The Effects of Independent Media Under Self-Censorship: Evidence from a Field Experiment in Tanzania

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Abstract

Recent decades have seen a rise in independent news sources in authoritarian countries. Although these outlets aim to provide critical coverage of autocratic regimes, they often engage in self-censorship by virtue of operating in restrictive environments. How does exposure to such media shape citizens' political beliefs? I investigate this question through a randomized field experiment in Tanzania in which participants received one month of free access to 30 national newspapers via a mobile app. The intervention led to a substantial increase in newspaper readership, with users strongly preferring nominally independent outlets over state-owned sources. In an endline survey, treated respondents scored significantly higher on a political knowledge index, yet, perhaps surprisingly, they also expressed more favorable attitudes toward the regime. A heterogeneous effects analysis suggests this pro-regime attitudinal effect was driven by participants substituting self-censoring independent newspapers for more critical online sources. The findings challenge the notion that independent media necessarily engenders opposition to authoritarian rule, highlighting conditions under which it may bolster regime support.

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1 Introduction

Africa's media landscape has undergone dramatic changes in recent decades. Beginning in the early 1990s, many authoritarian governments loosened press restrictions, ushering in a wave of media outlets covering political news from an independent perspective. In Tanzania, for example, there were no independent news outlets prior to 1993; today, there are over 200. This proliferation of independent outlets has coincided with the expansion of internet access, which has enabled Africans to consume not only social media, but also traditional print publications, many of which have shifted online to reach wider audiences.

How will the growing availability of independent media shape public opinion in Africa's autocracies? Conventional wisdom holds that independent media fulfills a watchdog function, reporting on the conduct of government officials and providing unbiased news about economic conditions (Larreguy et al. 2020). Citizens seeking reliable information about their government's performance are expected to consume these independent sources instead of state-controlled alternatives (Gehlbach and Sonin 2014). Exposure to independent media should in turn impart greater knowledge about politics and current events (Green et al. 2024) and more critical attitudes toward incumbent leaders and parties (Guriev et al. 2021; Enikolopov et al. 2023; Cho et al. 2017). Consistent with these predictions, a long line of research points to the role of the media in mobilizing opposition to authoritarian rule (Lawson 2002).

Yet there are reasons to question this optimistic view. First, just because independent news outlets exist does not guarantee that citizens will be interested in consuming them. Citizens might instead gravitate toward pro-government outlets, whether because they are more easily accessible (Roberts 2018; Bleck and Michelitch 2017), appear unbiased (Rahmani 2025b), or cater to the preexisting beliefs of pro-regime citizens (Shirikov 2024; Blum 2024). Alternatively, audiences may be apathetic to news media altogether, preferring apolitical entertainment (Kern and Hainmueller 2017; Chen and Yang 2019). If audiences select out of exposure to independent news, then these outlets are unlikely to exert meaningful effects on public opinion.

Second, even if citizens do seek out independent media outlets, these sources may be restrained in their criticism of the regime. By virtue of operating in restrictive political environments, independent outlets are often forced to engage in self-censorship in order to survive (Paskhalis et al.

2022; Rahmani 2025a; Stanig 2015; Kronick and Marshall 2024; Podesta 2009). Some nominally independent outlets may even cover the regime in an actively positive manner in order to reap financial rewards or avoid punishment (Szeidl and Szucs 2021; Di Tella and Franceschelli 2011; Rahmani 2025a). How exposure to self-censoring independent media shapes public opinion is difficult to predict and may depend on individuals' prior attitudes (Arias et al. 2022) or media habits (DellaVigna and La Ferrara 2015). On the one hand, even self-censoring outlets might serve as a counterpoint to state propaganda, reducing regime support among citizens with pro-government priors or who might otherwise consume state-controlled media. On the other hand, they could inadvertently increase regime support among anti-government citizens by offering unexpectedly favorable portrayals of the regime or by displacing more critical sources.

To explore whether independent media undermines or reinforces regime support, I conducted a randomized field experiment in Dar es Salaam, Tanzania. Dar es Salaam provides an ideal setting to study the effects of independent media under authoritarian rule. First, the city's residents are generally skeptical of the regime and of news sources under its control, and thus constitute the primary audience for independent media; indeed, independent newspaper consumption is roughly ten times higher in Dar es Salaam than in rural areas. The sample is thus representative of the kinds of people who consume independent media in the real world. Second, residents' political skepticism frequently translates into opposition voting and protest activity, making them an especially consequential portion of the population. Third, while Dar es Salaam is not representative of the country as a whole, it shares key features with other urban, opposition-leaning enclaves in authoritarian regimes around the world. Understanding how citizens in such environments respond to independent media may therefore be of broad relevance to students of authoritarian politics and political communication.

Partnering with a Tanzania-based digital news platform, I randomly assigned residents a free one-month subscription to a smartphone app that hosts electronic versions of over 30 national print publications. While users normally download each e-newspaper issue for a fee, treated respondents were given unrestricted access to all 237 issues published during the study period. Respondents in the control group were given a placebo subscription to a non-political trade publication.

Drawing on usage data provided by the app's creators, I tracked respondents' media consumption habits over the course of the study period. After three weeks, I measured respondents' political

knowledge and attitudes through a phone-based endline survey. Unlike other experiments, which force or encourage subjects to consume specific media messages or channels (Enikolopov et al. 2023; Bleck and Michelitch 2017; Pan et al. 2020; Baysan 2022) or take place in controlled settings with noticeable researcher intervention (Huang and Yeh 2019; Aytaç 2021; Liu and Yao 2023; Chen and Yang 2019), this design is naturalistic and unobtrusive. It randomly provides respondents with the means to access a range of media outlets, but otherwise allows them to select and consume media as they would ordinarily.

Compliance with the treatment was high: treated respondents increased their consumption of newspapers by 52 percentage points compared to the control group, amounting to an additional 16 newspapers per month. The app hosts a range of publications, including independent news outlets, government-controlled outlets, and entertainment-focused newspapers. Yet respondents by and large used their subscriptions to access independent political news (75 percent of all downloads) rather than government news (17 percent) or entertainment (8 percent). These first-stage results are informative, suggesting that when urban citizens are given the choice, they opt to consume nominally independent media rather than pro-government or apolitical content.

How did a media diet composed mostly of independent political news affect citizens' political beliefs? After one month of independent media exposure, respondents assigned to treatment emerged with higher levels of knowledge about politics and current events. Compared to their counterparts in the control group, treated respondents scored higher on a six-item index of political knowledge. In particular, these individuals were more likely to hold accurate beliefs about the country's economic performance, to have heard about the sacking of a key government minister, and to be able to cite specific provisions of a major election reform bill introduced by Tanzania's ruling party, CCM, during the study period.

Perhaps surprisingly, however, respondents exposed to independent news media became more likely on average to express attitudes consistent with the ruling party's line. Treated individuals were more likely to say that they were satisfied with the ruling party's proposed election reform agenda, in contrast to the opposition's contention that the reforms were superficial and centralized power within the ruling party. They were also more likely to approve of the government's response to nationwide flooding that occurred during the study period. Combining these measures into an index of pro-regime attitudes, I find a significant positive average treatment effect.

Several supplemental analyses shed light on the potential causal mechanisms at work. In an analysis of heterogeneous effects, I find that the newspaper subscription treatment primarily increased pro-regime attitudes among respondents who usually get their news from online sources like blogs and social media. I show that online media tends be much more critical of the regime than independent print media, explaining why shifting consumption from the former to the latter increased approval of the regime. These findings are consistent with research in Uganda showing that social media access reduces support for the ruling party, in part because it crowds out the consumption of more moderate traditional media (Bowles et al. 2024). The findings also echo experimental work in Russia, which finds that exposure to independent television affects social media users and non-users differently (Enikolopov et al. 2022). Together, these studies point to the contrasting effects of different media types and highlight the importance of citizens' prior consumption habits in conditioning responses to new information sources.

The results have important implications for scholars of authoritarianism. First, they challenge the conventional view that non-government media necessarily generates skepticism toward authoritarian regimes (Lawson 2002; Galetić et al. 2016; Enikolopov et al. 2022). While independent outlets may be ideologically motivated to hold incumbents accountable, they are often constrained in their ability to do so. Financial and legal repression can cause outlets self-censor (Paskhalis et al. 2022; Podesta 2009), while a reliance on government advertisement can incentivize positive coverage (Di Tella and Franceschelli 2011). When self-censoring outlets are read by individuals with anti-regime priors or who would otherwise consume more critical media—the primary audience for independent media—the result can be a pro-regime shift in attitudes. While moderate independent media might have different effects in rural or pro-regime areas (Green et al. 2024), they are typically less likely to service these populations in practice.

Second, the findings yield insights into the strategies of authoritarian control. Modern "informational autocrats" rely on the media to gain public support (Guriev and Treisman 2019), yet they often struggle to persuade urban opposition voters, who tend to avoid and discount obvious pro-government sources (Gehlbach and Sonin 2014; Adena et al. 2015; Knight and Tribin 2019). Recent scholarly work has suggested that autocrats can overcome such barriers by "borrowing credibility" from nominally independent outlets (Guriev and Treisman 2022; Mcmillan and Zoido 2004). The findings presented here provide rare empirical corroboration of the effectiveness of such strategies,

potentially explaining why autocrats tolerate the existence of semi-independent media rather than simply enforcing a state monopoly.

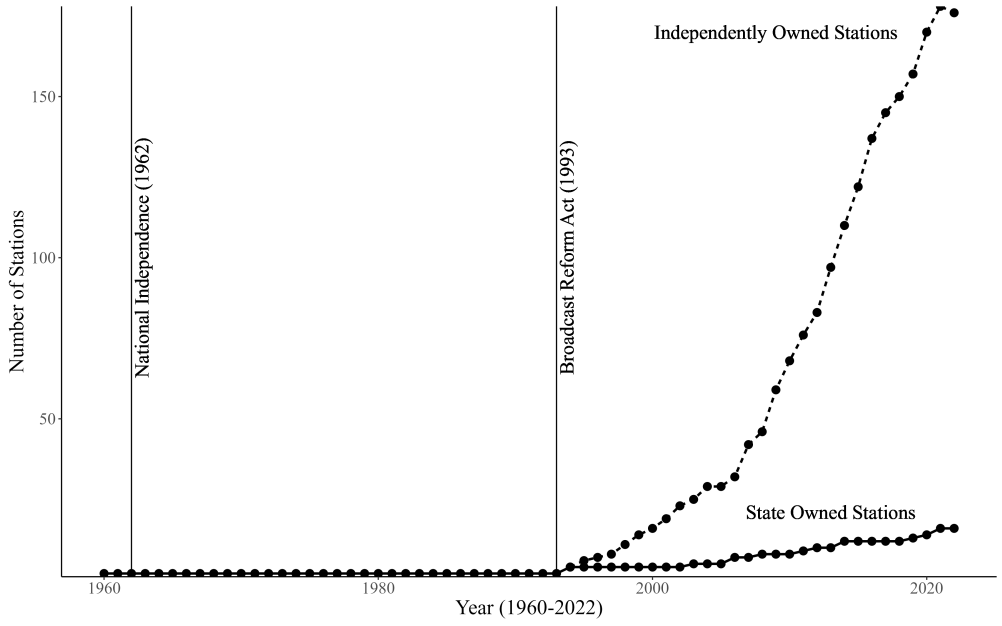
Finally, the results may be useful to media practitioners weighing the trade-offs of self-censorship. Editors and journalists operating in autocratic contexts often debate whether it is better to remain openly critical of the government—at the risk of being shut down and leaving readers with few alternatives to state media—or to continue to operate in attenuated form. While the findings presented here cannot speak directly to the causal effects of self-censorship, they shed some light on how moderate independent media shapes public opinion in autocracies: in this case, it increases political knowledge even as it makes readers more sympathetic to the regime's actions.

In the following sections, I describe the motivation, context, and design of the study, before presenting main results. I then explore the mechanisms behind the results through a series of empirical extensions. I conclude by discussing directions for future research.

2 Study Context

For much of Tanzania's post-independence history, independent media was nonexistent, with the country's authoritarian ruling party *Chama Cha Mapinduzi* (CCM) maintaining a monopoly over the media space. After CCM lifted restrictions on the press in 1993, however, the country saw a rapid expansion in the number and reach of independent outlets (see Figure 1). Although Tanzania remained an autocracy, the country entered a period of relative media pluralism, with independent outlets regularly covering government missteps and scandals.

Figure 1: **The Rise of Independent News Media in Tanzania**



Print newspapers have played a key role in driving this wave of independent reporting. Although radio remains the most-consumed medium, newspapers have gained a reputation as the standard-bearers of investigative journalism. Independent publications like *The Citizen*, *Mwananchi*, and *Nipashe* maintain large newsrooms of professionally trained journalists and thus retain a capability for news reporting that goes beyond that of the typical radio station. Consequently, newspapers tend to set the agenda for the broader media ecosystem. Television news programs frequently cover stories first published in print, while radio hosts regularly read newspaper headlines aloud to their listeners. Newspapers have also cultivated a small but dedicated audience of politically active, primarily urban readers, many of whom are skeptical of state media and gravitate toward outlets perceived as holding political leaders to account.

Given their penchant for original news reporting, independent newspapers have often shaped the course of political events in Tanzania. In 2008, for instance, *The Citizen* broke a story implicating government officials in the creation of a fake energy company, Richmond LLC, that received over $60 million USD in public tenders. The Richmond scandal rocked the administration of President Jakaya Kikwete and led to the resignation of Prime Minister Edward Lowassa. In 2014, *The Citizen* broke news of yet another scandal—this one involving illegal payments by a wealthy tycoon, Harbinder Singh Sethi, to government officials in exchange for control of the country's main electricity provider.

The resulting public outcry led to a string of resignations and prosecutions of senior government officials, including the country's Attorney General.

In recent years, however, independent newspapers have faced growing pressure from a regime eager to consolidate political control. On August 29, 2016, for instance, the government handed out three-month suspensions to a pair of radio stations popular in pro-opposition areas, Arusha FM and Magic FM, for airing content deemed "seditious." The following year, the government seized upon a factual error in *Tanzania Daima*, the chief newspaper of Tanzania's main opposition party, to suspend the publication for 90 days on grounds of spreading misinformation. The ostensible goal of these suspensions was to keep independents outlets in operation while incentivizing them to soften their coverage of the regime.

The suspension of *The Citizen* provides a vivid illustration of how government repression has shaped independent news coverage. In April 2019 *The Citizen* published two stories critical of the Magufuli administration: one on the depreciation of the shilling against the dollar, and another quoting foreign analysts warning of Tanzania's authoritarian turn under Magufuli. In response, the government suspended the newspaper for one week, from March 1 to March 7.

The ban imposed serious financial costs on the outlet, disrupting advertising and subscription revenue. As one board member explained, "The point of the suspension was to deprive us of revenue so that we would think about this when deciding what to publish." Indeed, even after the suspension was lifted, a climate of anxiety persisted in the newsroom, with decision-makers concerned about whether the outlet could survive another ban. According to another board member,

> How it would work is that we would print an edition, and after it was published, we would get a call from CCM if something crossed the line... It was constant fear. Whenever I got a call, my heart would start pounding.

The suspension prompted considerable soul-searching within the newsroom about whether and how much to self-censor. According to the managing editor, "It forced a trade-off: avoiding government repression versus alienating your own journalists or your audience, because they think you're bought out and too soft. It was between a short-term commitment to truth and a long-term commitment to keeping the doors open." Ultimately, the newsroom opted for survival. As one board member put it, "We would have to engage in self-censorship. The decision was to compromise our

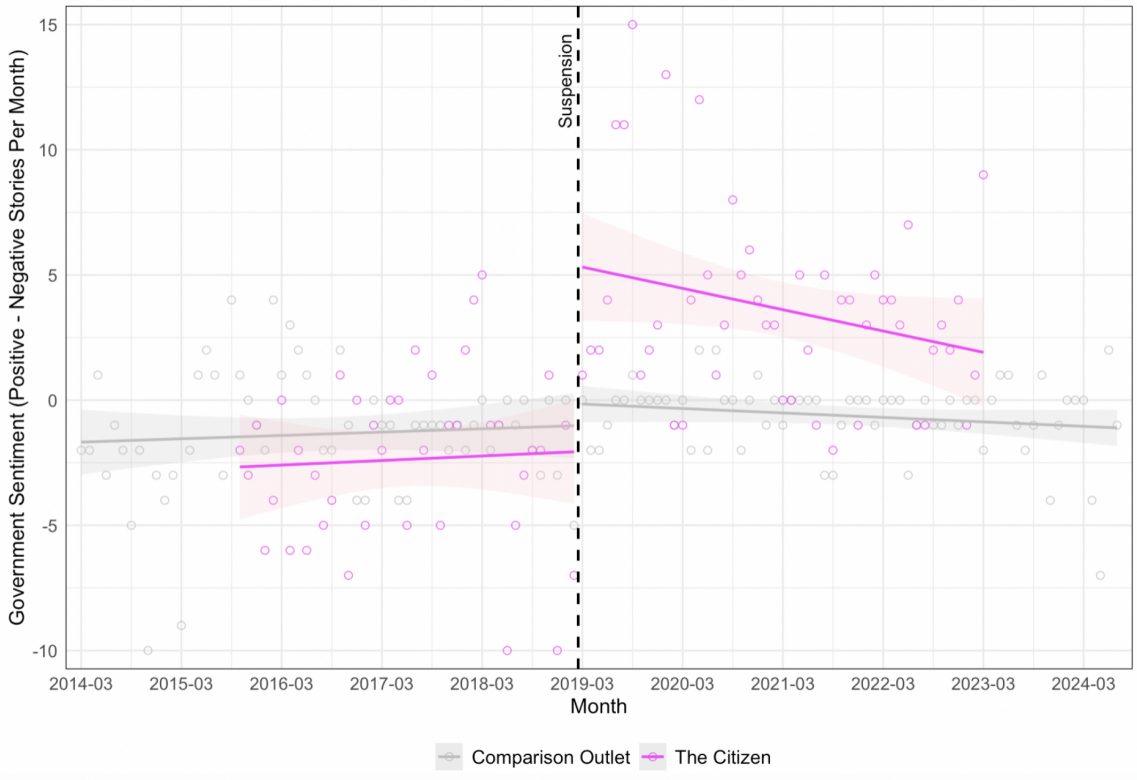
integrity so we can live to fight another day."

This self-censorship often took the form of actively promoting the regime's agenda and accomplishments. According to one board member, the outlet was forced to produce a steady stream of positive stories about the government:

> There was basically no open criticism. In this context, "resistance" was not about criticizing government or exposing wrongdoing, it was about trying not to cover the CCM talking points and rallies... Even still, if we went too many days without covering the CCM talking points, we might get a call saying, "Why aren't you covering this," and we might have to make a concession and cover it.

As Figure 2 shows, this self-censorship was dramatic and persistent. In the period prior to its suspension, *The Citizen* published more negative than positive articles about the regime per month on average. After the suspension, this proportion flipped, with the outlet publishing more positive articles than negative ones. These effects were still detectable by the time of the study period.

Figure 2: **Media Repression and Self-Censorship**



Note: This plot displays the difference in the proportion of positive and negative articles about the regime published in *The Citizen* each month. The comparison outlet is Jamii Forum, an online blog that was not subject to repression during this period.

Although overt criticism of the government was out of the question, the outlet tried to couch criticism in seemingly innocuous statements. The managing editor offered one example:

> Maybe we would report something like "The response time to the crash was slow" rather than saying "The government was slow to respond." But who is responsible for the response? The government. So we hope our readers would read between the lines.

It is this dynamic—overt self-censorship on one hand, and surreptitious criticism on the other—that motivates the present study. Can independent media operating in restrictive environments still hold autocratic regimes to account? As the managing editor of *The Citizen* notes, self-censorship risks alienating readers, potentially leading to reduced demand for independent news outlets. Even if readers continue to consume independent outlets, it is unclear whether they "read between the lines" and absorb veiled criticism of the regime, or update positively about the regime's performance and conduct. These questions have important implications for media practitioners and scholars. As a large body of research shows, independent outlets in autocratic contexts are often forced to make concessions to survive (Paskhalis et al. 2022; Podesta 2009), yet we know little about the downstream consequences of such decisions on public opinion.

3 Study Design

3.1 Intervention Description

To explore the effects of independent media in restrictive settings, I partnered with Rifaly, a Tanzanian mobile news application. Rifaly hosts 31 newspapers on its digitial platform, including all of Tanzania's major independent newspapers, several prominent government-controlled newspapers, and a number of apolitical newspapers focused on sports and celebrity gossip. The homepage of the app displays thumbnails of the front pages of these newspapers, and users can download full PDF versions for a cost of around $0.20 USD per issue. Alternatively, they can purchase a range of subscriptions that allow them three newspaper downloads per day ($0.38 USD per day), 25 newspapers per week ($1.90 USD per week), 100 newspaper per month ($9.51 USD per week), or unlimited access ($26.63 USD per month).

At the time of the study, Rifaly was in the process of expanding its user base and promoting its newly-redesigned platform. The research team worked with Rifaly to randomly extend free one-month subscriptions to potential users. Respondents treated with the subscription would receive

free unlimited access to all 31 daily and weekly e-newspapers available on the platform. Untreated respondents would be given a placebo subscription to an agriculture-focused trade publication also hosted on the app. This latter publication contained no political content and was published only once during the month-long study period.

The RCT took place in two stages. In the first stage, the research team's enumerators called potential users from a list of Dar es Salaam residents provided by Rifaly. Enumerators, who were trained to have a thorough understanding of the app, offered respondents a free month-long subscription upon successful completion of a baseline interview. A total of 140 respondents agreed to take part in the study. Respondents were asked a series of demographic questions as well as questions gauging baseline levels of media exposure, media preferences, and political beliefs. At the end of each day, respondents were assigned to receive treatment or placebo control subscriptions and were onboarded onto the platform.

During the study period, Rifaly provided the research team with full access to respondents' usage data and download histories.[1] This information allowed the research team to unobtrusively monitor respondents' compliance with the treatment assignment as well as their media selection and consumption patterns. Because I was able to determine which issues were downloaded and on which dates, I could determine the specific content that each respondent was likely to have encountered.

Just over three weeks later, respondents were re-contacted by phone and completed an endline survey assessing their political knowledge and attitudes (see Appendix A for a full list of questions). To incentivize completion of the endline survey, all respondents were offered an additional one-month subscription to a bundle of e-newspapers available on the platform. Attrition was low: 83 percent of study participants successfully completed the endline survey, with attrition balanced between treatment and control groups.[2]

3.2 Sample Characteristics and Balance

The initial sampling frame was provided by Rifaly's parent company and consisted of individuals who had previously used M-Paper, a now-defunct predecessor version of the app, or who had expressed interest in using Rifaly when it became operational. Table 1 summarizes the characteristics

[1] Following approved IRB protocol (AAAU9122), I obtained users' informed consent and safeguarded participants' confidentiality by conducting all phone interviews exclusively within Rifaly's secured premises. No identifiable information was removed from the premises; instead, the research team retained only a fully anonymized dataset.

[2] 60 of 70 treated respondents (85.7%) and 56 of 70 untreated respondents (80.0%) completed the endline survey. Differences in the completion rate across groups were not statistically significant.

of the sample using data collected in the baseline survey. The modal respondent was male, 37 years old, and a resident of Dar es Salaam. Respondents tended to be highly educated. Fully 24 percent of respondents had earned a graduate degree, 56 had earned a bachelor's degree, 11 percent had finished secondary school, and just nine percent had only finished primary school.

Respondents were also generally politically sophisticated. On average, 85 percent of respondents knew that William Ruto was the president of Kenya and 90 percent could name Tanzania's current vice-president. Contrast this with survey data from rural northeastern Tanzania, which shows that only 18 percent of villagers could name the country's vice-president. Consistent with this high degree of political knowledge, respondents reported regularly consuming political news, with 44 percent doing so every day, 34 percent a couple times per week, 12 percent a couple times per month, and only nine percent saying they "hardly ever" consumed news.

Table 1: **Sample Summary Statistics**

Variable	All	Control	Treatment	p-value
Age	37.31	36.38	38.16	0.523
Female	0.121	0.071	0.167	0.075
Education	1.957	1.946	1.967	0.842
Political Knowledge: Kenya President	0.845	0.857	0.833	0.857
Political Knowledge: Tanzania VP	0.897	0.893	0.900	0.638
Consume News Every Day	0.448	0.482	0.417	0.183
News Type: App	0.259	0.268	0.250	0.730
News Type: Social Media	0.845	0.839	0.850	0.072
News Type: Online	0.138	0.071	0.200	0.018
News Type: Newspapers	0.345	0.287	0.400	0.693
News Type: Radio	0.181	0.196	0.167	0.233
News Type: TV	0.224	0.232	0.217	0.969
Favorite Outlet: Government & Legacy	0.112	0.071	0.150	0.535
Favorite Outlet: Independent & Legacy	0.422	0.375	0.466	0.377
Favorite Outlet: Independent & Online	0.457	0.553	0.366	0.225
Joint F Test				0.254

Note: Missing values were replaced using mean imputation.

While not representative of Tanzania as a whole, the sample is characteristic of so-called "opposition elites"—urban, educated, and politically engaged individuals who are highly likely to protest and vote against the ruling party. Data from the 2024 Afrobarometer survey supports this characterization: individuals who are university-educated, live in urban areas, and regularly consume news are significantly more likely to distrust the ruling party, to vote for the opposition, and to report participating in protests or demonstrations. Although this demographic does not comprise

a large share of the population, it plays an outsized role in political life. In autocracies, opposition elites often lead protest movements, shape political discourse, and get involved in party politics, and they thus represent a key target of regime persuasion efforts.

Unsurprisingly, the individuals in this sample express skepticism of government media and tended to gravitate toward independent sources at baseline. When asked which media outlet they consume most frequently for news, the vast majority of respondents, 88 percent, named an independent outlet while just 11 percent named a government-controlled outlet. Looking more closely at the kinds of independent sources that respondents reported consuming, 42 percent of respondents named a "legacy" outlet like a newspaper, radio station, or television channel. 46 percent named an online source, with the most common being Jamii Forum, a wiki-style whistle-blowing blog, and Millard Ayo, an independent influencer and citizen-journalist who operates an eponymous social media page and website. The vast majority of respondents reported regularly consuming at least some of their news from social media or online sources, while a minority reported regularly consuming newspapers or news apps.

Reflecting the randomized nature of treatment assignment, experimental groups are broadly balanced across a range of pre-treatment covariates. A joint F-test of the hypothesis that none of the covariates predicts treatment assignment returns a non-significant p-value of 0.254, reassuring us of the comparability of the treatment and control groups.

3.3 News Content During the Intervention Period

The study took place between November 8, 2023, when respondents were first onboarded onto the e-newspaper platform, and December 4, 2023, when the final endline surveys were conducted. During the month of November 2023, several major news events dominated the headlines and received special focus in the independent press.

The first was a series of extreme weather events that affected villages and cities in northern Tanzania. Beginning in October, heavy rains caused flooding and landslides that killed at least 100 people and displaced over 10,000. In Dar es Salaam, flooding combined with outdated infrastructure led to a raft of property destruction, including a building collapse in the commercial district of Kariakoo that killed 13 people. According to interviews with the editor of a major independent newspaper, coverage of the flooding was constrained by two competing imperatives. On the one hand, the newspaper sought to draw attention to the relationship between poor infrastructure and

flooding destructiveness, thereby generating pressure on the government to invest in flood-proofing major urban areas. On the other hand, newspapers were wary of appearing excessively critical of the government's handling of the crisis so as to avoid a government-imposed suspension. To this end, they dedicated several stories to visits by state officials to flood-affected areas and detailed government efforts to rescue and compensate victims.

The second major news event was the unveiling of a series of electoral reform bills in parliament by Tanzania's ruling party, CCM. The centerpiece of the proposed reforms was the National Election Commission (NEC) bill, which would amend how members of the country's electoral oversight board were to be selected. Rather than the President appointing members directly, the bill would create a special committee that would interview candidates and recommend them to the President for approval. CCM officials framed the NEC bill as a historic reform that would ensure non-partisan oversight of national elections. Yet opposition party officials characterized the bill as mere window-dressing designed to diffuse long-standing calls for democratization. Specifically, the opposition criticized the lack of safeguards or transparency around how members of the selection committee were themselves to be chosen, allowing the President to appoint loyalists who would recommend regime-friendly individuals to the NEC.

In addition to these major news events, November 2023 also saw an investigation into the assassination of a mineral trader by police officers in a rural province, as well as an announcement by the country's former Registrar of Political Parties that he had faced inappropriate pressure from the government. In addition, independent newspapers reported on economic developments during the study period, including an uptick in the performance of the Dar es Salaam stock exchange and the President's decision to sack the head of the country's National Insurance Corporation (NIC) despite its strong year-on-year performance.

3.4 Outcomes and Estimation

In an endline survey, I measure four broad categories of outcomes: political knowledge, political attitudes, media literacy, and political priorities. Appendix A contains a pre-analysis plan (PAP) with a full accounting of all survey questions and their corresponding indices.

We ask seven questions to measure respondents' political knowledge. Three questions gauge respondents' basic awareness of major news events that occurred during the study period, including the tabling of the electoral reform bills, the sacking of the NIC head, and the assassination of a

mineral trader. I also ask follow-up questions probing whether respondents have deeper familiarity with these topics; specifically, I ask respondents to name at least one change to elections that the bills would introduce and whether the NIC had become more or less profitable over the last several years (correct answer: more). Finally, I asked respondents whether stocks were up, down, or the same compared to last month (correct answer: up) and whether they know which position John Twenda used to hold (correct answer: Registrar of Political Parties).

When it comes to political attitudes, I am primarily interested in gauging respondents' support for the regime. Since the endline survey was conducted by phone,[3] I reasoned that respondents would be wary of answering direct questions about their support for the president or ruling party. Instead, I asked respondents about their approval of the government's *actions* during the study period, which I interpret as an indirect—and in some ways, more specific—measure of their regime support. First, I asked respondents whether authorities were doing enough to respond to recent flooding, should be doing a little more, or should be doing a lot more. Second, I asked respondents about their thoughts on the proposed electoral reform bills. Specifically, I asked whether they thought the bills would make big improvements to how elections are run (the ruling party's position), would make modest improvements, or didn't go far enough in reforming elections (the opposition's position).

We also consider whether newspapers exert an agenda-setting function, shaping what respondents see as the most important issues of the day. First, I ask respondents to list some of the major issues affecting Tanzania and record how many they report. Second, I ask how seriously the recent flooding has affected Tanzanians and record whether the respondent said it had a "massive effect."

Finally, I explore whether a month of newspaper exposure makes respondents more accurate in their assessment of each outlet's ideological slant. I present respondents with a list of eight newspapers (five ruling party-controlled, two independent, and one opposition party-controlled) and ask them categorize each as either pro-government, neutral, or pro-opposition. If the respondent categorized a ruling party newspaper as pro-government, or if they categorized an independent or opposition newspaper as neutral or pro-opposition, the response was considered "correct."

Altogether, the endline survey includes 18 outcome measures. To avoid issues associated with multiple hypothesis testing, the PAP calls for combining related measures into four indices: a

[3]Security officials have been known to entrap citizens into revealing their opposition the regime by organizing faux-protests by phone or social media.

six-item political knowledge index, a two-item index of pro-regime attitudes, an eight-item media literacy index, and a two-item agenda-setting index. The main analyses regress each index on an indicator for treatment assignment. Also per the PAP, I present two models for each outcome, one without covariates and one with covariates. In order to minimize researcher discretion, I select covariates from the full list of all survey questions asked at baseline using the LASSO procedure.

4 Results

4.1 Compliance and First Stage Effects

Despite respondents' relative unfamiliarity with the news platform, uptake in the treatment group was high (Table 2). Usage data provided by the app indicate that none of the respondents in the control group read any e-newspapers during the three-week study period; by contrast, 52 percent of treated respondents read at least one newspaper on the app and 45 percent read multiple. The average treated complier read 16 newspaper issues over the course of the study period, amounting to more than two newspapers every three days.

Compared to respondents in the control group, treated respondents were nearly 30 percentage points more likely to report that the smartphone app was their primary or "go-to" source of political news over the past month. App usage appeared to overtake other forms of media consumption, with treated respondents becoming 11 percentage points less likely on average to say they primarily get their political news from social media, radio, and television. Notably, e-newspapers seemed to supplement rather than fully substitute for other media. While treated respondents were about 22 percentage points more likely to say they used the app more this month than the previous month, they were not significantly more likely to report a decline in social media use. Together, the behavioral and self-reported measures suggest that the treatment led to an overall increase in media consumption, with respondents incorporating newspapers into their media repertoire and giving them greater weight relative to other sources.

Table 2: **Effect of Subscription Treatment on E-Newspaper Consumption**

	Read Any Newspapers	Number of Newspapers	Primary Source: = App	Primary Source = Other	"Used News Apps More"	"Used Social Media Less"
E-News Treat	0.517***	8.100***	0.295**	-0.117**	0.223***	0.076
Standard Error	0.067	1.778	0.089	0.043	0.081	0.091
RI p-value	<0.001	<0.001	0.001	0.008	0.007	0.406
Hypothesis	+	+	+	-	+	+
Control Mean	0.00	0.00	0.32	1.00	0.16	0.43
Control SD	0.00	0.00	0.47	0.00	0.37	0.499
DV Range	[0-1]	[0-∞]	[0-1]	[0-1]	[0-1]	[0-1]
Controls	No	No	No	No	No	No
Adj-R^2	0.34	0.15	0.08	0.04	0.05	-0.00
Observations	116	116	116	116	116	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Randomization p-values are calculated with 1,000 randomizations testing the null hypothesis of no positive effect for any observation. However, for the outcome measuring primary consumption of sources other than the app, we test the null hypothesis of no negative effect for any observation.

4.1.1 Media Diets

What sorts of outlets did respondents choose to consume? Recall that the app hosts over 30 newspapers ranging from news to entertainment and representing diverse political perspectives. By and large, however, treated respondents used the access afforded them to consume independent news rather than government-controlled news or apolitical media. The average reader consumed nearly 12 e-newspapers with independent political content (75.3 percent), three with pro-government political content (17.1 percent), and just one with sports- and entertainment-focused content (7.5 percent). Nearly all readers—94 percent—were exposed to at least some independent news, while about half were exposed to some pro-government news and less than half to entertainment.

Table 3: **Treated Users' Media Diets**

Newspaper type	Number of Newspapers Available	Downloads (Average Per User)	Download Share (% of All Downloads)	Exposure Rate (% of Users Exposed)
Independent news	11	11.81	75.3	93.5
Government news	11	2.68	17.1	51.6
Entertainment	9	1.19	7.5	41.9
Total	31	15.68	100.0	100.0

Taking a closer look at the specific e-newspapers that respondents consumed, I find that the most popular were the Swahili-language independent newspapers *Mwananchi* and *Nipashe*, followed by their English-language sister publications *The Citizen* and *The Guardian*. Together, these four independent newspapers accounted for two-thirds of all e-newspapers downloaded during the study period. By contrast, the most popular regime-controlled e-newspaper, *Uhuru*, represented just seven

percent of all downloads. These findings speak against the notion that citizens living in autocracies are politically apathetic or mistrustful of sources that are not government-approved. Instead, they suggest that people living in autocracies—or at least the politically-sophisticated urbanites that make up this sample—have an appetite for independent political news.

Table 4: **Most Popular Newspapers**

Newspaper Name	Newspaper Type	Downloads	Downloads (% total)	Exposure (% of readers)
Mwananchi	Independent	131	21.1	58.9
Nipashe	Independent	107	17.2	58.9
The Citizen	Independent	85	13.7	33.9
The Guardian	Independent	85	13.7	32.1
Mwanaspoti	Sports	45	7.2	33.9
Uhuru	Government	42	6.7	21.4

4.2 Downstream Effects on Public Opinion

4.2.1 Political Knowledge

The previous section shows that the treatment increased exposure to independent newspapers. What were the downstream effects of this exposure on politically relevant outcomes?

I find that treated respondents became significantly and substantially more knowledgeable about current events and politics (Table 5). Compared to their counterparts in the control group, treated respondents were about 15 percentage points more likely on average to have heard about a major electoral reform bill introduced during the study period and to be able to accurately describe at least one of its specific provisions. They were also about 15 percentage points more likely to have heard about the President's removal of Dr. Elirehema Doriye as Director General of the National Insurance Corporation (NIC). The move attracted criticism from the opposition given that, under Dr. Doriye's leadership, the government-owned pension provider operated at a profit for the first time in its history. Relatedly, treated respondents were between 18 and 22 percentage points more likely to know about the NIC's positive performance, and 6 percentage points more likely to know that the Dar stock exchange was up since the start of the study period.

We do not observe knowledge gains when it comes to some other topics. For instance, treated respondents were no more likely to have heard about the assassination of a mineral trader or to know the identity of the Registrar of Political Parties, although baseline awareness of both of these stories was already high.

Overall, though, the effect of the treatment on a six-item political knowledge index was positive,

significant, and substantial—equivalent to a full standard deviation in the control group ($p < 0.05$). It appears that independent news does impart greater political knowledge, including of stories and events that reflect poorly upon the regime.

Table 5: **Treatment Effects on Political Knowledge**

	Index		Bill		Bill (Probed)		Killing		Registrar		Sacking		NIC Perform		Market Perform	
E-News Treat	0.084*	0.082*	0.073	0.023	0.150*	0.140*	-0.077	-0.117	0.035	0.028	0.152	0.144	0.181*	0.222*	0.060	0.060
Standard Error	0.043	0.042	0.092	0.091	0.087	0.085	0.090	0.085	0.093	0.093	0.092	0.093	0.061	0.065	0.064	0.064
RI p-value	0.030	0.035	0.214	0.380	0.042	0.041	0.811	0.925	0.338	0.367	0.051	0.063	0.000	0.000	0.181	0.181
Hypothesis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Control Mean	0.29	0.29	0.41	0.41	0.25	0.25	0.41	0.41	0.46	0.46	0.46	0.46	0.04	0.04	0.11	0.11
Control SD	0.23	0.23	0.50	0.50	0.44	0.44	0.50	0.50	0.50	0.50	0.50	0.50	0.19	0.19	0.31	0.31
DV Range	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]
Controls	No	5	No	3	No	5	No	6	No	2	No	7	No	11	No	0
Adj-R^2	0.02	0.12	-0.00	0.09	0.10	0.04	-0.00	0.20	-0.00	0.02	0.02	0.07	0.06	0.17	-0.00	-0.00
Observations	116	115	116	115	116	115	116	115	116	115	116	112	116	112	116	116

* $p < 0.05$

Note: Randomization p-values are calculated with 1,000 randomizations testing the null hypothesis of no positive effect for any observation. The outcome "Bill" is coded 1 if the respondent had heard about the election bills and 0 if not. The outcome "Bill (Probed)" is coded 1 if the respondent had heard about the election bills and offered at least one detail about the bills when prompted, and 0 otherwise. The outcome "Killing" is coded 1 if the respondent had heard about the assassination of a mineral trader and 0 if not. The outcome "Registrar" is coded 1 if the respondent correctly identified John Twenda as the Registrar of Political Parties and 0 if not. The outcome "Sacking" is coded 1 if the respondent had heard about the sacking of the head of the National Insurance Corporation (NIC), Elirehema Doriye, and 0 if not. The outcome "NIC Perform" is coded 1 if the respondent knew that the NIC had become "more profitable" under Doriye and 0 otherwise. The outcome "Market Perform" is coded 1 if the respondent knew that stocks were up compared to last month and 0 otherwise. The outcome "Index" is a weighted average of all political knowledge questions, using the probed measure of knowledge about the election bills.

Three weeks of newspaper exposure also imparted higher levels of media literacy (Table 6). Treated respondents scored significantly higher on an eight-item index measuring the accuracy of their beliefs about the political alignment of Tanzanian newspapers, suggesting that frequent exposure to a range of media sources makes audiences more attuned to their biases. That said, I observe null effects of the treatment on agenda-setting outcomes, including the number of issues respondents cite as important and the perceived severity of recent flooding that took place during the study period.

Table 6: **Other Treatment Effects**

	Meda Literacy Index		Agenda-Setting Index	
	(1)	(2)	(3)	(4)
E-News Treat	0.071*	0.071*	-0.024	-0.016
Standard Error	0.036	0.031	0.030	0.046
p-value	0.021	0.021	0.794	0.690
Hypothesis	+	+	+	+
Control Mean	0.43	0.43	0.57	0.57
Control SD	0.19	0.19	0.22	0.22
DV Range	[0-1]	[0-1]	[0-1]	[0-1]
Controls	No	0	No	3
Adj-R^2	0.02	0.02	-0.00	0.07
Observations	116	115	116	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Randomization p-values are calculated with 1,000 randomizations testing the null hypothesis of no positive effect for any observation. The Media Literacy Index is a weighted average of whether respondents correctly identified the political orientation of eight national newspapers. The Agenda-Setting Index is a weighted average of two items: the number of issues respondents cited when asked to name some important events occurring in Tanzania (standardized on a 0-1 scale) and the proportion of respondents who thought the recent flooding had a "massive effect" on Tanzanians.

4.2.2 Political Attitudes

Next, I examine how independent news shaped respondents' political attitudes. Perhaps surprisingly, one month of exposure to independent news coverage appears to have shifted participants' political attitudes in a more pro-regime direction (Table 7). Treated respondents were more likely than untreated respondents to say that the electoral reform bill introduced by the government would make "big improvements" or "modest improvements" to the country's election system—a position consistent with that of the ruling party. Treated respondents were less likely on average to endorse the opposition's stance that the reform bill "doesn't go far enough" or that it actively consolidates electoral oversight power in the hands of the ruling party.

Tanzania also saw widespread flooding during the study period, which resulted in the destruction of businesses and homes as well as loss of life in Dar es Salaam. The independent newspapers criticized the city's outdated infrastructure but were elliptical in attributing blame to government authorities. They also reported on official visits to flood-affected areas (see section 5). Perhaps as a result of this coverage, treated respondents were slightly more likely than untreated respondents to say that authorities were "doing enough" to respond to the flooding.

Per the pre-analysis plan, these attitudinal measures were combined into an index of pro-government attitudes and regressed on an indicator for treatment status, using the LASSO procedure to select prognostic covariates. Reflecting the theoretical uncertainty about the persuasive effects of independent media in autocracies, the pre-analysis plan specifies that I calculate a two-tailed p-value using randomization inference. Following this procedure, I find that the e-newspaper subscription increased pro-regime attitudes on average. This effect was sizable, equivalent to about one-third of the standard deviation in the control group.

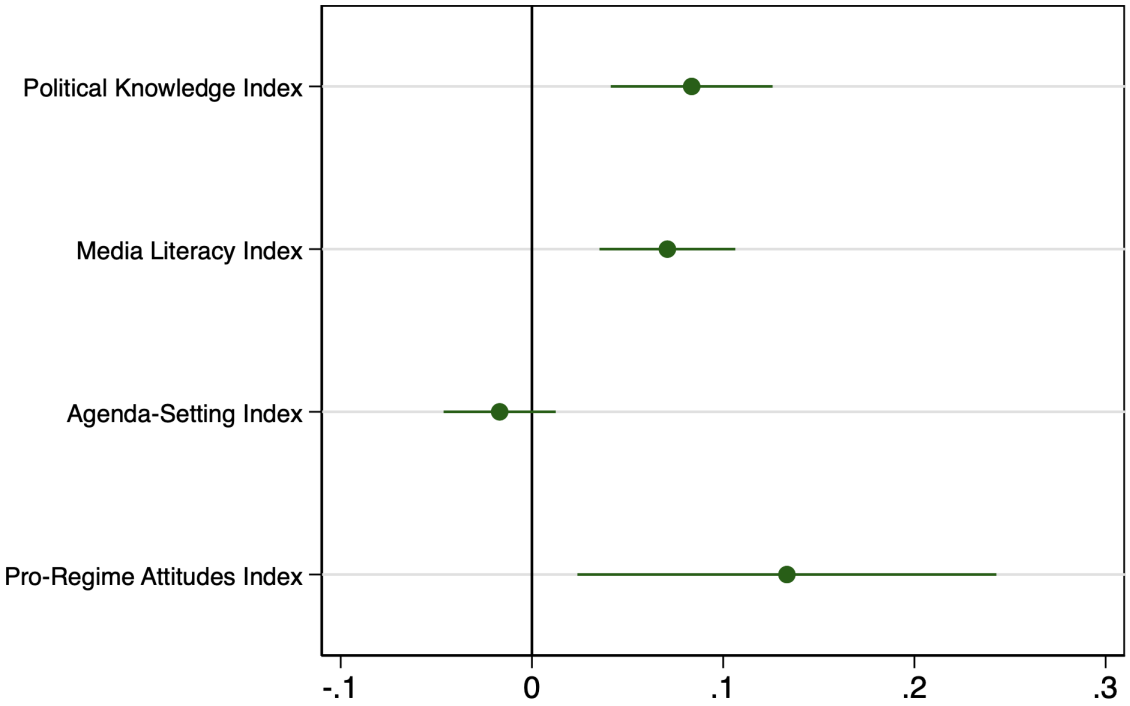
Table 7: **Treatment Effects on Pro-Regime Political Attitudes**

	Index		Flooding Response		Support Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treat	0.112	0.133*	0.106	0.106	0.118	0.118
Standard Error	0.056	0.056	0.085	0.085	0.065	0.065
p-value	0.054	0.015	0.225	0.225	0.096	0.096
Hypothesis	+/-	+/-	+/-	+/-	+/-	+/-
Control Mean	0.18	0.18	0.26	0.26	0.089	0.089
Control SD	0.26	0.26	0.45	0.45	0.29	0.29
DV Range	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]
Controls	No	1	No	0	No	0
Adj-R^2	0.01	0.09	-0.00	0.16	0.01	0.01
Observations	116	116	116	115	116	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Randomization p-values are calculated with 1,000 randomizations testing the null hypothesis of no effect for any observation. Columns 3-4 estimate the treatment effect on approval of the government's flooding response. Responses are coded 0 if the respondent thought authorities should be doing "a lot more," 0.5 if the respondent thought authorities should be doing "a little more," and 1 if the respondent thought authorities were doing enough or were unsure. Columns 5-6 estimate the treatment effect on support for the ruling party's electoral reform bills. Responses were coded as 0 if the respondent thought the bills "don't go far enough," 0.5 if the respondent thought they make "modest improvements," and 1 if the respondent thought they make "big improvements" or were unsure. Columns 1-2 ("Index") estimate the treatment effect on a weighted average of the previous two measures.

Figure 3: **Summary of Main Treatment Effects**



Note: This figure displays the intent-to-treat effect of the e-newspaper subscription on each of the four indices. As specified in the pre-analysis plan, we calculate one-tailed p-values for the Political Knowledge, Media Literacy, and Agenda-Setting Indices, and a two-tailed p-value for the Pro-Regime Attitudes Index using randomization inference. In line with the PAP, we adjust for baseline covariates selected using the LASSO procedure.

4.3 Heterogeneous Effects

Were certain people more likely than others to update their political beliefs and attitudes in response to the newspaper treatment? In this section, I explore the potential existence of heterogeneous treatment effects. My approach is guided by the pre-analysis plan, which pre-specifies heterogeneous effects analyses on the basis of respondents' baseline media preferences, political knowledge, and levels of political interest.

I first consider whether treatment effects depend on respondents' pre-treatment media preferences. My logic is as follows: given that e-newspapers supplement and potentially substitute for other forms of media, the effect of the treatment may depend on the types of media sources respondents would otherwise have consumed. For instance, if respondents typically consume pro-government media, then exposure to moderate independent newspapers may introduce them to information and messages that contradict the ruling party line, making them more critical of the regime. By contrast, if respondents typically consume media with a strong anti-government slant, then exposure to independent newspapers could exert positive effects on regime approval. Respondents who usually consume moderate independent media may not update their attitudes at all, since independent newspaper content is broadly consistent with what they already consume.

Per the pre-analysis plan, I divide respondents into subgroups based on the news outlet that they reported consuming most in the pre-treatment baseline survey. Almost half of respondents (45 percent) reported primarily getting their news from an independent *online* outlet, with the most popular being Jamii Forum, a whistleblowing website known for its critical coverage of the regime. About 42 percent of respondents primarily received their news from independent legacy outlets (i.e. print and broadcast) such as *The Citizen*, *Mwananchi*, and Clouds FM. Only a handful of respondents (11 percent) preferred to get their news from pro-government sources like the state-owned *Daily News* and TBC. Thus, for the purposes of this analysis, I compare individuals who consume online media with those who consume legacy media of any kind, whether independent or pro-government.

Table 8: **Treatment Effects by Respondents' Baseline Media Preferences**

	Pro-Regime Attitudes Index			Political Knowledge Index		
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treatment	0.242**	-0.001	-0.001	0.021	0.146*	0.146*
	(0.073)	(0.084)	(0.077)	(0.068)	(0.057)	(0.060)
	[0.002]	[0.990]	[0.989]	[0.763]	[0.013]	[0.016]
Prefer Online Media			-0.128			0.088
			(0.080)			(0.062)
			[0.113]			[0.161]
Treatment × Prefer Online Media			0.243*			-0.125
			(0.114)			(0.088)
			[0.035]			[0.157]
Prefer Online Media	YES	NO	ALL	YES	NO	ALL
Control Group Mean	0.198	0.238	0.220	0.336	0.315	0.325
Control Group SD	0.247	0.309	0.282	0.241	0.230	0.235
Adjusted-R^2	0.16	-0.02	0.05	-0.02	0.08	0.03
Observations	53	63	116	53	63	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Standard errors are in parentheses and two-sided p-values are in brackets.

Table 8 presents the results of this analysis. Exposure to independent newspapers exerts a large persuasive effect on individuals who usually consume online news, increasing pro-regime attitudes by 20.5 percentage points on average ($p < .01$) (Column 1). This effect is substantively significant, equivalent to nearly a full standard deviation in the control group. By contrast, the treatment had no observable effect on individuals who already consume legacy media (Column 2). As Column 3 shows, the difference in the treatment effect sizes for online and legacy news consumers is more than would be expected by chance alone ($p < .05$), indicating that the former were more likely to be influenced by newspapers than the latter. When it comes to political knowledge, however, the opposite appears to hold true: online news consumers updated their beliefs less than legacy media consumers—although the difference in effects falls short of conventional levels of statistical significance.

In short, it appears that the pro-regime attitudinal effect of the e-newspaper subscription treatment is concentrated among respondents who would otherwise have solely consumed online news. In section 5, I explore why these individuals were most likely to be influenced by newspapers.

Per the pre-analysis plan, I also test for heterogeneous effects based on respondents' baseline political knowledge and political interest. In the first instance, I divide respondents into two subgroups based on their responses to the political knowledge questions asked in the baseline survey. Respondents were characterized as having high political knowledge if they got both questions right

(80 percent of respondents) and low political knowledge if they got at least one question wrong (20 percent of respondents). I do not find meaningful differences in treatment effects across these groups (see Table A3 in the appendix). I operationalized political interest as respondents' self-reported interest in consuming political news. Respondents who said they consumed political news every day were no more or less likely to update their beliefs or attitudes in response to the treatment than those who consumed political news less frequently (Table A4). Finally, I find no evidence of heterogeneous treatment effects on the basis of gender (Table A5). These null results serve to focus attention on baseline media preferences as a potential factor in explaining why the treatment increased pro-regime attitudes.

5 Explaining the Results

According to conventional wisdom, independent media outlets serve as a critical alternative to government-controlled sources. Why, then, did independent newspapers fail to impart skeptical attitudes upon their readers?

As previous work has highlighted, media effects are composed of both the direct effects of exposure and the effects of displacing or supplementing exposure to other media content (DellaVigna and La Ferrara 2015). In the preceding analysis, I show that some study participants were already regular consumers of independent legacy media, others primarily consumed independent online media, and still others relied on government media. Understanding net media effects may thus require assessing differences in news content across these three media types.

To this end, I present an analysis of over 23,000 news articles published in Tanzania over the course of a decade (2014-2024). The articles originate from 36 publications, including all of the country's major government newspapers, independent newspapers, and independent online sources. Articles were coded for slant by a team of Swahili-language coders following a simple codebook, which is contained in Appendix E. For each article, coders determined whether the headline contained information about the government, ruling party, or president, or about the political or economic direction of the country. If so, coders assessed whether, in their estimation, the headline reflected negatively or positively upon the government or public officials. Coders were not informed about the purpose of the study and were blinded to the name of the publications. In addition to coding for slant, I performed a simple keyword search to determine whether articles mentioned the

president or ruling party or explored one of three sensitive topics: corruption, economic contractions, or government repression.

The results of the analysis are presented in Figure 4. Compared to government newspapers, independent publications—whether traditional or online—are less likely to cover the ruling party or president's actions, including rallies, speeches and publicity events. When they do cover the regime, they are much more likely than government newspapers to be negative in tone and less likely to be positive. These initial results are consistent with much of the literature, which finds that independent media is more critical of those in power than government-owned media.

However, the analysis points to significant differences in how independent print newspapers and their online counterparts cover the news. Although independent newspapers and online sources are equally likely to cover political news, 13 percent of newspaper articles focus on the President's rallies and speeches, compared to only four percent of online articles. Independent newspapers are roughly three times more likely to cover the ruling party than are independent online sources. When it comes to the tenor of political coverage, online sources are eight percentage points more likely than independent newspapers to criticize the regime, slightly less likely to praise the regime, and significantly more critical on balance.

Independent newspapers and online sources also differ in the sorts of topics that they cover. Online sources are significantly more likely to run stories about economic contractions and more likely report on episodes of government repression, including opposition crackdowns, media censorship, and attempts to rig or game electoral rules. Online sources are also more likely than independent newspapers to report on instances of corruption, although this difference is not statistically significant.

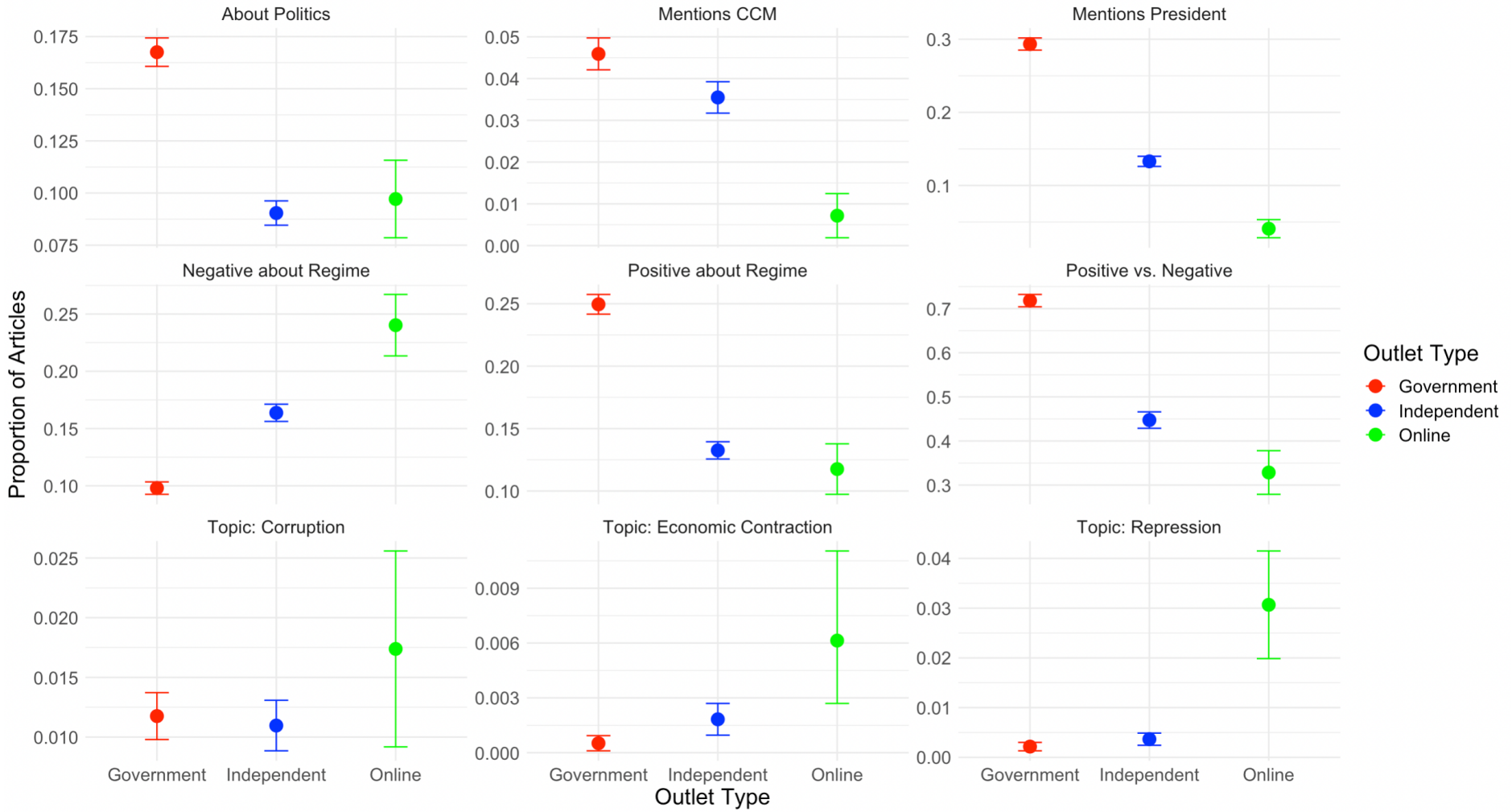
These differences in slant are evident in how newspapers and online outlets covered the two major news events during the study period—flooding and electoral reform. In their reporting on the floods, the major independent newspapers devoted considerable coverage to the human costs of the crisis (e.g. "The suffering of citizens on the Kimara-Kibaha road," *Mwananchi*, 11 November 2023; "Rain causes the death of five people," *Nipashe*, 15 November 2023). However, they rarely if ever pointed the finger at political mismanagement, focusing instead on government efforts to respond to the crisis (e.g. "President Mwinyi comforts people affected by the disaster," *Nipashe*, 15 November 2023; "Team of ministers arrives in Jangwani," *Nipashe*, 14 November 2023). By

contrast, the online blog Jamii Forum drew explicit connections between government policies and the destructiveness of the flooding (e.g. "So, what happened to the Tz5oo Billion World Bank loan to transform the flood-prone?" Jamii Forum, 12 November 2023). It is perhaps no surprise, then, that people who shifted from online to print sources would emerge with more positive views about the government's response to natural disasters.

Similar differences can be observed when it comes to coverage of the ruling party's proposed electoral reforms. Independent newspapers were broadly positive in their weekday coverage of the proposed bills (e.g. "Historic Reforms," *Mwanachi*, 11 November 2023), with discussion of opposition criticism relegated to the less-read Sunday editions (e.g. "Intense debate on election law," *Nipashe*, 17 November 2023). In contrast to this mixed coverage, Jamii Forum's reporting was almost uniformly negative. The blog was vocal in its criticism of the bills' shortcomings (e.g. "21 shortcomings in the National Electoral Commission Bill and the Election Law Bill," Jamii Forum, 16 November 2023; "The President selects everything in the electoral commission, directly or indirectly," Jamii Forum, 10 November, 2023) and covered the perspective of the main opposition party, CHADEMA, in detail ("Mara: CHADEMA reviews the new Electoral Commission system for registering voters," Jamii Forum, 26 November, 2023). It stands to reason that people who increased their consumption of newspapers relative to online sources would be more likely to describe the reforms as making "big improvements" to the conduct of elections and less likely to say they "don't go far enough."

The content analysis sheds light on the results of the heterogeneous effects analysis. Online news consumers receive regular exposure to staunchly anti-regime content. To the extent that the treatment caused them to supplement or substitute such content with more moderate traditional media, their media diets became more pro-regime on average. These findings could explain why independent print media increased regime support among individuals who mostly consume online media, but not those who already consume newspapers and the radio.

Figure 4: **News Coverage by Outlet Type, 2014-2024**



6 Discussion

How will the growing availability and accessibility of independent media shape public opinion in autocracies? I explore this question through an experiment in Tanzania that randomly reduces barriers to accessing national newspapers. Crucially, this experiment is conducted with a sample of educated, urban, and politically active individuals. Although far from representative of the median citizen, these individuals reflect the core audience for independent news. They also constitute the backbone of the opposition—the individuals most likely to organize electoral campaigns, lead protests, and shape public discourse. As such, they are a key target of autocrats' persuasive efforts. Understanding how these individuals respond to independent media is thus a critical question.

The first notable finding is that treated respondents by and large seek out independent rather than state-controlled sources. This first-stage result is illuminating in its own right, suggesting that citizens in this sample are motivated to consume alternative narratives to those promulgated by the government. The results contrast with prior work finding that when autocratic subjects are presented with a menu of media options, they gravitate toward government media (Simonov and Rao 2021; Shirikov 2024; Moehler and Singh 2011; Robertson 2017; Green et al. 2025) or entertainment (Kern and Hainmueller 2017; Liu and Yao 2023). It also differs from work showing that subjects do consume independent media, but only if encouraged by researchers to do so (Chen and Yang 2019).

Because the treatment induced greater independent media consumption, this study is able to examine downstream effects of independent media exposure on public opinion. The results accord with conventional wisdom in some respects, but diverge from it in others. On the one hand, a diet composed mostly of independent news increased respondents' political knowledge across a range of substantive domains. These results align with previous experimental work showing that independent media can help foster a politically engaged and informed citizenry (Green et al. 2024). On the other hand, I find that exposure to independent media *increases* regime approval, making citizens less critical of the government's natural disaster response and more supportive of its efforts to rewrite electoral laws. These latter findings serve to temper expectations about the liberating potential of independent media in autocracies (Lawson 2002; Enikolopov et al. 2022).

I present suggestive evidence that the pro-regime persuasive effect of independent newspapers stems in part from their reluctance to engage in overt criticism of the regime. As prior work

in autocratic settings shows, terrestrial media outlets often self-censor in response to government financial pressure (Rahmani 2025a; Stanig 2015) or incentives (Di Tella and Franceschelli 2011; Szeidl and Szucs 2021). From the perspective of media practitioners, self-censoring is often preferable to going out business, as even "muzzled" newspapers might serve as a counterpoint to state-controlled media. Yet, as this study demonstrates, such outlets may also divert attention away from highly critical online sources and convay surprisingly positive information about the regime to its critics (Rahmani 2025a; Bowles et al. 2024). When this occurs, the net effect may be to increase approval of the regime. These findings suggest conditions under which independent media may paradoxically bolster support for autocratic regimes among certain key audiences. As such, the findings have important implications for media practitioners weighing the relative merits of self-censorship in restrictive settings.

That said, while "muzzled" independent media might exert a pro-regime persuasive effect on opposition elites who get their news from online sources, it could have the opposite effect on other quarters of the population. In rural areas of Tanzania, villagers often only have access to a handful of mostly state-controlled radio stations, many of which cover the regime in a uniformly positive manner. If moderate independent newspapers were to crowd out these government radio stations, they could make readers more skeptical of the regime. Although newspapers have typically had limited reach beyond urban areas (Mcmillan and Zoido 2004), growing internet and smartphone penetration—and the use of digital distribution methods like the one employed in this study—may change that. Whether rural citizens would adopt digital mobile apps en masse and use them to seek out independent newspapers, and whether such exposure would cause them to update negatively about the government, are important questions for future research.

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Appendix

A Pre-Analysis Plan

Originally published on the Open Science Foundation (OSF) on November 23, 2023 under the title "Pre-Analysis Plan for E-Newspaper Distribution Experiment in Tanzania - Wave 1."

This document presents the pre-analysis plan (PAP) for the first wave of the "E-Newspaper Distribution" experiment in Dar es Salaam, Tanzania. This document predates follow-up data collection, and the plan is therefore blind to outcomes.

A.1 Introduction

A well-informed citizenry is critical to political accountability and good governance. Citizens must possess knowledge about current events and a general understanding of how government works if they are to participate meaningfully in elections and make the most of government programs and services.

A key question is how to supply information to citizens in developing countries, where a lack of infrastructure can limit access to news media. While the profusion of the internet and smartphones in Africa in recent years has increased access to social media and other online sources of news, information emanating from these sources is often low quality, biased, or inaccurate. By contrast, print newspapers are seen as the gold standard when it comes to reputable and reliable news reporting in Africa, with newspapers often leading the way when it comes to investigating corruption and malfeasance and uncovering novel stories. However, the logistical challenge of physically distributing newspapers in developing countries can hamper circulation. For instance, despite the plethora of highly rated newspapers in Tanzania and a high adult literacy rate that should in theory allow for widespread print news consumption, newspapers remain the least accessible form of media in the country, behind radio, television, and social media.

Mindful of this dilemma, this research project explores the effects of an innovative new technology that allows citizens to access reputable print newspapers online via their smartphones. "Digital newsstand" apps like Rifaly have become increasingly popular in Tanzania, reaching tens of thousands of users. Rifaly works by scanning and aggregating PDF versions of the country's leading newspapers, which users can purchase, download, and read offline. This mode of delivery not only circumvents issues with physical delivery that currently limit print newspaper circulation, but also

improves access to online news in areas with inconsistent internet coverage. Rifaly and similar apps offer a potential technological solution for expanding the reach of Tanzanian print newspapers. However, while this technology appears promising, its effects remain unclear. If given access to electronic newspapers, will people choose to read them? Does a selection effect exist such that politically informed people choose to read politically-focused newspapers while politically uninterested individuals gravitate toward entertainment-focused newspapers, leading to null effects on average? Even if most people choose to read politically-focused newspapers, does doing so actually affect one's knowledge about and interest in current affairs and government and one's willingness to participate in politics? These are longstanding questions in the literature on media effects, with surprisingly few answers. To date, only one major field experiment has sought to causally estimate the effects of newspaper readership on political knowledge and engagement (Gerber et al). No study has employed a field experiment to explore the effects of new modes of electronic newspaper delivery, nor has a comparable newspaper distribution experiment been conducted in the developing world.

To help fill this gap, this project takes advantage of an opportunity to work with local Tanzanian start-up Smart Foundry, the developer of the Rifaly app. Partnering with Smart Foundry, we seek to implement an electronic newspaper distribution experiment to assess the impact of giving citizens access to digital versions of Tanzanian newspapers. Study participants will be selected from the population of smartphone users in Tanzania. After completing baseline interviews, participants will be randomized to receive one month of free access to all newspapers on the Rifaly app, or to a placebo control condition in which participants are offered one month of free access to non-political magazines. After a few weeks, the research team will conduct follow-up phone interviews with participants to assess their media consumption habits, their knowledge about and interest in current affairs and politics, their political priorities, their political attitudes, and their beliefs about media bias.

Ultimately, we seek to explore how new technologies can be harnessed to increase access to reliable information in developing countries. The results of the study can help practitioners craft effective, low-cost, and scalable interventions for increasing political knowledge, interest, and participation.

A.2 Design

A.2.1 Baseline phone survey

Between November 7 and November 10, 2023 enumerators conducted a first wave of phone calls with 204 potential participants. The sample frame was provided by Rifaly and drawn from a list of past users of the app. Of the initial sample frame, 142 individuals picked up the phone, consented to participate in the study, and completed the baseline survey.

A.2.2 Intervention and randomization

The 142 participants who consented and completed the baseline survey were randomized with equal probability to one of two experimental conditions. Participants in the treatment condition were given free, unlimited access to all 31 newspapers on the Rifaly app for a period of one month. Participants in the placebo control condition were given free, unlimited access to all magazines for a period of one month. Although untreated participants were not barred from accessing the newspapers, they would be required to pay the standard price to download and read them – and vice-versa for treated participants. Importantly, while the majority of the newspapers (60%) primarily cover political and economic news, none of the magazines primarily cover political and economic news.

The research team was able to measure compliance in an unobtrusive manner by tracking participants' usage data on the app. For each participant, we documented whether they had read any newspaper (sporadic reader), whether they had read newspapers on multiple days (regular reader), and which newspapers they read.

A.2.3 Follow-up phone survey

Between 2-3 weeks after offering participants their respective subscription offers, enumerators will conduct follow-up calls during which outcomes will be assessed.

A.3 Outcomes and Hypotheses

The follow-up survey will measure five categories of outcomes: news consumption and interest, political priorities, political knowledge, political attitudes, and beliefs about media bias. The hypothesized direction of treatment effects are as follows.

A.3.1 Media consumption and political interest

- Question: "How often would you say you read or listen to news about politics?"

  - Hypothesis: Positive effect (one-tailed) on answer option "Every day."

- Question: "In the last two weeks, where have you gotten your political news from the most?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Rifaly or other news apps"

- Question: "In the past two weeks, would you say you read the news on Rifaly more, less, or about the same compared to the previous two weeks?"
  - Hypothesis: Positive effect (one-tailed) on answer option "More"

- Question: "In the past two weeks, would you say you read the news on social media more, less, or about the same compared to the previous two weeks?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Less."

A.3.2 Political priorities and agenda-setting

- Question: "Looking back on the last two weeks, what were some of the major issues in the country?"
  - Hypothesis: Positive effect (one-tailed) on the number of issues that respondents cite.

- Question: "In your opinion, how big of an effect has the recent flooding had on Tanzanians?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Massive effect."

A.3.3 Political knowledge

- Question: "Recently, some newspapers reported that the government tabled several bills that would reform elections in Tanzania. Have you heard about these election law bills, or have you not had a chance to hear about them yet?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Yes, I have heard about it"

- Question: "In your understanding, what are some of the changes to elections that the bills would introduce?"
  - Hypothesis: Positive effect (one-tailed) on answers mentioning at least one element of the bills.

- Question: "This week, Mwananchi reported on the assassination of mineral trader Mussa Hamis Hamis in Mtwara. Have you had a chance to hear about this, or have you not had a chance to hear about it yet?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Yes, I have heard about it."
- Question: "Do you happen to know which position John Twenda used to hold?"
  - Hypothesis: Positive effect (one-tailed) on "Registrar of Political Parties" or related.
- Question: "Last week, President Samia fired and replaced the head of the National Insurance Corporation, Dr. Elirehema Doriye. Did you hear about this change, or have you not had a chance to hear about it yet?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Yes, I have heard about it."
- Question: "In your understanding, had the National Insurance Company become more profitable under Dr. Doriye's leadership, less profitable, or no different?"
  - Hypothesis: "Positive effect (one-tailed) on answer option "More profitable."
- Question: "Two weeks ago, some outlets reported news about the performance of the Dar Stock Exchange. Do you recall if stocks are up, down, or the same compared to last month?"
  - Hypothesis: Positive effect (one-tailed) on answer option "Increased."
- Political Knowledge Index (All political knowledge variables will be standardized to range from 0 to 1 by dividing by the maximum possible value. All variables will then be summed and divided by the number of variables in the index.)
  - Hypothesis: Positive effect (one-tailed) on Political Knowledge Index.

A.3.4 Political attitudes

- Question: "Which of the following comes closest to your view: Statement 1: The proposed bills would make big improvements in how elections are run in Tanzania; Statement 2: The proposed bills would make modest improvements in how elections are run; Statement 3: The proposed bills don't go far enough in reforming elections in Tanzania; or Statement 4: I'm not sure."

- Hypothesis: Ambiguous effect (two-tailed) on answer option "Statement 1."*
- Hypothesis: Negative effect (one-tailed) on answer option "Statement 4."

- Question: "Now I am going to read two statements. You tell me which you agree with more. If you are not sure, you can say "not sure." Statement 1: Flooding is an unfortunate natural occurrence that we can't do much to prevent. Statement 2: We can limit the destruction caused by flooding by overhauling infrastructure and investing in better city planning."
  - Hypothesis: Positive effect (one-tailed) on answer option "Statement 2."

- Question: "In your opinion, would you say that local authorities are doing enough to respond to the flooding, or that local authorities should be doing more to give aid to victims of flooding? [Follow-up question] Do you think authorities should be doing a little more or a lot more?"
  - Hypothesis: Ambiguous effect (two-tailed) on answer option "Doing enough."*
  - Hypothesis: Ambiguous effect (two-tailed) on answer option "A lot more."

- Index of Pro-Government Attitudes (All asterisked political attitudes variables will be standardized to range from 0 to 1 by dividing by the maximum possible value. All variables will then be summed and divided by the number of variables in the index.)
  - Hypothesis: Ambiguous effect (one-tailed) on Index of Pro-Government Attitudes.

A.3.5 Beliefs about media bias

- Question: "I'm going to read out the names of a few newspapers and after each one, you can tell me whether you think it's pro-government, neutral, or pro-opposition. If you're not sure, you can say 'I'm not sure."'
  - Hypothesis (Uhuru): Positive effect on answer option "Pro-Government."
  - Hypothesis (Tanzania Leo): Positive effect on answer option "Pro-Government." Hypothesis (Mwananchi and The Citizen): Positive effect on answer option "Neutral" or "Pro-Opposition."
  - Hypothesis (Demokrasia): Positive effect on answer option "Neutral" or "Pro-Opposition."
  - Hypothesis (Majira): Positive effect on answer option "Pro-Government."

  - Hypothesis (Nipashe and The Guardian): Positive effect on answer option "Neutral" or "Pro-Opposition."
  - Hypothesis (Taifa Tanzania): Positive effect on answer option "Pro-Government."
  - Hypothesis (Jamvi La Habari): Positive effect on answer option "Pro-Government."

- "Correct" Beliefs about Media Bias Index: (All perceived media bias questions will be standardized to range from 0 to 1 by dividing by the maximum possible value. All variables will then be summed and divided by the number of variables in the index.)
  - Hypothesis: Positive effect on Correct Beliefs about Media Bias Index.

A.4 Estimation

For all outcomes we estimate both the intent-to-treat effect (ITT) and the complier average causal effect (CACE), or the average treatment effect among participants who comply with their treatment assignment. For the purposes of analysis, compliance is defined in two ways: being a sporadic reader having received the newspaper treatment and being a regular reader having received the newspaper treatment. Readership is determined using daily usage data as outlined in the Design section. Because the newspaper and magazine subscriptions are not completely equivalent, we do not necessarily consider participants assigned to the magazine condition who do not read any magazines to be non-compliers, and therefore we expect one-sided noncompliance.

For all analyses, we will estimate treatment effects using ordinary least squares regression and calculate p-values with randomization inference. The primary specifications will not include any covariates. The secondary specifications will include covariates. We will use lasso regression to select the minimal number of covariates that best predict each outcome and include only these covariates in our estimation. We draw potential covariates from the individual-level covariates from the baseline survey conducted 2-3 weeks prior to the follow-up survey.

We will also explore heterogeneous treatment effects by baseline political knowledge, baseline media preferences, and baseline political interest. For the first case, we will divide subjects into those who answer both baseline political knowledge questions correctly (high political knowledge) and those who got at least one question wrong (low political knowledge). We expect treatment effects to be larger for low-knowledge participants than high-knowledge participants. We also divide

respondents into those with a stated preference for independent media outlets at baseline and those with a stated preference for government media outlets. We expect treatment effects to be larger for the former than the latter. Finally, we divide respondents into those who said they consumed political news every day at baseline and all other respondents. We conduct a two-sided test for differences in treatment effects between these two groups.

Moreover, we will explore individual-level treatment heterogeneity using the generalized causal forest algorithm in R. When the sources of treatment effect heterogeneity are not known ex ante, restricting analyses to pre-registered hypotheses may hinder the discovery of unanticipated results; however, ad hoc exploration of treatment effect heterogeneity runs the risk of false discovery. We therefore use machine learning tools originally developed to predict individualized responses to medical interventions in order to automate and synthesize the search for treatment effect heterogeneity across many covariates. We will draw covariates from the full list of survey questions asked at baseline.

B Alternative Coding of Political Attitudes Measures

This section highlights a decision to diverge from the pre-analysis plan (PAP) and shows that the results are robust to this decision. In the PAP, we called for a two-tailed test of the hypothesis that the treatment would affect whether respondents expressed the highest level of support for the election reform bills (i.e. "Statement 1: The proposed bills would make big improvements in how elections are run in Tanzania."). However, the endline survey question allows respondents to express varying degrees of support from the bill, from full support (i.e. "Statement 1: The proposed bills would make big improvements in how elections are run in Tanzania.") to moderate support (i.e. "Statement 2: The proposed bills would make modest improvements in how elections are run.") to opposition (i.e. "Statement 3: The proposed bills don't go far enough in reforming elections in Tanzania."). To reflect this level of nuance, the specification in the main body of the paper (Table 7) uses a coding scheme in which strong support receives a value of 1, moderate support a value of 0.5, and opposition a value of 0. To assuage concerns that the results are sensitive to this decision, Table A1 presents the results with the original dichotomous coding, where strong support receives a value of 1 and all other responses a value of 0.

Likewise, our PAP called for a two-tailed test of the hypothesis that the treatment would affect whether respondents expressed the highest level of approval of the government's flooding response (i.e. that authorities are "doing enough"). Again, however, the endline survey question gives respondents the freedom to express varying degrees of approval, from full approval (i.e. authorities are "doing enough") to moderate disapproval (i.e. authorities should be doing "a little more") to strong disapproval (i.e. authorities should be doing "a lot more"). The specification in our main analysis thus uses a coding scheme in which 1 indicates approval, 0.5 moderate disapproval, and 0 strong disapproval. Table A1 presents the results with the original dichotomous coding, where strong approval receives a value of 1 and all other responses a value of 0.

Our primary outcome of interest is the index of pro-regime attitudes, which is a weighted average of the previous two measures. Table A1 creates a revised index using the dichotomous coding scheme described above.

As the table shows, the results are similar to those presented in the main body of the paper: in both specifications, the covariate-adjusted treatment effect on the pro-regime attitudes index is

positive, significant at the $p = .05$ level, and roughly comparable in magnitude (10.1 percentage points here versus 13.3 percentage points in the main body of the paper).

Table A1: **Treatment Effects on Pro-Regime Political Attitudes**

	Index		Flooding Response		Support Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treat	0.080	0.101*	0.082	0.130	0.077	0.077
Standard Error	0.052	0.052	0.086	0.087	0.062	0.062
p-value	0.134	0.046	0.418	0.131	0.218	0.218
Hypothesis	+/-	+/-	+/-	+/-	+/-	+/-
Control Mean	0.18	0.18	0.26	0.26	0.089	0.089
Control SD	0.26	0.26	0.45	0.45	0.29	0.29
DV Range	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]	[0-1]
Controls	No	3	No	9	No	0
Adj-R^2	0.01	0.07	-0.00	0.10	0.01	0.01
Observations	116	116	116	115	116	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Randomization p-values are calculated with 1,000 randomizations testing the null hypothesis of no effect for any observation. Columns 3-4 estimate the treatment effect on approval of the government's flooding response. Responses are coded 1 if the respondent thought authorities was "doing enough" and 0 otherwise. Columns 5-6 estimate the treatment effect on support for the ruling party's electoral reform bills. Responses were coded as 1 if the respondent thought they make "big improvements" and 0 otherwise. Columns 1-2 estimate the treatment effect on an index of pro-government attitudes, which is a weighted average of the previous two measures.

C Alternative Measure of Baseline Social Media Preferences

Table A2: **Treatment Effects by Respondents' Baseline Media Preferences (Alternative Measure)**

	Pro-Regime Attitudes Index			Political Knowledge Index		
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treatment	0.148*	-0.083	-0.083	0.087	0.056	0.056
	(0.060)	(0.161)	(0.142)	(0.047)	(0.096)	(0.109)
	[0.015]	[0.611]	[0.559]	[0.069]	[0.570]	[0.610]
Prefer Online Media			-0.155			0.101
			(0.110)			(0.084)
			[0.161]			[0.230]
Treatment × Prefer Online Media			0.232			0.032
			(0.155)			(0.118)
			[0.137]			[0.789]
Prefer Online Media	YES	NO	ALL	YES	NO	ALL
Control Group Mean	0.198	0.238	0.220	0.336	0.315	0.325
Control Group SD	0.247	0.309	0.282	0.241	0.230	0.235
Adjusted-R^2	0.05	-0.04	0.03	0.02	-0.04	0.04
Observations	98	18	116	98	18	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Standard errors are in parentheses and two-sided p-values are in brackets.

D Other Heterogeneous Effects Analyses

Table A3: **Treatment Effects by Respondents' Baseline Political Knowledge Levels**

	Pro-Regime Attitudes Index			Political Knowledge Index		
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treatment	0.146*	-0.025	-0.025	0.106*	-0.008	-0.008
	(0.062)	(0.130)	(0.126)	(0.048)	(0.091)	(0.096)
	[0.022]	[0.852]	[0.846]	[0.030]	[0.934]	[0.937]
High Knowledge			-0.045			0.039
			(0.102)			(0.077)
			[0.656]			[0.618]
Treatment × High Knowledge			0.170			0.114
			(0.141)			(0.107)
			[0.230]			[0.290]
Baseline Political Knowledge	HIGH	LOW	ALL	HIGH	LOW	ALL
Adjusted-R^2	0.05	-0.05	0.02	0.04	-0.05	0.04
Observations	93	23	116	93	23	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Standard errors are in parentheses and two-sided p-values are in brackets.

Table A4: **Treatment Effects by Respondents' Baseline Political News Consumption Levels**

	Pro-Regime Attitudes Index			Political Knowledge Index		
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treatment	0.062	0.151	0.151*	0.110	0.066	0.066
	(0.085)	(0.076)	(0.076)	(0.064)	(0.059)	(0.059)
	[0.466]	[0.051]	[0.050]	[0.089]	[0.271]	[0.263]
Consumes News Every Day			0.036			0.015
			(0.081)			(0.062)
			[0.656]			[0.814]
Treatment × Consumes News Every Day			-0.089			0.044
			(0.114)			(0.087)
			[0.435]			[0.613]
Consumes News Every Day	YES	NO	ALL	YES	NO	ALL
Adjusted-R^2	-0.01	0.04	0.01	0.04	0.00	0.01
Observations	52	64	116	52	64	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Standard errors are in parentheses and two-sided p-values are in brackets.

Table A5: **Treatment Effects by Respondents' Gender**

	Pro-Regime Attitudes Index			Political Knowledge Index		
	(1)	(2)	(3)	(4)	(5)	(6)
E-News Treatment	0.100	0.115	0.115	0.133	0.078	0.078
	(0.211)	(0.059)	(0.060)	(0.137)	(0.046)	(0.046)
	[0.644]	[0.054]	[0.059]	[0.349]	[0.095]	[0.094]
Female			-0.010			-0.042
			(0.158)			(0.122)
			[0.952]			[0.732]
Treatment × Female			-0.015			0.055
			(0.190)			(0.146)
			[0.936]			[0.707]
Gender	FEMALE	MALE	ALL	FEMALE	MALE	ALL
Adjusted-R^2	-0.06	0.03	0.01	-0.00	0.02	0.01
Observations	14	102	116	14	102	116

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Standard errors are in parentheses and two-sided p-values are in brackets.

E Codebook for Supplemental Analysis

To assess the relative slant of government, independent, and online news sources, annotators coded newspaper headlines according to the following guidelines.

A headline is considered "critical" if it:

- Mentions the President, CCM, public officials, the government, or a government ministry, body, or agency **AND** uses negative language indicating criticism, concern, failure, error, negligence, corruption, wrongdoing, etc.; or
- Mentions anything related to the national economy, household finances, development, or economic projects (i.e. how the country is doing generally) **AND** is negative in tone or conveys negative information; or
- Mentions any sort of wrongdoing by the government or CCM politicians, especially (1) corruption or (2) repression, including but not limited to arrests, bans, confiscation of property, or violence against opposition; or
- Mentions violence, protest, rioting, or unrest of any sort indicating people are unhappy with the government; or
- Mentions criticism of Tanzania by "experts" or foreign actors.

A headline is considered "positive" if it:

- Mentions the President, CCM, public officials, the government, or a government ministry, body, or agency **AND** uses positive language indicating success, victory, progress, achievements, stability, etc.; or
- Mentions anything related to the national economy, household finances, development, or economic projects (i.e. how the country is doing generally) **AND** is positive in tone or conveys positive information; or
- Mentions praise of Tanzania by "experts" or foreign actors.

A headline considered "neutral" if it concerns a topic not covered above, covers one of the above topics but is neutral in tone, or covers one of the above topics but has an evenly mixed tone.