

1. Predictor Table

Variable	Include for Agent sales	Effect on Agent Days	Include for sales Price	Effect on Agent Days	Rationale
Slno	No	()	No	()	NA
Status	No	()	NO	()	Status defines the status of the property whether its sold or not, it wont affect agent days as well as sales price
Beds	Yes	+ve	Yes	+ve	As the no. of bedroom increases the price of the property increases and becomes much more difficult for the agent to sell the property
Bathsfull	No	()	No	()	Bathsfull are correlated to bathstotal
Bathshalf	No	()	No	()	Bathshalf are correlated to bathstotal
Bathstotal	Yes	+ve	Yes	+ve	As the no. of bathroom increases the price of the property increases and becomes much more difficult for the agent to sell the property
Sqft	Yes	+ve	Yes	+ve	As the area increases the price of the property increases and becomes much more difficult for the agent to sell the property
Garages	Yes	+ve	Yes	+ve	As the garage space increases the price of the property increases and becomes much more difficult for the agent to sell the property
Roof	No	()	Yes	+ve	As much more high-quality material is used for building the property the selling price goes up
lotsqft	Yes	+ve	Yes	+ve	()
yrblt	Yes	-ve	Yes	+ve	Year build can be a factor as recently built property can get more selling price whereas older properties can take more time to sell
Pool	Yes	+ve	Yes	+ve	Properties with amenities can have more listing price and can take more time for sales as prices are high
spa	Yes	+ve	Yes	+ve	Properties with amenities can have more listing price and can take more time for sales as prices are high
subdivn	Yes	+/-	Yes	+/-	Location of the property can have a positive and negative effect on sales price and no of days taken by the agent for sale
adom_agentdaysonmarket	-	()	No	()	()
cdom_cumuldaysonmarket	Yes	-ve	No	()	If a property is listed for a couple of days, then the selling price may differ from the listed price as the buyers aren't intrusted at that property at that the price
listprice	Yes	+ve	Yes	+/-	The list price can be a driving factor for early sales and selling price
lppersqft	No	()	No	()	()
PendingDate	No	()	No	()	()
pricesold	NO	()	-	()	()
sppersqft	No	()	No	()	()
datesold	No	()	No	()	()
splsale	Yes	-ve	Yes	-ve	Sale on listed price can drive early sales and it would be a negative effect on selling price

2. Models

A. Agents day on Market

model1= lm(adom_agentdaysonmarket ~ beds + bathstotal + garages + sqft + yrblt + pool + subdivn + listprice + datesold + splsale + pricesold, data = data)

model2= lm(adom_agentdaysonmarket ~ beds + bathstotal + garages + sqft + yrblt + listprice + datesold + splsale, data = data)

model3= lm(adom_agentdaysonmarket ~ sqft + listprice + datesold + splsale, data = data)

B. Sale price of home

model1= lm(pricesold ~ beds + bathstotal + sqft + garages + roof + lotsqft + listprice + datesold, data = data)

model2 = lm(pricesold ~ beds + bathstotal + sqft + garages + roof + lotsqft + yrblt + pool + listprice + datesold + splsale, data = data)

model3= lm(pricesold ~ beds + bathstotal + sqft + garages + roof + lotsqft + yrblt + pool + subdivn + listprice + datesold + splsale, data = data)

Stargazer Output:

A. Agents day on Market

Comparison of OLS Models

	Dependent variable:		
	adom_agentdaysonmarket		
	(3)	(2)	(1)
beds	3.806 (7.986)		
bathstotal	9.237 (8.714)		
garages	-4.417 (9.877)		
sqft		0.037*** (0.010)	0.035*** (0.010)
lotsqft		-0.001 (0.001)	
yrblt	-2.026 (1.850)	2.030 (1.390)	
poolNone	10.061 (14.637)		
poolPrivate	-7.308 (14.257)		
poolPrivate, Community		-5.130 (15.890)	
subdivnHUNTER'S GREEN MAGNOLIA CHASE		-8.892 (79.371)	
subdivnHUNTER'S GREEN PARCEL 10A		-31.904 (80.632)	
subdivnHUNTER'S GREEN PARCEL 13		1.786 (79.182)	
subdivnHUNTER'S GREEN PARCEL 14 B PH 1		4.577 (79.642)	
subdivnHUNTER'S GREEN PARCEL 15		-16.278 (79.746)	
subdivnHUNTER'S GREEN PARCEL 15 REVISED		29.548 (79.329)	
subdivnHUNTER'S GREEN PARCEL 17A PH 2		-18.796 (58.590)	
subdivnHUNTER'S GREEN PARCEL 18A PH 2		135.311* (78.650)	
subdivnHUNTER'S GREEN PARCEL 19 PHASE		53.338 (79.023)	
subdivnHUNTER'S GREEN PARCEL 3		-2.425 (81.343)	
subdivnHUNTER'S GREEN PARCEL 6		-9.044 (78.726)	
subdivnHUNTER'S GREEN PARCEL 7		-24.378 (79.027)	
subdivnHUNTER'S GREEN PH 2A		107.419 (79.609)	
subdivnHUNTER'S GREEN, HUNTERS GREEN		5.194 (49.201)	
subdivnHUNTER'S GREEN/FOX CHASE		-54.906 (79.205)	
subdivnHUNTERS GREEN		28.190 (21.117)	
subdivnHUNTERS GREEN - FOX CHASE SECTION		-60.917 (79.188)	
subdivnHUNTERS GREEN - WYNSTONE		-3.544 (58.301)	
subdivnHUNTERS GREEN / HEATHER DOWNS		-18.205 (57.328)	
subdivnHUNTERS GREEN HAMPTON ON THE GREEN		57.652 (79.556)	
subdivnHUNTERS GREEN HUNTER'S GREEN		56.703 (39.873)	
subdivnHUNTERS GREEN MAGNOLIA CHASE		-46.566 (79.502)	

subdivnHUNTERS GREEN PA 03	-21.144 (49.497)		
subdivnHUNTERS GREEN PA 3	-23.435 (57.652)		
subdivnHUNTERS GREEN PARCEL 10B	151.398* (81.286)		
subdivnHUNTERS GREEN PARCEL 13	69.140 (79.169)		
subdivnHUNTERS GREEN PARCEL 14 B PHASE 1	-8.528 (78.656)		
subdivnHUNTERS GREEN PARCEL 20	21.939 (79.947)		
subdivnHUNTERS GREEN PARCEL 3	-36.842 (79.935)		
subdivnHUNTERS GREEN PARCEL 6	120.692 (85.081)		
subdivnHUNTERS GREEN PARCEL 7	-2.439 (79.521)		
subdivnHUNTERS GREEN PH 01	32.527 (23.234)		
subdivnHUNTERS GREEN PH 01 REP HAMPTON ON GREEN PH 01	1.659 (79.091)		
subdivnHUNTERS GREEN PH 02	36.852 (23.524)		
listprice	0.001*** (0.0003)	0.00003 (0.0001)	0.00002 (0.0001)
datesold	-0.00000*** (0.00000)	-0.00000*** (0.00000)	-0.00000*** (0.00000)
spSaleBank Owned/REO	32.481 (48.519)	46.810 (46.907)	50.152 (45.627)
spSaleNone	46.807 (44.582)	52.611 (44.097)	54.159 (42.389)
spSaleShort Sale	83.242 (54.054)	105.277** (50.395)	105.718** (49.563)
pricesold	-0.001*** (0.0003)		
Constant	4,470.941 (3,708.350)	-3,601.708 (2,796.251)	447.679*** (127.268)
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Observations	478	482	482
R2	0.277	0.193	0.189
Adjusted R2	0.116	0.180	0.178
Residual Std. Error	75.577 (df = 390)	72.810 (df = 473)	72.872 (df = 475)
F Statistic	1.719*** (df = 87; 390)	14.176*** (df = 8; 473)	18.399*** (df = 6; 475)
Note:	*p<0.1; **p<0.05; ***p<0.0		

B. Sale price of home

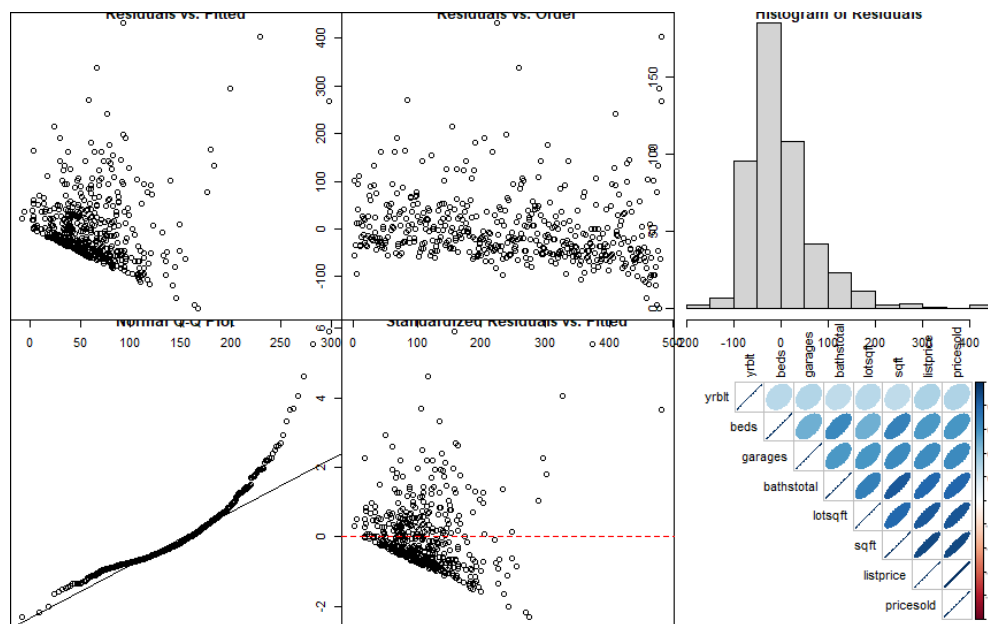
	Dependent variable:		
	(3)	(2)	(1)
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beds	630.003 (1,464.406)	1,825.744 (1,233.416)	1,997.799 (1,220.699)
bathstotal	5,755.310*** (1,607.284)	4,672.111*** (1,365.589)	4,374.188*** (1,390.335)
sqft	-1.342 (2.554)	-1.661 (2.189)	-1.028 (2.159)
garages	2,414.040 (1,753.698)	1,531.606 (1,498.423)	2,227.194 (1,472.893)
roofConcrete, Tile	9,661.796 (19,053.610)	8,913.533 (18,469.910)	10,707.170 (18,808.190)
roofOther	5,172.835 (18,928.860)	5,933.344 (18,387.200)	8,445.551 (18,732.840)
roofShake, Shingle	6,279.511 (19,235.230)	6,576.422 (18,627.250)	117.382 (18,697.950)
roofShingle	-2,816.606 (13,474.900)	-2,513.085 (13,038.580)	-1,796.189 (13,272.690)
roofShingle, Tile	-4,756.161 (20,017.900)	373.389 (18,370.290)	3,676.060 (18,713.030)
roofSlate	-5,037.597 (21,364.650)	-247.297 (18,488.390)	3,177.421 (18,740.610)
roofSlate, Tile	-32,202.260 (19,936.460)	-24,446.100 (19,006.170)	-27,230.930 (18,713.910)
roofTile	-385.647 (13,556.210)	-325.727 (13,097.070)	1,644.774 (13,317.880)
lotsqft	0.676*** (0.207)	0.622*** (0.191)	0.502*** (0.188)
yrblt	-506.107 (328.231)	-475.186* (265.507)	
poolNone	2,150.719 (2,556.066)	1,718.113 (2,236.771)	
poolPrivate	6,881.535*** (2,508.816)	6,338.225*** (2,159.492)	
poolPrivate, Community	7,795.466*** (2,800.877)	6,991.206*** (2,386.749)	
subdivnHUNTER'S GREEN MAGNOLIA CHASE		-16,861.810 (13,790.290)	
subdivnHUNTER'S GREEN PARCEL 10A		30,765.970** (14,022.980)	
subdivnHUNTER'S GREEN PARCEL 13		5,934.046 (13,786.860)	
subdivnHUNTER'S GREEN PARCEL 14 B PH 1		-25,574.090* (13,860.720)	
subdivnHUNTER'S GREEN PARCEL 15		-2,192.574 (13,893.340)	
subdivnHUNTER'S GREEN PARCEL 15 REVISED		-40,203.300*** (13,713.960)	
subdivnHUNTER'S GREEN PARCEL 17A PH 2		-6,015.568 (10,321.840)	
subdivnHUNTER'S GREEN PARCEL 18A PH 2		-2,867.101 (13,704.950)	
subdivnHUNTER'S GREEN PARCEL 19 PHASE		-3,009.727 (13,783.140)	
subdivnHUNTER'S GREEN PARCEL 3		-1,325.964 (14,295.870)	
subdivnHUNTER'S GREEN PARCEL 6		-17,487.890 (13,696.150)	
subdivnHUNTER'S GREEN PARCEL 7		-15,141.640 (13,760.260)	
subdivnHUNTER'S GREEN PH 2A		-16,877.840 (13,828.030)	
subdivnHUNTER'S GREEN, HUNTERS GREEN		-4,810.806 (8,586.729)	
subdivnHUNTER'S GREEN/FOX CHASE		-23,361.490* (13,772.750)	
subdivnHUNTERS GREEN		-5,153.791 (3,698.975)	
subdivnHUNTERS GREEN - FOX CHASE SECTION		4,009.014 (13,798.750)	
subdivnHUNTERS GREEN - WYNSTONE		1,092.482 (10,199.890)	

subdivnHUNTERS GREEN / HEATHER DOWNS	-9,925.858 (9,984.627)		
subdivnHUNTERS GREEN HAMPTON ON THE GREEN	-3,230.073 (13,872.670)		
subdivnHUNTERS GREEN HUNTER'S GREEN	-1,399.726 (7,597.883)		
subdivnHUNTERS GREEN MAGNOLIA CHASE	13,778.700 (13,823.200)		
subdivnHUNTERS GREEN PA 03	-13,930.900 (8,597.578)		
listprice	0.859*** (0.013)	0.875*** (0.012)	0.879*** (0.011)
datesold	0.00004** (0.00002)	0.00004*** (0.00002)	0.00005*** (0.00001)
splsaleBank Owned/REO	7,472.062 (8,744.733)	8,362.655 (8,424.125)	
splsaleNone	12,957.840 (8,138.285)	13,172.160* (7,880.208)	
splsaleShort Sale	5,457.951 (9,575.570)	5,874.522 (9,139.165)	
Constant	948,271.500 (659,535.900)	875,185.300 (534,415.600)	-63,440.230** (25,425.010)

Observations	478	478	478
R2	0.994	0.993	0.993
Adjusted R2	0.993	0.993	0.993
Residual Std. Error	13,130.180 (df = 382)	12,888.070 (df = 455)	13,171.710 (df = 462)
F Statistic	672.139*** (df = 95; 382)	3,009.832*** (df = 22; 455)	4,224.589*** (df = 15; 462)
Note:	*p<0.1; **p<0.05; ***p<0.01		

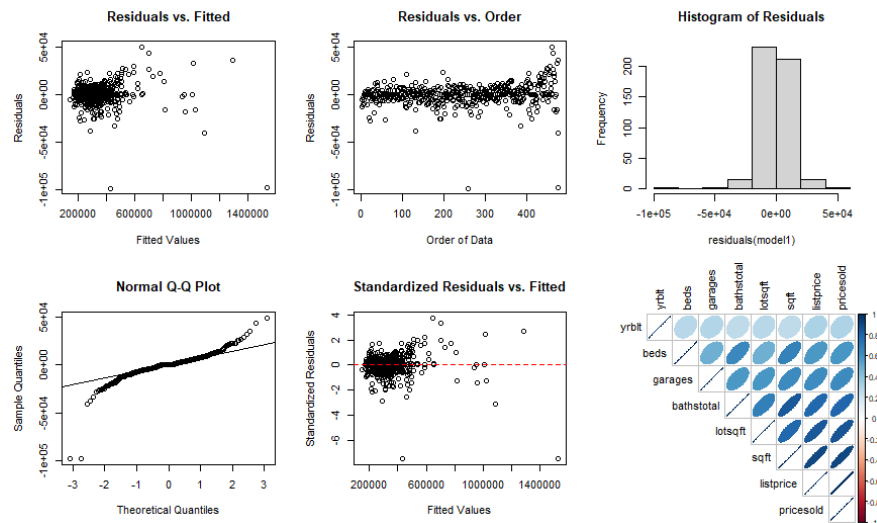
3. Assumptions

A. Agents day on Market



LINE: The residuals are not randomly scattered in the first graph, the normality histogram is left skewed and in the qq plot the plots are near the line at the mean and have extreme residuals. The Correlation between the variables is less than 70%.

B. Sales price



LINE: There seems like a pattern in the residuals vs fitted plot indicating a violation, the normality histogram is left skewed and in the qq plot the plots are near the line at the mean and have extreme residuals. The Correlation between the variables is less than 70%.

4. Interpretations

A. Agents' day on Market

sqft: A one-unit increase in square footage is associated with a **3.515e-02 days** increase in days on market, indicating positive relationship.

listprice: A one-unit increase in listed price has a very small and statistically insignificant effect on days on market.

datesold: There is a negative and statistically significant relationship between the date of sale and days on market. This suggests that properties sold later in the data period tend to spend fewer days on the market on average.

sp/sale: This variable is categorical, representing three types of sales. "Bank Owned/REO" and "None" sales have no statistically significant differences in days on market. However, "Short Sale" properties have an estimated 50.15 days longer on the market on average.

B. Sales price

bathstotal: A one-unit increase in the total number of bathrooms is associated with an average increase of \$4374 in the selling price.

lotsqft: A one-unit increase in the size of the lot is associated with an average increase of \$5.02 in the selling price.

listprice: A one-unit increase in the listed price is associated with an average increase of \$0.88 in the selling price.

datesold: A later date of sale is associated with a slight increase in the selling price on average.

beds: Number of bedrooms doesn't have a statistically significant impact on the selling price in this model.

sqft: Square footage also doesn't have a statistically significant impact on the selling price.

Garages and all roof categories except "Slate & Tile" also lack statistically significant individual effects on the selling price.