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STAT1221
Homework #6
MINITAB Output

Chapter 12

2b) (one regression equation)

Regression Analysis: PCI versus YNG, Dummy

Method

Categorical predictor coding (1, 0)

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	2217416	739139	906.60	0.000
YNG	1	953038	953038	1168.97	0.000
Dummy	1	252786	252786	310.06	0.000
YNG*Dummy	1	157494	157494	193.18	0.000
Error	48	39134	815		
Lack-of-Fit	36	36207	1006	4.12	0.006
Pure Error	12	2927	244		
Total	51	2256550			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
28.5532	98.27%	98.16%	97.95%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	2166.4	49.7	43.61	0.000	
YNG	-41.91	1.23	-34.19	0.000	1.94
Dummy					
1	-1268.9	72.1	-17.61	0.000	82.80
YNG*Dummy					
1	24.53	1.76	13.90	0.000	84.96

Regression Equation

Dummy			
0	PCI	=	2166.4 - 41.91 YNG
1	PCI	=	897.5 - 17.39 YNG

Fits and Diagnostics for Unusual Observations

Obs	PCI	Fit	Resid	Std Resid	
3	825.00	741.29	83.71	3.11	R
9	338.00	397.60	-59.60	-2.14	R
12	300.00	364.07	-64.07	-2.30	R

R Large residual

Regression Analysis: PCI versus YNG, Dummy

Method

Categorical predictor coding (1, 0)

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	2	2059922	1029961	256.67	0.000
YNG	1	948568	948568	236.38	0.000
Dummy	1	967041	967041	240.99	0.000
Error	49	196628	4013		
Lack-of-Fit	37	193701	5235	21.47	0.000
Pure Error	12	2927	244		
Total	51	2256550			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
63.3468	91.29%	90.93%	89.93%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	1689.8	79.7	21.19	0.000	
YNG	-30.08	1.96	-15.37	0.000	1.00
Dummy					
1	-273.4	17.6	-15.52	0.000	1.00

Regression Equation

Dummy			
0	PCI	=	1689.8 - 30.08 YNG
1	PCI	=	1416.4 - 30.08 YNG

Fits and Diagnostics for Unusual Observations

Obs	PCI	Fit	Resid	Std Resid	
3	825.0	667.2	157.8	2.59	R
41	300.0	423.8	-123.8	-2.06	R

R Large residual

2c) (one regression equation)

Regression Analysis: PCI versus YNG

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	1092881	1092881	46.96	0.000
YNG	1	1092881	1092881	46.96	0.000
Error	50	1163669	23273		
Lack-of-Fit	27	406376	15051	0.46	0.974
Pure Error	23	757292	32926		
Total	51	2256550			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
152.556	48.43%	47.40%	43.60%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	1639	192	8.54	0.000	
YNG	-32.20	4.70	-6.85	0.000	1.00

Regression Equation

PCI = 1639 - 32.20 YNG