Computing Effect Sizes in HLM EPSY 8268

**A Note on Effect Sizes for Fixed Effects**

To support the interpretation of the effects of explanatory variables on the intercept, the coefficients can be standardized based on the *SD* of the intercept from the base model (with a fully specified level-1 model and no level-2 explanatory variables). This converts the fixed effect into a standardized effect size (es). You can compute the ratio of the intercept fixed effect given the unconditional *SD* (this may not be of substantive interest):

$$es=\frac{γ\_{0s}}{\sqrt{τ\_{00}}(base model)}$$

Similarly, the effects of explanatory variables on the slope can be based on the *SD* of the slope from the same base model:

$$es=\frac{γ\_{1s}}{\sqrt{τ\_{11}}(base model)}$$

More generally, the effect size analogue for *S* level-2 explanatory variable fixed effects is:

$$es=\frac{γ\_{qs}}{\sqrt{τ\_{qq}}(base model)}$$

This tells us the magnitude of the level-2 explanatory variable fixed effect in term of standard deviations of the slopes across groups.

In each case above, the base model is the fully specified level-1 model.