

Re: large negative parameter correlations in regression

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Stephen Clark wrote:

I have a simple 3 variable plus intercept regression model with good goodness of fit statistics – high R^2 and t -ratios. When I calculate the correlation matrix of the parameter estimates I get a large negative correlation between the intercept and one of the other parameters (-0.98).

Prediction: the mean of the variable is a long way from zero.

To investigate whether I have multicollinearity I have used the R-package and the VIF is only given for the non-intercept parameters in the model (the VIFs are 1, 7.5 and 7.5). There are no worrisome correlations in the ACTUAL variables, including a constant intercept. Should I be concerned? Thanks.

No. If you mean-centred your variables, then the correlation will go away. It occurs because the least squares fit has to go through the means of the covariates and the response. So, if the mean for a covariate is positive, and you try to make the slope larger, then it rotates around the mean, so the intercept has to be reduced. Hence, the negative correlation.

Bob

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