

Political Behavior: An Applied Introduction with R*

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Course Description

This course focuses on some of the most fundamental tasks of political science: describing and explaining political participation, attitudes, and behaviors. Whereas description delves into questions of electoral sociology – who turns out in elections, supports or opposes redistribution or immigration, or votes for populist parties – explanation targets theoretically meaningful questions about causes to advance our understanding of why people hold certain views and vote the way they do.

In this course, we will not only approach these questions by engaging with theoretical perspectives and existing empirical evidence. Instead, we will also grapple with these questions through hands-on applied research. To this end, the course offers an applied introduction to the statistical programming software R in the context of political behavior research. R is a free and open software environment that is widely used for data analysis and data visualization in the social sciences and beyond. Participants will learn central features of the programming language and will receive targeted training in data wrangling, data visualization, and (generalized) linear regression modeling. Through technical exercises and applied research essays, they will apply these skills to address substantive questions from various strands of political behavior research. Prior quantitative methods training at the level of Statistik I + II (or equivalent) is strongly recommended.

Prerequisites

As a *Bachelorseminar*, this class is directed to advanced undergraduate students who have prior knowledge of **quantitative research methods** (e.g., linear regression) and **statistics** (e.g., hypothesis testing). Some familiarity with political behavior research will be helpful but is not required.

Diversity statement

This class brings together students of diverse personal backgrounds and with different levels of prior knowledge of the subject matter. We strive to create an **inclusive and respectful environment** that allows everyone to become part of the conversation and to feel safe in asking questions and voicing problems.

Should you, for any reason, feel like this class does not offer a safe and inclusive learning experience for yourself or others, please feel free to reach out to me (e.g., by emailing me with a request for office hours via Zoom). All concerns will be treated confidentially.

*This version: **October 28, 2024**. Syllabus is subject to change.

Schedule

This course divided into three main blocks – *Basics*, *Generalized Linear Modeling (GLM)*, and *Modeling Heterogeneity* – each of which will be embedded in the context of political behavior research. Each block consists of several weeks in which we will learn and apply new skills in-class and through small technical exercises.

Week	Date	Block	Title	Main Reading(s)	Background
1	2024-10-08	A	Introduction		
2	2024-10-15	A	R: Setup and Basics	Rodrigues (2022), Chs. 1-2	Wickham, Çetinkaya-Rundel, and Grolemund (2023), Chs. 4+6+28
3	2024-10-22	A	Importing and Working with Survey Data	Rodrigues (2022), Chs. 3	American National Election Studies (2021)
4	2024-10-29	A	Data Wrangling with the Tidyverse I	Rodrigues (2022), Ch. 4	Cohen et al. (2020)
5	2024-11-05	A	Data Wrangling with the Tidyverse II		
6	2024-11-12	A	Descriptive Statistics and Data Visualization	Rodrigues (2022), Ch. 5	Pew Research Center (2021)
7	2024-11-19	B	Linear Regression	Rodrigues (2022), Ch. 6, Gelman and Hill (2007), Chs. 3 + 4	
8	2024-11-26	B	GLM for Binary Outcomes I	Gelman and Hill (2007), Ch. 5	
9	2024-12-03	B	GLM for Binary Outcomes II	Arel-Bundock, Greifer, and Heiss (n.d.)	
10	2024-12-10	B	Review Session		
11	2024-12-17	C	Stratification	Gelman and Hill (2007), Chs. 11 + 12	
12	2025-01-07	C	Interaction Effects	Brambor, Clark, and Golder (2006)	
13	2025-01-14	C	Hierarchical Models	Gelman and Hill (2007), Chs. 11 + 12	
14	2025-01-21	C	Essay Review & Wrap-Up		
15	2025-01-28		Exam week – no class.		

Expectations and assessment

Grading (*Prüfungsleistung*)

Your *Prüfungsleistung* is an **applied research essay**. Seeing as this class takes place before and after the 2024 US Presidential Election, both the course and your essays will focus on voting behavior in US Presidential Elections.

Essays must be prepared individually – no collaboration allowed. The essay should be between **3,000** and **4,000** words in length, excluding code, title page, references, and appendices. Further instructions will be provided in class; you can also find a detailed checklist [here](#).

Participation requirements (*Studienleistungen*)

1. **Attendance and active participation:** Active participation is central to this class. You are expected to come to class prepared, which means (a) having read the assigned readings and (b) having prepared any assigned participation requirements for a given session. I encourage you to use the *Discussion Forum* on the Learnweb to post questions of any sort (clarification or discussion) in advance of the weekly sessions.
2. **Technical exercises:** Technical exercises are assigned every two weeks. Each technical exercise corresponds to a section of your final essay – they therefore present you with an opportunity for drafting and receiving feedback on parts of your final essay early on. You are expected to complete these technical exercises, individually or with your group members, and upload your code and output by the respective deadline.

Formal requirements for all written assignments

- Please make sure your submission fully complies with Daniel Bischof's [formatting guide](#) at the Chair of Comparative Politics [DE/EN].
- Since your submissions will heavily feature R Code, we will introduce Quarto documents for your write-ups (examples will be presented in class).

Deadlines

Applied research essay

The submission deadlines for the final essay is **Monday, January 20, 9:00 AM**.

Please keep track of your schedules to ensure submission without delay. **Late submissions** will result in deductions of 1/3 of a grade point per day.

Technical exercises

Technical exercises are assigned every two weeks. You must submit an initial write-up after one week; using the feedback you receive, you will then have a chance to revise and/or extend your write-up and resubmit the week after. The deadline for submissions is always **Monday, 9:00 AM**. You may submit your write-up individually or in small groups.

Submissions

Please upload all written assignments via the respective submission modules on the [Learnweb](#).

Academic integrity

Plagiarism

Students must comply with the [university policy on academic integrity](#). You are expected to be familiar with the policy and must understand the meaning and consequences of cheating, plagiarism, and other forms of academic misconduct.

Responsible use of AI

Artificial intelligence productivity tools, including large language models (LLMs) and generative pre-trained transformers (GPTs), are permeating our daily work routines and will continue to do so in the future. While I encourage you to use these tools frequently and extensively, it is important that you also do so responsibly:

- Adhere to **best practice advice** as, for instance, formulated in this talk by [Olga Kononykhina](#) ([slides](#), [video recording](#))
- **Be transparent:** When using AI productivity tools for generating knowledge, code, or text, you must list the full prompts and answers in a separate appendix. Failure to fully disclose the use of AI for these purposes will be penalized. You do not need to list the use of AI for language editing, grammar corrections, or code debugging.
- Remember: **You own the contents of your submissions, including any mistakes contained therein.** If your submission includes AI-generated contents that contain factually incorrect statements, misattributions of others' work, or plagiarism, these will not be treated as shortcomings of the AI but as your own.

Detailed course plan

October 08, 2024: Introduction

Introductory session. We will get to know each other, discuss the course syllabus, and clarify any questions you may have.

October 15, 2024: R: Setup and Basics

Main reading:

- Bruno Rodrigues (2022). *Modern R with the tidyverse*. Web versio, Chs. 1-2.

Background reading:

- Hadley Wickham, Mine Çetinkaya-Rundel, and Garrett Grolemund (2023). *R for Data Science*. Second Edi. O'Reilly Media, Inc., Chs. 4+6+28.

October 22, 2024: Importing and Working with Survey Data

Main reading:

- Bruno Rodrigues (2022). *Modern R with the tidyverse*. Web versio, Chs. 3.

Background reading:

- American National Election Studies (2021). *ANES 2020 Time Series Study Full Release [dataset and documentation]*. February 10, 2022 version.

October 29, 2024: Data Wrangling with the Tidyverse I

Main reading:

- Bruno Rodrigues (2022). *Modern R with the tidyverse*. Web versio, Ch. 4.

Background reading:

- Denis Cohen et al. (2020). "Efficient Data Management in R". in: *Methods Bites. Blog of the MZES Social Science Data Lab*.

November 05, 2024: Data Wrangling with the Tidyverse II

November 12, 2024: Descriptive Statistics and Data Visualization

Main reading:

- Bruno Rodrigues (2022). *Modern R with the tidyverse*. Web versio, Ch. 5.

Background reading:

- Pew Research Center (2021). "Behind Biden's 2020 Victory".

November 19, 2024: Linear Regression

Main readings:

- Bruno Rodrigues (2022). *Modern R with the tidyverse*. Web versio, Ch. 6.
- Andrew Gelman and Jennifer Hill (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press, Chs. 3 + 4.

November 26, 2024: GLM for Binary Outcomes I

Main reading:

- Andrew Gelman and Jennifer Hill (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press, Ch. 5.

December 03, 2024: GLM for Binary Outcomes II

Main reading:

- Vincent Arel-Bundock, Noah Greifer, and Andrew Heiss (n.d.). “How to Intepret Statistical Models Using marginaeffects for R and Python”. In: *Journal Of Statistical Software* ().

December 10, 2024: Review Session

December 17, 2024: Stratification

Main reading:

- Andrew Gelman and Jennifer Hill (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press, Chs. 11 + 12.

January 07, 2025: Interaction Effects

Main reading:

- Thomas Brambor, William Roberts Clark, and Matt Golder (2006). “Understanding Interaction Models: Improving Empirical Analyses”. In: *Political Analysis* 14, pp. 63–82.

January 14, 2025: Hierarchical Models

Main reading:

- Andrew Gelman and Jennifer Hill (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press, Chs. 11 + 12.

January 21, 2025: Essay Review & Wrap-Up

Essay Review & Wrap-up: We will review what you have learned, collect feedback, and discuss the course evaluations.

January 28, 2025: Exam week – no class.

Exam week – no class.

References

- American National Election Studies (2021). *ANES 2020 Time Series Study Full Release [dataset and documentation]*. February 10, 2022 version.
- Arel-Bundock, Vincent, Noah Greifer, and Andrew Heiss (n.d.). “How to Intepret Statistical Models Using marginaeffects for R and Python”. In: *Journal Of Statistical Software* ().
- Brambor, Thomas, William Roberts Clark, and Matt Golder (2006). “Understanding Interaction Models: Improving Empirical Analyses”. In: *Political Analysis* 14, pp. 63–82.
- Cohen, Denis et al. (2020). “Efficient Data Management in R”. In: *Methods Bites. Blog of the MZES Social Science Data Lab*.
- Gelman, Andrew and Jennifer Hill (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press.
- Pew Research Center (2021). “Behind Biden’s 2020 Victory”.
- Rodrigues, Bruno (2022). *Modern R with the tidyverse*. Web versio.
- Wickham, Hadley, Mine Çetinkaya-Rundel, and Garrett Grolemund (2023). *R for Data Science*. Second Edi. O’Reilly Media, Inc.