

**Doctoral Qualifying Examination
Department of Criminology
Fall 2012**

Methods and Data Analysis

The student's personal items will be kept in the office of the graduate director during the exam. The student will be provided with a writing pad, computer, pen, grading information and exam.

During the examination period of 8 a.m. to 5 p.m., the student must not utilize any outside resources. The student may not confer with any people or refer to any books, articles, etc. Students are on their honor to produce their own work on their exams. The University subscribes to a document-checking service that can be used to assess plagiarism; the Department of Criminology reserves the right to submit any examination to this service for evaluation.

Responses to exam questions may be typed; student should double-space and use a 12-point font. Students who use computers will save their exam as a single MS Word document to the notebook computer provided by the Graduate Director.¹ Students may hand write their exams; the exams will be typed up by a staff person and the committee will receive both the typed and hand-written copies. Students may not withdraw from the exam after receiving it; if the student does not complete and turn in the exam, it will be recorded as a failure. Exam responses must be submitted to the graduate director by 5 p.m.

There is a single Word file on the desktop with the exam. Write your answers IN that document (which includes the exam questions). You, your computer and your exam have a number that identifies you. Do not change the name of the file; do not include your name IN the exam file. You may print to the printer in SOC 351.

When you are done. Bring the computer and cord to me in my office.

Security: The computers have been stripped. After the fact, the computers will be checked to determine if any flash drive has been inserted or if the internet has been accessed. **DO NOT ACCESS THE INTERNET FOR ANY REASON.** I will have visual/audio contact with the room for the exam period.

You must pick at least one question from the first three questions (questions 1-3). (This is to ensure that you answer a question that requires a research design.) Then pick any three of the remaining 7 (questions 1 – 8). In total, you will answer 4 questions. For each, write an essay the scientific style of which resembles that found in scholarly peer-reviewed journal articles. Students should provide in-text citations to the best of their abilities; a reference list is not required. There are no minimum or maximum page limits. Be sure to consider the grading rubric as you write your responses.

¹ The exam computers are checked before the exam. All non-program files are removed, Internet access is blocked, and the computers are locked up until exam time. After the exam, software is used to detect use of USB ports.

- 1) You are designing a study to determine the effect of a particular individual-level crime correlate on violent crime. You may pick your own known correlate of violent crime, such as drug use, gang membership, poverty, to name just a few. First, explain how you would approach this study using a longitudinal design in order to examine the utility of this known correlate for explaining variation in violent crime. Second, assume you do not have the time or resources to collect data over time and must conduct your study using a cross-sectional approach. Describe how you would approach this using a cross-sectional design. Third, explain what limitations your longitudinal and cross-sectional designs have. And, finally, for each of your designs (longitudinal and cross-sectional), indicate the data analysis techniques you will use in order to estimate the effect of your selected known correlate on violent crime. Explain why you chose those techniques.
- 2) Select a research topic based on your knowledge of the literature in criminology and criminal justice. Identify a research question that needs to be addressed and hypotheses that need to be tested. Develop a research design that addresses the research question and tests the hypotheses. Describe your design in a way that can be understood by those with a thorough understanding of research methodology, but who may not have a specialized knowledge of the particular area of research you have chosen. Be sure to discuss and justify the methods of data collection and operationalization of variables. Develop a data analysis plan. Indicate the strengths and limitations in the research design you have proposed relative to previous studies in the literature.
- 3) You are designing a study to determine the effect of a particular individual-level crime correlate on violent crime. You may pick your own known correlate of violent crime, such as drug use, gang affiliation, poverty, to name just a few. First, design a study to answer your research question that relies mostly on quantitative data. Second, explain how you would answer this research question using qualitative data? Be sure to address reliability and validity issues related to your measures. For both designs, include a data analysis plan. Finally, explain the strengths and weaknesses of each design relative to each other. [NOTE: If you are also answering question #1 above, for this one you must pick a *different* correlate from the one you used in that answer. DO NOT simply do a cut and paste from one question to another.]
- 4) With quantitative data of various types, there exist ways to assess the reliability and validity of measures. This question directs your attention to assessing such issues for qualitative research. Choose a topic (e.g., drug use, gangs) to research using a qualitative design. First, how do you assess the reliability and validity of measures collected using qualitative methods? Second, describe the data that you would need to collect in a qualitative study to help ensure that your measures were reliable and valid. Third, describe the types of analyses that you would conduct to demonstrate the reliability and validity of the qualitative data measures.
- 5) Choose 6 of the following 11 pairs of terms; select at least **two** from List B. Define each term in the pair. Be sure to compare and contrast the terms within each pair.
LIST A
 - a. internal validity vs. external validity
 - b. reliability vs. validity
 - c. experimental group vs. control group
 - d. experimental design vs. quasi-experimental design
 - e. random sampling vs. cluster sampling
 - f. Type I error vs. Type II error

LIST B

- a. mediation vs. moderation
 - b. structural equation modeling vs. path analysis
 - c. correlation vs. causation
 - d. exploratory factor analysis vs. confirmatory factor analysis
 - e. ordinary least squares vs. logistic regression
- 6) Nearly all of the concepts central to the study of criminology are difficult to measure (e.g., crime, illegal immigration, recidivism). Take a concept related to criminology and discuss:
- a. Why is it difficult to measure?
 - b. What types of data do researchers use to measure the phenomenon?
 - c. How have researchers overcome some of the problems with these data?
 - d. Which sources are more or less suited to studying which kinds of questions?
 - e. Discuss the implications for data analysis of the various ways to measure this concept.
 - f. How successful are these various approaches for measuring the concept? If the solutions are not perfectly valid, how much does that affect the conclusion(s) we wish to draw? Cite the literature to illustrate your discussion.
- 7) There are four primary sources of data about the nature and distribution of crime in the US: official statistics, resident perceptions, victimization surveys and self report studies. Discuss the strengths and weaknesses of each source. For example: what can each source tell you about how much crime occurs, where it occurs and characteristics of offenders and victims, etc.? What are the implications for data analysis of the various measures? Cite examples from the literature for a particular research problem.
- 8) You are writing a grant proposal to study the effectiveness of a prisoner re-entry program that exists in Florida. Explain the methodological approach you would take to conduct this study, the variables you would measure, and the population you would study. Note that the funding agency requires that characteristics of the individuals as well as the contextual characteristic of the location to which inmates are released be considered in the evaluation. Explain how you would approach these requirements from a conceptual, measurement, and data analytic perspective.