Determining the Price of Real Estate in the Nacogdoches Area
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Project originated from Dr. Phelps ECO 339 Fall 2013 Class

Summary Statistics

	Mean	Standard Error	Standard Deviation	Minimum	Maximum	Count
Sale	139,603.71	3,221.25	81,364.58	5,000.00	520,000.00	638
Sq. ft.	1,814.46	26.30	664.24	572.00	4,800.00	638
Year	2,010.53	0.07	1.69	2,007.00	2,013.00	638
brick	0.72	0.02	0.45	0.00	1.00	638
HouseRating	4.27	0.05	1.21	1.00	6.50	638
Lot Value	15,728.56	422.64	10,675.24	550.00	93,350.00	638

Correlation Matrix

	Sale	Sq. ft.	Year	brick	HouseRating	Lot Value
Sale	1					
Sq. ft.	0.8082	1				
Year	-0.0226	-0.0831	1			
brick	0.4790	0.3841	-0.0490	1		
HouseRating	0.7876	0.6562	-0.1156	0.6557	1	
Lot Value	0.6511	0.4805	-0.0084	0.2494	0.4867	1

Sale Price Regression Results

	Model 1	Model 2	Model 3
Sq. ft..	53.95 ***	53.96 ***	72.04 ***
	(2.82)	(2.82)	2.81
brick	-309.99		31503.78 ***
	(4,075.30)		3758.09
House Rating	25849.07 ***	25764.06 ***	
	(1,923.73)	(1,564.54)	
Lot Value	1.94	1.94 ***	2.48 ***
	(0.15)	(0.15)	0.17
Year	2902.54 ***	29000.02 ***	1805.32 *
	(816.99)	(815.68)	921.01
Adjusted R Squared	0.8194	0.8197	0.7682
Observations	638	638	638

How We Developed Our Idea

For Dr. Phelps Fall ECO 339 class, we had to prepare a regression analysis paper in a group of four. It did not matter what the topic was, however it had to consists of at least **four** variables. After brainstorming for a few days, we decided on determining the price of real estate in the Nacogdoches area.

As college students, we are soon going to be in the real estate market, and what better way to learn about it then doing a regression paper over it.

How We Explored/Investigated Our Idea

- Dr. Phelps gave us old data
- We went to the appraisal district for three days to update data with the help of John Yarborough.
- Ran a regression analysis on the data, along with a correlation matrix and summary statistics.

Executive Summary

This report was prepared as a group project in the Economics 339.022, fall 2013 class at Stephen F. Austin State University. The objective of our study of real estate in Nacogdoches, Texas was to analyze the impact of different components of a home and how they impact the price of real estate. We chose variables that intuitively would impact the sale price of a home. The data used in this project were provided free of charge by the Nacogdoches County Appraisal District. With the collected data we created a statistical summary, a correlation matrix, and a regression model. The statistical summary and correlation matrix enabled us to examine our data for extraneous and unusual results, which there were. Three regression models were created and the best one is able to explain 81.97% of the variation in residential real estate sale prices in Nacogdoches, Texas. One of the other models is very close, explaining 81.94% of the variation and we only dropped one insignificant variable. However the third is lacking a single significant variable and it shows. It is only able to explain 76.82% of the variation. The best regression model gave us the information to compose an equation to predict home sale prices in the Nacogdoches area. An additional regression model and equation were created to predict the sale price per square foot of a home. To predict the sale price or the sale price per square foot of a home we take information from any home in the Nacogdoches area, and enter it into our equation. This regression model is an excellent way to predict the sale price of a home or evaluate what attributes of a home impact the sale price.

Do you live in Nacogdoches?
How much is your house worth?

All you have to do is plug in your house's Square footage, Lot Value, if the house is brick or not . The year sold, and the houses rating, and you will get a 81.97% accurate answer.

Here is an example

http://www.zillow.com/homedetails/200-Boulder-Ln-Nacogdoches-TX-75965/113046099_zpid/

Square feet: 1,724
Year: 2010
Brick: 1
House Rating: 4
Lot Value: 20,000

$134,644.20 = -5,929,279.28 + 2,900.02(2010) + 53.96 (1724) + 25,764.06(4) + 1.94(20,000)

Price Per Square Foot Regression Results

House Rating	14.38	***
	-0.83	
Year	2.08	***
	-0.45	
Brick	4.94	**
	-2.23	
Adjusted R square	0.4943	
Observations	638	