POL 222: Introduction to Quantitative Reasoning I

Tutorial 5
Peer Discussion on Essay 2

Complete the exercise below as much as possible before the tutorial session for Essay 2. You will have an opportunity to discuss your essay ideas with your classmates and receive peer feedback in the tutorial session.

1. What is your causal theory/hypothesis?

2. Proposal of Empirical Research Design
In the essay, you will propose only one empirical research design. That is, you need to choose either an experiment or an observational study for your research design. In this exercise, you may choose either one or explore both types of empirical research.

(1) Experimental Research
Propose an experimental research design — either laboratory, field, or survey experiment — to empirically test your causal theory. Use the following questions to guide the specification of your experiment.

(a) Is your experimental research design a laboratory experiment, a field experiment, or a survey experiment?

(b) Who are the participants in the experiment (= the unit of analysis of your experimental research)? How are they recruited?

(c) What is the treatment of your experiment (= the independent variable)?[1]

(d) How are different values of the treatment assigned to the participants of the experiment? (Your answer should include more than "a random assignment." Remember that great care should be given to how you assign the value of the treatment to the participants. Recall the examples covered in lectures.)

[1] If your independent variable (= treatment) takes only two values, you may assign one group as the "treatment" group and the other the "control" group. If your independent variable takes more than two values, then you may say that there are multiple treatment groups and call each of them the first treatment group, second treatment group, and so forth.

(e) How are the outcomes (= the dependent variable) measured?

(f) Is there a possibility of reverse causality or simultaneous relationship? If so, how would it be addressed by your research design?

(g) Are there confounding variables? If so, how would your research design address the potential problem of confounding variables?

(h) What are the potential disadvantages of your experiment? How would you defend your research design in light of these disadvantages? What cautions and reservations are needed for interpreting the results of your experiment?

(2) Observational Study Design

Propose an observational study design — either cross-section, time-series, or TSCS/Panel study — to empirically test your causal theory. Use the following questions to guide the specification of your observational study.

(a) Is your observational research design a cross-sectional study, a time-series analysis, or a TSCS/Panel study?

(b) What is the unit of analysis?

(c) Is your data an aggregate data or individual-level survey data? How would the data be collected?

(d) How do you operationalize the independent and dependent variables?

(e) Is there a possibility of reverse causality or simultaneous relationship? If so, how would it be addressed by your research design?

(f) Are there confounding variables? If so, how would your observational study address the potential problem of confounding variables? How do you operationalize these confounding variables? Are there any unobservable confounding variables?

(g) What are the potential disadvantages of your observational study? How would you defend your research design in light of these disadvantages? What cautions and reservations are needed for interpreting the results of your observational study?