

Research Methods and Inquiry in Public Affairs II (PA 8181)
Harry S Truman School of Public Affairs
University of Missouri-Columbia
Dr. Colleen M. Heflin
Spring 2009

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OFFICE HOURS: Fridays 2-3pm

Class Meetings: Monday/Wednesday 10-11:15 Middlebush 309

Objectives and Description

This course focuses on what a practitioner needs to know about multiple regression analysis and its extensions. The course provides students with the intuitions, concepts and statistical tools for analyzing management and policy problems. Building on what students learned in PA8180, students will gain experience in running and interpreting regression using STATA (Version 10). The course begins with a quick review of statistical inference and simple regression, covers the multiple regression model under ideal conditions, and then goes on to consider departures from the ideal conditions.

Teaching Style

There are many ways to learn and different styles are more effective for some students than others. Therefore, we will utilize several different approaches: straight lectures, problem sets, assigned reading, case studies and exams. Readings will be assigned for each class period, and the material covered in the readings will become the basis for each lecture. While the reading will provide the theoretical (mathematical) framework, the lecture will provide the intuition and application of the concepts at hand. (Copies of my powerpoint slides will be available on Blackboard by noon the day before class.) The homework is designed to allow you to make connections between the theoretical concepts and the real life application. In my idealized classroom, the textbook, lecture and homework are not substitutes—they are chosen and designed to complement each other.

Textbook :

Mendenhall, William and Terry Sincich. *Regression Analysis: A Second Course in Statistics*. 6th edition. Pearson Education, Inc.: Upper Saddle River, New Jersey. ISBN 0-13-022323-9

Academic Honesty

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a

breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Disability

If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office. To request academic accommodations (for example, a notetaker), students must also register with the [Office of Disability Services](http://disabilityservices.missouri.edu), (<http://disabilityservices.missouri.edu>), S5 Memorial Union, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Intellectual Pluralism

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the [Office of Students Rights and Responsibilities](http://osrr.missouri.edu/) (<http://osrr.missouri.edu/>). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

Case Studies

In order to provide the opportunity to delve into the data and apply multiple regression techniques to analyze questions of interest, three case studies will be completed. For each, I will provide you with data that you can use but you will provide your own research question. However, if you would like to substitute a dataset, you may contact me to receive permission to substitute your own data. Additional information on the requirements of each case study will be provided in class. Case studies are due as follows:

Case Study #1	February 25 th
Case Study #2	April 1st
Case Study #3	May 6th

Exams

There will be two midterms and a final. These exams will stress the consumption of regression research and not the production of it. The first midterm will be given on February 18st, the second on March 18th. The final cumulative exam is scheduled for Monday, May 11th from 10:30 to 12:30. For all exams students may bring one page of notes and a calculator. No laptops are allowed.

Homework:

Homework is required and assignments will be due as indicated below. Assignments are due at the beginning of class on the day indicated. Late assignments will be penalized 30 percent for each day the homework is late. In order to discourage you from skipping class to complete the homework, assignments not turned in at the beginning of class is considered one day late.

Working on the homework in groups is encouraged. In all cases, you should do the final write-up of the assignment yourself. Please indicate on the top of each homework set, the total amount of time that you spent on it and who you consulted while working on it. There are 10 homework sets assigned; your homework grade will be based on the highest 9 problem sets (i.e., I will drop your lowest score).

Homework Assignments Due Dates

1. January 26
2. February 2
3. February 9
4. February 16
5. March 2
6. March 9
7. March 16
8. April 6
9. April 13
10. April 27

Grading

Final grades will be figured by weighting grades on various assignments and exams using the following weights:

Homework	25 percent
First Midterm Exam	15 percent
Second Midterm Exam	15 percent
Final Exam	30 percent
Case Studies	15 percent

Reading Assignments

January 21: Session 1-Introduction to the Course

Reading Assignment: Review Chapters 1 & 2

January 26: Session 2-Simple Regression, Part 1

Reading Assignment: Chapter 3.1-3.5

January 28: Session 3-Simple Regression, Part 2

Reading Assignment: Chapter 3.6-3.3.10; 3-12

Coursey, David, and Donald F. Norris. "Models of E-Government" *Public Administration Review*. May/June 2008.

February 2: Session 4-Multiple Regression, Part 1

Reading Assignment: Chapter 4.1-4.5

February 4: Session 5-Multiple Regression, Part 2

Reading Assignment: Chapter 4.6-4.8; 4-10

Wright, Marshal H. and Mihai C. Bocarnea. "Contributions of Unrestricted Funds." *Nonprofit Management & Leadership*. Vol. 18, No.2 Winter 2007.

February 9: Session 6-Multiple Regression, Part 3

Reading Assignment: Chapter 4.11; 4-13-4.15

Meier, Ken and Alisa Hicklin. "Employee Turnover and Organizational Performance." *JPART* 18:573-590.

February 11: Session 7-Multiple Regression: Pulling it All Together

Reading Assignment: Mellor et al. "Volunteering and Its Relationship with Personal and Neighborhood Well-Being." *Nonprofit and Voluntary Sector Quarterly* 2009.

February 16: Session 8-Multiple Regression: Review

Reading Assignment: Tschirhart et al. "Is the Grass Greener?" *Nonprofit and Voluntary Sector Quarterly* 2009.

February 18: Session 9-First Midterm Exam (on Chapters 3-4)

February 23: Session 10- Dummy Variables

Reading Assignment: Chapter 5.7

February 25: Session 11- Interactions with Dummy Variables and Logs

Reading Assignment: Chapter 5.8, pp. 220-225

Lovasi, Gina S. et al. "Effect of Individual or Neighborhood Disadvantage on the Association Between Neighborhood Walkability and Body Mass Index." *American Journal of Public Health*. February 2009, Vol 99, No. 2.

March 2: Session 12- Multicollinearity and Extrapolation
Reading Assignment: Chapter 7.1-7.3;7.5-7.6

March 4: Session 13- Heteroscedasticity
Reading Assignment: Chapter 8.1-8.3

Holtfreter, Kristy. "Determinants of fraud losses in nonprofit organizations." *Nonprofit Management & Leadership*. Vol. 19, No. 1, Fall 2008.

March 9: Session 14- The Normality Assumption, Outliers & Measurement Error
Reading Assignment: Chapter 8.4-8.5

March 11: Session 15- Serial Correlation and Omitted Variable Bias
Reading Assignment: Chapter 8.6

March 16: Session 16- Review for Second Midterm Exam
Reading Assignment: Crew, Michael. "Taming the Local Leviathan." *Urban Affairs Review*. February 2008.
In-Class Exercise

March 18: Session 17-Second Midterm Exam (material covered in chapters 5, 7-8)

March 25 and March 27: Spring Break

March 30: Session 18-Data Management with Administrative Data
Reading Assignment: Hatry, "Using Agency Records".

April 1: Session 19- Linear Probability Model
Reading Assignment:
In-Class Exercise

April 6: Session 20- Logistic Regression, Part I
Reading Assignment: Chapters 9.5-9.6

Tschirhart et al. "Is the Grass Greener?" *Nonprofit and Voluntary Sector Quarterly* 2009.
(again!)

April 8: Session 21- Logistic Regression, Part 2

Reading Assignment: Cutt et al. 2008. “Understanding Dog Owners’ Increased Levels of Physical Activity.” *American Journal of Public Health*. Vol 98(1): 66-69.

April 13: Session 22- Logistic Regression, Part 3

Reading Assignment: Im, Tobin. “An Exploratory Study of Time Stress and Its Causes among Government Employees.” *Public Administration Review*. January/February 2009.

Chapter 10 in A STATA Companion to Political Analysis by Philip Pollack III.

In-Class Exercise

April 15: Session 23- Ordinal/Multinomial Regression

Reading Assignment: Stephen Crystal PhD, Usha Sambamoorthi PhD, James T. Walkup PhD, Ayşe Akıncıgil MA (2003) Diagnosis and Treatment of Depression in the Elderly Medicare Population: Predictors, Disparities, and Trends. *Journal of the American Geriatrics Society* 51 (12), 1718–1728.

April 20: Session 24-Time Series

Reading Assignment: Chapter 10.1-10.2, 10.4-10.5-10.8

April 22: Session 25-Time Series

Reading Assignment: Meier, Brudney and Bohte, “Time Series Analysis”

April 27: Session 26-Time Series Applied

Reading Assignment: Tolbert, Caroline J. , Karen Mossberger, and Ramona McNeal. “Institutions, Policy Innovation, and E-Government in the American States.” *Public Administration Review*. May/June 2008.

April 29: Session 27- Performance Management

Reading Assignment: Meier, Brudney and Bohte, “Performance Measurement Techniques”

May 4: Session 28- Performance Management

In-Class Exercise

May 6: Session 28- Review for Final