3G Internet and Confidence in Government

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The last decade: ICT revolution

Broadband internet access has grown because of the expansion of *mobile* broadband (3G) internet.
The last decade: ICT revolution

Perhaps, more surprisingly, it has been true in both developed and developing countries.
3G implications go beyond broadening internet access

- 3G was a key driver of a rapid expansion of social media
- 3G is the first generation mobile technology allowing users to freely stream and upload videos
- 3G not only changed how much time we spend online, but what we do
The public debate

What are the political implications of the expansion of mobile broadband internet around the world?

- Starting with the Arab Spring, optimists call internet a “Liberation technology”
  - Improves access to independent political information
  - Social media enables two-way information flows, which helps coordinating protests
- Pessimists consider the internet and social media a “misinformation technology,” which
  - facilitates the dissemination of fake news
  - empowers non-democratic regimes by reducing costs of surveillance and propaganda
  - helps populists to connect to voters through social media
- These conjectures found empirical support in a number of single-country studies (survey: Zhuravskaya, Petrova, and Enikolopov 2020)
In a recent book, a former CIA analyst Martin Gurri argues:

- “the rise of Homo informaticus [a person relying on social media for information] places governments on a razor’s edge, where any mistake, any untoward event, can draw networked public into the streets... This is the situation today for authoritarian governments and liberal democracies alike. The crisis in the world [...] concerns loss of trust in government”

- “the greater the diffusion of information to the public [through social media], the more illegitimate any political status quo will appear... [It] poses an existential challenge to the legitimacy of every government”
What we do...

- Our paper is the first one to document political effects of the expansion of mobile broadband internet around the world.
- We combine data on:
  - the expansion of 3G internet across the globe over the last decade
  - survey data on attitudes toward governments from the Gallup World Poll (GWP)
  - election results for European democracies
- The global setting allows us to shed light on at least some of the mechanisms at play by comparing the effect of 3G on government approval across different institutional environments.
The main takeaways

1. On average, access to 3G internet decreases government approval.

2. The availability of independent-of-the-government political information is one of the channels at play.
   - The effect is stronger when traditional media is censored.
   - There is no effect if internet is censored.
   - The 3G internet helps expose actual corruption.
   - In the cleanest countries, the effect is positive.

3. In Europe, incumbents lose votes with the expansion of 3G internet.
   - Only the populist opposition benefits.
1 story is more persuasive than statistics with 1M obs.

2014 victory of Klaus Iohannis, Romania’s “Facebook President”
Romania 2014: “Facebook President”

- In 2014 presidential election the incumbent Victor Ponta lost to an outsider, a former physics teacher, Klaus Iohannis.
- Romania is the second most corrupt country in the EU and Iohannis won on the anti-corruption ticket.
- Iohannis campaigned primarily on Facebook:
  - On election night, he wrote: “Together, we have won the battle here on Facebook! ... For the first time, the online has made a difference.”
- A post-election survey: 1/2 of Romanians use Facebook and 70% of them admit that social media played a major role in their voting decision.
  ... Iohannis sticks to his election promises: he fights corruption in Romania from his office (he was re-elected in Nov 2019).
The other side of the coin...

Jair Bolsonaro, Brazil’s “WhatsApp President”
Brazil 2018: “WhatsApp President”

• In 2018, a right-wing populist presidential candidate, Jair Bolsonaro, was also an outsider
• Due to electoral-campaign rules favoring incumbents, he had no access to TV → ran a fully digital campaign, mostly on WhatsApp
• He criticised entrenched elites, but also disseminated false stories about the incumbent
• WhatsApp was particularly well suited for spreading false news
  1. 90% of Brazilian internet users actively used WhatsApp
  2. due to widespread “zero-rating” plans that allowed only limited number of applications, and did not give access external websites
  3. Encrypted chats within closed groups made fact checking impossible
• Bolsonaro won in the second-round with 55% of the vote
Election results and mobile broadband internet coverage

- Bolsonaro’s margin of victory was higher in places covered by mobile internet networks, necessary to connect to WhatsApp
- Despite the fact that mobile internet coverage is higher in urban areas, which were a priori less likely to vote for a populist right-wing candidate
Story No. 3: exposing corruption in autocracies
No free elections, yet the popularity of autocratic leaders is affected

- Navalny’s YouTube documentary “He Is Not Dimon to You” (2017) exposing corruption of the former Russia’s Prime Minister led to an unprecedented fall in his ratings and eventually led to his resignation
- As of yesterday, the film had 38M views on YouTube
Roadmap

• Data
• Average results across the globe
• Mechanisms
  • The effect of online and offline censorship
  • The impact of 3G expansion in cleaner vs. dirtier countries
  • Does 3G internet help expose actual corruption
• Electoral implications
• Conclusions
Outcome 1: Confidence in government

Gallup World Poll

- Survey of about 1 million people
- Between 2008 and 2017
- The same questions asked in over 100 countries
- Four yes/no questions:
  Do you have confidence in each of the following, or not:
  - The national government?
  - The judicial system and courts?
  - The honesty of elections?
  Is corruption widespread throughout the government in your country, or not?
- Information on subnational region for each respondent and the time of the interview
3G networks in 2007

ITU: Only 0.04 active mobile broadband subscriptions per capita in 2007

Sample: Countries with 3G and GWP data.
3G networks in 2018

ITU: 0.70 active mobile broadband subscriptions per capita in 2018

Sample: Countries with 3G and GWP data.
The increase in 3G network coverage from 2007 to 2018 (by GWP subnational regions)

Sample: Countries with 3G and GWP data.
How we estimate the political effects of 3G

Exercise No. 1: Standard diff-in-diff

- Look at how government approval changes with the arrival of mobile internet into a subnational region, taking into account other factors that can affect government approval, such as economic development, demographics, education, income, and region and year fixed effects etc.
3G internet and government approval

Increase in 3G coverage and government approval across the globe

- Mean government approval, by equal-size bins
- Predicted government approval (local polynomial smoothing)
- 90% confidence interval from block bootstrap replications
3G internet and government approval, all respondents

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The effect is even bigger for rural respondents
Is this relationship causal?

- Could it be that the expansion of 3G networks is driven by a change in government approval or other factors related to it?
  - Yes, but it is unlikely
  - To show this, we look at the dynamics of government approval around sharp changes in regional 3G coverage
    - Define a sharp increase as more than half of the population of the subnational region get access to 3G in one year
    - 452 regions in 65 countries
Change in government approval around sharp 3G increases

Panel A: Event study
Treatment: regional 3G coverage increased by over 50 percentage points in year 0
Coefficients on year dummies relative to year -1
Same results using more robust estimator for staggered diff-in-diff

De Chaisemartin and D’Haultfoeuille (2021)
2G networks allowed SMS, but not broadband internet
Could it be that any new ICT leads to fall in government approval?
Could it be that the places that get new ICT technology have decreasing trends in trust of the governments for some other reasons?

The effect of 2G has the opposite sign

- Confidence in government
- Confidence in judicial system
- Honesty of election
- No corruption in government
- Overall government approval

% of respondents

Before 2G  After 2G
Exercise No. 2: IV

- To fully address causality, one needs to find a factor that affects 3G expansion, but does not affect government approval (in other way than by affecting 3G)

- Frequent lightning strikes cause power surges, which substantially increase the costs of providing mobile service and maintaining the infrastructure
  - Thus, they hinder the rollout of telecommunication technologies

- We follow Manacorda and Tesei (2020) and use frequency of lightning to predict which subnational regions will get mobile internet faster and which slower
  - Then, we compare trends in government approval in these groups of regions
Lightning frequency is a predictor of the speed of 3G expansion, when there is no power-surge protection particularly in poor countries: subsample of countries below-median GDP per capita
What is the dynamics of government approval in regions with different lightning frequency?

Sample of countries with below-median GDP per capita

![Graph showing mean residuals of government approval](image)
What could explain this effect of 3G?
Mechanism 1: The information channel

If 3G provides citizens with negative information on government performance (be that real or fake)

- The effect should be weaker if internet content is censored
- The effect should be stronger if alternative channels of information (e.g., traditional media) are censored
Comparative analysis: Internet censorship

3G coverage and government approval: Low vs. high internet censorship

Increase in 3G coverage and government approval across the globe

Data: Limits on Online Content score from Freedom House

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3G Internet and Confidence in Government
Comparative analysis: Censorship of traditional media
The effect of 3G is stronger when traditional media is censored

Increase in 3G coverage and government approval in countries with uncensored internet

- Mean government approval, by equal-size bins
- Predicted government approval (local polynomial smoothing)
- 90% confidence interval from block bootstrap replications
Why is the average effect negative?

• The elites have control over traditional media
  • which means that the pre-3G view of the government was too positive, and this positive bias gets corrected with 3G
• Social media is more prone to disseminating negative messages
  • which biases the public opinions towards being focused on the negative, after the arrival of 3G
• Yet, if the government is super-clean (e.g., New Zealand, Denmark or Switzerland), even when social media is biased toward negative news, people should learn that the situation in other countries is even worse,
  • if so, they should improve confidence in their own government

• Is the effect negative everywhere?
In clean countries, 3G expansion increases ratings.

The effect of 3G by country's overall corruption level on:

- Confidence in national government
- Confidence in judicial system
- Confidence in honesty of elections
- Percentage of government not corrupt
- Share of positive answers
- Public approval of government

Coefficients on each graph come from a single regression; group M has countries with missing GICI index.

Clean countries: Denmark, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, New Zealand.
Does 3G internet help expose actual corruption? GICI

Belief: No corruption in government
Before and after an actual corruption incident in regions with and without 3G

Region without 3G

Region with 3G

% of respondents

Data: Global Incidents of Corruption Index (GICI) from Furceri, et al. (2019)
Does 3G help expose actual corruption? Panama Papers

Belief: No corruption in government

Effect of Panama Papers revelations in countries with lots of scandals

No effect in countries not featured in Panama Papers

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Alternative explanation: “general unhappiness”
Could it be that social media makes people generally unhappy?

Standard of living getting better (Range: 1-3)
Current satisfaction with standard of living (Range: 0-1)
Expected future life satisfaction (Range: 0-10)
Current life satisfaction (Range: 0-10)

% of respondents

Before 3G
After 3G
Outcome 2: Elections

What are electoral implications of voter disillusionment with the government, caused by 3G expansion?

- We test for the effect of 3G on vote shares for:
  - Incumbents, opposition, Populist and Green parties in Europe
- Focus of Europe because:
  - A recent rise of populist parties in Europe
- Data:
  - 33 European democracies
  - 102 parliamentary elections between 2007 and 2018
  - Populist parties are classified based on the Chapel Hill Expert Survey and text analysis of online sources
  - Subnational level
Rise of populism in Europe

Vote share of populist parties, different classifications of populist parties.

Source: Guriev and Papaioannou (2021)
Rise of populism in Europe

Source: PopuList.org

- The number of Europeans living in a country with a populist in cabinet has increased 13-fold from 12.5M in 1998 to 170.3M in 2018
3G networks in Europe 2007

Sample: Countries with 3G and GWP data.
3G networks in Europe in 2018

Sample: Countries with 3G and GWP data.
Electoral implications of 3G internet: incumbents

![Graph showing the relationship between increase in district 3G coverage and incumbents' vote share.]

- **Mean vote share, by equal-size bins**
- **Predicted vote share (local polynomial smoothing)**
- **90% confidence interval from block bootstrap replications**
Electoral implications of 3G internet: opposition

- Right-wing populists' vote share
- Left-wing populists' vote share
- Nonpopulist opposition's vote share
- Green parties' vote share

Mean vote share, by equal-size bins
Predicted vote share (local polynomial smoothing)
90% confidence interval from block bootstrap replications

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Why populists?

• The mechanism behind the effect on populist opposition is unclear and could be both coincidental and causal.

• The timing of the 3G expansion could have coincided with the time when the populist message resonated with voters.

• It could also be that some opposition political messages are better suited to the format of social media.
  • Populist messages may be simpler, and thus, better suited for a short and catchy communication.
    • For instance, the Green parties’ narrative is more complex, asking voters to take responsibility for the planet.

• More research needed to understand this.
  • Importantly, populist incumbents are hurt by the criticism of the government online as much as other incumbents.
Conclusions

- Access to mobile broadband internet reduces government approval
- Independent political information is an important mechanism:
  - The effect is only present in countries, where the internet is not censored, and is stronger when the traditional press is censored
  - The internet helps expose actual corruption to the public
  - Mobile broadband internet increases government approval in the least corrupt countries
- The expansion of 3G internet has electoral implications in democracies:
  - In Europe, 3G reduces incumbent parties’ vote shares
  - Only the populist opposition gains from the 3G expansion
    - This suggests that providing critical information about governments may not be the only channel, as the story of Bolsonaro illustrates