties



Waterfront properties have a premium price.

- Waterfront properties have an estimated premium of around **\$267,000** compared to non-waterfront properties.

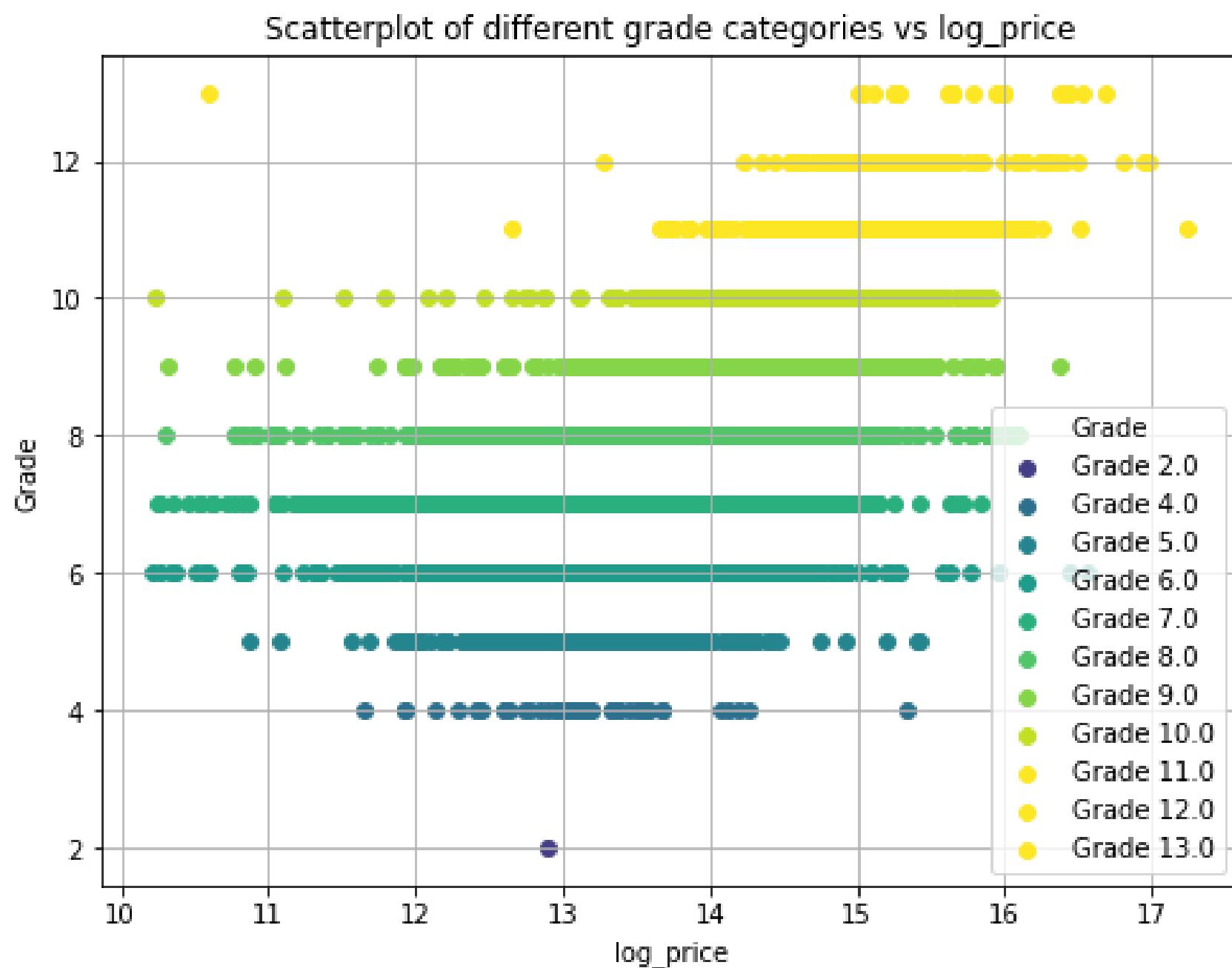
Condition



Better condition in homes maintain value.

- Homes in above-average condition contribute approximately **\$138,000** to the estimated price.

Grade



Property grades significantly affect prices.

- grade of 13.0 properties have an estimated sale price that is approximately **\$1,369,000 higher** than properties with lower-grade ratings.



Conclusion

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1. **Size Matters:** Square footage plays a crucial role in pricing; consider larger homes.
 2. **Prioritize Waterfront Properties:** Investing in dreamy waterfront properties can yield significant returns.
 3. **Value View Quality:** Homes with superior views tend to be more valuable in the long run.
 4. **Favor Above-Average Condition:** Well-kept homes not only make living enjoyable but also hold their value.
 5. **Consider Heating Source:** Properties with gas heating sources have a positive impact on price.
 6. **Grade Categories:** Higher-grade properties often come with higher prices; they're worth considering.

Next Steps



- **Data Enrichment:** Continue collecting and incorporating relevant data.

***Staying updated with the latest information is key to making informed decisions.*

Thank you!

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