

Partial and Semipartial Correlation Example

This SPSS output was obtained by checking the “Part and Partial Correlations” box on the regression *Statistics* option for the simultaneous regression of SALARY regressed on TIME and PUBS.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	43082.394	3099.493		13.900	.000			
	TIME years since PhD	982.867	452.057	.570	2.174	.050	.710	.532	.430
	PUBS number of publications	121.801	149.699	.213	.814	.432	.588	.229	.161

a. Dependent Variable: SALARY annual salary in dollars

Note that “Part” refers to the semipartial correlation coefficient ($sr = .161$). The squared semi-partial coefficient for PUBS (sr^2) equals the R-square change value from the hierarchical regression when PUBS is added to the model already including TIME:

$$sr^2 = R_{change}^2 = (.161)^2 = .026$$

Also note that the partial correlation coefficient (pr) has no relationship to the R-square change value ($pr^2 \neq R_{change}^2$).

The other semi-partial coefficient, .430 for TIME, bears the same relationship to R-square change. Looking at the hierarchical regression in which TIME is added to the model already including PUBS, you see that:

$$sr^2 = R_{change}^2 = (.430)^2 = .185.$$