

Re: range issues in ANCOVA

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On Sat, 26 May 2007 21:43:40 EDT, Isabelle <isabellesup@xxxxxxxxxxx> wrote:

A research scientist told me that he wants me to study some of the ranges issues that may exist with the predictor variables in his ANCOVA or Linear Model Analysis.

His understanding of statistics is intuitive, rather than rigorous.

The only range issue I can think of are that which arise when a categorical var has the values 1 and 2 (say man=1, woman=2) instead of the values 0 and 1. If one wants the gender coefficient to be meaningful, one would rather use a 0/1 variable than the 1/2 variable.

Okay, that's not it. See what David says.

Can anybody think of other such range issues that may arise?

Prediction is poorer near the end of the range of a variable as you have collected it, than in the middle. (And prediction is even worse, if you project beyond that range). He might be intending to collect more scores near the extremes, or beyond his present extremes, in order to improve his results

If the scaling is wrong, variables might be measured with "basement" or "ceiling" effects, or need a transformation to be linear with the outcome. These are potential problems that might be described as looking at "range" issues.

If predictors are correlated, there might be "range" issues that relate to confounding -- so one might look at unusual combinations in addition to looking at unusual scores.

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