

Multicollinearity Example

n = 25 males; height is in inches, rtfoot and leftfoot are foot lengths in centimeters

corr height rtfoot leftfoot

	height	rtfoot	leftfoot
height	1.0000		
rtfoot	0.5345	1.0000	
leftfoot	0.5467	0.9078	1.0000

regress height leftfoot rtfoot

Source	SS	df	MS	Number of obs =	25
Model	82.3357873	2	41.1678937	F(2, 22) =	4.88
Residual	185.704213	22	8.44110058	Prob > F =	0.0177
Total	268.04	24	11.1683333	R-squared =	0.3072
				Adj R-squared =	0.2442
				Root MSE =	2.9054

height	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
leftfoot	.6379438	.7729833	0.83	0.418	-.9651254 2.241013
rtfoot	.364721	.7095837	0.51	0.612	-1.106866 1.836307
_cons	43.93342	8.998286	4.88	0.000	25.27211 62.59472

regress height leftfoot

Source	SS	df	MS	Number of obs =	25
Model	80.105744	1	80.105744	F(1, 23) =	9.80
Residual	187.934256	23	8.17105461	Prob > F =	0.0047
Total	268.04	24	11.1683333	R-squared =	0.2989
				Adj R-squared =	0.2684
				Root MSE =	2.8585

height	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
leftfoot	.9986255	.3189407	3.13	0.005	.3388465 1.658405
_cons	44.07006	8.849316	4.98	0.000	25.76385 62.37626

regress height rtfoot

Source	SS	df	MS	Number of obs =	25
Model	76.5863718	1	76.5863718	F(1, 23) =	9.20
Residual	191.453628	23	8.32407079	Prob > F =	0.0059
Total	268.04	24	11.1683333	R-squared =	0.2857
				Adj R-squared =	0.2547
				Root MSE =	2.8851

height	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rtfoot	.8963551	.29551	3.03	0.006	.285046 1.507664
_cons	46.84077	8.222449	5.70	0.000	29.83134 63.8502