

EPsy 8266
Spring 2019
Final Assignment
Updated: 12 March 2019

Develop and analyze a structural equation model

This assignment is intended to integrate all the work of the course. You will need to develop, run, and evaluate your own model. The assignment should be kept concise and will consist of two parts: the narrative and an appendix.

The narrative should respond to all 9 items below with the first six items (1 – 6 below) comprising approximately 3 pages of text (excluding the path diagram). Feel free to use tables to help explain how the variables are operationalized. Most assignments will be between 10 – 15 pages to respond to items 1 – 9 below, **but there are no explicit page limitations (please don't write 30 pages though).**

In the narrative, the only relevant R code that should be included is for item 8 (i.e., you should set up the lavaan syntax in the narrative). For item 9, you do not need to include the R input/output in the narrative, but you could create a table containing parameters and/or fit indices combined with text to respond to this item. You could also just respond to this item text.

While this should not be included in the narrative, I do expect that you would do proper initial data analyses before running your models.

Please try to write your narrative as a unified, flowing document while addressing these items in order. Feel free to use appropriate section headers as well. Citations are not required, but you're welcome to include them and APA format is also not required.

In your appendix include all the R code to completely reproduce your findings. This should include your data, as a covariance matrix. I will run your code to ensure it can run and reproduce your findings. I am not grading you on how well you code in R, but a small portion of your grade (10%) will be affected if your results cannot be reproduced. Please make sure you comment your code as necessary and make sure it's organized well enough that I know what you've done!

Characteristics of the models:

1. Include 5 latent variables and approximately 3 indicators or more per latent variable. The use of 5 - 7 latent variables is a suggestion, but use more if your model has more variables in it. Your model could also include a combination of observed variables. You can also do a latent growth curve model, bifactor model, et cetera, too.
2. Describe each conceptual variable in your model, how it has been operationalized by previous research, and how you are operationalizing it.
3. Briefly explain why the relations among the conceptual variables are of interest to researchers and you and what already is known and not known.

4. Draw a structural equation model/path diagram for your model using RAM notation and justify (briefly) the paths among the latent variables (including the relations among exogenous variables).
5. As needed, expand on what you wrote in response to #2 in defining your measurement model. Explain any residual covariances among indicators or complex structure. You may not have any have.
6. If at all possible, describe/justify and provide diagrams for at least two equivalent models - but you only need to set up matrices and R code for your model of interest.

Running/evaluating the model:

7. Write the equations for your model using LISREL notation.
8. Set up the lavaan syntax for your model.
9. Run the model in lavaan, evaluate the model's overall fit, and interpret your model findings.

Please note, that the fit of your model has no bearing on your grade on this assignment!