

POP77034 Experimental Methods for Social Scientists

Hilary Term 2025

Seminars: Wednesdays 9-11am, PX 201 Leinster Pl.

Instructor: Prof Gizem Arikan

Email: arikang@tcd.ie

Office Hours: Thursdays 11.30am – 1.30pm or by appointment

Tutorials: Thursdays 2-4 pm, Aras an Phiarsaigh AP0.09

Convenor: Dr Trajche Panov

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Module description and learning objectives

This module introduces students to the conceptual foundations and practical considerations around designing and implementing social science experiments. Experiments (also known as randomized controlled trials -RCTs), where the researcher assigns treatment or control status to each unit, are the most powerful tools for making causally valid inferences. This module will begin with a review of the theoretical basics behind causal inference, with a focus on understanding why experiments are so powerful. It will then cover various issues in experimental design and experimental data analysis, including ethical issues, non-compliance, intention to treat, sampling and randomization, and measurement of outcomes. We will also discuss power and effect size as well as the various decisions that must be made when designing an experiment.

We will be looking at different types of experimental designs, including policy interventions and other types of field experiments, experiments using social science data, priming and framing experiments, conjoint designs, lab and lab-in-the-field experiments. The module's focus is on experiments where the researchers actively assign units to treatment and control status, and therefore we will not be covering topics such as natural experiments or quasi-experimental designs. Students who are interested in these topics could start by consulting Thad Dunning's [book](#) on Natural Experiments in Social Sciences.

Office hours and contact with students

I will respond to your e-mails within 48 hours on weekdays during the teaching weeks. If you send an email during the weekend, do not expect to receive an immediate reply.

Please note that I will **not** be able to answer substantive questions concerning course content via e-mail. In case you have such questions, please set up an appointment for office hours or raise them during class meetings.

In case you have questions about course content, readings, or class discussions, you can raise them during office hours. Please bear in mind that I will not cover the lecture material for you during office hours, as office hours are not intended to replace lectures.

If the office hours clash with your other modules or responsibilities, please let me know and we can try to make an appointment for a different day and time.

Module requirements and grading

- 10% Participation
- 20% Experimental design, part 1
- 20% Experimental design, part 2
- 50% Final experimental design

Participation (10%). Active participation in class and tutorial discussions is a key component of this seminar. Students are expected to complete all required readings in advance, acquire a solid understanding of the material, and prepare informed questions or critiques based on the readings. During discussions, students should actively engage by listening to their peers' perspectives, constructively responding to them, and demonstrating a clear comprehension of the weekly readings.

Students will be evaluated on the quality of their input in discussions. Merely attending the seminars or the tutorials or making uninformed comments are not sufficient for achieving a passing participation mark.

Attendance to seminars and tutorials is mandatory, and absence may result in a lowered overall module grade except for the week/s in which the student cannot attend because of sickness or an emergency. In such circumstances, the students should inform me (if possible) before the seminar or the tutorial.

The best learning environment is the one in which all members feel respected while being productively challenged. The course is dedicated to fostering an inclusive atmosphere, in which all participants can contribute, explore, and challenge their own ideas as well as those of others. All interactions in class will be civil, respectful, and supportive of an inclusive learning environment for all students. These rules are reciprocal, i.e, students are also expected to interact with instructors in a civil and respectful manner. Students are encouraged to speak to the instructor about any concerns they may have about classroom participation and classroom dynamics. Every participant has an active responsibility to foster a climate of intellectual stimulation, openness, and respect for diverse perspectives, questions, personal backgrounds, abilities, and experiences.

Experimental design, part 1. Devise and describe the basic setup of a social science experiment you would like to conduct. You should briefly outline your research question and its context/background (both practical and theoretical), explain your manipulation/treatment strategy and discuss the ethical considerations.

Further details are posted on Blackboard and will be discussed in class and tutorials.

Due by 31 January, 6pm via Blackboard

This assignment should be around 400-800 words in length (excluding bibliography/list of references), double-spaced in 12pt font. Late submissions will be penalized up to 5 points per day.

Experimental design, part 2. This assignment should discuss population of interest and the sample, sampling and recruitment procedures, power and sample size calculations, and the measurement of outcomes.

Due by 14 February, 6pm via Blackboard

This assignment should be around 400-800 words in length (excluding bibliography/list of references), double-spaced in 12pt font. Late submissions will be penalized up to 5 points per day.

Final experimental design. This is the full experimental design that will discuss the research question, background, theory and hypotheses, and all elements of the experimental design in detail. Detailed information on the expectations and grading criteria are posted on Blackboard and will be discussed in seminars and tutorials.

Due by 28 February, 6pm via Blackboard

****Please make sure that all assignments are submitted using the [plagiarism cover sheet](#).****

Late work

All late work, unless excused **in advance** by the module lecturer, will be penalized at a rate of 5 marks per day or part thereof, up to a maximum of 20 marks. There are many reasons why a student may not be able to submit an assignment on time and I am happy to make reasonable accommodations where they are appropriate. However, it is **not reasonable** to get in touch after the assignment deadline or just a few hours beforehand to request an extension. Do not leave requests until the last minute!

All requests for extensions must go through your college tutor. In the event of late submission due to illness or an emergency, students will be required to submit a medical certificate.

Under no circumstances will work be accepted after it has been marked and handed back to other students. Under these cases, the student will receive a grade of 0 for the assignment.

Finally, make sure to save and back up your work. Failure to back up your work will not count as acceptable excuses for late submission.

Academic integrity

Academic integrity is the pursuit of scholarly activity free from fraud and deception. Academic dishonesty, including, but not limited to, cheating on an exam or assignment, plagiarizing, representing someone else's work as your own, submitting work previously used without the informing and taking the consent of the instructor, fabricating of information or citations, etc. have severe consequences that can result in receiving no credit for an assignment, a failing grade for the module, and even expulsion from the program.

Remember that careless note-taking can lead to this happening: you must enclose direct quotations in quotation marks, and even when paraphrasing, ensure that a reference is provided. Careless note-taking or rushing to get an assignment submitted is no excuse for committing plagiarism and where it is detected, it will be responded to with appropriate severity.

Make sure that any material that has not been produced by the student (e.g. ideas, arguments, research findings etc.) are clearly indicated through proper referencing. Plagiarism comes in many forms but it is mainly seen as stealing someone else's words or ideas and passing them off as your own. **This extends to ideas, statements, arguments or outlines generated by artificial intelligence** since the text or materials produced by AI are not created by the student. It is the responsibility of students to stay up-to-date about College policies around plagiarism.

Plagiarism is often not intentional –it happens because students are not fully aware of what counts as academic dishonesty. I strongly recommend that you familiarize yourselves with academic integrity and good research and writing practices to avoid plagiarism:

- Consult the TCD Library guide at: <https://libguides.tcd.ie/academic-integrity/>
- Ready, Steady, Write Avoiding Plagiarism tutorial: <https://libguides.tcd.ie/academic-integrity/ready-steady-write>
- Please read pp. 45-47 of the [College Calendar](#) for University's plagiarism policy.

Remember that academic integrity is a reflection of one's character. In addition, I strongly recommend that you visit <http://www.plagiarism.org/> for more information on what is and is not plagiarism. Lastly, students are required to only submit "new work" in each module, which means work that has not been submitted previously in any other university module.

Disability policy

Students with a disability are encouraged to register with the [Disability Service](#) to seek supports where the disability could affect their ability to participate fully in all aspects of the course.

Mental health

If you have any concerns or are experiencing personal and interpersonal difficulties, you can contact the Student Counselling Services and get some support and resources to help you: https://www.tcd.ie/Student_Counselling/

Resources and texts

Key resources and texts that we will be reading in the module are:

Druckman, James. 2022. *Experimental Thinking*. Cambridge University Press. [Link](#).

Druckman, James, Donald P. Green, James H. Kuklinski, and Arthur Lupia. 2011. Cambridge University Press. [Link](#).

Druckman, James N., and Donald P. Green, eds. 2021. *Advances in Experimental Political Science*. Cambridge University Press, 2021.

Other recommended sources:

Huntington-Klein, Nick. *The Effect: An Introduction to Research Design and Causality*. <https://theeffectbook.net/>

Cunningham, Scott. 2021. *Causal inference: The Mixtape*. Yale University Press. <https://mixtape.scunning.com/>

Morton, Rebecca B., and Kenneth C. Williams. 2010. *Experimental Political Science and The Study of Causality: From Nature to the Lab*. Cambridge University Press.

Gelman, Andrew, Jennifer Hill, and Aki Vehtari. 2020. *Regression and Other stories*. Cambridge University Press. <https://users.aalto.fi/~ave/ROS.pdf>

Seminar and Reading Schedule

Week 1: Experiments and causal inference. Use of experiments in industry. Ethical issues.

Ionica Smeets. 2012. “The danger of mixing up causality and correlation.” [5:56] [Link](#)

Masten, Matt. 2015. “Counterfactuals.” [4:52] [Link](#)

Druckman, Jamie. *Experimental Thinking*. Cambridge University Press, 2022. Chapter 2 (especially 37-51)

Allcott, H. et al. 2024. The Effects of Facebook and Instagram on the 2020 Election: A Deactivation Experiment. *Proceedings of the National Academy of Sciences*, 121(21): p.e2321584121. [Link](#)

Meyer, Michelle M. 2014. Everything You Need to Know About Facebook's Controversial Emotion Experiment. *Wired*. [Link](#)

Arthur, Charles. 2014. Facebook Emotion Study Breached Ethical Guidelines, Researchers Say. *The Guardian*. [Link](#)

- *Optional:* Kramer, Adam DI, Jamie E. Guillory, and Jeffrey T. Hancock. 2014. Experimental Evidence of Massive-Scale Emotional Contagion through Social Networks. *Proceedings of the National Academy of Sciences of the United States of America* 111(24): 8788.

Kupferschmidt, Kai. 2024. A study found Facebook’s algorithm didn’t promote political polarization. Critics have doubts. *Science Insider*. [Link](#)

- *Optional:* Guess, Andrew M. et al. 2023. How do Social Media Feed Algorithms Affect Attitudes and Behavior in an Election Campaign?. *Science* 381(6656): 398-404.
- *Optional:* Bagchi, Chhandak, et al., 2024. Social Media Algorithms Can Curb Misinformation, but do They? [Link](#)

Week 2. Internal and external validity in experiments. Policy interventions and intention to treat analysis.

Druckman, Jamie. [Experimental Thinking](#). Cambridge University Press, 2022. Chapter 2.

McDermott, Rose. 2013. Internal and External Validity. In Druckman et al. *Cambridge Handbook of Experimental Political Science*, pp. 27-40.

Dolan, Lindsay. 10 Things to Know About Randomization. EGAP Resources. [Link](#)

Lynch, Elizabeth. Intention to Treat [11:17]. [Link](#)

Department of Tourism. 2023. Early Research Findings of Basic Income for the Arts Pilot Scheme Show Positive Impact on Recipients. [Link](#)

- You can read the 2024 impact assessment report in [this link](#) (see pp. 4-6)

Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. 2016. The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. *American Economic Review* 106, no. 4 (2016): 855-902. [Link](#)

Week 3. Field experiments with behavioral and self-reported outcomes. Power and power analysis.

Coppock, Alexander. “10 Things to Know About Statistical Power.” EGAP Resources. [Link](#)

Statistical power, clearly explained [8:19] [Link](#)

Power analysis, clearly explained [16:44] [Link](#)

Scacco, A., & Warren, S. S. (2018). Can Social Contact Reduce Prejudice and Discrimination? Evidence from a Field experiment in Nigeria. *American Political Science Review*: 112(3), 654-677.

Mousa, Salma. 2020. Building Social Cohesion between Christians and Muslims through Soccer in Post-ISIS Iraq. *Science* 369: 866-870. [Link](#)

- Optional: Watch the lecture and Q&A by Mousa concerning the experiment: [Link](#)

Sands, Melissa L. 2017. Exposure to Inequality Affects Support for Redistribution. *Proceedings of the National Academy of Sciences* 114, no. 4 (2017): 663-668. [Link](#)

Fearon, James D., Macartan Humphreys, and Jeremy M. Weinstein. 2009. Can Development Aid Contribute to Social Cohesion after Civil War? Evidence from a Field Experiment in Post-conflict Liberia. *American Economic Review* 99(2): 287-291

Week 4. Lab and survey experiments. Conjoint designs. Samples, recruitment, and attention checks.

Iyengar Shanto. 2013. Laboratory Experiments in Political Science. In: James N. Druckman and Donald P. Greene (eds.) *Cambridge Handbook of Experimental Political Science*, pp. 73-88.

Wilke, Anna. 10 Things to Know About Sampling. EGAP Resources. [Link](#)

Krupnikov, Yanna, H. Hannah Nam, and Hillary Style. 2021. Convenience Samples in Political Science Experiments. In James N. Druckman and Donald P. Green (eds.), pp. 165-183.

McClendon, Gwyneth, and Rachel Beatty Riedl. 2015. Religion as a Stimulant of Political Participation: Experimental Evidence from Nairobi, Kenya. *The Journal of Politics* 77(4): 1045-1057.

Valentino, Nicholas A., Stuart N. Soroka, Shanto Iyengar, Toril Aalberg, Raymond Duch, Marta Fraile, Kyu S. Hahn et al. 2019. Economic and Cultural Drivers of Immigrant Support Worldwide. *British Journal of Political Science* 49(4): 1201-1226.

Dasandi, Niheer, Hilary Graham, David Hudson, et al. 2022. Positive, Global, and Health or Environment Framing Bolsters Public Support for Climate Policies. *Communications: Earth & Environment* 3: 239. [Link](#)

Week 5. Issues in survey experiments. Replication crisis and open science practices.

Berinsky, Adam J., Michele F. Margolis, and Michael W. Sances. 2014. Separating the Shirkers from the Workers? Making Sure Respondents Pay Attention on Self-administered Surveys. *American Journal of Political Science* 58(3): 739-753.

Kane, John. 2023. More than Meets the ITT: A Guide for Investigating Null Results. Working Paper. [Link](#)

Resnick, Brian. 2018. More social science studies just failed to replicate. Here's why this is good. *Vox*. [Link](#)

- Also see: <https://newsroom.haas.berkeley.edu/research/amid-a-replication-crisis-in-social-science-research-six-year-study-validates-open-science-methods/>
- Nosek, Brian and Stephen Lindsay. 2018. Preregistration Becoming the Norm in Psychological Science. [Link](#)

Druckman, Jamie. *Experimental Thinking*. Cambridge University Press, 2022. Chapter 6.