Research Design Assignment

Length: 1-2 pages, single spaced, **plus** a causal diagram.

Come up with a causal question pertaining to the real world. This question should be of the form “How does X [affect/increase/decrease/impact/etc.] Y?” Ideally, pick one we haven’t covered in class. I’m sure you have your own! You may, if you like, pick a particular context where your diagram applies (the same problem may have different diagrams in different contexts, some identifiable and some not).

Using dagitty, draw a causal diagram containing no more than 10 total variables, including your X and your Y (fewer is completely fine) that you might use to investigate this question. Make sure your diagram is easily visible (dagitty has a tendency of making the images very small – crop and zoom as appropriate).

In your paper, justify and explain your diagram: your choice of variables, the direction of arrows and which arrows aren’t there. Also explain which variables are **unobserved/unmeasurable** and why you think they’re unobserved.

Also in your paper, explain whether it’s possible to identify your effect of interest. If it’s not possible, explain how you know. If it is possible, explain **how you would do it** (this could be by any method – back door, front door, instrumental variable). Be clear: what variables would you adjust for, whether you can use a difference-in-difference, regression discontinuity, etc. You may need to specify a particular context when doing this (example: “I’m interested in how immigration affects local wages, so I can look at the Mariel Boatlift example where I can use a difference-in-difference…”) When discussing identification, **assume your diagram is correct**. Don’t make reference to variables that aren’t in your diagram, or base your identification on a version of the diagram you didn’t draw. Also, don’t control/adjust for any variables that are unobserved.

Rubric:

9-10: Interesting question, reasonable set of variables chosen without too many extraneous variables, good justification for variables included, which are observed or unobserved, and arrows **including** how your real-world understanding influences your diagram, accurate judgment of whether or not the effect is identifiable in your diagram, and accurate explanation of how you would identify the effect.

7-8: Justification for diagram could use some work or is not situated in real-world knowledge. Minor errors in judging whether and how the effect can be identified. A paper that, assuming the diagram is true, is incorrect about whether its effect can be identified, or how it could be done, can earn no higher than a 7.5 (unless the reason you’re wrong is highly technical and beyond what we’ve learned in class), so be sure to be right! You can check this beforehand, there’s no reason not to!

6 or below: Poor justification for causal diagram, incorrect identification.