Improving Your Home: What any homeowner can do!

Business Problem

- For many people, their home is their most valuable asset.
- The question is: What can a homeowner improve to boost the value of their house?

Data

- To answer that question, I am going to look at housing sales data from King County, WA (the Seattle area) from 2014-15 when over 21k houses were sold.
- The county was generous enough to provide this data online.
- Now there are many categories in the dataset but I am limiting it to the things that an existing homeowner can control like:

1. The condition
2. Grade
3. Sq. footage
4. The number of bathrooms, bedrooms
5. The month the deal closes in
6. When/if you renovated.

Regression Results

OLS Regression Results

Dep. Variable:	price_log	**R-squared:**	0.558
Model:	OLS	**Adj. R-squared:**	0.557
Method:	Least Squares	**F-statistic:**	1601.
Date:	Thu, 19 May 2022	**Prob (F-statistic):**	0.00
Time:	12:27:24	**Log-Likelihood:**	-21833.
No. Observations:	21597	**AIC:**	4.370e+04
Df Residuals:	21579	**BIC:**	4.385e+04
Df Model:	17		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	-2.5342	0.050	-50.841	0.000	-2.632	-2.436
sqft_living_log	0.3725	0.008	45.081	0.000	0.356	0.389
bedrooms	-0.0510	0.006	-7.998	0.000	-0.063	-0.038
floors	-0.0492	0.009	-5.204	0.000	-0.068	-0.031
yr_renovated	0.0002	1.55e-05	13.887	0.000	0.000	0.000
grade	0.3875	0.006	62.933	0.000	0.375	0.400
January	-0.2673	0.020	-13.059	0.000	-0.307	-0.227
February	-0.2380	0.018	-13.004	0.000	-0.274	-0.202
March	-0.1508	0.015	-9.821	0.000	-0.181	-0.121
April	-0.1006	0.014	-7.039	0.000	-0.129	-0.073
May	-0.1822	0.014	-13.157	0.000	-0.209	-0.155
June	-0.1941	0.014	-13.410	0.000	-0.223	-0.166
July	-0.2239	0.014	-15.616	0.000	-0.252	-0.196
August	-0.2270	0.015	-15.002	0.000	-0.257	-0.197
September	-0.2288	0.016	-14.573	0.000	-0.260	-0.198
October	-0.2163	0.015	-14.119	0.000	-0.246	-0.186
November	-0.2406	0.017	-13.863	0.000	-0.275	-0.207
December	-0.2645	0.017	-15.523	0.000	-0.298	-0.231
Renovated Recently	0.0731	0.051	1.428	0.153	-0.027	0.173

Omnibus:	81.303	**Durbin-Watson:**	1.978
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	81.949

Interpretation

- The model can explain 56% of the variation in the price data. That may seem low but remember that this model does not include zip code, view data, and waterfront data because an existing homeowner cannot control the factors.

Recommendations

- 1. Improving the square footage by 5% leads to an increase in price of 2%.
- 2. Improving the grade by 1 unit will increase price by 39%.
- 3. Recently Renovated homes sell for 7% more.

Next Steps

- Moving beyond the King County area: the Seattle area is very unique and the trends we see in the 2014-15 years may not be representative for the country.
- Isolating by individual zipcodes and examining how they effect of the features on the price.

Thanks

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Github: https://github.com/icapeli/phase_2_project