

**PAD 7705**  
**Applied Quantitative Analysis I**  
Fall 2019

**Instructor:** Alexander Kroll, Ph.D.

**Teaching Assistant:** Kira Haensel

**Messages:** Within Canvas

**Office Hours:**

Tuesday, 5:00 – 6:00 PM

Thursday, 5:00 – 6:00 PM

or by appointment in PCA 351B (MMC)

**Time:** Thursday, 6:25 – 9:05PM

**Location:** SIPA 200 (MMC)

## Course Objectives

Every good PhD dissertation should enhance our understanding of how public administration works. That is, you will have to develop a specific idea that contributes something novel to the existing literature. However, the research community is biased towards the status quo, which is why it is not enough just to have a good idea or an innovative answer to a relevant research question. Rather, you need to provide evidence for your claim, and using quantitative data and statistics is one way to do this. This course will guide you through this research process. Using data from the National Administrative Studies Project and the Federal Employee Viewpoint Survey, two prominent and widely used data sources in public administration research, you will develop a statistical model to test a theoretical idea employing regression analysis. You will also learn how to work with the statistics software Stata.

The course's critical objectives are:

- Understanding what a theory is and being able to develop an empirically testable model.
- Understanding issues related to the reliability and validity of variable measures and being able to use factor analysis.
- Being able to design and implement your own survey and being aware of issues related to common-method bias.
- Knowing how to use randomized and quasi experiments as well as understanding the idea behind inferential statistics and the concept of statistical significance.
- Understanding how bivariate and multiple regression analysis works and being aware of its limitations.
- Being able to use mediation and moderation as advanced modelling techniques and to test such models using regression analysis.
- Knowing how to use Stata for different types of statistical analyses.
- Being able to write a research paper, review and critique other people's research, and understand the publication process.

## **Class Format and Communication**

Classes will be a mix of my lectures, input on how to use Stata, discussions of research articles, and occasional group work. I have also scheduled two lab days that will give you the opportunity to practice working with Stata. To do well in this course, you will need to do the readings prior to each meeting and devote a good amount of time to working with Stata outside of the classroom in order to complete assignments and become comfortable using this software.

I will use Canvas to share all my materials and send messages to you. Please regularly check your FIU emails, sign on to Canvas, and customize your notification settings. When you want to get in touch with me, please also use Canvas messages. In addition, I encourage you to meet me during office hours or by appointment if you have questions or you want to discuss your research or career.

## **Readings**

- (1) Remler, Dahlia and Gregg Van Ryzin. (2015). *Research Methods in Practice: Strategies for Description and Causation*. Second Edition. Thousand Oaks, CA: Sage.
- (2) Schroeder, Larry, David Sjoquist, and Paula Stephan. (2017). *Understanding Regression Analysis: An Introductory Guide*. Second Edition. Thousand Oaks, CA: Sage.
- (3) Jaccard, James and Robert Turrisi. (2003). *Interaction Effects in Multiple Regression*. Second Edition. Thousand Oaks, CA: Sage.

I use the Remler/Van Ryzin textbook to make sure that everyone has the same foundation when it comes to statistics, no matter how long it has been since your last stats class. My advice is to read this book selectively, by skipping or skimming sections on topics familiar to you. My expectation is that everyone understands the main points made in the book. However, the text does not only provide a basic understanding of statistics and methods, I find it is also better than many other books regarding its coverage of topics such as causation, research design, and experimentation.

The other two texts are a part of Sage's "Little Green Books" series, where every book covers one quantitative method on less than 100 pages. Additionally, I will draw on selected chapters from other books as well as conceptual and empirical journal articles all of which I provide as PDFs through Canvas. The empirical articles fulfill two functions. On the one hand, they serve as applications of the methods we discuss in class and, therefore, illustrate how to use such methods for PA research. On the other hand, every article will introduce you to a different substantive research area, which is why all of them together will give you an overview of several important research directions in PA. At a minimum, always read the articles that are marked with \*\*\*, unless I have indicated that you should read all listed articles.

In addition to my input on working with Stata, I do not assign specific Stata-related readings. However, if you prefer to have a book that accompanies my input, then I can suggest the Acock book listed below. I also provide links to some web resources as a part of the course schedule below, most of which are related to UCLA's Stata website

(<https://stats.idre.ucla.edu/stata/>) or UCLA's web book on regression analysis by Chen et al. 2003 that is available online.

- Acock, Alan. (2018). *A Gentle Introduction to Stata*. Sixth Edition. College Station, TX: Stata Press.
- Chen, Xiao, Philip Ender, Michael Mitchell, and Christine Wells (2003). *Regression with Stata*. <https://stats.idre.ucla.edu/stata/webbooks/reg/>

## Grading

<i>Due Date</i>	<i>Deliverables</i>	<i>Weight</i>
Sep 26	Coding Exercise	1%
Sep 29	Paper Proposal	1%
Oct 13	Problem Set I	10%
Oct 27	Paper Draft	20%
Nov 24	Problem Set II	10%
Dec 15	Full Paper (incl. Presentation)	28%
tbd	Discussion Leadership	10%
---	Pop Quizzes	10%
---	Participation	10%

The lowest unrounded scores for the following letter grades are:

Exceeds expectations: **A** 95

Meets expectations: **A-** 90 **B+** 87

Below expectations: **B** 84 **B-** 80 **C+** 77 **C** 74 **D** 65 **F** below 65

## Submissions, Tardiness, and Troubleshooting

Submissions are due by 3pm on the listed day. If you miss submission deadlines, your scores will be reduced by one grade level (10%) for every 24 hours of tardiness. Late submissions of assignments worth 1% yield zero credit.

In cases in which you experience issues with uploads via Turnitin, please do the following in the given order: Take a screenshot that shows the error message as well as the time and date on your computer screen; try the upload a second time using a different web browser and, if possible, a different computer; send me a Canvas message prior to the deadline and attach your document and the screenshot; contact technical support and resolve the issue; and eventually upload the document via Turnitin.

## Deliverables

The detailed assignments will be posted on Canvas, but here is a quick overview of what to expect.

## **Problem Set I and II and Coding Exercise**

The problem sets are Stata-based assignments that you are supposed to work on at home. The final product is a memo-like paper that summarizes your findings, and in which you explain and interpret your statistical analyses. The coding exercise is scheduled at the beginning of the course and will help you get started using Stata.

## **Proposal, Draft, and Full Paper**

The centerpiece of this course is your research paper. You will propose a testable theory and then examine potential evidence for this theory employing quantitative analyses. I will provide you with three data sets (see below) that you can use for this purpose, but if you have other data on a topic of your interest, then by all means use your data. The reason I am giving you data is that I do not want you to spend most of the semester searching for, and cleaning up, data sets.

Your paper is supposed to contribute to existing research, so the task is not to simply replicate another paper. Although the contribution does not have to be significant enough to warrant publication in a journal, its empirical analysis needs to be sophisticated, and the paper should resemble a published journal article in most of its features. In class, we will discuss different ways how to frame such a paper and how to make a contribution using data sets that have previously been examined by other researchers.

The first step is to submit a one-page paper proposal. You have about half the semester to develop a draft of your paper, and you will present your full paper at the end of the semester in a conference-like format in class.

## **Discussion Leadership**

In addition to my lecture and Stata input, students will lead a discussion about each method introduced in this course. In particular, the discussions focus on three selected journal articles that applied a specific method. The introduction of the method (by me) and the discussion of related research applications (by students) occur in two different meetings that are lagged by a week. The idea is to facilitate learning by allowing students to reflect on a method's "theory" before we discuss practical issues and applications.

Discussion leadership consists of two parts: giving a presentation (10 min) and moderating a discussion (10 min). For the presentation, I recommend to prepare some PowerPoint slides (probably not more than 10) that display your main points as well as some relevant tables and/or figures from the articles. Your task is to explain how the articles used a particular method to answer a substantive research question. Of course, you will not be able to cover all the details of each article – rather, the charge is to be selective and only provide enough context, so that your classmates are able to understand the method application. You should also assess the article's strength and weaknesses in their use of the method.

While the presentation should cover all three articles, the discussion moderation should be focused on the piece that is marked with \*\*\* because this is the only one that was assigned to all students (unless I assigned all three articles to all students, see course schedule).

Develop about five questions and email them to me on the Monday prior to the date of your discussion. I will share them with the class and ask students to prepare responses. All questions should be related to the article's methods. Please share your slides/notes with me no later than two days prior to your discussion.

In small classes, students may lead multiple discussions, and I will average discussion scores. In larger classes, groups of students may lead a discussion jointly. I will clarify this at the beginning of the semester.

### **Participation and Pop Quizzes**

Participation refers to your continuous qualitative and quantitative contributions to our class discussions. The pop quizzes are brief open-ended quizzes on the week's readings. They will not be held every week but "pop up" randomly throughout the semester.

### **Data and Software**

In this course, we use the data sets listed below. Please note that I requested the use of these data sets for our class, so any outside use would require another request from you. Although the data sets are all in the semi-public domain, it is important to respect the copyrights of the researchers and institutions who collected the data.

- NASP-II: National Administrative Studies Project – A National Survey of Managers in State Health and Human Service Agencies, 2003.
- NASP-III: National Administrative Studies Project III – A Survey of Managers in Public and Non-Profit Organizations in Georgia and Illinois, 2005.
- FEVS: Federal Employee Viewpoint Survey, 2017.

You have access to the statistics software Stata 14 through FIU's eLabs:

<http://elabs.fiu.edu>. To set up Stata through eLabs on your home computer, visit this page: <https://elabs.fiu.edu/Citrix/GetStarted.pdf>. While eLabs allows you to use Stata remotely, without having the software installed on our computer, you may want to consider purchasing your own student version of Stata, which will make its use more convenient for you. By the way, Stata 14 has been installed on two computers in the PhD room.

### **Attendance, Classroom, and Academic Conduct**

I understand that unexpected work- or family-related emergencies may require an absence during the course of the semester, which is why I will grant you one absence. However, you will not be able to pass the class with more than one absence. If you already know that you will miss more than one class, then this may not be the semester for you to take this course. Please be on time when coming to class. I know that traffic can be difficult around campus but will not accept patterns of tardiness and may count multiple late arrivals as one missed full class.

## **Incompletes and Make-Up Exams**

In the absence of a dire, documented emergency, I am opposed to the granting of incomplete grades. This is consistent with University policy. Make every effort to complete the course in a timely manner. Please note that enrolling in this class means you agree with the syllabus and are able to provide papers, submissions, and presentations at the listed dates.

## **Americans with Disabilities Act**

The Americans with Disability Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities.

The Disability Resource Center collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The DRC provides FIU students with disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact the Center at 305-348-3532 or visit them at the Graham Center GC 190.

## **Statement on Plagiarism**

Plagiarism is the representation of another person's words, ideas, and creative work in general as one's own. This misrepresentation is a breach of ethics that seriously compromises a person's reputation. Professional careers have been ruined by revelations of plagiarism. To avoid plagiarism, researchers and professionals in public, private, or nonprofit organizations must scrupulously give credit whenever they use another person's idea, opinion, theory, written or spoken words, as well as any facts, statistics, graphs, drawings- any pieces of information- that are not common knowledge. The following rules should be observed to make sure that the distinction between one's own words, ideas or work, and those of others is justly maintained.

1. Put in quotations everything that comes directly from the text of another's work, especially when taking notes.
2. Alternatively, you can paraphrase another person's work, but be sure you are not just rearranging or replacing a few words. A good strategy is to (1) read over what you want to paraphrase carefully, (2) cover up the text with your hand, (3) write out the idea in your own words without peeking, and (4) check your paraphrase against the original text to be sure you have not accidentally used the same phrases or words, and that the information is accurate.
3. Whether you quote, paraphrase or otherwise borrow another's work, always cite or indicate the source of the information, and provide references following one of the many accepted styles or formats.
4. Common knowledge such as George Washington's date of birth or meaning of OLS regression need not be quoted, cited, or referenced. However, borrowing another's original or creative presentation of common knowledge should follow the above mentioned rules. When in doubt, follow the rules.

Of course, submitting a paper that is completely the work of another person is plagiarism in its most extreme form. A student who plagiarizes all or part of an assignment can expect severe cumulative penalties, ranging from failure in the course to expulsion from the university, with an annotation of the sanction received on the student's transcript.

It should be kept in mind that, although it is not as egregious an offense as copying someone else's work, the extensive copying of a paper that one has prepared for one course for subsequent use and submission in another course is totally inappropriate. Especially at the graduate level, students may wish to prepare more than one paper in the same area. However, these must be substantially different papers which, while they may be in the same general area, represent a substantively different focus and do not significantly overlap in written text.

## Course Schedule

*Every week, I suggest you do the readings in the recommended order, following my numbering. Among all "application articles," at a minimum, always read the articles that are marked with \*\*\*.*

### Week 1 (8/29), The Quantitative Study of Public Organizations

*I will introduce you to the research area of public management (topics, journals, conventions etc.) and talk about the role of quantitative methods therein. I also want to get to know all of you better during this meeting and hear about your research interests.*

#### Required Readings

- Syllabus

### Week 2 (9/5), Theory Development

*Discussion leaders will be assigned for the semester.*

*Problem Set I assignment will be posted.*

*Paper Proposal assignment will be posted.*

*Paper Draft assignment will be posted.*

#### Required Readings

1. Remler and Van Ryzin (2015), Ch. 1 & 2
2. Abner, Gordon, Sun Young Kim, and James Perry. (2017). Building Evidence for Public Human Resource Management: Using Middle Range Theory to Link Theory and Data. *Review of Public Personnel Administration* 37(2): 139-159.
3. Sutton, Robert and Barry Staw. (1995). What Theory is Not. *Administrative Science Quarterly* 40(3): 371-384.
4. Sparrowe, Raymond and Kyle Mayer. (2011). Publishing in AMJ Part 4: Grounding Hypotheses. *Academy of Management Journal* 54(6): 1098-1102.

## Week 3 (9/12), Measuring Variables

*Coding Exercise will be posted.*

### Required Readings

1. Remler and Van Ryzin (2016), Ch. 4
2. Fernandez, Sergio, William Resh, Tima Moldogaziev, and Zachary Oberfield. (2015). Assessing the Past and Promise of the Federal Employee Viewpoint Survey for Public Management Research: A Research Synthesis. *Public Administration Review* 5(3): 382-394.
3. Browse through the codebooks of all three data sets (see Canvas), so you have a general idea what data was collected, when, and from whom.

[Review Stata learning modules as needed: <https://stats.idre.ucla.edu/stata/modules/>]

*You can find a good number of published articles, which are all based on the NASP or Federal Viewpoint data sets, sorted by key variables in Canvas ("Articles Data Sets"). Browse through the folders and identify one key variable that could potentially interest you. Find out a little bit more about this variable by skimming through some of the studies: How is this variable measured? What are important determinants? What has previous research found out about this variable? etc.*

## Week 4 (9/19), OLS Regression I

### Required Readings

1. Schroeder et al. (2017), Ch. 1, 2, & 3
2. Remler and Van Ryzin (2015), Ch. 8, 9, & 10 (up to p. 322)

[Review as needed:

- <https://stats.idre.ucla.edu/stata/output/regression-analysis/>
- Chen et al. (2003), Ch. 1]

## Week 5 (9/26), Lab Day I

*Coding Exercise is due on 9/26.*

*Paper Proposal is due on 9/29.*

### OLS Regression Applications (Read all articles)

1. O'Toole, Laurence and Kenneth Meier. (2004). Desperately Seeking Selznick: Cooptation and the Dark Side of Public Management in Networks. *Public Administration Review* 64(6): 681-693.
2. Witteloostuijn, Arjen van, Marc Esteve, and George Boyne. (2017). Public Sector Motivation ad fonts: Personality Traits as Antecedents of the Motivation to Serve the Public Interest. *Journal of Public Administration Research and Theory* 27(1): 20-35.
3. Kroll, Alexander, Milena Neshkova, and Sanjay Pandey. (2017). Spillover Effects from Customer to Citizen Orientation: How Performance Management Reforms Can

Foster Public Participation. Forthcoming in *Administration & Society* (doi: 10.1177/0095399716687341).

## **Week 6 (10/3), OLS Regression II**

### Required Readings

1. Schroeder et al. (2017), Ch. 4 & 5
2. Remler and Van Ryzin (2015), Ch. 10 (pp. 323 onwards), 11, 12, & 13  
[Review as needed: Chen et al. (2003), Ch. 2-3]

## **Week 7 (10/10), Survey Research**

*Problem Set I is due on 10/13.*

*Problem Set II assignment will be posted.*

### Required Readings

1. Remler and Van Ryzin (2015), Ch. 5, 6, & 7

We will work on a survey-building exercise in class.

## **Week 8 (10/17), Interaction Effects (Moderation)**

### Required Readings

1. Jaccard and Turrisi (2003), Ch. 1, 2, & 4 (up to p. 74)
2. Brambor, Thomas, William Clark, and Matt Golder. 2006. Understanding Interaction Models: Improving Empirical Analyses. *Political Analysis* 14(1): 63-82.  
[Review as needed: Chen et al. (2003), Ch. 6 & 7]

### Survey Applications

1. \*\*\* Lee, Geon, Jennifer Benoit-Bryan, and Timothy Johnson. (2012). Survey Research in Public Administration: Assessing Mainstream Journals with a Total Survey Error Framework. *Public Administration Review* 72(1): 87-97.
2. Enticott, Gareth, George Boyne, and Richard Walker (2009). The Use of Multiple Informants in Public Administration Research: Data Aggregation Using Organizational Echelons. *Journal of Public Administration Research and Theory* 19(2): Pages 229-253.
3. Van de Walle, Steven and Gregg Van Ryzin. (2011). The Order of Questions in a Survey on Citizen Satisfaction with Public Services: Lessons from a split-ballot experiment. *Public Administration* 89(4): 1436-1450.

## **Week 9 (10/24), Factor Analysis**

*Paper draft is due on 10/27.*

*Full paper assignment will be posted.*

### Required Readings

1. De Vellis, Robert. (2012). *Scale Development: Theory and Applications*. Thousand Oaks, CA: Sage, Ch. 6.
2. Kline, Rex. (2013). Exploratory and Confirmatory Factor Analysis. In Yaacov Petscher, Christopher Schatschneider, and Donald Compton (Eds.), *Applied Quantitative Analysis in the Social Sciences* (pp. 171-207). New York: Routledge.

[Review as needed]

- <https://stats.idre.ucla.edu/stata/output/factor-analysis/>
- [www.stata.com/manuals14/mvfactor.pdf](http://www.stata.com/manuals14/mvfactor.pdf)

### Interaction Applications

1. \*\*\* Kroll, Alexander. (2017). Can Performance Management Foster Social Equity? Stakeholder Power, Protective Institutions, and Minority Representation. *Public Administration* 95(1): 22-38.
2. Jensen, Ulrich, Donald Moynihan, and Heidi Houlberg Salomonsen. (2018). Communicating the Vision: How Face-to-Face Dialogue Facilitates Transformational Leadership. *Public Administration Review* 78(3): 350-361.
3. Andrews, Rhys. (2011). Exploring the Impact of Community and Organizational Social Capital on Government Performance: Evidence from England. *Political Research Quarterly* 64(4): 938-949.

## **Week 10 (10/31), Indirect Effects (Mediation)**

### Required Readings

1. Hayes, Andrew, Kristopher Preacher, and Teresa Myers. (2011). Mediation and the Estimation of Indirect Effects in Political Communication Research. In Erik and Lance Holbert (Eds.), *Sourcebook for Political Communication Research: Methods, Measures, and Analytical Techniques* (pp. 434-465). New York: Routledge.
2. Schreiber, James, Amaury Nora, Frances Stage, Elizabeth Barlow, and Jamie King. (2006). Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *Journal of Educational Research* 99(6): 323-338.

[Review as needed]

- [www.stata.com/manuals14/sem.pdf](http://www.stata.com/manuals14/sem.pdf)

### Factor Analysis Applications

1. \*\*\* Lee, Danbee and Gregg Van Ryzin. (2019). Measuring Bureaucratic Reputation: Scale Development and Validation. *Governance* 32(1): 177-192.
2. Tummers, Lars. (2012). Policy Alienation of Public Professionals: The Construct and Its Measurement. *Public Administration Review* 72(4): 516-525.
3. Vogel, Dominik and Alexander Kroll. (2019). Agreeing to Disagree? Explaining Self-Other Disagreement on Leadership Behaviour. Forthcoming in *Public Management Review* (doi: 10.1080/14719037.2019.1577910).

## **Week 11 (11/7), Lab Day II**

### Indirect Effect Applications (Read all articles)

1. DeHart-Davis, Leisha, Randall Davis, and Zachary Mohr. (2015). Green Tape and Job Satisfaction: Can Organizational Rules Make Employees Happy? *Journal of Public Administration Research and Theory* 25(3): 849-876.
2. George, Bert, Sebastian Desmidt, Eva Cools, and Anita Prinzie. (2018). Cognitive Styles, User Acceptance and Commitment to Strategic Plans in Public Organizations: An Empirical Analysis. *Public Management Review* 20(3): 340-359.
3. Kroll, Alexander, Leisha DeHart-Davis, and Dominik Vogel. (2019). Mechanisms of Social Capital in Organizations: How Team Cognition Influences Employee Commitment and Engagement. Forthcoming in *American Review of Public Administration* (doi: 10.1177/0275074019851894).

## **Week 12 (11/14), Experimentation**

### Required Readings

1. Remler and Van Ryzin (2015), Ch. 14 & 15

### Experimentation Applications

1. \*\*\* Linos, Elizabeth. (2018). More than Public Service: A Field Experiment on Job Advertisements and Diversity in the Police. *Journal of Public Administration Research and Theory* 28(1): 67-85.
2. Riccucci, Norma, Gregg Van Ryzin, and Karima Jackson. (2018) Representative Bureaucracy, Race, and Policing: A Survey Experiment. *Journal of Public Administration Research and Theory* 28(4): 506-518.
3. Nielsen, Poul and Donald Moynihan. (2017). How Do Politicians Attribute Bureaucratic Responsibility for Performance? Negativity Bias and Interest Group Advocacy. *Journal of Public Administration Research and Theory* 27(2), 269-283.

## **Week 13 (11/21), Publishing Quantitative Research and Cross-Cutting Issues**

*Problem Set II is due on 11/24.*

### Required Readings

1. Somers, Mark. 2018. Strategies for Improving Measurement Models for Secondary Data in Public Administration Research: Illustrations from the Federal Employee Viewpoint Survey. *Public Administration Review* 78(2): 228-239.
2. George, Bert and Sanjay Pandey. (2017). We Know the Yin – But Where Is the Yang? Toward a Balanced Approach on Common Source Bias in Public Administration Scholarship. *Review of Public Personnel Administration* 37(2) 245-270.
3. Schwab, Donald. 1985. Reviewing Empirically Based Manuscripts: Perspectives on Process. In Peter Frost (Ed.): *Publishing in the Organizational Sciences* (pp. 171-181). Homewood, IL: Irwin.

[Review as needed: Remler and Van Ryzin, Ch. 16 & 17]

**Week 14 (11/28), Thanksgiving**

**Week 15 (12/5), Paper Presentations**

**Finals Week (12/12), Paper Presentations**

*Papers are due on 12/15.*