

# Regression

(Additional analyses have been added for the sake of completeness!)

## Descriptives

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	Outcome1	Outcome2
N	4	4
Missing	0	0
Mean	2.00	6.00
Standard deviation	2.45	2.45

These statistics were obtained using the "Descriptives" command described on the previous page of this guide. Note that they are calculated separately for each variable.

These calculations are dependent on the Covariance ("COV"), which is not determinable from the summary statistics provided, but rather the data. Therefore, the calculations for it are not shown here.

"R" is a function of the covariance and the standard deviations of both variables:

$$R = \frac{COV}{(SD_X)(SD_Y)} = \frac{3.000}{(2.45)(2.45)} = 0.500$$

$$R^2 = 0.500^2 = 0.250$$

## Linear Regression

Model Fit Measures

Model	R	R <sup>2</sup>
1	0.500	0.250

Note. Models estimated using sample size of N=4

The Unstandardized Regression Coefficients ("Estimate") are also a function of the Covariance and the descriptive statistics:

$$B_1 = \frac{COV}{(SD_X)^2} = \frac{3.000}{(2.449)^2} = 0.500$$

$$B_0 = M_Y - (B_1)(M_X) = 6.000 - (0.500)(2.000) = 5.000$$

The Standardized Regression Coefficient for the predictor can be similarly determined:

$$\beta_1 = B_1 \left( \frac{SD_X}{SD_Y} \right) = 0.500 \left( \frac{2.449}{2.449} \right) = 0.500$$

Model Coefficients - Outcome2

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	5.000	1.785	2.801	0.107	
Outcome1	0.500	0.612	0.816	0.500	0.500