PPA207: Quantitative Methods

DTN 110, 6:00-8:50 pm, Wednesdays (Section 1) or Thursdays (Section 2)

Instructor: Ahrum Chang, Ph.D., M.P.P.
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Office: DTN 230
Office hours: 4:30-6:00 pm on Wednesdays and Thursdays, and by appointment. If you would like to see me outside of office hours, please email me 24h in advance to set up the time.

Course Description

This course aims to expand students' understanding of the statistical knowledge and technique used in public policy and administration research. This course (1) begins with an overview of variables, measurement, hypotheses, and descriptive statistics, (2) introduces an elementary linear regression analysis (OLS estimation), and (3) finishes with the regression with binary dependent variables. The course will involve performing applied data analysis using STATA.

Prerequisite: PPA 205 with a B- or better or instructor permission

Learning Objectives

This course addresses five learning objectives from those set for the MPPA program. The following table shows the five objectives applicable to PPA207 and the way they are applied to this course. The attainment of these objectives will occur when students complete their in-person attendance and get real-time feedback from their peers and an instructor each week.

PPA Learning Objectives	How Applied to PPA207
1 f. Identify, critically examine, and use relevant data to inform policy and administrative decisions.	Practice finding and identifying dataset that inform public policy or administrative issues; Learn how to use data that inform public policy and/or administrative issues
1 h. Critically review the literature to help understand and address a problem from various perspectives	Conduct review of empirical research articles; Understand how public policy or managerial issues are developed as a research question and hypotheses.
2 a. Critically use different analytical skills, processes, and tools to address policy and administration problems.	Learn how to use STATA; Learn the statistical knowledge and analytical skills that are necessary to run a regression on policy or administration problems
2 d. Effectively communicate with different audiences to understand public problems and policy and administration strategies.	Present your regression-based research and discuss how to understand public policy and administrative problems; share your research with a non-statistical audience.
2 e. Write clearly and succinctly as appropriate to various audiences	Practice writing a regression paper and provide implications for various audiences.

Required Materials

- STATA Statistical Package: You will need a laptop during class, loaded with STATA and Excel. We will start to use STATA from our second meeting, so please purchase the basic version of STATA (STATA/BE) for your own machine before the second class starts. Prices for students are $48 for six months. Please visit: https://www.stata.com/order/new/edu/profplus/student-pricing/ If you have any question on purchasing or installing this software, let me know in our first meeting.
- This course does not require students to purchase any textbook. However, reading materials can be uploaded via Canvas, if necessary.

Evaluation

Course grades will be determined in accordance with the following weights:

- Class Participation 10%
- HW Assignments 30%
- Research Project 60%
  ° Topic Proposal 15%
  ° Presentation & Peer Feedback 10%
  ° Final Paper 35%

A 94-100% A- 90-93%
B+ 87-89% B 84-86% B- 80-83%
C+ 77-79% C 74-76% C- 70-73%
D+ 67-69% D 64-66% D- 60-63%

1. Class Participation

In this course, class participation means your active engagement into class/group discussion, listening to and interacting with your peers, exercising STATA, and getting real-time feedback from an instructor and your classmates. Therefore, I highly encourage you to attend the class in person. Missing more than one will affect your class participation.

2. HW Assignments

There are five take-home assignments throughout the semester. Among five, four assignments (5pt each) would be problem sets that entail STATA software applications, written analyses of statistical findings, or summaries of the key concepts. Student interaction is highly encouraged on the assignments, but each student should (be able to) individually perform their own work when completing each assignment. One assignment (10pt) is about reviewing previous literature on the topic.

3. Research Project

- Topic Proposal: Students will explore public policy, management, or administrative problems of interest and select one topic based on their interests. In their topic proposal, students should

clearly define their research questions, what variables they would use for their explained and explanatory variables. Detailed guidelines and a rubric will be provided by an instructor.

- Presentation & Peer Feedback: Towards the end of the semester, students will individually present their regression-based paper during class and get verbal-feedback from each other.

- Final Paper: The final assignment is to write a regression-based research paper. Detailed instructions and a rubric will be provided by an instructor.

Class Schedule

This schedule will serve as a general guideline for the course, not a rigid constraint through the semester. Depending on students' needs and/or an instructor's discretion, we may spend more time on a certain topic and less on another. Any changes to the syllabus or course schedule will be announced in advance.

Week	Date	Course Contents	Assignment due on Canvas by 6pm
1	Jan 24 or 25	Course orientation & STATA installation Q&A	
2	Jan 31 or Feb 1	Getting started: Measurement & Variables	
3	Feb 7 or 8	Cleaning and preparing data	
4	Feb 14 or 15	Descriptive statistics I	
5	Feb 21 or 22	Descriptive statistics II & Data visualization	
6	Feb 28 or 29	Causal Analysis	HW1
7	Mar 6 or 7	Regression I: Intro	Topic Proposal
8	Mar 13 or 14	Preparation for literature review	
9	Mar 20 or 21	Spring break	HW2
10	Mar 27 or 28	Regression II: Interaction effects	HW3
11	Apr 3 or 4	Regression III: Multicollinearity & heteroscedasticity	
12	Apr 10 or 11	Logistic Regression I	HW4
13	Apr 17 or 18	Logistic Regression II	
14	Apr 24 or 25	Tips for quantitative research & Project assistance	HW5
15	May 1 or 2	Presentation & Discussion I	
16	May 8 or 9	Presentation & Discussion II	Final Paper due 5/13

Note: There is no required reading for our first meeting. After meeting 1, 2, and 6, I will provide some readings for the following week. Detailed information will be provided on course orientation.

Class Attendance and Absence

I encourage students to attend all class meetings. This is an 100% in-person class, so I will not record my lecture. If you must miss the class, please come to the class held on a different night in the same week. In this case, you don't need to ask for my permission. If this does not work for you, (1) please check with me during my office hours, (2) make an appointment outside of the office hours in advance, or (3) send me (or my TA) an email to ask any missed class contents.

I am glad to assist students with any question or clarification regarding class materials. However, you are

responsible for all assigned materials, even if you are unable to attend the class on time. This means I encourage you to scan the slides/reading materials for your missed class before checking with me. If possible, you may also reach out to your classmates for notes for your missed session. If you have further questions regarding the class attendance policy, contact me.

Submission Policy

HW Assignments, topic proposal, and final paper must be completed on time. Late submission is not accepted. Please submit all these assignments electronically to Canvas by 6:00 pm per each deadline. Even if you are unable to attend the class, you are responsible for all specific deadlines posted on the syllabus or on Canvas. If you submit the same assignment for multiple times via Canvas before the deadline, I will grade only the latest one.

Student with Disabilities

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADA) covers issues relating to disability and accommodations. Students with disabilities that could affect their ability to participate in the course or perform well on graded assignments should see me early in the semester. I am receptive to these situations and will try to make any reasonable accommodations. If a student has questions or needs an accommodation in the classroom (all medical information is treated confidentially), please contact:
Services for Students with Disabilities
Division of Student Affairs (916)-278-6955, sswd@csus.edu.

Academic Honesty

Students should familiarize themselves with the University Honor Code and Academic Honesty Policy, particularly as it relates to plagiarism and related concerns. The Student Code of Conduct defines academic misconduct, non-academic misconduct and the consequences or penalties for each. Please check the website: https://www.csus.edu/student-affairs/student-conduct/academicdishonesty.html. Academic dishonesty can result in a grade of F for the course.

Electronic Devices

Laptop use should pertain to class exercises and assignments only. Please refrain from the use of cell phones, laptops, or any other electronic devices to check emails, send messages, or browse non-course relevant information. I expect a high level of courtesy and professionalism in the classroom.

Emails and Academic Support

I am always willing to meet students who are concerned about class assignments or STATA exercises throughout the course. If you experience some difficulties in this course for any reason, please do not hesitate to let me know. Questions about the course or other assignments can be directed to me via email. I try my best to reply to your email within 24 to 48 hours during the workweek.