

Florida State University College of Criminology and Criminal Justice
Ph.D. Comprehensive Examination in Research Methods and Statistics, Spring 2015

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 302A), 8:00 AM to noon; Sonja Siennick (Room 405), 12:00-2:00 PM; Bill Bales (Room 404), 2:00-4:00 PM. Please notify Margarita Frankeberger (Room 101A) when you are finished and ready to have your exam answers printed. *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 (Answer one of the two questions in this section.)

- 1) 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 following 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

- 2) Experimental research designs commonly provide strong internal validity, but studies using these designs also 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.

II. DATA GATHERING METHODS (Answer one of the two questions in this section.)

- 3) 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.
 - (a) Describe the different types of indexes that can be created for such studies,
 - (b) state the relative advantages and disadvantages of these types of indexes, and
 - (c) describe the different ways the individual items can be combined into an index.

- 4) Self-report offending measures are common in criminological research. Discuss measurement validity in relation to these measures. Include in your discussion descriptions of, and ways to assess the extent of, face validity, content validity, criterion validity, and construct validity.

III. STATISTICS (Answer one of the two questions in this section.)

- 5) Inclusion of control variables in regression models is supposed to provide researchers with more valid estimates of the 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) Criminological theories often predict that the relationship between X and Y will be mediated by or moderated by a third factor, Z. What are mediation and moderation? How should researchers test for mediation and for moderation? Illustrate your points with a criminological example.

IV. DATA INTERPRETATION (Answer one of the two questions in this section.)

- 7) Interpret the findings of the attached article by Gibson. 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 Akins. 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?