NPLD 7200:
Data Analysis for Social Impact

Online MS Nonprofit Leadership Program
School of Social Policy and Practice
University of Pennsylvania

Course Dates: October 6 – December 18, 2025
Zoom Sessions: Mondays and Thursdays, 12:00 to 1:30 PM EST

Instructor Information

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Office hours: By Appointment

Course Description

In today's fast-paced world, practitioners, leaders, and researchers must stay connected with the latest cutting-edge research in their fields. This course is your gateway to **understanding the quantitative methods that drive social impact research**. Through hands-on, lab-based activities, you'll gain both the theoretical knowledge and practical skills needed to analyze real-world data. We'll explore the dynamics of individual participation in the nonprofit sector, focusing on activities like **charitable giving and volunteering**.

This course is all about getting you comfortable with the nuts and bolts of handling and analyzing quantitative survey data. We'll start with the basics—understanding statistical principles and using descriptive and exploratory methods to make sense of data. Then, we'll dive into more advanced techniques like OLS regression and logistic regression, all within the user-friendly environment of **STATA**. Along the way, you'll also tackle big-picture topics like theory testing, the philosophy of science, and the importance of replication in research.

Whether you're looking to engage with existing social impact research or make your own original contributions, this course has something for you. And don't worry, **no prior experience with statistics or programming is required**. Just bring your curiosity, and by the end of the course, you'll be equipped to make data-driven decisions that can truly make a difference.

Course Objectives

On completion of this course, students are expected to be able to:
- Demonstrate a sound understanding of the role of quantitative data analysis in social impact research
- Understand basic statistical theory principles
- Develop important data management skills and basic programming skills (writing syntax)
- Report and present social impact research with close reference to theoretical frameworks
- Understand the principles of some of the **most frequently used statistical modelling methods** such as **ordinary least square (OLS) regression** and **logistic regression**.
- Understand and interpret the quantitative outputs / findings, statistically and substantively.
- **Write-up statistical results and present findings in a journal-acceptable format**.

Course Materials

STATA

If you are new to the statistical software we will be using, STATA, start by checking out the **Penn Libraries' STATA Guide**, including their **Stata Quick Guide**.

In order to use STATA during this course, you will need to either **access it for free from your device via the Penn Libraries' Virtual Computer Lab** or **purchase it**. STATA offers a discounted rate for students. The least expensive option is the **6-month Stata/BE license for $48**.

This course is demanding and may be asking you to develop a range of new skills, such as: 1) thinking about the world quantitatively; 2) using an unfamiliar statistical software package; and 3) using programming and coding techniques to manipulate and analyses data. Coding errors are frustrating and common place in quantitative research. Quantitative research requires careful attention to detail and learning the particulars of STATA. It gets easier the more you do it and the more familiar you become with the software and programming language!

You also have the option of **scheduling an appointment with a Technology Consultant** at the Penn Libraries for **additional STATA guidance**.

Readings

Required Reading

Any number of general statistics texts can be used for the class and will cover the general material. Excerpts from the following are provided on Canvas:

- Agresti A and Finlay B. (2009). *Statistical Methods for the Social Sciences*. Pearson.

Optional Further Reading

- Acock AC. (2016). *A Gentle Introduction to Stata*. Stata Press.
  - Read full text online via Penn Libraries (1 reader at a time can access)
- Allison PD. (1999) *Multiple Regression: A Primer*. Pine Forge Press.
  - Available in print at the Penn Libraries
- Long JS. (1997) *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks: Sage.
  - Available in print at the Penn Libraries
- Long JS and Freese J. (2006) *Regression Models for Categorical Dependent Variables Using Stata*. College Station, Tex.
  - Available in print at the Penn Libraries
- Wheelen C. (2014) *Naked Statistics: Stripping the Dread from Data*. Norton.
  - Available in print at the Penn Libraries

Further Resources

- Statalist: The Stata Forum

Literature Review - Giving

Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and Voluntary Sector Quarterly*, *40*(*5*), 924-973.

Bekkers, R., & Wiepking, P. (2011). Who gives? A literature review of predictors of charitable giving part one: Religion, education, age and socialisation. *Voluntary Sector Review*, *2*(*3*), 337-365.

Neumayr, M., & Handy, F. (2019). Charitable giving: What influences donors' choice among different causes?. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 30, 783-799.

Saeri, A. K., Slattery, P., Lee, J., Houlden, T., Farr, N., Gelber, R. L., ... & Zorker, M. (2023). What works to increase charitable donations? A meta-review with meta-meta-analysis. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *34*(3), 626-642.

Wiepking, P., & Bekkers, R. (2012). Who gives? A literature review of predictors of charitable giving. Part Two: Gender, family composition and income. *Voluntary Sector Review*, *3*(2), 217-245.

Wiepking, P., Handy, F., Park, S., Neumayr, M., Bekkers, R., Breeze, B., ... & Yang, Y. (2021). Global philanthropy: Does institutional context matter for charitable giving?. *Nonprofit and Voluntary Sector Quarterly*, *50*(4), 697-728.

Literature Review - Volunteering

Dempsey-Brench, K., & Shantz, A. (2022). Skills-based volunteering: A systematic literature review of the intersection of skills and employee volunteering. *Human Resource Management Review*, 32(4), 100874.

Mao, G., Fernandes-Jesus, M., Ntontis, E., & Drury, J. (2021). What have we learned about COVID-19 volunteering in the UK? A rapid review of the literature. *BMC Public Health*, 21, 1-15.

Rodell, J. B., Breitsohl, H., Schröder, M., & Keating, D. J. (2016). Employee volunteering: A review and framework for future research. *Journal of Management*, *42*(1), 55-84.

Wilson, J. (2000). Volunteering. *Annual Review of Sociology*, 26(1), 215-240.

Wilson, J. (2012). Volunteerism research: A review essay. *Nonprofit and Voluntary Sector Quarterly*, 41(2), 176-212.

Grades

#1 Attendance and Participation	10%
#2 STATA Assignments (3)	30%
#3 Quizzes (4)	20%
#4.1 Research Proposal	10%
#4.2 Research Presentation	20%
#4.3 Research Paper	10%
TOTAL	**100%**

#1 Attendance and Participation (10%)

Attendance at all sessions is important. You may miss **up to two sessions for any reason without penalty**. Beyond these two, each additional absence will lower your grade by three points unless we've agreed on an exception in advance.

#2 STATA Assignments (30%)

There are three assignments during the course, accounting for 30% of your grade. These are to be submitted via Canvas.

#3 Quizzes (20%)

The course includes four quizzes, which will make up 20% of your overall grade. **These quizzes will cover the content from the weekly readings.**

#4 Final Research Project (40%)

The final research project for this course is divided into three components: **(1) a research proposal (10%), (2) a research presentation (20%), and (3) a research paper (10%).** The research paper should be a **3,000-word** data analysis report that applies multivariate **linear and/or logistic regression models** within the field of social impact research.

You should clearly define your research question(s) and describe how they will be addressed using the statistical techniques covered in the course. **The instructor will provide secondary data for you to work on.** Be sure to include references for both the substantive topic and the research methods employed. It may also be helpful to discuss exploratory approaches before delving into the details of the regression analysis.

In your report, you need to demonstrate:

- Your understanding of the statistical techniques used
- Your ability to apply these techniques in a meaningful way
- Your ability to interpret your results in terms of their statistical significance and in the context of your research question(s)

Late Work Policy

Late assignments or projects will be penalized by **a deduction of one full letter grade for each day they are overdue**. Exceptions may be made in exceptional situations. However, lack of planning is generally a common issue and does not typically qualify as an exceptional circumstance.

Camera Use Policy

To help foster engagement, **please keep your cameras on** during class whenever possible. Similar to being in an in-person classroom, seeing each other helps make discussions more interactive. That said, there may be times when turning on your camera is difficult due to technical, personal, or environmental reasons. If that's the case, please let the instructor know.

Policy on the Use of AI Tools

The use of AI tools such as ChatGPT is permitted in this class, but only when used responsibly.

You can't use AI to write, generate, or complete your assignments. For example, asking AI to write a paragraph about people's motivations for charitable giving and then submitting that AI-generated paragraph as your own work is considered academic misconduct.

However, you may use AI tools to locate relevant literature, refine ideas (after you have brainstormed on your own first), improve your understanding of statistics or STATA commands (e.g., "What is standard deviation?" or "How do I run a correlation analysis in STATA?"), and/or proofread your own writing.

If you use AI for an assignment, you are required to clearly indicate which parts of your work were assisted by AI. Please note that AI outputs, particularly for STATA commands and statistical formulas, are not always accurate, especially when users lack a solid understanding of statistics. So, please do not rely too heavily on AI for your assignments.

Your grade will not be affected by your use of AI, but by the quality, originality, and accuracy of your work.

The following grading scale will be used for final grades:

98 - 100% = A+   80 - 82.9% = B-

93 - 97.9% = A   77 - 79.9% = C+

90 - 92.9% = A-   73 - 76.9% = C

87- 89.9% = B+   70 - 72.9% = C-

83- 86.9% = B   Below 70% = Failing

Class Schedule

CLASS	TOPICS AND READINGS
Session 1 10/06 (Mon)	**Topics: Course Overview** **Readings:** • Syllabus • Canvas • STATA Installation • Final Research Project Advice • Literature Review • Example • Introduction to Quantitative Methods • Pre-Course Survey **Prepare for class:** Introduction • The name you prefer to go by? • How far along are you in the program? • Why are you in the degree program, and how does it tie to your career goals? • Why do you take this class?
Session 2 10/09 (Thurs)	**Fall Break** **No Class**
Session 3 10/13 (Mon)	**Lecture: Descriptive Statistics** **Required Readings:** • Agresti and Finlay (2009). Chapters 1 & 3
Session 4 10/16 (Thurs)	**Lab 1: Using STATA, Recoding Variables, Descriptive Statistics** **Required Readings:** • Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and Voluntary Sector Quarterly*, 40(5), 924-973. **In-Class Activity:** STATA Lab 1 **Assignment:** • Quiz 1 Due
Session 5 10/20 (Mon)	**Lecture: Sampling and Graphical Representation** **Required Readings:** • Agresti and Finlay (2009). Chapters 2 & 4

Session 6 10/23 (Thurs)	*Lab 2: Univariate Statistics and Graphs* *Required Readings*: - Ruiter, S., & De Graaf, N. D. (2006). National context, religiosity, and volunteering: Results from 53 countries. *American Sociological Review*, 71(2), 191-210. *In-Class Activity: STATA Lab 2* *Assignment:* - Quiz 2 Due
Session 7 10/27 (Mon)	*Lecture*: **Confidence Intervals and Hypothesis Testing** *Required Readings*: Agresti and Finlay (2009). Chapters 5 & 6
Session 8 10/30 (Thurs)	*Lab 3:* **Confidence Intervals and Hypothesis Testing** *Required Readings*: - Kamerāde, D., & Bennett M. R. (2017). Rewarding Work: Volunteering During Unemployment, Benefits, Well-being and Mental Health. *Work, Employment and Society*. 32(1): 38-56. *In-Class Activity: STATA Lab 3* *Assignment:* - Quiz 3 Due
Session 9 11/03 (Mon)	*Lecture*: **Correlation and Bivariate Linear Regression** **Required Readings:** - Agresti and Finlay (2009). Chapter 9 **Assignment:** - Assignment 1 Due
Session 10 11/06 (Thurs)	*Lab 4:* **Bivariate Linear Regression and Correlation** *Required Readings*: - Guideline: Research Project Proposal - Review: Final Project Advice *In-Class Activity: STATA Lab 4* *Assignment:* - Quiz 4 Due
Session 11 11/10 (Mon)	*Lecture*: **Multiple Linear Regression** **Required Readings:** Agresti and Finlay (2009). Chapters 10 & 11

Assignment:
- Research Proposal Due

Session 12
11/13
(Thurs)
	***Lab 5:* Multiple Linear Regression**
	Required Readings:
	    • Presenting Models
	    • Presentation Template
	
	In-Class Activity: *STATA Lab 5*

Session 13 11/17 (Mon)	***Lecture: Models with Categorical Data*** **Required Readings:** ● G Agresti and Finlay (2009). Chapter 15 **Assignment:** Assignment 2 Due
Session 14 11/20 (Thurs)	***The instructor is attending an academic conference.*** ***No Class***
Session 15 11/24 (Mon)	***Lab 6:* Logistic Regression** ***Required Readings***: • Review: Final Project Advice ***In-Class Activity:*** *STATA Lab 6*
Session 16 11/27 (Thurs)	***Thanksgiving Day*** ***No Class***

Session 17
12/01
(Mon)
	Guest Speaker
	
	Olivia Ildefonso, Ph.D. (Co-founder of North Arrow)
	
	Assignment:
	    • https://www.north-arrow.org/
	    • Assignment 3 Due

Session 18 12/04 (Thurs)	***Final Project Presentations (3 to 4 students)*** ***Assignment:*** **Final Project Presentation Slides Due** *by 12 PM December 4.*
Session 19 12/08 (Mon)	***Final Project Presentations (3 to 4 students)***
Session 20 12/11	***Final Project Presentations (3 to 4 students)***

Session 21 12/15 (Mon)	***Students work on Final Project Research Paper*** *Students who have questions about their term paper are welcome to schedule a meeting with the instructor.*
Session 22 12/18 (Thurs)	***Final Project Research Paper*** ***Assignment:*** *Final Project Research Paper Due by 12 PM December 18.*

Statement on Academic Integrity

Students are expected to conduct themselves consistent with the **University of Pennsylvania's Code of Academic Integrity**. Care should be taken to avoid academic integrity violations, including plagiarism, fabrication of information, and multiple submissions (see descriptions below).* Students who engage in any of these actions will be referred to **The Center for Community Standards and Accountability**, which investigates and decides on sanctions in cases of academic dishonesty.

1. Plagiarism: using the ideas, data, or language of another without specific or proper acknowledgment. Example: copying another person's paper, article, or computer work and submitting it for an assignment, cloning someone else's ideas without attribution, failing to use quotation marks where appropriate, etc.
2. Fabrication: submitting contrived or altered information in any academic exercise. Example: making up data for an experiment, fudging data, citing nonexistent articles, contriving sources, etc.
3. Multiple submission: submitting, without prior permission, any work submitted to fulfill another academic requirement.

*It is students' responsibility to consult the instructor if they are unsure about whether something constitutes a violation of the Code of Academic Integrity.

Course Resources

- **Technical Help and Questions**: Submit requests for technical help to **sp2help@sp2.upenn.edu**.
- **Canvas Help and Questions:** You can search the **online Canvas documentationLinks to an external site.** for students and **Penn's Canvas for Students page** and email **Canvas Support** with any further issues.

- **Accessing Penn Libraries Resources**: Learn how to:
    - **Access resources from off-campus**
    - **Search Franklin Articles+:** Penn Libraries' large collection of eBooks, scholarly journals, newspaper articles, conference proceedings, and more.
    - **Scan and Deliver**: Enables you to obtain scans of selected book chapters and journal articles in the general, non-Reserve collections of the University of Pennsylvania Libraries for your research.
    - **Get books by mail**: A service offered to Penn patrons with no geographic limitation. Register and request via Books by Mail to have Penn materials shipped to your off- campus home address. The library pays for the outbound shipment. *Users are responsible for paying return shipping or returning materials to the Van Pelt Library.*
- **SP2 Writing Support**: SP2 master's program students (online and on-campus) can access one-on-one writing support from peer tutors enrolled in our doctoral programs. Zoom-based sessions help students sharpen skills and leverage best practices in areas such as writing style, organization, editing, APA standards, redundancy, and avoiding plagiarism. To access this service, request a referral from an instructor or your Academic Advisor.
- **Weingarten Center:** The Weingarten Center offers a variety of resources to support all Penn students in reaching their academic goals. All services are free and confidential. **To contact the Weingarten Center, call 215-573-9235**. The office is located in Stouffer Commons, 3702 Spruce Street, Suite 300.
- **Disability Services**: The University of Pennsylvania is committed to the accessibility of its programs and services. Students with a disability or medical condition can request reasonable accommodations through the Weingarten Center website. Disability Services determines accommodations on an individualized basis through an interactive process, including a meeting with the student and a review of their disability documentation. Students who have approved accommodations are encouraged to notify their faculty members and share their accommodation letters at the start of each semester. Students can contact Disability Services by calling 215-573-9235.