Intergenerational Families in Kings Counties

Beau Morton

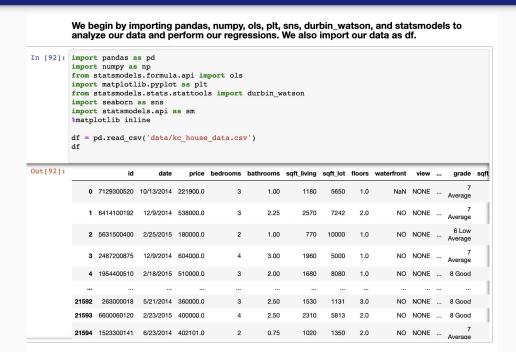
Overview

Client: National Association for Real Estate Brokers (NAREB) A black led organization that focuses on bringing together the minority professionals in the real estate industry to promote the meaningful exchange of ideas about our business and how best to serve their clientele. For this case the clientele will focus on black intergenerational families.

Overview

How can home renovations increase the estimated value of homes for black families in King County, WA? (specifically focusing on intergenerational homes)

Data Understanding



Data Preparation

The first model iteration for our case will focus on square foot living, square foot above, and bathrooms. Before we can get to the analysis, we will drop 'zipcode' as a variable, because the numbers in zip code are not useful to us in this analysis without context of what each zip code means.

Data Preparation

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We also converted our categorical data into something more useful for us in this analysis.

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Model 1

Dep. Variable:	price		e R-squ	R-squared:		0.493	
Model:		OLS	Adj.	Adj. R-squared:		0.493	
Method:	Least Squares		s F-sta	F-statistic:		7003.	
Date:	Sun, 17 Apr 2022			Prob (F-statistic)		0.00	
Time:			_	ikelihood:		-3.0005e+05	
No. Observations:		21597	7 AIC:			6.001e+05	
Df Residuals:		21593				6.001e+05	
Df Model:		3					
Covariance Type:		nonrobust	5				
	coef	std err	t	P> t	[0.025	0.975]	
Intercept -3.815	 5e+04	5252 893	-7.262	0.000	-4.84e+04	-2.79e+04	
sqft living 297						306.723	
sqft above -18.					-27.202		
bathrooms -3972	1769	3545.059	-1.120	0.263			
Omnibus:	======	14748.993				1.982	
Prob(Omnibus):		0.000) Jarqu	e-Bera (JB)	:	538245.600	
Skew:		2.806	Frob(JB):		0.00	
		26.804	Cond.	No.		9.59e+03	

Model 2

Dep. Variable:		pr	ice R-sq	uared:		0.507		
Model:		_	OLS Adj.	R-squared:		0.507		
Method:	Leas		res F-st	atistic:		7398.		
Date:	5	un, 17 Apr 2	022 Prob	(F-statistic):	0.00		
Time:	21:06:3		:31 Log-1	Likelihood:		-2.9976e+05		
No. Observations:		21	597 AIC:	AIC:		5.995e+05		
Df Residuals:		21	593 BIC:	BIC:		5.996e+05		
Df Model:			3					
Covariance T	ype:	nonrob	ust					
				P> t	-	-		
				0.000				
bedrooms	-5.775e+04	2324.412	-24.846	0.000	-6.23e+04	-5.32e+04		
sqft_living	313.8304	2.467	127.187	0.000	308.994	318.667		
floors	3476.4322	3480.340	0.999	0.318	-3345.290	1.03e+04		
Omnibus:			709 Durb			1.985		
Prob(Omnibus	١.			ue-Bera (JB):		491526.502		
Skew:	, •		733 Prob			0.00		
Kurtosis:			723 Cond	• •		1.04e+04		

- [1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
 [2] The condition number is large, 1.04e+04. This might indicate that there are
- strong multicollinearity or other numerical problems.

Model 3

		OLS Rec	ression Res	sults		
Dep. Variabl	.e:	 pri	.ce R-squa	ared:		0.509
Model:		C	LS Adj. H	R-squared:		0.509
Method:		Least Squar	es F-stat	istic:		7451.
Date:	Sui	n, 17 Apr 20	22 Prob	F-statistic):	0.00
Time:		22:15:	14 Log-Li	kelihood:		-2.9972e+05
No. Observat	ions:	215	97 AIC:			5.994e+05
Df Residuals	:	215	93 BIC:			5.995e+05
Df Model:			3			
Covariance T	ype:	nonrobu	ıst			
	coef	std err	t	P> t	[0.025	0.975
Intercept	8.424e+04	6637.291	12.692	0.000	7.12e+04	9.72e+0
bedrooms	-5.959e+04	2327.075	-25.605	0.000	-6.41e+04	-5.5e+(
sqft living	318.6333	2.383	133.727	0.000	313.963	323.30
sqft_lot	-0.3847	0.043	-8.922	0.000	-0.469	-0.30
Omnibus:		14308.0	34 Durbir	 n-Watson:	======	1.98
Prob(Omnibus	:):	0.0	00 Jarque	e-Bera (JB):		477721.46
Skew:		2.7	10 Prob(3	JB):		0.0
Kurtosis:		25.3	94 Cond.	No.		1.73e+0

Notes:

- [1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
- [2] The condition number is large, 1.73e+05. This might indicate that there are strong multicollinearity or other numerical problems.

Conclusion