**Florida State University College of Criminology and Criminal Justice**

**Ph.D. Comprehensive Examination in Research Methods and Statistics, Fall 2023**

**DAY 1 OF THE EXAM**

**INSTRUCTIONS:**

Answer one question from each of the two sections below. Please notify the proctor when you

are finished. 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.

1. **RESEARCH DESIGN**
2. Assume you have been asked to evaluate a new intervention aimed at improving law enforcement officer mental health. While the agency you are working with has agreed to allow you to evaluate the program, they have ethical concerns pertaining to randomizing the treatment program. Given this information, propose a rigorous research design that would still allow you to evaluate the program without traditional randomization techniques. In your answer, make sure to sufficiently specify your sampling frame and procedures, your outcome measures, and the types of analyses you would employ.
3. Propose a research design that allows for the assessment of community residents’ fear of crime in the state of Florida. Be sure to propose a design and sampling procedures that would allow for assessment at multiple levels of analysis, including individual and neighborhood levels.
4. **DATA GATHERING**
5. Many criminological studies use data from official records collected by criminal justice agencies in the course of doing business. For example, several recent studies of inmates’ misconduct and later recidivism have used data from Florida Department of Corrections and Florida Department of Law Enforcement databases. Discuss potential issues related to the validity and reliability of behavioral measures created from such data.
6. Discuss the concept of sampling in criminology research and its importance in ensuring the representativeness of data. Compare and contrast three distinct sampling methods commonly used in criminological studies. Provide examples of research scenarios where each method would be appropriate and highlight the strengths and limitations of each approach.

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**DAY 2 OF THE EXAM**

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1. **STATISTICS**
2. Discuss the key assumptions underlying an ordinary least squares (OLS) regression model, and specifically those related to the error term. For each assumption, include the following:
   1. an explanation of the assumption
   2. the consequences of violating the assumption
   3. any steps we can take to detect a violation of the assumption
   4. how we can remedy or avoid the problem
3. In examining the relationship between two variables, X and Y, researchers often consider the potential role of a third variable, Z. This third variable can relate to X and Y in a number of different ways, including as a mediator, a moderator, and a confounder. Define what is meant by these terms. Then, provide an example of each, drawing on the criminological literature. Finally, identify the most appropriate statistical approaches to test for these different relationships.

1. **DATA INTERPRETATION**
2. Interpret the findings of the attached article by Hayes et al. (2020). 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?
3. Interpret the findings of the attached article by Wolfe (2011). 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?