

DIVISION OF PUBLIC ADMINISTRATION
NORTHERN ILLINOIS UNIVERSITY

COURSE SYLLABUS
PSPA 601
DATA ANALYSIS IN PUBLIC ADMINISTRATION
Spring, 2009

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Class Location: Naperville Campus
Dates/Time: Tuesdays 6:30 – 9:10 p.m.
Blackboard Site: <https://webcourses.niu.edu/webapps/portal/frameset.jsp>
Office Hours: Thursdays 3:00 – 4:30 p.m. and by appointment

Course Description

Utilizing information and data for solving complex problems is an essential skill for the modern public manager. The advancement of modern information technology coupled with ever-increasing efforts to gather information on public administration is yielding a large amount of data in a variety of formats. Modern public managers increasingly need to utilize analytical and statistical techniques such as conducting statistical analysis of citizen survey results to understand underlying needs and trends. They need to be comfortable as both producers and consumers of quantitative and statistical analyses if they aim to maximize the ability to create knowledge and solve contemporary public problems.

This course is designed to equip students with basic knowledge and skills in quantitative and statistical analyses. The primary audience of this course is current and future public (and nonprofit) administrators with little or no background in mathematics, statistics, or other quantitative methods. For this audience, this course provides a basic program that starts with measurement, descriptive statistics, and probability. Then, the course continues with an overview of the formulation of hypotheses and their testing in a bi-variate context. The last section will cover multiple regression and time series analysis.

A problem-solving framework infused with the use of statistical software (SPSS) aims to maximize student learning outcomes. This problem-solving framework will guide students through the process of solving problems while focused on the utilization of quantitative and statistical techniques. The focus is more concerned with asking the right questions, picking the right analytical and statistical procedures, using the right software command, and correctly interpreting results to answer research questions.

Course Objectives

This course builds student knowledge and skills in data analysis. Upon the completion of this course students will:

- gain the skills to design and implement data analysis as well as interpret and communicate the results
- gain sufficient familiarity with a statistical software program (SPSS) to perform data analysis
- be able to critically assess the quality of statistical analysis commonly used in the field of public administration.

Course Learning Resources

Required Textbooks

Meier, Kenneth J., Jeffrey L. Brudney, and John Bohte. (2006). *Applied Statistics for Public and Nonprofit Administration, 6th Edition*. Belmont, CA: Wadsworth Group/Thomson Learning. ISBN: 0534602681.

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Morgan, George A. Morgan, Nancy L. Leech, Gene W. Gloeckner, and Karen Caplovitz Barrett. (2007). *SPSS for Introductory Statistics: Use and Interpretation*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc. (Taylor & Francis Group). ISBN: 0-8058-6027-4.

Required Software Program: SPSS

You are required to purchase the student version of the SPSS software program. Either Version 16 or 17 will work for the purposes of this course. You can purchase the student version by calling NIU bookstore (815-753-1081) or by visiting http://www.spss.com/vertical_markets/education/online.htm. I will also create an online forum for exchanging information on other online purchasing sites. For those who consider using statistics more extensively for any graduate and work-related projects beyond PSPA 601, you are encouraged to buy the “Career Starter” package available via NIU bookstore.

Quizzes, Assignments, Due Dates, and Grading

Table 1. Summary Table for Quizzes, Assignments, Due Date, and Grade Points

Due Date	Assignment	Grade Points (Percentage)
Always	Active Participation	100 pts (10%)
Feb. 3 (Tue.)	First Quiz	100 pts (10%)
Feb. 17 (Tue.)	First Assignment	200 pts (20%)
Mar. 3 (Tue.)	Second Quiz	100 pts (10%)
Mar. 27 (Fri.)	Second Assignment	200 pts (20%)
Apr. 7 (Tue.)	Third Quiz	100 pts (10%)
Apr. 28 (Tue.)	Last Quiz	100 pts (10%, best 3 of 4)
May 5 (Tue.)	Final Project Due & Presentation	200 pts (20%)

Quizzes

Quizzes provide the opportunity for you to review the materials and get immediate feedback. Frequent feedback is critical because the knowledge covered in this course is cumulative. It will offer you the opportunity to adjust your learning strategy. Quizzes will focus on the understanding of the concepts and interpretation of results.

Assignments

The take-home assignments will give you the opportunity to practice the use of SPSS as a tool for problem-solving. The other purpose is to reinforce some of the statistical concepts covered in the class for informed evidence-based decision-making.

Final Project

This project will allow you to go through the problem-solving process with statistics from start to finish. You will begin with a research question, formulate hypothesis, gather data, conduct statistical analysis, present and interpret the results, and provide policy/management recommendations based on your findings. With the completion of this project, you will have the knowledge, skill, and confidence to work with statistics as an integral part of evidence-based decision-making.

Lab Exercises

We will be doing lab exercises throughout the semester. This provides you with the necessary skills and knowledge to employ statistical concepts and software for solving modern public administration problems. More specifically, you will learn how to use SPSS to perform various statistical analyses. You will also learn the reading and interpretation of the results from these analyses.

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Grading

Students are expected to finish the required readings for the week PRIOR to class. The goal is to have a productive and engaging in-class session to maximize learning outcomes. Students also need to actively participate in classroom discussions, lab, and other activities. Attendance is required.

Your final grade is based on your performance in various activities.

Active Participation (attendance, lab exercises)	100 pts
Take-home Assignments: Two (200 pts each)	400 pts
Quizzes (Best 3 of 4)	300 pts
<u>Final project and presentation</u>	<u>200 pts</u>
Total	1000 pts

Course Policies and Information

Communication Requirements

Students are required to check their e-mails and *Blackboard* course Web site for announcements and resources at least once before each class meeting and once during another time of the week. *Blackboard* is the primary vehicle for announcements, distributing readings, submission of assignments, and online discussions and postings. E-mail will also be used for timely communication.

Active Participation

Active participation includes active involvement in class activities, effective classroom discussion, lab sessions, and information exchange. Class attendance (lab included) is expected and is a necessary component of class participation.

Late Assignments

There will be NO late assignment. Exceptions may be granted only for students with a DOCUMENTED EMERGENCY.

Incomplete

It is the policy of the Division of Public Administration NOT to give an incomplete except for extraordinary circumstances.

Lab fee

PSPA 601 requires that students learn to manage and analyze data in statistical packages (SPSS in particular). Lab fees are used to provide hardware, software, telecommunication network, and technical consultation services that are related to the use of SPSS and other computing needs.

Course Schedule, Topics, and Readings

Date	Topic	Meier et al.	Morgan et al. (SPSS)
Jan. 13	* Course overview * Introduction to SPSS (File Mgt.)	Ch. 1	Ch. 5
Jan. 20	* Measurement * Research design * SPSS data mgt & transformation	Chs.1 (review), 2, and 3	Chs. 1 & 2, Ch. 3 (pp. 37-42 only)
Jan. 27	* Descriptive Statistics: frequencies, central tendencies, and dispersion * Generate and interpret descriptive statistics w/ SPSS	Chs. 4, 5, 6 (skim 82-85, 104), & pp. 447-450	Chs. 3 & 4

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Date	Topic	Meier et al.	Morgan et al. (SPSS)
Feb. 3	* Probability: normal and binominal, and other distributions <First Quiz>	Chs. 7, 8, 9	Ch. 5 (review)
Feb. 10	* Probability distribution * Inferential statistics	Ch. 10 Ch. 11	Ch. 6
Feb. 17	* Hypotheses testing and test of difference <First Assignment Due on Feb. 17>	Ch. 3 (review) Chs. 12 & 13	Ch. 9
Feb. 24	* Test of difference * Testing the difference between two groups * Run the tests w/ SPSS	Ch. 13 (continued) Ch. 14	
Mar. 3	* Testing the difference between two groups (continued) <Second Quiz>	Ch. 14 (continued)	
Mar. 10	<i>Spring break</i>		
Mar. 17	* Analysis of nominal and ordinal data (I): contingency table * Nominal and ordinal data analysis w/ SPSS	Chs. 15 & 16	Ch. 7
Mar. 24	<i>ASPA conference (assignment time)</i> <Second Assignment Due on the 27th>		
Mar. 31	* Analysis of nominal and ordinal data (II): control tables, tests, and interpretations	Ch. 17	
April 7	* Regression Analysis: introduction and assumptions; bivariate regression * Regression data management w/ SPSS <Third Quiz>	Chs. 18 & 19, Ch. 23 (pp. 435-442 only)	Ch. 8 (up to bivariate regression)
April 14	* Multiple regression * SPSS procedure for multiple regression	Ch. 21, Ch. 23	Ch. 8 (multiple regression)
April 21	* Time series analysis * Basic time series analysis with SPSS	Chs. 20 & 22 (pp. 443-450 only)	
April 28	* Review and project consultations <Last Quiz>		
May 5	Final project presentations <Final Project Due>		