

Florida State University College of Criminology and Criminal Justice

Ph.D. Comprehensive Examination in Research Methods & Statistics

Spring 2006

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. Return your completed exam to the proctor on duty when you are finished.

Bill Doerner (Room 318), 8:00 - 10:00 am;
Bill Bales (Room 324), 10:00 am – 12:00 pm;
Mike Reisig (Room 305), 12:00 – 2:00 pm.
Gary Kleck (Room 306), 2:00 – 4:00 pm;

SECTION I: RESEARCH DESIGN

1. Explain in exactly what way research is weakened as a result of each of the following flaws in a research design.
 - a) the research does not have a control group
 - b) the researcher cannot control which subjects are exposed to the treatment and which are not
 - c) the researcher randomly assigned subjects to experimental and control groups, but has post-test (after the intervention) measurements only, no pre-test measurements.
 - d) the researcher cannot do random assignment of subjects to experimental (treatment) and control groups, and must do matching instead.

2. Kerlinger makes the statement that, “the main technical function of a research design is to *control variance*” and the goal of a research design is to maximize experimental variance, minimize error variance, and control extraneous variance. Explain what Kerlinger means by these assertions and why controlling variance is a fundamental component of a research design. Also, explain the differences in a quasi-experimental design versus a true experimental design in their relative ability to control variance and the implications of any differences you describe.

SECTION II: DATA GATHERING METHODS

3. Suppose you wanted to do a qualitative field study of the way crack dealers went about their business and the way they thought and felt about it. Explain how you could solve the following problems.
 - a) gain entrée in to the situation and make contact with potential subjects
 - b) gain the confidence of informants
 - c) gain information about specific topics without appearing to “interrogate” your informants
 - d) Record what your informants told you, but without using technological aids such as audio or videotape that might jeopardize your relationship with informants
4. Operationalizing variables through the development of scales is an important component of many research studies. You are conducting a sentencing study which involves data on a wide range of sentencing options that include varying lengths of local jail, probation, house arrest, and prison. You are required to build a scale of the severity of punishment as part of your research. Describe how you would develop a sentencing severity scale using at least two different scaling techniques. Explain why building a scale is a sound and advantageous measurement approach, the advantages and disadvantages of each scaling method you chose, and how you would determine the reliability and validity of your scales.

SECTION III: STATISTICS

5. Suppose you hypothesize that the generally positive effect of X on Y depends on the level of a third variable, C, such that as C gets larger, the effect of X on Y gets less positive. Explain two major ways you could test for this interaction, and state what results you would expect if the interaction worked the way you hypothesized.
6. Logistic Regression is one of the most common statistical methods used in our discipline. Explain the purposes of logistic regression and what situations you would employ this method, how it differs from Ordinary Least Squares Regression, and the statistics that are generated with this technique and how they should be interpreted. Also, explain how logistic regression with a dichotomous dependent variable differs from when a categorical variable that is ordered or non-ordered is used.

SECTION IV: DATA INTERPRETATION

7. Interpret the findings of the attached article by LaFree and Arum. 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 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 Ulmer and Johnson. 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 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?