

Methods Comprehensive Exam Practice Test Bank

This document contains questions that students may choose to prepare written responses to for review by a professor as part of their preparation process for the comprehensive exam. These questions were chosen to provide students a breadth of topics as well as a variety of critical thinking applications. These questions will not appear, as written, on any comprehensive exam.

Part I Questions

1) Imagine you are asked to develop an experimental design to test whether participating in a job training program in prison will reduce an inmate's likelihood of re-offending after release from prison. Describe the research design that you would propose. Explain all the ways you think of why this experimental design is preferable to quasi-experimental or correlational designs. If there are weaknesses of your design, what are they?

2) You want to study whether associating with delinquent peers is a predictor of juvenile delinquency. However, you are concerned that the causal ordering may be just the reverse – that being delinquent may increase the likelihood of having delinquent peers. Design a study that would address this research question. Describe the sampling method you would use, your measurement strategy for the key variables of delinquency and delinquent peers, how you would address the potential causal order problem, and outline how you would analyze the data. Finally, discuss what you see as the major weaknesses of your study design.

Part II Questions

1) Many popular survey datasets, such as NYSL and Add Health, feature complex survey designs where respondents are sampled from within samples of higher-order units (e.g., neighborhoods) and where some types of respondents are oversampled (e.g., racial minorities). Explain how these types of design features would be implemented (i.e., what steps would be involved in doing these types of sampling). Explain why the designer of the study might have included each design feature. Describe the disadvantages of each of these design features.

2) One of the central concepts of research design and statistical methods is randomness. This concept is used in reference to many different facets of research design and implementation. Describe how the term “randomness” is relevant to each of the four aspects of research design. What are the potential consequences for each of failing to achieve randomness? In what ways can we approximate randomness for each, or compensate for our inability to do so?

- a) selecting respondents for a survey
- b) assigning cases to an experimental or control group
- c) missing cases and missing data

3) Experimental research designs commonly provide strong internal validity, but studies using these designs often have weak external validity. Discuss the specific ways in which the generalizability of experimental findings is often quite limited, explaining what it is about experimental designs that contributes to this limited generalizability. Finally, discuss ways researchers can improve the external validity of experimental designs.

4) In many studies of delinquency, the dependent variable is some kind of index that combines responses to self-report questions about multiple types of delinquency. Describe the different types of indexes that can be created for such studies, state the relative advantages and disadvantages of these types of indexes, and describe the different ways the individual items can be combined in an index.

5) Inclusion of control variables in regression models is supposed to provide researchers with more valid estimates of an effect of a given variable (X) on an outcome (Y). First, what criteria should be used for selecting control variables? Second, under what conditions can we feel confident that a given set of control variables is sufficient for obtaining valid estimates of X's effect on Y? Third, if it is not possible to include all relevant controls, what statistical methodologies might you use to obtain an accurate estimate of the effect of X on Y?

6) Nonresponse can be a serious issue for survey research. First, explain why this is such a serious concern. Second, describe several potential reasons for both unit nonresponse and item nonresponse. Next, describe ways to reduce each type of nonresponse in research designs. Finally, explain how you might evaluate whether nonresponse is a problem in survey data.

7) Describe three types of nonlinear relationships and how you would model the relationships statistically. In each instance, describe how the nonlinearity may be relevant to modifying a theory or developing a policy, providing a specific criminological example.

8) Validity, reliability, and non-response are three central concerns in survey research. Describe in detail how the following three aspects of survey design and administration can influence validity, reliability, and non-response. Be sure to discuss in detail the problems that may arise, how they influence each of the three central concerns, and what we might do to minimize those effects.

- a) question wording
- b) question structure and order
- c) interviewer bias
- d) social desirability bias

9) Quasi-experimental research designs are frequently touted as a credible alternative to experimental research designs. Describe the central differences between the two approaches. Discuss the conditions under which quasi-experimental research produces credible results and the conditions under which it does not. Discuss the conditions under which experimental research produces credible results and the conditions under which it does not.

10) Secondary data analysis can be a valuable tool in criminological research. However, researchers conducting this type of analysis must address concerns that do not arise when they collect their own data. What are the advantages and disadvantages of secondary data analysis? Describe the issues and concerns associated with this type of analysis, and how researchers can deal with them. Use two examples of commonly used secondary data sources to illustrate these issues.