

**PSQF 6272 HW4: Individual Analysis of Clustered Data (2+16=18 points)**  
**Due Monday 11/13/2023 by 11:59 PM under “assignments” in ICON**

**Please submit HW4 in an editable format (e.g., .docx or .rtf extension)  
using this file-naming convention: PSQF6272\_Lastname\_Firstname\_HW4**

The goal of HW4 is for you to practice conducting analyses using clustered multilevel models on real data (either your own or public use data, as described the HW4 Plan document). The list below describes all of the elements to be included, but **I WILL NOT ACCEPT THIS LIST BACK**. Instead, write a report using **APA style** (or whichever alternative style is most common in your discipline) that contains the elements below. I want you to get practice with technical writing, including transitions and describing the contents of your tables and figures. You may use my example results sections or those from homework as templates, but they need to be customized to match your analyses. You may use AI (e.g., Grammarly, Chat-GPT) to help correct English spelling and grammar errors, but make sure to not let it change the intent of your words or add anything fake!

**HW4 must be at least  $\frac{3}{4}$  complete (with respect to points attempted) before it will be accepted, and late submissions will receive a –2 point penalty.** You will have the chance to **revise your HW4 once** for full credit (except any late points), which will be due at the end of finals week.

**Items to be included (and their point values):**

1. Write a **very short introduction** (1–2 paragraphs at most) that briefly introduces your topic area and presents explicit research questions. **(1 point)**
2. Write a **short method section** that contains only the most relevant information about your sample and the variables used. Also describe your centering strategies for all variables and report which version of the software you used. The reader should be able to replicate your analyses with the info given. **(2 points)**
3. Create level-specific tables of sample size and descriptive statistics **for all original variables and for the versions actually used in your analyses** (Mean, SD, and range for quantitative variables; frequencies per category for categorical variables). These tables should be neatly formatted with informative variable labels (do NOT just paste in output). In excel, use “text to columns” under “data” to make this easier. **(3 points)**
4. Write a **results section that summarizes the intermediate steps** in building to your final model(s), starting with unadjusted intraclass correlations for each original level-1 variable. Do not report any model that includes a smushed effect. At each step in your series of models, summarize what happened for new fixed effects (slope direction, significance, effect size) and new random effects (likelihood ratio test results, effect sizes). Equations for these intermediate models can be provided if you wish. **(3 points)**
5. **Describe your final model in detail**, including the model equation and a nicely-formatted table of model parameter estimates, standard errors, and  $p$ -values. Interpret the meaning of all fixed effects regardless of significance. Create a figure of predicted outcomes to illustrate one or more of your findings. **(6 points)**
6. Write the **beginning of a discussion section that summarizes the results as explicit answers** to the research questions you started with (1–2 paragraphs at most). **(1 point)**