

## Florida State University College of Criminology and Criminal Justice

### Ph.D. Comprehensive Examination in Research Methods, Spring 2010

#### 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: Kevin Beaver (Room 322), 8:00-10:00 AM; Bill Bales (Room 324), 10:00 AM to Noon; Brian Stults (Room 317), Noon to 2:00 PM; Gary Kleck (Room 306), 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 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. Discuss the strengths and limitations of longitudinal research designs and cross-sectional research designs. Discuss a situation when a longitudinal research design would be preferred over a cross-sectional research design. Discuss a situation when a cross-sectional research design would be preferred over a longitudinal research design.
2. You have been asked to submit a proposal to the National Institute of Justice. They are interested in research that identifies factors that influence neighborhood homicide rates, with an ultimate goal of developing programs and policies to reduce homicide in dangerous places. Describe the research design you would propose. What would the key concepts be and how would you measure them? What would your sample(s) be, and what data would you collect/use? What types of statistical analysis would you conduct? Explain why your proposed design is superior to alternative methods for studying this research question. Be sure to discuss the strengths and weaknesses of your design.

#### **II. Data Gathering Methods**

3. Select a commonly-studied relationship in criminology. Compare and contrast the ways in which qualitative and quantitative researchers might study that relationship. Discuss each approach in terms of its epistemological assumptions, data quality concerns (e.g. validity and reliability), and generalizability. Do you believe that one or the other approach (qualitative or quantitative) is better for developing *causal* explanations? Support your case.
4. When people are asked questions in surveys, there are many reasons why they might give erroneous answers. List and explain as many of these sources of error as you can. Then provide three different criminological examples of how the relationship between (a) some independent variable commonly used to explain criminal behavior and (b) criminal behavior as measured using self-report measures might be distorting, leading to erroneous conclusions.

### **III. Statistics**

5. Give a thorough description of the concept of the sampling distribution of an OLS regression coefficient. What is it? What do we know about its characteristics? How do we use it to test hypotheses about empirical relationships? What does it mean, in terms of this distribution, when we accept or reject a hypothesis? Your answer should be detailed, and it should include, but not be limited to, concepts such as alpha level, probability, Type I and Type II error, and true versus estimated values.
6. Describe why it is inappropriate to use ordinary least squares regression when the dependent variable is non-normally distributed. Explain some of the correct statistical techniques that can be used with non-normally distributed dependent variables.

### **IV. Data Interpretation**

7. Interpret the findings of the attached article by D'Alessio and Stolzenberg. 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 Hay and Forrest. 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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