University of Milano-Bicocca

Department of Statistics and Quantitative Methods

Causal effects conditional on post-treatment variables

Seminars in Causal Inference

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Many studies aim to estimate treatment effects on outcomes that are defined only for individuals who experience a post-treatment event. For example, the effect of cancer therapies on quality of life is only well defined among individuals who are alive. Similarly, the effect of vaccines on post-infection outcomes is only of interest among individuals who become infected. A naive comparison of outcomes conditional on such post-treatment events generally lacks a causal interpretation, even when treatment is randomly assigned. In this talk, I discuss causal contrasts for outcomes conditional on post-treatment events, including principal stratum effects and conditional separable effects. I then derive identification results for these estimands and discuss their interpretation and the conditions under which they might, in principle, be falsified. I illustrate the relevance of these results for clinical trials of cancer therapies and vaccines, and I conclude by revisiting the classical birth weight paradox in epidemiology.

Dr. Stensrud develops causal and statistical methodology with two main goals: make the target of inference scientifically meaningful, and keep assumptions transparent and testable. He is particularly interested in settings where exposures and outcomes evolve over time (longitudinal and time-to-event data). His works are usually inspired by applications in clinical medicine and epidemiology.

When: Tuesday, November 17, 2026 | 14:00-15:00

Where: University of Milano-Bicocca,
Aula Del Consiglio, U7 – 4th floor, Room 4057

Zoom: https://ki-se.zoom.us/j/65583355802

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