

Policy Evaluation – PMAP 4061

QUIZ 5: RESEARCH DESIGNS

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1. (1 point) Which one is the “fundamental problem” of causal inference?
 - A. Correlation does not equal causation
 - B. Internal validity does not imply external validity
 - C. Counterfactual outcomes cannot be observed
 - D. Counterfactual outcomes cannot be generated**

Solution: While statements A) and B) are true, they are true for all research designs. Statement D) is incorrect because counterfactual outcomes can be generated using statistical techniques. Statement C) is correct because only realized outcomes are observed, and that’s what the “fundamental problem” of causal inference boils down to.

2. (1 point) The resident psychologist has advised the school principal against the use of IQ testing for advance classes admissions. She worries that test results loosely translate into ability to perform. What type of concern has raised the psychologist?
 - A. Self-selection
 - B. Instrumentation**
 - C. External validity
 - D. Attrition

Solution: Answer choice B) is correct. The lacking performance of IQ as an *instrument* for ability has been debated for decades.

3. (1 point) A policy analyst is flipping through the *Handbook of Evaluation*. One report mentions about a neighboring state piloting a Universal Basic Income (UBI) program among 1,000 random recipients. The analyst writes up a policy memo vetting the same policy for implementation and leaves it for the legislature to decide on the performance metrics. The analyst has failed to include:
 - A. The treatment group
 - B. The control group
 - C. The treatment variable
 - D. The outcome variable**

Solution: The 1,000 recipients represent the treatment group while everyone else in the state is a control. The UBI program is the treatment variable, but no outcome variable has been defined (e.g., household expenditures, employment status, welfare payments, etc.).

4. (1 point) It has been established that preschool is a cause for higher lifetime earnings. Can we conclude that the two are correlated?
- A. **Yes**
 - B. No
 - C. Not necessarily
 - D. Too little information to tell

Solution: Preschool attendance and earnings must be correlated if a causal link exists between the two. Causation always involves correlation, not the other way around.

5. (1 point) A policy analyst observes that a SAT prep program has yielded larger dividends on the test performance of districts which stayed offline relative to districts which moved instruction online during the pandemic. She concludes that the physical presence requirement is a _____ for the effect of the prep class on SAT performance.
- A. Mediator
 - B. **Moderator**
 - C. Cause
 - D. Antecedent

Solution: The requirement *moderates* the effect of the prep class because it changes the strength of its relationship with SAT test scores. It is not an antecedent because it does not determine the requirement nor is it a pathway through which the class yields effects on student performance. Less so we should be talking causation when the covariance structure of a model is being examined.

6. (1 point) The policy analysis team believes that age and socioeconomic status, two features which determine eligibility to a state subsidy, do not drive the response to the policy. The two variables act as:
- A. Mediators
 - B. Moderators
 - C. Causes
 - D. **Antecedents**

Solution: Participation in the subsidy intervenes in the pathway linking age and socioeconomic status with the outcome variable. Therefore, the two variables act as antecedents in the model.

7. (1 point) Based on the above, the policy analysis team decides not to include them in their model. Are they making the right choice?
- A. Yes
 - B. **No**
 - C. Not necessarily
 - D. Too little information to tell

Solution: Because these characteristics are correlated with the focal variable (i.e., participation in the subsidy), they must always be included in the model, whether or not their independent effect on the outcome variable is anticipated.

8. (1 point) The new Miller Scholarship requirements subjects continuation of scholarship payments to keeping a GPA of 3.3 or above. The education specialist at the University System of Georgia believes that less motivated high school graduates will shun the application in the future. She claims that attainments of pre- and post-reform cohorts will not be comparable because of _____.

Choose the correct filler word.

- A. Testing
- B. Maturation
- C. Attrition
- D. Self-selection**

Solution: Less motivated students will have self-selected out of the scholarship. Attrition would be the correct answer if students dropped out after enrollment.

9. (1 point) The chief policy analyst took stance against running any evaluations during the COVID-19 pandemic. She is concerned that the external validity of the results might be limited. Specifically, she worries for:

- A. Reaction to measuring
- B. General Equilibrium Effects
- C. Multiple treatments**
- D. History

Solution: Is it really the effect of the policy or is it COVID-19? The pandemic would taint the evaluation metrics with multiple treatments bias.

10. (1 point) Education scholars have documented extensive teaching-to-the-test practices following the roll-out of No Child Left Behind (NCLB) test-based policies. They argue that students have become better at testing without gaining any deeper knowledge of test subjects. Therefore, reformed cohorts might not be comparable to prior students. The Bush Administration has countered that the tests' only use was comparisons across schools, not to compare test-takers.

Which of the following is correct?

- A. The Bush Administration defends the external validity of the policy but ed scholars really have picked up on the internal validity of the tests
- B. The Bush Administration defends the internal validity of the policy but ed scholars really have picked up on the external validity of the tests**
- C. They are both debating the external validity of the tests with different arguments
- D. They are both debating the internal validity of the tests with different arguments

Solution: B) is correct. The Bush Administration argues that the tests are valid to the extent that they are used to compare across schools. However, education scholars have raised an external validity concern with regards to longitudinal comparisons of students across time.