



VTheta1 not invertible

The message

“Matrix Vtheta1 is not invertible. Unable to continue”

probably indicates a problem with a collinearity/multicollinearity within the fixed effects. The terms collinearity **and** multicollinearity are overlapping. Collinearity is a condition in which two of the independent variables are highly correlated, so there is a linear association between the two variables. Multicollinearity are highly linearly related associations between two or more explanatory variables.

It may be hard to find out which variables are causing the problem. One way to do this within HLM is to first of all request full output (**Other Settings, Output settings**). Save the model (**hlm/mlm** file and run the analysis, paying close attention to the iteration detail in the Command Prompt box. For example, the program may iterate for a bit and stop on the fifth macro iteration. Now return to the **Other Settings** menu and set the number of macro iteration on the **Iteration Settings** dialog box to the number of successfully completed macros, in this example, four. Run the program and look at the fixed effects table from this run. You should see some huge standard errors. The problem lies in some interaction between these variables.