(Mis-)information technology: Internet use and perception of democracy in Africa

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The Internet has significantly expanded worldwide, changing our relationship with the world, and the way we communicate, educate, and inform ourselves. Africa, despite having a very low number of fixed-broadband subscriptions for 100 inhabitants, has not escaped the Internet phenomenon, as the number of individuals with Internet access has risen from 2 in 2002 to 39.7 (per 100 inhabitants) in 2022. Similarly, the number of individuals with mobile-cellular telephone subscriptions has jumped from 12.4 in 2002 to 86.3 (per 100 inhabitants) in 2022 (ITU, 2022).

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`···/···` For decades, Africa was digitally isolated from the rest of the world, until the intercontinental submarine infrastructure widely expanded (Cariolle, 2021).

The rise in connectivity and the Internet that followed has coincided with the emergence of protest movements in several autocratic regimes in the region, with demands for greater democracy. The Arab Spring in North Africa was the most prominent example, but other significant movements emerged in countries like Burkina Faso, South Africa, Senegal, Nigeria, and Zimbabwe. Thus, Africa offers an interesting case study to examine the impact of Internet use on citizens' preference for and perception of democracy.

This is what this research aims to contribute to, by examining how the Internet's role in information processing is reshaping African citizens' relationship with democracy. This question is essential insofar as the alleged superiority of democracy depends on the ability of individuals to access information in such a way as to be able to formulate properly enlightened opinions. It is about the status of the Internet as a technology of liberation, disinformation, or misinformation, which was particularly relevant in the wake of the Arab Spring, and which is crucial in all periods of democratic transition: while some consider the Internet a "liberation technology" that serves as an alternative to traditional media by providing a more open and freer source of information including blogs and social network sites, especially in countries with limited freedom of speech (Diamond, 2010), others believe that it is a "misinformation technology" used by non-democratic regimes, but also anti-establishment political actors, for fake news dissemination, surveillance, and propaganda (Qin *et al.*, 2017).

The Internet and social networks have been scrutinized in the literature through their impacts on the trust in institutions, on the perception of corruption (Enikolopov *et al.*, 2018), confidence in government (Guriev *et al.*, 2021), on the way we participate in politics: demonstrations or voting (Gavazza *et al.*, 2019; Enikolopov *et al.*, 2020; Manacorda and Tesei,

2020; Schaub and Morisi, 2020), and finally on the propensity to hold and maintain false opinions regardless of exposure to contradictory facts. All these impacts have implications and significance for democracy. As argued by Flynn *et al.* (2017), if the use of the Internet produces biases in perception, beliefs, and judg- ments, which do not cancel each other out, this can lead to misperceptions at the macro level and to the formulation of erroneous social and economic policies (on immigration, security, public health, public finance), with injurious consequences. By spreading false information, blurring the visibility of government action, reducing accountability and trust in democratic institutions, and making people doubt them, the Internet can make people distrust democracy and prefer other regimes. Further upstream, while citizens influenced by the Internet tend to distrust and denigrate demo- cratic institutions, they can also vote for extreme parties and participate in street demonstrations, which can sometimes be violent.

The importance of the Internet question explains why, in the last two decades, democracy schol- ars have tried to disentangle how access to information technology shapes the democratization process. Information technology has the potential to play a role in either consolidating or un- dermining democracy (Evans, 2019; Jha and Kodila-Tedika, 2020) by modeling perceptions and shaping preferences and opinions toward it. This research contributes to this literature by con- ducting an empirical analysis of how accessing news through the Internet affects African citizens' preferences for and perceptions of democratic governance.

▶ Main findings

Our empirical analysis relies on three rounds of the Afrobarometer survey from 2011 to 2018, consisting of 99,938 respondents living in 1,845 districts across 35 African countries, some of whom have recently experienced a surge in democratic movements. We find that Internet use induces a bias toward respondents' belief that "in some circumstances, a non-democratic government

can be preferable", away from the belief that "democracy is preferable to any other kind of government". More specifically, a one-unit increase in Internet use frequency as a source of news (e.g. passing from using the Internet from once a month to a few times a week, or from a few times a week to every day) lowers the probability of (strictly) preferring democracy to other forms of government by 31.7 (26) percentage points. We notice that this belief may not be consistent, as a significant share of respondents reports a preference for democracy but approve institutional settings that may not be fully compatible with democratic principles. We also find that Internet users tend to have a more negative perception of the level of democracy in their countries, a one-unit increase in Internet use frequency decreases the probability of perceiving the country as a "full democracy" or a "democracy with minor problems" by 23.3 percentage points. Results are reported in **Fig. 1**.
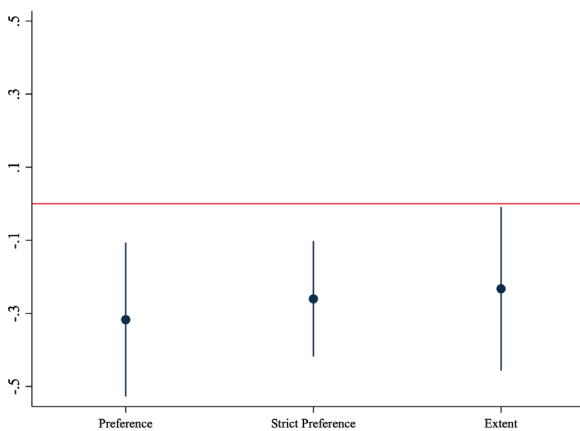

Fig. 1. Internet use and perception of democracy
Source: Authors' elaboration on Afrobarometer data.

We first test whether the Internet influences the public's trust in their regimes. This can be due to either the Internet's ability to expose government misconduct and corruption or the dissemination of false news that criticizes governments on social media platforms. Our first assumption is that the negative impact of Internet use on individuals' preference for and perception of the extent of democracy is channeled through a de-

creased confidence in their governments. To test it, we conduct IV regressions on several dummy variables reflecting individuals' trust in different political institutions, including the president, parliament, electoral commission, local government, ruling/opposition party, police, army, and courts. Each dummy variable is equal to 1 if the individual trusts the entity "a lot" or "somewhat", and 0 otherwise. Results reported in **Fig. 2** show that a higher frequency of using the Internet as a source of information is associated with a lower probability of trust in parliament and the ruling party, by 19.8 and 28.1 percentage points, respectively. Overall, this table is quite consistent with the evidence provided by Guriev *et al.* (2021) and their analysis of 3G network expansion and trust in government institutions.
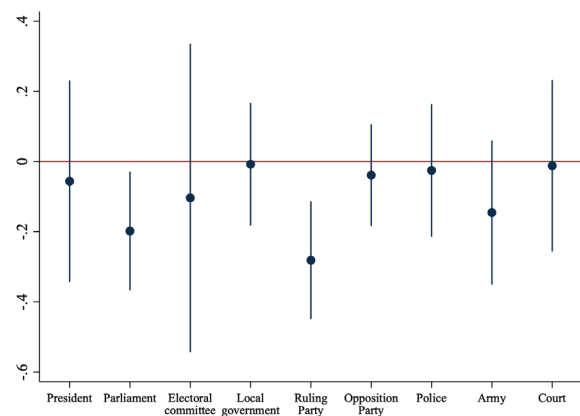

Fig. 2. Internet use and trust in political institutions
Source: Authors' elaboration on Afrobarometer data.

We complement these results by displaying the impact of the Internet on the perceived corruption of political actors (**Fig. 3**). In this case, the dependent variables are equal to 1 if the individual believes that "all" or "most" of the political actors in question are involved in corruption, and 0 otherwise. The significant increase in the perceived corruption of parliament members coincides with the decrease in trust towards the parliament and the ruling party reported above. Given previous evidence on the deterrent effect of Internet use on institutional trust, we continue our investigation by exploring the social discontent channel.
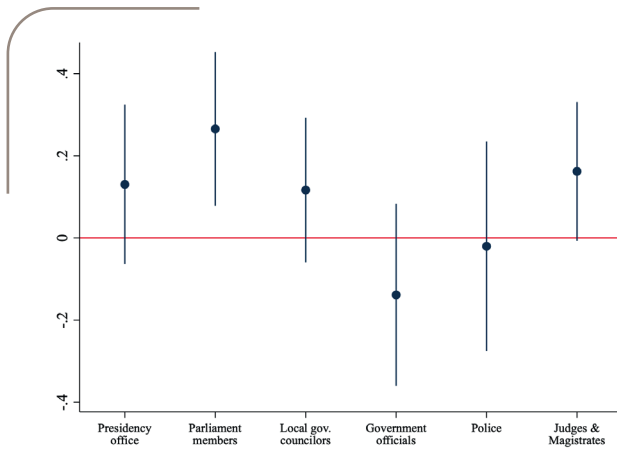
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Fig. 3. Internet use and corruption of political actors
Source: Authors' elaboration on Afrobarometer data.

Trust in government and protest are closely related, as shown by Sangnier and Zylberberg (2017), who found that trust in political leaders and institutions sharply decreases after protests in Africa. Interestingly, several studies have documented the enhanced information and coordination role played by the Internet in organizing collective actions through two-way communication between users (Fergusson and Molina, 2019; Manacorda and Tesei, 2020). To complement the evidence that trust in institutions is altered by the Internet, which is highlighted above, we examine the impact of Internet use on the likelihood of political participation: attending demonstrations and voting.

We begin by examining citizens' responses to a question about their participation in protests or demonstrations over the past year. Next, we turn to a more objective measure of protests using the Armed Conflict Location and Event Data Project (ACLED), which is a publicly available dataset that records political violence and protest events across the world, including the location, date, actors involved, and type of event. We assess the relationship between the average frequency of Internet use and the number of protests at the district level. Finally, we consider a dummy variable that takes a value of 1 if the respondent reports voting in the most recent national election, and 0 otherwise[1]. Results are reported in **Fig. 4**.

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1. We exclude from the sample those who reported being too young to vote at the time of the most recent national election.

We find a positive and significant impact of the frequency of Internet use on the probability of attending demonstrations and on the number of observed protests in the respondent's district. Also, our results suggest a positive effect on voting (and intention to vote) in the most recent national election, which is significant if the election date is close enough to the survey year.

Remember that this greater participation through both protests and voting does not reflect a greater attachment to the intrinsic values of democracy: our results show the opposite. An explanation of this apparent contradiction is proposed in Tufekci (2017)'s much-cited work: a powerful tool for almost instantaneous coordination and mobilization, the Internet often proves powerless to structure a reasoned political offer. Internet users' opinions tend to become simplified and radicalized, while the Internet provides them with the means to mobilize through communities that nurture and amplify discontent. As Internet-induced protests and content proliferate, distrust toward in- stitutions increases and preference for democracy diminishes. In addition, the vote can increase in favor of conservative parties that advocate order and stability, rather than the rights attached to democracy and liberalism, from which individuals exposed to street disorder turn away. All this is particularly harmful in the context of democratic transition.
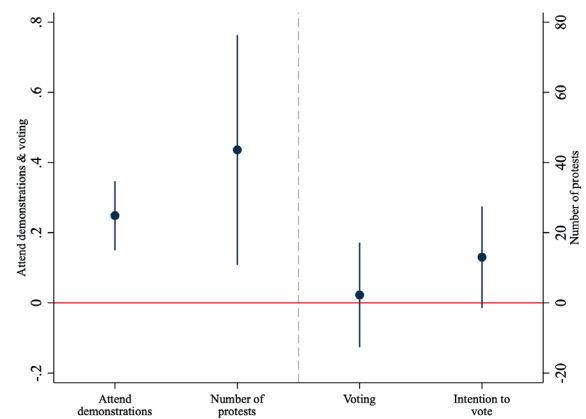

Fig. 4. Internet use, demonstrations, and voting
Source: Authors' elaboration on Afrobarometer data.

► ## Internet as a misinformation technology?

The Internet is often regarded as a "liberation technology" as it provides access to alternative and freer sources of information. However, it is also seen as a "misinformation technology" due to its ability to propagate censored or false information. The liberation versus misinformation technology debate can be apprehended through the lens of two features of the Internet: the low entry barriers cost and the reliance on user-, not expert-generated content. The latter feature gives a voice to marginalized and extremist groups, all the more easily as the absence of safeguarding procedures coupled with the low fact-checking standards lead to a spread of misinformation and fake news, ultimately increasing political misperceptions[2].

Misinformation can be observed in democracies where the absence of regulation and the principle of press freedom allows false information to spread more easily. It can also prevail in non-democratic regimes where it is used as a means of propaganda and surveillance (Qin *et al.*, 2017). However, in environments where censorship reigns, the Internet can act as a window to a more open and diverse array of news, from beyond the borders of the country, leading to higher expectations of governments and creating citizens who are prompt to criticize. Whether the Internet fits the first or the second of these two interpretations in our context is a matter of empirical validation. To provide this empirical validation, we compare individuals' perceptions of the level of democracy with experts' assessments using two commonly used indices: the Polity2 index from the Polity5 project and the Regime of the World index (RoW) from the V-Dem dataset. In addition, we also compare the citizens' perceptions and experts' ratings of the level of corruption among legislators us-

ing an index measuring legislators' involvement in corrupt practices from the V-Dem dataset. We test the (mis)information channel by creating convergence dummies that reflect the convergence between individuals' perceptions and experts' ratings of the level of democracy or corruption (re- flected by Polity 2, RoW, or corruption index rating) and run our model using these new dependent variables.

We also investigate whether using the Internet to get informed increases or decreases comprehension of the core principles of democracy, such as the separation of executive, legislative, and judiciary power, freedom of speech, free and fair election, the rule of law, and other characteristics that are often absent in non-democratic regimes. Although some citizens say they prefer democracy, they may be willing to tolerate certain types of authoritarian rule. Similarly, among citizens who say that non-democratic governance can be preferable at times, some tend to reject all alternative authoritarian rules. To analyze the impact of Internet use on the probability of providing coherent responses to both questions, we consider a dummy variable that takes a value of 1 if citizens either "prefer democracy to any kind of government" and "reject all three authoritarian alternatives", or if they believe that "in some circumstances, a non-democratic government can be preferable" and "reject at most two of the three authoritarian alternatives". Results are reported in **Fig. 5.**
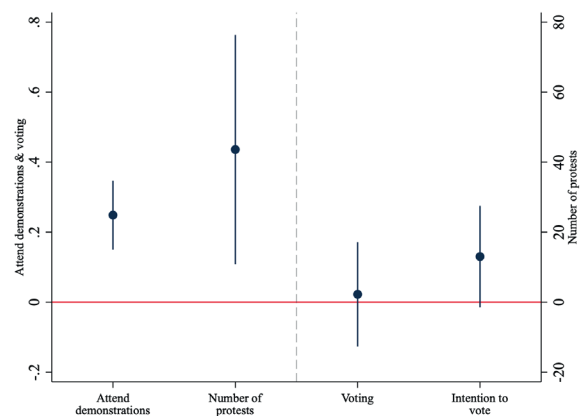

Fig. 5. Internet use as a misinformation technology?
Source: Authors' elaboration on Afrobarometer data.

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2. There is a growing literature documenting that political fake news and false information spread online (see, for instance, Mocanu *et al.* (2015); Allcott and Gentzkow (2017); Grinberg *et al.* (2019), and that they spread more rapidly and reach a larger audience than true news (Vosoughi *et al.*, 2018).

Our analysis shows that regardless of the index used to construct the convergence dummy, the effect of the Internet is consistently negative and statistically significant, reflecting a divergence from experts' ratings. Additionally, we find that Internet use decreases the probability of providing coherent answers, thereby suggesting a lack of consistent understanding of the questions related to the preference for democracy. These findings supplement our previous results on the Internet's role as a misinformation technology. Nonetheless, the inconsistency in responses can also be interpreted as an indication of a varying comprehension of the term "democracy" among different countries and institutional contexts.

▶ Concluding remarks and policy implications

The widespread use of the Internet as a means of information and communication has fueled ongoing debates on whether it serves as a tool for promoting open and freer access to information or, conversely, as a facilitator of misinformation. Despite the prevalence of such discussions, there is still a need for careful micro-level analysis on the impact of Internet use on perceptions of democracy, particularly in a developing context (Acemoglu *et al.*, 2021). This research aims to provide this careful micro-level analysis by investigating the role of the Internet as a (mis)information technology through an analysis of the impact of regular Internet news consumption on citizens' perception of democracy in 35 African countries using three rounds of the Afrobarometer survey spanning from 2011 to 2018.

We use citizens' preference for democracy and perception of the level of democracy as our main outcome variables. This paper's main finding is that the Internet as an alternative source of news has a negative and significant effect on citizens' preference for and perception of the extent of democracy. A one-unit increase in Internet use frequency decreases the probability of (strictly) preferring democracy by 31.7 (26)

and perceiving the country as a democracy by 23.3 percentage points. This suggests that citizens are more likely to prefer non-democratic governance in some circumstances and develop more negative views of the country's level of democracy.

When investigating the potential channels through which Internet news negatively affects citizens' perception of democracy, we found that frequent use of the Internet for news leads to a decrease in trust in the parliament and the ruling party, as well as an increased perception of corruption among parliament members. This aligns with Guriev *et al.* (2021) on 3G expansion and government approval. We also found that Internet users are more likely to engage in street protests, which is consistent with the view that deteriorated trust in African political leaders and institutions results in street protests Sangnier and Zylberberg (2017). The Internet-induced increase in the intention to vote may correspond to a desire for greater order and stability, values promoted by the conservative parties, which in fact coincide with the distrust of democracy that we are highlighting. Additionally, our study suggests that negative attitudes toward democracy and its institutions may stem from a misperception of how it functions. We document that Internet users' perception of the level of democracy diverges from experts' ratings. Furthermore, we find that Internet users are more likely to give inconsistent answers regarding preference for democracy variables, which may result from an altered understanding of democracy across different countries and institutional settings.

The findings of this paper contribute to the wider literature on the role of information technologies in the consolidation of democracy in Africa. It has important policy implications, particularly in the context of developing countries where democratic institutions may be more fragile. Governments should take steps to ensure that citizens have access to accurate and reliable information while also addressing issues of corruption and political accountability. Addi-

tionally, efforts should be made to promote civic engagement and participation, including voting and peaceful protest, as a means of strengthening democracy. Finally, media literacy programs and fact-checking can play an essential role in helping citizens critically evaluate the information they receive online and form informed opinions about their country's governance and policies, thus limiting the propagation of online false news (Barrera *et al.*, 2020; Henry *et al.*, 2022). Therefore, as the Internet continues to play a vital role in shaping public opinion, policymakers and media outlets need to combat misinformation and promote critical thinking among citizens.

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