Social Media-Based Field Experiments

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Module outline

1. What are social media-based field experiments?
2. Social media-based experiments using individual-level assignment
3. Social media-based experiments using cluster-random assignment

Introduction

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

Field experiments

- Field experiments are *randomized* trials that are conducted in real-world settings.
- Motivation: Ensure a more realistic and unobtrusive intervention.
- What we consider to be "real-world" depends on the authenticity of:
  1. The interventions (treatments)
  2. The participants
  3. The contexts
  4. The outcome measures

Online field experiments

"experiments that leverage platforms or systems that already exist on the Internet to study the motivations and behaviours of individuals, organizations, and even governments."

"tend to capitalize on the web's cababilities and the unique experience of cyberspace as an environment"

Muise and Pan (2018)

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Social media-based field experiments

- Social media data can be used in three ways for experimentation, according to Guess (2020):
  1. Recruitment of subjects (also common in survey experiments)
  2. **Delivery of treatments**
  3. Collection of outcomes (could also be done in a survey environment or offline)

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  4. Political talk has moved to social media.
- Most of these trends are not new, but have been accentuated during the pandemic.

Range of social media-based field experiments

- Effects of social media ads and messages (e.g. GOTV, voter registration)
- Induce political expression/ talk / deliberation
- Sharing of political information/reduction of exposure to disinformation
- Induce social interactions
- Social contact and reduction of prejudice / online harassment
- Incentivize online media consumption
- Effects of social comparison

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- An increasing number of important political interactions happen on social media.
- Social-media type of interventions can be less costly in terms of time-commitment.

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- Financial costs can be prohibitive.

Social media platforms ranked from most to least permissive to experimentation

1. Twitter
2. (Zoom)
3. Snapchat
4. Facebook / Instagram
5. TikTok / Google

Outcome measurement

- If possible, intermediate outcomes (clicks, likes, shares etc) should be measured on platform.
- But as political scientists we are often interested in outcomes beyond "likes and shares".
- "Hard outcomes" can be measured from public registers or via online panel surveys (e.g. Broockman, Kalla and Sekhon 2017, Foos et al. 2020).
- Linking offline and online data is a major challenge.

Generalizability

- Users of social media platforms are not representative of all registered voters (Mellon and Prosser 2016), but some platforms are more representative than others. The key question is "what is the target population?".
- Social media platforms change quickly, with implications for the replicability of social media field experiments (Munger 2019).

Temporal Validity

- "Temporal validity" (Munger 2019) is a real problem: Platforms usually don't have versions and it is difficult to keep track of the all features (and impossible to keep track of changes to proprietary algorithms) that change over time.

  $\rightarrow$ This means that some social media-based interventions are likely to have a shorter shelf-life than other interventions.

APSA Principles and Guidance for Human Subjects Research

1. Individual researcher responsibility
2. Deviations need justification
3. Autonomy
4. Power
5. Consent
6. Deception
7. Harm and trauma
8. Confidentiality
9. Impact
10. Laws and regulations

Impact

"Political science researchers conducting studies on political processes should consider the broader social impacts of the research process as well as the impact on the experience of individuals directly engaged by the research. In general, political science researchers should not compromise the integrity of political processes for research purposes without the consent of individuals that are directly engaged by the research process."

APSA Principles and Guidance for Human Subjects Research

Why do field experimentalists often forego informed consent

- Avoiding the Hawthorne Effect $\rightarrow$ avoid bias in the estimator
- Realism of the intervention, construct validity

The Hawthorne effect

- The effect of the research on the outcome itself. Research subjects adjust their behaviour in response to being studied. This may lead to the inference that an intervention has worked when it has not.

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- Are there costs to informed consent/not deceiving subjects?

Hypothetical case 1

- Researchers partner with a social media platform to test if displaying a larger or smaller share of positive / negative peer messages on their timeline affects users' expressions of their emotions.
- To measure outcomes, they conduct sentiment analysis on users' posts.

Hypothetical case 2

- Researchers assign young people in some postcode sectors to receive voter registration social media ads and young people in other postcode sectors to control (no voter registration messages).
- They count voter registrations in treatment and control sectors from the public register.

Time for questions.