

History 595: Quantitative Analysis of Historical Data

Eighth Short Assignment, due Monday, April 9, 2:00 PM in electronic form to margo@uwm.edu and on paper in class.

Part 1. Using the output you did in the class exercise on March 28, write the regression equation from the hypothesis you tested. Report the R squared. Report if your results are statistically significant and report the statistic you used to determine that.

Part 2: Examining the attached regression model output for the relationship between house size and value, answer the following questions.

$\text{Newsize} = \text{size}/1000$

$\text{Newvalnow} = \text{newval}/1000$

- a. Is there a statistically significant relationship between size of the house and the value of the house in each of the neighborhoods? How do you know?
- b. Calculate the value of a 1500 square foot house on the East Side.
- c. Calculate the value of a 2000 square foot house on the North West Side.
- d. Calculate the value of a 1000 square foot house on the South Side.
- e. Report the proportion of variance explained by the models for the 3 neighborhoods.

Descriptive Statistics

neigh neighborhood		Mean	Std. Deviation	N
East	newvalnow	55.0392	38.87229	97
	newsiz	2.2454	.88057	97
Northwes	newvalnow	25.1776	10.96188	295
	newsiz	1.4726	.67280	295
South	newvalnow	17.5324	8.85037	74
	newsiz	.9550	.46989	74

Variables Entered/Removed^a

neigh neighborhood		Variables Entered	Variables Removed	Method
East	1	newsiz ^b		Enter
Northwes	1	newsiz ^b		Enter
South	1	newsiz ^b		Enter

a. Dependent Variable: newvalnow

b. All requested variables entered.

Model Summary

neigh neighborhood		R	R Square	Adjusted R Square	Std. Error of the Estimate
East	1	.658 ^a	.434	.428	29.40854
Northwes	1	.754 ^a	.568	.567	7.21539
South	1	.774 ^a	.600	.594	5.63964

a. Predictors: (Constant), newsiz

ANOVA^a

neigh neighborhood			Sum of Squares	df	Mean Square	F	Sig.
East	1	Regression	62899.345	1	62899.345	72.728	.000 ^b
		Residual	82161906	95	864.862		
		Total	145061251	96			
Northwes	1	Regression	20073.784	1	20073.784	385.576	.000 ^b
		Residual	15254.108	293	52.062		
		Total	35327.892	294			
South	1	Regression	3428.026	1	3428.026	107.781	.000 ^b
		Residual	2289.997	72	31.806		
		Total	5718.022	73			

a. Dependent Variable: newwalnow

b. Predictors: (Constant), newsize

Coefficients^a

neigh neighborhood			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
East	1	(Constant)	-10.233	8.216		-1.246	.216
		newsize	29.069	3.409	.658		
Northwes	1	(Constant)	7.092	1.012		7.005	.000
		newsize	12.282	.625	.754		
South	1	(Constant)	3.605	1.493		2.414	.018
		newsize	14.584	1.405	.774		

a. Dependent Variable: newwalnow