King County Real estate analysis

Student: Kimley Kadoche

King County is in Washington state.

Washington State
map courtesy US Census Bureau

Presentation Overview

A real estate firm is looking to help its customers (homeowners) get the best value for their properties.

The real estate firm needs to analyse what are the factors to be taken into account by homeowners in order to increase the value of their properties.

Data overview

In order to conduct the following analysis, we used the **King County Sales Dataset.**

The data contained 20 columns and 21,597 rows in total.

The goal of the analysis was to understand which factors had an impact on the **price** (target variable).

Regression Model

Key takeaways:

R2 = 0.582

Skew = 0.033

Kurtosis = 2.893

P-values < 0.05 (alpha level) except for
bathrooms (p-value = 0.689)

OLS Regression Results

Dep. Variable:	price	R-squared:	0.582
Model:	OLS	Adj. R-squared:	0.582
Method:	Least Squares	F-statistic:	4288.
Date:	Mon, 19 Dec 2022	Prob (F-statistic):	0.00
Time:	13:27:31	Log-Likelihood:	-7347.1
No. Observations:	21589	AIC:	1.471e+04
Df Residuals:	21581	BIC:	1.477e+04
Df Model:	7		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	11.7451	0.013	891.829	0.000	11.719	11.771
bedrooms	-0.0138	0.003	-4.168	0.000	-0.020	-0.007
bathrooms	0.0019	0.005	0.400	0.689	-0.007	0.011
view	0.0854	0.003	26.147	0.000	0.079	0.092
grade	0.1820	0.003	52.694	0.000	0.175	0.189
sqft_above	0.0001	6.02e-06	23.857	0.000	0.000	0.000
sqft_basement	0.0003	6.77e-06	37.558	0.000	0.000	0.000
sqft_living15	7.4e-05	5.58e-06	13.258	0.000	6.31e-05	8.49e-05

Omnibus:	15.346	Durbin-Watson:	1.970
Prob(Omnibus):	0.000	Jarque-Bera (JB):	14.295
Skew:	0.033	Prob(JB):	0.000787
Kurtosis:	2.893	Cond. No.	1.67e+04

Results and Recommendations

Results:
The grade is the most important factor: a per grade increase will drive the sale price up by **18.2%**
Bedrooms and bathrooms: negative coefficients of **1.1%** and **1.6%** respectively.

Recommendations: Grade is the most important factor to look at for increasing the home value.
To do so, homeowners can do the following:

- interior: upgrade AC units, renew plumbing, new kitchen/bathroom appliances, solar panels…etc.
- exterior: New paint, new windows, flowers in the driveway, clean walls and new roof.

- Caution when adding bedrooms and bathrooms: this won't be considered as upgrading the home and can have a negative impact on value of the house.

Next steps

Have a better understanding of what can be taken into account when assessing the value a property:

- Driveway, is it easy access for strollers/wheelchairs, are the windows double glazed for noise ...etc.
- Take into account some add-ons such as heated pool, well curated backyard, and also some other factors such as the location (how close to hospital or school for example).

Thank you!

email: kadoche.k@gmail.com

github: [Kim-trading](https://github.com/Kim-trading)