PSY 315H: Structural Equation Modeling

Fall 2019 (Andrew Conway)

DA 4

For this assignment, conduct a multiple-group SEM analysis on the data from Redick et al. (2016). Please find the dataset here: “Psy315H - DA 4 Multigroup Comparison.csv”. Specifically, replicate **the 2-factor model in Figure 2 of the Redick et al. article**. Please find the article here: “Redick2016.pdf”.

The models in Figure 2 of Redick et al. (2016) test whether 1 or 2 factors best explains the covariance among a battery of working memory tasks (the 2-factor model fits better). In this DA, please test three models based on the 2-factor structure (right panel of Figure 2) in the Redick et al. (2016), comparing men (coded as 1) and women (coded as 2), as follow:

* Configural invariance
* Weak invariance (constrain the factor loadings)
* Structural invariance (constrain the covariance between the two factors)

Provide a summary explaining which model illustrates the best fit (include chi-square difference tests to support your decision). Also, if there are significant differences between men and women in any of the parameters, please report those differences. Finally, provide a figure with the best fitting model for both men and women. Please embed your tables and figures in appropriate points in your text.

The manifest variable names in the figure correspond to variable names in the dataset as follows:

Oper Span      OpspanTo

Read Span      RespanTo

Symm Span    SyspanTo

Rota Span       RoSpanTo

Brief Report   BRTotalS

Change K       Arrays\_k

Counters        Counters

Keep Track    KT\_sum

Matrix Mon    MatMon.a