Dangerously informed:
Voter information and pre-electoral violence in Africa

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Abstract

A considerable literature examines the effect of voter information on candidate strategies and voter-politician interactions in the developing world. The voter information literature argues that information can improve accountability because more informed voters are harder to woo with traditional campaign tools, such as ethnic appeals and vote-buying. However, this literature has largely ignored the reaction of political candidates and thus may reach conclusions that are overly optimistic regarding the impact of information on electoral accountability. We argue that voter information can increase electoral violence in developing countries where politicians face fewer institutional constraints on their campaign tactics. When violence is used as a campaign strategy, more informed electorates are more at risk because they are harder to sway through alternative campaign techniques. Using data from 35 African countries, we show that respondents receiving their news predominantly from newspapers are a good proxy for informed voters because they differ in terms of their political attitudes from respondents consuming no news or receiving it via other channels. Combining the geocoded survey data with pre-electoral violence event data, we find a robust positive association between newspaper readership and fear of and exposure to campaign violence. This finding contributes to the micro-foundations of election violence and adds a cautionary note for voter information programs.

A considerable literature examines the effect of voter information on candidate strategies and voter-politician interactions in the developing world. Research shows that uninformed voters are more prone to ethnic voting, clientelistic politics, and vote buying (Chandra, 2004; Posner, 2005; Kitschelt, 2000). In contrast, exposure to information makes citizens less likely to sell their votes (Banerjee et al., 2011; Vicente, 2014; Bratton, 2008; Erlich, forthcoming; Nichter, 2008), less likely to vote along ethnic lines (Ichino & Nathan, 2013; Banerjee et al., 2010), and more critical of politicians' campaign promises (Ferraz & Finan, 2008) and campaign actions (Gutierrez-Romero & LeBas, 2020). All of this suggests that exposure to information makes citizens harder to woo by traditional means of campaigning, leading researchers to conclude that voter information improves political accountability (see Pande, 2011) and consequently results in more responsible and more policy-oriented politicians (Besley, 2006; Besley & Burgess, 2002). More recent studies cast doubt on the effectiveness of information interventions but interestingly point out that politicians believe that voter information interventions are effective, may change voter behavior, and thus need to be countered, for example by undermining the dissemmination of negative information (Dunning et al., 2019). However, the literature has largely ignored the responses of politicians (Pande, 2011: 233; Ashworth & Bueno de Mesquita, 2014), especially where politicians are less constrained in their use of campaign strategies, which may include fraud, vote buying, and violence (Schedler, 2002; Burchard, 2015; Bekoe, 2012; Norris, Frank & Martinez I Coma, 2015). In these contexts, politicians may react violently towards informed voters, suggesting that the voter information literature might have reached too optimistic conclusions.

We argue that in less institutionalized contexts, informed electorates are more at risk of being exposed to election violence. If informed voters are harder to woo through traditional campaign tools (e.g., policy, ethnic appeals, vote buying), as suggested by the voter information literature, and incumbents know in which locations these campaign strategies are failing or have failed during past election campaigns, then these voters might be more likely to be exposed to violence in order to change their behavior during the election. Hence,

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when violence is used as a campaign strategy, informed voters are more at risk than uninformed voters. This sheds light on the information-accountability link (Ashworth & Bueno de Mesquita, 2014), which examines how voter information affects the interaction between voters and politicians. We also contribute to the microfoundations of election violence. Much research points to politicians inciting election violence and specifically incumbents being the main perpetrator of campaign violence (e.g., Straus & Taylor, 2012). We contribute to this work by noting that politicians may react negatively towards informed voters when facing fewer constraints on their behavior, such as in developing democracies.

An illustrative and well-documented example of this dynamic is Zimbabwe. At least since 2000, the ruling party (ZANU-PF) has regularly intimidated informed groups in the run-up to elections. Informed people at higher risk of violence in communities include teachers, principals, student leaders, journalists, medical professionals, and business people (UNESCO, 2014: 205-207; Unknown, 2000; Media Monitoring Project Zimbabwe, 2009: 13-14, 36; Research and Advocacy Unit, 2012: 8-9). Pre-election intimidation of these groups tends to be widespread, with more than half of the teachers reporting having been intimidated between 2000 and 2012 (Research and Advocacy Unit, 2012: 16-17; Unknown, 2000). These intimidation campaigns also aim for a wider audience, as teachers are usually beaten in full view of students during regular school hours (Research and Advocacy Unit, 2012: 2). Information seems to be important for victimization, as teachers were targeted when they tried to distribute information flyers about Zimbabwe's collapsing education system (Human Rights Watch, 2008: 2). During the voter registration period, teachers seem to be targets of campaign violence – especially in ruling party strongholds – because they might encourage others to register to vote and because they were perceived 'as having an influence on local communities' (Human Rights Watch, 2008: 3-4). Importantly, both opposition and government-affiliated teachers were more likely to be targeted than non-partisan teachers; and among election officials, teachers were still at greater risk (Research and Advocacy Unit, 2012: 18). Politicians willing to use campaign violence seem more likely to direct it at in-

formed groups in an effort to change their behavior in the run-up to elections and through them the behavior of others in the community.

To assess our argument systematically, we leverage geo-coded individual-level survey data from 35 African countries and event-level data of pre-electoral violence. We use newspaper readership as a proxy for information. In line with our predictions, we find that newspaper readers are more fearful of campaign violence and are more likely to be exposed to campaign violence.[1] The information effects on violence are substantively important: the difference in fear between newspaper readers and non-readers is nearly half the difference in fear between incumbent and opposition partisans. Newspaper readers are on average 3.8 percentage points more likely to fear and 3.6% more likely to be exposed to an election related violent event near their location than non-readers. We also investigate the underlying theoretical mechanisms and find that newspaper readers show similar attitudes and beliefs to informed voters in the voter information literature.

Our finding has implications for two important literatures: voter information and accountability, and election violence. Experimental studies have shown that voter information about the political process and politician performance increases participation (Mvukiyehe & Samii, 2017; Aker, Collier & Vicente, 2017) and induces electorates to punish and reward politicians (Chong et al., 2015; Ferraz & Finan, 2008; Banerjee et al., 2011; Ichino & Nathan, 2013; Gutierrez-Romero & LeBas, 2020; Pande, 2011). However, for a better informed electorate to cause better governance, politicians need to change from clientelist to programmatic and performance-based campaigning. Whether they do so is an open empirical question. Recent studies suggest that voter information can make politicians change the timing of malpractices (Bobonis, Fuertes & Schwabe, 2016) and prompt them to use coercion (Fergusson, Vargas & Vela, 2004). We provide evidence that more informed individuals

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[1]Our objective measure of violence exposure is based on geographic proximity and thus does not allow identifying individual targets, while the fear measure shows who personally felt more affected. The results for both measures point in the same direction.

are more fearful of and more exposed to campaign violence. This adds an important cautionary note on the use of information to strengthen electoral accountability in developing democracies.

Second, our findings contribute to the burgeoning research on election violence by addressing the puzzle of who is at risk of campaign violence. About a quarter of elections worldwide are accompanied by electoral violence, mostly – but not exclusively – in developing countries (Fischer, 2002: 11; Hafner-Burton, Hyde & Jablonski, 2014: 151; Borzyskowski, 2019: 34). Most of this violence takes place in the run-up to election day, which is also our focus. Formal models identify partisanship as a key predictor of who gets targeted by campaign violence (Chaturvedi, 2005; Collier & Vicente, 2012; Robinson & Torvik, 2009). While incumbent partisans are consistently found to be least likely to fear or experience victimization in the run-up to elections, the primary targets of campaign violence vary across countries (Kuhn, 2013; Bratton, 2008: 624; Wallsworth, 2016: 101): sometimes it is opposition partisans, at other times it is non-partisans.[2] This lack of knowledge about the targets of election violence is puzzling and highly relevant for research and policy. We contribute to filling this gap in the microfoundations of electoral violence by presenting empirical evidence that more informed voters are systematically at higher risk of intimidation, controlling for partisanship and other individual and location characteristics. We show that even among incumbent partisans, more informed citizens are more likely to be exposed to violence.

Voter information and campaign violence

In developing democracies, politicians often have a larger menu of available campaign strategies at their disposal because they face fewer institutional constraints than in advanced democracies. In addition to the usual tools of influencing citizens' vote choice through positioning, advertising, and mobilizing, politicians in developing democracies can also resort to

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[2]For *post*-election violence victimization, see Dercon & Gutierrez-Romero, 2012; Gutierrez-Romero, 2014. For a study on the 2011 Guatemala election and an argument about targeting poor and rural citizens, see Gonzales-Ocantos et al., 2020.

fraud, vote buying, and violence (Schedler, 2002; Southall, 2013). Election-related violence is political violence to influence the process or outcome of an election. Campaign violence, i.e. the use of force as a strategic tool prior to election day, is often used to shape turnout or vote choice (Straus & Taylor, 2012: 20; Wilkinson & Haid, 2009).

Campaign violence is often intended to have effects beyond the immediate targets. Coercive violence can be low level and is meant to instill fear and paralyze the surrounding community or area and 'performs a communicative function with a clear deterrent dimension' (Kalyvas, 2006: 26-28). While some individuals are directly targeted, low-level political violence is intended to terrorize the surrounding community which is exposed to intimidation, and to shape the broader community's actions. Voters who are exposed to violence in their community but do not experience it personally may still become fearful of being targeted in the future, leading them to adapt their behavior. The effectiveness of coercive violence is well documented for election campaigns in sub-Saharan Africa, where a small percentage of people is directly affected but a much higher percentage of people is fearful of becoming a victim of campaign violence (Bratton 2008; Gutierrez-Romero 2014).[3]

While election violence can in principle be (or look) spontaneous, most studies point to it being orchestrated by politicians, particularly incumbent politicians or their affiliates. Specifically, about 80 percent of pre-election violence in sub-Saharan Africa is orchestrated by incumbent politicians (Straus & Taylor, 2012: 29-30; Sachikonye, 2011: 19; International Crisis Group, 2007b: 4). Politicians often activate local party youth wings or hire thugs for implementation (Laakso, 2009: 231-232, 243-244; Mehler, 2009: 204-206; Makumbe, 2002: 91; Masunungure, 2011: 55-57).

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[3]For example, Bratton (2008: 624) documents that while only 4% of Nigerians reported being directly affected by electoral violence and intimidation, 56% of Nigerians were at least a little fearful of becoming a victim of political violence or intimidation in the forthcoming election. Similarly, Gutierrez-Romero (2014: 1505) documents for Kenya that while only 9% reported being personally threatened negative consequences for their voting behavior, 32% of respondents heard about violent political groups being active in their neighborhood.

Politicians also often hire local agents to help overcome information problems (Stokes, 2011; Stokes et al., 2013). In many developing countries, local party representatives are present in polling stations during voting and counting, observing who voted. In many African countries, polling-station-level election results posted outside the polling station or on the election commission website provide information on the vote choice and turnout of each neighborhood/village (Koter, 2013: 194). This means politicians and their local intermediaries have detailed spatial information on where their campaigns have succeeded or failed in past elections. This information is then used to shape their campaigning strategy in the next election (Koter, 2013: 194).

Politicians and their intermediaries can also use local knowledge to identify more informed voters. A large body of work has shown how politicians in developing countries use local agents to target illicit campaign strategies, such as vote and turnout buying and electoral clientelism (Stokes, 2005; Nichter, 2008; Stokes, 2011; Stokes et al., 2013). Because local party operatives have knowledge about the local communities in which they are embedded, it is possible for them to identify individuals (Schaffer & Baker, 2015: 1099; Stokes et al., 2013: 75). Research on African elections has documented how politicians employ local agents deeply embedded in communities (Kramon 2017; Izama and Wilkinson 2012, 67). While these studies examine the local targeting of positive incentives (vote buying, turnout buying), we shift the focus to negative incentives such as violent intimidation (Mares & Young, 2016; Gottlieb, 2017; Chuang & Schechter, 2015: 16). Studies have shown how politicians' local intermediaries direct threats of punishment and coercion at individualss (Mares & Young, 2018, 2019). Local party operatives have information which can be used by party youth wings or thugs for intimidation. We build on these previous studies and argue that local knowledge about the community can also be used to direct intimidation, as documented for Zimbabwe (Bratton, 2008) and Uganda (Conroy-Kutz & Logan, 2012: 647).

We argue that when politicians resort to violence during election campaigns, more informed voters are more likely to be at risk than uninformed voters because more informed

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voters reduce the effectiveness of other campaign tools (such as ethnic appeals or vote buying) and threaten a candidate's chances of winning the election. More informed electorates are harder to sway by common campaign strategies, such as clientelistic exchanges, bribery, and ethnic appeals. Research has shown that more informed voters are more critical of campaign promises, especially if a politician's performance record is bad (Ferraz & Finan, 2008), less susceptible to ethnic cues (Ichino & Nathan, 2013; Banerjee et al., 2010), and less likely to sell their votes (Banerjee et al., 2011; Vicente, 2014; Bratton, 2008; Nichter, 2008). Candidates often make campaign promises that they do not fulfill as incumbent politicians, generating disappointment among voters. The more informed citizens are about what the incumbent failed to achieve, the more likely they are to be disappointed and non-supportive. If incumbents cannot convince those prospective voters to support them through the use of non-violent campaign techniques and fear losing office, they have incentives to resort to violence to change the electoral behavior of those non-supportive groups.

An empirical illustration is Uganda's recent (2016) election. The Ugandan government and ruling party officials intimidated and threatened journalists to keep them from providing information to voters. As one journalist noted, 'I think government intends to keep the people uninformed [...] You see, uninformed people are easy to manipulate. Cases of intimidation are prevalent [...] As journalists, we are forced to cover up. In the reporting you don't hit the nail on top. You have to communicate carefully. In election season we see this very clearly.' Human Rights Watch (2016b) notes that the 'government has likewise clamped down on domestic organizations, particularly those working on human rights, including voter education.' Another Human Rights Watch report (2016a: 1-2, 19, 26) notes that the Ugandan police has harassed journalists and ordered them not to write about campaign rallies by opposition candidates. Civil society organizations, too, 'face challenges talking about critical issues, and informing voters about key issues, violating rights to both free expression and association' as elections draw near. This has become known as 'de-campaigning,' which is one way of limiting voter information about political alternatives. This is one example of

politician actions (a) to limit voter information in order to better manipulate voters and (b) to direct campaign violence at more informed citizens who might pose a threat to politicians' re-election chances.

Our argument has two main observable implications for the relationship between voter information and campaign violence. Specifically, it implies that more informed individuals (1) should fear campaign violence more and (2) should be more exposed to campaign violence than uninformed voters. In the subsequent sections we provide empirical evidence in support of these predictions and the underlying theoretical mechanism outlined above.

Research design

This section introduces our data and empirical strategy. We combine two different data sources to measure our main variables: (1) geocoded survey data for 35 African countries from 2014/15; and (2) geocoded campaign violence event data. Our unit of analysis is an individual i.[4]

Exposure to independent information

Voter information is measured by exposure to independent information, which is captured by regular newspaper readership. Information comes through the ability to read and consume newspapers, which on average are less controlled by the state (Djankov et al., 2003: 357-359)[5] and provide more local and regional political information than other forms of mass media.

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[4]Summary statistics of and bivariate correlations between all variables are provided in Appendix Table A.I and Appendix Table A.II, respectively.

[5]In 16 of the 22 countries in our sample for which Djankov et al. (2003) reports data, the press is more free, whereas in the remaining six (Burundi, Cameroon, Gabon, Ghana, Niger and Togo) broadcasting and print media have the same level of media freedom (Djankov et al., 2003: 357-359). For the remaining 13 countries in our sample we lack comparable data but believe the pattern is similar. We have searched for more recent data, but were unable to find any similarly detailed information on media ownership. In particular, while there are various annual media freedom indices, they fail to distinguish between the press and broadcasters.

Information on newspaper readership comes from the sixth wave of the Afrobarometer Survey (AFB6), which was administered in 36 African countries in 2014/15.[6] Newspaper readership is measured on a five-point Likert scale (AFB6, q12c) ranging from 'never' (0) to 'daily' (4). Given the question's reliance on respondents' recall and calculation of averages across an unspecified time period, we follow a conservative approach by dichotomizing the ordinal measure: a respondent is considered a *Newspaper reader* if (s)he gets the news from a paper at least a few times a month (i.e., q12c > 1).[7] Across all countries in the sample 32.3% of all respondents read a newspaper at least a few times a month with significant variation between countries ranging from 1.6% in Burundi to 87.7% in Mauritius.

Outcomes

Campaign violence is measured in two ways: (1) with an objective measure, the number of *Election-related conflict events* near a location; and (2) with a subjective measure, *Fear of campaign violence*. For the objective measure we count the number of election-related conflict events within 25km[8] of a location during the six months prior to the last three

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[6]Political parties are forbidden in Swaziland. As partisanship and partisan affiliation are important control variables in our regressions, we exclude Swaziland. The remaining 35 countries are not a random sample. They tend to be concentrated in West, East, Northern, and Southern Africa, so the following results may not apply to the whole continent. To avoid spatial measurement error, we drop all respondents whose geographic location could only be pinpointed at the district, region or country level, which is 28.75% of the sample. In Appendix Table A.III we show that, conditional on the full set of controls (see below) and country fixed effects, there are no systematic statistical differences in our main explanatory and outcomes variables between geographically precisely and imprecisely coded subsets. Hence, dropping the imprecisely coded observations does not bias our findings.

[7]All our findings are robust to using the ordinal scaled index as shown in Appendix Table A.IV.

[8]The 25km radius was chosen to reflect the average action radius of an individual to proxy for exposure. Our results, however, do not depend on the particular distance chosen. Appendix Table A.IV, Panel B, Columns 1 and 2 show that the results are qualitatively similar when using a 10 or 40km radii instead.

national elections.[9] The event data are taken from the Social Conflicts in Africa Database (SCAD) Version 3 (Salehyan et al., 2012), which contains information on protests, riots, strikes, inter-communal conflict, government violence against civilians, and other forms of social conflict. Its primary sources of information are the Associated Press (AP) and the Agence France Presse (AFP) wires, as compiled by the Lexis-Nexis news service.[10] We filter the data in two ways for each of the last three national elections: by time (from six months prior to the election through election day) and by type (only election-related events). We also drop all events that could not be precisely geocoded.[11] The median electoral conflict event in our sample lasts one day and stays short of fatalities, although a third of the events result in up to twenty deaths. The most common event types in our sample are riots and pro-government violence, with the latter defined as violence initiated and 'waged primarily by government authorities or groups acting in explicit support of government authority' (Hendrix & Salehyan, 2013: 3). A higher number of events in close proximity to a location indicates an increased exposure to election-related violence during the most recent election campaigns. As the event count is positively skewed, we logarithmize the event count to reduce the impact of outliers.

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[9]If a national election was held within less than six months of a previous national election, then the previous election was ignored to avoid conflating pre- and post-election violence events, as the two types of election violence have distinct spatial patterns. Our results are robust to using only the number of events in the last two national elections, see Appendix Table A.IV, Panel B, Column 3.

[10]We call this measure 'objective' to contrast it with the more subjective measure from individual-level surveys but are aware of the potential for reporting bias in media-based event data such as SCAD (Borzyskowski & Wahman, forthcoming). We assess reporting bias in the robustness section, and also use the subjective fear measure as one way to validate the event data in this study.

[11]Using the geocoding information in SCAD we drop events without location precision, where the exact event location is unknown, where only province is given, and where events are coded as nationwide with several but unidentified locations. This ensures a clean link between respondent and event location at the village level. Our results are robust to restricting our sample to those countries for which we have no imprecisely geocoded violent events (see Appendix Table A.IV, Panel B, Column 4).

Our subjective measure of campaign violence is based on self-reported *Fear of campaign violence.* The Afrobarometer survey question 'During election campaigns in this country, how much do you personally fear becoming a victim of political intimidation or violence?' (AFB6, q49) has responses ranging from 'not at all' (0) to 'a lot' (3). We distinguish between those respondents without and those with at least a little fear of victimization (i.e., q49>0). The subjective measure has two advantages: it allows us to assess the impact of newspaper readership on violent campaign events below the AP's and AFP's reporting thresholds (such as threats and intimidation) and it serves as a validation of the event data. There is a positive and statistically significant relationship between our objective and subjective measures of campaign violence ($\chi^2(12) = 483.96$), suggesting that exposure and fear are positively associated.

To assess the extent to which newspaper readers share attributes with informed voters as described in the voter information literature, we look at four variables from the AFB6: the extent of a respondent's *Interest* in public affairs (AFB6, q14) and the extent to which they *Discuss* politics with friends or family (AFB6, q14), which both record answers on Likert scales starting at zero, with higher values indicating more interest and discussion; the extent to which a respondent perceives themselves purely or mostly in *Ethnic* rather than national terms (AFB6, q88B); the extent to which a respondent agrees that the executive is subject to the *Rule of law* (AFB6, q38), and whether a respondent prefers *Democracy* over all other forms of government (AFB6, q30=3).

Control variables

In addition to country fixed effects, we include alternative information, geographic, demographic, socio-economic, and political controls to account for alternative explanations. To capture the independent informational effect of newspapers on fear of and exposure to election violence, all our regressions include indicators for alternative information sources, i.e., *Radio* (AFB6, q12a>1), *TV* (AFB6, q12b>1), and *Internet* (AFB6, q12d>1). We use news-

paper readership as a proxy for the informedness of a respondent rather than radio or TV, as the proportion of state-controlled outlets across Africa is larger among broadcasters than the press (Djankov et al., 2003: 357-359) and broadcasters generally put more weight on national and international relative to local and regional news given their broader audience and advertising constraints. The internet provides access to the largest variety of independent political information, but is not a valid alternative to the newspaper proxy in the African context. While connectivity has increased, it is still low (Silver & Johnson, 2018), especially with regard to the 3G/4G connectivity necessary to browse websites and access social media (Global System for Mobile Communications Association, 2018: 43-49). Moreover, in many African countries the internet's infrastructure is controlled by the state, allowing governments to restrict access or shut down the internet all together around elections (Freyburg & Garbe, 2018).

As education levels, newspaper density, and political competition in many African states is greater in urban compared to rural areas and political activity is often concentrated in and around the capital, we include *Urban* (AFB6, urbrur) and *Capital* (AFB6, `geoname_adm_name`) indicators, as well as the logged shortest *Distance to capital* in km.

To account for demographic differences in newspaper readership and fear of election violence we include *Age* and *Age*^{2} (AFB6, q1) and whether the respondent is *Male* (AFB6, thisint).

The set of socio-economic controls include *Living condition-* (AFB6, q4c), *Employment-* (AFB6, q95), and *Education-* (AFB6, q97) fixed effects, as well as an index of *Poverty* (AFB6, mean(q8a-e)). Their aim is to account for differences in respondents' ability to read newspapers as well as their ability to protect themselves from campaign violence.

Finally, as newspapers are the least state controlled mass media outlets (Djankov et al., 2003) and partisanship may influence electoral violence targeting (e.g., Kuhn, 2013), we include partisanship indicators for whether a respondent is a *Non-partisan* (AFB6, q90a) or, based on the parties in power before the last national election, whether they were an

Incumbent partisan (AFB6, q90b).[12] The baseline category in all regressions is identifying as an opposition partisan.

Empirical strategy

We estimate the effect of information exposure from newspapers on a respondent's fear of and exposure to campaign violence using the following main specification:[13]

$$\text{Outcome} = \beta_1 \text{Newspaper reader}_i + \gamma \mathbf{X_i} + \alpha + \epsilon_{\mathbf{i}}, \tag{1}$$

where $\gamma \mathbf{X_i}$ denotes the set of individual controls, α the country fixed effects, and ϵ_i the idiosyncratic error term. The main coefficient of interest is β_1. As survey respondents are clustered by location and our objective measure of campaign violence is measured at the location rather than individual level, we estimate location clustered standard errors throughout.

Empirical analysis

Main results

Figure 1 presents the coefficient estimates on fear of campaign violence (left) and exposure to election-related conflict events (right).[14]

Figure 1 here

Figure 1 depicts the coefficient estimates and their 95% confidence intervals for models

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[12]Respondents in countries with executives without party affiliations are all coded zero; dropping those cases does not change our findings substantially.

[13]Our results are qualitatively similar when using the conditional logit estimator with the dichotomous outcome variable. As there are few differences between linear and non-linear models with regard to estimating marginal effects (Angrist & Pischke, 2009; Beck, 2015) and the interpretation and comparability of linear models across outcomes is easier, we rely on OLS fixed effects regressions throughout.

[14]The full regression results underlying this figure are provided in Appendix Table C.I.

with different sets of control variables: the baseline model (circles), including country fixed effects, alternative news sources, geographic, and demographic controls, the baseline model plus socioeconomic controls (squares), and the baseline model plus socioeconomic and political controls (triangles). Across all three specifications newspaper readers are significantly more likely to fear campaign violence. On average, newspaper readers are 3.8 percentage points more fearful of becoming a victim of campaign violence than non-readers, independent of geographic, demographic, socio-economic, and political factors. The estimate is quite stable across specifications and substantively meaningful: the difference in fear between readers and non-readers is nearly half the difference in fear between incumbent and opposition partisans.

Similarly, the results on the objective measure of campaign violence reveals that newspaper readers are on average 3.6% more likely to be exposed to an election-related violent event than non-readers, which remains fairly stable across model specifications. Compared to the baseline risk, regular newspaper readers have a 28% greater risk of being exposed to an election-related violent event than non-readers.

The findings for the three other news sources are mixed. While radio listeners are more fearful of campaign violence, there is no statistically significant association between radio and exposure to election-related violent events. Respondents receiving their news by TV are more likely to be exposed to violent events, but are not significantly more likely to fear becoming a victim of campaign violence. Finally, receiving news via the internet seems unrelated to fear of and exposure to pre-election violence.

To further disentangle the informational effect from ethnicity and partisanship, the main two targeting characteristics discussed in the election violence literature to date (e.g., Kuhn, 2013; Wallsworth, 2016), we re-run the models with the full set of controls for both outcomes among co-ethnics[15] and incumbent partisan sub-samples. The results are presented

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[15]Information on the incumbent's ethnicity could not be found for Cape Verde, Gabon and Sao Tome & Principe and the ethnicity question was not asked in Burundi, Egypt, Sudan, and Tunisia, which is why all

in Table I.

Table I here

The effect of newspaper readership on fear or and exposure to campaign violence among co-ethnics and incumbent partisans is largely identical to those in Figure 1. This strengthens our argument as the newspaper effect seems to be distinct from ethnicity and incumbent partisanship. Hence, we find consistent evidence in support of our claim that more informed voters in Africa are more likely to fear and be exposed to campaign violence. In the following subsection we investigate the mechanism of our argument further.

To what extent are African newspaper readers like informed voters? To assess this claim we regress newspaper readership on various attitudinal measures. The results are in Table II.

Table II here

Newspaper readers seem to share certain features with informed voters in the voter information literature: they are significantly more likely to be interested in public affairs, discuss politics with friends and family, more likely to agree with the statement that the president must obey the law and courts, and are more likely to agree with the statement that democracy is preferable to all other forms of government. They are also somewhat less likely to identify in ethic than national terms, but this estimate is imprecisely estimated. With regard to the size of the effects the results are mixed. The coefficient estimates on the interest in public affairs and discussion of politics are meaningful: both effects are greater than 19% of their outcomes' standard deviation. The difference in support of the rule of law and democracy, however, are rather small substantively: it is only 3% and 4% of the outcome's standard deviation, respectively.

The comparison of coefficient estimates across the different news sources further shows that newspaper readers are not only more similar to informed voters than non-readers, but

observations from those countries had to be excluded from this analysis.

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by and large also more similar to informed voters than respondents receiving their news from the radio, TV or internet. Of the 15 differences in coefficient estimates reported in the lower part of Table II, 11 have a positive sign, of which 8 are statistically significant, indicating that newspaper readers are significant more like informed voters than individuals receiving news via other sources. Only 4 differences have a negative sign, all of which are small and statistically insignificant. Taken together, our main results show that newspaper readers are on average more similar to informed voters than non-readers and consumers of other news sources and that there they are on average more fearful and more likely to be exposed to campaign violence.

Robustness

We consider the robustness of our results with regard to (1) measurement and model specification, (2) social desirability bias, (3) reporting bias in election-related event data, and (4) endogeneity. We start by assessing to what extent measurement and modelling choices might be driving our main result. Appendix Table A.IV, Panel A, Columns 1 and 2 uses the ordinal scaled indices underlying the newspaper readership measure. The main result remains robust to the use of the index. Note that there seems to be a difference between those respondents that never or rarely read newspapers and those that read newspapers more regularly, but that there does not seem to be a dosage effect, which further justifies our dichotomization. The lack of a dosage effect might be due to measurement issues mentioned previously; it is consistent with findings in the voter information literature, which has largely focused on exposure rather than dosage. When dosage effects are considered, no pure or only conditional dosage effects are found (e.g. Dunning et al., 2019: chapter 4).

Because our country samples differ in size, we check to what extent our results might be driven by the more populous countries with high-quality digitized maps (i.e., Uganda and South Africa) by re-running our main models including probability weights to ensure that each observation from each country has equal contribution (see Appendix Table A.IV,

Panel A, Columns 3 and 4). Both the size and the direction of the estimates remains virtually unchanged.

Finally, Appendix Table A.IV, Panel B of shows that the positive relationship between newspaper readership and the logged number of election-related violent events is not limited to our 25km buffer choice (Columns 1 and 2), that it is present when using only events from the last two national elections rather than the last three national elections (Column 3), and that it is not dependent on the inclusion of countries for which geographically imprecisely coded events were dropped (Column 4).

Next we consider to what extent social desirability might account for the observed relationship. If non-readers are significantly more likely to believe that a political party or government agency sent the interviewer to the village and if incumbents are perceived to be the primary perpetrators (see e.g. Straus & Taylor, 2012), then non-readers might be more inclined to under-report fear of campaign violence. To address this issue, the main fear model was re-run on two sub-samples: (1) those respondents that believed a political party or government agency sent the interviewer or indicated that they did not know who sent the interviewer (AFB6, q101) and (2) those that named the correct or another non-political source. The coefficient estimates reported in Appendix Table A.V, Columns 1-2 are similar both across sub-samples (i.e., 3.7 and 3.5 percentage points increase, respectively) and compared to the main result, mitigating social desirability concerns.

We also consider reporting bias. Event data based on newspaper reporting might be biased towards urban areas, as events in such areas are more likely to be reported (Weidmann, 2016; Borzyskowski & Wahman, forthcoming). Moreover, when reporting on events journalists might proxy location to the nearest urban location. If newspaper readers and reported events are both clustered in urban areas, then this might result in overestimating the effect even after including geographic controls. In order to address this concern, we re-estimate our event model on both the urban and rural sub-samples separately. As shown in Appendix Table A.V Columns 3 and 4, in both the urban and rural sample there is a positive

and statistically significant association between newspaper readership and exposure to an election-related violence event within 25km. In the urban sub-sample newspaper readers are on average 3.1% and in the rural sub-sample 2.4% more likely to be exposed to campaign violence, mitigating reporting bias concerns.

A final concern might be that our results are endogenous. There are at least three reasons for this: (1) because exposure to political violence might have caused some voters to seek out more independent and local political information, (2) newspaper readers might be more fearful of election violence because they are more exposed to news about crime and violence, not because they are more informed, and (3) because of the timing of the AFB6, we have to rely on events from past rather than future elections. First, several empirical studies have shown that past experience of violence motivates individuals to seek more information (Badiuzzaman & Murshed, 2014; Soderstrom, 2018) and to boost their political engagement, especially in terms of participation and community leadership (Blattman, 2009; Bellows & Miguel, 2009). To assess this issue, we instrument newspaper readership via location-specific Protestant mission density in the early 20th century. These missions spurred mass literacy and provided access to the printing press in the surrounding areas (Woodberry, 2012), with long-term effects on newspaper availability and readership that persist until today (Cage & Rueda, 2016). As detailed in Appendix B, we show that conditional on a large set of historical geographic controls, Protestant mission density is strongly associated with newspaper readership today (first stage F-statistic = 31 and 24 respectively, which is above the weak instrument threshold of 10). The IV-estimates reported in Appendix Table A.IV point in the same direction, are larger, but less precisely estimated than the OLS estimates. To address the second reason, we have included additional measures of fear to account for the media effect (i.e., have you felt unsafe walking in your neighborhood (AFB6, q10a) and have you feared crime in your home (AFB6, q10b)). Including those additional fear indicators as controls (Appendix Table A.VI, Panel B) reduces the fear estimates slightly, but they remain positive and significant. To address the last reason, we have re-run our models in Figure 1

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using AFB4[16] and campaign violence event data from the two following national elections coded as described above. The coefficient estimates (see Appendix Table A.VI, Panel A) are slightly smaller (i.e., 3 percentage point change for fear and 2% for exposure to violence) but consistently positive and statistically significant. While we are unable to fully resolve endogeneity concerns given the observational data, the combination of our three robustness checks mitigates these concerns.

Conclusion

In developing democracies politicians are less constrained in their choice of campaign strategies, including fraud, vote buying, and violence. We argue that informed voters are more likely to be exposed to campaign violence than uninformed voters, because they are harder to sway through the use of non-violent campaign strategies, such as policy promises, ethnic appeals, and vote buying.

After providing illustrative evidence from recent electoral campaigns in Zimbabwe and Uganda, we use geocoded survey data from 35 African countries and geocoded data of violent events during election campaign periods to assess our argument more systematically. We show that newspaper readers are significantly more likely to fear and be exposed to campaign violence. This finding is robust to changes in measurement of the main variables, statistical modelling specifications, and testing for social desirability, reporting bias, and endogeneity. We also present evidence in support of our theoretical mechanism, showing that newspaper readers have similar attitudes and beliefs to informed voters in the voter information literature.

By shedding light on who is more likely to fear and be exposed to campaign violence, this paper contributes to the development of the phenomenon's micro-foundations. Aside from partisanship and poverty the existing literature has not highlighted any other voter

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[16]The AFB4 data was collected in 2008 and early 2009 in 20 sub-Saharan African countries. It is the first AFB survey to ask whether respondent fear becoming a victim of campaign violence.

attributes that are systematically associated with electoral victimization during campaigns. This research suggests that the exposure to information increases exposure to campaign violence. For work exploring the consequences of electoral violence on political behavior and beliefs, this implies that we should expect heterogenous effects of campaign violence. For example, changes in vote choice and mistrust in elections and other democratic institutions among victims of electoral violence should be mitigated by the extent to which they are exposed to independent information.

As a research field, we still have a weak understanding of whom politicians target with election violence at the micro- and meso-level. Voter information is one pathway among others, such as partisanship or ethnicity. While we think there is evidence for a general tendency of information to play a role, there is likely heterogeneity depending on country and local contexts, which we encourage future research to explore. For example, the information-violence link should be weaker when more people are well informed (which is more likely in more developed countries), when politicians rarely use violence (which is more likely in more democratic countries), and when violence is relative more expensive and thus less attractive than other forms of manipulation such as vote buying (which depends on the rule of law and the independence of the police).

Our findings provide a cautionary note that improving voter information can have unintended negative consequences. It may not be the silver bullet to more accountable politicians and better policies, particularly in less democratic countries where politicians choose freely from a wider menu of (legal and illicit) campaign strategies. Much more research is needed to understand the causal mechanisms of voter information, how it affects strategic interactions, and under which conditions certain effects obtain.

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Data replication: The dataset and replication code for the empirical analyses in this article can be found at http://www.prio.org/jpr/datasets.

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Biographical statements

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Figures and Tables

Figure 1. Main result
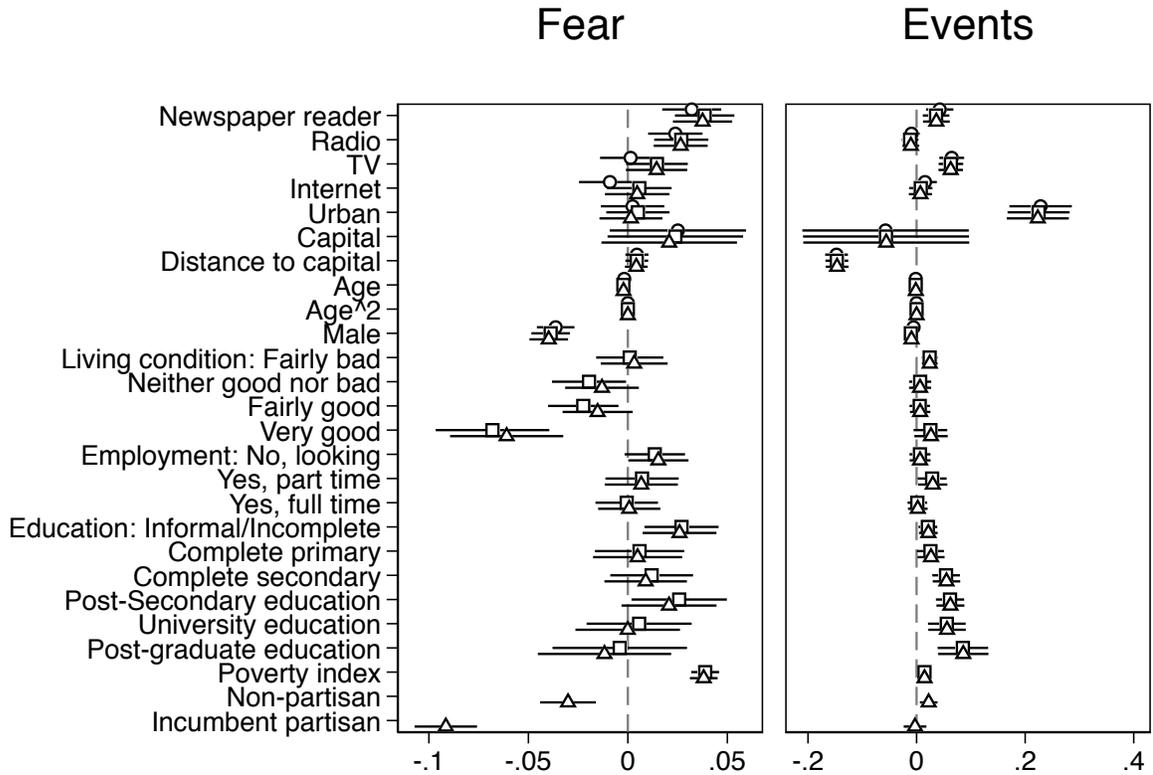
The baseline model (circles) include country fixed effects, alternative news sources (radio, TV and internet), geographic (urban and capital indicators, distance to capital), and demographic (age, age^2, and male) controls. Estimates denoted by squares also include socio-economic (living condition-, employment-, education-fixed effects, and a poverty index) controls and those denoted by triangles also include political controls (incumbent partisan and non-partisan indicators). 95% confidence intervals are derived from clustered standard errors at the location level.

Table I. Information effect within co-ethnics and incumbent partisans

	(1)	(2)	(3)	(4)
	Co-ethnics		**Incumbent**	
	Fear	Event	Fear	Event
	(mean=0.43;	(mean=0.25;	(mean=0.45;	(mean=0.18;
	sd=0.49)	sd=0.62)	sd=0.50)	sd=0.55)
Newspaper reader	0.055**	0.052*	0.042**	0.034*
	(0.015)	(0.022)	(0.014)	(0.016)
R-Squared	0.163	0.363	0.126	0.340
Observations	8,688	8,688	9,529	9,529
Clusters	1,828	1,828	2,767	2,767

All regressions include country fixed effects, alternative news sources (radio, TV and internet), geographic (urban and capital indicators), demographic (age, age^2, and male), and socio-economic (living condition-, employment-, education-fixed effects, and a poverty index). Columns 1 and 2 also include political controls (incumbent partisan and non-partisan indicators). Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

Table II. Newspaper readers' similarity to informed voters

	(1)	(2)	(3)	(4)	(5)
	Interest	**Discuss**	**Ethnicity**	**Rule of law**	**Democracy**
	(mean=1.58;	(mean=0.88;	(mean=2.21;	(mean=2.27;	(mean=1.64;
	sd=1.08)	sd=0.70)	sd=1.17)	sd=1.37)	sd=0.67)
β_1: Newspaper reader	0.209**	0.147**	-0.024	0.044*	0.025*
	(0.017)	(0.011)	(0.020)	(0.022)	(0.012)
β_2: Radio	0.176**	0.162**	-0.027	-0.062**	0.039**
	(0.016)	(0.010)	(0.020)	(0.021)	(0.011)
β_3: TV	0.059**	0.063**	-0.063**	-0.067**	0.027*
	(0.017)	(0.011)	(0.021)	(0.023)	(0.012)
β_4: Internet	0.091**	0.082**	0.008	-0.007	0.006
	(0.018)	(0.011)	(0.022)	(0.024)	(0.013)
$\beta_1 - \beta_2$	0.033	-0.015	0.003	0.105**	-0.014
	(0.023)	(0.015)	(0.029)	(0.032)	(0.017)
$\beta_1 - \beta_3$	0.15**	0.084**	0.039	0.111**	-0.001
	(0.025)	(0.017)	(0.031)	(0.035)	(0.018)
$\beta_1 - \beta_4$	0.118**	0.065**	-0.032	0.050	0.019
	(0.027)	(0.018)	(0.159)	(0.036)	(0.019)
R-Squared	0.130	0.151	0.083	0.051	0.069
Observations	32,286	32,168	28,835	31,475	29,300
Clusters	3,993	3,992	3,699	3,991	3,985

All regressions include country fixed effects, geographic (urban and capital indicators), demographic (age, age^2, and male), socio-economic (living condition-, employment-, education-fixed effects, and a poverty index), and political controls (incumbent partisan and non-partisan indicators). Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

Supplementary Online Materials to "Dangerously Informed"

Inken von Bozyskowski and Patrick M Kuhn

The Supplementary Material for this paper consists of three sections. Section A presents the summary statistics of and bivariate correlations between all variables and most of the robustness tables mentioned in the main text. Section B describes the instrumental variable regression addressing the endogeneity concern and presents the first stage, OLS and 2SLS regression results. Finally, Section C presents the full regression output underlying Figure 1. Below a brief overview of all Appendix Tables.

- **Appendix Table A.I:** Summary statistics of AFB6 variables used in the empirical analysis

- **Appendix Table A.II:** Bivariate correlations of AFB6 variables used in the empirical analysis

- **Appendix Table A.III:** Balance checks on precisely and imprecisely geocoded survey respondents in AFB6

- **Appendix Table A.IV:** Re-estimation of the main result using alternative measures and model specifications

- **Appendix Table A.V:** Split sample regressions to assess social desirability bias and reporting bias

- **Appendix Table A.VI:** Re-estimation of the main result using AFB4 data and future election-related campaign violence events and controlling for alternative fears of violence account for potential media effects

- **Appendix Table B.I:** Summary statistics of additional variables used in the IV-regression

- **Appendix Table B.II:** Impact of information on fear of pre-electoral violence and election-related violent events

- **Appendix Table C.I:** Regression estimates underlying Figure 1

A Summary Statistics, Partial Correlations, and Robustness Tables

Table A.I. Summary statistics AFB6 data

Variable	Median	Mean	Std.Dev.	Min	Max	N
Panel A: Main outcome variables						
Fear of campaign violence	0	0.461	0.498	0	1	32,506
Election-related conflict events	0	0.223	0.573	0	3.555	32,506
Interest in politics	2	1.578	1.079	0	3	32,320
Discuss politics	1	0.881	0.702	0	2	32,200
Ethnicity	2	2.208	1.173	1	5	28,860
Rule of law	2	2.287	1.370	1	5	31.506
Democracy	2	1.644	0.674	1	2	29,331
Panel B: Main explanatory variable						
Newspaper reader	0	0.323	0.468	0	1	32,472
Panel C: Controls						
Radio	1	0.793	0.405	0	1	32,506
TV	1	0.581	0.493	0	1	32,506
Internet	0	0.256	0.437	0	1	32,506
Urban	0	0.438	0.496	0	1	32,506
Capital	0	0.055	0.229	0	1	32,506
Distance to capital	5.301	4.784	1.621	0	7.503	32,506
Age	34	37,208	14,340	18	105	32,993
Male	1	0.501	0.500	0	1	32,506
Living condition	3	2.774	1.195	1	5	32,506
Employment	1	1.294	1.230	0	3	32,506
Education	3	2.533	1.765	0	6	32,506
Poverty	1	1.122	0.988	0	4	32,506
Incumbent partisan	0	0.293	0.455	0	1	32,506
Non-partisan	0	0.401	0.490	0	1	32,506

Table A.II. Correlation matrix

	Newspaper reader	Fear campaign violence	Election conflict events	Interest in politics	Discuss politics	Ethnicity	Rule of law	Democracy	Radio	TV	Internet
Newspaper reader	1.000										
Fear of campaign violence	0.049	1.000									
Election conflict events	0.174	0.083	1.000								
Interest in politics	0.099	-0.033	-0.030	1.000							
Discuss politics	0.156	0.001	0.040	0.541	1.000						
Ethnicity	-0.016	0.039	-0.054	-0.013	-0.028	1.000					
Rule of law	-0.048	0.003	-0.054	-0.008	-0.015	-0.012	1.000				
Democracy	0.019	-0.046	0.012	0.050	0.041	-0.009	-0.083	1.000			
Radio	0.160	0.017	0.013	0.119	0.148	-0.009	-0.038	0.050	1.000		
TV	0.445	0.034	0.204	0.017	0.117	-0.028	-0.051	-0.000	0.190	1.000	
Internet	0.499	0.041	0.168	0.063	0.125	-0.015	-0.041	0.003	0.100	0.409	1.000
Urban	0.318	0.056	0.366	-0.036	0.045	-0.029	-0.053	-0.013	0.041	0.435	0.323
Capital	0.183	0.021	0.235	-0.003	0.032	0.011	-0.033	-0.007	-0.017	0.146	0.145
Distance to capital	-0.199	0.022	-0.430	0.009	-0.052	0.003	0.061	-0.028	-0.018	-0.219	-0.203
Age	-0.103	-0.093	-0.065	0.064	0.027	-0.021	-0.007	0.023	0.016	-0.133	-0.266
Male	0.091	-0.037	-0.005	0.164	0.178	-0.027	-0.031	0.034	0.114	0.022	0.077
Living condition	0.162	-0.055	0.008	0.054	0.027	-0.026	0.022	0.009	0.056	0.147	0.191
Employment	0.214	0.028	0.048	0.082	0.100	-0.016	-0.028	0.009	0.116	0.179	0.171
Education	0.494	0.083	0.185	0.085	0.149	-0.019	-0.063	0.007	0.139	0.428	0.528
Poverty index	-0.234	0.082	0.017	-0.039	-0.016	-0.010	0.015	-0.016	-0.120	-0.270	-0.233
Non-partisan	0.034	-0.004	0.073	-0.214	-0.200	0.033	-0.019	-0.024	-0.072	0.087	0.084
Incumbent partisan	0.017	-0.019	-0.044	0.123	0.084	-0.056	0.044	0.024	0.033	-0.043	-0.045
Opposition partisan	-0.052	0.019	-0.033	0.104	0.127	0.020	-0.022	0.002	0.042	-0.049	-0.044

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Table A.II: Correlation matrix – continued

	Urban	Capital	Distance to capital	Age	Male	Living condition	Employment	Education	Poverty	Non-partisan	Incumbent partisan	Opposition partisan
Urban	1.000											
Capital	0.276	1.000										
Distance to capital	-0.347	-0.516	1.000									
Age	-0.120	-0.052	0.048	1.000								
Male	-0.016	-0.003	0.004	0.117	1.000							
Living condition	0.051	0.032	0.011	-0.078	-0.001	1.000						
Employment	0.136	0.059	-0.074	-0.041	0.105	0.027	1.000					
Education	0.361	0.164	-0.192	-0.258	0.087	0.156	0.296	1.000				
Poverty index	-0.146	-0.032	0.056	0.049	-0.008	-0.309	-0.166	-0.257	1.000			
Non-partisan	0.103	0.047	-0.155	-0.090	-0.078	0.001	-0.055	0.035	0.008	1.000		
Incumbent partisan	-0.066	-0.018	0.125	0.056	0.016	0.067	0.053	0.001	-0.047	-0.510	1.000	
Opposition partisan	-0.044	0.040	0.039	0.066	-0.066	0.006	-0.037	0.038	-0.548	-0.440	1.000	

Table A.III. Balance in geographic precision coding

	(1) Newspaper reader	(2) Fear Campaign violence	(3) Election-related violent event	(4) Interest	(5) Discuss	(6) Ethnicity	(7) Rule of law	(8) Democracy
Panel A: Country fixed effects only								
Precise geocoded	0.012	-0.003	0.099**	-0.044*	-0.016	-0.021	-0.011	0.004
	(0.012)	(0.008)	(0.026)	(0.017)	(0.012)	(0.024)	(0.024)	(0.012)
R-Squared	0.173	0.128	0.115	0.039	0.029	0.069	0.041	0.059
Observations	45,233	45,233	45,233	44,970	44,794	38,706	43,897	40,727
Clusters	4,845	4,845	4,845	4,844	4,842	4,381	4,842	4,834
Panel B: Full set of controls and country fixed effects								
Precise geocoded	-0.005	-0.006	0.058**	-0.041*	-0.018	-0.023	0.001	0.007
	(0.006)	(0.008)	(0.022)	(0.017)	(0.010)	(0.024)	(0.023)	(0.012)
R-Squared	0.417	0.143	0.306	0.129	0.147	0.080	0.051	0.067
Observations	45,233	45,233	45,233	44,970	44,794	38,706	43,897	40,727
Clusters	4,845	4,845	4,845	4,844	4,842	4,381	4,842	4,834

All regressions include country fixed effects. Panel B also includes alternative information (radio, TV and internet), geographic (urban and capital indicators and distance to capital), demographic (age, age^2, and male), socio-economic (living condition-, employment-, education-fixed effects, and a poverty index), and political controls (incumbent partisan and non-partisan indicators). Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

Table A.IV. Re-estimation of main result using alternative measures and specifications

	(1)	(2)	(3)	(4)
Panel A: Alternative measures and specifications				
	Fear (mean=0.46; sd=0.50)	Event (mean=0.22 ;sd=0.57)	Fear (mean=0.46 ;sd=0.50)	Event (mean=0.22 ;sd=0.57)
Less than once a month	0.039**	0.015		
	(0.011)	(0.014)		
Few times a month	0.039**	0.027*		
	(0.010)	(0.013)		
Few times a week	0.057**	0.039*		
	(0.010)	(0.018)		
Daily	0.043**	0.064**		
	(0.012)	(0.021)		
Newspaper reader			0.040**	0.024
			(0.008)	(0.013)
Weights	No	No	Yes	Yes
R-Squared	0.150	0.376	0.149	0.389
Observations	32,472	32,472	32,472	32,472
Clusters	3,994	3,994	3,994	3,994
Panel B: Alternative measures of election-related violent events				
	Election-related conflict events			
	10km	40km	Last 2 elections	Precise codings
	(mean=0.13; sd=0.45)	(mean=0.28; sd=0.62)	(mean=0.20; sd=0.53)	(mean=0.20; sd=0.48)
Newspaper reader	0.019	0.038**	0.025*	0.029**
	(0.012)	(0.013)	(0.012)	(0.010)
R-Squared	0.267	0.389	0.366	0.447
Observations	32,472	32,472	32,472	20,097
Clusters	3,994	3,994	3,994	2,520

All regressions include country fixed effects, alternative information sources (radio, TV and internet), geographic (urban and capital indicators and distance to capital), demographic controls (age, age^2, and male), socio-economic (living condition-, employment-, education-fixed effects, and a poverty index), and political controls (incumbent partisan and non-partisan indicators). Regressions in Columns 3 and 4 in Panel A are probability weighted to give countries equal weight. Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

Table A.V. Social desirability and reporting bias

	(1)	(2)	(3)	(4)
	Social desirability bias		**Reporting bias**	
	Pol. source or DK	Non-pol. source	Urban	Rural
	(mean=0.46; sd=0.50)	(mean=0.48; sd=0.50)	(mean=0.45; sd=0.76)	(mean=0.05; sd=0.26)
Newspaper reader	0.037**	0.035**	0.031	0.024**
	(0.011)	(0.010)	(0.018)	(0.008)
R-Squared	0.135	0.174	0.458	0.116
Observations	15,947	16,485	14,203	18,269
Clusters	3,726	3,722	1,732	2,359

All regressions include country fixed effects, alternative information sources (radio, TV and internet), geographic (urban and capital indicators and distance to capital), demographic (age, age^2, and male), socio-economic (living condition-, employment-, education-fixed effects, and a poverty index), and political controls (incumbent partisan and non-partisan indicators).Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

Table A.VI. AFB4 with future election-related conflict events and controlling for non-election related fears

	(1)	(2)	(3)	(4)	(5)	(6)
	Fear of campaign violence			**Election-related conflict events**		
Panel A: AFB 4 data with future election-related conflict events						
	(mean=0.46 ; sd=0.50)			(mean=0.22 ; sd=0.57)		
Newspaper reader	0.020*	0.030**	0.029**	0.027**	0.021**	0.020**
	(0.010)	(0.010)	(0.010)	(0.008)	(0.008)	(0.008)
Socio-economic controls	No	Yes	Yes	No	Yes	Yes
Political controls	No	No	Yes	No	No	Yes
R-Squared	0.116	0.123	0.125	0.297	0.300	0.301
Observations	16,303	16,303	16,303	16,303	16,303	16,303
Clusters	2,261	2,261	2,261	2,261	2,261	2,261
Panel B: Controlling for non-election-related fears						
	(mean=0.46; sd=0.50)			(mean=0.22 ; sd=0.57)		
Newspaper Reader	0.030**	0.036**	0.035**	0.042**	0.035**	0.036**
	(0.008)	(0.008)	(0.008)	(0.013)	(0.012)	(0.012)
Feel unsafe	0.024**	0.020**	0.020**	0.011*	0.010*	0.010*
	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)
Fear crime	0.026**	0.024**	0.024**	0.001	0.001	0.001
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Socio-economic controls	No	Yes	Yes	No	Yes	Yes
Political controls	No	No	Yes	No	No	Yes
R-squared	0.148	0.153	0.157	0.374	0.376	0.376
Observations	32,392	32,392	32,392	32,392	32,392	32,392
Clusters	3,994	3,994	3,994	3,994	3,994	3,994

All regressions include country fixed effects, alternative information sources (radio, TV and internet (Panel B only)), geographic (urban and capital indicators, distance to capital), and demographic controls (age, age^2, and male). Columns 2, 3, 5, and 6 also include socioeconomic and political controls as indicated. Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

B Instrumental variable regression using historical Protestant mission location

To address endogeneity concerns, we use an instrumental variable approach. In particular, we instrument voter information via location-level Protestant mission density in the early 20th century. These missions spurred mass literacy and provided access to the printing press in the surrounding areas (Woodberry, 2012), with long-term effects that persist until today. Colonial Protestant missions have been praised for their long-term positive effects on literacy, education, and information. Notably, Woodberry (2004; 2012) proposed the 'mission education hypothesis' and provided cross-national evidence of this effect, which was substantiated in sub-national analyses (Lankina & Getachew, 2012; Wietzke, 2012). Further, mission activities have contributed to democratic development by supporting mass printing, newspapers, reforms, the public sphere, and civil society (Cage & Rueda, 2016; Woodberry, 2012). Thus, we leverage data on colonial Protestant missions in sub-Saharan Africa.

In this Appendix, we describe the data source, discuss how the instrument satisfied the IV assumptions, describe the estimation and present the IV results.

B.1 Data on Protestant missions and controls

Information on the location of Protestant missions in Africa in 1924 comes from a map published by William RM Roome and digitalized by Nunn (2010).[17] It provides the exact location of all Protestant missions in Africa in 1924. A mission is defined as a location established by foreign missionaries with the intention to convert, educate, or assist in other ways the indigenous populations. Hence, churches developed by indigenous people for themselves or churches serving the immigrant (i.e., white) people are not recorded (Nunn, 2016: 4). The map was regarded as reputable by early 20th century experts in the field, who confirmed the accuracy of mission locations (e.g., E.W.S., 1925). In order to spatially join the survey data with the location of Protestant missions in 1924 and geocoded conflict data, we used the location information in AfroBarometer 6.

Our instrument is the number of *(#) Protestant missions* in 1924 within 25 kilometers of a location.[18] As the impact of each additional Protestant mission is likely to have a marginally diminishing impact on newspaper readership, we take the logarithm of the number of Protestant missions plus one.

We include a series of historical geographic controls to ensure conditional independence between a location's Protestant mission density in 1924 and current-day Newspaper Readers. In particular, we include factors that have been shown to influence settlement decisions of Protestant missions (Johnson, 1967; Nunn, 2016). To capture the accessibility of a location with regard to supplies from Europe, prior knowledge about the area, settlement patterns, and economic development, we construct, based on the map of The Century Company (1897) that was digitized by Nunn (2016), a series of dichotomous indicator variables if a *Railway* or *Explorer* route is located within 25km of a location. Using the Global Mapping Inter-

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[17]The map was originally entitled 'Ethnographic Survey of Africa: Showing the Tribes and Languages; also the Stations of Missionary Societies.'

[18]Our main results are qualitatively similar if we choose slightly smaller (10km) or larger (40km) distances.

national's (GMI) Seamless Digital Chart of the World Version 3.2 and the FAO's Global Agro-Ecological Assessment for Agriculture database, we also control for the log distance from the *Equator*, log distance from the *Coast*, closeness to a major *River* and *Lake*, *Elevation*, and *Agricultural suitability*. Moreover, Protestant missions were more often established where slavery was prevalent due to their frequent (but not universal) interest in ending the slave trade (Johnson, 1967; Nunn, 2010: 148). Thus we also control for the intensity of the Atlantic and Indian *Slave trade*. This measure is constructed following Nunn & Wantchekon (2011) by dividing the total number of slaves taken from each ethnic group on Murdock's (1959) list by the size of the ethnic group, which is proxied by the amount of land they inhabited during the early 20th century. All locations within the pre-colonial settlement area of an ethnic group are assigned the slave trade intensity measure of that group. Finally, we include indicators for *Urban* (AFB6, URBRUR) and for the *Capital* of the country to proxy for historical population density.

Appendix Table B.I provides the summary statistics on the IV-specific historical geographic controls.

Table B.I. IV-specific summary statistics

Variable	Median	Mean	Std.Dev.	Min	Max	N
Panel A: Instruments						
# Protestant missions (25km, log)	0	0.278	0.443	0	2.079	32,506
Panel B: Historical geographic controls						
Explorer (25km)	0	0.128	0.335	0	1	32,506
Railway (25km)	0	0.179	0.383	0	1	32,506
River (25km)	0	0.233	0.422	0	1	32,506
Lake (25km)	0	0.056	0.229	0	1	32,506
Elevation	334	320.674	1784.729	0	2912	32,506
Agricultural suitability	2.571	2.452	1.342	0	5	32,506
Distance to the equator (log)	7.132	6.785	1.297	-4.035	8.325	32,506
Distance to the coast (log)	5.460	4.540	2.393	-5.438	7.443	32,506
Slave trade per squared km	0.004	2.093	7.368	0	42.562	32,061

B.2   IV Assumptions

An instrumental variable (IV) strategy which relies on the following two assumptions: instrumental relevance and the exclusion restriction (Angrist & Pischke, 2009: chapter 4). Specifically, we exploit differences in the local density of Protestant missions in 1924 to estimate the impact of information on being targeted by pre-election violence in the 21st century, circumventing endogeneity. In this section we make the case that our instrument is (1) valid because it is a key determinant of modern-day newspaper readership in sub-Saharan Africa and (2) satisfies the exclusion restriction conditional on geographic and demographic controls. Thereafter we introduce our statistical model and discuss our results.

B.2.1 Relevance of the instrument

We establish instrumental relevance along the following lines: (1) Protestant missions spurred mass literacy by providing literacy and the printing press to the local community; (2) these differences in informational endowments between locations have persisted over time into the modern period; and (3) our first-stage regressions show that Protestant mission density is a strong predictor of newspaper readership in 2014/15, conditional on geographic and demographic controls.

First, Protestant missions have influenced literacy and informational endowments of local communities through several mission policies: literacy training, schooling, and the introduction of the printing press. A key element of their conversion strategy was to enable locals to read the bible (Nunn, 2016: 147; Lankina & Getachew, 2012: 12; Pinto, 2011: 3). Providing mass literacy was therefore a necessary element of the Protestant conversion strategy, although some Catholic missions also engaged in it to some degree, especially when forced to compete for converts with Protestants (Woodberry, 2004: 12; Woodberry, 2012: 251, 256). To print bibles, educational material, pamphlets, and mission newspapers in the local language (Pinto, 2011; Sanneh, 2008), Protestants brought the printing press to Africa, which soon created demand for other publications (Lankina & Getachew, 2012: 476), giving rise to indigenous newspapers at these mission locations with a lasting effect on contemporary newspaper supplies and readership (Cage & Rueda, 2016). By enabling citizens to read and introducing the printing press, Protestant missions had a catalytic effect on local communities' access to independent information about politics. Literate communities are better able to attain written information than their illiterate counterparts, and information has been shown to have differential effects on knowledge, attitudes, and behavior (Pande, 2011).

Second, differences in informational endowments around colonial Protestant missions in Africa have persisted for more than 200 years (Woodberry, 2004, 2012; Gallego & Woodberry, 2010; Nunn, 2009, 2016; Wantchekon, Klasnja & Novta, 2015). Both cross- and sub-national research (Woodberry, 2004, 2012; Lankina & Getachew, 2012; Wietzke, 2012) has found that groups and areas exposed to Protestant missions have substantially different levels of modern-day literacy, schooling, and human capital than those groups and areas with no exposure to Protestant missions, which is due to intra-household generational transmission and path-dependent local institutional investments (Wietzke, 2012; Huillery, 2009; Lankina & Getachew, 2012: 467).

Third, for the instrument to be relevant more technically, it must be strong. That is, the 1924 Protestant mission density within 25km of a location must be highly correlated with the frequency by which respondents in 2015 get their news from a paper. If the association is weak, the resulting IV estimates are uninformative (Stock & Yogo, 2005; Murray, 2006). We show in Appendix Table A.IV Columns 1 and 4 that Protestant mission density within 25km of a location is a strong predictor of newspaper readership, conditional on country-fixed effects, geographic and demographic controls. The F-statistic is above 27, which is well above 10, the weak instrument rule of thumb (Stock & Yogo, 2005), and signifies statistical relevance. Doubling Protestant mission density within walking distance increases the likelihood of a respondent reading the newspaper at least some of the time by around 6 percentage points, which is between a 12.8% percent increase in the outcome's standard deviation. Hence, in line with previous research (Woodberry, 2004; Cage & Rueda, 2016;

Wietzke, 2012; Woodberry, 2012) our first stage results suggest that local Protestant mission density in 1924 has had a robust and lasting impact on newspaper readership today.

B.2.2 Exclusion restriction

The validity of our IV strategy also rests on the exclusion restriction being satisfied. In our case, the number of Protestant missions must be conditionally independent of other determinants of victimization and turnout. In other words, Protestant missions should influence pre-election violence exclusively through voter information, conditional on geographic controls. Since this exclusion restriction is ultimately untestable, we discuss – and rule out – alternative channels based on the pre-electoral violence literature. In particular, the restriction would be violated if mission density was correlated with other, unobserved determinants of campaign violence. Drivers of campaign violence include (i) a likely incumbent loss (Bhasin & Gandhi, 2013; Hafner-Burton, Hyde & Jablonski, 2014; Wilkinson & Haid, 2009); (ii) a greater incumbency advantage (Chaturvedi, 2005; Krieger, 2000) (iii) religious tensions (Lewis, 2003; International Crisis Group, 2007b,a, 2011); (iv) fraud in the campaigning period (Norris, 2012; Arriola & Johnson, 2012); and (v) the presence of observers on election-day (Daxecker, 2014).

While many of these factors are most likely uncorrelated with Protestant mission density, one potential issue is the presence of election observers. If historical infrastructure (roads, rivers, railways) is similarly distributed as their modern equivalent (Jedwab & Moradi, 2016), observers might be more likely to observe polling places in easy-to-reach areas. In that case, infrastructure would correlate positively with both historical mission location and modern observer presence. However, since research on observers and campaign violence has only relied on national-level data, it is unclear whether the relationship also exists sub-nationally, within countries. To further alleviate this concern, we include geographic controls for historical infrastructure.

More importantly, we stress that other mission benefits, such as today's level of democracy and development work *through* the literacy education channel central to our instrumental relevance argument and *not* independently. As Woodberry notes, the relationship of church and state influenced formal education, which 'in turn influenced post-colonial democratization' (Woodberry, 2004: 11-13; Nunn, 2009: 28). We thus conclude that our instrument is relevant and satisfies the exclusion restriction.

B.3 Statistical model

To assess the impact of free information on campaign violence, we estimate the following simultaneous linear equation system:

$$\begin{aligned} Outcome &= \alpha_0 + \alpha_1 Newspaper\ reader + \gamma \mathbf{X_i} + \delta_{\mathbf{k}} + \epsilon, \\ Newspaper\ reader &= \beta_0 + \beta_1 \log(\#\ Protestant\ missions) + \gamma \mathbf{X_i} + \delta_{\mathbf{k}} + \nu, \end{aligned}$$

where α_1 is the parameter of interest, the treatment variable *Newspaper readers* is endogenous, the instrument *# of Protestant missions* is exogenous conditional on the vector of geographic and demographic controls $\gamma \mathbf{X_i}$ and country fixed effects δ_k. Subscript k indicates country and i indicates individual. Standard errors are clustered at the location level to account for the lack of within location variation of our instrument. The IV-estimation is performed using the two-stage-least-squares (2SLS) estimator.

B.4 First stage and IV results

This section presents our 2SLS results and discusses its robustness with regard to alternative explanations. Table B.II presents the empirical evidence that newspaper readers are more likely to fear campaign violence (Panel A) and experience election-related conflict events (Panel B).

Table B.II. Impact of information on fear of pre-electoral violence and election-related violent events

	(1) 1. Stage	(2) OLS	(3) 2SLS	(4) 1. Stage	(5) OLS	(6) 2SLS
Panel A: Fear of campaign violence (mean=0.46; sd=0.50)						
Protestant mission density	0.055**			0.055**		
	(0.010)			(0.010)		
Newspaper reader		0.030**	0.207		0.032**	0.194
		(0.007)	(0.281)		(0.007)	(0.272)
1. Stage F-statistic	31.17			31.08		
Demographic controls	No	No	No	Yes	Yes	Yes
R-squared	0.249	0.125	0.109	0.269	0.129	0.116
Observations	30,034	30,034	30,034	30,034	30,034	30,034
Clusters	3,754	3,754	3,754	3,754	3,754	3,754
Panel B: Election-related conflict events (mean=0.22; sd=0.57)						
Protest mission density	0.055**			0.055**		
	(0.031)			(0.010)		
Newspaper reader		0.038**	4.998**		0.037**	4.872**
		(0.010)	(1.306)		(0.011)	(1.252)
1. Stage F-statistic	31.17			31.08		
Demographic controls	No	No	No	Yes	Yes	Yes
R-squared	0.249	0.479		0.269	0.479	
Observations	30,034	30,034	30,034	30,034	30,034	30,034
Clusters	3,754	3,754	3,754	3,754	3,754	3,754

Instrument in the 2SLS estimations is the logged number of Protestant missions within 25km of a Location. All regressions include country fixed effects, geographic and historical controls. In addition, Columns 4-6 include demographic controls (age, age^2, and male). Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.

C Regression Table Underlying Figure 1

Table C.I. Regression estimates underlying Figure 1

	(1)	(2)	(3)	(4)	(5)	(6)
	Fear of campaign violence			**Election-related conflict events**		
	(mean=0.46; sd=0.50)			(mean=0.22 ; sd=0.57)		
Newspaper reader	0.032**	0.039**	0.038**	0.043**	0.036**	0.036**
	(0.008)	(0.008)	(0.008)	(0.013)	(0.012)	(0.013)
Radio	0.024**	0.027**	0.027**	-0.009	-0.012	-0.010
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)
TV	0.001	0.015	0.014	0.065**	0.063**	0.063**
	(0.008)	(0.008)	(0.008)	(0.012)	(0.012)	(0.012)
Internet	-0.009	0.006	0.005	0.016	0.008	0.007
	(0.008)	(0.008)	(0.008)	(0.011)	(0.011)	(0.011)
Urban	0.002	0.005	0.002	0.228**	0.225**	0.223**
	(0.008)	(0.008)	(0.008)	(0.029)	(0.029)	(0.029)
Capital	0.025	0.024	0.021	-0.057	-0.056	-0.056
	(0.017)	(0.017)	(0.017)	(0.078)	(0.078)	(0.078)
Distance to capital	0.005	0.004	0.004	-0.147**	-0.147**	-0.146**
	(0.003)	(0.003)	(0.003)	(0.011)	(0.011)	(0.011)
Age	-0.002	-0.002*	-0.002*	-0.001	-0.002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	-0.036**	-0.039**	-0.040**	-0.005*	-0.010**	-0.009**
	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)
Living condition		0.001	0.003		0.024**	0.024**
Fairly bad		(0.009)	(0.009)		(0.007)	(0.007)
Neither good nor bad		-0.020*	-0.013		0.007	0.006
		(0.009)	(0.009)		(0.010)	(0.010)
Fairly good		-0.022*	-0.015		0.006	0.007
		(0.009)	(0.009)		(0.010)	(0.010)
Very good		-0.068**	-0.061**		0.025	0.027
		(0.015)	(0.015)		(0.016)	(0.016)
Employment		0.014	0.015*		0.006	0.007
No, looking		(0.008)	(0.008)		(0.010)	(0.010)
Yes, part time		0.007	0.007		0.029*	0.030*
		(0.009)	(0.009)		(0.014)	(0.014)
Yes, full time		-0.001	0.001		0.001	0.002
		(0.008)	(0.008)		(0.009)	(0.009)
Informal/-complete		0.027**	0.026**		0.021*	0.022*
schooling		(0.010)	(0.009)		(0.009)	(0.009)
Complete primary		0.006	0.005		0.026*	0.027*
schooling		(0.011)	(0.011)		(0.013)	(0.013)
Complete secondary		0.012	0.009		0.054**	0.055**
schooling		(0.011)	(0.011)		(0.013)	(0.013)
Post-secondary		0.026*	0.021		0.062**	0.062**
education		(0.012)	(0.012)		(0.013)	(0.013)
University education		0.006	-0.000		0.056**	0.056**
		(0.013)	(0.013)		(0.018)	(0.018)
Post-graduate education		-0.004	-0.012		0.085**	0.086**
		(0.017)	(0.017)		(0.024)	(0.024)
Poverty		0.039**	0.038**		0.015**	0.015**
		(0.004)	(0.004)		(0.005)	(0.005)
Non-partisan			-0.030**			0.022**
			(0.007)			(0.008)
Incumbent partisan			-0.092**			-0.003
			(0.008)			(0.011)
Constant	0.491**	0.436**	0.474**	0.817**	0.752**	0.734**
	(0.026)	(0.028)	(0.029)	(0.062)	(0.062)	(0.063)
R-Squared	0.138	0.145	0.149	0.374	0.375	0.376
Observations	32,472	32,472	32,472	32,472	32,472	32,472
Clusters	3,994	3,994	3,994	3,994	3,994	3,994

All regressions include country fixed effects, alternative information sources (radio, TV and internet), geographic (urban and capital indicators), and demographic controls (age, age^2, and male). Columns 2, 3, 5, and 6 also include socioeconomic and political controls as indicated. Estimates significant at the 0.05 (0.01) level are marked with * (**). Standard errors are clustered at the location level.