

***How can we obtain unbiased ICC estimates
for small sample size datasets?***

Beretvas, S. N.^{1*}, Gonzalez, D. P.¹, Park, S.¹, Moeyaert, M.², Van den Noortgate, W.³, & Ferron, J. M.⁴

¹ The University of Texas at Austin, USA

² The University of New York at Albany, USA

³ Katholieke Universiteit Leuven, Belgium

⁴ The University of South Florida, USA

* Presenting author

Briefly Explain Your Question (max. 100 words)

Intraclass correlations (ICCs) can be used to correct standardized mean difference effect sizes for clustered data. Prospective power analyses for clustered data require ICC values. And reasonable ICCs can be used to construct informative priors to improve MCMC estimation of random effects' variance components. However, it is difficult to obtain accurate estimates of ICCs especially when the variances used to calculate ICCs are based on a small number of data points. We have explored different ways of estimating variance ratios and ICCs and have yet to find a way to handle the small sample bias.

Scientific field(s) of the author(s)

Educational / Social science statistics

Relevance to conference theme (max. 50 words)

Our research question focuses on an important small sample size estimation challenge whose solution impacts important statistical techniques (including meta-analysis, power and MCMC estimation priors' selection). We have begun investigation of how best to estimate variance ratios and ICC to use for these scenarios and are stymied by small samples.

Keywords (max. 3)

MCMC estimation, Multilevel data, Power