Fit: Retained impressions per week

TV Advertising Yields 1983

http://lib.stat.cmu.edu/DASL/Stories/tvads.html

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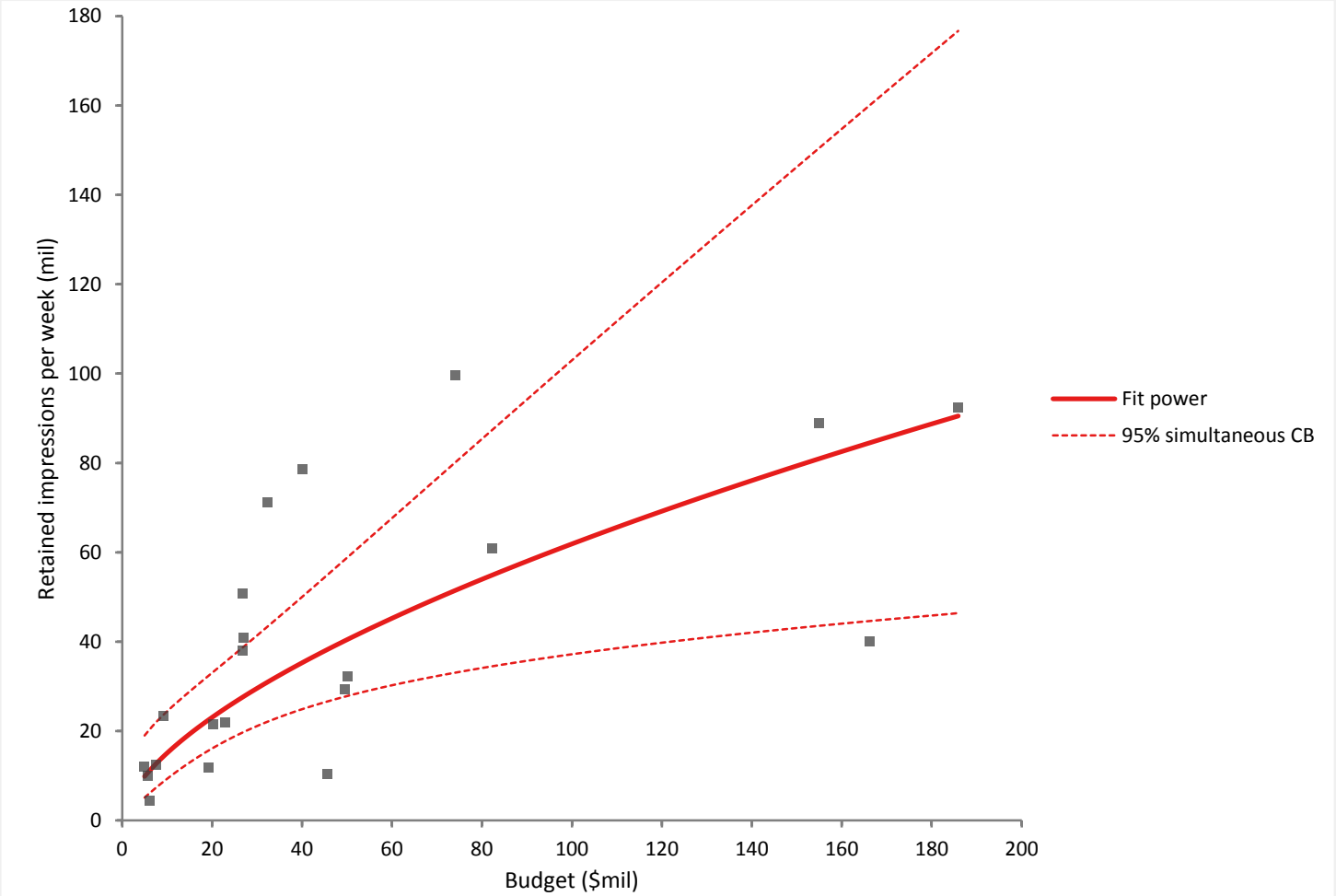
Descriptives



N	21

Variable	Mean	SD	Minimum	Median	Maximum
ln Budget	3.395	1.091	1.61	3.296	5.23
ln Retained impressions per week	3.383	0.8768	1.48	3.469	4.60

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Fit

Equation	Retained impressions per week (mil) = 3.669 * Budget ($mil) $^{0.6135}$

R^2	0.583
R^2 adjusted	0.561
AICc	-20.244
BIC	-18.822
SE of fit (RMSE)	0.581

Parameter	Estimate	95% CI	SE
Constant	1.300	0.4133 to 2.187	0.42363
ln Budget	0.6135	0.3643 to 0.8627	0.11905

Correlation of Estimates

	Constant	Budget
Constant	1.000	-0.954
Budget	-0.954	1.000

Covariance of Estimates

	Constant	Budget
Constant	0.1795	-0.04812
Budget	-0.04812	0.01417

Effect of Model

Source	SS	DF	MS	F	p-value
Difference	8.96	1	8.96	26.55	<0.0001
Error	6.41	19	0.34		
Null model	15.38	20	0.77		

H0: $E(Y|X=x) = \mu$
The model is no better than a null model $Y=\mu$.
H1: $E(Y|X=x) = \alpha * x^{\beta}$
The model is better than the null model.

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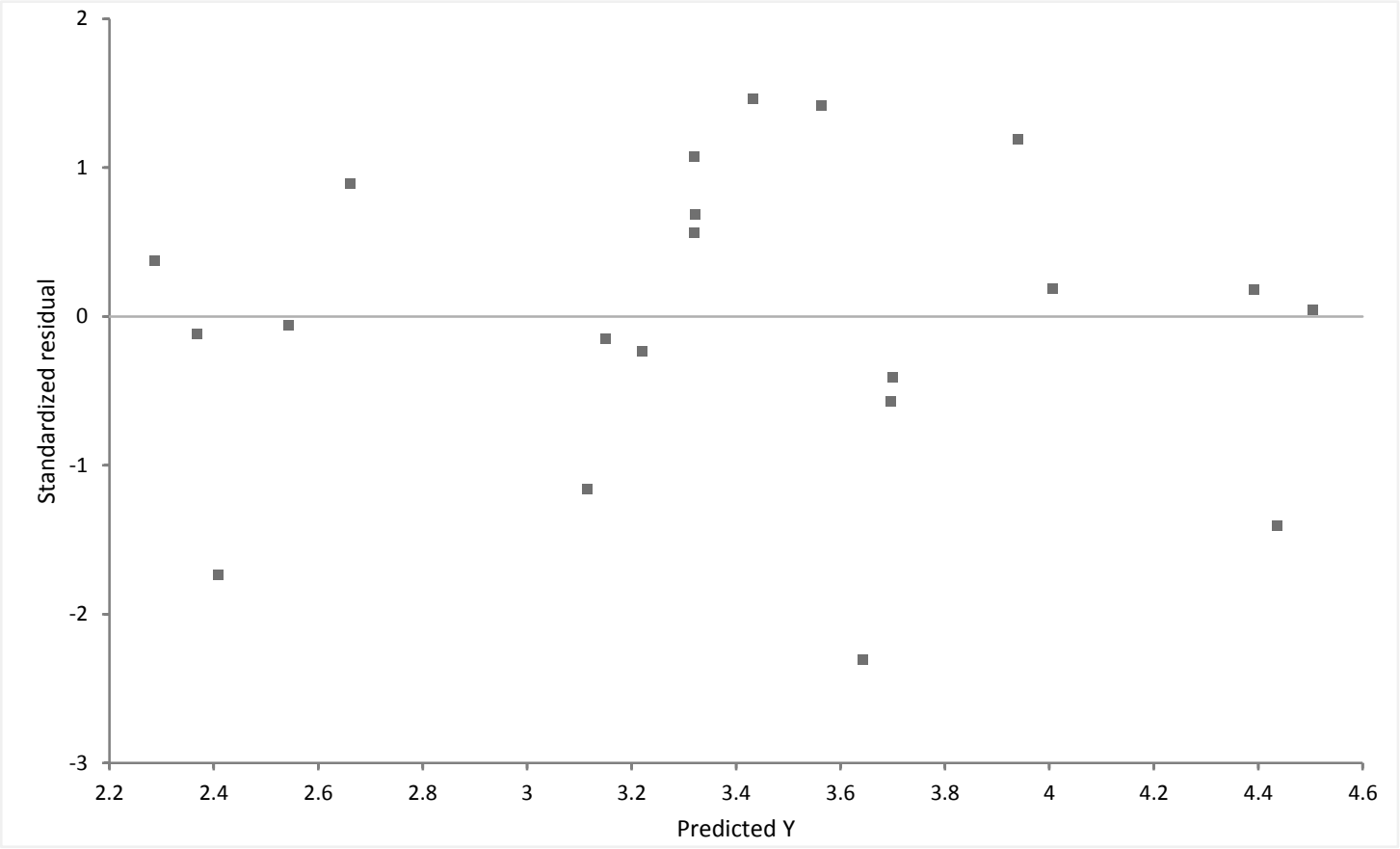
Residuals



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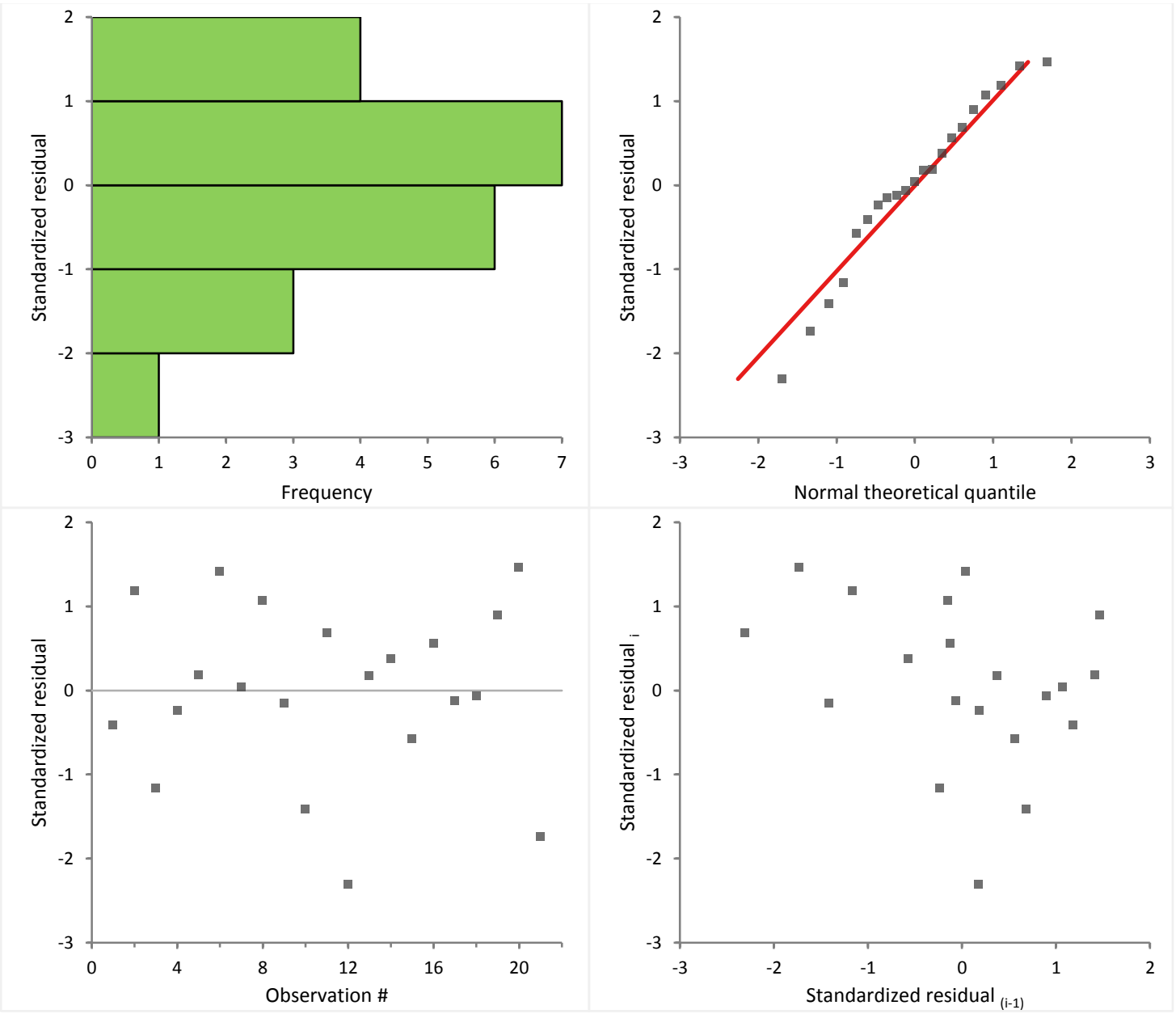

Normality

Shapiro-Wilk test

W statistic	0.96
p-value	0.4505[1]

H0: F(e) = N(μ, σ)

The distribution of the population is normal with unspecified mean and standard deviation.

H1: F(e) ≠ N(μ, σ)

The distribution of the population is not normal.

[1] Do not reject the null hypothesis at the 10% significance level.

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Outliers, Leverage, Influence