

Florida State University College of Criminology and Criminal Justice

Ph.D. Comprehensive Examination in Research Methods, Spring 2013

Instructions:

There are four sections to the exam. Answer one question from each section. You have until 4:00 PM to finish. If you have problems with the exam, you may consult with faculty proctoring the exam: Brian Stults (Room 317), 8:00-9:00 AM; Gary Kleck (Room 306), 9:00 AM to Noon; Bill Bales (Room 307), Noon to 2:00 PM; Eric Baumer (Room 305), 2:00-4:00 PM. Please notify Margarita Frankeberger (Room 216) when you are finished and ready to have your exam answers printed out. Please note: Once a student takes possession of the examination at the start of the exam period, this constitutes an attempt at taking the exam, regardless of whether the student completes the exam, hands in any answers, or remains for the full exam period.

I. RESEARCH DESIGN

1. Randomized experiments are considered the “gold standard” in research design. Discuss the strengths and benefits of randomized experiments as they apply to the investigation of causal relationships in criminology. Then, review the limitations of this approach. Finally, briefly describe methods a researcher may use to overcome or minimize these concerns when conducting a randomized study.
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.

II. DATA GATHERING METHODS

3. Criminologists face the difficult problem of studying a phenomenon that is, fortunately, relatively rare in the population – serious criminal behavior. What are the consequences of this problem for research? How could one do a survey that included a larger number of serious criminals?
4. Missing data have the potential to significantly undermine the quality of criminological research. Assume you wish to test the effectiveness of a criminal justice or community-based intervention, and you plan to gather data from participants in both experimental and control conditions at multiple time points before, during and after implementation. Describe the steps you would take throughout the study to minimize missing data from respondents in each condition.

III. STATISTICS

5. Many of the dependent variables in criminological research are highly skewed. What statistical techniques can be used to formally assess the extent of this distributional issue? Assuming that there is significant skew present in a given dependent variable, how might this affect the parameters obtained from OLS? What should researchers do, if anything, to ensure unbiased regression parameter estimates in the presence of significant skewness in the dependent variable?
6. What techniques or procedures could be used to address each of the following problems? How does the technique or procedure fix the given problem?
 - (a) a relationship between X (an independent variable) and Y (the dependent variable) that is nonlinear – as X increases, Y increases at first, but as X increases more, Y decreases
 - (b) A dependent variable that is a raw count (e.g., the number of homicides), that is most often equal to 0, then the next most common value is 1, and so on, the frequency of each value declining as the value increases
 - (c) positive first order autocorrelation
 - (d) heteroscedastic errors
 - (e) a simultaneous two-way causal relationship between X and Y
 - (f) multicollinearity amongst the independent variables

III. DATA INTERPRETATION

7. Interpret the findings of the attached article by Gibson, Piquero, and Tibbetts. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?
 8. Interpret the findings of the attached article by Jackson and Hay. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?
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