Robust standard errors

The fixed coefficients in the model are often of primary interest. In the hierarchical context, inferences about these coefficients are to some degree dependent on assumptions about the distribution of random effects at the various levels of the hierarchy. Robust standard errors are standard errors that are consistent even when HLM assumptions do not hold.

The use of these robust standard errors is most appropriate when the number of units at the highest level of the hierarchy is large. When there is insufficient data, HLM will not compute the robust standard errors, but will print a message to the output file that robust standard errors could not be computed for the model.

The robust standard errors are very useful as a diagnostic tool. Should there be large differences between the model-based standard errors and the robust standard errors, these discrepancies typically indicate model misspecification.

An example of this is given in the Raudenbush & Bryk (2nd. Edition, Sage) text (pp. 278-280).