

RECSM: Quantitative Methods in Social Research

Day 3 - 04 07 2025

Burak Sonmez

Measurement of the Unobserved Variables and Scale Construction.

Final Problem Set

Step 1: Open a new script and save it as day3. Clear your workspace.

Step 2: Load the General Social Survey (gss2016.RData) dataset and install “Psych” alongside “psychTools” package.

Step 3: Once you subset the ten variables related to confidence in institutions, you can explore the correlations among those variables in the dataset.

Step 4: Try to create a new variable that combines all 10 likert-scale variables (hint: use rowMeans function).

Step 5: Test the reliability of this scale through Cronbach’s alpha (hint: use “alpha” function).

Step 6: Test for the number of factors in your data using parallel analysis.

Step 7: Do the same analysis above with Principle Component Analysis (PCA).

Step 8: Use factor analysis with the data. Then compare the solution to a hierarchical cluster analysis using the “ICLUST” algorithm and function (Revelle, 1979).

Solutions for problem sets