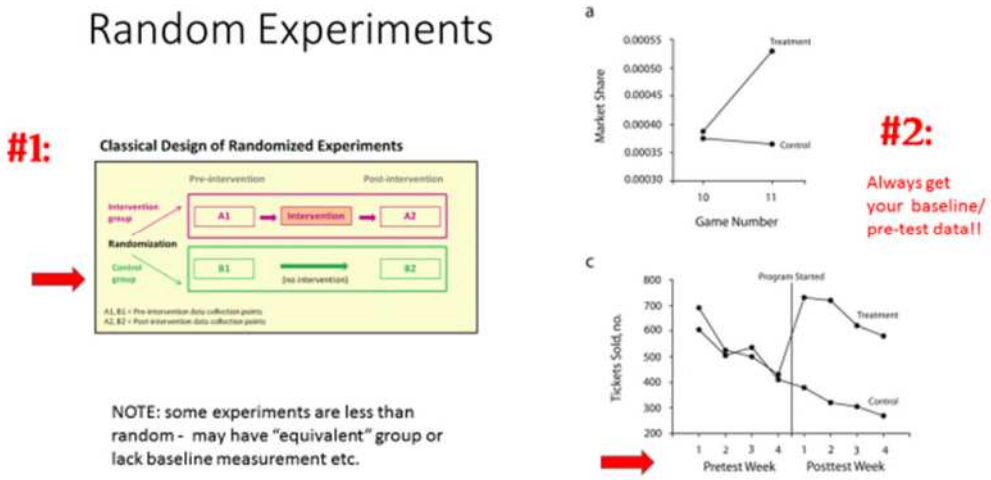
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Chapter 2: Research Design

Note: SI refers to the section introduction on pp. 17–20.

Note: This lecture invites professors to also bring their own program or policy evaluation examples, which additional graphs such as:



Critical Thinking

SI = section introduction

1. Give examples of basic and applied research questions that might be raised in the context of (1) a program to reduce adult illiteracy and (2) a program that fights international terrorism. (SI)

Ans: *Adult literacy*
Basic research questions: What is the nature of adult literacy in a specific population? How many people are illiterate? What skills do they have to learn how to read? What barriers to reading exist for them?
Applied research questions: How effective is a specific adult literacy program? Which approaches are more effective? What conditions influence the effectiveness of these approaches?

International terrorism
Basic research questions: What is the nature of international terrorism? How does it differ across countries of origin? Are different countries affected differently? What type of terrorism methods are used?
Applied research questions: How effective is an antiterrorism program? Which approaches are

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more effective? What conditions influence the effectiveness of these approaches?

2. Why are both quantitative and qualitative methods indispensable in addressing questions of basic and applied research? (SI)

Ans: See p. 19: "Both quantitative and qualitative methods are indispensable in addressing questions of basic and applied research. Quantitative research requires solid knowledge of existing phenomena and how they are related to each other. Simply, before we measure something, we need to be certain that we know what we are measuring and that we are measuring the right thing. However, qualitative research does not provide much specific information about the magnitude of problems and phenomena nor can it offer conclusive, statistical proof about the impacts of programs and policies. Hence, research in public management and analysis typically uses both quantitative and qualitative research methods."

3. Give some examples of variables. Why are variables key to research?

Ans: Examples of variables include gender, environmental quality, and robberies. Variables are key to research because they are the targets of program and policies (e.g., environmental quality), which themselves are also variables.

4. A program aims to reduce adult illiteracy by providing reading sessions during evening hours. Identify the dependent and independent variables.

Ans: Dependence variable: adult
illiteracy Independent variable:
reading sessions

5. A study examines the impact of gender and drug use on school performance and political orientations. Identify the dependent and independent variables.

Ans: Dependence variable: school performance and political
orientations. Dependence variable: gender and drug use.

6. It is said that in Sweden an empirical association exists between the presence of storks and the incidence of new babies. Explain what is necessary to establish a claim of causation. Do storks really bring babies?

Ans: See p. 25: "Causation requires both (1) *empirical (i.e., statistical) correlation* and (2) *a plausible cause-and-effect argument.*"

Storks do not bring babies because, well, they don't. However, in the context of this question, it is more appropriate to say that no plausible (logical) cause-and-effect argument exists

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between the presence of storks and the presence of babies.

7. A study examines the relationship between race and crime. Is this a causal relationship or an association? Explain.

Ans: Usually such a relationship is said to be an association, because no plausible cause-and-effect argument exists between race (as in ethnic origin or skin color) and crime. Certain other, socioeconomic, community, or individual conditions associated with crime may or may not be strongly present in certain ethnic groups (as is sometimes argued), but this is not measured adequately by the variable "race."

8. Apply the following statement to program evaluation: "Research begins with asking questions." Think about a program that you know about as a basis for answering this question.

Ans: This question helps students to note the importance of asking the right (research) question, before implementing analytical activities such as program evaluation.

9. The developers of the adult literacy program mentioned in question 4 claim that the program is effective. By what measures might this effectiveness be demonstrated?

Ans: This question forces students to think about measurement, discussed in more detail in Chapter 3. The initial answer is obvious—increase literacy skills—but probing a bit further may lead to some questions insight about the amount of learning (hours of literacy training), the method of learning (and support from family members), starting levels, the equivalency of control groups, and more.

10. What might be some rival hypotheses regarding the effectiveness of this adult literacy program?

Ans: Some students are apt to want to answer this question off the cuff rather than focusing on the threats to internal and external validity discussed on pp. 36–37. A rival hypothesis might be that program participants learn simultaneously from other sources, too, not necessarily just the adult literacy program.

11. Discuss an experimental research design for testing the effectiveness of an anger management program. Then apply the three quasi-experimental designs mentioned in Box 2.1 in the text. Diagram the designs as shown in this box.

Ans: This is a detailed question that follows the text discussion on pp. 30–35.

Application Exercises

SI = section introduction

Note: I imagine instructors will choose 3–4 of the following, adapt to their own areas of

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interest/knowledge, and discuss as part of the class lecture. It might help to point out to students the workbook questions you are raising/modifying.

1. Give examples of basic and applied research questions in your area of interest. (SI)

Ans: Answers vary. (see critical thinking #1, above)

2. Give examples of quantitative and qualitative research methods in your area of interest. (SI)

Ans: Answers vary, but should include—in depth interviews and focus groups as examples of qualitative research, and surveys and experimental designs as examples of quantitative methods, too.

3. Consider the following variables: the number of immigrants, attitudes toward abortion, and environmental pollution. What might be some attributes for each of the variables?

Ans: Answers vary, for example, the number of immigrants: numbers attitudes toward abortion: interview response scale (e.g., Likert-type scale) environmental pollution: measurement scale of pollutants

4. You have been asked to develop a neighborhood crime control program. Thinking ahead, you develop a strategy for evaluating the program in subsequent months and years. Define the program and identify dependent and independent variables that can be used to evaluate it.

Ans: This question makes the larger point that thinking about evaluation is a driver of program design. This problem also helps students to think about programs and policies as independent variables causing dependent variables (here, neighborhood crime). It may also help focus on equivalent groups/neighborhoods for purposes of comparison.

5. Identify a problem in your area of interest. Identify the dependent and one or more independent variables affecting this problem.

Ans: Answers vary.

6. Consider a program or policy in your area of interest. How do the specific issues raised in the text regarding program evaluation apply to your program or policy? For instance, give some examples of how difficult it can be to document program outcomes.
Ans: Answers vary, but they should touch on matters of measurement and disentangling program impacts from other impacts.

7. Discuss how you can apply the six steps of program evaluation to a specific program in your area of interest.

Ans: Answers vary.

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8. Find an article that discusses a specific program evaluation and identify in it each of the six steps of program evaluation.

Ans: Answers vary. This question may be a bit difficult to answer, given that articles seldom clearly identify each of these steps in their writing. This is the lesson that needs to be communicated, as well.

9. Identify some rival hypotheses (control variables) that might affect conclusions about the effectiveness of an adult literacy program. Then, discuss how an experimental research design and several quasi-experimental designs might be helpful for determining the effectiveness of the program.

Ans: Answers vary, but all will point toward the need for statistics as a method of controlling for these other factors. See p. 31: ". . . .we can no longer rely on the research design itself to rule out the presence of rival hypotheses; rather, we must use the *strategy of statistical control* to account for rival hypotheses."

The point about control variables is also reinforced on p. 38: "The point of this lengthy list is to draw attention to concerns that analysts may want to consider in their research and evaluation. Most researchers consider at least a few or the most important rival hypotheses and threats to validity . . . ."

10. Define the objectives of a job-training program and then identify some rival hypotheses regarding possible outcomes. Explain how baselines and comparison groups might be used.

Ans: Answers vary.

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