PSPA 608
Public Service Performance II: Management & Data Analysis

Christopher Goodman, Ph.D.

Office: IASBO Building (2nd Floor)
Office Hours: By appointment (click here to make an appointment online)
cgoodman@niu.edu

Course Description

> *Follows PSPA 607. Focus on public service performance and management, adding more skills-based practices of data analysis. Studies the basic theory, techniques, and practice of data collection and analysis so that information can be used to inform management decisions. Examination of generating research questions by identifying knowledge gaps in the organization. Data analysis methods include quantitative techniques (descriptive and inferential statistics, hypothesis testing) and qualitative techniques (focus groups, content analysis, observational data). Results are interpreted and presented.*
>
> — NIU Graduate Catalog

This course is a graduate course in performance management, focusing on data utilization and analysis. It is designed to develop 1) analytic skills for use in public affairs, performance management, and collective decision making, 2) improve your performance management research design skills, 3) assess the validity and limits of information presented to you, and 4) have a thorough understanding of basic statistical methods.

This course will cover the tools and techniques of performance management research design and the basic statistical skills that are designed to give you an understanding of the appropriate uses and mis-uses of these tools and techniques. This course will also help you to become proficient in the use of the statistical software packages. As a policymaker in the public, nonprofit, or private sector, you will find these skills to be invaluable as you make recommendations, decisions, or attempts to persuade others.

MPA Competencies & Learning Outcomes

MPA Program Competency	Course Assignments & Activities	Goal Level
MPA Competency #1. Integrate current and preferred management practices of budgeting, human resources, information technology, statistical analysis and performance measurement to improve organizations		
• **Course objective #1.** Explain the role of performance measurement in managing public organizations	Lecture Final project	Foundation Application
• **Course objective #2.** Analyze complex performance-related inquiries in a more systematic way	Weekly assignment Final project	Application
• **Course objective #3.** Use and navigate the Excel to produce outputs needed for managerial decision making process and program evaluation	Weekly assignment Final project Final exam	Foundation Application
• **Course objective #4**. Make statistical inferences and interpret outputs for decision making purposes	Weekly assignment Final project Final exam	Foundation Application
MPA Competency #2. Identify strategies for improving democratic accountability in governance, including improved transparency and civic participation		
• **Course objective #4.** Demonstrate ability to generate and use performance information for decision making	Lecture, misleading statistics, Final project	Foundation Application
• **Course objective #5.** Utilize the citizen satisfaction survey to evaluate public performance in local governments	Weekly assignment Final project	Application Integration
MPA Competency #3. Communicate effectively both orally (public speaking) and in writing (analytical and persuasive) for a public service organization and in the public policy process.		
• **Course objective #6.** Conduct appropriate statistical analyses and clearly communicate results	Misleading statistics presentation Final project presentation	Application Integration

Course Format

Instructional Methods

This course will be taught using various instructional methods, including but not limited to online lectures, demonstrations, and exercises. Because of the nature of the subject, we will actively utilize LinkedIn Learning, a leading online learning platform for technical and statistical skills. For statistics, approaching the material step by step in LinkedIn Learning Statistics Training courses will make it easier to follow. Students are required to subscribe the LinkedIn Learning.

Format

This class will be taught in a 100% asynchronous online format. Read all the assigned readings, watch designated LinkedIn Learning courses, and complete the exercises. All resources are available through Blackboard. Each module will start on Monday mornings at 12:01am; assignments are due Sunday at 11:59 pm.

In addition to understanding the concepts, learning statistics requires a fair amount of drill and practice. To help with the practice, regular homework assignments will be given. Note there is considerable redundancy in the way in which the material will be introduced. It is expected that you will supplement classwork with the textbook, the software, fellow students, the professor, and the internet.

Course Materials

Required Textbooks & Resources

- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge.
- LinkedIn Learning Subscription. Because NIU's contract will be terminated in mid-October, 2021, all 608 students are required to purchase the LinkedIn Learning monthly subscription by the end of the semester. For the first time users, it provides one-month free trial. Please check it through the website: https://www.linkedin.com/learning/subscription/products

Supplemental Readings

- Additional required readings, as detailed below, will be available either online through the library or on Blackboard.

Required Software & Equipment

- We will use Excel to generate descriptive statistics and graphics, estimate probabilities, calculate test statistics, and perform simple regression analysis.
- Students are required to access to **2010 Excel or equivalent**.

Assignments Required

Course Assignments	Value toward overall grade
LinkedIn Assignment (x 8)	24 points (3 points each)
Module Assignment (x 7)	35 points (5 points each)
Module Quiz (x 7)	14 points (2 points each)
Misleading Statistics Discussion	5 points
Final Paper: Research Proposal Data Analysis	16 points
Final Presentation & Discussion	6 points
TOTAL POINTS	**100**

LinkedIn Learning Module Assignment

Due: Sunday 11:59pm
Submission guideline: Upload on Blackboard
Deliverables: Excel files

In LinkedIn Learning courses, Exercise Files are provided. Exercise Files are supplemental learning materials associated with lessons. Download the files (or use the downloaded file posted on Blackboard) and create the solutions following the instruction in the video clip. The purpose of this assignment is to reinforce essential statistical skills. You SHOULD have done this assignment FIRST.

Grading Rubric:
- 3 points = 100% completion
- 2 points = 90-99% completion
- 1 points = 80-89% completion
- 0.5 points = 70-79% completion
- 0 point = less than 70% completion

Weekly Data-based Exercise Homework

Due: Sunday 11:59pm
Submission guideline: Upload on Blackboard
Deliverables: Excel & Word files

In addition to watching LinkedIn Learning videoes and learning about the topics each week, the weekly "data-based exercises" homework will be posted on Blackboard. This assignment is designed to remind you what you have learned from the week's lesson. Application-oriented, data-based questions will be assigned.

It consists of TWO parts. One is data-based application using Workbook. The other part is application assignment using Naperville Citizen Satisfaction Data and your own research proposal. You will download the homework sheet and related data from the Blackboard.

Grading Rubric:
- 5 = The solution is correct, well-documented, and writing is clear. It provides a correct step-by-step solution and is easy to follow.
- 4 = The solution has omitted details and/or steps but answer is correct. Calculations are correct but derived without the sure of specified statistical software. Graphics are hand sketched but correct in principle.
- 3 = The solution is wrong, but the approach is generally correct. Calculations yield the wrong answer due to minor errors. Graphics are roughly sketched.
- 2 = Concepts are understood but not well explained in the context of the problem. Calculations yield the wrong answer due to minor and/or major errors. Graphics are incorrectly sketched.
- 1 = The problem was attempted but largely incomplete or incorrect.
- 0 = The problem was not attempted.

Module Quiz

Due: Sunday 11:59pm
Submission guideline: Take Online Quiz

Module Quizzes are based on the weekly reading assignments and consist of about 5-15 True/False questions that cover the important fundamental knowledge that students will need to know to apply the activities. This is an open-book test. This will be automatically graded.

Misleading Statistics Discussion

Upload your discussion (Due: Module 4 Friday 11/11 11:59pm).
Post comments/questions/responses to at least 2 students (Due: Sunday 11/13 11:59pm)
Deliverables: Misleading statistics example & explanation on discussion board

Students are required to find **one** example of misleading/erroneous statistics in newspapers, media coverage, political advertisement, or performance reports. For the assignment, please include:
- The erroneous/misleading statistics and the source and the date (e.g., internet link is required)
- Why the statistics is incorrect and how it can be fixed/improved
- What is the real evidence base for this item (if there is any)

Criteria	Points (Max: 5 points)
Misleading statistics content: • Originality (Find a good/ORIGINAL example which is not used in other textbook, blogs, newspaper about misleading statistics); • Substantive argument (explain correctly why the statistics is incorrect); • Future suggestion (suggest an alternative way to present the statistics)	3 = Exemplary Response 2 = Good Response 1 = Requires Improvement 0 = Below Expectations
Discussion: • Make at least 2 comments & responses • A response to a student post must be critical, while also professional and polite	2= Exemplary Response 1 = Requires Improvement 0 = Below Expectations

Final Paper

Research Proposal Data Analysis

Report Due: Module 8 Friday (12/9) 11:59pm
Submission guideline: Upload on Blackboard
Deliverables: Paper word file and data Excel file

Using the research proposal developed in Module 1 and specified throughout Weekly assignments, the purpose of this assignment is to give you a hands-on experience to run the data analysis and generate the performance report. Using the Naperville Citizen Satisfaction dataset, you will actually do the data analysis. Beginning with your research questions, you will utilize a variety of statistical analyses to answer your research questions throughout the semester. Combining all the weekly assignment, create a final report.

Paper (double spaced 7 10 pages): 1) Introduction & Research question; 2) data and methods; 3) Findings (tables and interpretation); and 4) conclusion and practical implication

Grading Rubric (Total 16 points):

Final Project	Sophisticated (Full points)	Competent (70% of points)	Not yet complete (50% of points)
Introduction (1 point)	• Concisely describes the survey overview • Method of data collection is clearly described • Has a clearly stated question of interest	• Introduces the survey overview and method of data collection is clearly described • Question of interest is somewhat clear	• Mostly rely on Naperville Report • Not clearly stated question of interest
Research Question and Hypotheses (2 points)	• Clearly defines the research interest and states correct hypotheses for each service area • Question of interest is of appropriate difficulty	• Has hypotheses OR has appropriate difficulty	• Has hypotheses
Graphs and Descriptive Statistics (3 points)	• Appropriate graphs/tables are included • Graphs/tables are neat, clearly labeled, and easy to compare • Appropriate descriptive statistics are included • Graphs/tables and descriptive statistics are used to give a preliminary answer to the question of interest	• Includes an inappropriate graph/table, doesn't provide a preliminary answer, doesn't include descriptive statistics or has errors in the graphs (e.g., hard to compare)	• Graphs or descriptive statistics are not included
Hypothesis testing results (4 points)	• Correct inference procedure is chosen • Test statistic/P-value or confidence interval is calculated correctly • P-value or confidence interval is interpreted correctly	• Correct inference procedure is chosen • Lacks interpretation, or makes a calculation error	• Inference procedure is not attempted
Discussion/Conclusion (3 points)	• Appropriately summarize the statistical analysis findings in relations to research question and hypotheses • Make appropriate practical implications/ suggestions	• Summarize the results • Practical implications/suggestions are somewhat vague	• Summarize the results
Overall Presentation/ Communication (3 points)	• Clear, holistic understanding of the project • Overall content is well organized, neat and easy to read • Statistical vocabulary is used correctly • Report is visually appealing	• Clear, holistic understanding of the project • Statistical vocabulary is used correctly • Report is unorganized or isn't visually appealing,	• Communication and organization are very poor

Final Recorded Presentation & Discussion

Upload Presentation (Due: Module 8 Wednesday 11:59pm)
Post comments/questions to at least 2 students (Due: Friday 11:59pm)
Respond to comments/questions (Due: Saturday 11:59pm)
Submission guideline: Upload your presentation video on Blackboard Discussion board.
Deliverables: Presentation video

Recorded Presentation: Upload by Wednesday.
Students are required to record their presentation and post in online for asynchronous viewing. Students' face should be visible through the presentation. The video-recorded presentation should be 8-10 minutes in total.

- Presentation recording can be done with Kaltura. See the related information here: https://www.niu.edu/keepteaching/guides/create-and-share-video-using-kaltura-student.shtml
- Once you have created and uploaded your video to your Kaltura My Media Library, you can submit the video to Discussion Forum/Thread.

Discussion:
After students upload their video, visit the video links created by other students.
Post comments/questions to at least TWO students by **Friday**.
Then, the presenter will respond to the questions by **Saturday**.

Course Policies

Communications

Course announcements will be made via email so it is imperative that you check your e-mail daily. "I didn't get the email" is never a valid excuse. The most effect method of communicating with me is using email; however, you are also encouraged to schedule a meeting at my office or a phone call.

Late Assignments

For all late assignments, 10% will be deducted for each day late up to four days. Assignments not submitted within four days will receive a zero.

Lauren's Promise

I will listen and believe you if someone is threatening you. Lauren McCluskey, a 21-year-old honors student athlete, was murdered on October 22, 2018 by a man she briefly dated on the University of Utah campus. We must all take action to ensure that this never happens again.

If you are in immediate danger, call 911.

If you are experiencing sexual assault, domestic violence, or stalking, please report it to me and I will connect you to resources or call NIU's Counseling and Consultation Services (815-753-1206).

Any form of sexual harassment or violence will not be excused or tolerated at Northern. NIU has instituted procedures to respond to violations of these laws and standards, programs aimed at the prevention of such conduct, and intervention on behalf of the victims. NIU Police officers will treat victims of sexual assault, domestic violence, and stalking with respect and dignity. Advocates on campus and in the community can help with victims' physical and emotional health, reporting options, and academic concerns.

Accessibility

If you need an accommodation for this class, please contact the Disability Resource Center as soon as possible. The DRC coordinates accommodations for students with disabilities. It is located in the Campus Life Building, Suite 180, and can be reached at 815-753-1303 or drc@niu.edu.

Also, please contact me privately as soon as possible so we can discuss your accommodations. Please note that you will not be required to disclose your disability, only your accommodations. The sooner you let me know your needs, the sooner I can assist you in achieving your learning goals in this course.

Name and Pronoun Statement

Class rosters and University data systems are provided to faculty with the student's legal name and legal gender marker. As an NIU student, you are able to change how your preferred/proper name shows up on class rosters. This option is helpful for various student populations, including but not limited to: students who abbreviate their first name; students who use their middle name; international students; and transgender students. As a faculty member, I am committed to using your proper name and pronouns. We will take time during our first class together to do introductions, at which point you can share with all members of our learning community what name and pronouns you use, as you are comfortable. Additionally, if these change at any point during the semester, please let me know and we can develop a plan to share this information with others in a way that is safe for you.

Should you want to update your preferred/proper name, you can do so by looking at the following guidelines and frequently asked questions:
- https://www.niu.edu/regrec/preferred_proper_name/index.shtml
- https://www.niu.edu/regrec/preferred_proper_name/preferrednamefaq.shtml

Academic Integrity

The following statement is from the NIU 2017-18 Graduate Catalog:

"Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated, for example, if they copy the work of another or use unauthorized notes or other aids during an examination or turn in as their own a paper or an assignment written, in whole or in part, by someone else. Students are guilty of

plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students guilty of, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university.

The university has adopted additional policies and procedures for dealing with research misconduct among its students, faculty, and staff. The guidelines, entitled Research Integrity at Northern Illinois University, are available in department offices, in the office of the dean of the Graduate School, and online at www.niu.edu/provost/policies/appm/I2.shtml, and pertain to the intentional commission of any of the following acts: falsification of data, improper assignment of authorship, claiming another person's work as one's own, unprofessional manipulation of experiments or of research procedures, misappropriation of research funds.

If a graduate student fails to maintain the standards of academic or professional integrity expected in his or her discipline or program, the student's admission to the program may be terminated on recommendation of the student's major department. A statement on students' rights to the products of research is available in department offices, in the office of the dean of the Graduate School, and online at www.niu.edu/provost/policies/appm/I11.shtml."

Ethics: In case it is not yet crystal clear, there is zero tolerance for plagiarism in this course, this program and this university. Anyone who violates the ethical imperative to cite the work of others that is used in writing course papers is subject to an F for the course and possible dismissal from the university. If in doubt, cite the source, whether a quotation or a paraphrasing of someone else's work. I am happy to provide advice on how to cite works in specific situations. Use the Turabian style manual for all paper citations.

The English Department's statement on Plagiarism is direct and to the point: www.engl.niu.edu/composition/guidelines/plag.shtml. I recommend you take the online tutorial available from the NIU website to be sure you understand the rules and principles writingtutorial.niu.edu/writingtutorial/style/plagiarism01.html.

Course Outline

Week 01, 10/17: What to Measure? How to Measure?

Module Introduction

This module provides a roadmap for understanding performance management and data analysis. The first module begins with the performance information use in the public sector, the purpose of measuring performance, and the introduction of different types of data. This module also covers the foundations of research design, measurement, and data collection. The citizen satisfaction survey data for the final project will be introduced in this session.

Module Content:
- ICMA. 2019. *Getting Started: Performance Management for Local Government.* 2nd ed. Washington, D.C.: International City/County Management Association, pg. 1-31.
- Robert D. Behn. 2003. "Why Measure Performance? Different Purposes Require Different Measures." *Public Administration Review* 63 (5): 586–606.
- Karl W. Broman and Kara H. Woo. 2018. "Data Organization in Spreadsheets." *The American Statistician* 72 (1): 2–10.

Module Presentation:
- Module presentation will cover topics about 1) why statistics for public managers and policy analysts? 2) where data come from? and 3) how to measure what to measure?

Assignments:
- LinkedIn Assignment #1
- Module 1 Assignment
- Module 1 Quiz

Week 02, 10/24: How to Effectively Describe Statistics in Both Graphical and Numerical Form?

Module Introduction

If you collect and enter your own data, most of the actual time you spend on the project will not be analyzing the data; it will be getting it ready to analyze. In this week, we will cover topics about the basic descriptive statistics such as mean and standard deviation used to summarize the distribution of a variable.

Module Content:
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, Chapter 11

Module Presentation:

- Module presentation will cover topics about 1) misleading statistics and 2) descriptive statistics.

Assignments:

- LinkedIn Assignment #2
- Module 2 Assignment
- Module 2 Quiz

Week 03, 10/31: How to Describe the Relationships between Two or More Variables

Module Introduction

This week provides an opportunity to create, interpret, and analyze contingency tables as well as to generate pivot tables. In addition, using various figures and visualization techniques, students will learn how to effectively present their data analysis results.

Module Content:

- Evan M. Berman and XiaoHu Wang. 2018. *Essential Statistics for Public Managers and Policy Analysts.* 4th ed. Washington, D.C.: CQ Press, Chapter 8.
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, Chapter 13.

Module Presentation:

- Module presentation will cover topics about contingency tables and pivot tables.

Assignments:

- LinkedIn Assignment #3
- Module 3 Assignment
- Module 3 Quiz

Week 04, 11/07: Understand the Process of Generalizing from a Random Sample to the Population from which it is drawn

Module Introduction

This session discusses the t-test that is frequently used to analyze relationships between one continuous and one dichotomous variable.

Module Content:
- Evan M. Berman and XiaoHu Wang. 2018. *Essential Statistics for Public Managers and Policy Analysts.* 4th ed. Washington, D.C.: CQ Press, Chapter 11.
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, Chapter 5 AND pg. 380-390; 403-408.

Module Presentation:
- Module presentation will cover topics about 1) chi-square analysis and 3) inferential statistics

Assignments:
- LinkedIn Assignment #4
- Module 4 Assignment
- Module 4 Quiz

Week 05, 11/14: How to Test the Difference between Two Groups

Module Introduction

This session discusses the t-test that is frequently used to analyze relationships between one continuous and one dichotomous variable.

Module Content:
- Kenneth J. Meier, Jeffrey L. Brundey, and John Bohte. 2015. *Applied Statistics for Public and Nonprofit Administration.* 9th ed. Stamford, CT: Cengage Learning, Chapter 13.
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, pg. 390-408.

Module Presentation:
- Module presentation will cover topics about t-tests.

Assignments:
- LinkedIn Assignment #5
- Module 5 Assignment
- Module 5 Quiz

Week 06, 11/21: Understand Analysis of Variance (ANOVA)

Module Introduction

This class examines ANOVA, which is useful when the independent variable is nominal and has three or more categories.

Module Content:
- Evan M. Berman and XiaoHu Wang. 2018. *Essential Statistics for Public Managers and Policy Analysts.* 4th ed. Washington, D.C.: CQ Press, Chapter 13.
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, pg. 390-408.

Module Presentation:
- • Module presentation will cover topics about analysis of variance (ANOVA)

Assignments:
- LinkedIn Assignment #6
- Module 6 Assignment
- Module 6 Quiz

Week 07, 11/28: Understand Simple Regression

Module Introduction

This module completes our discussion of statistical techniques for studying relationships between two variables by focusing on those that are both continuous. We will examine simple regression and the Pearson's correlation.

Module Content:
- Evan M. Berman and XiaoHu Wang. 2018. *Essential Statistics for Public Managers and Policy Analysts.* 4th ed. Washington, D.C.: CQ Press, Chapter 14.
- Gary Rassel et al. 2021. *Research Methods for Public Administrators.* 7th ed. New York: Routledge, Chapter 14.

Module Presentation:
- Module presentation will cover topics about simple regression

Assignments:
- LinkedIn Assignment #7
- Module 7 Assignment
- Module 7 Quiz

Week 08, 12/05: Performance Dashboard in Government & Wrap Up

Module Introduction

This class will revisit important concepts of performance management and data analysis, by discussing the use of performance dashboard in governments. Moreover, managers and researchers know that unless research findings are reported effectively nothing happens. In our meeting, we will discuss about clear, focused presentations tailored to the needs of a particular audience.

Module Content:
- IBM Center for Business, *Performance Dashboard in Government*.
- Stephanie D. H. Evergreen. 2018. *Presenting Data Effectively: Communicating Your Findings for Maximum Impact.* 2nd ed. Thousand Oaks, CA: SAGE Publications, Chapter 1.
- Jonathan A. Schwabish. 2014. "An Economist's Guide to Visualizing Data." *Journal of Economic Perspectives* 28 (1): 209–234.
- Jonathan A. Schwabish. 2020. "Ten Guidelines for Better Tables." *Journal of Benefit Cost Analysis* 11 (2): 151–178.

Module Presentation:
- Module presentation will cover topics about 1) performance dashboard in government, 2) why do we need to learn data analysis? 3) why do we need to learn statistical program? 4) how to link data analysis with performance management and 5) how to apply statistical concepts to practices?

Assignments:
- Submit your Final Report: Research Proposal Data Analysis (Due: Friday, 11:59pm)
- Submit your Final Presentation and Discussion
    - Upload Presentation (Due: Wednesday 11:59pm).
    - Post comments/questions to at least 2 students (Due: Friday 11:59pm)
    - Respond to comments/questions (Due: Saturday 11:59pm)