**Exercise 6**

A. Using the data provided (exercise6.csv), select and interpret a latent profile model of the “Big 5” personality traits using 5 indicators of the latent profile variable. Interpret all parameters in the model. Note that, by default in most software packages, the variances of the latent profile indicators are restricted to be equal across profiles (i.e., classes).

The variables in exercise6.csv are shown on the next page.

B. Add a grouping variable or covariate for biological sex to the model fit in (A). If you add a grouping variable, be sure to impose measurement invariance across groups. What are the main group differences or covariate effects you notice? Interpret all parameters in the model.

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| ID | Participant ID | SEX | Biological sex  0 = male, 1 = female |
| AGREEABLENESS | Big 5 scale of  agreeableness (mean=0) | CONSCIENTIOUSNESS | Big 5 scale of conscientiousness (mean=0) |
| EXTROVERSION | Big 5 scale of  extroversion (mean=0) | NEUROTICISM | Big 5 scale of  neuroticism (mean=0) |
| OPENNESS | Big 5 scale of  openness (mean=0) |  |  |