PSYR 6003 Assignment 4

Linear Mixed Effects Modeling

Dataset Overview for "Personality and Satisfaction with Life"

Datafile Original Source: https://osf.io/m9wdn/

Datafile Names on GitHub: P6003.A4.sav

Number of Cases: 4252 observations (263 participants)

Variable Codebook

This dataset contains a sample of 263 people that were measured with daily questionnaire once a day for up to 20 days. The variable "id" indicates the unique ID for each person, and the variable "day" indicates the day of participation (from 2-21, where the daily questionnaires took place.

Methods: Participants measured daily for a maximum of 20 days each

Variables Needed for Assignment:

id – Unique identifier for each individual participant. Level 2 identifier.

day – Out of 20 possible measured days, which day was measured. Ranges from 2-21 because day 1 was a different baseline questionnaire Level 1 identifier.

swl – Satisfaction with life. Items could range from 1 (strongly disagree) to 7 (Strongly Agree). Component items were averaged into a total score such that higher number indicate higher satisfaction with life.

tipm.E – Extraversion (i.e., tendency to experience positive affect and be engaged in the social world). Items could range from 1 (strongly disagree) to 7 (Strongly Agree). Component items were averaged into a total score such that higher number indicate higher Extraversion.

tipm.N = Neuroticism (i.e., tendency to experience negative affect). Items could range from 1 (strongly disagree) to 7 (Strongly Agree). Component items were averaged into a total score such that higher number indicate higher neuroticism.

NOTE: Other variables not needed for this assignment, despite being in the dataset.

WHAT TO SUBMIT

Written summary. Write up the results of this analysis in APA 7 format, as though it were a section in a journal article. Use prose rather than respond to each question paragraph by

paragraph (i.e., pretend it's a real Results write up). Specifically, in your report, you should describe the following:

1. Report the data analysis strategy with all your choice points
A data analytic strategy where you describe what you did regarding: (a) fixed vs. random slopes, if used, (b) what kind of estimator (ML vs. REML) and (c) writing out the model you tested in EQUATION FORM, like in class. Where required, defend your choices (e.g., nested model comparisons).

2. Screen the data prior to analysis
Screen the data (i.e., explore raw data visually) and assess for all assumptions. If assumptions are violated, note it in the text and interpretation, but proceed with the rest for the purposes of this assignment.

3. Report descriptive statistics
A table with Means, Standard Deviations, and a bivariate correlation matrix. For the correlations, you can just report the correlations on all 4252 observations, ignoring the clustering (there are better ways to do this, but this is fine for here).

4. Results in a Table
A table including Bs, SEs, 95% CIs, p-values (if you choose to), ICC, and R^2 for your final selected model

5. Interpretation of Results
A brief interpretation of what the results mean, in words. Describe in lay terms what the results mean. What is the take home message, and which of the hypotheses were supported?

Code. All responses and work must be documented and be completely reproducible. Your assignment should be submitted by sending a link to a public GitHub repo with all your work on Brightspace including your write up, code, and data. Include annotated syntax (i.e., with comments to guide the reader) for all of the analyses/work you report. Make sure the syntax is reproducible (e.g., Quarto) and is part of your assignment repo. **I will run this syntax to see if it works, so don't skip steps here!** It will also serve as a record for you if you ever need to do this kind of work again.

QUESTIONS & TASKS

Begin by cloning the repo for the assignment that contains the dataset:
https://github.com/iyakoven/PSYR6003-Assignment-4

Specifically, I'd like you to test a model where extraversion and neuroticism are predictors, and the dependent variable is satisfaction with life.

You're testing the following three hypotheses:

H1. Extraversion will be positively associated with satisfaction with life.

H2. Neuroticism will be negatively associated with satisfaction with life.

H3. The effects will be similar for both level 1 (within participants over time) and level 2 (between participants).

Test these hypotheses using a linear mixed effects model. **You will need to make your own decisions on issues such as random vs. fixed slopes** (using nested model comparisons may help defend your choices). Note that for the purposes of this assignment, you can ignore any errors that say the model did not converge and proceed with interpretation.