



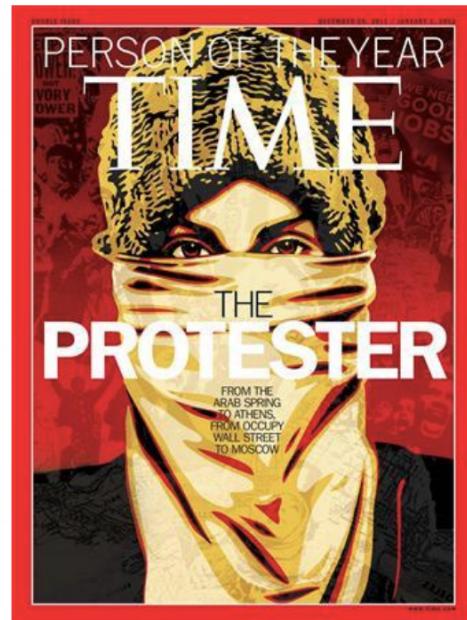
The effects of WhatsApp on exposure to misinformation and political attitudes: Evidence from a multimedia-constrained deactivation experiment

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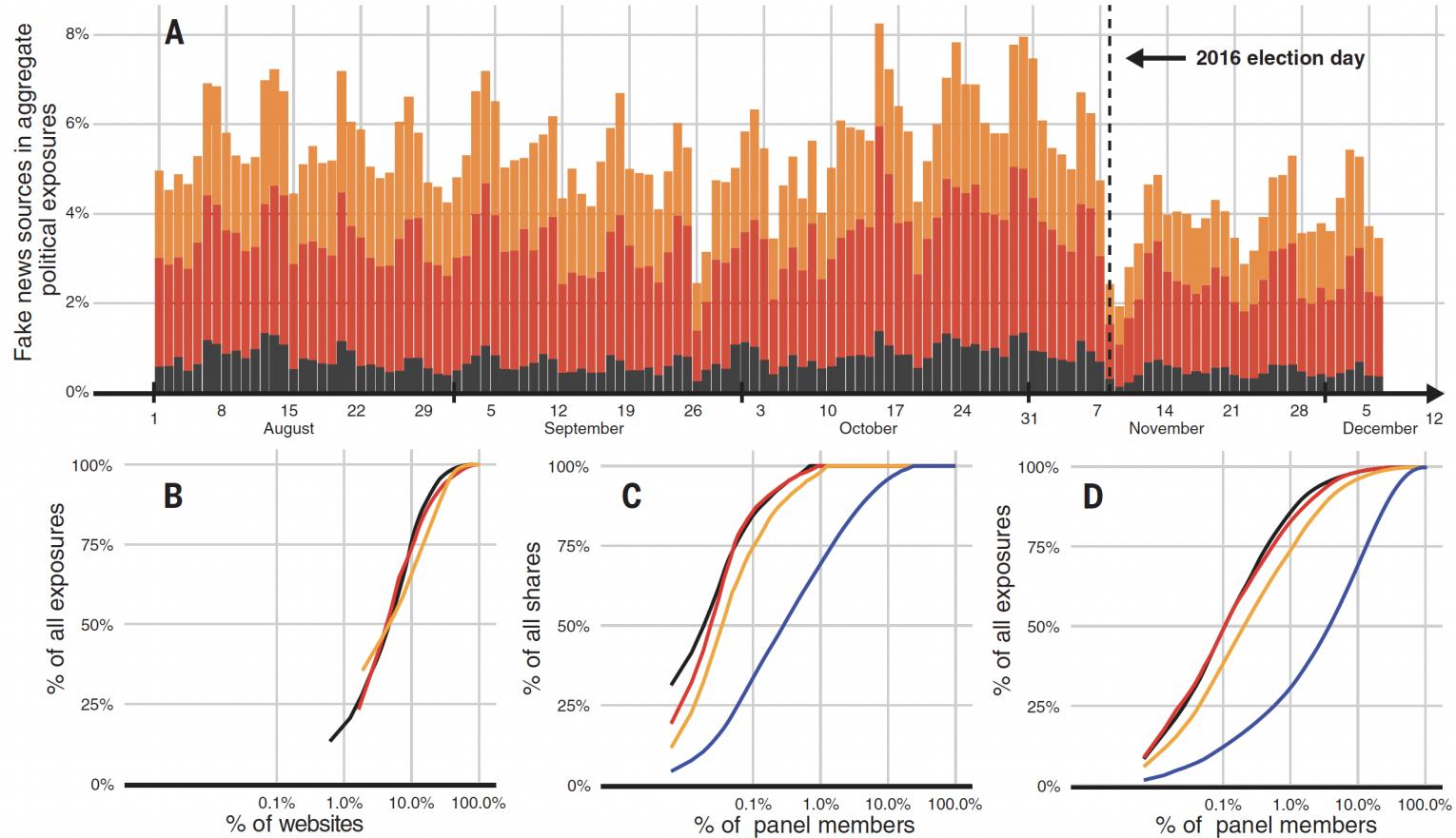
From Liberation to Turmoil: The Misinformation Turn



From Liberation to Turmoil, Tucker et. al., 2019

Three insights from the recent literature on social media and misinformation.

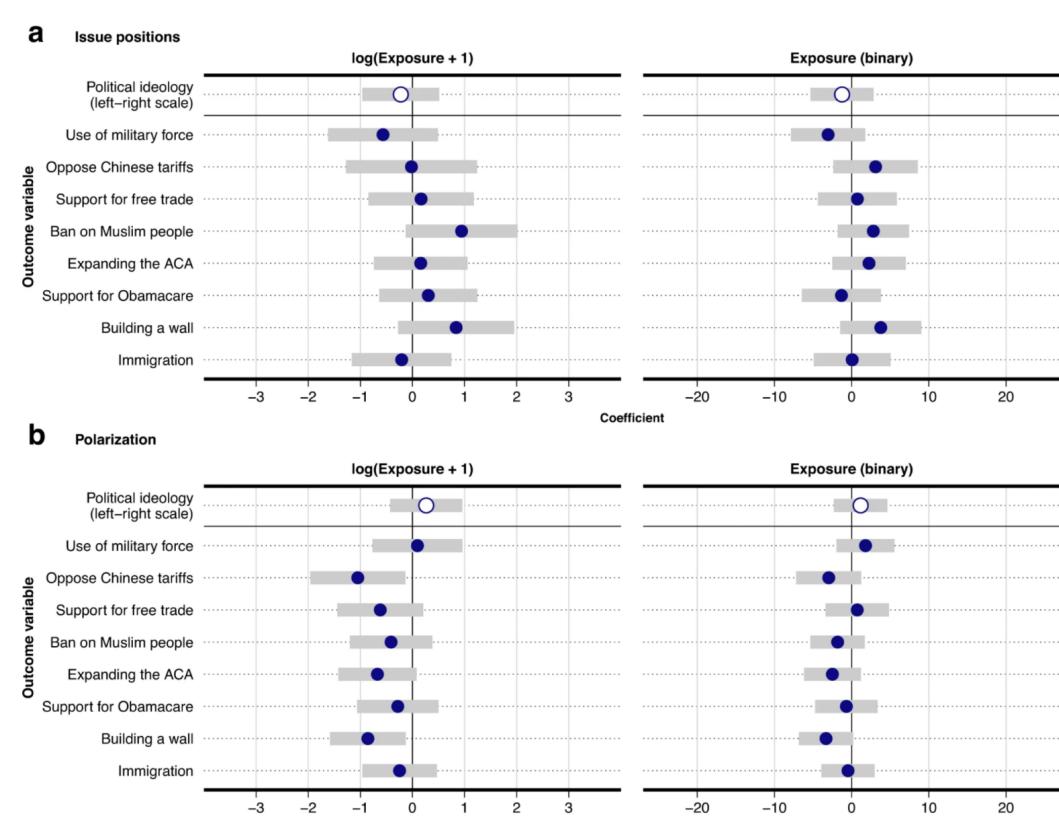
1) People **aren't** actually exposed to a lot of **misinformation** – but exposure is heavily concentrated.



Grinberg et al., 2019

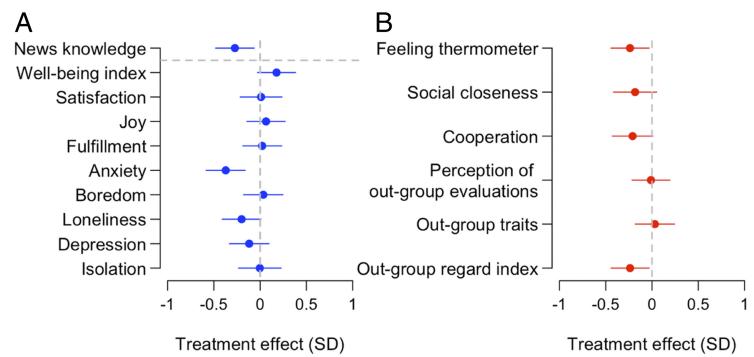
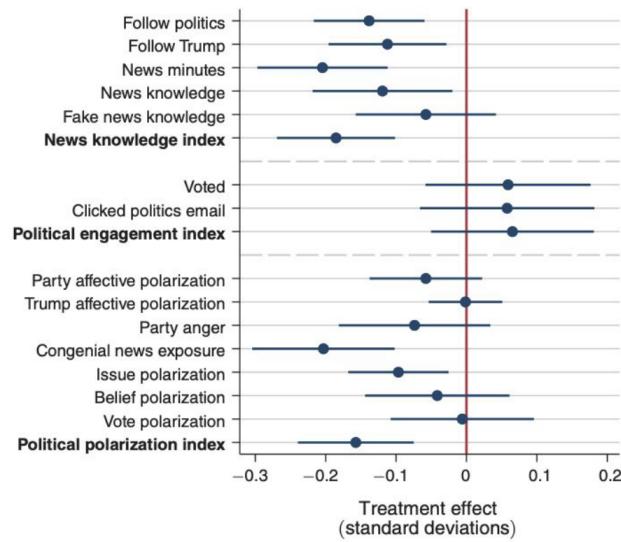
2) The downstream effects of exposure to misinformation on political attitudes are difficult to measure, often small in size, and context dependent.

Exposure to IRA Russian Misinformation on Twitter doesn't lead to changes in attitudes



Eady et al., 2023

Causal effects of social media are context-dependent



Facebook Deactivation in Bosnia and Herzegovina **Asimovic et. al, 2022**

Facebook Deactivation in the US **Alcott et al., 2020**

3) Most of the scholarly evidence come from a **advanced democracies** and from a **few platforms** (mostly Twitter, and to some extent Facebook)

Disinformation Spreads on WhatsApp Ahead of Brazilian Election

 Give this article  



Fake News Is Poisoning Brazilian Politics. WhatsApp Can Stop It.

Oct. 17, 2018



Today's Presentation

Research Problem: What are the causal effect of WhatsApp usage on beliefs for misinformation and its downstream effects, particularly political polarization?

Design: Multimedia-Constrained Deactivation Experiment on WhatsApp:

- Incentivized participants to spent three weeks without accessing any multimedia (images, videos and audio) on WhatsApp.

Context: Weeks before the 2022 Presidential Election in Brazil

Results:

- Substantive reduction in **exposure to popular misinformation rumors**.
- Unable to detect small to moderate effects on **attitudes (belief accuracy and polarization)**

Deactivation Studies on Facebook

American Economic Review 2020, 110(3): 629-676
<https://doi.org/10.1257/aer.20190658>

The Welfare Effects of Social Media[†]

By HUNT ALLCOTT, LUCA BRAGHIERI, SARAH EICHMEYER,
AND MATTHEW GENTZKOW*

The rise of social media has provoked both optimism about potential societal benefits and concern about harms such as addiction, depression, and political polarization. In a randomized experiment, we find that deactivating Facebook for the four weeks before the 2018 US midterm election (i) reduced online activity, while increasing offline activities such as watching TV alone and socializing with family and friends; (ii) reduced both factual news knowledge and political polarization; (iii) increased subjective well-being; and (iv) caused a large persistent reduction in post-experiment Facebook use. Deactivation reduced post-experiment valuations of Facebook, suggesting that traditional metrics may overstate consumer surplus. (JEL D12, D72, D90, I31, L82, L86, Z13)

Social media have had profound impacts on the modern world. Facebook, which remains by far the largest social media company, has 2.3 billion monthly active users worldwide (Facebook 2018). As of 2016, the average user was spending 50 minutes per day on Facebook and its sister platforms Instagram and Messenger (Facebook 2016). There may be no technology since television that has so dramatically reshaped the way people get information and spend their time.

Speculation about social media's welfare impact has followed a familiar trajectory, with early optimism about potential benefits giving way to widespread concern about possible harms. At a basic level, social media dramatically reduce the cost of connecting, communicating, and sharing information with others. Given that interpersonal connections are among the most important drivers of happiness and



Testing the effects of Facebook usage in an ethnically polarized setting

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Edited by Christopher Andrew Bail, Duke University, Durham, NC, and accepted by Editorial Board Member Mark Granovetter May 10, 2021 (received for review November 3, 2020)

Despite the belief that social media is altering intergroup dynamics—bringing people closer or further alienating them from one another—the impact of social media on interethnic attitudes has yet to be rigorously evaluated, especially among ethnic minorities in democratic settings. We report results from a randomized controlled trial in Bosnia and Herzegovina (BiH), exploring the effects of exposure to social media during 1 wk around genocidal remembrance in July 2019 on a set of interethnic attitudes. Facebook users were randomly assigned to either stick to their preexisting expectations, people who deactivated their Facebook profiles report lower regard for ethnic outgroups than those who remained active. Moreover, we present additional evidence suggesting that this effect is likely conditional on the level of intergroup tolerance of respondents. Finally, we extend the analysis to include measures of subjective well-being and knowledge of news. Here, we find that Facebook deactivation leads to suggestive improvements in subjective well-being and a decrease in knowledge of current events, replicating results from recent research in the United States in a very different context, thus increasing our confidence in the generalizability of these effects.

spaces can help or hinder the goal of transforming relations from antagonistic to constructive, social media should be considered and studied as one of the forces influencing the direction of cross-state polarization.

Importantly, both ethnicity and partisanship are potential markers of one's identity. Given that partisanship is acquired by choice, however, it is a more informative measure of one's worldview than group membership based on more immutable characteristics such as ethnicity or race (10). As such, some propose that people may assign larger amounts of responsibility to others for their partisanship than for their inborn group affiliations (11). The differences between partisan and other social identities have recently been discussed as a potential explanation of why partisan cognition, which tends to be associated with prejudice reduction (12–14), may be less effective at mitigating outgroup hostility in the context of partisanship (15). This, however, remains an open question requiring studies that go beyond partisan affiliation, in particular addressing attitudes toward ethnic outgroups and especially in an online context.

POLITICAL SCIENCE

Facebook Deactivation in the US **Alcott et al., 2020**

Facebook Deactivation in Bosnia and Herzegovina **Asimovic et. al, 2022**

④ **Our Design:** Cut the primary channels through which users are exposed to misinformation and polarizing content: videos, images and audios (Machado et al., 2019; Resende et al., 2019; Garimella and Tyson, 2018; Garimella and Eckles, 2020; Batista Pereira et al., 2023).

④ **Experiment:** Offer respondents a monetary incentive to

- Disable their automatic download of media on WhatsApp.
- Do not purposefully click and watch any media on WhatsApp.

④ **Treatment Period:** Three weeks:

- **Start:** Three weeks before general election in Brazil.
- **End:** three days after the voting day.

Overview of the Experiment

Recruitment

Method: Facebook Ads targeting adults Brazil

Started Recruitment: September 8th

Number of respondents: 1,947

Screening variables:

- Willingness to join: 1,8861 participants
- More 5min WhatsApp daily
- Only WhatsApp mobile
- More than 2 min to complete recruitment + other quality controls

Treatment Assignment

Start: September 15.

Treatment:

- Turn off the automatic download.
- Three **weeks** without consuming any multimedia.

Control: Three **days** without consuming any multimedia.

Invited: 1,135 respondents

Completed: 773 respondents



Compliance Checks

Compliance Tasks:

- Screenshots of WhatsApp storage information
- Every week + final survey
- After the first compliance check, the control group was activated



A screenshot of a mobile phone displaying WhatsApp network usage statistics. The screen shows the following data:

MESSAGES	
Sent	2,522
Received	8,797
CHAT MEDIA	
Bytes Sent	12.5 MB
Bytes Received	15.6 MB
STATUS MEDIA	
Bytes Sent	56 MB
Bytes Received	273.6 MB
Zero KB	
Bytes Sent	Zero KB
Bytes Received	7.5 MB

Outcomes

Self-Reported Exposure and Accuracy Judgment

- False Rumors published on fact-checking webpages during the month of the experiment + True News stories headlines from mainstream media.

Polarization

- Affective polarization (Feeling Thermometer).
- Social Polarization (Willingness to engage with outgroup voter).
- Issue Polarization (Abortion, gun control, etc..).
- Perceptions about ideological polarization ('Where do I observe the two main candidates?').

Subjective Well-being

- How did you feel for the past three weeks? (Happy, Anxious, etc...).

Hypotheses

H1: Deactivated users will report lower levels of previous exposure to FALSE rumors.

H2a: Deactivated will display a higher ability to accurately identify FALSE rumors.

H2b Deactivated users will display lower levels of mainstream news knowledge.

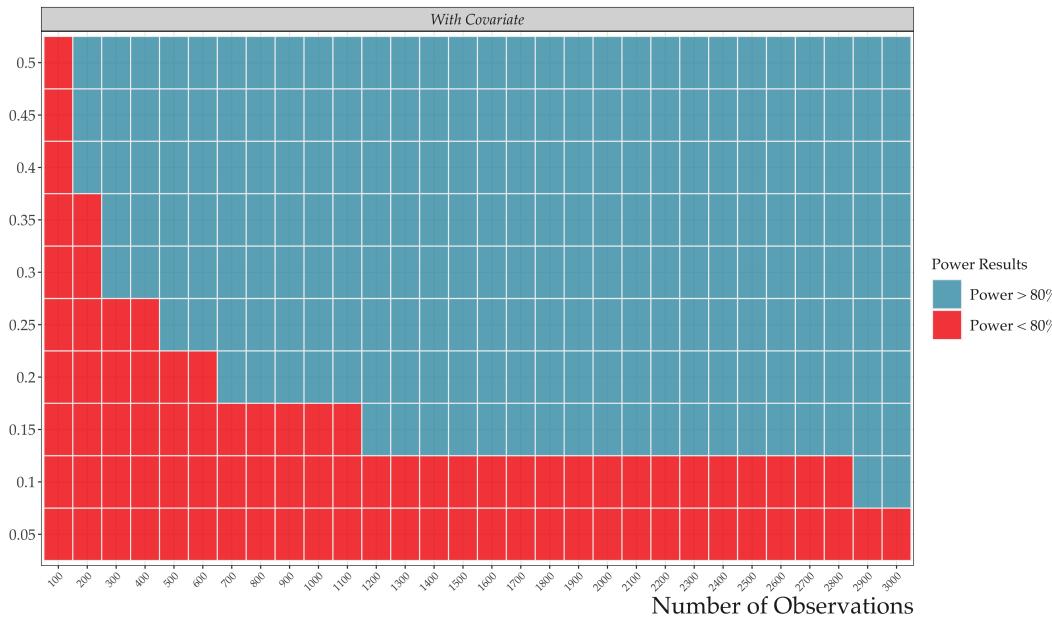
H3: Deactivated will display lower levels of outgroup political polarization.

H4: Deactivated will display higher levels of the aggregated index of subjective well-being.

Recruitment and Power Analysis

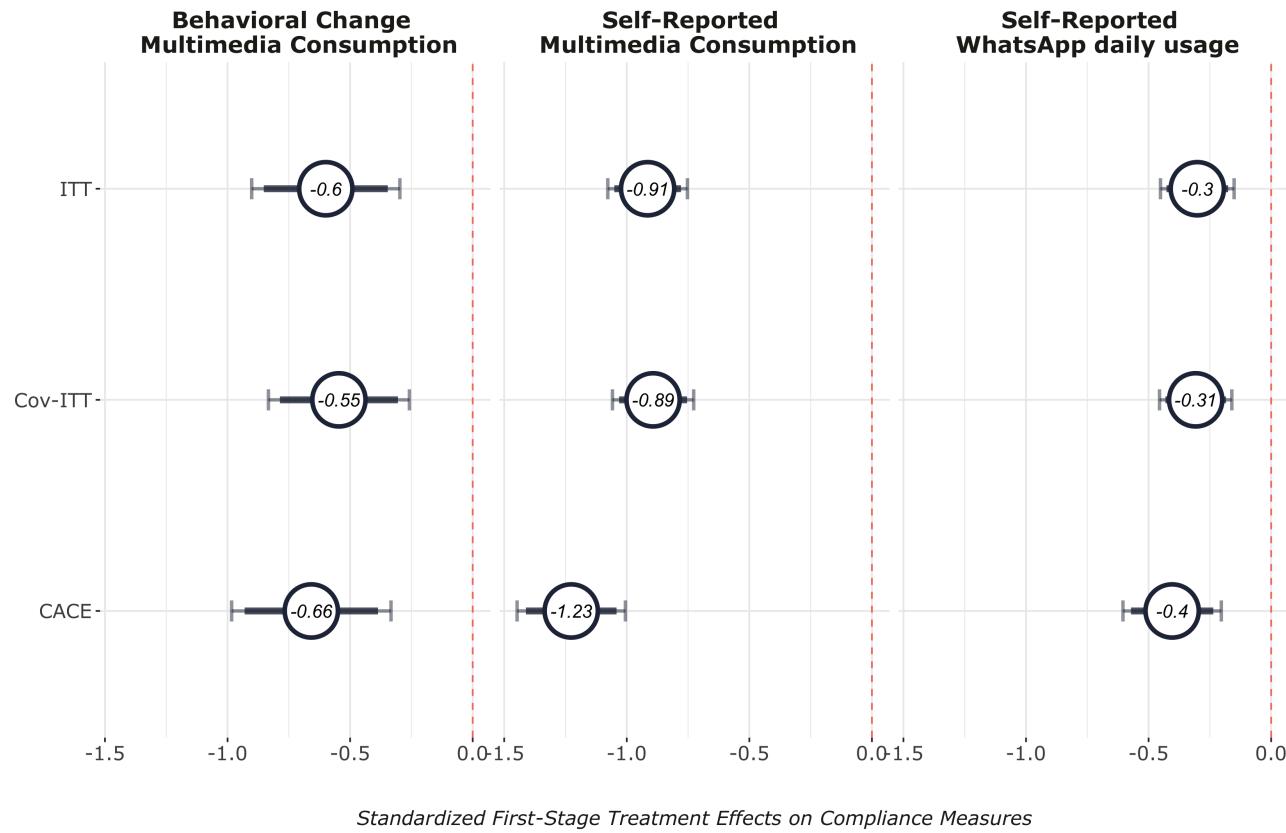
Complete Responses: 732.

Attrition Rate: 5.3%.

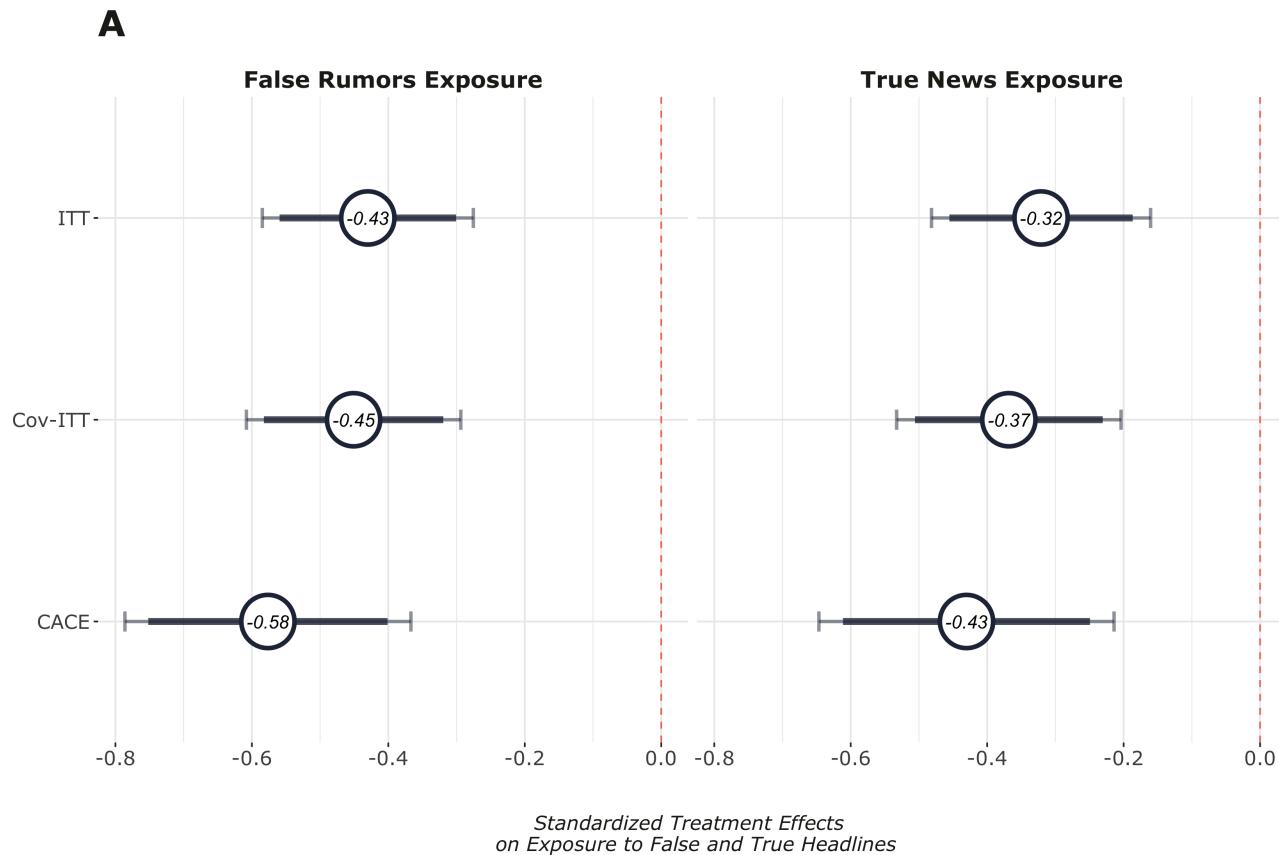


Results

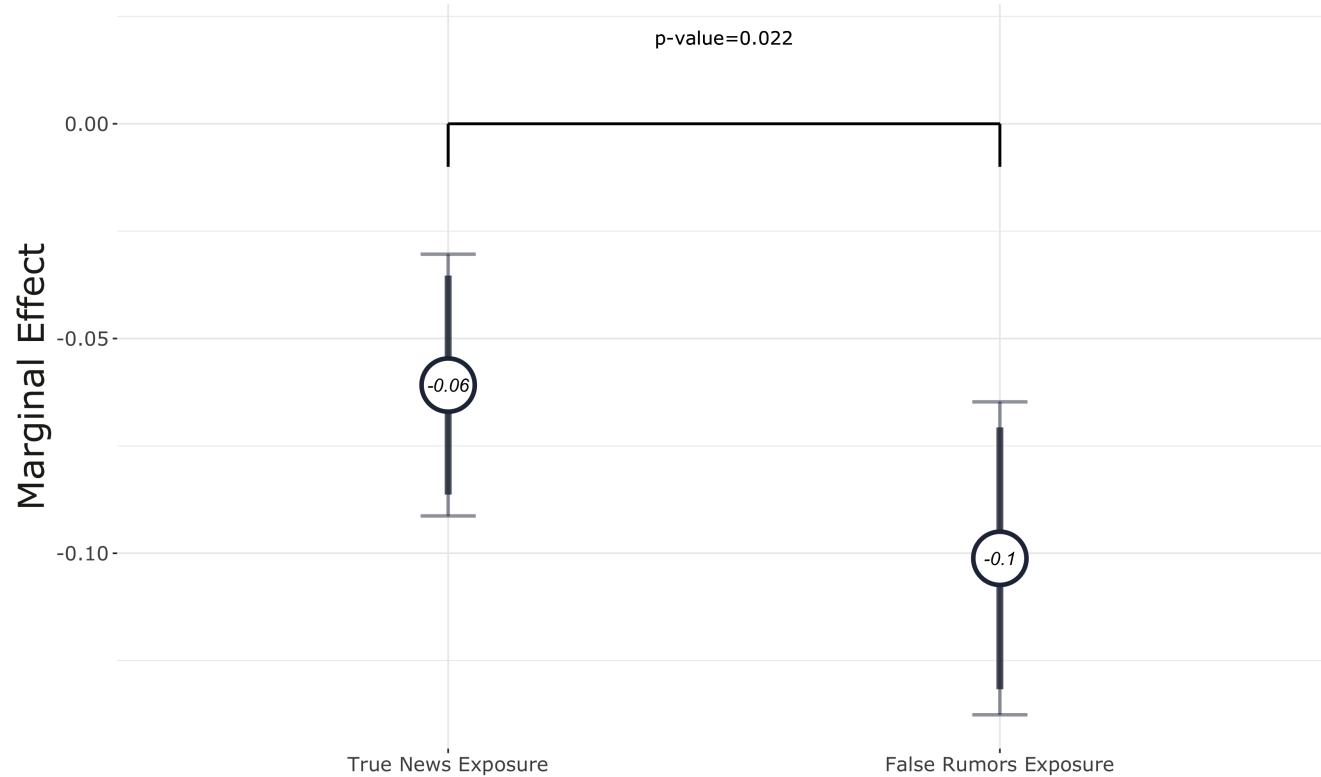
First-Stage Results



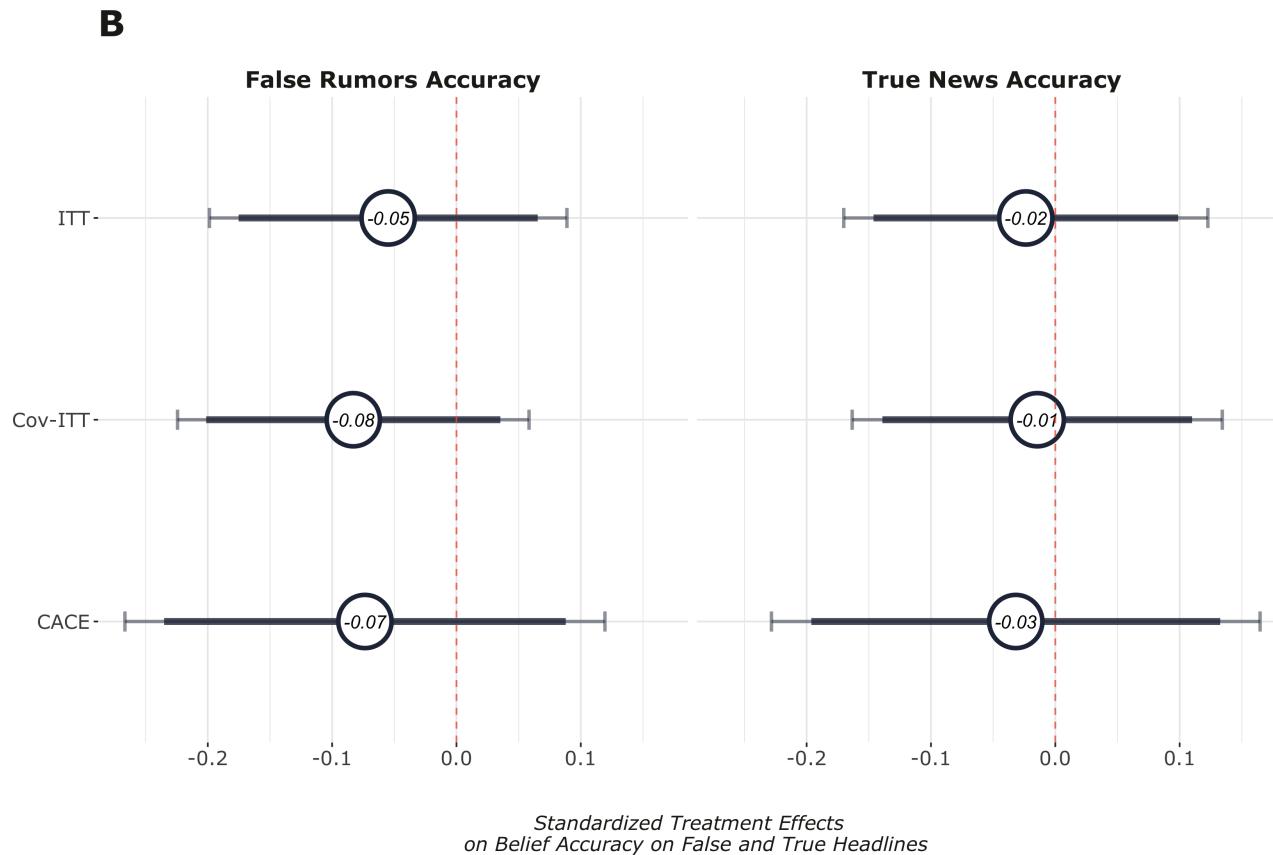
Effects on Exposure to Misinformation Rumors (H1)



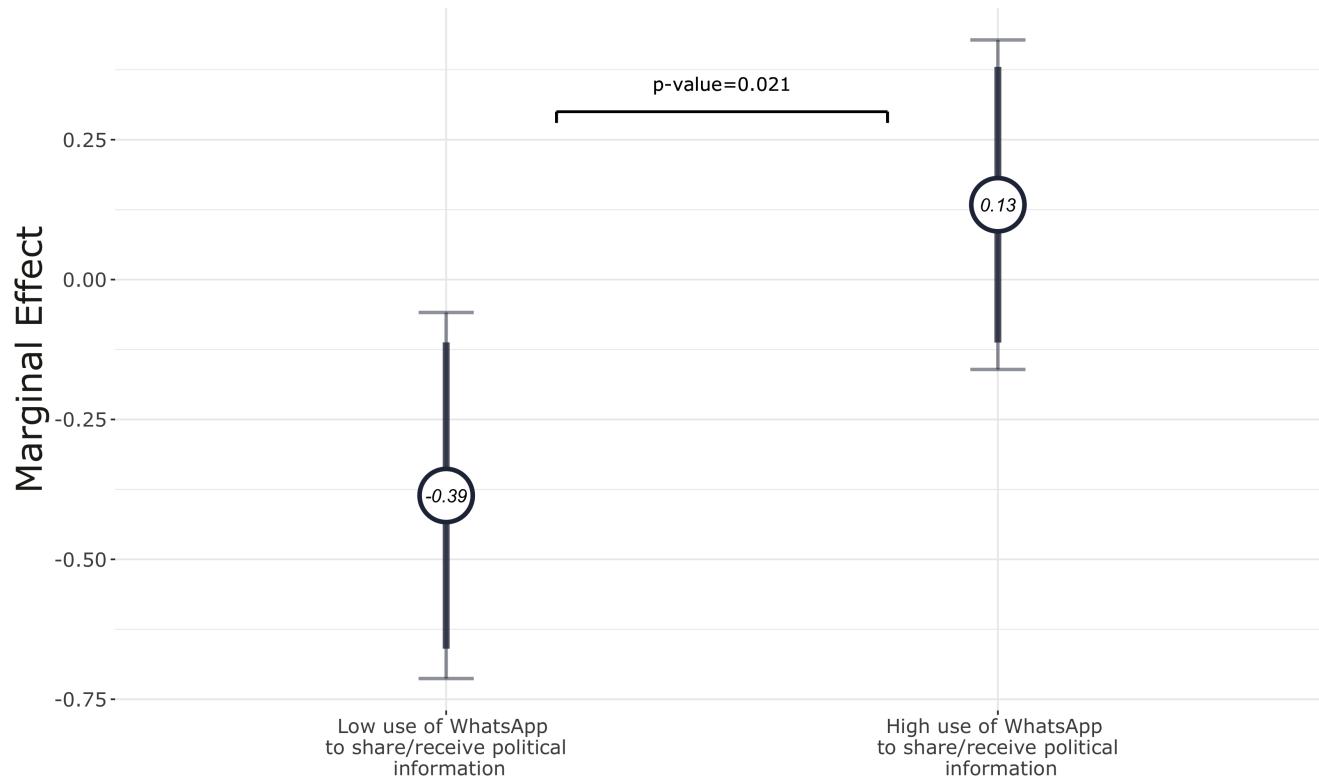
Reduction in exposure is large for false news (H1)



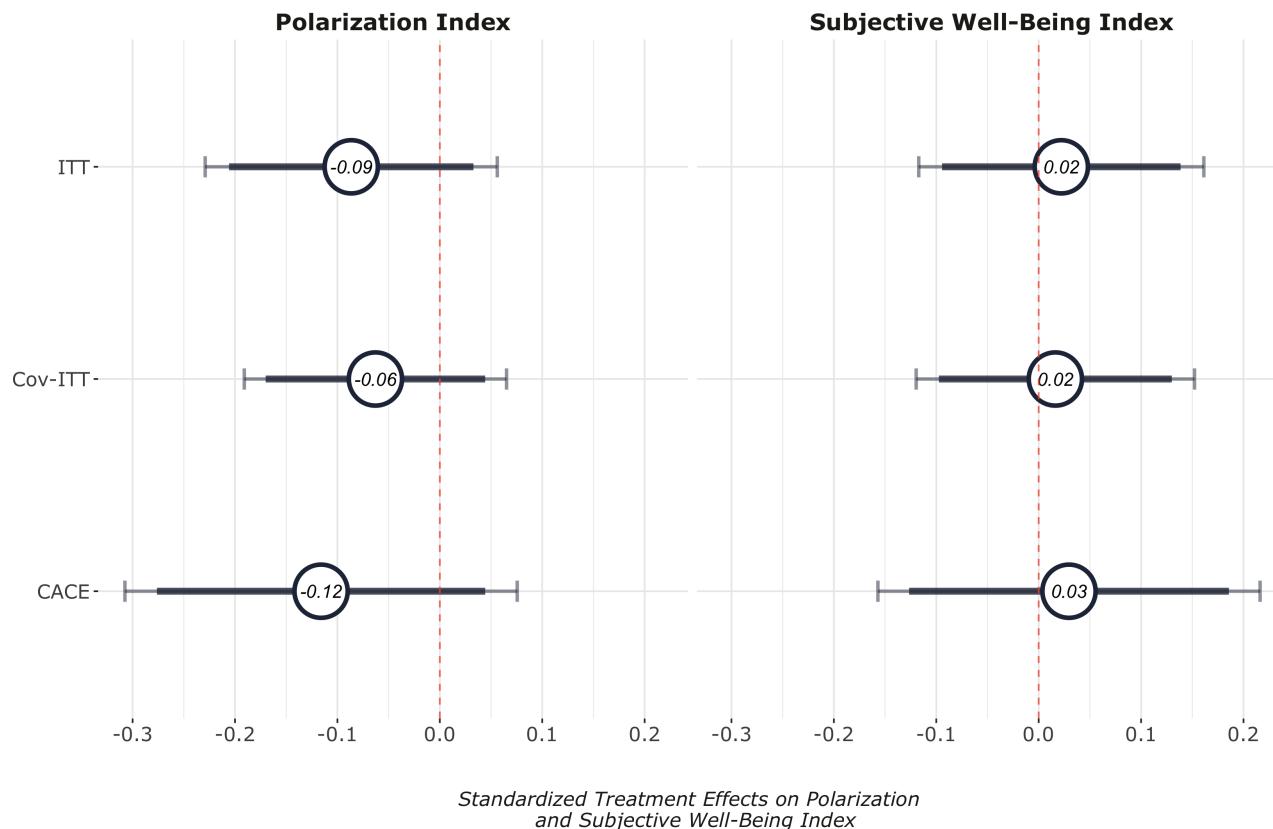
Effects on Belief Accuracy (H2)



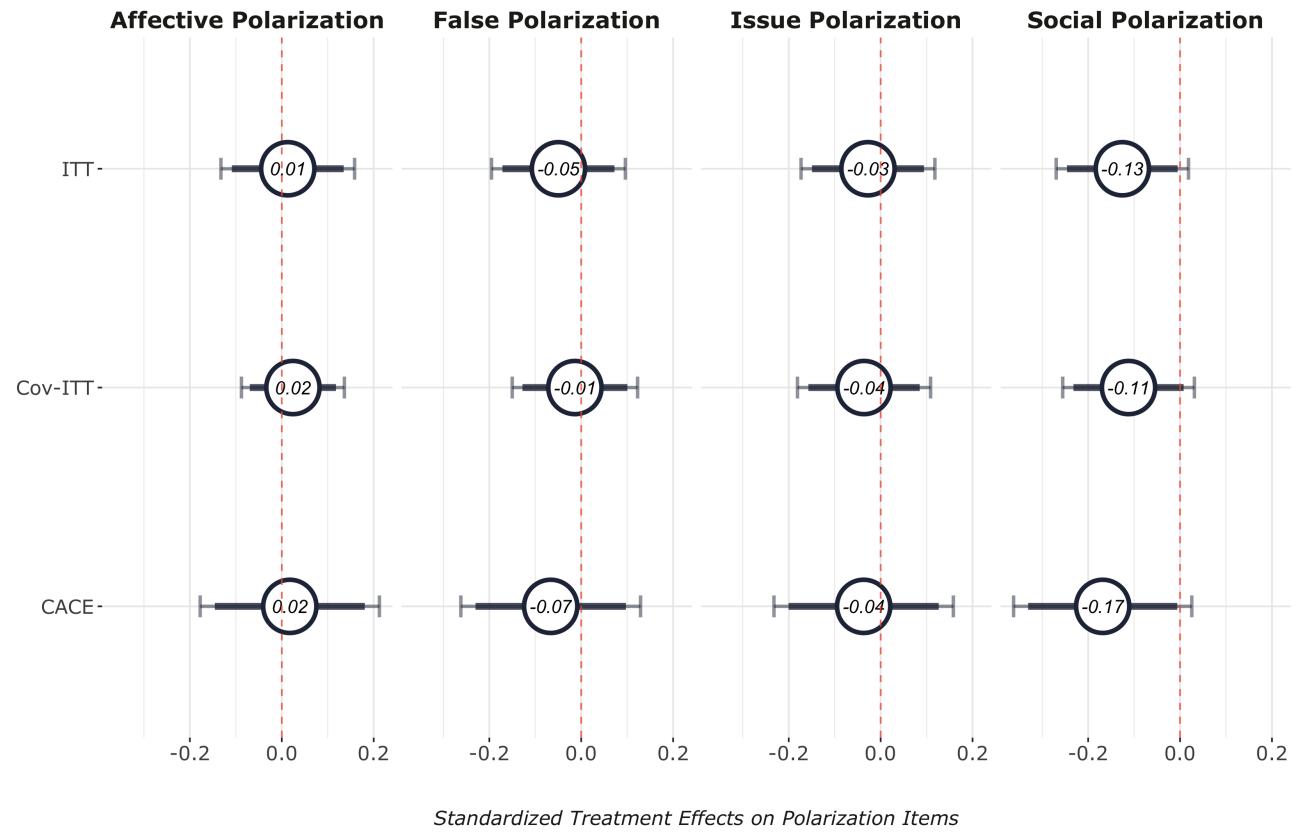
Belief Accuracy Conditional on WhatsApp usage for Politics



Effects on Polarization & Subjective Well-Being (H3 & H4)



Polarization Outcomes



Discussion

- ⊕ WhatsApp is an important vector through which voters receive misinformation in Brazil at a higher rate compared to true news.
- ⊕ The null results provide support for a minimalist view of the short-term causal effects of exposure to misinformation on WhatsApp on political attitudes.
- ⊕ Exposure to misinformation does not mechanically affect attitudes

Limitations

- Scope conditions: focus on direct effects of WhatsApp.
- Larger effect might exist exactly in hard to reach groups.
- Small effect size vs power

Next steps.

Replication, Replication, Replication

Thank you!

Examples of Misinformation Outcomes

False Item:

Only complete votes are counted by the electoral justice. If the voter only votes for the President, and votes blank for all the other races, the vote is considered a partial vote, and will be annulled

True Item:

After consecutive reductions, the current oil price in Brazil is below the global average value