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The Impact of Voter Knowledge Initiatives in Sierra Leone

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DEBATES:

The Impact of Voter Knowledge Initiatives in Sierra Leone

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Abstract

This project explores whether giving voters information about candidates and policy facilitates more informed voting and greater electoral accountability. In the information poor environment of Sierra Leone, we use a set of randomized experiments to estimate the impacts of structured debates between Parliamentary candidates on voter knowledge and behavior. We find evidence for strong positive impacts on general political knowledge, knowledge of candidate qualifications and policy stances; improved alignment between the policy preferences of voters and their selected candidate; greater voter openness to candidates from all parties; and increased vote shares for the candidate who performed the best during the debates. We further document an endogenous response by candidates, who increased their campaign effort in communities where videotapes of the debates were screened in public gatherings. A complementary series of treatment arms administered at the individual level unpacks the different types of information delivered by the debates, and finds evidence that voters respond to both candidate charisma and "hard facts" about policy stances and professional qualification. This report was prepared for the International Growth Centre (IGC), who provided funding for this research project, with the goal of summarizing key findings, outlining areas of ongoing and future research, and formulating policy recommendations.

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I. Introduction

Most academics and practitioners agree that the transparency and accountability of government are critical determinants of public sector performance, yet there is limited evidence about how best to enhance accountability in new or poorly functioning democratic institutions. One problem in developing countries with limited mass media is that giving citizens the vote may not translate into the selection of more competent candidates or greater accountability of elected officials if the electorate is poorly informed. Delivering political information to voters—in a way that is engaging and accessible to poor, illiterate and geographically remote citizens—could thus naturally be part of the solution.

This research project evaluates one novel vehicle for disseminating political information: structured inter-party debates between candidates. We worked in partnership with the NGO Search for Common Ground to host and film debates between Parliamentary candidates in the lead up to the November 2012 elections in Sierra Leone. To comprehensively estimate the effect of debates on a number of interrelated political actors, the experiment was randomized on three levels: i) at the level of constituency, to gauge the longer term impact of debates on the accountability of elected Members of Parliament (MPs); ii) at the level of polling center, to evaluate the impact of debates on communities and endogenous campaign responses by MP candidates; and iii) at the individual level, to tease apart and calibrate voter responsiveness to the different types of information revealed by debates.

Answering the first question about electoral accountability involves tracking the elected MPs over time, a process that remains part of our ongoing research agenda and will be discussed at the end of this report. To explore the second question, we took videotapes of the debates on a polling-center level "road show," screening the films in large public gatherings. We find strong positive impacts of exposure to debates on voter knowledge—of politics in general, and of specific candidate attributes and policy stances; improved alignment between voter policy preferences and those of their selected candidate; greater voter openness to candidates from all parties; and increased vote shares for the candidate who performed most strongly during the debates. As should be expected of any intervention into political markets that alters voter behavior on a nontrivial scale, we further capture an endogenous campaign responses by participating candidates. Candidates from all parties increased their campaign effort, as measured by gift giving, the monetary value of gifts and number of visits to communities, in villages where screenings were held.

To address the third question regarding the different types of information revealed by debates, a series of treatment arms at the individual level isolated the role of more superficial attributes such as appearance and charisma from that of policy stance and professional qualifications. Some voters were exposed to brief "get to know you" videos of the candidates speaking informally about themselves and their hobbies, which capture persona but not professional or policy information. Others listened to a radio report or journalistic summary of the debate, which articulated all the "hard facts" about policy stances and professional qualifications that arose during the debates, but delivered no information about persona. Others watched the full debate on a tablet device. We find evidence that voters respond to both persona and hard facts, but only the combination of the two delivered by the debates moved them into better policy alignment and triggered changes in actual voting choices.

Testing the efficacy of debates contributes to the literature exploring the impacts of information of voting. Ferraz and Finan (2008) and Banerjee et al (2011), among others, show that providing specific information about incumbent performance and candidate qualifications can have large effects on voting.

Debates are distinctive in that they provide more general and comprehensive information about candidates, including information about persuasion and charisma, which can be considered productive attributes of an effective legislator. Moreover, if information about an arguably sufficient competence statistic—like corruption—is not available, the generality of debates could further be important in light of theoretical concerns that increasing transparency along one dimension will simply reallocate politician effort towards those more observable actions, regardless of their impact on welfare (e.g. Liessem and Gersbach 2003 on multi-tasking or Prat 2005 and Cranes-Wrone et al 2001 on pandering); or because politicians may be able to unravel the impact of scorecard-style information campaigns more easily (Humphreys and Weinstein 2012).

A more closely comparable intervention is Fujiwara and Wantchekon (forthcoming), who find that town hall meetings between candidate representatives and voters decreased the prevalence of clientelism in recent Presidential elections in Benin. While their intervention focused on the efficacy of public deliberation between representatives of a single candidate and his constituents, the head-to-head debates between rival party candidates studied here aim to directly reveal information about the relative quality difference between candidates. Lastly, in comparison to the US, Gerber et al. (2011) document positive effects of campaign advertising on voting intentions for the endorsed candidate, which are markedly similar in magnitude to the effects we find here for the debate winner. The effects in the US, however, dissipate very rapidly, reduced to zero in a matter of days, whereas the impact of debates persisted over a range of one to six weeks after treatment exposure and affected actual vote choices on Election Day.

II. Experimental Design

A. Constituency Level

Sierra Leone has 112 Parliamentary constituencies in total, which are single member jurisdictions elected by first-past-the-post plurality to represent the local area in the national legislature. Before the 2012 candidates were officially announced, we randomly selected 14 constituencies from what we estimated would be the 28 most competitive races, stratifying on the strength of the ethnic bias favoring one party over the other. We invited candidates from each of the three largest parties (the All Peoples Congress APC, Sierra Leone People's Part SLPP, and the People's Movement for Democratic Change PMDC) that were contesting a given seat to participate in the debate.

Hosted and filmed by our partner, Search for Common Ground (SFCG), each debate followed a standardized format. The SFCG moderator opened the debates by introducing the candidates and explaining the basic roles and responsibilities of office. A casual "get to know you" section followed, where the candidates spoke informally about where they were from, their family and hobbies. Then five national policy questions were posed, where each candidate was allowed two to three minutes to respond. The first policy question concerned the candidate's top priority for additional government spending. The second covered plans for how to spend the constituency facilitation fund (CFF), which is an untied 43.8 million Leones (approximately US$ 11K) grant given annually to each MP for transport to and development of his or her constituency. The third issue asked for the candidate's strategy to uplift the youth, where "youth" is defined by the government as 18 to 35 year old adults. This demographic faces high unemployment and their historic disenfranchisement and frustration were seen by many as a contributing factor to the country's civil war (1991 to 2002). Fourth was whether the candidate, if

elected, would vote in favor or against the Gender Equity Bill (GEB), a 30% quota for women's representation in government that was introduced but never voted on by the previous Parliament. The last national policy question asked for the candidate's assessment of the implementation of free healthcare (FHC), a major initiative by the incumbent government to provide free care to children under five and pregnant or nursing women. Each debate closed with two local policy questions, which varied by constituency and were tailored to prominent issues in the local area. All debates were conducted in Krio, Sierra Leone's *lingua franca*.

B. Polling Center Level

Within the 14 constituencies selected for participation in the debates, we first allocated voter registration and polling centers to the polling-center level treatment and control group. This sample drew in 224 polling centers that were sufficiently small (fewer than ~900 registered voters) and far apart from their nearest neighboring polling center (at least ~ one mile). SFCG took videotapes of the debates produced on a "road show" to 112 of these polling centers, selected randomly. In constituencies where there were a sufficient number of polling centers left over, we randomly allocated 40 remaining larger and closer together polling centers into the individual-level treatment arms group. A few months before the screenings, we conducted a household listing of registered voters in all 264 polling centers to develop the sampling frame for individual respondents. See figure 1 for an overview of the implementation framework.

The mobile cinema treatment at the polling center level consisted of an evening showing of a video tape of the relevant debate projected at a convenient public place, usually the polling center itself, in the weeks leading up to the Election. Typical protocol for these screenings was as follows: host polling center and satellite communities were notified in advance and invited to attend the screening; 25 randomly selected residents (using data from the earlier listing exercise) were provided a small incentive (10 cooking spice cubes) to attend the screenings; the video was played once in a pause and play format that inserted translation into the relevant local language after each question; the video was played a second time with or without translation; and a secondary screening was held in the largest accessible satellite village earlier in the day, in most cases without translation. A total of 112 primary and 85 secondary screenings were held, and we estimate that roughly 19,000 people were thereby exposed to one of the debates.

At the time of screening in treated polling centers, some of the 25 respondents who received attendance incentives were also surveyed, where specifically: i) 12 completed surveys both before and after the screening; ii) 4 completed only after screening surveys; and iii) the 9 remaining were not surveyed but were contacted only to deliver the incentive. We later conducted exit polls on Election Day and the days immediately after in all 224 treatment and control polling centers. To avoid any differential attrition or selection across treatment assignment, the 5,600 exit poll respondents were drawn from the original household listing in both treatment and control polling centers. In what follows, we will thus be estimating intention to treat effects, where 82% of exit poll respondents indicated that they had attended a debate screening, as did 4% of those in the control group

C. Individual Level Treatment Arms

Within each of the polling centers assigned to individual-level treatments, households were divided into those with only female registered voters, only male, and both male and female registered voters (based on

the earlier household listing exercise). We randomly assigned the six arms to households within each of these bins, and randomly selected respondents within each household to receive the individual-level treatments and/or survey(s). The six treatment arms at the individual level were as follows:

1. Debate: Individuals were shown the exact same debate screened in polling centers on a personal handheld device.
2. Getting to Know You: Individuals were shown a "getting to know you" video of the same two candidates speaking informally about their hobbies and interests.
3. Radio Report: Individuals listened to a recording of an independent moderator or journalist summarizing the main policy positions articulated by the two candidates during the debates.
4. Thin Slice Evaluations: Individuals participated in a "lab" experiment where they were exposed to pairs of isolated images, voice recordings, video clips, and names of candidates from other constituencies across the country and asked to rate them along a variety of metrics, such as who they thought would be a better leader.
5. Surveyed Control group: Individuals were given the same survey as the one that accompanied treatments 1 to 3, but were not shown any media.
6. Pure controls: Individuals were not surveyed until Election Day, where they only contact at time of treatment implementation was to record basic demographics.

There were 400 individuals assigned per arm, save 600 in the surveyed control group. Unlike for the polling center level intervention, the exact same 2,600 respondents who participated in the individual treatment arms were relocated in the exit polls. As we had perfect compliance and near zero attrition, average treatment effect estimates for the individual treatment arms are comparable to treatment on the treated.

III. Econometric Framework

We registered a pre-analysis plan (PAP) governing this analysis with the Abdul Latif Jameel Poverty Action Lab on November 20, 2012 before fieldwork for the exit poll, which is the primary source of data for this analysis, was completed. We have since migrated that plan with subsequent updates to the American Economic Association trial registry, which can be found here: https://www.socialscienceregistry.org/trials/26. The plan sets out research domains (i.e. effects on voters and candidates) with hypotheses under each domain; groups outcomes under these hypotheses; and specifies the econometric framework including direction of tests, subgroup analysis and dimensions of heterogeneous effects. This section summarizes key components of the PAP.

A. Domain A: Polling Center Treatment Effects on Voters

Hypotheses for effects of polling center-level debate screenings on voters are as follows:

- Exposure to debates increases **political knowledge** and leads to more informed voting, including (i) general political knowledge; (ii) knowledge of individual candidate attributes; and (iii) candidate policy stances
- Exposure to debates increases **policy alignment**
- Exposure to debates enhances **voter openness** to other parties

- Exposure to debates increases **vote shares** for the candidate that performed the best in the debates
- Exposure to debates increases the willingness to **vote across party lines**
- Secondary hypotheses: (i) Exposure to debates mobilizes the public and leads to greater **turnout; (ii)** Exposure to debates increases the perceived **legitimacy** of elections; and (iii) Exposure to debates increases **interest in politics**

Analysis of Domain A treatment effects takes the form:

$$Y_{ipc} = \beta_0 + \delta T_{pc} + \boldsymbol{X}'_{ipc}\boldsymbol{\Pi} + \boldsymbol{Z}'_{\boldsymbol{pc}}\boldsymbol{\Gamma} + \boldsymbol{W}'_{ipc}\boldsymbol{\Psi} + \boldsymbol{c}_p + \varepsilon_{ipc} \quad (1)$$

where outcome Y (i.e. vote choice) is measured for individual i registered in polling center p within Parliamentary constituency c; T is an indicator variable equal to one if the polling center received the debate video screening treatment; $\boldsymbol{X}$ is a vector of indicator variables that denote the stratification bin from which exit poll respondents were drawn (where the bins were constructed by age and gender); $\boldsymbol{Z}$ is a vector of indicator variables that denote the stratification bin from which the polling center was drawn (where the bins were constructed by number of registered voters and distance to nearest neighboring center); $\boldsymbol{W}$ is a set of additional control variables determined by a pre-specified algorithm for analysis of the control group data that identifies individual characteristics that do not vary with treatment and that help explain variation in a particular outcome; $\boldsymbol{c}$ is a set of constituency-specific fixed effects (the level of debate and candidates); and ε is an idiosyncratic error term clustered at the polling center level. The coefficient of interest is δ and recall that we are estimating intention to treat effects. Unless otherwise stated, all tests are one-sided in the direction indicated in the statement of the hypothesis.

For this and all that follows, our main specification in the PAP includes the full set of controls ($\boldsymbol{X}$, $\boldsymbol{Z}$ and $\boldsymbol{W}$), and commits to showing results for the sparser specification that includes only the stratification variables as controls ($\boldsymbol{X}$ and $\boldsymbol{Z}$ only) as a robustness check. All preliminary results in this note are for the sparser set of controls, and limited to the exit poll data (our primary data source). We report treatment effects for all individual outcomes as well as mean effects indices by hypothesis and sub-hypothesis (where relevant) following Kling, Liebman and Katz (2007). The PAP further commits us to adjusting standard errors to account for multiple inference, which we will do as part of our ongoing analysis. The PAP specifies the following dimensions of potential heterogeneous effects: (i) competitiveness of constituency; (ii) candidate performance; (iii) lesser known candidates (secondary); and (iv) subgroup analysis by gender, age, political informedness, and fluency in Krio.

B. Domain B: Polling Center Treatment Effects on Candidates

We have one primary hypothesis concerning the effects of polling center-level debate screenings on candidates:

- Candidate allocation of **campaign effort and expenditure** is responsive to debate publicity

where we are interested in whether campaign investment complements or substitutes for treatment allocation. Note that while we did not inform the candidates of which polling centers were assigned to treatment or control, the screenings were large public events and it would not have been difficult for the candidates to find out where they were held.

Analysis of Domain B treatment effects takes the form:

$$Y_{impc} = \beta_0 + \delta T_{pc} + \boldsymbol{X}'_{ipc}\boldsymbol{\Pi} + \boldsymbol{Z}'_{\boldsymbol{pc}}\boldsymbol{\Gamma} + \boldsymbol{W}'_{ipc}\boldsymbol{\Psi} + \boldsymbol{c}_p + \varepsilon_{ipc} \quad (2)$$

where outcome *Y* (i.e. receiving a gift) is measured for individual *i* in relation to candidate *m* where the individual is registered in polling center *p* within Parliamentary constituency *c*; *T*, $\boldsymbol{X}$, $\boldsymbol{Z}$, $\boldsymbol{c}$ and ε remain as defined in Equation (1); and $\boldsymbol{W}$ is a set of additional individual characteristics that predict political gift receipt and will be determined from analysis of the control group data.

C. Treatment Effects for Individual Arms

We registered a separate PAP governing the analysis of the individual treatment arms. The hypotheses are the same as those specified for Domain A above, but we are now interested in the absolute treatment effect of each of the three treatment arms (debate, get to know you and radio report) compared to the control group, as well as the net or relative effect of each treatment arm compared to the other treatments.

Analysis of individual-level treatment arms takes the form:

$$Y_{ihtpc} = \beta_0 + \delta_t T_{htpc} + \boldsymbol{X}'_{hpc}\boldsymbol{\Pi} + \boldsymbol{Z}'_{\boldsymbol{pc}}\boldsymbol{\Gamma} + \boldsymbol{W}'_{ihtpc}\boldsymbol{\Psi} + \boldsymbol{c}_p + \varepsilon_{ihtpc} \quad (3)$$

where outcome *Y* (i.e. vote choice) is measured for individual *i* living in household *h* assigned to treatment arm *t* registered in polling center *p* located in Parliamentary constituency *c; T* is a dummy variable indicating assignment to treatment arm *t*; $\boldsymbol{X}$ is a vector of indicator variables that denote the stratification bin from which the household was drawn (where the bins were determined by the gender composition of registered voters); and $\boldsymbol{Z}$, $\boldsymbol{W}$, $\boldsymbol{c}$ and ε remain as defined in (1). For each treatment arm, the coefficient of interest is δ_t, the average treatment effect for treatment *t* compared to the control group. The control group is defined as respondents in both the surveyed and "pure" control arms as well as participants in the Lab experiment arm, who were not exposed to any media concerning candidates from their own constituency. We will further test a series of hypotheses about the relative effects of the different treatment arms that take the form $\delta_t \geq \delta_{\sim t}$. Tests of average treatment effects are one-sided in the direction of the hypothesis statement, and tests of relative effects are two-sided.

IV. Preliminary Results: Polling Center-Level Treatment

A. Domain A: Voters

Table 1 presents the first set of results for Domain A, revealing strong positive effects of polling center screenings on voter knowledge. For each hypothesis in what follows, the first row presents the mean effect index that estimates the average treatment effect across all individual outcomes expressed in standard deviation units. In row 1 of Table 1, we see that on average, exposure to debates increased general political knowledge by 0.302 standard deviation units (standard error 0.048), significant at 99% confidence. The subsequent rows present treatment effects for each component outcome individually, in the units natural to the measure. For example, in row 2, the first column shows that the proportion of voters in control polling centers who could correctly state the amount in the constituency facilitation fund (CFF) was 0.034 or 3.4%. Note that answers were coded to correct for a generous range around the 43.8

M Leone figure. Column 2 presents a treatment effect estimate of 0.141 (s.e. 0.018) or 14.1 percentage points, indicating that the proportion of voters who knew the amount in the CFF increased fivefold with exposure to treatment. Similarly, in row 3 the proportion of voters who knew who was eligible to receive free healthcare increased by 5.9 percentage points (s.e. 3.3) on a base of 70.6%. The number of correctly reported roles and responsibilities of an MP also increased significantly. The treatment effect estimate for correctly stating that the Gender Equity Bill would reserve between 2 and 4 out of 10 seats for women is positive, but not statistically significant.

The next hypothesis concerns voter knowledge of specific candidate attributes. The mean effect index is positive and highly significant, indicating a one quarter standard deviation unit (s.e. 0.033) increase on average across all component outcomes. To provide a sense of magnitude, the proportion of voters who could infer which candidate was better educated rose from 24.3% to 40.5%, and the proportion who knew which candidate (if any) had been an MP in the past increased from 49.0% to 60.3%, both significant at 99% confidence (s.e. 4.4 and 3.3, respectively). Other outcomes reveal positive treatment effects on ability to correctly name candidates and to infer which candidate had the most public office experience.

Voter knowledge of candidate policy positions also increased markedly. For each of (up to) three participating candidates, on each of three national policy issues, voter ability to correctly place the candidate on the specific policy spectrum increased significantly (at 99% confidence) for 8 of 9 treatment effect estimates. As some examples, the proportion of voters who could correctly identify the SLPP candidate's first priority for government spending doubled, from 14.2 to 29.2%; the proportion who knew the APC candidate's view on whether free healthcare was being well implemented or needed to be significantly reformed rose from 25.2 to 45.0%; and the proportion who knew whether the PMDC candidate would vote in favor of the gender equity bill (GEB) rose from 24.4 to 45.6%.

Together, these results suggest substantial improvements in voter knowledge. Recall that respondents experienced a one to six week lag between exposure to debates and the exit polls, indicating that these gains in knowledge were relatively persistent. The next natural question is thus whether these knowledge gains translated into changed in voting choices on Election Day, which is the subject of Table 2.

The first set of results in Table 2 suggests that voters acted on the gains in policy knowledge to move into better policy alignment with their preferred candidate. For example, in row 4 the empirical match between the voter's first priority issue and the view articulated by their preferred candidate during the debate increased by 9.0 percentage points (s.e. 3.1) on a base of 42.5%. This improvement in alignment can arise through two main channels: i) voters who prefer education select a candidate who also supports education; and ii) voters are persuaded to adopt the policy views of their preferred candidate and update their position on which sector is most important accordingly. Using both the exit poll and the before and after survey data from treatment implementation, we find evidence that both channels are at work. We find similar effects on alignment with respect to free healthcare, and no effect for gender equity.

The treatment effects of ultimate interest are in the next set of outcomes, where we find significant impacts on votes for the candidate who performed the best during the debates. Specifically, the mean effect index increases by 0.078 standard deviation units (s.e. 0.044), significant at 95% confidence. This effect is driven by increases in votes for the candidate that audience members judged to have performed

the best, where we see a 4.7 percentage point rise in votes for the debate winner. Note that vote shares for these candidates were already high, 80.3% in the control group, indicating that in this set of constituencies, the candidate who was locally popular tended to also perform best during the debates. There is no significant impact on votes for the candidate judged to have performed the best by our expert panel, which was composed of current government officials from all major parties who watched the debate videos and scored each candidates' response to every policy question.

Summarizing the remainder of Table 2, the next set of results reveals no evidence of treatment effects – neither positive nor negative – on votes across party lines. There are significant positive effects on voter opinions of all candidates as measured by a 10 point likeability scale, which is important for encouraging candidate participation in future interventions. There is no evidence for effects on secondary outcomes concerning voter turnout and the perceived legitimacy of the electoral process, however these were already extremely high in the study sample (at 98.4 and 91.9 respectively). Lastly, we find positive effects on increased interest in politics, where voters exposed to debates were more likely to discuss politics and be able to name other candidates at the national level.

B. Domain B: Candidates

Table 3 shows evidence that candidates responded to the debates "road show" by increasing their campaign effort in treated polling centers. First note that all treatment effect estimates – for all candidates and for each of three outcomes considered – are positive in sign. These reflect increases in voter reports of having received a gift from the particular candidate, the monetary value of the gift, and the number of times the candidate was reported to have visited the village, all with reference to the weeks leading up to the Election. Second, the response by the two major parties, the APC and the SLPP, is roughly proportional when measured as the percentage increase on their base level of spending in control communities. Lastly, the candidates who appeared to have responded most strongly with complementary spending are those from the PMDC, the third party that was generally much less competitive than the two main parties. These results are consistent with the idea that by equipping voters with greater political knowledge and changing their voting choices, debate screenings made these areas appear more competitive (as in Casey 2013).

V. Preliminary Results: Individual-Level Treatments

Table 4 turns to the individual-level treatment arms to explore the effects of different types of information conveyed by the debates. To conserve space, each hypothesis is summarized by its mean effects index, where column 1 presents the treatment effect estimate for the debate arm, column 2 for the get to know you video arm, and column 3 for the radio report, all with respect to the full set of controls as specified in the PAP. The fourth column presents two-sided tests that detected a statistically significant difference in relative effects across treatment arms.

The first two rows suggest that all arms were effective in delivering basic political information. Debates were more effective than the get to know you video for general political knowledge, and the positive effect on the latter may reflect survey priming effects (more on this below). Interestingly, in row 2, voters were equally as able to infer which candidate was better education and which one had more public office

experience by watching the 5 minute get to know you video as they were after watching 45 minutes of debate. These topics were generally not asked directly, but could plausibly be inferred from the candidate's manner of speech and physical carriage or confidence.

Moving to policy, row 3 shows that both debates and radio reports positively impacted knowledge, but only debates moved voters into better alignment (row 4). Reassuringly for the soundness of the basic research design, there is no evidence that the get to know you video impacted either set of policy measures. The fifth row reveals that only debates affected actual vote choices. The last row suggests some positive impacts on turnout, however these do not carry through to the larger polling center level sample, so will not receive much weight in this discussion.

Overall, while the radio report and get to know you video affected political knowledge, it is only debates that moved voters to change their voting choices and update their policy views. This pattern of results is consistent with the idea that debates are additive in both charisma and policy/professional information, and that the combination is more powerful than either in isolation.

VI. Additional Analysis

A. Survey Priming Effects

Table 5 turns to the question of how much of these effects can be attributed to the content of the treatment itself as compared to the experience of being surveyed in depth about one's political views. This is important in light of findings that the act of surveying has nontrivial impacts on behavior (see Zwane et al 2011). The design of our experiment tackles this issue in two ways: we can compare i) surveyed controls to pure controls in the individual treatment arms to capture a survey priming effect; and ii) those assigned to treatment with survey versus "pure" treatment (those assigned to receive an attendance incentive but not survey at the time of screening) across treatment and control polling centers to capture survey reinforcing effects.

Starting from the right hand side of Panel A in Table 5, estimates in column 5 suggest that the experience of being surveyed accounts for a 0.105 standard deviation unit (s.e. 0.036) increase in general political knowledge compared to pure controls, significant at 99% confidence. In the left hand side, column 1 compares those in the debate arm to surveyed controls to reveal a 0.183 standard deviation unit (s.e. 0.032) increase in knowledge, which can be attributed to the content of treatment, above and beyond the survey experience. Together, these two estimates suggest that the survey priming effect accounts for one third of the total treatment effect on general political knowledge. There is a similar effect for policy knowledge, although the survey priming effect accounts for a much smaller proportion of the total effect. Lastly, there is weak evidence for a survey effect on votes for the best, however it is noisily estimated (90% confidence in a one sided test) and does not hold up in the larger polling center level sample of Panel B.

Panel B takes the converse approach, where column 1 estimates a "pure" treatment effect from watching the debate without being surveyed of 0.238 standard deviation units (s.e. 0.055) compared to controls (note all polling center controls are "pure"). In column 5, there is evidence for an additional 0.103

standard deviation unit effect of being surveyed alongside treatment, suggesting that the survey reinforcing effect similarly accounts for roughly a third of the total effect on general political knowledge. There is only one other marginally significant survey reinforcing effect on voter openness. Reassuringly, the "pure" treatment effects on all other hypotheses discussed above continue to hold even after the additional effect of surveying is removed.

B. Treatment Heterogeneity

Overall, we find little evidence for systematic heterogeneity in treatment effects. Looking at individual subgroups, there is no evidence for differential effects by age, interest in politics or fluency in Krio. We find some evidence that women benefited less than men in terms of knowledge acquisition: the heterogeneous treatment effect estimate is negative in sign for 17 of the 20 knowledge outcomes in Table 1, and negative and statistically significant for two of the three mean effect indices. Estimates are from a unified regression framework that includes all subgroup dummies and their interaction with treatment assignment together in a single equation.

Our results also do not appear to be driven by large effects in any particular constituency. As an example, the treatment effect estimate on voting for the best candidates is robust to excluding each constituency one by one.

VII. Looking Forward: Policy Insights and Ongoing Research

Taken together, these results suggest that voters acquired significant political knowledge from watching the debates, knowledge that persisted over a number of weeks, and importantly, influenced their voting choices on Election Day. By equipping voters with knowledge that changed their voting behavior, debates further attracted greater campaign investment by participating candidates. Debates convey comprehensive information about candidates – including charisma, professional qualifications and policy stances – and the combination of factors appears more powerful than each in isolation.

Our NGO partner, Search for Common Ground (SFCG), received these research results with enthusiasm. In a joint presentation during Growth Week 2013, Country Director Ambrose James explained that SFCG had been using radio as a tool to promote governance and conflict resolution in Sierra Leone for quite some time, however their use of video had been limited, targeted only to policy makers with the goal of generating discussion. Our results convinced him that video and mobile cinema can be potentially more effective tools, and ones that rural villagers can engage with, to promote both education and community empowerment. They plan to pilot these newer tools in other thematic areas like public health and agriculture. Together, we are planning additional pilot activities to explore how best to build upon these results and extend the impact of debates to mobilizing the public around the accountability of elected officials. In early 2014, we hope to pilot a few different interfaces that bring elected MPs together with their constituents for a public discussion of progress made to date on fulfilling their commitments made during the debate.

Commissioners of the National Electoral Commission of Sierra Leone, who have been close consults on this project from its inception, also responded positively to our early dissemination events. In addition to

the impacts on knowledge, this initiative demonstrates that debates are logistically feasible to host and disseminate, which opens up wide scope for similar interventions in future. While the individual treatment arms suggest that video is more effective than audio alone, the radio report we tested was rather dry, and one could imagine a livelier radio program that captures a real time debate between candidates in the recording studio that might come closer to the impacts of the film screening. This kind of radio counterpart could reach much larger audiences at minimal cost.

In terms of ongoing research, a substantial amount of planned data analysis remains to be done, including: i) estimating impacts on vote shares for the debate winner in the official electoral returns to complement the results from the exit poll data; ii) investigating correlates of debate performance, including standard measures of education and previous work experience, as well as prospective correlates of performance by the winners in their first year of office; iii) descriptive analysis exploring treatment spillovers across nearby polling centers and calibrating the dissipation of effects from initial exposure to Election Day; and iv) estimating heterogeneity in treatment saturation and by different measures of debate performance and competition. In a related line of research, we conducted a set of lab experiments in the field that exposed voters to short visual, audiovisual and textual cues, both before and after the Election. These experiments are designed to gauge how easily voters can infer various candidate attributes from such "thin slice" cues, which have been shown to be highly predictive of voting results in the US (Todorov et al 2005 and Benjamin and Shapiro 2009). This data is now ready for analysis.

Finally, the discussion so far has focused on the question of whether debates can facilitate more informed voting and influence electoral support for better performing candidates. The second key question is the extent to which debates can facilitate greater accountability over elected officials. To investigate this issue, recall that the first tier of randomization was at the constituency level, so we are tracking the performance of winning MPs across the 14 treated and 14 control constituencies over time. This analysis examines the impact of debates on MP behavior, before any additional work to mobilize the public in the SFCG pilot begins.

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Figure 1: Implementation Framework

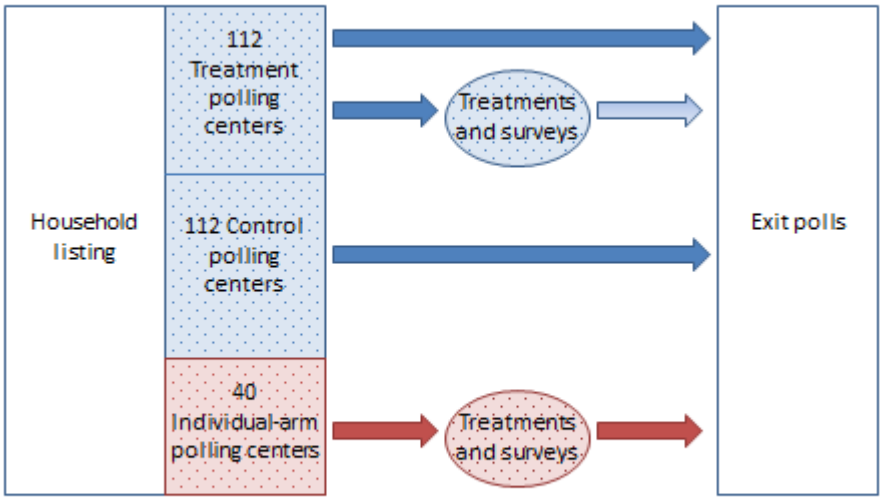

Table 1: Domain A - Impacts of Polling Center Debate Screenings on Voter Knowledge

Hypothesis and outcomes	Control mean (1)	Treatment effect (2)	Std error (3)	P-value, one-sided (4)	Signif (5)	N (6)
General Political Knowledge						
Mean effect across all outcomes	***0.000***	***0.302***	***0.048***	***0.000***	***0.99***	
Correctly stated the amount in the CFF	0.034	0.141	0.018	0.000	0.99	5414
Correctly stated who is entitled to free healthcare	0.706	0.059	0.033	0.038	0.95	5414
Correctly stated that the gender equity bill is 30%	0.352	0.013	0.030	0.339		5413
Correct number of stated MP roles (out of 3)	0.555	0.225	0.070	0.001	0.99	5415
Knowledge of Candidate Characteristics						
Mean effect across all outcomes	***0.000***	***0.250***	***0.033***	***0.000***	***0.99***	
Primary reason for choosing candidate was an individual characteristic	0.209	-0.008	0.028	0.619		5242
Correctly stated whether any of the candidates had been an MP before	0.490	0.113	0.033	0.000	0.99	5415
Correctly stated which candidate was most educated	0.243	0.162	0.044	0.000	0.99	3109
Correctly stated which candidate had most public office experience	0.336	0.052	0.038	0.088	0.90	2582
Correctly named the APC candiate	0.445	0.169	0.033	0.000	0.99	5415
Correctly named the PMDC candiate	0.115	0.109	0.031	0.000	0.99	3299
Correctly named the SLPP candiate	0.395	0.171	0.032	0.000	0.99	5415
Knowledge of Candidate Policy Stances						
Mean effect across all outcomes	***0.000***	***0.292***	***0.036***	***0.000***	***0.99***	
Correctly stated the APC candidate's first priority issue	0.190	0.089	0.030	0.002	0.99	5072
Correctly stated the PMDC candidate's first priority issue	0.099	0.066	0.026	0.006	0.99	3296
Correctly stated the SLPP candidate's first priority issue	0.142	0.150	0.028	0.000	0.99	5413
Correctly stated the APC candidate's view of free healthcare	0.252	0.198	0.035	0.000	0.99	4593
Correctly stated the PMDC candidate's view of free healthcare	0.119	0.009	0.036	0.400		2820
Correctly stated the SLPP candidate's view of free healthcare	0.123	0.072	0.029	0.007	0.99	4935
Correctly stated the APC candidate's position on gender equity bill	0.285	0.097	0.035	0.003	0.99	5073
Correctly stated the PMDC candidate's position on gender equity bill	0.244	0.212	0.053	0.000	0.99	3299
Correctly stated the SLPP candidate's position on gender equity bill	0.331	0.157	0.038	0.000	0.99	5415

Notes: i) exit poll data; ii) robust standard errors clustered by polling center; iii) all specifications include indicator variables denoting stratification bins used in treatment assignment; iv) reporting intention to treat effects; v) tests are one sided in direction specified in the PAP; and vi) mean effect indices are expressed in standard deviation units.

Table 2: Domain A (Continued) - Impacts of Polling Center Debate Screenings on Voter Behavior

Hypothesis and outcomes	Control mean (1)	Treatment effect (2)	Std error (3)	P-value, one-sided (4)	Signif (5)	N (6)
Policy Alignment						
Mean effect across all outcomes	***0.000***	***0.105***	***0.035***	***0.002***	***0.99***	
Voter's view on FHC matches that of the candidate they chose	0.394	0.092	0.035	0.004	0.99	4727
Voter's view on GEB matches that of the candidate they chose	0.613	-0.024	0.024	0.843		5160
Voter's first priority issue matches that of the candidate they chose	0.425	0.090	0.031	0.002	0.99	5160
Votes for the Debate Winner						
Mean effect across all outcomes	***0.000***	***0.078***	***0.044***	***0.038***	***0.95***	
Voted for the candidate the audience thought won the debate	0.803	0.047	0.021	0.015	0.95	5225
Voted for the candidate the expert panel thought won the debate	0.712	0.009	0.022	0.333		5225
Votes across Party Lines						
Mean effect across all outcomes	***0.000***	***-0.019***	***0.031***	***0.728***		
Voted across ethnic-party lines	0.107	-0.011	0.013	0.802		4574
Voted for a different party for MP than did in 2007	0.163	0.005	0.019	0.388		4410
Split ticket across parties for MP vs President	0.058	-0.008	0.010	0.800		5217
Voter Openness to Other Parties						
Mean effect across all outcomes	***0.000***	***0.090***	***0.048***	***0.032***	***0.95***	
How much the voter likes the APC candidate (10 point scale)	6.523	0.161	0.261	0.269		5073
How much the voter likes their own party's candidate (10 point scale)	7.971	0.245	0.237	0.151		5160
How much the voter likes the PMDC candidate (10 point scale)	2.369	0.579	0.273	0.018	0.95	3299
How much the voter likes the rival party's candidate (10 point scale)	3.395	0.117	0.226	0.303		4906
How much the voter likes the SLPP candidate (10 point scale)	4.952	0.229	0.230	0.160		5414
Turnout (secondary)						
Mean effect across all outcomes	***0.000***	***-0.204***	***0.113***	***0.964***		
Turnout, verified by enumerator check of voter ID card stamps	0.984	-0.026	0.015	0.961		5346
Perceived Legitimacy of Electoral Process (secondary)						
Mean effect across all outcomes	***0.000***	***-0.090***	***0.086***	***0.852***		
Whether voter is confident that election was free and free	0.919	-0.025	0.023	0.852		5415
Interest in Politics (secondary)						
Mean effect across all outcomes	***0.000***	***0.061***	***0.037***	***0.049***	***0.95***	
Frequency of discussing politics	0.243	0.036	0.027	0.088	0.90	5411
Correctly named MP candidate who did not participate in the debate	0.135	-0.020	0.031	0.738		1645
Number of Presidential candidates correctly named (of 2)	1.360	0.101	0.042	0.008	0.99	5413

Notes: i) exit poll data; ii) robust standard errors clustered by polling center; iii) all specifications include indicator variables denoting stratification bins used in treatment assignment; iv) reporting intention to treat effects; v) tests are one sided in direction specified in the PAP; and vi) mean effect indices are expressed in standard deviation units.

Table 3: Domain B - Impacts of Polling Center Debate Screenings on Candidates

Hypothesis and outcomes	Control mean (1)	Treatment effect (2)	Std error (3)	P-value, one-sided (4)	Signif (5)	N (6)
Campaign Spending Response						
Mean effect across all outcomes	***0.000***	***0.104***	***0.039***	***0.008***	***0.99***	
Received a gift from APC candidate	0.160	0.011	0.027	0.686		5071
Received a gift from PMDC candidate	0.007	0.014	0.006	0.024	0.95	3220
Received a gift from SLPP candidate	0.089	0.008	0.020	0.690		5413
Value of gift received from APC candidate	0.412	0.118	0.098	0.226		5005
Value of gift received from PMDC candidate	0.014	0.035	0.015	0.016	0.95	3213
Value of gift received from SLPP candidate	0.210	0.080	0.064	0.210		5362
Number of APC candidate visits to village	1.292	0.149	0.139	0.282		5072
Number of PMDC candidate visits to village	0.353	0.218	0.093	0.019	0.95	3299
Number of SLPP candidate visits to village	1.273	0.077	0.187	0.678		5415

Notes: i) exit poll data; ii) robust standard errors clustered by polling center; iii) all specifications include indicator variables denoting stratification bins used in treatment assignment; iv) tests are one sided in direction specified in the PAP; and v) mean effect indices are expressed in standard deviation units.

Table 4: Impacts of Individual Treatment Arms on Voter Behavior

Mean Effect by Hypothesis	**T1 - Debate**	**T2 - Get to Know You**	**T3 - Radio Summary**	**Comparisons** (2 sided tests)
	(1)	(2)	(3)	(4)
General Political Knowledge	0.20**	0.09**	0.16**	T1 > T2 *
	(0.04)	(0.04)	(0.04)	
Knowledge of Candidate Characteristics	0.08**	0.08**	0.05**	---
	(0.02)	(0.02)	(0.02)	
Knowledge of Candidate Policy Stances	0.16**	0.02	0.12**	T1 > T2 **
	(0.03)	(0.02)	(0.02)	T3 > T2 **
Policy Alignment	0.08**	0.00	0.00	
	(0.03)	(0.03)	(0.03)	
Votes for the Candidate who Performed Best	0.06+	-0.00	-0.03	T1 > T3 +
	(0.04)	(0.04)	(0.04)	
Voter Turnout	0.02*	0.02*	0.01	
	(0.01)	(0.01)	(0.01)	
No differential effects for Votes across Party				

Notes: i) exit poll data; ii) robust standard errors clustered by polling center; iii) all specifications include indicator variables denoting stratification bins used in treatment assignment; iv) tests are two sided as specified in the PAP; and v) mean effect indices are expressed in standard deviation units.

Table 5: Survey Priming Effects

Panel A: Survey Priming Effects across Individual-level Arms

Hypothesis, Mean Effect	Treatment effect beyond survey: T1 Debates vs Surveyed controls				Survey priming effect: Surveyed controls vs pure controls			
	TE	Std error	P-val	Signif	TE	Std error	P-val	Signif
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
General Knowledge	0.183	0.032	0.000	0.99	0.105	0.036	0.003	0.99
Candidate Knowledge	0.093	0.022	0.000	0.99	-0.025	0.019	0.904	
Policy Knowledge	0.147	0.032	0.000	0.99	0.039	0.024	0.055	0.90
Policy Alignment	0.064	0.035	0.038	0.95	0.041	0.041	0.164	
Openness	0.000	0.026	0.502		0.009	0.029	0.382	
Votes for best	0.032	0.054	0.278		0.085	0.054	0.061	0.90
Votes across party lines	-0.022	0.040	0.710		-0.046	0.050	0.820	
Turnout (sec)	0.081	0.044	0.038	0.95	0.019	0.058	0.374	
Legitimacy (sec)	0.029	0.039	0.235		-0.059	0.040	0.926	
Interest in Pol (sec)	0.011	0.044	0.400		0.003	0.036	0.462	

Panel B: Survey Reinforcing Effects in Polling Center Arms

Hypothesis, Mean Effect	"Pure" treatment effect: Treated with no survey vs controls (β_T)				Additional survey effect for treated that were surveyed (β_{T*P})			
	TE	Std Error	P value	Signif	TE	Std Error	P value	Signif
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
General Knowledge	0.238	0.055	0.000	0.99	0.103	0.037	0.003	0.99
Candidate Knowledge	0.243	0.036	0.000	0.99	0.010	0.025	0.351	
Policy Knowledge	0.286	0.039	0.000	0.99	0.009	0.022	0.344	
Policy Alignment	0.105	0.041	0.005	0.99	-0.001	0.030	0.490	
Openness	0.064	0.050	0.103		0.042	0.026	0.052	0.90
Votes for best	0.088	0.047	0.033	0.95	-0.015	0.036	0.336	
Votes across party lines	-0.054	0.037	0.925		0.056	0.034	0.948	
Turnout (sec)	-0.175	0.107	0.948		-0.046	0.078	0.724	
Legitimacy (sec)	-0.079	0.093	0.803		-0.018	0.048	0.646	
Interest in Pol (sec)	0.054	0.041	0.097	0.90	0.012	0.029	0.333	

Notes: i) exit poll data; ii) robust standard errors clustered by polling center; iii) all specifications include indicator variables denoting stratification bins used in treatment assignment; iv) tests are one sided; and v) mean effect indices are expressed in standard deviation units.

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