Lab #6

# Latent Growth Models

NOTE: Each question should be a separate chunk in **R-studio’s Rmarkdown or R notebook** and using Knitr, knit your work and the output into a word document that you will upload into Canvas.

* Start with packages “foreign” and “lavaan” (and maybe “crayon”)
* Load datasets lsayshort.sav, and lsaylong.sav in R.

1. Using lsayshort.sav (include fit.measures and rsq in the summary of each below):
   1. Conduct a linear growth model on the Math variables (math7, math8, math9, math10). Interpret the output; especially the correlation between the factors.
   2. Convert Gender to a 0/1 variable and Fit 1.a above using Gender, mother’s education and home resources as time invariant predictors of the intercept and slope factors. Interpret the output.
   3. Conduct a 1) linear and then a 2) quadratic growth model on the Attitude variables. Interpret the output.
   4. Conduct a model in which the Attitude Growth model predicts the Math growth model. Copy and paste the fit indices, variances and prediction equations between the 2 models.
2. Using lsaylong.sav (include fit.measures and rsq in the summary of each below):
   1. Fit a CFA model of the on the “Math” variables (bas, geo, alg, qlt) from grades 7 – 10. Add any correlated errors that help the model fit using modindices.
   2. Using the CFA results from 2.a above, conduct a Latent Variable Latent Growth model on the “Math” variables (bas, geo, alg, qlt) from grades 7 – 10.
   3. Find a time invariant variable that predicts the trend significantly.