

Sommersemester 2022

MW86 Seminar

The Replication Crisis in the Social Sciences

The seminar is about the replication crisis in the social sciences that has been noticed since the beginning of the 2010s: Even well-published experimental studies can often not be replicated and may even turn out to be the result of falsification. Nevertheless, some of these studies continue to be cited, even disproportionately often. To explain these findings, we first look at the empirical evidence. We discuss extensive replication studies, especially in economics. We then analyze the causes, and finally we review measures to remedy the situation. Intriguingly, it turns out to be easy to predict whether a paper will replicate. Simple black box models, a panel of experts and even laypeople are rather successful at this. We will discuss authors who argue that the high rate of failed replications is consistent with regular and non-fraudulent science.

- Topics: The seminar and presentation topics are assigned in a meeting at the beginning of the semester.
- Target group: Advanced students of the degree programmes M.Sc. VWL or M.Sc. BWL
- Prerequisites: Advanced knowledge of statistics is a prerequisite, MW76 is helpful.
- Examination:
 1. Presentation (20-25 minutes, plus 5-10 minutes discussion)
 2. Seminar paper (10-15 pages including references and appendices)
- Note: Two of these seminars together meet the requirements of module MW86.

Seminar and presentation topics

0. General background reading, written for a general audience:
 - Colquhoun, David (2016). The problem with p-values, Aeon Magazine
 - Resnick, Brian (2018). More social science studies just failed to replicate. Vox
 - Lehrer, Jonah (2010). The Truth Wears Off. The New Yorker
1. Statistically significant bogus
 - Bem, D. J. (2011). Feeling the future: experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of personality and social psychology*, 100(3), 407.
2. Replicability of economics laboratory experiments
 - Camerer, C. F., et al. (2016). Evaluating replicability of laboratory experiments in economics. *Science*, 351(6280), 1433-1436.
3. Replicability of social science experiments in Nature and Science
 - Camerer, C. F., et al. (2018) Evaluating the replicability of social science experiments in Nature and Science between 2010 and 2015. *Nature Human Behaviour*, 2(9), 637-644.
4. Nonreplicable publications are cited more often
 - Serra-Garcia, M., und Gneezy, U. (2021). Nonreplicable publications are cited more than replicable ones. *Science advances*, 7(21), eabd1705.
5. Nonreplicability is predictable
 - Altmejd, A., Dreber, A., et al. Camerer, C. (2019). Predicting the replicability of social science lab experiments. *PloS one*, 14(12), e0225826.
6. Remedy I: Appropriate interpretation of p values
 - Colquhoun, David (2015). An investigation of the false discovery rate and the misinterpretation of p-values. *Royal Society Open Science*. 1 (3): 140216.
 - Colquhoun, David (2017). The reproducibility of research and the misinterpretation of p-values. *Royal Society Open Science*. 4 (12): 171085
7. Remedy II: Larger samples and smaller p values
 - Benjamin, D.J., Berger, J.O., Johannesson, M. et al. (2018) Redefine statistical significance. *Nat Hum Behav* 2, 6–10.