Research Methods in Leadership and Public Affairs (MPA 6010)

Lecture	Wednesday: 09:00 a.m. – 11:50 p.m.; Computer Lab, Building #22
Office Hours	By appointment via Outlook Exchange
Contact Information	Building #21, Room #115 @ The Ridges; 740-597-1949; ruhil@ohio.edu

Learning Objectives

- Analyze data using basic descriptive and inferential statistical techniques
- Synthesize information you have gleaned from all analyses carried out on a particular dataset
- Think critically in terms of the strengths and weaknesses of a given dataset and analyses – do you have a reasonable sample size? Are you measuring variables correctly? Are you carrying out the most appropriate analyses? What could be better? What could be worse? What cautions should you offer so that the end-user of your work does not draw mistaken conclusions?
- Solve problems, both substantively and technically – Understand what data you need to answer a particular question, how to gather it, and how to use the data to get meaningful answers
- Make decisions – based on careful data analysis and full consideration of the strengths and weaknesses of your work.

Course Description

The public, non-profit, and international development sectors deal with some of the worst social and economic problems of daily life – cast your mind over issues such as poverty, crime, health, economic development, educational reform, female empowerment, micro-finance schemes, corruption, etc. Despite this challenge, the irony is that most of those who work in these sectors often are poorly trained in quantitative research methods. However, if they knew (a) how to design a research enterprise or program evaluation, (b) what data to compile, and (c) how best to analyze these data, these individuals would be well positioned to evaluate the success or failure of a particular program or policy. They may even end up identifying a few change levers that could be used to improve targeted outcomes.

MPA 6010 is thus designed as a first course in quantitative research literacy, and by that I mean two things – the course emphasizes the value of good research designs, and the power of quantitative data analysis. Why quantitative? First, statistics have the power to describe systematically a body of information or data. Second, statistics are useful for subjecting to empirical testing intuitive ideas about how a process or phenomenon operates in the real world. For example, we may want to test whether the increasing involvement of the nonprofit sector in the delivery of publicly financed services will lead to greater government calls for accountability, or that an HIV-awareness program has had an impact on program participants. Third, statistics allow us to draw accurate inferences from a sample of data to the full population, and provide some measure of how reliable these inferences are likely to be. Fourth, there has been an explosion of interesting data out there, ranging

from data.world to kaggle, FiveThirtyEight and buzzfeed, to name a few. This is exciting because now even news stories driven by data are open to secondary analysis. Add to this the fact that many international, federal and state agencies are making their data available *for free* and there is no limit to what questions can be asked and answered today.

Computer Lab (Building #22)

Computer lab time is an integral part of this course and will help you learn how to apply the statistical tools and techniques needed for data management, statistical analysis, and graphics. We will use SPSS for all analysis and graphics. SPSS should be on all university-owned machines (including in the labs around campus). So if you plan to do all your work on these machines, then you do not need to purchase SPSS (my recommended path of action). If however you want SPSS on your personal machine, then you will need to buy/rent it see here for details.

Required Text

Data Analysis for Leadership and Public Affairs, by Ani Ruhil. This textbook is free and available here in html (for online reading), pdf (useful if you want to print chapters) and in the epub format (for tablets). *Do not* print more than a chapter at a time since this is a live text that is being continually updated. See also the course website for lecture slides, handouts and data.

Grade Requirements

Your course grade will be determined on the basis of the following components:

Problem Sets	Exam I	Exam II	Exam III
25%	25%	25%	25%

Exams are largely quantitative (i.e., worked problem solving), with at least half of the material coming directly from the textbook. The rationale for this is to: (1) encourage you to work through the problems in the text (both exercises and examples), (2) confirm that you have reached a correct solution, and (3) to limit the scope of material you will encounter on the exams. Occasionally short answer and/or short essay questions that probe your understanding of the material may appear as well. Exams are not cumulative (i.e., Exam I will cover the initial chapters, Exam II will cover the next few chapters, and so on).

There will be approximately 6–8 problem sets worth a total 25% of your grade. Problem sets must be completed using SPSS and you must hand in SPSS output (exported from SPSS) and your answers in a Word document with SPSS tables/graphs copied-and-pasted into this Word document. All *assignments and exams must be submitted via* Blackboard. No collaboration is allowed for homeworks and exams; all work must be your own. If you violate the honor code you will receive an F.

When working on these problem sets, you are allowed to ask me clarifying questions and seek technical guidance if you are stuck. I can also review the assignment before you submit it on Blackboard so long as you email the assignment to me before Noon on the Monday of the week the assignment

is due. This critical feedback option is designed to help you understand not only how to do some calculation but also the correct interpretation and description of your results.

Note: Assignments submitted late *without my prior approval and not governed by University policy on "legitimate absences"* will remain ungraded, earning an F by default.

Your final course grade will be determined on the basis of the following distribution:

A	94-100	A-	90-93	B+	86-89	B	82-85	B-	78-81	C+	74-77
C	70-73	C-	66-69	D+	62-65	D	58-61	D-	53-57	F	0-52

Course Calendar

We will set our own pace and hence no specific dates are attached to the chapters. Required readings are identified with a checkmark (✓) and you are expected to have read this material *before* coming to class. Since we will use a "flipped classroom" approach this semester, it is very important that you take notes and flag questions as you read before coming to class. Our class time will be spent on assimilating the resulting knowledge through discussion and hands-on problem-solving. This will be very different from a lecture approach where I lecture in class and then you go home to work on the problems. Optional readings are identified with the Maltese cross (✠) reflect media coverage of one or more issues covered by a topic, and you are not expected to have read one or more of these before class.

Note: The first few weeks of class establish the foundation for all that follows. Throughout the semester, each subsequent week's material will build upon material covered in preceding weeks so be warned: Both the pace of the class and the complexity of the material increases rapidly. If, at any point, you feel you are lost and need some help, don't hesitate ... let me know right away. The longer you wait, the more difficult will it be to catch-up.

Topic	Reading(s)
Chapters 1 and 2	Preface ✓ and Introduction to Core Concepts ✓ The Causes, Costs and Consequences of Bad Government Data ✠ The Hot Spotters and – Doctor Hotspot ✠ The Data-Driven Life ✠ Teachers to the Test ✠ Racial Bias, Even When We Have Good Intentions ✠
Chapter 3	Visualizing Data ✓ Flow chart shows you what chart to use ✠ Chart Chooser ✠ Data Visualization Checklist ✠
Chapter 4	Central Tendency and Dispersion ✓ The Median isn't the Message ✠

	How Mean is the Median? ✠
Chapter 5	Probability Theory ✓ The Monty Hall Problem ✠ The Tennis Racket ✠ How BuzzFeed News Used Betting Data To Investigate Match-Fixing In Tennis ✠ The Ferguson Area Is Even More Segregated Than You Probably Guessed ✠ Here's What We Know About Race And Killings By Police ✠
Chapter 6	Probability Distributions ✓ What does randomness look like? ✠ Shark attacks may be a Poisson burst ✠
Chapter 7	The Theory of Sampling Distributions ✓ Half a million deaths is a statistic ✠ Questioning The Lancet, PLOS, And Other Surveys On Iraqi Deaths: Michael Spagat ✠
Chapter 8	The Logic of Hypothesis Testing ✓ Misuse of p-values ✠ Replication crisis in psychology? ✠
Chapter 9	Comparing Means ✓
Chapter 10	Comparing Proportions ✓
Chapter 11	Working with Multinomial Distributions ✓
Chapter 12	Linear Regression ✓ Olympic Physics: The Long Jump and Linear Regression ✠ Predicting Olympic Medals ✠

Special Accommodations: Ohio University students with disabilities are assured equal access and full participation in the university's programs and services. As such if you have special needs please let me know on the first day of class so that we can make suitable arrangements for you to participate fully in this course.

Course Policy: Attendance is expected for all scheduled class meetings except in cases of "legitimate absences" as defined by the University (illness, death in the family, religious observances, jury duty, or University-sponsored activity). Absences that fall outside this purview do not qualify for make-up exams or homework assignments. The penalty for academic misconduct is a grade of F on any evaluated assignment affected by the misconduct.

Multiple Final Examinations - Resolution Adopted by Faculty Senate March 12, 2012: Students may not be required to sit for more than three final examinations in one day. Should a student be scheduled for more than three examinations in one day, the student may seek relief from the instructor with the examination scheduled latest in the day. This process must be initiated and completed by the beginning of the 13th week of the semester. The instructor will provide an examination for the student at a mutually agreed upon time during the examination period.