Political Effects of Social Media

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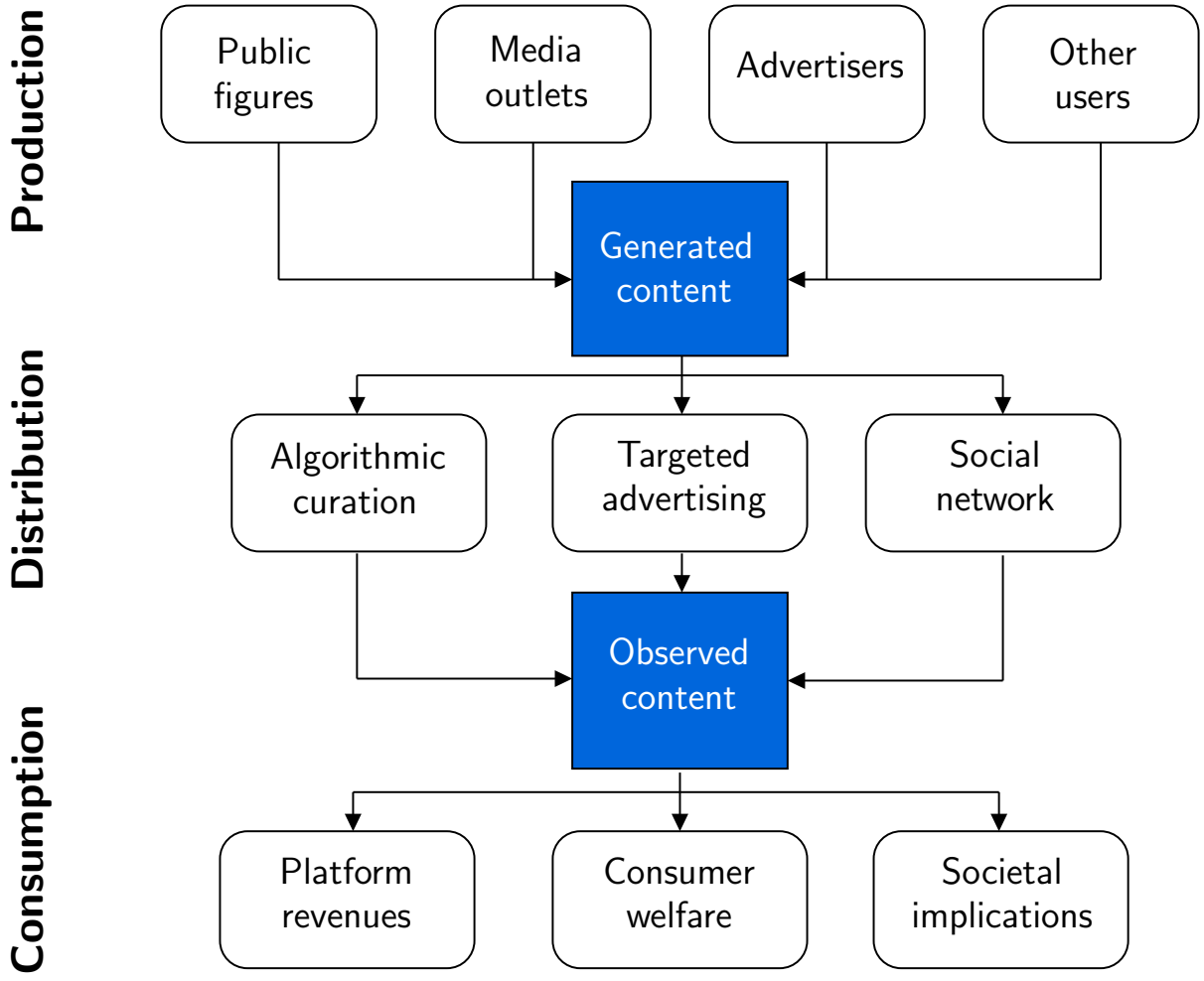
Defining Social Media

"two-sided platforms that primarily host user-generated content distributed via algorithms, while allowing for interactions among users" (Aridor et al, 2024)

- The key difference from traditional media is that any user on the platforms can produce content
  - low barriers to entry
  - user-generated content
- That leads to large volume of content compared to traditional media, so platforms have to work primarily as aggregators
  - content moderation
  - algorithmic curation
- Extensive social interactions is another important feature
  - Affecting algorithmic curation
  - Providing metadata regarding shared content
  - Direct discussions

Flow of content

Aridor, Jimenez-Durán, Levy, and Song, 2024



Special Features of Social Media

- Low Barriers to Entry
  - Makes gatekeeping of information less effective
  - Provides outlet for opposition and whistleblowers
    - can make political regimes more vulnerable and accountable (Edmond, 2013; Besley and Prat, 2006)
  - but also to extremists
  - May undermine reputation mechanisms that assure quality of information (Gentzkow and Shapiro, 2006; Cage 2017)
- User-generated content
  - Allows for horizontal flows of information
  - Makes it easier to coordinate and participate in collective actions
- Social curation and targeting
  - Facilitates spread of fake news
  - Promotes "echo chambers" and "filter bubbles"

Potential Channels

- Exposure to persuasive content
  - Information
  - Misinformation
  - Noninformational materials
  - Effect can be intentional or unintentional
- Facilitation of collective actions
  - Information
  - Emotional contagion
  - Social pressure
- Changing perception of others
  - Creating common knowledge
- Crowding out other activities

Potential Effects

- Voting behavior
  - mobilization
  - bias
  - accountability
- Polarization
- Protests
- Extremism
- Behavior of politicians
- Monitoring and surveillance

Social Media and Voting Outcomes

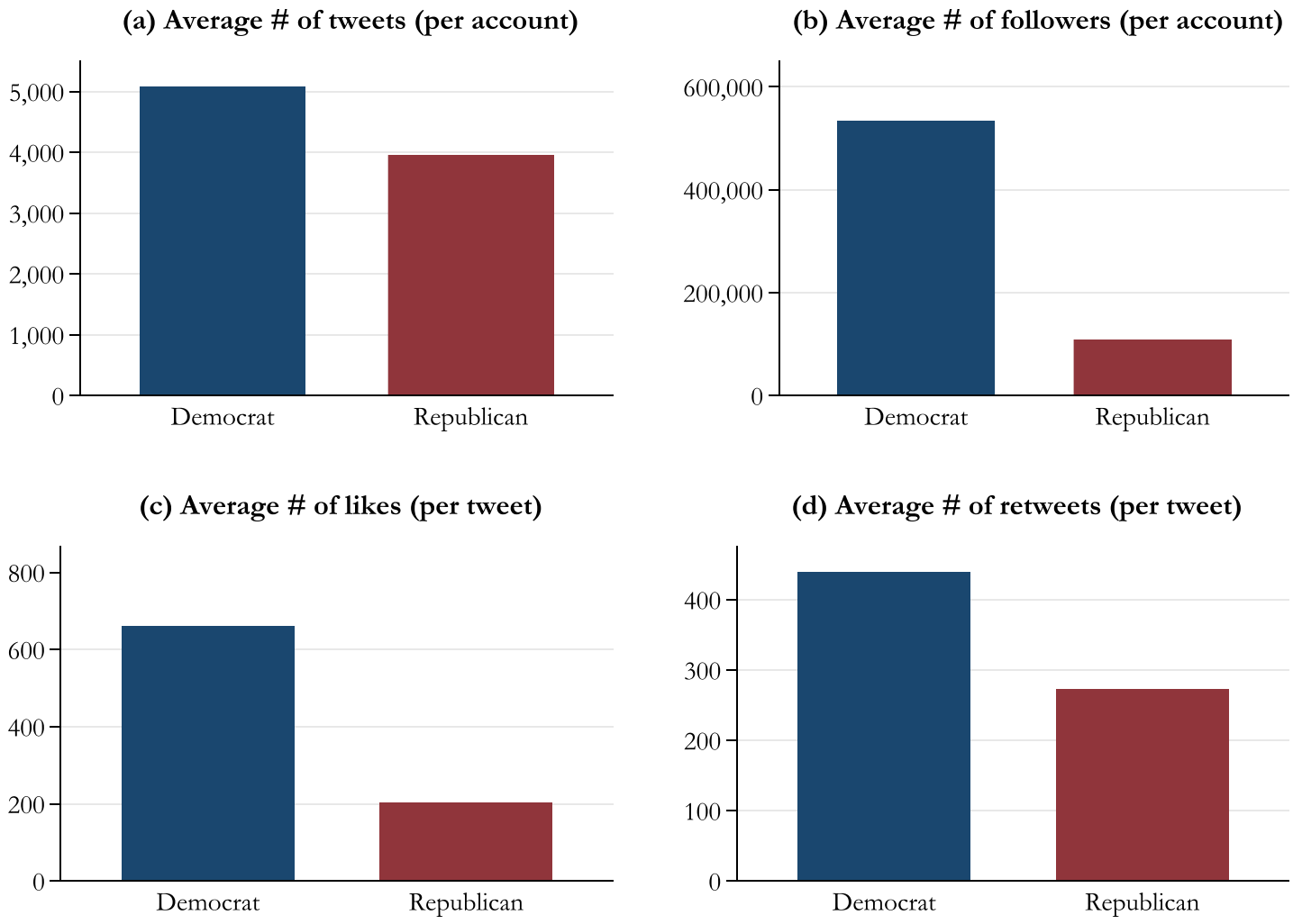
- Mobilization
  - Facebook can increase turnout via social pressure mechanisms (Bond et al. 2012; Jones et al. 2017)
  - Twitter increased turnout in US presidential elections only in 2020 (Fujiwara, Müller, and Schwarz, 2024)
  - May serve as one of the instruments of mobilizing new groups of voters (Campante, Durante, and Sobbrio, 2017)

- Bias
  - Twitter reduced votes for Trump in 2016 and 2020; no significant effect on congressional elections (Fujiwara, Müller, and Schwarz, 2024)
  - The opposite results in Rotesi (2019) using different identification approach that changes LATE

Fujiwara, T., K. Mueller, and C. Schwarz **"The Effect of Social Media on Elections: Evidence from the United States"** (2024), *Journal of European Economic Association,* 22(3): 1495-1539

Examines the effect of social media on the election outcome in the United States.

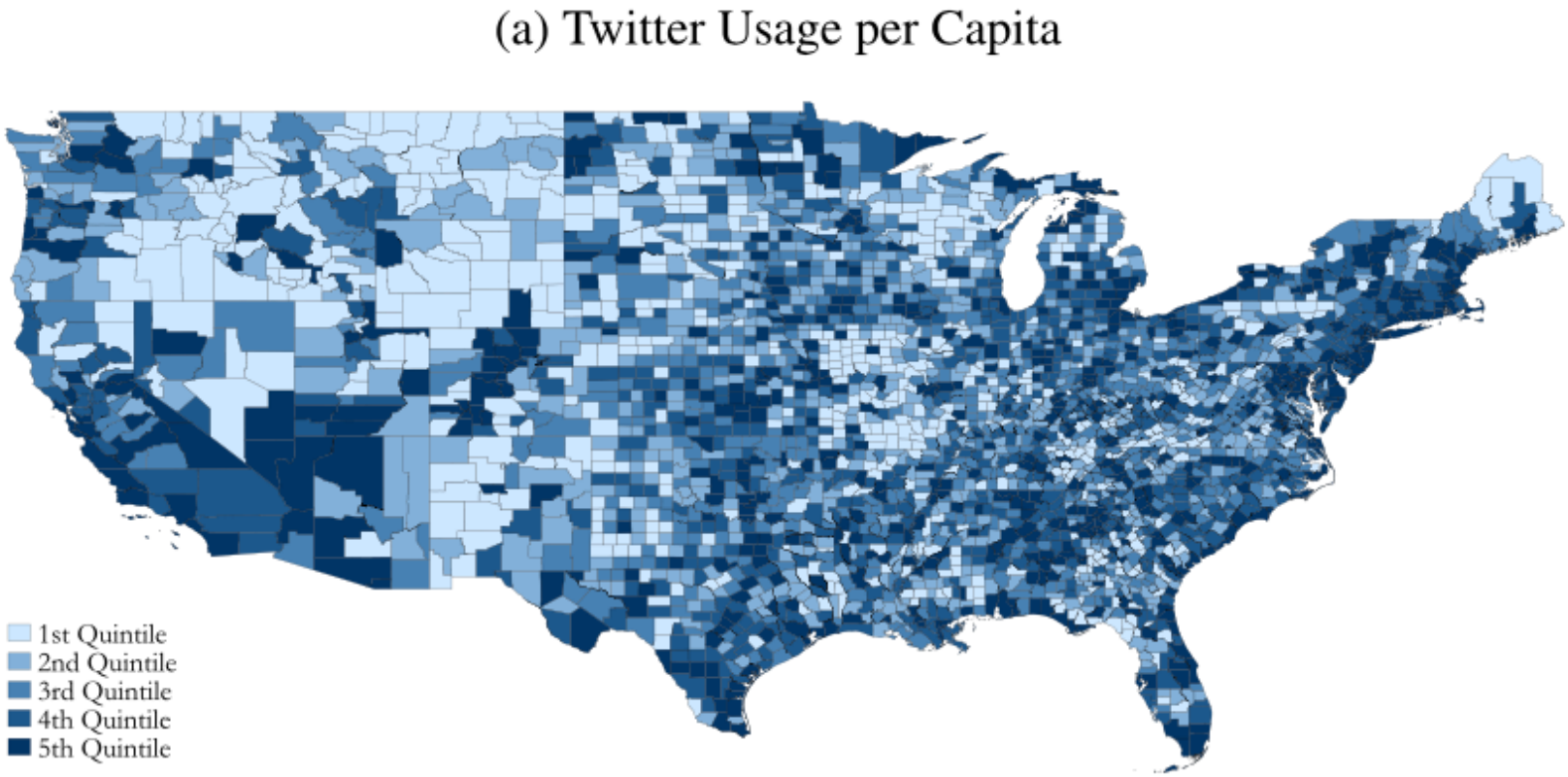
Twitter reach by party



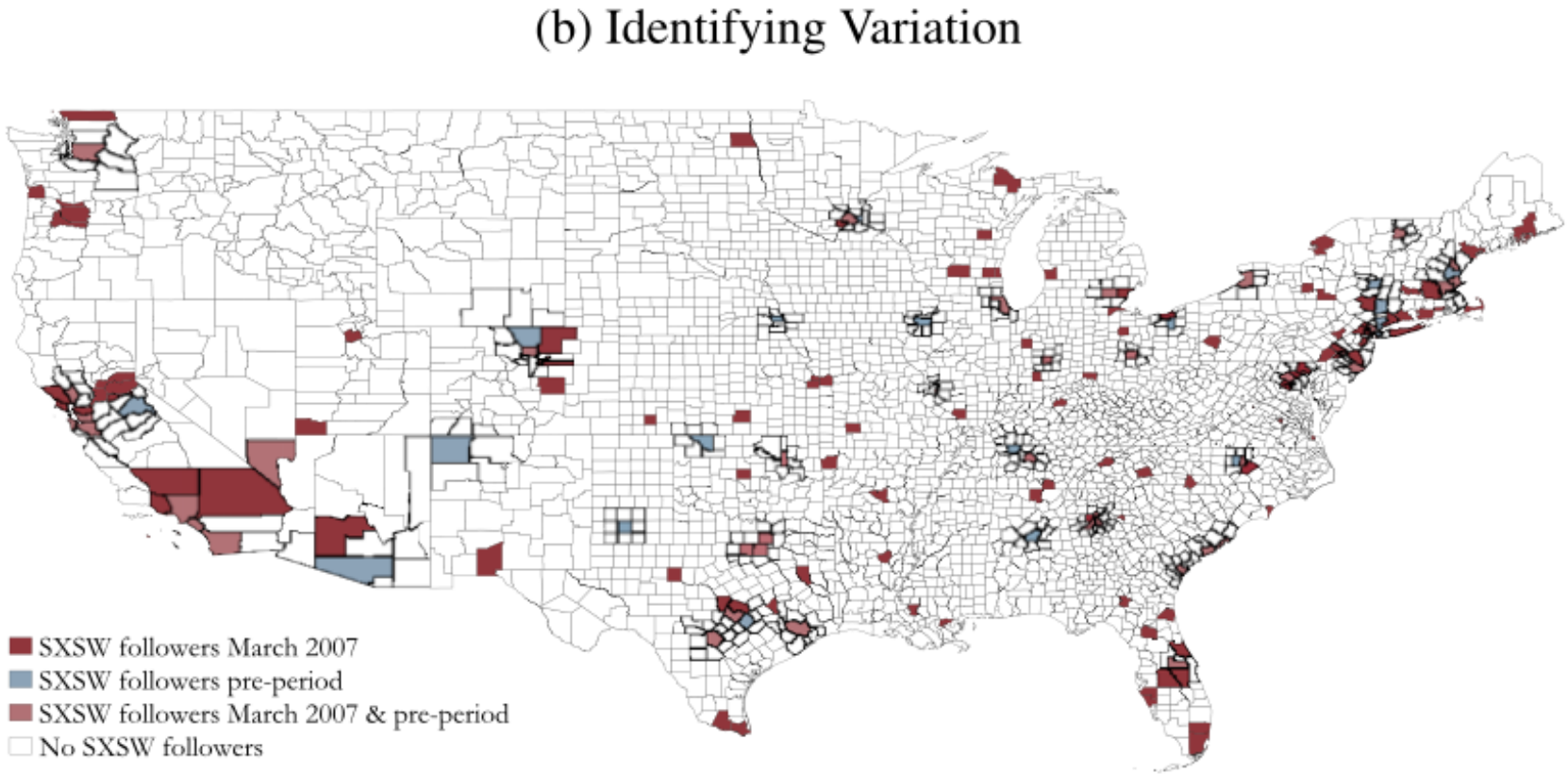
Methodology

- Twitter became popular after 2007 SXSW festival (annual film, interacted media, and music festival in Texas)
- The argument is that counties which had more 2007 SXSW festival had a higher Twitter penetration in 2016 and 2020, conditional on pre-existing (pre-March 2007) interest in SWSW Twitter account from these counties
- The authors use county-level 2007 SXSW festival followers as an instrument for subsequent Twitter penetration, conditional on the number of pre-March 2007 followers

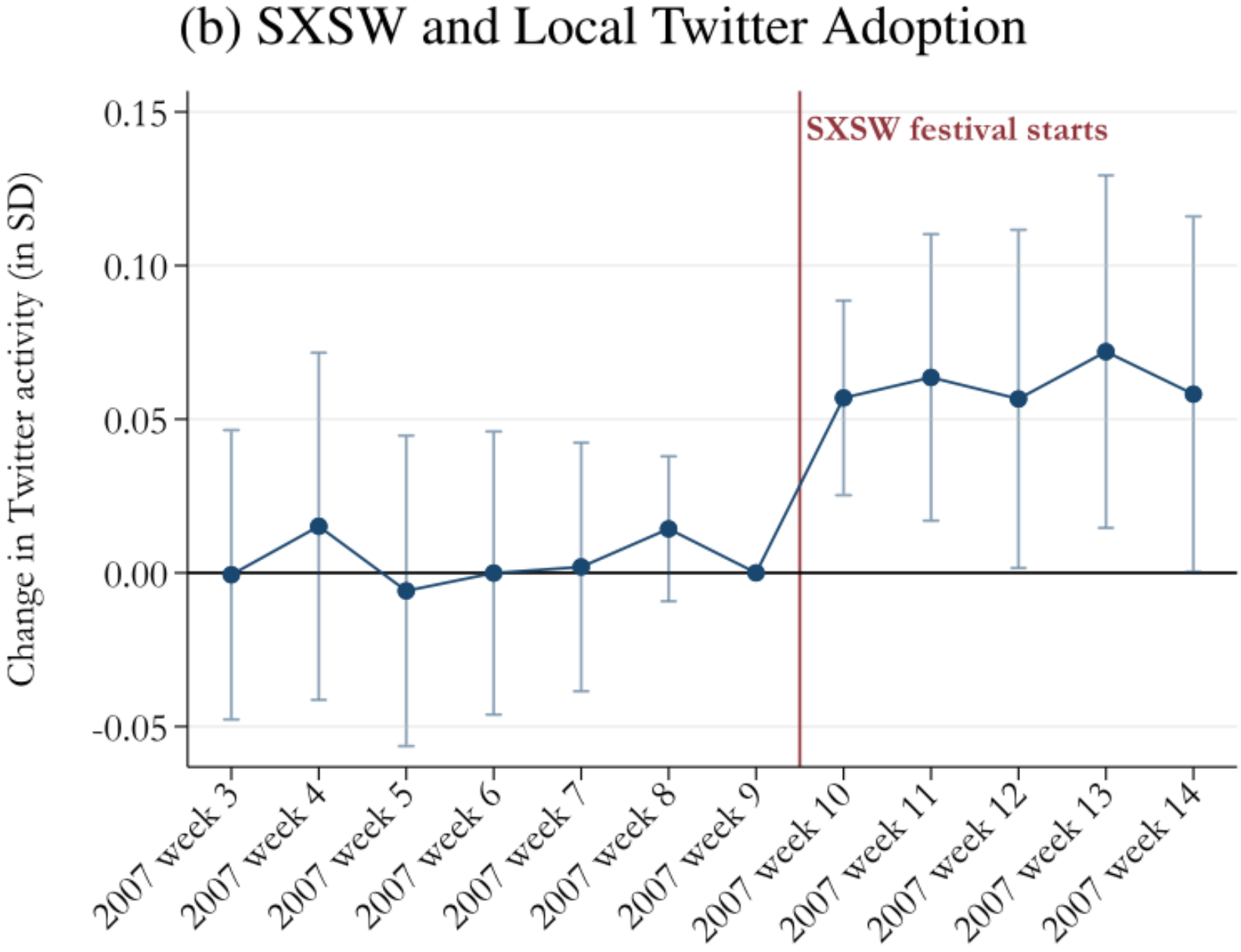
Twitter usage



Identifying variation



Event Study


(b) SXSW and Local Twitter Adoption
SXSW festival starts
Change in Twitter activity (in SD)
0.15
0.10
0.05
0.00
-0.05
2007 week 3
2007 week 4
2007 week 5
2007 week 6
2007 week 7
2007 week 8
2007 week 9
2007 week 10
2007 week 11
2007 week 12
2007 week 13
2007 week 14

Twitter and 2016 Republican vote share

	Dependent variable: Republican vote share in 2016				
	(1)	(2)	(3)	(4)	(5)
Panel A: OLS					
Log(Twitter users)	−0.065***	−0.067***	−0.013***	−0.011***	−0.007**
	(0.009)	(0.008)	(0.004)	(0.003)	(0.003)
Panel B: Reduced form					
Log(SXSW followers, March 2007)	−0.053***	−0.058***	−0.019***	−0.014***	−0.011***
	(0.011)	(0.012)	(0.005)	(0.004)	(0.004)
Log(SXSW followers, Pre)	−0.021	−0.003	−0.000	−0.002	0.001
	(0.016)	(0.013)	(0.006)	(0.006)	(0.004)
Panel C: 2SLS					
Log(Twitter users)	−0.072***	−0.085***	−0.034***	−0.027***	−0.021***
	(0.016)	(0.018)	(0.010)	(0.008)	(0.008)
Log(SXSW followers, Pre)	−0.014	0.007	0.002	−0.001	0.002
	(0.020)	(0.016)	(0.007)	(0.006)	(0.005)

Placebo estimates

	Dep. var.: Republican vote share in...					
	2000	2004	2008	2012	2016	2020
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reduced form						
Log(SXSW followers, March 2007)	−0.003	−0.005	−0.006	−0.003	−0.011***	−0.011**
	(0.002)	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)
Log(SXSW followers, Pre)	0.001	0.001	−0.000	−0.002	0.001	−0.001
	(0.004)	(0.003)	(0.006)	(0.005)	(0.004)	(0.005)
Panel B: 2SLS						
Log(Twitter users)	−0.005	−0.009	−0.011	−0.007	−0.021***	−0.020**
	(0.004)	(0.006)	(0.009)	(0.008)	(0.008)	(0.009)
Log(SXSW followers, Pre)	0.001	0.001	0.000	−0.001	0.002	0.000
	(0.004)	(0.004)	(0.006)	(0.005)	(0.005)	(0.006)
Observations	3,064	3,064	3,064	3,064	3,064	3,064
Mean of DV	0.48	0.51	0.46	0.47	0.46	0.47
Robust *F*-stat.	121.18	121.18	121.18	121.18	121.18	121.18

Social Media and Accountability

- Evidence that social media can increase accountability at least in the domain of corporate governance (Enikolopov, Petrova, and Sonin, 2018)
- Facebook information campaign can increase accountability, but only if combined with debiasing nudges (Enriquez et al., 2024)
- Social media exposure increases political knowledge (Allcott et al, 2020)
  - but increases belief in misinformation (Allcott et al , 2024)
- Consistent with more general effect of mobile internet (Guriev, Melnikov, and Zhuravskaya, 2021)

Social Media and Corruption

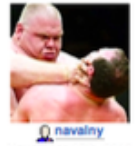
Enikolopov, Petrova, Sonin, *American Economic Journals: Applied Economics*, 2018

- Background: Russia is an authoritarian state led by Vladimir Putin since 1999
- State-controlled companies: comprise more than 50% of all production
  - (e.g. Gazprom ≈$160 billion market capitalization)
  - management appointed by Board of Directors, which is appointed by the government
- Alexey Navalny and his blog
  - Shareholder activist and (afterwards) opposition politician in Russia
  - Before 2008, no reputation and almost no readers
- Wrote in his blog about corporate governance violations in state-owned companies
  - more negative than traditional media

Navalny's blog

navalny.livejournal.com

Как пилят в Транснефти



navalny

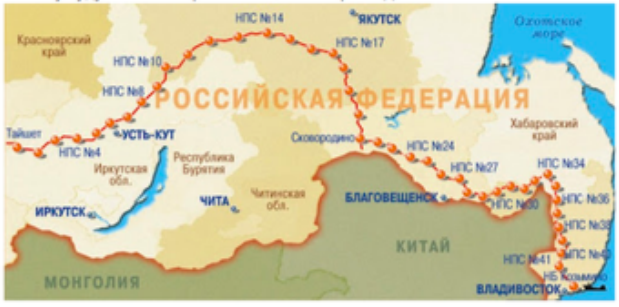
November 16th, 2010

Это очень важный для меня пост.
Над этим делом я с коллегами работаю уже много месяцев.

Я буду очень благодарен всем, кто прочитает и поможет.

Но прежде, чем вы начнете читать - загляните в свой бумажник. Может вы и не заметили, но из него пропало примерно 1 100 рублей.
Не так много, для каждого из нас, но эту сумму украли у каждого совершеннолетнего жителя России. Всего, по нашей оценке, по ходу этой истории было **украдено не менее $ 4 млрд долларов.**

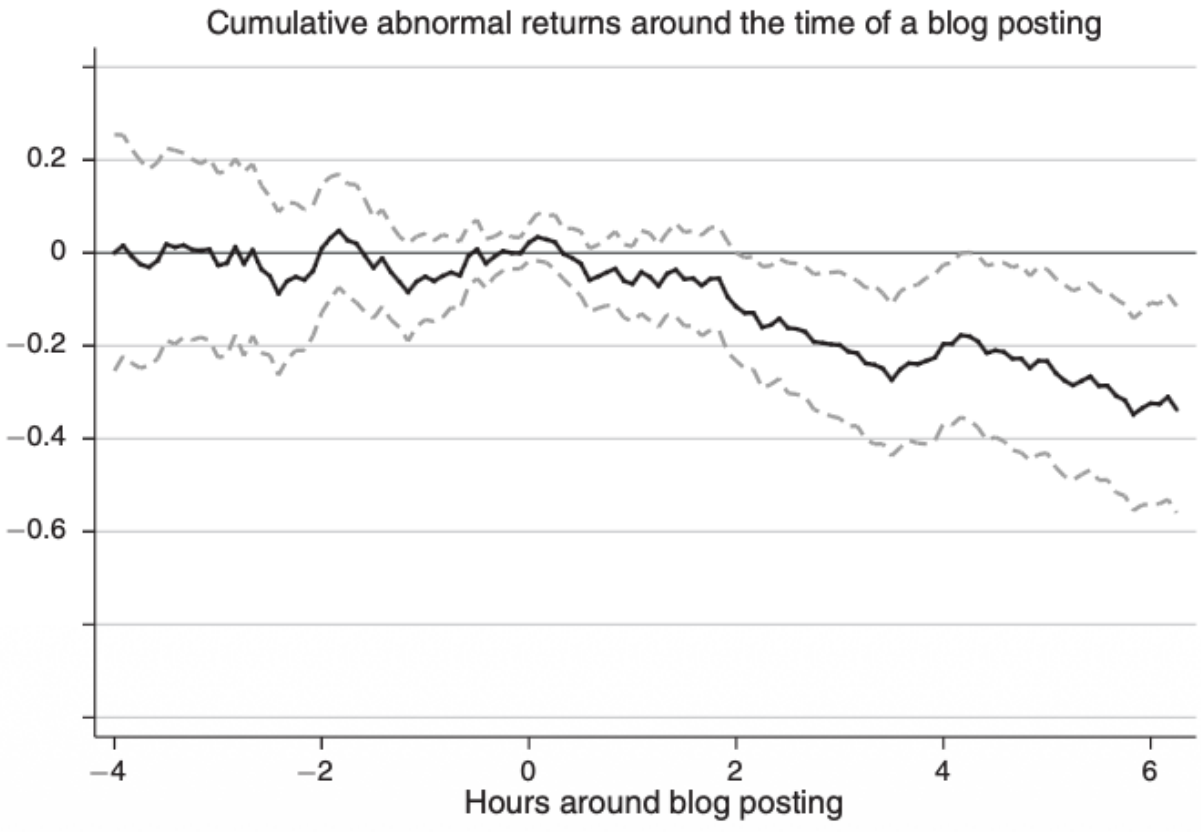
Итак. Трубопровод ВСТО. Восточная Сибирь - Тихий Океан. Протяженность - 4188 км.
По нему будут качать нефть Восточной Сибири на Дальний Восток.



- Speaks about corruption in state-controlled companies
  - E.g. VTB overpaid $160 million for drilling equipment, which it has not been using so far ($15 million per machine that costs $10 million)
- Aggregates information: got access to internal investigation report, summed up all numbers, got $4 billion stolen
- Demands to disclose recipients of "spending on charity" of Transneft

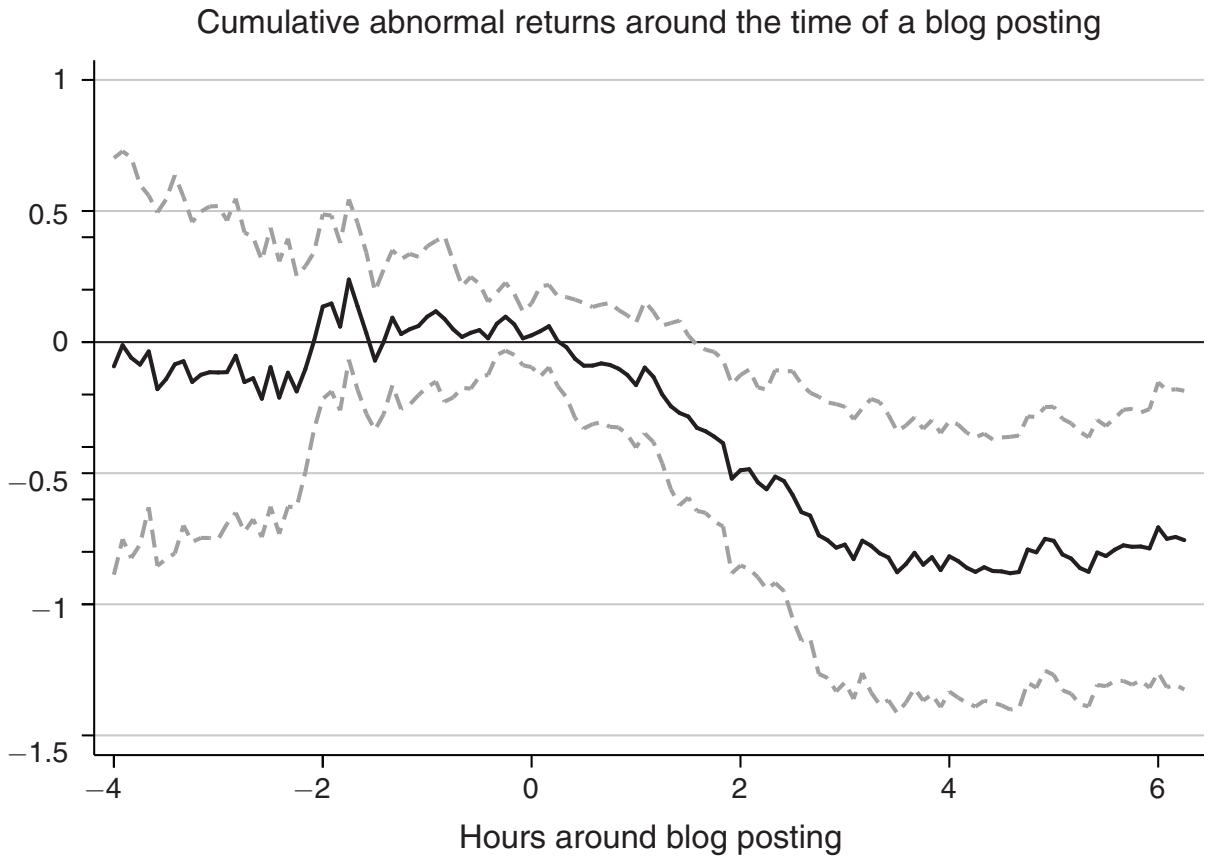
Intraday Price Reaction

Trading day FE, hour FE, and company-month FE are included, posts with preceding mentions excluded



Intraday Price Reaction after important (5+ mentions) posts

Trading day FE, hour FE, and company-month FE are included, posts with preceding mentions excluded



Implications for corporal governance

- Longer term effects on corporate governance for covered companies:
  - Positive effect of blog posts on management turnover
  - Less conflicts with minority shareholders following blog posts
- Example that proves that social media can have an impact on accountability and governance

Social Media and Polarization

- Deactivation studies produce conflicting results
  - FB in the US in 2018 increases polarization (Allcott et al, 2020; Mosquera et al. 2020)
  - FB and Instagram in the US in 2020 have no effect (Allcott et al, 2024)
  - FB in Bosnia and Herzegovina increases polarization (Asimovic et al, 2021)
- Facebook information campaign without debiasing nudges increases polarization (Enriquez et al., 2024)
- Consistent with the polarizing effect of mobile internet (Melnikov, 2023)
- But the story may be even more nuanced...

Deactivation Study of Facebook

Hunt Allcott, Luca Braghieri, Sarah Eichmeyer, and Matthew Gentzkow: Welfare Effects of Social Media, "(2020) *American Economic Review*

- Idea: randomly offer some people money to deactivate their Facebook account for four weeks in 2018
- Check what happens with news consumption, political opinions...
- ... and also psychological well-being

Figure 3: **Effects on News and Political Outcomes**

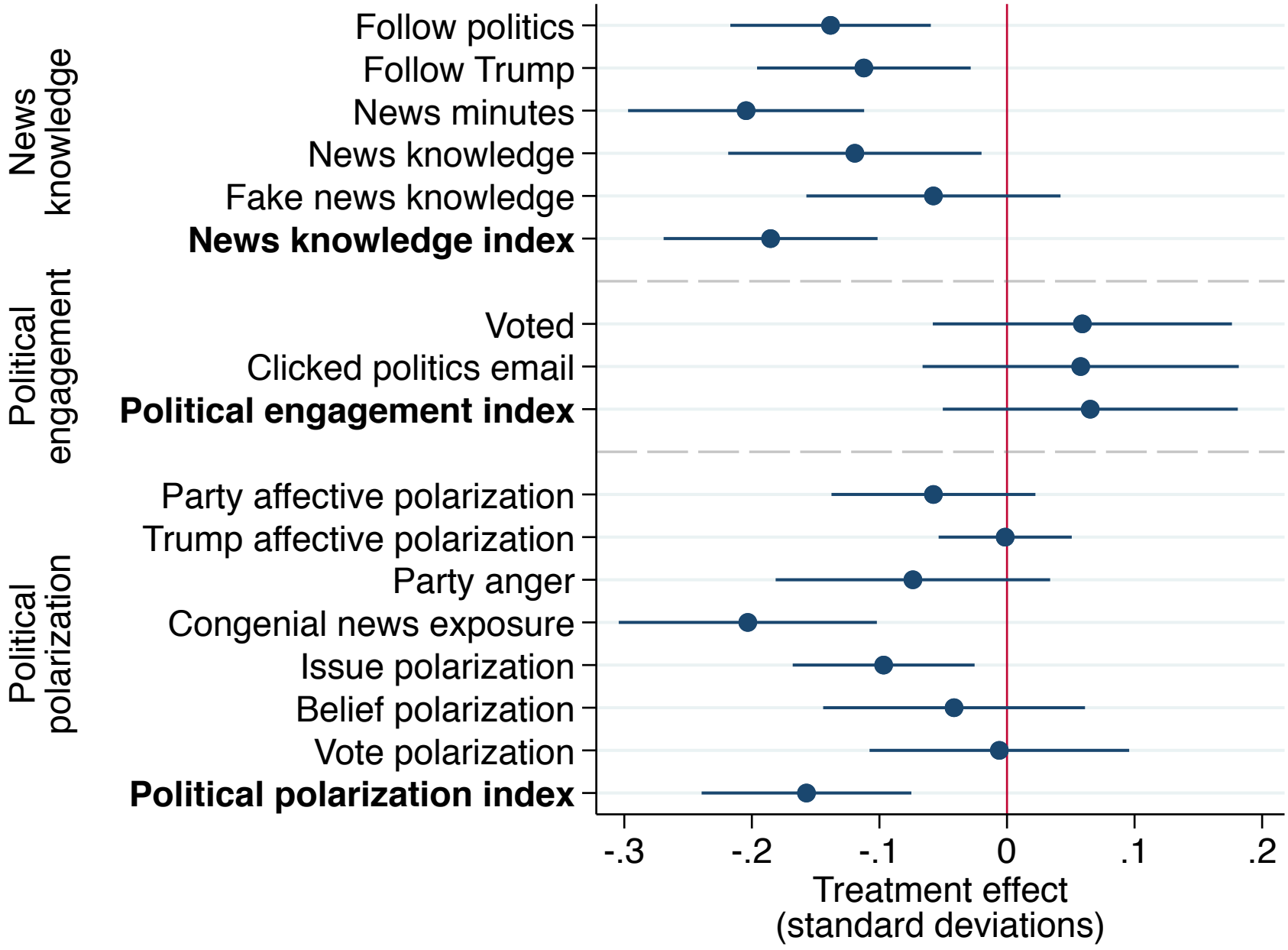


Figure 5: **Effects on Subjective Well-Being**

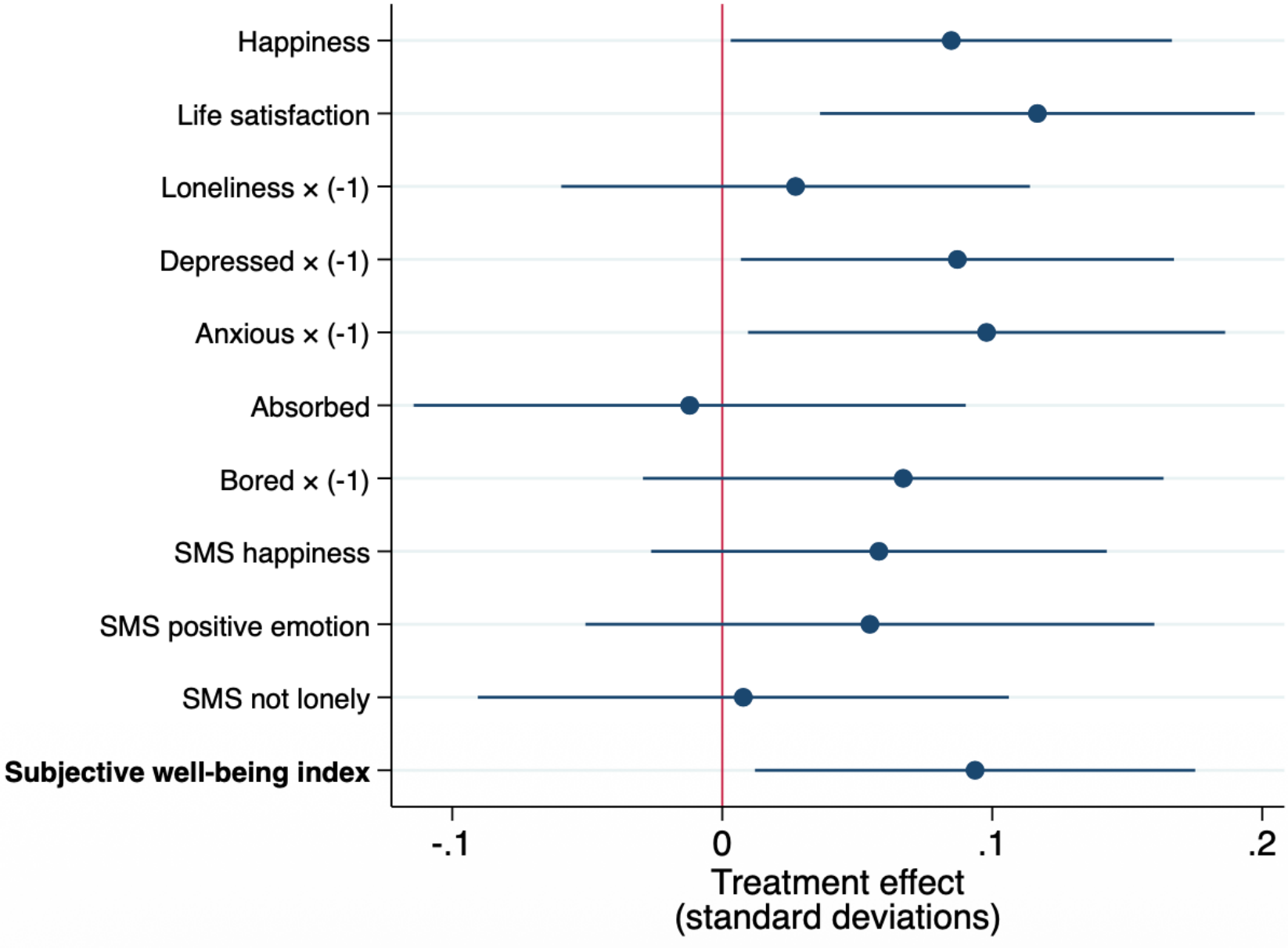
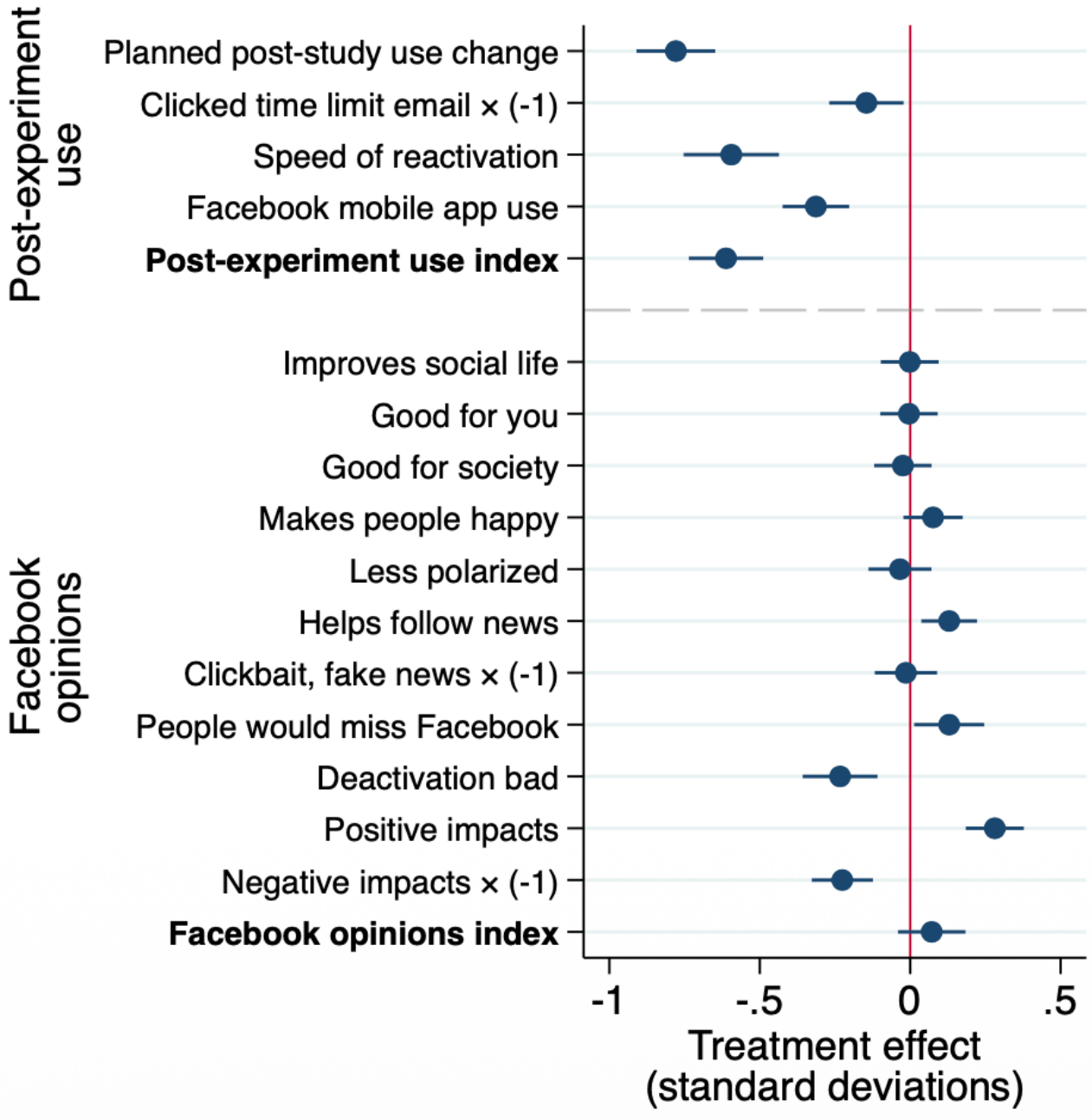


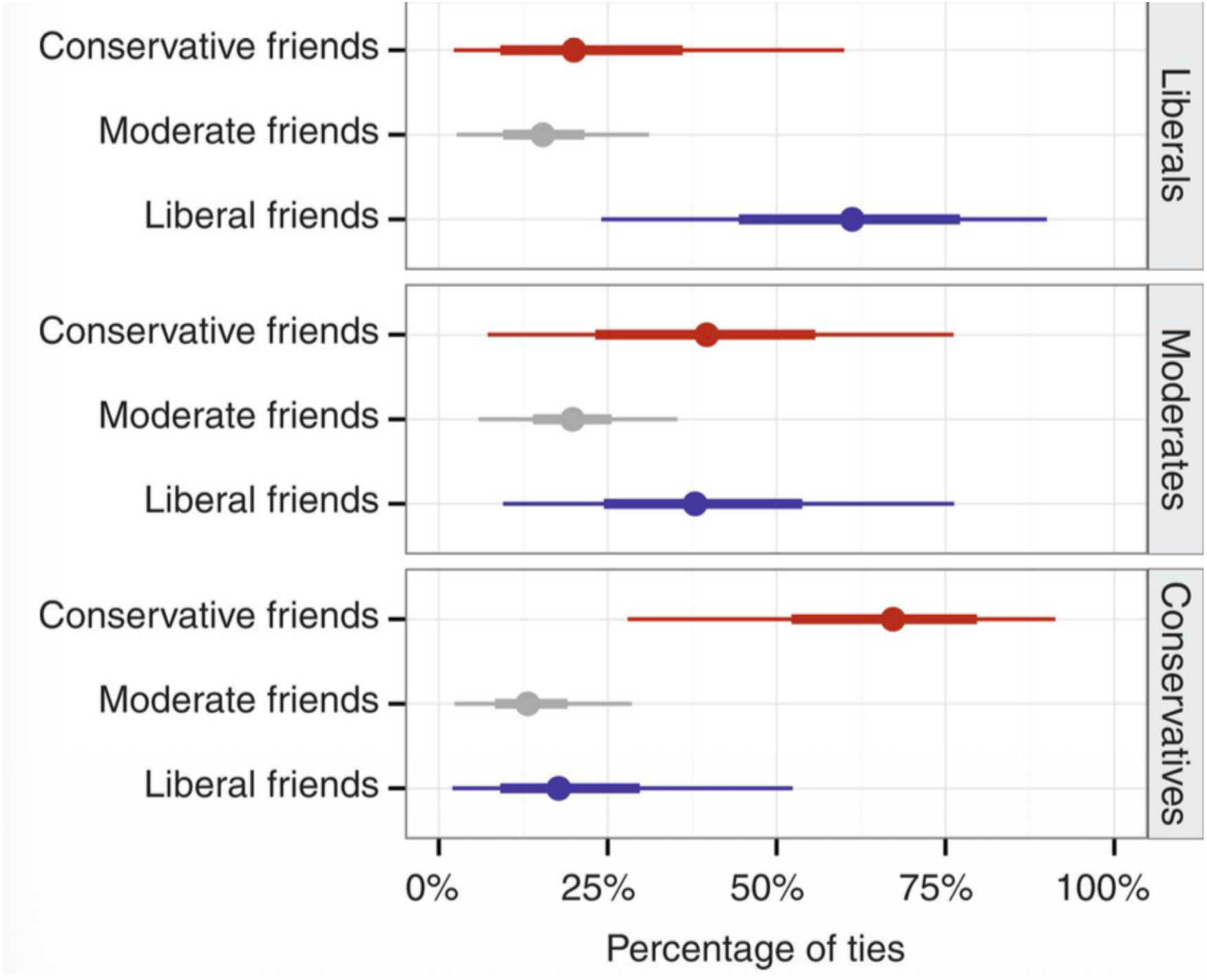
Figure 6: **Effects on Post-Experiment Facebook Use and Opinions**



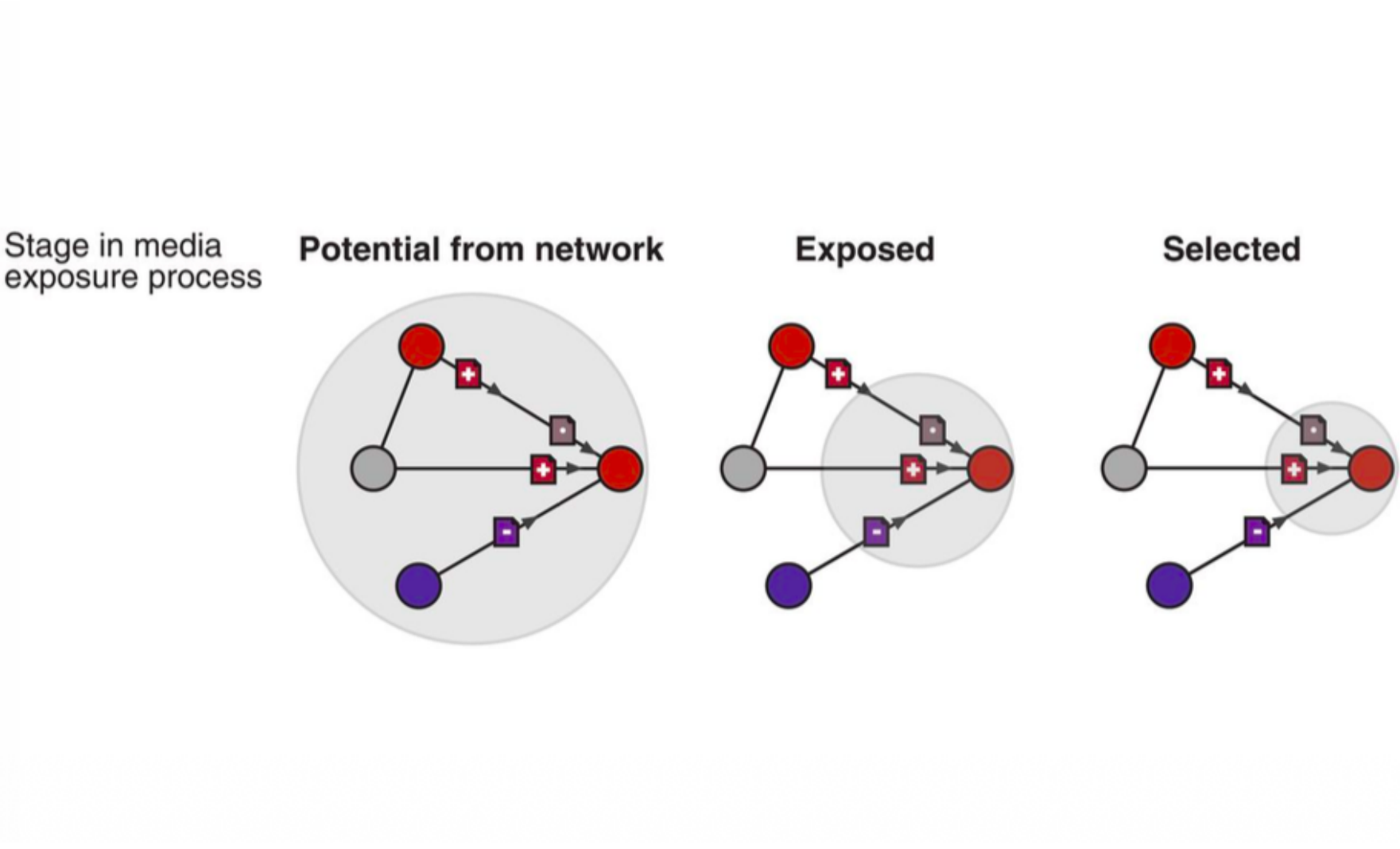
Exposure to ideologically diverse news

Bakshy, Messing, Adamic, *Science* (2015)

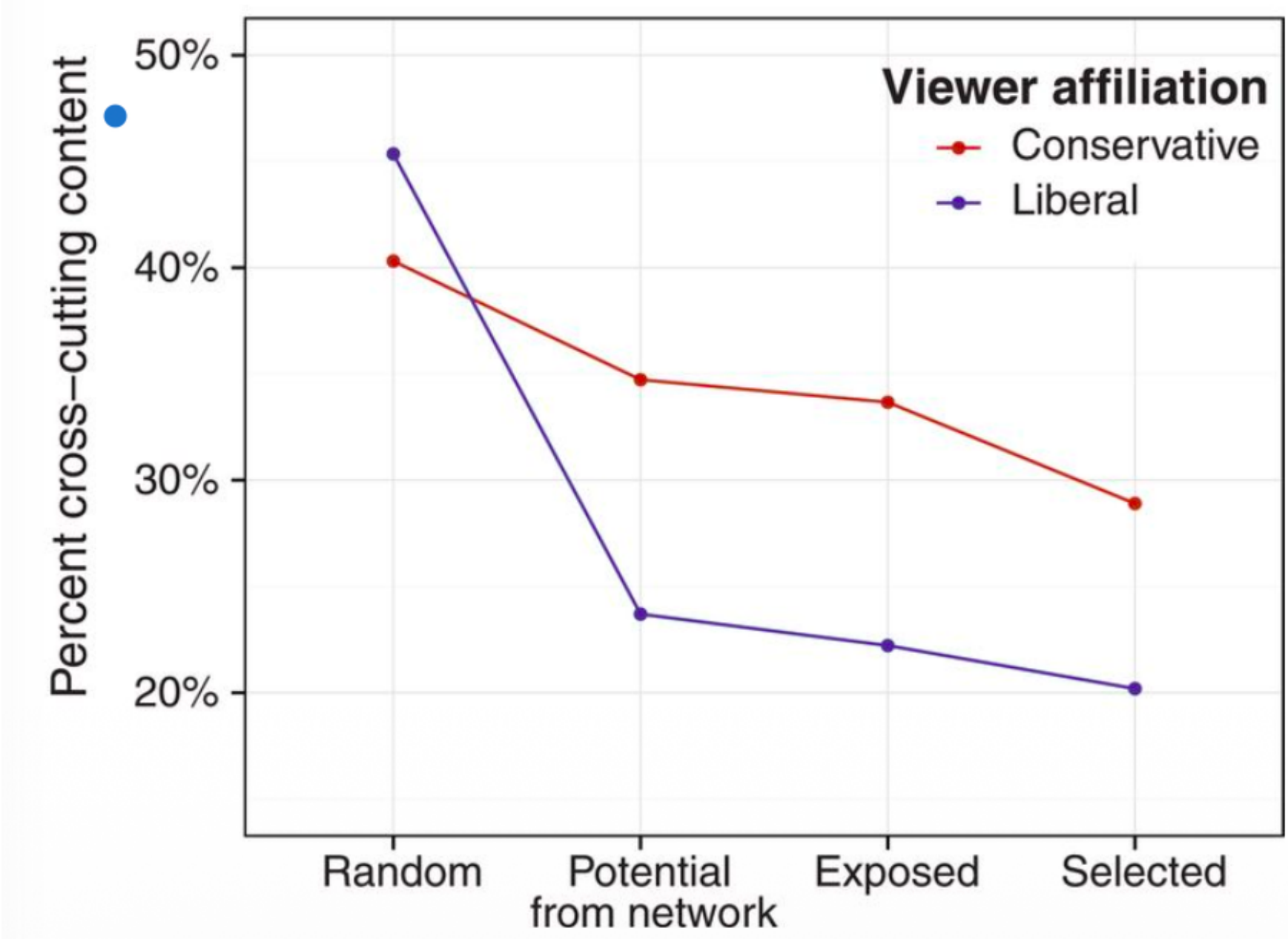
- 10.1 million active U.S. users who self-report their ideological affiliation
- 7 million distinct Web links (URLs) shared by U.S. users over a 6-month period between 7 July 2014 and 7 January 2015.
- take 13% of stories classified as either "hard" (such as national news, politics, or world affairs) as opposed to "soft" content (such as sports, entertainment, or travel)
- limited the set to 226,000 distinct hard-content URLs shared by at least 20 users with self-identified ideology
- data set includes
  - 3.8 billion potential exposures (cases in which an individual's friend shared hard content, regardless of whether it appeared in her News Feed)
  - 903 million exposures (cases in which a link to the content appears on screen in an individual's News Feed)
  - 59 million clicks, among users in the study.


Conservative friends
Moderate friends
Liberal friends
Liberals
Conservative friends
Moderate friends
Liberal friends
Moderates
Conservative friends
Moderate friends
Liberal friends
Conservatives
0%
25%
50%
75%
100%
Percentage of ties

Stage in media exposure process



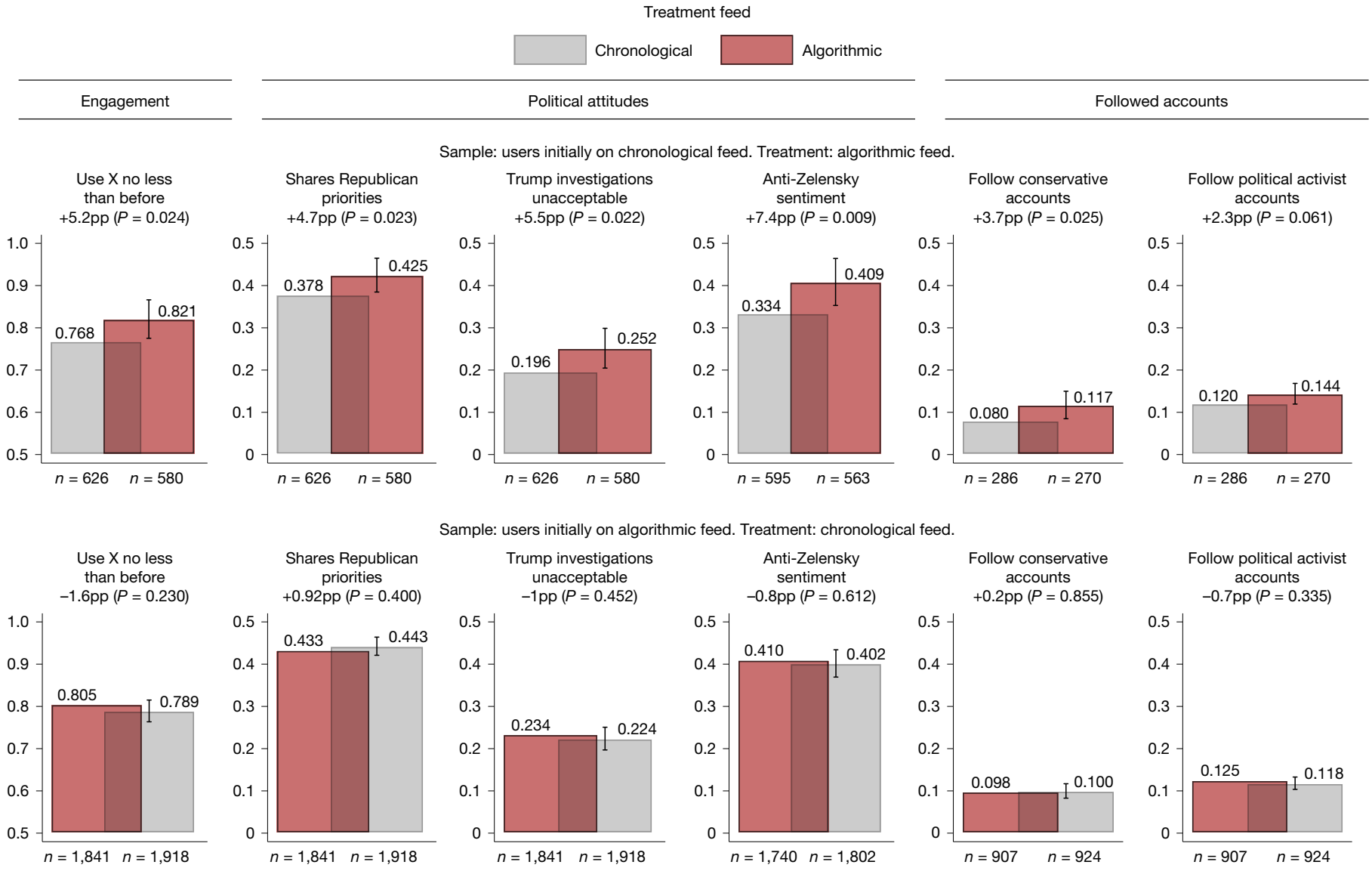
Cross-cutting content



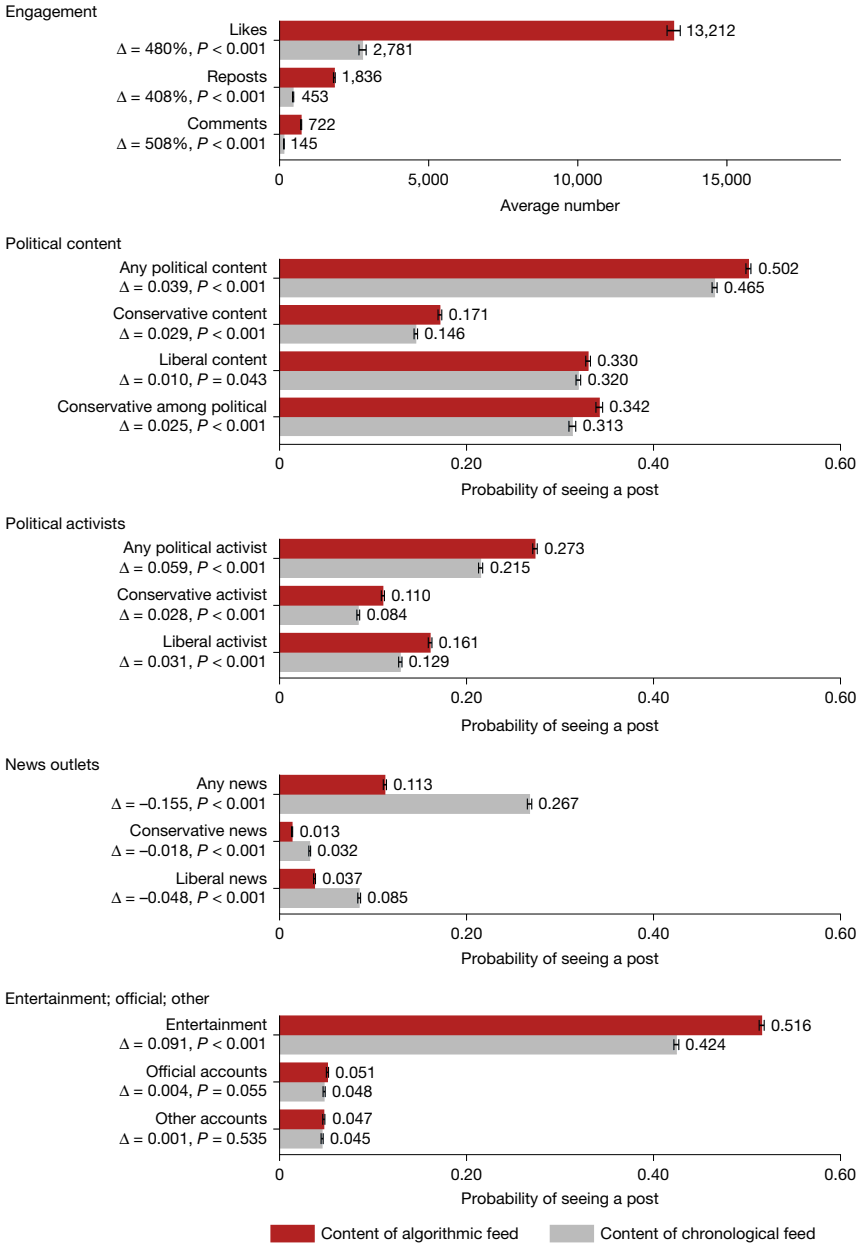
The Role of Feed Algorithms

- Studies of Meta platform indicate that switching from algorithmic feed to reverse chronological order do not have a significant effect on political attitudes, although it decreases engagement (Guess et al 2023).
- However
  - the effect may be asymmetic depending on the direction of change
  - the effect may be specific to a particular platform
  - we don't even know if the algorithm did not change during the period of the study...
- Gauthier et al (2026) provide important additional evidence ont the political effects of X's feed algorithm.
  - exploit the fact that in X people can switch themselves between the algorithmic feed and reverse chronological order
  - Recruit participants and pay them to change their choice

Outcomes


Treatment feed
Chronological
Algorithmic
Engagement
Political attitudes
Followed accounts
Sample: users initially on chronological feed. Treatment: algorithmic feed.
Use X no less than before +5.2pp (P = 0.024)
Shares Republican priorities +4.7pp (P = 0.023)
Trump investigations unacceptable +5.5pp (P = 0.022)
Anti-Zelensky sentiment +7.4pp (P = 0.009)
Follow conservative accounts +3.7pp (P = 0.025)
Follow political activist accounts +2.3pp (P = 0.061)
0.768
0.821
0.378
0.425
0.196
0.252
0.334
0.409
0.080
0.117
0.120
0.144
n = 626 n = 580
n = 626 n = 580
n = 626 n = 580
n = 595 n = 563
n = 286 n = 270
n = 286 n = 270
Sample: users initially on algorithmic feed. Treatment: chronological feed.
Use X no less than before −1.6pp (P = 0.230)
Shares Republican priorities +0.92pp (P = 0.400)
Trump investigations unacceptable −1pp (P = 0.452)
Anti-Zelensky sentiment −0.8pp (P = 0.612)
Follow conservative accounts +0.2pp (P = 0.855)
Follow political activist accounts −0.7pp (P = 0.335)
0.805
0.789
0.433
0.443
0.234
0.224
0.410
0.402
0.098
0.100
0.125
0.118
n = 1,841 n = 1,918
n = 1,841 n = 1,918
n = 1,841 n = 1,918
n = 1,740 n = 1,802
n = 907 n = 924
n = 907 n = 924

Change in the content



Interaction with Traditional Media

Economic Journal.

- Idea: Field experiment to see the effect of independent TV channel in Russia in 2016. Examine heterogeneity of effects depending on social media usage.
- Main finding - the treatment y had a very different effect for users and non-users of social media
  - for users of social media it had a polarising effect
  - for non-users it uniformly reduced support of the pro-governmental party
- Additional checks suggest that the effect reflects causal effect of social media.
- Highlights the role that social media is playing in mediating the effect of traditional media.

In Sum

- The is some, but not overwhelming evidence of polarizing effect of social media.
  - may depend on the traditional media environment
- Feed algorithms per se do not seem to be driving the effects.
- But feed algorithms that insert posts from previously unfollowed accounts can have an effect by changing netwo6)rk connections
- Cosistent with the findings that friend recommendation algorithms have a percistent effect on network structure and behavior (Enikolopov et al 2026)
  - Examine causal effect of homophily driven by friendship algorithms
  - Shows negetive effect on offline socialization, local social capital, and political cohesion
  - Interestingly, negative effect on political polarization

False news

- Major policy issue
- Well-informed voters are essential for democracy
- At the same time, false news disseminate widely on social media (Allcott and Gentzkow, 2017; Vosoughi, Roy, and Aral, 2018)
- False news could be very persuasive (Barrera, Guriev, Henry, and Zhuravskaya, 2020; Nyhan, Porter, Reifler, and Wood, 2020)
- Increasing number of people in the world use social media as a source of political news

Potential Interventions

"Curtailing False News, Amplifying Truth" (2026) Guriev, Henry, Marquis, Zhuravskaya, forthcoming in *Econometrica*

- Experiments to assess various interventions to prevent circulation of false news (see, e.g., Pennycook et al. 2020; Fazio, 2020; Yaqub et al. 2020; Henry et al. 2022; Arechar et al. 2023, surveys by Nyhan, 2020; Martel and Rand, 2023, and meta-analyses by Pennycook and Rand, 2022 and Kozyreva et al.,2024).
- Limitations
  - reduced form analysis, limiting external validity
  - one type of intervention per paper
  - most studies do not consider dissemination of true news in addition to false news
- This paper: offers unified framework to compare different policies within a single structural model

Political posts

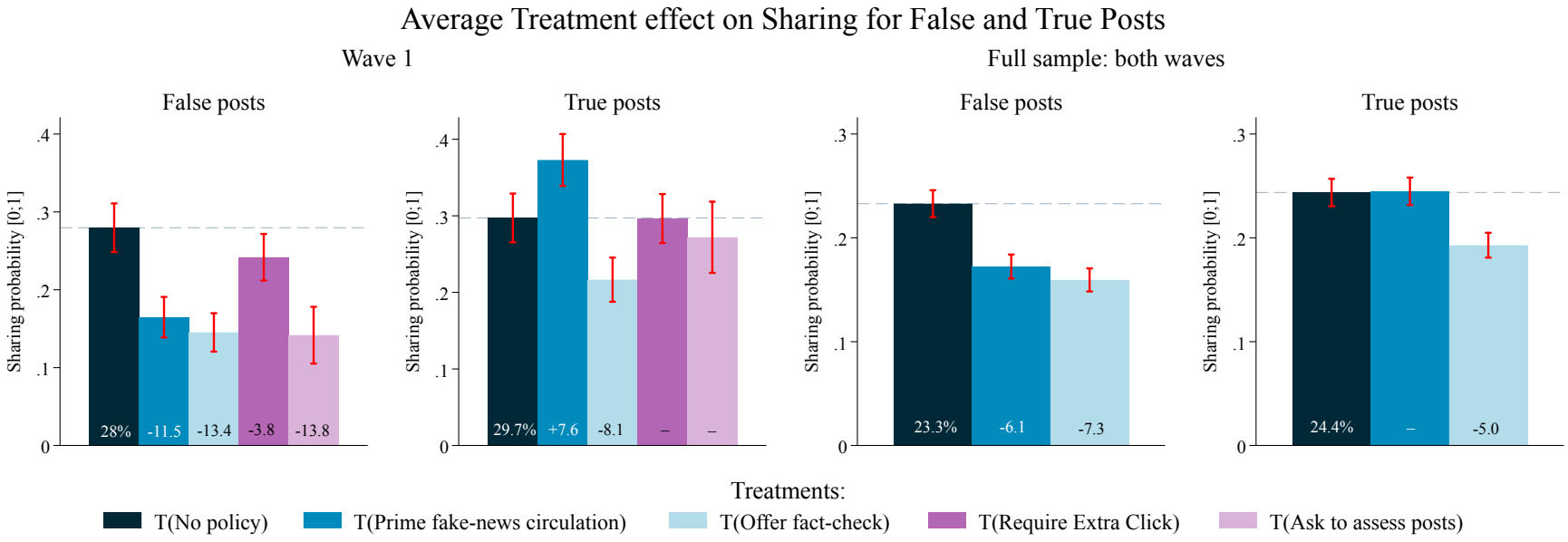
- In each wave, the participants were shown 4 posts
  - two false news posts, which were fact-checked, one pro-Republican, and one pro-Democratic
  - two traditional media posts, which were not fact checked, authors define them as true posts, one from conservative media, and another one from liberal media
- First wave: 4 posts selected by the authors
- Second wave: 40 posts selected using pre-registered procedure

Treatments and sharing decisions

- People were asked if they want to share one of four posts (or none) in their Twitter/X account
- Treatments
  1. No policy
  2. Prime fake news circulation. "Please think carefully before you repost. Remember that there are a lot of false news circulating on social media."
  3. Offered fact-check. "For some of these tweets, fact-checking of the content was done by PolitiFact, an independent fact checker. You can select the fact-checks you want to see. You can also choose to view none at all."
  4. Extra click
  5. Ask to assess posts (veracity, partisanship) before sharing decision

ATE results

Figure 1: Average Treatment Effects on Sharing for False and True Posts



Note: The figure presents the mean sharing rates of false and true posts by treatment group in wave 1 (left) and the full sample, including both waves (right). This is raw-data summary without controls. Appendix Figure A9 presents ATE separately for wave 2.

A model of sharing

- A binary state of the world $\theta \in \{0,1\}$ is unknown
  - 1 (0) is the state of the world in which Republican (Democratic) action is optimal
- Sender i has access to content (post) j. Post is potentially informative about θ
- The actual veracity of content is $\omega_j \in \{0,1\}$.
  - Initially, both the sender and the receivers share the same prior belief about the veracity of j. $P(\omega_j = 1) = \nu_j^0$
- Content also has partisanship
  - sender i perceives that post j will be interpreted by any receiver with probability π_{ij} as suggesting that the state of the world is 1
- Individuals could be informed or uninformed
- Partisanship of individuals and content might be aligned or misaligned

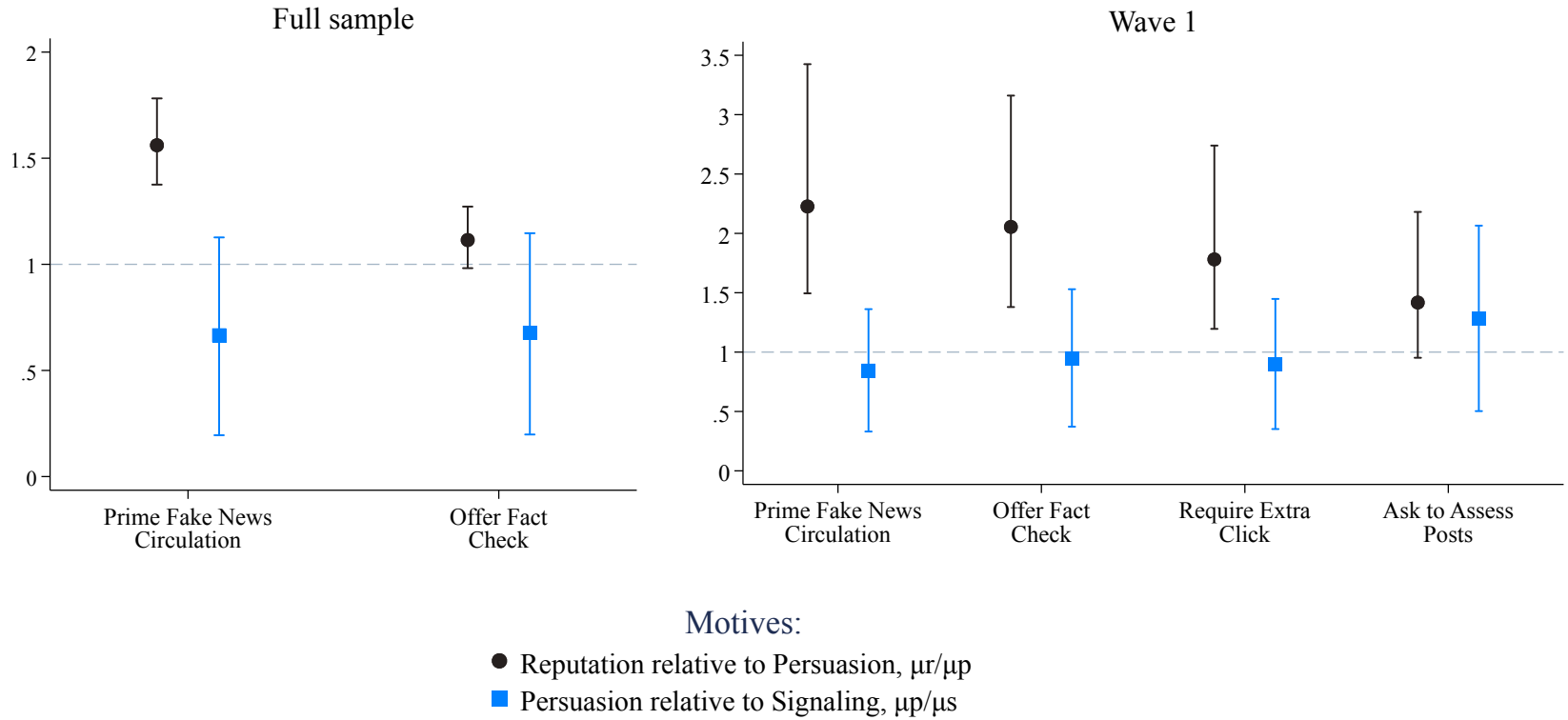
Senders and receivers

- Receivers get utility from choosing action that fits their belief about the state of the world
- Senders have payoffs that consist of three parts
  - persuasion payoff from influencing others' actions μ_p
  - signaling payoff from others correctly identifying the sender's partisan beliefs μ_s
  - reputation payoff, the benefit of having an image of being informed μ_r
- Proposition: In all PBE of this game, senders share if and only if the partisan alignment between them and the news is high. There is a threshold level of π_{ij} so that Republicans share if and only if π_{ij} is higher than the threshold, and, similarly, there is a related threshold for Democrats. The threshold level depends on the state of the sender (informed, uninformed).

Structural approach

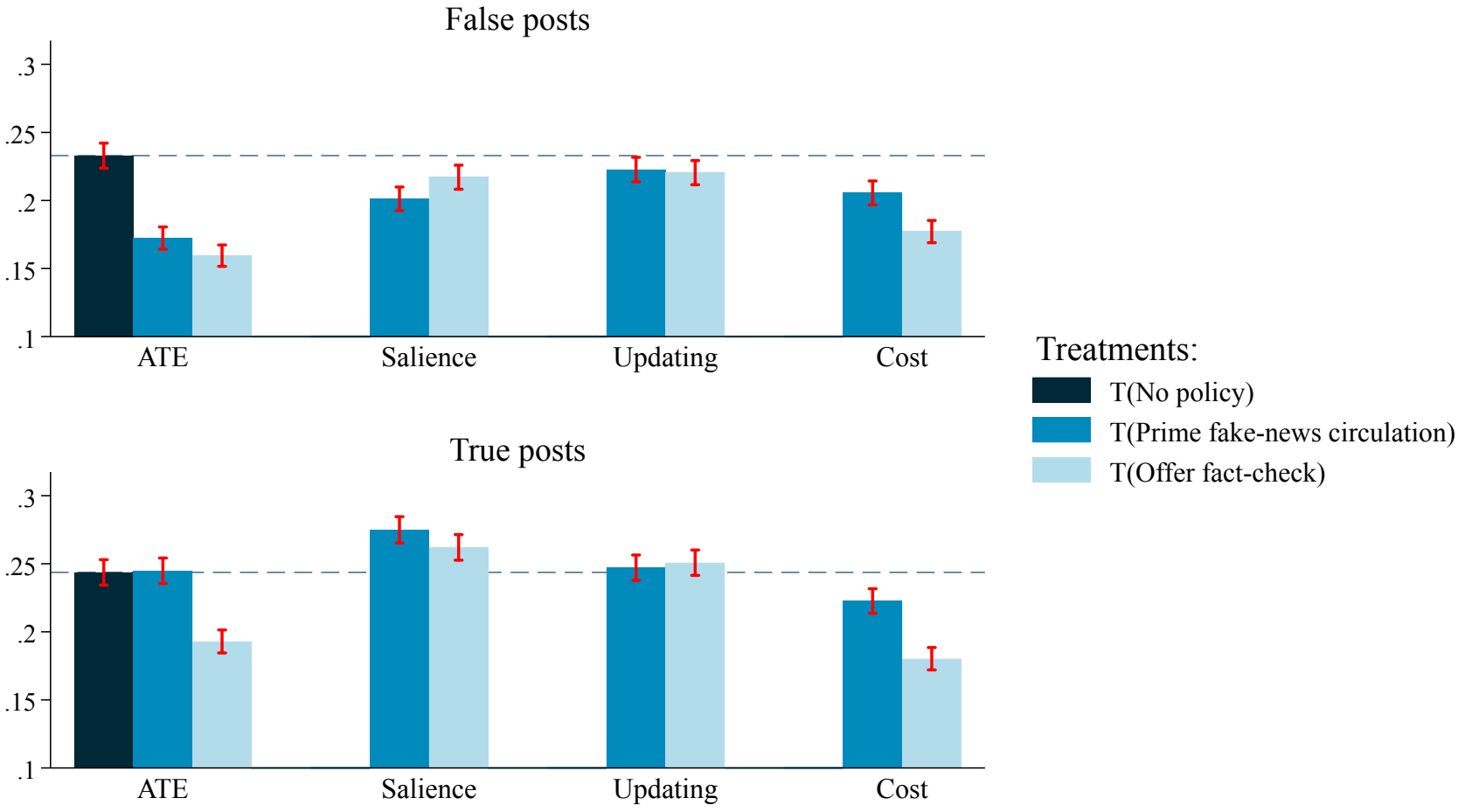
- $P(j|s) = \frac{e}{\sum_{l=1}^{J} eV_{il}/\lambda_\omega} V_{ij}/\lambda_\omega$
- Three channels treatments affect decisions of the sender
  - **updating channel**: treatments can affect sender's assessment of partisanship and veracity of the post
  - **salience channel:** increase in reputation concern
  - **costs of engagement channel:** utility from non-sharing anything could be large, cognitive costs, distrust in social media

Figure 3: The Impact of the Treatments on the Relative Importance of Different Motives in the Sender's Utility Function Relative to the No-Policy Treatment Group



Note: The figure presents the results of the numerical solution for the parameters of the sender's utility function. The 90% confidence intervals are shown. The left panel displays the full-sample results, while the right panel shows the results for the extended set of treatments in wave 1.

Figure 4: Counterfactual exercise: allowing one channel at a time



Note: The figure shows simulation results for false posts (in the top row) and true posts (in the bottom row), presenting counterfactual results keeping one channel at a time: updating, salience, and engagement cost channels. Average Treatment Effects are presented in the first column, for comparison.

In sum

- Priming is the most cost-effective method to prevent false news circulation.
  - However, it is not clear if it continues to work if implemented at scale
- Understanding the mechanisms allows to design interventions not directly considered by the experiment
  - e.g., combination of AI fact check and priming
- Short-term interventions are effective in the presence of uncontroversial news.
  - At the same time, at least some social media platforms downgrade posts from mainstream media.
  - That could be regulated.

Social Media and Protests

- Growing literature that indicates that social media has a causal effect on political protests (Acemoglu, Hassan, and Tahoun 2017; Enikolopov, Makarin, and Petrova 2020; Fergusson and Molina 2021)
- Consistent with more general effect of mobile internet (Manacorda and Tesei, 2020)
- May introduce a positive feedback loop between protests and social media (Casanueva-Artís, 2023; Casanueva-Artís et al.2022)
- The channels include
  - reduction in coordination costs (Enikolopov, Makarin, and Petrova 2020)
  - signaling the opening of a "window of opportunity" or mobilization through peopleís emotional responses (Qin, Strömberg and Wu, forthcoming)

Political Effects of Online Social Networks

Enikolopov, Ruben, Alexey Makarin, and Maria Petrova (2020) "Social Media and Protest Participation: Evidence from Russia," *Econometrica*

- Do online social networks threaten authoritarian leaders and promote political protests?
- The paper looks at these questions using the example of online social networks in Russia
  - effect on electoral support of the government
  - effect on political protests in 2011-2012

Background on VK

Timeline

- October 2006 – VKontakte (VK) created as a Russian clone of Facebook
  - founder - Pavel Durov, who was at that time a student of philology department
  - initially, by invitation only (through student forum, created also by Durov)
- First VK users
  - mostly students from SPbSU; different home cities
  - most of them never returned to their home cities, but still had networks of friends and relatives there
- End of November 2006 – open registration
- Later:
  - Summer 2008 – Facebook offered Russian interface
  - 2011 – 55 million VKontakte users, 6 million Facebook users

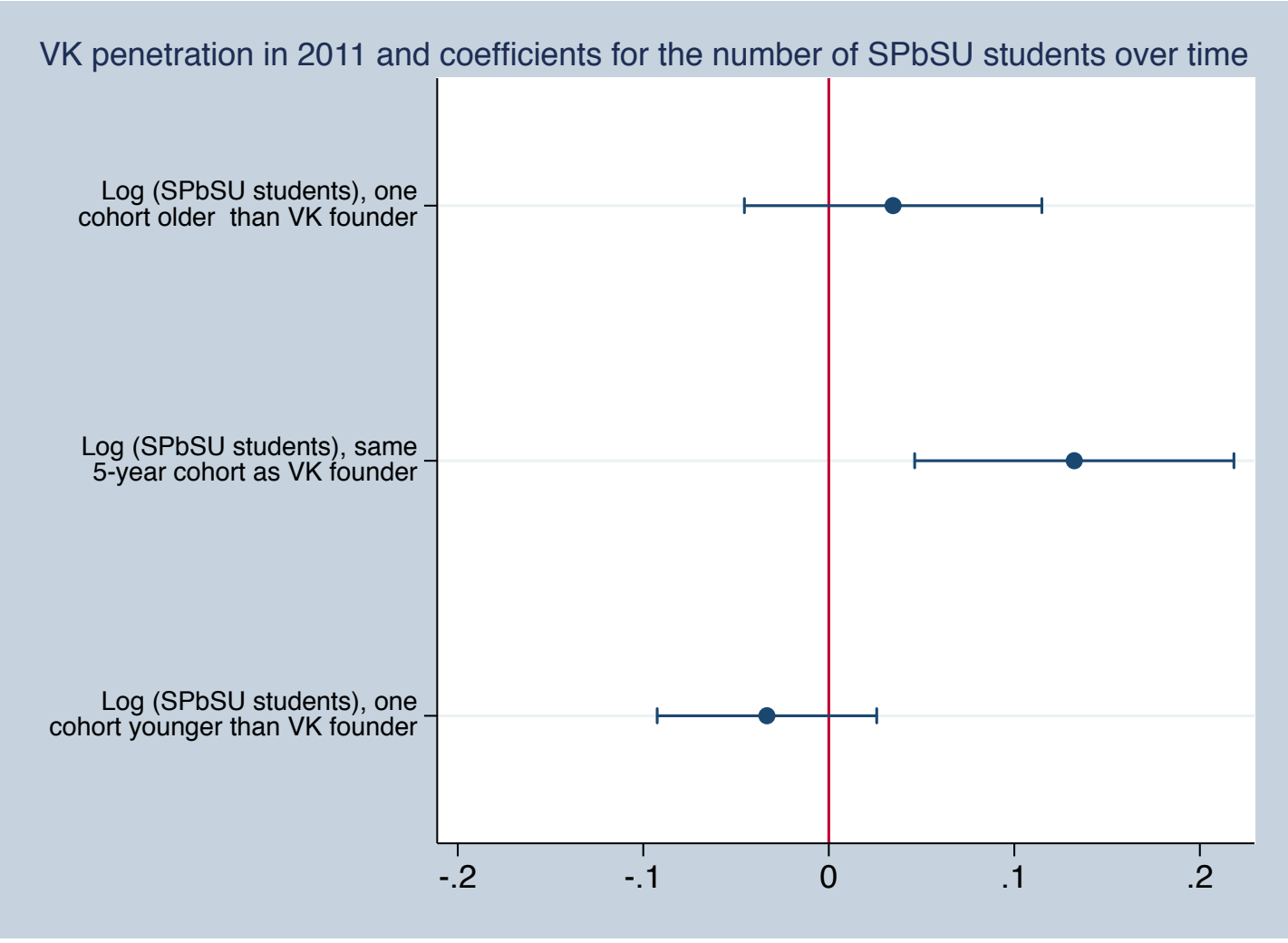
Source of Variation

- Argument: idiosyncratic variation in the distribution of early users has a long lasting effect
  - attract new users through network externalities
  - deter opening Facebook accounts
- Instrument: fluctuations in inter-city student flows
  - Originally, accounts by invitation only
  - Early penetration can be correlated with unobserved taste parameter
  - We use information on city origins of the students studying in St Petersburg State University by cohort
    - separate cohort studying with the VK founder (+- 2 years) from older or yonger cohorts

VK Penetration and Inter-city Student Flows

Coefficients for the number of students of different origin as determinants of 2011 VK penetration

- in a regression with all baseline controls included



VK Penetration and Protest Participation

Panel A. Probability of protests

	Incidence of protests, dummy, Dec 2011							
	IV	IV	IV	IV	OLS	OLS	OLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (number of VK users), Aug 2011	0.466**	0.451**	0.458***	0.479***	0.060***	0.057***	0.055***	0.065***
	[0.189]	[0.177]	[0.175]	[0.181]	[0.018]	[0.018]	[0.019]	[0.018]
Log (SPbSU students), one cohort younger than VK founder	0.027	0.026	0.028	0.030	0.029	0.028	0.026	0.030
	[0.024]	[0.024]	[0.025]	[0.025]	[0.021]	[0.020]	[0.021]	[0.020]
Log (SPbSU students), one cohort older than VK founder	-0.033	-0.029	-0.028	-0.026	0.003	0.005	0.003	0.007
	[0.031]	[0.029]	[0.027]	[0.029]	[0.018]	[0.017]	[0.017]	[0.018]
Population controls	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Age cohort controls	Yes	Yes	Yes	Yes	Yes**	Yes**	Yes**	Yes***
Education controls	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Electoral controls, 1995		Yes				Yes*		
Electoral controls, 1999			Yes				Yes	
Electoral controls, 2003				Yes				Yes**
Observations	625	625	625	625	625	625	625	625
Kleibergen-Paap F-stat	6.554	6.779	7.591	7.031				
Effective F-stat (Montiel Olea and Pflueger 2013)	10.97	12.03	12.30	12.17				

Panel B. Number of protesters

	Log (number of protesters), Dec 2011							
	IV	IV	IV	IV	OLS	OLS	OLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (number of VK users), Aug 2011	1.911**	1.872**	1.894**	2.013**	0.377***	0.359***	0.351***	0.393***
	[0.924]	[0.872]	[0.872]	[0.889]	[0.098]	[0.102]	[0.104]	[0.103]
Log (SPbSU students), one cohort younger than VK founder	0.216*	0.209*	0.213*	0.230*	0.221**	0.217**	0.207*	0.233**
	[0.117]	[0.115]	[0.119]	[0.119]	[0.107]	[0.106]	[0.108]	[0.107]
Log (SPbSU students), one cohort older than VK founder	-0.141	-0.127	-0.124	-0.115	-0.004	0.004	-0.002	0.013
	[0.151]	[0.145]	[0.135]	[0.144]	[0.093]	[0.092]	[0.090]	[0.094]
Population controls	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Age cohort controls	Yes	Yes	Yes	Yes	Yes*	Yes**	Yes**	Yes**
Education controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes*	Yes
Other controls	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Electoral controls, 1995		Yes				Yes		
Electoral controls, 1999			Yes				Yes	
Electoral controls, 2003				Yes*				Yes*
Observations	625	625	625	625	625	625	625	625
Kleibergen-Paap F-stat	6.554	6.779	7.591	7.031				
Effective F-statistics (Olea Montiel and Pflueger 2013)	10.97	12.03	12.30	12.17				

Support of the Government: Voting

	Voting share for United Russia, 2007							
	IV	IV	IV	IV	OLS	OLS	OLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (number of VK users), Aug 2011	0.043	0.023	0.054	0.004	-0.027*	-0.025**	-0.018	-0.032***
	[0.060]	[0.047]	[0.056]	[0.042]	[0.014]	[0.011]	[0.013]	[0.011]
	Voting share for Medvedev, 2008							
Log (number of VK users), Aug 2011	0.153*	0.132*	0.165*	0.113*	-0.007	-0.009	-0.004	-0.013
	[0.089]	[0.072]	[0.085]	[0.065]	[0.012]	[0.010]	[0.011]	[0.009]
	Voting share for United Russia, 2011							
Log (number of VK users), Aug 2011	0.281*	0.206*	0.276*	0.210	-0.047***	-0.043**	-0.034*	-0.052***
	[0.169]	[0.118]	[0.154]	[0.130]	[0.017]	[0.016]	[0.017]	[0.014]
Log (SPbSU students), one cohort younger than VK founder	-0.004	-0.001	-0.002	-0.002	-0.004	0.001	-0.003	-0.001
	[0.016]	[0.012]	[0.015]	[0.012]	[0.012]	[0.010]	[0.011]	[0.010]
Log (SPbSU students), one cohort older than VK founder	0.000	0.005	-0.001	-0.005	0.023*	0.023**	0.020*	0.015
	[0.018]	[0.014]	[0.016]	[0.014]	[0.012]	[0.011]	[0.010]	[0.010]
	Voting Share for Putin, 2012							
Log (number of VK users), Aug 2011	0.155*	0.129*	0.153*	0.110	-0.015	-0.014	-0.011	-0.021**
	[0.093]	[0.077]	[0.087]	[0.071]	[0.012]	[0.010]	[0.012]	[0.009]
	Voting share for United Russia, 2016							
Log (number of VK users), Aug 2011	0.212*	0.141	0.185*	0.130*	0.001	0.012	0.018	-0.000
	[0.116]	[0.088]	[0.095]	[0.077]	[0.017]	[0.016]	[0.018]	[0.012]
Population controls	Yes	Yes	Yes*	Yes**	Yes	Yes	Yes*	Yes*
Age cohort controls	Yes**	Yes*	Yes**	Yes	Yes	Yes	Yes	Yes
Education controls	Yes	Yes	Yes	Yes	Yes***	Yes***	Yes***	Yes***
Other controls	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Electoral controls, 1995		Yes***				Yes***		
Electoral controls, 1999			Yes***				Yes***	
Electoral controls, 2003				Yes***				Yes***
Observations	625	625	625	625	625	625	625	625
Kleibergen-Paap F-stat	6.554	6.779	7.591	7.031				
Effective F-statistics (Olea Montiel and Pflueger 2013)	10.97	12.03	12.30	12.17				

Support of the Government: Survey Evidence

	How do you assess the work of president Dmitry Medvedev					
	Good and getting better	Good and remains the same	Good and getting worse	Bad, but getting better	Bad and remains the same	Bad and getting worse
	(1)	(2)	(3)	(4)	(5)	(6)
Log (number of VK users), Aug 2011	0.255**	-0.069	-0.060	-0.094	-0.026	0.026
	[0.127]	[0.130]	[0.062]	[0.059]	[0.076]	[0.061]
Log (SPbSU students), one cohort younger than VK founder	-0.013	0.010	0.001	0.013**	0.003	0.005
	[0.016]	[0.009]	[0.007]	[0.005]	[0.009]	[0.008]
Log (SPbSU students), one cohort older than VK founder	-0.016	-0.017	-0.001	0.006	-0.011	-0.006
	[0.019]	[0.014]	[0.010]	[0.008]	[0.009]	[0.008]
	How do you assess the work of prime minister Vladimir Putin					
	Good and getting better	Good and remains the same	Good and getting worse	Bad, but getting better	Bad and remains the same	Bad and getting worse
Log (number of VK users), Aug 2011	0.205*	-0.072	0.004	-0.061	-0.068	-0.016
	[0.124]	[0.124]	[0.047]	[0.042]	[0.075]	[0.056]
Log (SPbSU students), one cohort younger than VK founder	-0.019	0.012	-0.000	0.008**	0.007	0.004
	[0.016]	[0.009]	[0.006]	[0.003]	[0.009]	[0.007]
Log (SPbSU students), one cohort older than VK founder	-0.011	-0.021	-0.007	0.005	-0.002	-0.002
	[0.018]	[0.016]	[0.007]	[0.006]	[0.011]	[0.007]
	How do you assess the work of the government					
	Good and getting better	Good and remains the same	Good and getting worse	Bad, but getting better	Bad and remains the same	Bad and getting worse
Log (number of VK users), Aug 2011	0.313**	0.100	-0.124*	-0.078	-0.075	-0.027
	[0.133]	[0.129]	[0.074]	[0.079]	[0.104]	[0.091]
Log (SPbSU students), one cohort younger than VK founder	-0.017	0.015	0.004	0.013**	-0.001	0.001
	[0.018]	[0.013]	[0.008]	[0.006]	[0.012]	[0.009]
Log (SPbSU students), one cohort older than VK founder	-0.019	-0.026	0.007	0.006	-0.014	0.001
	[0.020]	[0.018]	[0.012]	[0.010]	[0.012]	[0.011]

Pre-Election Intentions

	Which party are you planning to vote for in December elections					
	United Russia	Just Russia	LDPR	KPRF	Patriots of Russia	Yabloko
Log (number of VK users), Aug 2011	0.260*	0.050	-0.056	-0.041	-0.002	-0.005
	[0.155]	[0.055]	[0.055]	[0.067]	[0.009]	[0.013]
Log (SPbSU students), one cohort younger than VK founder	-0.006	-0.000	0.006	0.003	0.001	0.002
	[0.016]	[0.005]	[0.005]	[0.005]	[0.001]	[0.001]
Log (SPbSU students), one cohort older than VK founder	-0.043*	-0.004	0.005	0.002	0.000	-0.002
	[0.023]	[0.007]	[0.009]	[0.008]	[0.001]	[0.002]

	Do you personally admit or exclude a possibility to take part in any protests		
	Admit	Exclude	Difficult to answer
Log (number of VK users), Aug 2011	-0.278*	0.101	0.186
	[0.164]	[0.184]	[0.146]
Log (SPbSU students), one cohort younger than VK founder	-0.001	-0.002	0.002
	[0.014]	[0.015]	[0.012]
Log (SPbSU students), one cohort older than VK founder	0.027	-0.024	-0.005
	[0.021]	[0.025]	[0.022]

Conclusions

- Evidence consistent with social media boosting protest participation
  - Cross-city results for the leading Russian social network, VKontakte
  - Use overtime fluctuations of student flows for identification
- Evidnce consistent with reducing the costs of collective action
  - Critical Mass
  - Fractionalization is important
  - Supported by theoretical predictions
- But: social media can at the same time promote support of autocratic regime

Social Media and Extremism

- Growing evidence that social media promotes xenophobia and hate crime (Müller, and Schwarz, 2021, 2023)
- The mechanisms seems to include persuasion and coordination, despite the fact that social stigma associated with xenophobi view may be even increasing (Bursztyn et al. 2023)
- The important role of leading politicians in changing norms (Müller, and Schwarz, 202; Fagues and Martinez, 2024)
- The open question is what can be done to limit the spread of toxic content
  - moderation (Beknazar-Yuzbashev Jiménez Durán, and Stalinski, 2024; (Jiménez Durán 2023; Beknazar-Yuzbashev Jiménez Durán, McCrosky, and Stalinski, 2024)
  - legal restrictions (Jiménez Durán, Müller, and Schwarz, 2024)

Social Media and Behavior of Politicians

- Evidence of substitution between online and off-line types of political activity in Brazil (Bessone et al, 2022).
  - Expansion of Facebook makes politicians
    - use social media extensively to communicate with constituents, finely targeting localities
    - increase online engagement, especially with places with pre-existing vote share
    - shift their offline engagement (measured by speeches and earmarked transfers) away from connected municipalities
- Twitter access helps not well known politicians spread information about themselves (Petrova, Sen, and Yildrim, 2021)
  - opening a Twitter account helps candidates running to get higher campaign contributions, especially for newcomers
- Uncivil behavior, insults, and harassment, primarily targeted at politicians, makes them choose one-sided communication in social media (Theocharis et al. 2016)

Online Strategies of Autocratic Regimes

- Digital Censorship
  - prevalent in China (King, Pan and Roberts 2013, 2014; Qin, Strömberg and Wu, 2024) and increasingly so in Russia
  - not as much in other countries
  - Even if people have free access to uncernsored information they rarely use it (Chen and Yang 2019)
  -
- Manipulation of Information
  - the most popular of information manipulation (Roberts 2018)
  - increasingly used for by foreign powers interfering in democratic regimes
  - not that much academic research on that topic (Gorodnichenko, Pham and Talavera 2018; Stukal et al 2019)
- Monitoring and Surveillance
  - collecting information on performance of local governments (Egorov, Guriev and Sonin, 2009)
  - and citizens (Qin, Strömberg and Wu, 2017)

Overall

- The influence of social media has important features that differentiates them from traditional media
- Low barriers to entry and horizontal flows of information in social media
  - can promote accountability
  - can promote self-organization and protest participation;
- At the same time, low barriers to entry and algorithmic curation
  - promote extremism
  - may increase susceptibility to information manipulation
- In autocracies it is a tug of war between governments and civil society
  - the outcome is likely to depend on state capatiy of autocracies