Causal Inference for the Social Sciences

Reading list

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1 Week 1

1.1 Why causal inference?

Keywords: *theoretical estimand, empirical estimand, estimator, estimate, assumptions*

Greenland, Sander. 2022. "The Causal Foundations of Applied Probability and Statistics." Pp. 605–24 in Probabilistic and Causal Inference: The Works of Judea Pearl. Vol. 36. New York, NY, USA: Association for Computing Machinery.

Hernán, Miguel A., John Hsu, and Brian Healy. 2019. "A Second Chance to Get Causal Inference Right: A Classification of Data Science Tasks." CHANCE 32(1):42–49. doi: 10.1080/09332480.2019.1579578.

Holland, Paul W. 1986. "Statistics and Causal Inference." Journal of the American Statistical Association 81(396):945–60. doi: 10.2307/2289064.

Imbens, Guido W. 2022. "Causality in Econometrics: Choice vs Chance." Econometrica 90(6):2541–66. doi: 10.3982/ECTA21204.

Lundberg, Ian, Rebecca Johnson, and Brandon M. Stewart. 2021. "What Is Your Estimand? Defining the Target Quantity Connects Statistical Evidence to Theory." American Sociological Review 86(3):532–65. doi: 10.1177/00031224211004187.

Mitra, Nandita, Jason Roy, and Dylan Small. 2022. "The Future of Causal Inference." American Journal of Epidemiology 191(10):1671–76. doi: 10.1093/aje/kwac108.

Ogburn, Elizabeth L., and Ilya Shpitser. 2021. "Causal Modelling: The Two Cultures." Observational Studies 7(1):179–83.

Pearl, Judea, and Dana Mackenzie. 2019. The Book of Why: The New Science of Cause and Effect. 1st edition. London: Penguin.

1.2 Potential outcomes to hypothesize, Experiments to learn

Keywords: potential outcomes, switching equation, treatment effect, SUTVA, consistency, exchangeability, ignorability, independence, identification, randomization, balance, clusters, blocks

Deaton, Angus, and Nancy Cartwright. 2018. "Understanding and Misunderstanding Randomized Controlled Trials." Social Science & Medicine 210:2–21. doi: 10.1016/j.socscimed.2017.12.005.

Druckman, James N. 2022. Experimental Thinking: A Primer on Social Science Experiments. Cambridge: Cambridge University Press.

Gerber, Alan S., and Donald P. Green. 2012. Field Experiments – Design, Analysis, and Interpretation. Illustrated edition. New York London: W. W. Norton & Company.

Glennerster, Rachel, and Kudzai Takavarasha. 2013. Running Randomized Evaluations: A Practical Guide. Illustrated edition. Princeton, NJ: Princeton University Press.

Kohavi, Ron. 2020. Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing. 1st edition. Cambridge: Cambridge University Press.

Rubin, Donald B. 2008. "For Objective Causal Inference, Design Trumps Analysis." The Annals of Applied Statistics 2(3):808–40. doi: 10.1214/08-AOAS187.

Senn, Stephen. 2013. "Seven Myths of Randomisation in Clinical Trials." Statistics in Medicine 32(9):1439–50. doi: 10.1002/sim.5713.

Veltri, Giuseppe. 2023. Designing Online Experiments for the Social Sciences. 1st edition. Los Angeles London New Delhi Singapore Washington DC Melbourne: SAGE Publications Ltd.