Universidade de São Paulo
Faculdade de Filosofia, Letras e Ciências Humanas
Departamento de Ciência Política

FLS 6523

Survey Design and Analysis

1º semester / 2025

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Surveys and public opinion polls are essential data sources, particularly for research on opinions, behavior, and preferences. Surveys also have special importance for public policy evaluations and improvements. This course will introduce students to advanced survey design and analysis techniques and how analyses are used to test theories emphasizing critical questions related to public health. This is an applied course, and as such, students are expected to actively participate in performing lab exercises every week. The data and replications used in the course will emphasize key themes, debates, and concepts in the literature, contrasting insights from replications of published peer-reviewed empirical work with particular attention to Brazil.

Readings:

Heeringa, Steven G., Brady T. West, and Patricia A. Berglund. *Applied Survey Data Analysis*, Second Edition (2020). CRC Press.

Lohr, Sharon L. (2009). *Sampling: Design and Analysis*. Cengage.

Robinson, Sheila B., and Kimberly Firth Leonard. *Designing Quality Survey Questions* (2018). SAGE Publications.

Programming:

The course requires advanced knowledge of either Stata or R. Course materials will provide sample code in Stata.

Class Structure:

Each week the class will be divided into two sessions: lab and lecture. The first session will be devoted to a lab exercise based on the readings and topics for that week. The second session will consist of a discussion of the lab exercise with an emphasis on covering core material from the readings and integration with the interactive learning activities and discussions from the first class.

Pre-requisites

Students should have a background in statistical inference (for example, FLP 406, FLS 5028, or a similar course) and multivariate regression analysis (for example, FLP0468, FLS 6183, or a similar course). The course will assume students understand the basics of these subjects, as the readings and lab assignments will be based on replication of empirical exercises that assume students have sufficient background.

Course Requirements

Weekly Problem Sets 50%
Final Paper (Initial Presentation, Final Presentation, and Paper) 50%

Topics

1. Introduction to Survey Design and Analysis
2. Simple and Complex Sample Survey Designs.
3. Survey Quality and Bias
4. Introduction to Survey Data Analysis
5. Non-Responses
6. Linear Regression Models with Continuous Dependent Variables
7. Logistic Regression and Generalized Linear Models for Binary Survey Variables
8. Generalized Linear Models for Multinomial, Ordinal, and Count Variables
9. Survival Analysis of Event History Survey Data
10. Analysis of Longitudinal Complex Sample Survey Data
11. Imputation of Missing Data

Readings by Topic

1. Introduction to Survey Design and Analysis

Lohr, Chapter 1. Introduction.

Heeringa *et al.*, Chapter 1. Applied Survey Data Analysis: An Overview.

Andrew Gelman and Antony Unwin. "InfoVis and statistical graphics: Different goals, different looks"

Andrew Gelman and Antony Unwin. "Tradeoffs in information graphics."

Brady, Henry E. "Contributions of survey research to political science." *PS: Political Science & Politics* 33.1 (2000): 47-58.

Robinson and Leonard, Chapter 2. Planning and Predrafting

2. Simple Sample Designs and Complex Sample Survey Data Analysis

Lohr, Chapter 2. Simple Probability Samples

Lohr, Chapter 7. Complex Samples

Heeringa *et al.*, Chapter 2. Getting to Know the Complex Sample Design

Fowler, Chapter 3. Sampling

3. Survey Quality and Bias

Fowler, Chapter 2. Types of Error in Surveys

Fowler, Chapter 6. Designing Questions do Be a Good Measures

Fowler, Chapter 11. Ethical Issues in Survey Research.

Fowler, Chapter 13. Survey Error in Perspective

Robinson and Leonard, Chapter 1. Why Quality Surveys and Questions Matter.

4. Introduction to Survey Data Analysis

Fowler, Chapter 7. Evaluating Survey Questions and Instruments

Fowler, Chapter 9. Preparing Survey Data for Analysis

5. Non-Responses

Lohr, Chapter 8

Fowler, Chapter 4. Nonresponse: Implementing a Sample Design

6. Linear Regression Models with Continuous Dependent Variables

Heeringa *et al.*, Chapters 5, 6 and 7

7. Generalized Linear Models for Binary Survey Variables

Heeringa *et al.*, Chapter 8

8. Initial Presentation

9. Logistic Regression

10. Generalized Linear Models for Multinomial, Ordinal, and Count Variables

Heeringa *et al.*, Chapter 9

11. Imputation of Missing Data

Heeringa *et al.*, Chapter 12

12. Final Presentation