EPSY 8268 Assignment 7

To complete this assignment, identify a data set with two or three levels, with sufficient numbers of units at each level – hopefully at least 15 cases within group at level 1, 10 units within group at level 2 and 15 level-3 groups. Smaller samples at each level will work for the assignment, but you might have trouble with estimation and power (statistical significance).

You may elect to estimate a Bernoulli (dichotomous outcome) or Binomial Model (number of successes on a outcomes given *m* trials), an Ordinal Model, a Latent Variable Regression Model, a Measurement Model, or a Variance-Known Model.

***Bernoulli Model***

Data from a national survey of primary education in Thailand, conducted in 1988.

7516 sixth grade students nested in 356 primary schools.

Research goal: estimate the probability a child will repeat a grade during primary years.

UTHAIL1.SAV

male: 0=female, 1=male

pped: 0=no preprimary education, 1=preprimary education experience

rep1: 0=no repetition, 1=repeated a grade during primary school

THAI2.SAV

msesc: school mean SES

UTHAI12.SAV

male: 0=female, 1=male

pped: 0=no preprimary education, 1=preprimary education experience

rep1: 0=no repetition, 1=repeated a grade during primary school

random1: student random variable, *M* = 50, *SD* = 10

male\_m: proportion of males in school

pped\_m: proportion of students with preprimary education experience

rep1\_m: proportion of students repeated grade in school

rand1\_m: mean random student variable in school

msesc: school mean SES

random2: school random variable, *M* = 50, *SD* = 10

***Ordinal Model***

Data from a 1990 survey of 680 teachers in 16 high schools in California and Michigan. Available in the Example data (Chapter8) from the HLM download.

TCHR1.SAV

tcommit: teacher commitment (1=Yes, I would choose teaching again, 2=not sure, 3=No)

taskvar: student variability

TCHR2.SAV

tcontrol: teacher control (*M* = 0.09, *SD* = 0.32)

***Non-Normal Variables, Latent Variables, Measurement Models***

***Minnesota Student Survey Data*** – Samples of High Schools from 2016

**mss2016HS.sav**

OVERSAMPLE of LGB students from a sample of 69 high schools in the 11-county metro area.

Includes 7701 students from 9th and 11th grade, sampled from the sampled schools.

(116 students per school on average, ranging from 31 to 231).

**MSS7640.sav**

A random sample of 52 high schools in the 11-county metro area.

Includes 7640 students in 11th grade, sampled from the sampled schools.

(147 students per school on average, ranging from 51 to 270).

Both data files contain the same variables, including L1 and L2 variables.

There are 78 variables at the student L1, described in the Excel worksheet, MSScodebook.xls

All of the dichotomous and continuous variables are aggregated at the school L2, ending in \_m

***Variance Known Models – Meta-Analysis***

In the document available online, Meta-Analysis Descriptions, you will find full descriptions of the following databases:

1. Social Skills Meta-Analysis
2. Asthma & LRD Meta-Analysis
3. Test Score Reliabilities

**Assignment Tasks:**

1. Select one of the models above – feel free to use one of the databases described above or one of your own choosing.
2. Describe the data and the variables you use in your model. State a research question that lends itself to one of the above models. Describe the selected model and write out the model in hierarchical notation.
3. Test the intended model. Describe the major outcomes. If relevant, be sure to describe:
   1. Within and between group variance and associated ICC for base model.
   2. Evidence from results regarding your research question.
   3. Other results from your model that helps understand the role of predictors on outcomes and variances explained.