

‘It is true, I received on WhatsApp’:

**The Effects of WhatsApp on Misinformation Beliefs and
Polarization**

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WhatsApp 101

WhatsApp

Usage in Brazil

WhatsApp is a worldwide popular end-to-end encrypted messaging app allowing both direct and ingroup communications with close to 2 billion around the world

WhatsApp 101

WhatsApp

Usage in Brazil

- 66% of the Brazilian eligible voters has a social media account, and 65% have an WhatsApp account (Datafolha 2018) – 150 million people in 2022.
- Most used app for all purposes: talk to family & friends, do business & pay bills, consume news, talk politics, among others (Reuters Institute, 2021).
- Used by 48% of population to read news, despite having no “news feed” (Reuters Institute, 2021)
- Across the world, Brazilians are the most concerned about misinformation.
- And WhatsApp is the main social media application where users report to see more misinformation.

Motivation

Disinformation Spreads on WhatsApp Ahead of Brazilian Election

 Give this article  



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

Oct. 17, 2018



Field Experiment: An WhatsApp Media-Constrained Deactivation

Intervention

Deactivation experiments have been recently used to causally identify the effects of social media on users' behavior and attitudes (Asimovic et al 2021 and Alcott et al 2020). Deactivating WhatsApp users is **theoretically and empirically unfeasible**.

➡ **Our Solution:** cut channels through which users' are exposed to misinformation and polarizing content

➡ **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

➡ **Treatment Period:** Three weeks:

- **Start:** Two week before presidential elections in Brazil
- **End:** One week after the voting day

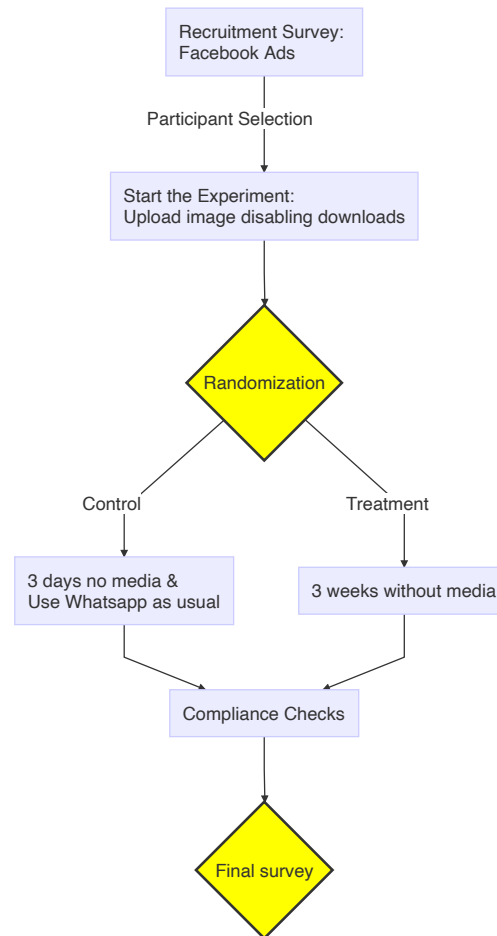
Overview of the Experiment

Design

Filtering
Questions

Timeline

Treatment Groups



Overview of the Experiment

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- Time spent on WhatsApp > 10 minutes every day
- Should not use desktop WhatsApp
- Accept to join the study
- **?** Received images about politics on WhatsApp

Overview of the Experiment

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Treatment Groups

- **Start Recruitment:** Between September 2th - 5th
- **Start the Experiment** September 15th
- **Activation of the Control + First Compliance:**
September 18th
- **Treatment duration:** From September 15th to October 6th
- **Presidential Election:** October 2

Overview of the Experiment

Design

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Timeline

Treatment Groups

➔ Treatment

- 3 weeks with automatic download disabled
- 3 weeks without consuming media
- Weekly screenshots of storage of media consumption on WhatsApp

➔ Control

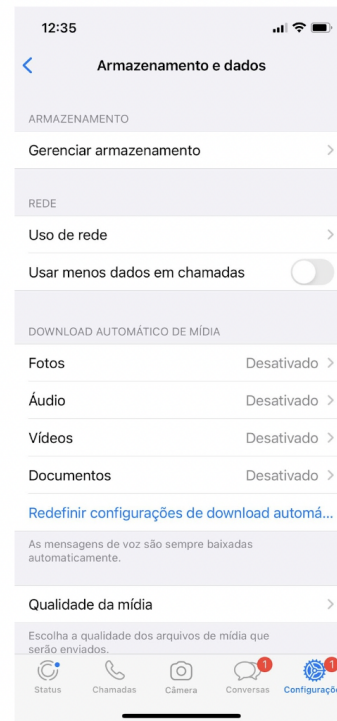
- 3 days with automatic download disabled
- 3 days without consuming media
- Weekly screenshots of storage of media consumption on WhatsApp

Ways to Measure Compliance

To measure compliance, we will ask participants to upload through a qualtrics survey screenshots of their WhatsApp.

Automatic
Download

Storage
Information

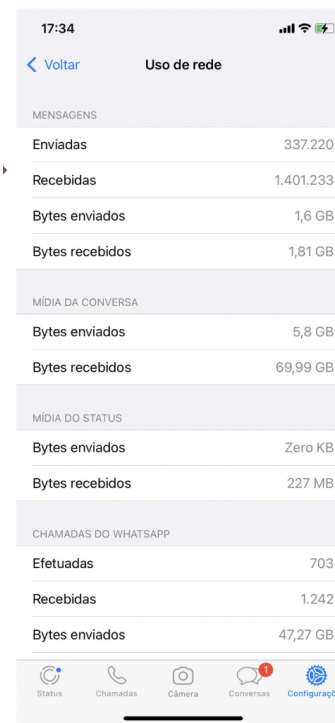


Ways to Measure Compliance

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Automatic
Download

Storage
Information



The screenshot shows the 'Uso de rede' (Network Usage) screen in WhatsApp. It displays data usage for messages, media, and calls. The top status bar shows the time as 17:34 and signal strength. The screen has a back arrow labeled 'Voltar' and the title 'Uso de rede'.

MENSAGENS	
Enviadas	337.220
Recebidas	1.401.233
Bytes enviados	1,6 GB
Bytes recebidos	1,81 GB

MÍDIA DA CONVERSA	
Bytes enviados	5,8 GB
Bytes recebidos	69,99 GB

MÍDIA DO STATUS	
Bytes enviados	Zero KB
Bytes recebidos	227 MB

CHAMADAS DO WHATSAPP	
Efetuadas	703
Recebidas	1.242
Bytes enviados	47,27 GB

The bottom navigation bar shows icons for Status, Chamadas, Câmera, Conversas, and Configurações.

Outcomes

Misinformation

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

Polarization

- Affective polarization (Feeling Thermometer)
- Social Polarization (Watching the world cup with an outgroup)
- Issue Polarization (Abortion, gun control, etc..)
- False Polarization ('Where do I observe the two main candidates?')

Subjective Well-being

- How did you feel last week? (Happy, Anxious, etc...)

Hypotheses

H1a: Users using the Media-Constrained WhatsApp will display a **higher ability to accurately identify FALSE headlines** compared to their counterparts using the regular WhatsApp.

H1b: Users using the Media-Constrained WhatsApp will display **lower levels of knowledge on mainstream news headlines** compared to their counterparts using the regular WhatsApp.

H2: Users using the Media-Constrained WhatsApp will display **lower levels of outgroup partisan polarization** compared to their counterparts using the regular WhatsApp.

H3: Users using the Media-Constrained WhatsApp will display **higher levels of the aggregated index of subjective well-being** compared to their counterparts using the regular WhatsApp.

One-Week Pilot Study

Pilot Summary

Recruitment: Four days using Facebook Ads

Experimental Condition:

- **Treatment** Full-week with automatic download disabled
- **Control:** Three days with no-media.

Experiment Assignment: After uploading proof of disabling automatic download of media.

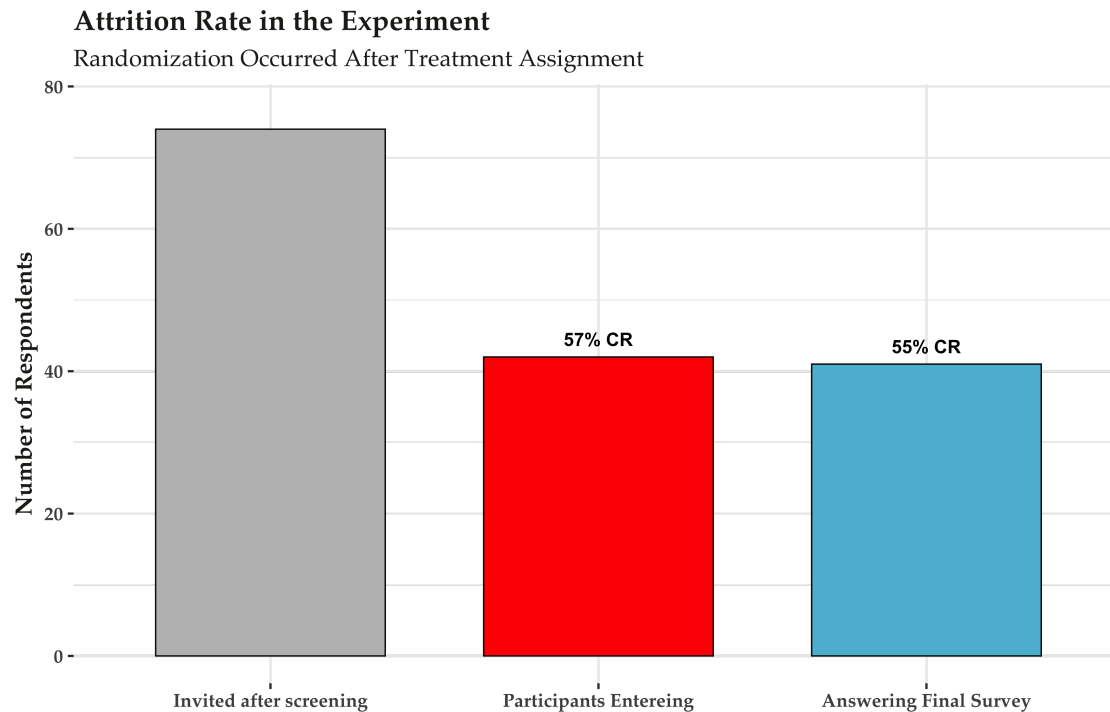
Responses:

- 540 complete responses
- 317 passed the filters
- 74 invited to join the experiment (August 19-20)

Pilot Analysis: Attrition Rate

Results

Notes



Pilot Analysis: Attrition Rate

Results

We recruited 540 completes in the screening, from which 317 passed all the screening questions.

Notes

To invite participants, we block randomized on gender, education and age to select 74 out of 317. This probably give us a lower bound for the attrition rate.

In addition, we started with email communication, and moved later to direct WhatsApp messages. The later is way more effective.

Pilot Analysis: Evaluating Compliance Checks

	Treatment	Control
Participants	23	19
Uploaded Treatment Assignment (CR)	23 (100%)	18 (94%)
Uploaded First Compliance Check (CR)	22 (95%)	13 (72%)
Uploaded Second Compliance Check (CR)	21 (91%)	13 (72%)
Upload Both Compliance Checks Correctly (CR)	18 (78%)	12 (63%)
Answered Final Survey	23 (100%)	18 (94%)

Pilot Analysis: Comparing Demographics

	All (N=467)		Compilers (N=42)		Never-Takers (N=32)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	2.7	1.2	2.6	1.2	2.9	0.9
Gender	1.1	0.3	1.1	0.3	1.2	0.4
Education	4.9	1.2	4.8	1.1	4.9	1.3
Politics	2.9	0.7	2.8	0.8	3.0	0.7
Ideology	5.5	2.9	5.1	3.3	5.7	3.0
WhatsApp usage per day	5.6	1.6	5.8	1.3	5.6	1.3
Received Images about Politics	0.8	0.4	0.9	0.3	0.9	0.3

All variables are converted to a numeric scale

Open Questions

Mechanisms for misinformation

- Working with exposure (Have you seen this headline before?). What else is important to be included in the survey?

Headlines selection

- Any advice on how to select the headlines?
 - .red[Should we take advantage of the compliance survey and add some headline tasks while collecting screenshots for compliance?]

Compliance

Descriptive information

What else?

Thanks!