PS8_Schmidt

akeaneschmidt1998

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1 Discussion

The ground truth beta values were

$\beta = [1.5, -1, -0.25, 0.75, 3.5, -2, 0.5, 1, 1.25, 2]$.

Comparing the estimated coefficients ($\hat{\beta}$) with the "ground truth" (β), we can see that the estimates are very close to the true values. The differences are minor and seem to be attributable to the random noise (ϵ) added to the data.

Table 1: OLS Regression Output

	(1)
X1	1.501
	(0.002)
X2	-1.001
	(0.002)
X3	-0.252
	(0.002)
X4	0.749
	(0.002)
X5	3.501
	(0.002)
X6	-2.001
	(0.002)
X7	0.499
	(0.002)
X8	1.003
	(0.002)
X9	1.247
	(0.002)
X10	2.001
	(0.002)
Num.Obs.	100000
R2	0.991
R2 Adj.	0.991
AIC	145143.6
BIC	145248.3
Log.Lik.	-72560.811
RMSE	0.50

Table 2: Comparison of True and Estimated Coefficients

Variable	**True** β	**Estimated** $\hat{\beta}$
X1	1.50	1.501
X2	-1.00	-1.001
X3	-0.25	-0.252
X4	0.75	0.749
X5	3.50	3.501
X6	-2.00	-2.001
X7	0.50	0.499
X8	1.00	1.003
X9	1.25	1.247
X10	2.00	2.001