PLSC 503: "Multivariate Analysis for Political Research"

Exercise Ten

In the interest of continuing our analyses of only-marginally-political phenomena in a graduate-level course in political science, we'll return this week to Washington University's American Panel Study (TAPS) study. As noted in Exercise Nine, in July 2016 that survey asked roughly 1200 U.S. survey respondents a series of questions that included both conventional and unconventional survey items, including one question which asked:

> What size is your bed?
>
> 1. Twin
> 2. Full
> 3. Queen
> 4. King

The survey also included response options for "Don't Know" and "Refused," which we'll treat as missing. As in the hotel-shampoo-theft example in Exercise Eight, we'll assess the correlates of respondents' answers to this burning political question. The data we use here (`PLSC503-2025-ExerciseTen.csv`) code respondents' answers to the above question as the (ordinal) numeric values listed above.

We'll examine the association between answers to this question and the same demographic and political variables we considered last time:

- Political party identification indicators – binary variables for `Democrat` and `GOP`, with independents serving as the reference category,
- `Ideology` – a seven-point indicator variable, where higher values indicate greater political conservatism,
- `Education` – measured as a twelve-category ordinal variable with values ranging from 3 to 15,
- `Income` – a 15-category ordinal indicator,
- The respondent's `Age` in years, as of 2016,
- `Female` – a binary indicator of sex, naturally-coded, and
- Racial classifications – indicator variables for `White`, `Black`, and `Asian` identification (with "other" as a reference category),

In the interest of maximizing your opportunity to work on your final project, your assignment here is very, very simple:

1. Fit a *nominal-response* (multinomial logit) model to the above data, using a regression specification (or specifications) of your choosing. Interpret your findings, using the techniques discussed in class: What characteristics are and are not associated with bed size? How do changes in those variables related to the probabilities of each alternative?
2. Take the data and ideas from (1) and fit an ordered-response model to the same outcome. Interpret your findings, and talk briefly about what, if any differences there are between what you find in (1) vs. (2).

This assignment is due (electronically, in the usual fashion) at 11:59 p.m. EST on (or before) Monday, May 5, 2025, and is worth the usual 50 points.