Social Media Field Experiments

≻ Summer School in Data Science, Hertie School

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Content: The proliferation of social media use has provided new avenues for Political Science research, both in relation to the quantitative description of social media data and when it comes to identifying the effects of social media interactions or experiences on political outcomes. Moreover, as due to the COVID-19 pandemic much of social life moved online, so did political life, providing new opportunities for field experimentalists. This module is concerned with how social media can be used as a platform to conduct online field experiments. Social media field experiments hold a lot of promise, but equally pose numerous methodological challenges that are also common in other contexts, but are aggrevated on social media: social media is all about interaction, hence how can the non-interference asumption plausibly hold? Moreover, many platforms only allow researchers to target users via geographical or demographic clusters, with important implications for statistical power. How can we deal with these common complications? This module sets out how different research teams have dealt with these questions.

Objectives: The goal of this short workshop is to provide participants with some of the methodological knowledge and the practical skills to design and analyse social media field experiments. The workshop consists of theoretical input in the form of three short lectures (45 minutes each) and 2 lab sessions (1 hour each). Participants will learn how to conduct complete and cluster random assignment in R using the randomizr package (Coppock, Cooper and Fultz, 2019), and will learn how to analyse data generated from social media field experiments following the "analyse as you randomize" dictum.

Prerequisite: The pre-requisites are familiarity with the potential outcomes framework as taught in most grad courses in causal inference (Neyman-Rubin causal model) as well as a good working knowledge of linear regression and hypothesis testing.

Course Pages: Data, code and readings will be distributed via dropbox.

Textbook: Gerber, Alan and Donald P. Green *Field Experiments: Design, Analysis, and Interpretation*, W.W. Norton, 2012.

Software: R Studio will be used throughout this module.

Workshop Outline

1. Social media experiments - promises and challenges (45 minutes lecture)

2. Individual-level assignment (45 minutes lecture and 1 hour lab)

3. Cluster-level assignment (45 minutes lecture and 1 hour lab)

Introduction

Reading

Guess, Andrew M. "Experiments Using Social Media Data." Advances in Experimental Political Science, 2021: 184.-198.

Muise, Daniel, and Jennifer Pan. "Online field experiments." Asian Journal of Communication 29.3, 2019: 217-234.

Munger, Kevin. "The limited value of non-replicable field experiments in contexts with low temporal validity." Social Media+ Society 5.3, 2019.

Content

- What are social media field experiments?
- Platforms
- Outcome measurement
- Ethical considerations
- Limits to generalizability

Individual level assignment

Method

Gerber and Green: Chapters 2 and 7

Application

Coppock, Alexander, Andrew Guess, and John Ternovski. "When treatments are tweets: A network mobilization experiment over Twitter." Political Behavior 38.1, 2016: 105-128.

Guess, Andrew M., et al. "The consequences of online partisan media." Proceedings of the National Academy of Sciences 118.14, 2021.

Foos, Florian, et al. "Does social media promote civic activism? A field experiment with a civic campaign." Political Science Research and Methods, 2015: 1-19.

Munger, Kevin. "Tweetment effects on the tweeted: Experimentally reducing racist harassment." Political Behavior 39.3, 2017: 629-649.

Siegel, Alexandra A., and Vivienne Badaan. "No2Sectarianism: Experimental approaches to reducing sectarian hate speech online." American Political Science Review 114.3 (2020): 837-855.

Content

- Twitter as a platform for individual-level experimentation

- Avoiding spillovers

- Outcome measurement on and off social media

- Complete random assignment

- Sampling variability

- Power calculations

Cluster level assignment

Method

Abadie, Alberto, et al. When should you adjust standard errors for clustering?. No. w24003. National Bureau of Economic Research, 2017.

Gerber and Green: Chapter 3

Blair, Graeme et al. Sometimes you need to cluster standard errors above the level of treatment. Declare Design Blog, https://declaredesign.org/blog/sometimes-you-need-to-cluster-standard-errors-above-the-level-o html

Application

Arias, Eric, et al. "Information provision, voter coordination, and electoral accountability: Evidence from Mexican social networks." American Political Science Review 113.2, 2019: 475-498.

Broockman, David E., and Donald P. Green. "Do online advertisements increase political candidates' name recognition or favorability? Evidence from randomized field experiments." Political Behavior 36.2, 2014: 263-289.

Foos, Florian, Peter John and Asli Unan. 2021. Progressive campaigns, social media ads and young voters: Null effects from the 2019 UK General Election. Working paper.

Foos, Florian and Alexander Wuttke. 2021. Democratic Persuasion: Strengthening Citizen Commitment to Democracy. Working paper.

Hager, Anselm. "Do online ads influence vote choice?." Political Communication 36.3, 2019: 376-393.

Content

- Facebook as a platform for cluster-randomly assigned experiments

- Clustering at the level of assignment

- The penalty to clustering

- Clustering at higher levels than the level of assignment

- What if levels of assignment and outcome measurement do not overlap

- Analyse as you randomize

- Power calculations