Case: Reviewing Inference and Standard Errors

Case written for [Teaching Fellow Training](#), held January 2021
(prepared by Shiro Kuriwaki and Soichiro Yamauchi)

Please watch the first 38 minutes of this **video [link removed for public version]** and consider the discussion questions at the end of this case. (Note: do not share this video outside of participants of the training).

Background

Soichiro was one of four teaching fellows for Gov 51 - Data Analysis and Politics in Fall of 2021.   The class had a total enrollment of 57 undergraduate students and 10 people showed up to his section. Sections are technically optional but attendance is often 100%.

The course head for Gov 51 was Matt Blackwell. The class overall used a mix of pre-recorded and live sessions: Matt provided pre-recorded Youtube lectures each week in addition to one coding-based live discussion per week (also led by Matt). After attending these both, students attended one TF-led section a week.

The section recorded here occurred in Week 10 of the class, after covering experiments, regression, probability, and random variables. The particular topic of the week was statistical inference, covering estimation and uncertainties (Matt's corresponding lectures of that week can be viewed [here](#) and live discussion [here](#)).

At the time of the section on November 21, the last [problem set](#) on inference and standard errors was due November 23, the second take-home exam was scheduled for December 7th, and a draft analysis for the Final Project was due November 18th. To provide some context, Gov 51 students were graded based on four problem sets (40% of the course grade), two take-homes (30%), and a final data analysis project (20%). The course followed Kosuke's Quantitative Social Science Book and drew upon many of its examples.

Time Management

As you can see, the first 40 minutes of the section were spent as follows:

- Review (Slides)
    - 6 minutes on review
    - 8 minutes on explaining a list experiment
- Exercise (Question 1)

- 6 minutes on silent work for Question 1
- 18 minutes on demonstrating how to solve Question 1

The total section was 75 minutes. Soichiro spent another 20 minutes on Question 2 (confidence interval). The remaining 15 minutes, not recorded, were spent on a discussion about the final project.

Discussion Questions

Here are some of the questions that the TF considered in designing the section. What do you think? What other questions does this section raise?

1. Was the first segment of content review an effective use of time?
   - Pro: Reminds students of the big picture and goal of the current topic
   - Con: Takes time to explain; too abstract for students; less time for coding exercises

2. Did you think the list experiment example is appropriate for reviewing point estimation and standard errors? Was the form and amount of exercises enough?
   - Pro: Shows an Interesting *real* application of statistical inference
   - Con: Requires an introduction of the topic; less time for coding exercises

3. The list experiment example was only used in this section, and the lectures and problem sets used examples from different political science papers. Should the section have doubled down on one of these examples instead?

Links

The material used in this section is available from [here](#) (prompts) and [here](#) (slides).