PRE-ANALYSIS PLAN: LEARNING ACCOUNTABILITY: CAN FORMAL EDUCATION HELP HOLD POLITICIANS TO ACCOUNT?*

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Effective democratic representation is closely connected to economic development, good governance, and political stability. However, accountability is often limited in the developing contexts where it is needed most. In light of the mixed evidence that information dissemination campaigns can support electoral accountability, we explore whether education complements or substitutes for information provision in pursuing this goal. To assess these claims, we are conducting a panel survey in Senegal around the July 2017 national legislative elections. Our design nests two sources of exogenous variation: quasi-experimental variation in access to free secondary schooling and randomized individual-level provision of legislator duty and performance information before the election. Such variation enables us to plausibly identify the effects of access to secondary education, information about deputy responsibilities, incumbent and benchmarked performance information, and their interactions on political engagement and electoral accountability. The surveys also explore the mechanisms underpinning these effects, helping us to speak to the broader question of whether and how education complements or substitutes for information provision in supporting electoral accountability, and ultimately democratic representation.

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1 Introduction

Political accountability is widely regarded as a key driver of economic development (e.g. Acemoglu, Johnson and Robinson 2001). However, holding politicians accountable to voters is not a straightforward task, not least because voters are often poorly informed about the actions of their representatives in office. A wealth of recent studies examining the effects of informational campaigns on electoral accountability provide mixed findings (e.g. Banerjee et al. 2011; Chong et al. 2015; Ferraz and Finan 2008; Humphreys and Weinstein 2012; Larreguy, Marshall and Snyder 2017).

We investigate the extent to which heterogeneity in responses to such information provision reflects differences in prior formal education levels. Understanding when and how education supports informed participation remains a key question, particularly as primary and secondary enrollment rates in sub-Saharan Africa respectively rose from 59% and 26% in 1999 to 78% and 41% in 2011 (UNESCO 2014). Specifically, we argue that education could serve as a necessary condition for electoral accountability in (at least) two ways with very different implications for information campaigns.

First, education could *complement* information provision by enhancing voters' capacity to use the information. To the extent that formal education imparts the cognitive skills required to evaluate, compare, and recognize the value of incumbent performance metrics, such education can enable voters to effectively process the information required to hold their governments to account, when credible information is provided (Alt, Lassen and Marshall 2016; Gottlieb 2016; Weitz-Shapiro and Winters 2017; Zaller 1992). This could be particularly important when providing more complex forms of information, such as performance benchmarks (Arias et al. 2017*a*,*b*). Similarly, education could accentuate information provision's ability to increase electoral accountability by increasing the probability that a voter turns out to vote (e.g. Friedman et al. 2011; Larreguy and Marshall forthcoming; Sondheimer and Green 2010).[1]

Second, education could instead *substitute* for information provision by ensuring that voters are already informed. Beyond enabling voters to evaluate information when provided, formal education could also induce educated voters to become politically informed about their incumbents, and thus develop strong prior beliefs or already know the content of the information provided (see Druckman and Lupia 2000; Zaller 1992). Although the exact motive for doing so is not well un-

[1]Other studies temper this claim by suggesting that greater participation may be conditional on sufficiently competitive elections (Croke et al. 2016) and the ability of the state to tax those earning higher income levels (Kasara and Suryanarayan 2015). Compared with other less democratic African contexts with weaker states, these caveats are less likely to apply in Senegal.

derstood, some studies provide causal evidence that educated voters are generally better informed about politics (e.g. Croke et al. 2016; Larreguy and Marshall forthcoming) and more likely to turn out (Holbein forthcoming; Larreguy and Marshall forthcoming; Sondheimer and Green 2010). However, it is not obvious whether voters are sufficiently already informed to be unaffected by the provision of credible information.

Existing studies have yet to identify how the interaction between education and information provision influences electoral accountability. Some studies have leveraged exogenous variation in either civic education (e.g. Gottlieb 2016) or information (e.g. Alt, Lassen and Marshall 2016; Weitz-Shapiro and Winters 2017), but not both simultaneously. Gottlieb (2016) provides initial evidence that education increases accountability in Mali, although she focuses on civic rather than formal education, and primarily examines preferences between hypothetical candidates. Similarly, Alt, Lassen and Marshall (2016) and Weitz-Shapiro and Winters (2017) find that only sophisticated voters respond to incumbent economic performance information in Denmark and Brazil, but do not exploit exogenous variation in sophistication. However, identifying the interaction between education and information—which requires exogenous variation in both components—in a real-world electoral context is an essential parameter of both academic and policy interest. As noted above, understanding whether education complements or substitutes for information is crucial for designing dissemination campaigns, which are themselves increasingly recognized as necessary for solving the fundamental agency problems that can compromise public goods provision in developing contexts (Khemani et al. 2016).

We examine education's relationship with information provision in the context of Senegal's July 2017 elections for the Assemblée Nationale du Sénégal. Parliamentary accountability has traditionally been low, with few voters being aware of the duties and actions of their national deputies. However, a new generation of voters was relatively recently granted significantly greater educational opportunities, which may lay the groundwork for greater electoral accountability. Administrative data show that, following the abolishment of lower secondary education fees in 2002, the number of secondary schools nationwide more than doubled to accommodate the influx of students. The construction of these schools, designed to close disparities in secondary school access, presents a rare opportunity to analyze relatively long-term political effects of formal education.

To identify the interaction between education and information provision we combine natural variation with a randomized controlled trial. First, we leverage variation in school construction to identify the effects of access to education using a difference-in-differences (and instrumental variables) design that compares cohorts just too old to be affected by the reforms to cohorts affected by the reforms in villages that were and were not close to locations where new secondary schools

were constructed. Second, we randomize the provision of incumbent performance information to individuals in those cohorts and villages. In addition, we compare the effects of just informing voters about their current incumbent with also providing a temporal benchmark—the performance of a previous incumbent. To further probe the conditions required to process and incorporate such information in voting decisions, we further vary whether voters are informed of the duties of their deputies. We conduct a panel survey to measure the pre-treatment effects of education, the effects of different types of information provision, and interaction between education and information provision on electoral accountability and several costly behavioral outcomes. A variety of treatment conditions and survey questions help us to separate between the mechanisms potentially driving our main hypotheses relating to the effects of education, information provision, and their potential complementarity or substitutability on electoral accountability.

This pre-analysis plan is structured as follows. Section 2 provides a brief overview of the Senegalese context. Section 3 explains in detail our research design, including our treatment, sample selections, and data collection. Section 4 details our hypotheses and specific statistical specifications.

2 Context

Senegal represents an excellent location to examine how education and information affect electoral accountability. Senegal is one of Africa's oldest and strongest democracies, and has experienced unrestricted multi-party politics since 1981. It is one of the few African states that has never experienced a coup d'état or exceptionally harsh authoritarian rule. Having seen two incumbents removed from office through competitive democratic elections—Abdou Diouf in 2000 and Abdoulaye Wade in 2012, it is a model of peaceful democratic transition.

However, while Senegal enjoys well-functioning electoral institutions in many respects, Senegal is characterized by hyper-presidentialism, with the parliament still playing a limited role in democratic representation, which prevents full democratic consolidation (Beck 2012; Khagram, Fung and De Renzio 2013; O'Donnell 1994). Focusing on legislators—90 (60%) of whom are elected in 12 single and 23 multi-member departments (districts)—has the potential to inform how legislators can become more active and accountable to voters, and thus promote economic development.

Representatives to the Assemblée Nationale are elected by a mixed system, wherein 60% of deputies are selected by majoritarian voting at the department level, and the remaining 40% are selected by proportional voting at the national level. All competing political coalitions form de-

partmental lists for each of the 35 departments in Senegal, as well as an overall national list. At the department level, the coalition that receives the most votes wins all the seats allotted to that particular department, the number of which is decided in advance by the Ministry of Interior. Proportional seats, by contrast, are allotted by taking into consideration overall vote shares at the national level. In the legislative elections of 2012, the president's coalition, Benno Bokk Yakkar (BBY), won almost all department-level contests, taking 87 of the 90 departmental seats based on the majoritarian voting system. At the national level, the president's coalition won approximately half of the proportionally allocated seats. The present project focuses on deputies elected from departmental lists, as these politicians have distinct constituencies and thus stronger ties of accountability relative to deputies elected from national lists.

The primary task of deputies to the Assemblée Nationale is amending and voting on laws drafted by government ministries. In theory, deputies have the ability to initiate new laws themselves, though in practice this is extremely rare (Thomas and Sissokho 2005). As noted above, Senegal is characterized by hyper-presidentialism and consolidated executive power, and this influence shows in parliament. Very few laws are rejected by the Assemblée Nationale, and its role as a check on executive power is often called into question by civil society.

Nonetheless, deputies serve several roles as part of their parliamentary duties. They can serve on one or several of the 11 technical parliamentary commissions. When a ministry proposes a law and it is brought to the Assemblée Nationale, it first goes to the technical commission that is paired with that particular ministry. The commissions meet in closed sessions and propose recommendations and amendments to the law, which eventually is debated in open, plenary sessions. Leaders of commissions are considered influential in the amending of laws. The finance commission is considered to be particularly influential, as it plays a significant role in the deliberation over the national budget.

Deputies can also submit written or oral questions to the government, to be answered by the relevant ministers in open sessions. Participating in these debates, as well as in ordinary plenary sessions, is one of the ways in which deputies can defend the interests of their constituents. Deputies are not given any specific funds for local development projects in their home districts, nor is this a codified role of deputies to the Assemblée Nationale. Despite this reality, constituents often see local development as the primary responsibility of deputies, and accordingly, many deputies make efforts to increase transfers to their districts for local development projects by lobbying government ministers.

In 2002, Senegal extended free and compulsory education to include lower secondary schooling, and engaged in significant middle-school construction (Figure 1). This led to a quadrupling

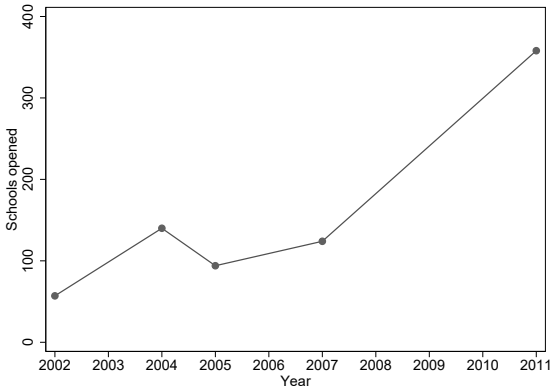

Figure 1: Middle school openings
Source: Larreguy and Liu (2017).

of its middle school enrollment (Figure 2) and to an increase in the transition rate from primary to lower secondary from 35% in 1999 to 88% in 2011 (UNESCO, 2015). As such, Senegal is an ideal context to test for whether education complements or substitutes the effect of information on electoral accountability.

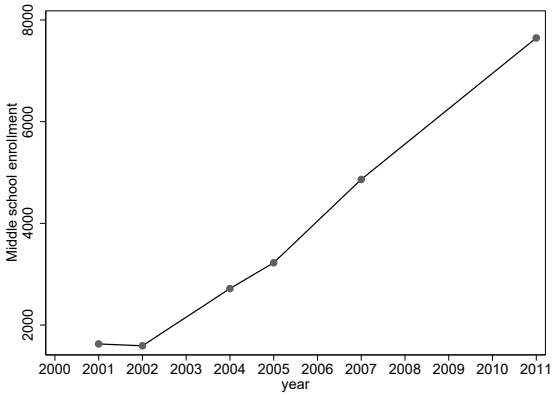

Figure 2: Middle school enrollment
Source: Larreguy and Liu (2017).

3 Research design

To examine the research question enumerated above, we implement a panel survey around Senegal's Sunday 30th July 2017 parliamentary election. To identify whether education and information are complements or substitutes in the process of providing information to support electoral accountability, we exploit natural observational variation in access to education across cohorts

and villages, and a randomized controlled trial experimentally varying the provision of incumbent performance information to voters by village.

3.1 Treatment conditions

First, we leverage quasi-experimental spatial variation in school construction. Similarly to Duflo (2001) and Larreguy and Marshall (forthcoming), we propose a difference-in-differences design to compare the behavior of voters that were and were not old enough to benefit from free secondary education from villages that did and did not experience greater access to secondary education following the 2002 reform due to the construction of a new school. More specifically, this entails comparing unaffected cohorts to partially and fully affected cohorts across villages that did and did not experience the construction of a new school following the reform. Our sampling strategy designed to support the maintained parallel trends assumption, and the exact difference-in-differences specifications, are discussed below.

Second, we combine this variation in access to formal schooling with experimental variation in the provision of information relating to incumbent performance. As explained below in greater detail, we will work in departments where only one incumbent is standing for re-election (with one exception) and (to facilitate comparative performance information) a different (individual) incumbent was in office before the previous election. We will provide voters with a variety of measures of incumbent performance in office: the commissions they are members of; positions of parliamentary leadership; the number of parliamentary debates participated in; the number of local projects budgeted for their department; and the number and per capita per year value of ministry transfer received by the department, by type of transfer.[2] The latter two measures are department-level variables, and thus do not vary across deputies within the department. All deputy performance data was obtained from either Assemblée Nationale or a government department. The information on the leaflet makes clear which departments have singular or multiple deputies.

Based on the performance metrics just described, we will randomly assign villages to one of the following six experimental conditions:

1. Pure control: no information is provided.

2. "Duties" treatment: voters receive information about the role and responsibilities of parliamentary representatives. In particular, this information highlights the capacity of MPs to join

[2] Annual transfer data from the government is only available from 2010 to 2016. To ensure comparability between current and previous incumbents we convert ministry transfers to a per year basis and adjust for inflation. We further adjust for population size using the 2013 Census. Where transfers affect multiple departments, transfers are distributed in accordance with the share of the 2013 population in each department.

committees that can influence legislation and budgets, lobby the government for projects, and participate in parliamentary debates.

3. "Incumbent" treatment: voters receive factual and impartial measures of legislator performance. Specifically, we will provide the following information covering the previous electoral cycle: committee membership, committee leadership, debates participated in, projects budgeted for the legislator's department, and ministry transfers to the department.

4. "Duties + Incumbent" treatment: voters receive the duties and incumbent treatments.

5. "Benchmark" treatment: voters receive the same information as in the "Incumbent" treatment, but also benchmark it against the performance of a previous incumbent (from the previous legislature).

6. "Duties + Benchmark" treatment: voters receive the duties and benchmark treatments.

The "Duties" treatment is designed to inform voters about the functions that their deputies perform, while the "Incumbent" and "Benchmark" treatments respectively provide performance information about the incumbent deputy seeking re-election and the incumbent deputy seeking re-election alongside a previous incumbent in the department. Voters only receive performance information about one previous incumbent, who must be drawn from the 2017 majoritarian list. In departments previously represented by multiple deputies, we randomize (across randomization blocks) which previous incumbent's performance is shown. We only use deputies from the majoritarian list. All treatments will be delivered towards the end of the baseline survey, when enumerators will provide respondents with a leaflet and walk them through it.

We hired a graphic artist to design the leaflets shown in Figures 5-9 in the Appendix. These provide an example of all treatment leaflet types for the department of Oussouye. Our leaflets were designed in partnership with our partnering civil association, LEGS-Africa, and were pre-tested with the head of legislative services at the Assemblée Nationale, the librarian at the Assemblée Nationale, and several active and former deputies to make sure that the information is correct and fairly attributed. We also piloted the leaflet with voters to check that the information was comprehensible. Nevertheless, our surveys include comprehension checks to validate that the leaflet information is internalized.

3.2 Sample selection

We selected five departments in which to conduct this study: Fatick, Foundiougne, Kanel, Oussouye, and Ranérou Ferlo. These departments were chosen because only a single incumbent is

seeking re-election (with one exception), no incumbent is seeking a second re-election, there are no incumbents elected from the proportional list (with one exception), the departments are not new departments with no previous history of incumbent performance, and because they minimize the number of deputies representing the department. No partisan considerations we included in the sampling criteria. Oussouye and Ranérou Ferlo currently only have one incumbent deputy (although Oussouye had two in the previous legislature). Fatick and Foundiougne currently have two majoritarian deputies and no deputies from the proportional list. However, both had deputies from the proportional list in the previous legislature, although only information about the majoritarian deputies will be provided. Only Kanel, which has two majoritarian deputies, also has one deputy elected from the proportional list; in Kanel, one majoritarian and the one list incumbent are standing for re-election, both on the majoritarian list. The distribution of these departments is shown in Figure 3.

Figure 4 shows the distribution of the main performance metrics provided, where each dot represents a current incumbent-previous incumbent pairing. Although there are eight such pairings across our five departments, some comparisons are exact duplicates. The figure shows that, in general, the current incumbent outperforms previous incumbents. This is particularly true with respect to debates, projects, and transfers. Moreover, the current incumbents in Fatick and Kanel are performing consistently better across all dimensions, while the current incumbent in Oussouye is generally performing worse. If we assume that voters' prior expectations are broadly in line with previous incumbents' performance, then our information is likely to increase voters' favorability towards incumbents on average across departments.

Within these five departments, we selected 450 mid-sized rural villages for our sample. Starting from the 859 possible villages in these departments, we excluded all villages with fewer than 200 people and all villages with more than 4,000 people. We also excluded villages where the first post-2002 school was built between 2006 and 2010, because the treatment status of cohorts in such villages is ambiguous. This yielded 539 villages, of which 248 are within 6km of a secondary school built between 2002 and 2005, 142 are within 6km of a secondary school built in 2011 or later, and 149 are not within 6km of a secondary school from 2002 on. Among these, we selected 225 villages where a secondary school was built within 6km of the village between 2002 and 2005, and 225 other villages where no school was built during that time frame, based on logistical concerns, to ensure that each department contains a multiple of six villages, and to maximize the prior enrollment rate comparison between villages with and without schools.[3]

[3]Of logistical concerns, 19 villages were dropped because they were too expensive to reach (e.g. because they are on islands).

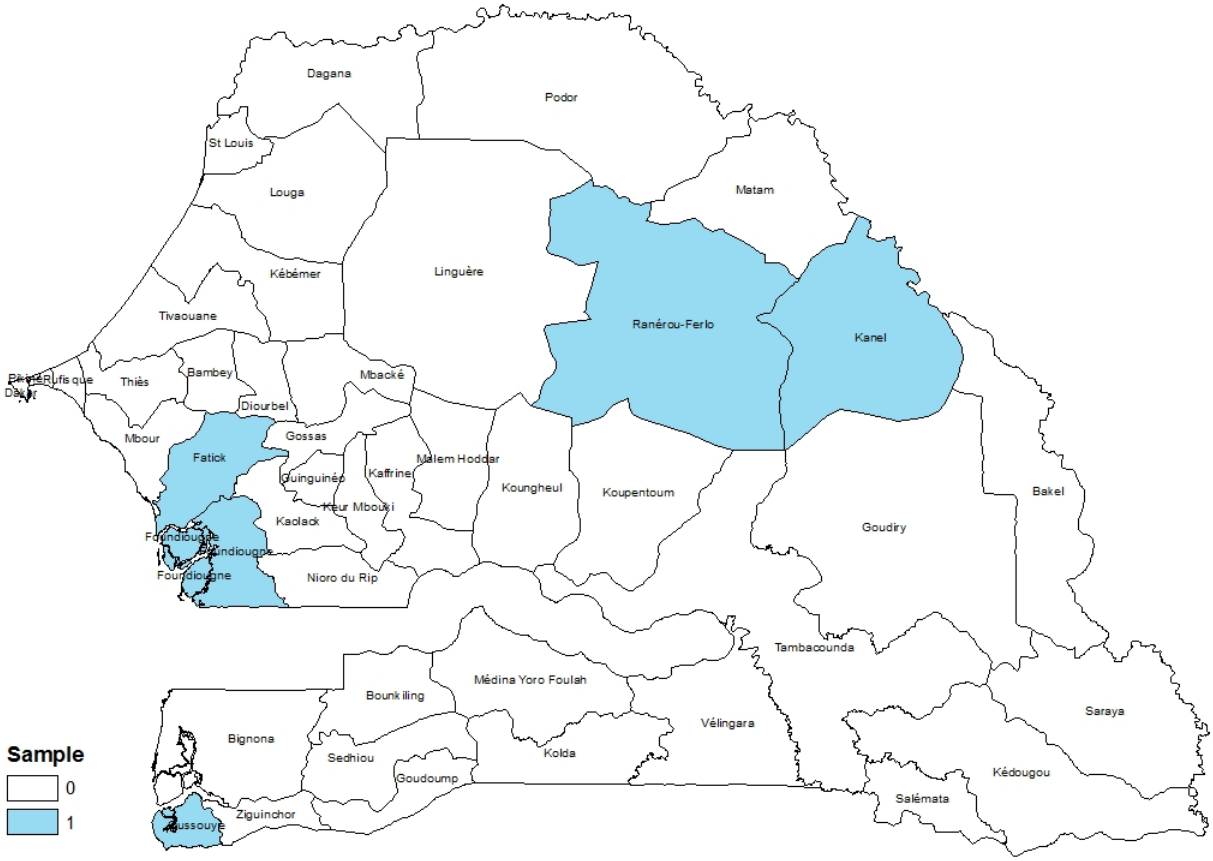

Figure 3: Distribution of departments across Senegal

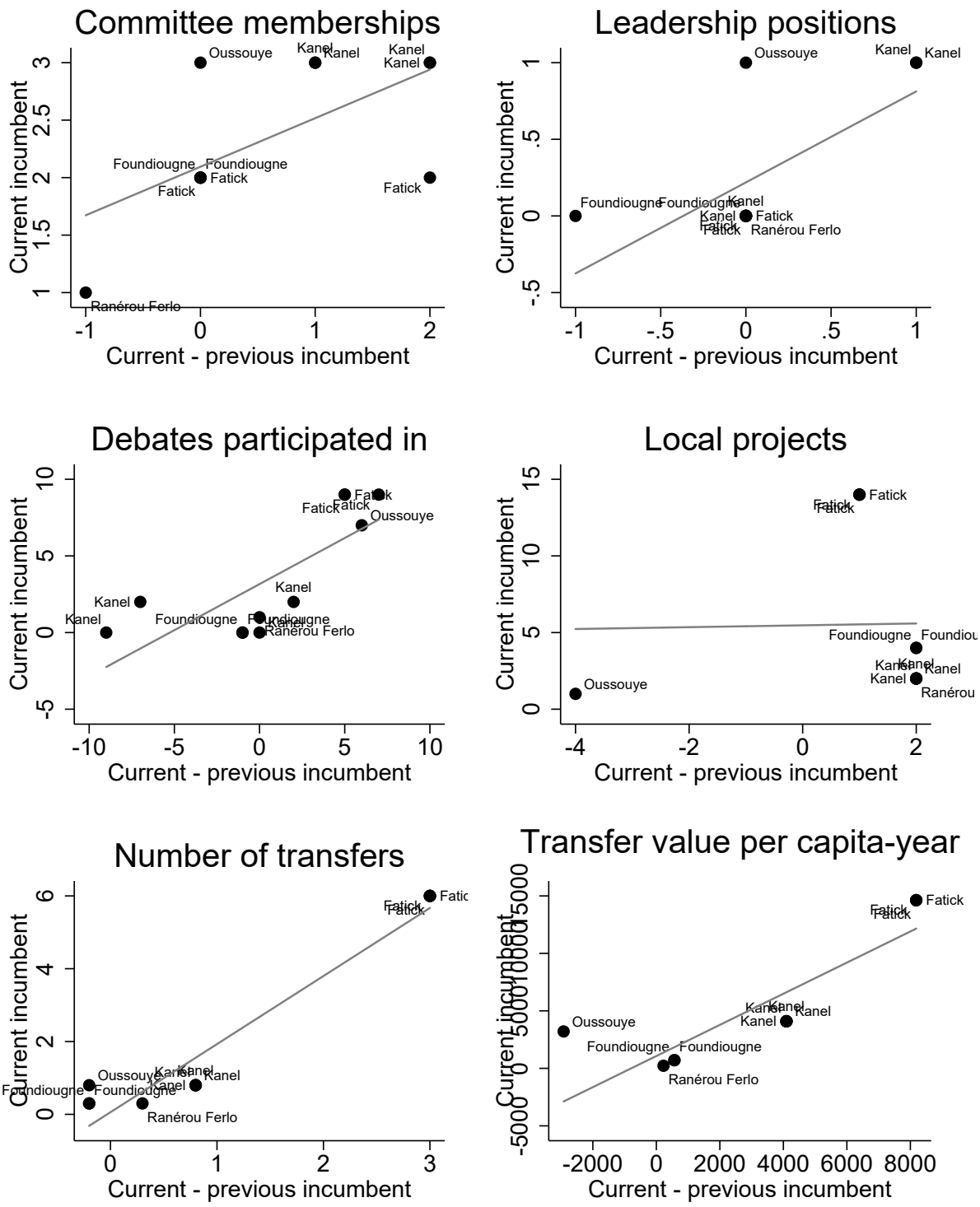

Figure 4: Distribution of treatment information across departments

Finally, we aim to survey nine registered voters that grew up in each village. We will only survey respondents within seven years either side of the first cohort to be fully affected and the last cohort not to be affected at all, i.e. those aged 5-23 in 2002 and 20-38 in 2017. Specifically, in each village, we will aim to sample three voters each from three categories of voters: fully eligible cohorts (those aged 20-26 at the time of the survey), partially eligible cohorts (aged 27-31), and ineligible cohorts (aged 32-38). Enumerators will be instructed, wherever possible, to ensure that at least two respondents from each category are surveyed in each village.[4] The only further restrictions are that the respondents must have a cellphone number that they could be contacted on, that they be eligible to vote, and that they were born in the village or have lived there prior to the age of primary school enrollment (in Senegal, this is typically at 6 years of age). Due to the small number of voters receiving our treatment leaflets within a given department, the chance of affecting election outcomes is very low.

3.3 Information provision randomization

Although we selected villages to generate plausibly exogenous variation in access to formal schooling, we are not able to experimentally manipulate the education treatment. However, we do control the assignment of the information treatments, which will be assigned at the village level to mitigate potential within-village spillovers and "John Henry" effects. Specifically, we will identify 75 blocks containing six similar villages. Village similarity is defined by being in the same department (and thus facing the same parliamentary election) as well as 24 pre-treatment covariates, including latitude, longitude, prior education levels, population, socioeconomic development indicators, local language, and incumbent presidential vote share.[5]

Treatments are assigned such that each of the villages within a block is assigned to either the control or one of the five treatment conditions and all voters in a treated village receive the same information treatment. In departments where there are multiple comparisons (e.g. because there were multiple previous majoritarian deputies or in the case of Kanel were two incumbents are seeking re-election), we use complete randomization to assign a incumbent-previous incumbent pair to each block; all villages within a block are thus subject to the same information. This ensures that each department receives exactly the same proportion of each type of information.

[4] Due to the difficulty of coordinating two enumerators to achieve this simultaneously in each village and finding eligible respondents, this exact distribution may not always be feasible.

[5] We use the `R` package "blockTools" to assign blocks, department by department, based on a greedy algorithm using Mahalanobis distance.

3.4 Data

The experiment includes both a baseline and endline survey. The baseline survey will be conducted in person over four weeks before the general election in July 2017, while the short post-election survey will be conducted by telephone (and in person for those that cannot be contacted) over two-four weeks after the election. We intend to recruit a two-wave panel of around 4,050 registered Senegalese voters, and will use both multiple imputation and listwise deletion to address any missing responses. We will also log respondents that fail to satisfy these criteria to assess any selection biases that could arise as a consequence of access to education.

We also intend to collect polling station level electoral returns. We will map villages to polling stations and examine how turnout and incumbent politician vote share vary with our treatments.

3.4.1 Measurement of educational attainment

To validate our difference-in-differences design, we intend to examine whether respondents subject to the reforms indeed received more schooling. We measure educational attainment by asking respondents for their highest level of education in terms of grades or level of schooling. This will generate a continuous measure of school attainment, henceforth referred to as "Schooling," where each level of schooling corresponds to an additional year of schooling. This will also allow us to establish at which broader levels those were attained (e.g. incomplete and complete primary, secondary, and higher).

3.4.2 Measurement of politician performance

To measure the content of the information provided, we will adopt three approaches. First, we will use separate variables for our six quantitative measures of performance over the deputy's time in office: number of committee memberships; number of leadership positions; number of debates participated in; number of local projects constructed in the department; number of transfers received by the department; and the per capita-year value of those transfers. Second, we will create an index that sums across standardized versions of each variable.[6] Third, we will construct an inverse covariance weighted (ICW) index across these variables.[7] Fourth, we will construct two

[6]For items $x_{i1},...,x_{iK}$, with means μ_k and standard deviations σ_k, this entails calculating the following index score for individual i: $\sum_{k=1}^{K} \frac{x_{ik}-\mu_k}{\sigma_k}$.

[7]Following Anderson (2008), we will define the ICW index for individual i as $(\mathbf{1}'\Sigma^{-1}\mathbf{1})^{-1}(\mathbf{1}'\Sigma^{-1}\tilde{\mathbf{x}}_i)$, where Σ is the covariance matrix between items $x_{i1},...,x_{iK}$, $\tilde{\mathbf{x}}_i$ is the vector of standardized items, and $\mathbf{1}$ is a vector of 1s.

indexes (standardized and ICW) to reflect information's relevance.[8] Henceforth we will refer to these variables as "Incumbent performance." We create analogous indexes for "Previous incumbent performance," and "Performance difference" for the difference between the two sets of metrics.

3.4.3 Measurement of Outcome variables

We next overview our main outcomes, and the scales created from these. The full baseline and endline surveys are provided in section A.2 of the Appendix.

Our first set of outcomes measure voter engagement with politics. We use six self-reported measures: frequency of political discussion; interest in public affairs; frequency of getting political news from radio; frequency of getting political news from television; frequency of getting political news from newspapers; and self-reported turnout at the previous parliamentary election. We also create a standardized and ICW indexes across these variables. We henceforth refer to this group of outcomes as "Political engagement." Because all these variables are measured before information is provided, they may also be useful to capture heterogeneous effects of providing information.

Our second set of outcomes measure perceptions of local democracy. Specifically, we employ three measures: satisfaction with deputies in parliament; extent to which deputies listen to what voters have to say; and responsiveness to the community. Again, we also create standardized and ICW indexes across these variables. We henceforth refer to this group of outcomes as "Local democratic appraisal." Because all these variables are measured before information is provided, they may also be useful to capture heterogeneous effects of providing information.

Our third set of outcomes capture contacting deputies. We ask respondents if they have contacted a deputy within the last year, before following up to ask why one would do so (even if they did not).

Our fourth set of outcomes measures political knowledge. In particular, we ask respondents both local and national political knowledge questions relating to deputies. For the local questions,

[8]Specifically, we will define the two relevance-weighted content indexes to only include: the content relating to committee memberships, leadership positions, and debates participated in when the respondent indicates that "The work you expect the candidate will do in the amending and approval of laws or the budget." is one of the three most important determinants of their vote choice; the content relating to local projects, number of transfers, and transfer value per capita when the respondent indicates that "The work you expect the candidate will do in lobbying Ministers to bring development projects or to increase the government transfers to his or her constituents." is one of the three most important determinants of their vote choice; all content variables when both are listed in the respondent's three most important determinants of their vote choice; and zero when neither are listed. For the case of zero, we will also include a separate indicator variable and its interaction with any other regressor that is interacted with the information treatment.

we ask: whether they know the coalition of their current incumbents (in our departments, all incumbents are from the same coalition); the name of any of their deputies; whether any deputy is from the same community as the respondent; whether any deputy is from the same village as the respondent; and whether any deputy is from the same ethnicity or religious sect as the respondent. For the national questions, we ask several true or false questions (which relate to the information that will subsequently be provided in the treatment): whether deputies serve on committees and amend laws (true); whether deputies amend and approve the national budget (true); and whether members are responsible for bringing ministry transfers and budgeted projects back to their departments (false). For each variable, we will code whether the respondent is correct. Again, we also create standardized and ICW indexes across these variables, both separately across local and national information and combined. We henceforth refer to this group of outcomes as "Political knowledge." Because all these variables are measured before information is provided, they may also be useful to capture heterogeneous effects of providing information.

Our fifth set of outcomes measure voter beliefs about the performance of their current incumbent standing for re-election and previous incumbents on five-point scales, before the information treatment is provided. First, to capture overall beliefs about the incumbent's performance we ask how well—on a five-point scale—the specific incumbent standing for re-election (who will be named) has done since elected in 2012. This key variable will be measured to measure voters' pre-treatment prior beliefs. Second, to capture relative comparisons, we ask how performance compares to the previous incumbents on a five-point scale. Third, we ask prospectively about how respondents think that current incumbent seeking re-election would do if re-elected. Fourth, we ask about how candidates from other parties would do. In each case "don't know" responses will be coded at the mid-level of the scale. Furthermore, for each of these variables, we elicit the strength of voters' assessment on a ten-point scale (from 1 ("not at all certain") to 10 ("completely certain"). Throughout, "don't know" responses to scales eliciting voter beliefs will be coded as 1 certainty, and "don't know" responses to scales eliciting vote intention certainty will be coded as 5 certainty.

Our sixth set of outcomes measure intended voting behavior, before the information treatment is provided. Here, we measure intention to turn out, vote intention (party/coalition and individual candidate), and certainty over vote intention. Again, we also create standardized and ICW indexes across vote intention and the belief variables in the previous paragraph (excluding certainty of beliefs). We henceforth refer to this group of outcomes as "Overall incumbent support."

The treatment leaflet is provided immediately after these questions. To assess treatment comprehension, we ask four factual questions about the information contained in the treatment of both

treated and untreated respondents.[9] These question could, in theory, be answered by politically-astute control respondents. Again, we create standardized and ICW indexes across these variables. We henceforth refer to this group of outcomes as "Treatment knowledge."

We also measure key outcomes after treatment delivery, including both new measures and some outcomes already elicited prior to treatment delivery. First, we ask the same voting intention questions again, as well as questions to validate whether voters indeed turned out. Second, to combat potential social desirability biases, we consider several behavior outcomes: willingness to receive a poster from their preferred party or candidate (post-treatment), and (if desired) any other party or candidate; willingness to request a visit from their preferred party or candidate (post-treatment) if they are elected, and (if desired) any other party or candidate if they are elected; and willingness to sign up to be contacted to express views to their preferred party or candidate (post-treatment) if they are elected, and (if desired) any other party or candidate if they are elected.[10] Third, we again elicit voter beliefs (and their uncertainty) about current, comparative, and prospective overall performance, as well as their knowledge of the role of legislators. In addition, we also ask more specific questions relating to the particular information contained in the leaflet. With the exception of prospective overall performance, which is only asked about in the baseline survey, these outcomes are elicited in both the baseline survey and the short post-election endline survey. The only difference between repeated measures is that we request actual vote choice in the endline survey (as opposed to voting intention in the baseline survey) and require respondents to text or call—which are not free—to register their interest in their elected deputy visiting their village or expressing their views to their deputy (in order to further increases the costliness of the behavioral outcomes).

We also create standardized and ICW indexes to capture "Overall post-treatment incumbent support" by combining the following post-treatment variables: overall incumbent performance evaluation (and change relative to pre-treatment beliefs); overall relative performance comparison (and change relative to pre-treatment beliefs); expectations of incumbent performance if re-elected (and change relative to pre-treatment beliefs); intention to vote for the incumbent (and change relative to pre-treatment vote intention); self-reported vote for the incumbent; and our baseline and endline behavioral measures of willingness to support the incumbent.

Our last set of survey-level outcomes examines broader electoral responses. First, we ask voters whether they coordinated together in response to the information. Second, we ask voters

[9] We also ask only treated voters about who they think provided the leaflet.

[10] These behavioral outcomes do not involve any deception: as our survey indicates, we will inform respondents that politicians will be approached on their behalf by our partner organization, LEGS Africa; this does not guarantee that politicians will respond to them (as this is beyond the control of this study).

about whether the incumbent or challenger parties (or their agents) responded specifically to the treatment information in any way. Third, we employ a list experiment to measure the extent of vote buying, in order to assess whether party electoral strategies change, even without explicitly mentioning the leaflets. Half the sample will be subject to a list experiment including incumbent vote buying as the omitted option from the list; vote buying by a challenger party will be omitted for the other half of the sample.

Finally, we will also examine polling station level turnout and incumbent politician vote share varies with our treatments. Because most villagers in treated villages will not actually be treated, these estimates are likely to be noisy. Nevertheless, it is possible that votes change enough to manifest at the polling station level, especially if there are informational spillovers within villages—a theoretically-interesting finding in its own right. In the endline survey we also ask about the extent to which voters discussed the information with others and coordinated their responses.

3.4.4 Baseline covariates

In addition to the outcomes described above, we measure a variety of background covariates (year of birth/age, gender, marital status, previous turnout, previous vote (party, coalition, candidate). We also use several questions to elicit voters' preference between national and local politicians, what they believe that representatives should do, and which factors are important in their vote choice. If these variables are not affected by access to education, they will be used to examine heterogeneous effects.

4 Specifications and hypotheses

4.1 First stage

We first seek to estimate whether the 2002 schooling reforms indeed increased educational attainment. Following the difference-in-differences designs of Duflo (2001) and Larreguy and Marshall (forthcoming), we leverage cross-cohort variation in access to a newly-built secondary school. Specifically, we implement the difference-in-differences design using baseline OLS specifications of the following form:

$$Schooling_{icvb} = \beta \left(Intensity_v \times Post_c \right) + \eta_c + \mu_v + \theta_e + \varepsilon_{icvb}, \quad (1)$$

where $Schooling_{icvb}$ is years of schooling attained by individual i in cohort c in village v, η_c and μ_v are respectively cohort and village fixed effects, and θ_e are survey enumerator fixed effects.[11] Given that village fixed effects are not required for identification, we will also consider simpler specifications without those fixed effects (beyond the interaction's lower-order terms) and using fixed effects for rural community—the lowest administrative level in Senegal—in place of village fixed effects if this first stage is under-powered. Throughout, standard errors are clustered by randomization block (i.e. above the village level). The vast majority of hypotheses that are clearly signed (e.g. hypothesis F1 below) will be tested using one-tailed tests, while hypotheses about which we lack clear expectations (e.g. hypothesis E12 below) will be tested using two-tailed tests; we designate whether the a test is one- or two-tailed below using "[1T]" or "[2T]". To adjust for any differences in the number of respondents sampled by village, observations will be weighted by the inverse of the number of respondents per village throughout.

$Intensity_v$ can take three possible values depending on the approach. First, as mentioned above, our primary approach defines $Intensity_v$ as $Secondary\ school\ built_v$—an indicator for villages within 6km of a secondary school built between 2002 and 2005. Second, our alternative approach following Larreguy and Marshall (forthcoming) and Larreguy and Liu (2017), defines $Intensity_v$ as either the share of students in the village that did not experience any secondary schooling out of those that are too old to be affected by the reform or an indicator for villages above and below the median prior secondary enrollment rate in the sample. This approach lacks precision in the exact source of additional education, but may better capture the broader incentives and environmental factors affecting schooling decisions. Provided that the results are robust to potential parallel trend violations, this approach may be used instead of or in addition to the primary approached above. The results below will be estimated using all three measures of intensity when they deliver a strong first stage that plausibly satisfies the parallel trends assumption.[12]

As with $Intensity_v$, we also consider two definitions of $Post_c$. In one approach, $Post_c$ is an indicator for being young enough to be *fully* affected by the 2002 reform. More specifically, in this case, $Post_c$ indicates that an individual was younger than the starting secondary-school age when the reform was implemented. In the second approach, $Post_c$ is a continuous measures that also captures those *partially* affected by the 2002 reform. In particular, $Post_c$ captures the share of an individual middle-school years taking place after the reform (see Croke et al. 2016). On theoretical grounds, we do not find either of these approaches more compelling; we will ultimately examine both and focus on whichever provides a stronger first stage (as measured by the first stage

[11] The lower level interaction terms are absorbed by the fixed effects.

[12] Although they may substantially reduce precision, we will examine robustness checks such as village-specific time trends to assess this.

F statistic).

In any of these cases, we expect to find that:

F1 Access to schooling increases schooling (see above), i.e. $\beta > 0$ in equation (1). [1T]

We will also create indicators for different levels of schooling to examine the following hypotheses establishing which levels of schooling are affected by the reforms:

F2 Access to schooling increases incomplete primary schooling, complete primary schooling, incomplete secondary schooling, complete secondary schooling, and higher education, i.e. $\beta > 0$ in equation (1). [1T]

We expect the largest increases in schooling to occur at the secondary level, although some individuals may remain in primary school because they know that they will have the opportunity to continue on to secondary school (e.g. Croke et al. 2016). Larreguy and Liu (2017) have also previously found that increased access to middle school in Senegal led to a differential increase in remedial primary schooling in areas previously undeserved but had little differential effect on middle school and beyond. As they clarify, this does not imply that the school reform had no effect on middle school, but simply that such an effect was not differential across areas with varying baselines of middle-school completion.

4.2 Primary hypotheses

We now detail the specifications and our expectations for our primary hypotheses.

4.2.1 Effects of access to education

We first investigate the effects of education, absent the influence of providing information. We thus test the extent to which education increases political knowledge and engagement. (Note that this cannot utilize the panel structure of the design.) To do so, we adopt two general specifications: a reduced form difference-in-differences; and a instrumental variables strategy. As above, the difference-in-differences specification entails estimating the following reduced form OLS regression:[13]

$$Y_{icvb} = \beta(Intensity_v \times Post_c) + \eta_c + \mu_v + \theta_e + \varepsilon_{icvb}, \tag{2}$$

[13]The lower-order interaction terms are absorbed by the fixed effects.

where Y_{icvb} is an outcome discussed below. For the instrumental variables specifications, we instead use $Intensity_v \times Post_c$ to instrument for attained education level $Schooling_{icvb}$ and thus estimate the following structural equation using 2SLS:

$$Y_{icvb} = \beta Schooling_{icvb} + \eta_c + \mu_v + \theta_e + \varepsilon_{icvb}. \tag{3}$$

Equation (3) identifies the local average treatment effect of schooling, among voters that only attained additional grades of schooling due to post-2002 secondary school construction. For polling station level outcomes, we substitute the i and v subscripts for a p subscript. Provided that we can obtain the assignment of villages to polling stations, we will assign villages and their treatment assignment accordingly. If this is not possible, we will assign villages and their treatment assignment according to their nearest polling station. In either case, we will also interact treatment effects with the percentage of voters at the polling station that received the treatment.

In line with the previous literature, and to establish the baseline impacts of education required to help differentiate between between the complements and substitutes motivation for this study, we test the following hypotheses relating to voter engagement using different sets of outcomes:

E1 Access to schooling, and schooling itself, increase political engagement outcomes (both the individual variables and indexes defined above), i.e. $\beta > 0$ in equations (2) and (3). [1T]

E2 Access to schooling, and schooling itself, increase local democratic appraisal outcomes (both the individual variables and indexes defined above), i.e. $\beta > 0$ in equations (2) and (3). [1T]

E3 Access to schooling, and schooling itself, increase the probability of contacting a deputy or turning out to vote (see above), i.e. $\beta > 0$ in equations (2) and (3). [1T]

E4 Access to schooling, and schooling itself, increase political knowledge outcomes (both the individual variables and indexes defined above), i.e. $\beta > 0$ in equations (2) and (3). [1T]

E5 Access to schooling, and schooling itself, increase treatment knowledge outcomes (both the individual variables and indexes defined above), i.e. $\beta > 0$ in equations (2) and (3). [1T]

For E1-E3, as in Larreguy and Liu (2017), we expect that the effect will be positive because Senegalese democracy is relatively competitive and inclusive (in contrast with Croke et al. 2016). We make no unconditional prediction as to how education influences perceptions of democracy. Hypotheses E4 and E5 represent key possible mechanisms, where an increase in political knowledge is likely to imply that our treatment information is easier to follow for educated voters (consistent

with the complements and substitutes arguments), and where an increase in knowledge of the specific information contained within the treatment would support the substitutes argument. Although these are hypotheses are expressed as one-sided tests, failing to reject the null hypothesis would also be informative about our most novel tests. In this sense, these tests are principally used to inform the interpretation of the electoral accountability results below.

With respect to electoral accountability, and especially if E4 and E5 hold, we intend to use heterogeneous effects to examine whether educated voters are more likely to reward incumbents performing well absent our informational treatment. To do so, we also estimate interactive specifications of the following form:

$$Y_{icvb} = \beta_1 (Intensity_v \times Post_c) + \beta_2 (Intensity_v \times Post_c \times Content_b) + \eta_c + \mu_v + \theta_e + \varepsilon_{icvb}, \quad (4)$$

$$Y_{icvb} = \beta_1 Schooling_{icvb} + \beta_2 (Schooling_{icvb} \times Content_b) + \eta_c + \mu_v + \theta_e + \varepsilon_{icvb}, \quad (5)$$

where $Content_b$ are our district-specific measures of politician performance. Our six indicators will be entered separately, together, and in the form of the three indexes described above.

E6 Access to schooling, and schooling itself, increase the belief that the incumbent standing for re-election is performing well overall, and will perform well overall in future if re-elected, as levels of incumbent performance (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

E7 Access to schooling, and schooling itself, increase the belief that the incumbent standing for re-election is performing better than previous incumbents as levels of performance difference (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

E8 Access to schooling, and schooling itself, increase the belief that politicians other than the incumbent would perform well as levels of previous performance (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

E9 Access to schooling, and schooling itself, increase the certainty of voter beliefs about how current and previous incumbents have performed and will perform, i.e. $\beta > 0$ in equations (2) and (3). [1T]

E10 Access to schooling, and schooling itself, increase intention to vote for, actual votes for (at the individual and polling station levels), and engage in costly action to support incumbents as levels of incumbent performance (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

E11 Access to schooling, and schooling itself, increase intention to vote for, actual votes for (at the individual and polling station levels), and engage in costly action to support incumbents as levels of performance difference (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

E12 Access to schooling, and schooling itself, increase overall incumbent support (defined above), as levels of incumbent performance (defined above) increase, i.e. $\beta_2 > 0$ in equations (4) and (5). [1T]

These hypotheses further test whether education is itself sufficient to support electoral accountability without also providing voters with information. For the electoral accountability specifications, we will include turnout and party of vote choice at the previous election fixed effects as additional controls to potentially increase precision by exploiting variation in education among voters that initially exhibited the same turnout behavior and supported the same party.

Finally, to inform our subsequent analyses, we examine how education affects which issues drive vote preferences over candidates—potentially a key mechanism driving differences in the voting behavior between educated and uneducated voters. In particular, we test whether education increases preferences for, among other features, candidates that focus on national legislation or for candidates who work more on bringing transfers and development projects to their constituents. Specifically we use a series of to capture the indicators to capture the nine factors (of which voters may choose at most three) that respondents list as mattering most to them in terms of determining their vote choice:

E13 Access to schooling, and schooling itself, influences the factors that voters deem important in determining how they vote, i.e. $\beta_2 \neq 0$ in equations (4) and (5). [2T]

This hypothesis is exploratory, and we thus do not offer a specific prediction of the direction of the effect.

4.2.2 Effects of information provision

We identify the effects of information on various outcomes by leveraging within-block variation in treatment assignment by first estimating saturated specifications of the form:

$$\begin{aligned} Y_{icvb} &= \beta_1 Duties_v + \beta_2 Incumbent_v + \beta_3 Benchmark_v + \beta_4 \left(Incumbent_v \times Duties_v\right) \\ &\quad + \beta_5 \left(Benchmark_v \times Duties_{cv}\right) + \xi_b + \theta_e + \varepsilon_{icvb}, \end{aligned} \tag{6}$$

where ξ_b are randomization block fixed effects. To increase the design's power (especially likely to hold if $\beta_1 = 0$, $\beta_4 = 0$, and $\beta_5 = 0$), we will also pool the $Duties_v$ treatment with the pure control condition to estimate the following simpler specifications:

$$Y_{icvb} = \beta_1 Incumbent_v + \beta_2 Benchmark_v + \xi_b + \theta_e + \varepsilon_{icvb}. \tag{7}$$

Furthermore, if $\beta_1 = \beta_2$ in equation (7), we will further collapse the baseline treatment specification by pooling the incumbent and benchmark treatments as a single information treatment:

$$Y_{icvb} = \beta Performance_v + \xi_b + \theta_e + \varepsilon_{icvb}. \tag{8}$$

For polling station level outcomes in the above general specifications, substitute the i and v subscripts for a p subscript. In each of the three preceding equations, we will include pre-treatment controls relating to the outcome as a robustness check designed to increase efficiency.

To validate that the treatments operate as expected, we first test whether:

I1 The incumbent and benchmark treatments increase the treatment knowledge outcomes corresponding to each treatment (see above), i.e. $\beta_1 > 0$ and $\beta_2 > 0$ in equation (7) and $\beta > 0$ in equation (8). [1T]

I2 The duties treatment increases the corresponding treatment comprehension outcomes and the political knowledge outcomes asked after treatment delivery (see above), i.e. $\beta_1 > 0$ in equation (6). [1T]

To understand how electoral accountability will be manifested in this particular context, we first assess how our information affects voter beliefs about incumbent and challenger candidates. To do so, we will also leverage the power provided by repeating questions pre- and post-treatment and our panel design—this allows us to use first differences to remove baseline differences across voters, e.g. the difference between the post-treatment measure of perceived incumbent performance and its pre-treatment analog.[14] Without knowing the distribution of prior beliefs in advance, it is hard to predict whether voters will positively or negatively update their beliefs about politicians upon receiving our information (e.g. Arias et al. 2017*b*). On the basis that most current incumbents have outperformed previous incumbents, we tentatively anticipate that:

[14]Due to the risk that control respondents may become frustrated by the repetition of this questions without an intervening treatment, we will use pre-treatment responses for posteriors and set the difference to zero for all control respondents as robustness checks.

I3 The incumbent and benchmark treatments increase the belief, and change in the belief, that the incumbent standing for re-election is performing well, i.e. $\beta_1 > 0$ and $\beta_2 > 0$ in equation (7) and $\beta > 0$ in equation (8). [1T]

I4 The incumbent and benchmark treatments decrease the belief, and change in the belief, that politicians other than the incumbent standing for re-election would perform well, i.e. $\beta_1 < 0$ and $\beta_2 < 0$ in equation (7) and $\beta < 0$ in equation (8). [1T]

For hypothesis I3 and subsequent hypotheses referring to how well the incumbent is performing, our outcomes will be voters' posterior perception of performance, the difference between posterior (post-treatment and post-election) and prior perceptions of performance, and more specific posterior beliefs about performance along particular dimensions relating to the treatment information. Nevertheless, because we do not know for sure how our information relates to voters' prior beliefs; accordingly, it is possible that the signs of I3 and I4 may be reversed if voters possess optimistic prior beliefs.

Less ambiguously, we expect information to increase the certainty of voters' beliefs. Although information does not necessarily increase certainty in all models of belief updating (although in the case of Normal learning it does), this expectations is particularly reasonable in the Senegalese context where voters are poorly informed about parliamentary politics and are thus likely to have especially weak prior beliefs:

I5 The incumbent and benchmark treatments increase the certainty, and change in certainty, of voter beliefs about how incumbents and challengers have and will perform, i.e. $\beta_1 > 0$ and $\beta_2 > 0$ in equation (7) and $\beta > 0$ in equation (8). [1T]

Moreover, because a deputy standing for re-election's performance generally exceeds a previous incumbent's performance benchmark, we expect to find that:

I6 Relative to receiving the incumbent information only, voters receiving the benchmark treatment are more likely to believe, or become more likely to believe, that the incumbent standing for re-election is performing well, i.e. $\beta_1 < \beta_2$ in equation (7). [1T]

I7 Relative to receiving the incumbent information only, voters receiving the benchmark treatment are less likely, or become less likely, to believe that politicians other than the incumbent standing for re-election would perform well, i.e. $\beta_1 > \beta_2$ in equation (7). [1T]

However, regardless of the direction of updating, we test for whether information can, on its own, support electoral accountability. If voters use the information to hold politicians to account, we should expect to find that changes in beliefs translate into voting behavior such that:

I8 If the incumbent and benchmark treatments increase (decrease) the belief, and change in the belief, that the incumbent standing for re-election is performing well, then incumbent and benchmark treatments will increase (decrease) intention to vote for, change in intention to vote for, actual votes for (at the individual and, when applicable polling station, levels), and engage in costly action to support incumbents, i.e. $\beta_1 > (<)0$ and $\beta_2 > (<)0$ in equation (7) and $\beta > (<)0$ in equation (8). [1T]

I9 Relative to receiving the incumbent information only, voters receiving the benchmark treatment are more likely to intend to vote for, increase in their intention to vote for, actually vote for (at the individual and, when applicable polling station, levels), and engage in costly action to support the incumbent, i.e. $\beta_1 < \beta_2$ in equation (7). [1T]

Furthermore, we expect the effects of our information treatments vary systematically with voter prior beliefs and the content of the information received. Accordingly, we estimate interactive regressions of the following forms:

$$\begin{aligned} Y_{icvb} &= \beta_1 Incumbent_v + \beta_2 Benchmark_v + \beta_3 X_{icv} + \beta_4 \left(Incumbent_v \times X_{icv}\right) \\ &\quad + \beta_5 \left(Benchmark_v \times X_{icv}\right) + \xi_b + \theta_e + \varepsilon_{icvb}, \qquad (9) \\ Y_{icvb} &= \beta_1 Information_v + \beta_2 X_{icv} + \beta_3 \left(Information_v \times X_{icv}\right) + \xi_b + \theta_e + \varepsilon_{icvb}. \qquad (10) \end{aligned}$$

where X_{icv} is either a measure of prior beliefs or treatment content. If voters behave as Bayesians, we expect to find that:

I10 The effect of the incumbent and benchmark treatments on the belief, and change in the belief, that the incumbent standing for re-election is performing well and intention to vote for, change in intention to vote for, actual votes for (at the individual and, when applicable polling station, levels), and engage in costly action to support incumbents is increasing in incumbent performance and the performance difference (both defined above), i.e. $\beta_4 > 0$ and $\beta_5 > 0$ in equation (9) and $\beta_3 > 0$ in equation (10), and decreasing in previous performance (defined above), i.e. $\beta_4 < 0$ and $\beta_5 < 0$ in equation (9) and $\beta_3 > 0$ in equation (10). [1T]

I11 The effect of the incumbent and benchmark treatments on intention to vote for, change in intention to vote for, actual votes for (at the individual and, when applicable polling station, levels), and engage in costly action to support incumbents is decreasing in the posterior belief that the incumbent is performing well, i.e. $\beta_4 > 0$ and $\beta_5 > 0$ in equation (9) and $\beta_3 > 0$ in equation (10), and decreasing in previous performance (defined above), i.e. $\beta_4 < 0$ and $\beta_5 < 0$ in equation (9) and $\beta_3 > 0$ in equation (10). [1T]

I12 The magnitude of the effect of the incumbent and benchmark treatments on the belief, and change in the belief, that the incumbent standing for re-election is performing well and intention to vote for, change in intention to vote for, actual votes for (at the individual and, when applicable polling station, levels), and engage in costly action to support incumbents is decreasing in the certainty of a respondent's prior beliefs about how well the incumbent is performing, i.e. $\beta_4 < (>)0$ and $\beta_5 < (>)0$ in equation (9) when $\beta_1 < (>)0$ and $\beta_2 < (>)0$, and $\beta_3 < (>)0$ in equation (10) when $\beta_1 > (<)0$. [1T]

Hypotheses I10 and I11 imply that support for the incumbent is increasing in the extent to which the information is positive and the extent to which prior beliefs are negative, while hypothesis I12 indicates that the effects of information (in any direction) are largest for those with the least prior certainty. To further distinguish incumbent performance from the performance difference, both sets of interactions will be included simultaneously.[15] Hypothesis I12 relies on some degree of non-linearity reflecting the existence of an empirically-obtained point where the marginal effect on incumbent support becomes smaller.

To understand which parts of the treatment drive the results, we further examine the heterogeneous effects of subcomponents of the information provided on the posterior beliefs relating to the specific subcomponents as well as the overall measure specified in I10. In particular, for treatment content we will examine our six quantitative indicators of performance separately, together, and in the form of two indexes. We will further interact these components with voters' elicited preferences for nationally- versus locally-oriented deputies to test whether nationally-oriented voters are more responsive information about commissions and participation in parliamentary debate than local projects and transfers (although of course all are likely to support national and local effectiveness, but to different degrees).

Returning to the saturated specification in equation (6), the information treatment enables us to test whether an understanding of the political system is required for voters to be able to use performance information to hold politicians to account. It is possible that even while voters understand the performance metrics provided, they do not know how these relate to the responsibilities of their deputies. To test whether providing information on responsibilities is a necessary condition for accountability we test the following hypotheses:

I13 The information treatment accentuates the magnitudes of the effects posited in hypotheses I3-I12, e.g. $|\beta_2| < |\beta_2 + \beta_4|$ and $sign(\beta_2) = sign(\beta_4)$, and $|\beta_3| < |\beta_3 + \beta_5|$ and $sign(\beta_3) = sign(\beta_5)$, in equation (6) for hypotheses I3-I9. [1T]

[15] This may be hard to meaningfully estimate because the correlation between the standardized indexes of these two variables is relatively high (0.82).

We will also test these hypotheses by pooling the incumbent and benchmark performance information treatments.

4.2.3 Interaction between education and information provision

To fully test whether education and information provision ultimately serve as complements or substitutes for electoral accountability, we estimate the following specifications:

$$\begin{aligned} Y_{icvb} &= \beta_1 Intensity_v + \beta_2 Incumbent_v + \beta_3 Benchmark_v + \beta_4 (Incumbent_v \times Intensity_v) \\ &\quad + \beta_5 (Benchmark_v \times Intensity_v) + \beta_6 (Intensity_v \times Post_c) \\ &\quad + \beta_7 (Incumbent_v \times Post_c) + \beta_8 (Benchmark_v \times Post_c) \\ &\quad + \beta_9 (Incumbent_v \times Intensity_v \times Post_c) \\ &\quad + \beta_{10} (Benchmark_v \times Intensity_v \times Post_c) + \eta_c + \xi_b + \theta_e + \varepsilon_{icvb}, \qquad (11) \\ Y_{icvb} &= \beta_1 Intensity_v + \beta_2 Performance_v + \beta_3 (Performance_v \times Intensity_v) \\ &\quad + \beta_4 (Performance_v \times Post_c) + \beta_5 (Intensity_v \times Post_c) \\ &\quad + \beta_6 (Performance_v \times Intensity_v \times Post_c) + \eta_c + \xi_b + \theta_e + \varepsilon_{icvb}. \qquad (12) \end{aligned}$$

We adopt a difference-in-differences approach with block fixed effects in order to be able to identify the baseline information treatment effects. However, to potentially increase power, we will also include village fixed effects in analogous interactive specifications building on equations (2) and (3) (at the cost of absorbing lower-order treatment variables). Analogous specifications allowing for partial eligibility, the intensity approach, and using instrumental variables will also be estimated for all hypotheses below, but are omitted for brevity.[16]

We first set about testing whether education complements or substitutes for information by examining whether educated or uneducated respondents learn more from the information provided:

C1 If education complements (substitutes for) the incumbent and benchmark treatments, the effect of incumbent and benchmark treatments on treatment knowledge outcomes (defined above) and intention to turn out will be increasing (decreasing) in access to schooling, i.e. $\beta_9 > (<) 0$ and $\beta_{10} > (<) 0$ in equation (11) and $\beta_6 > (<) 0$ in equation (12). [1T]

Turning to beliefs and support for the incumbent, education will accentuate the effects of information if education and information provision are complements and attenuate the effects of

[16] We expect to have less power when allowing for partial eligibility and the intensity approach, since the number of parameters that we will be estimating will increase.

information if they are substitutes. Accordingly, we build on hypotheses in the previous subsection by predicting that:

C2 If education complements (substitutes for) information provision, access to education accentuates (attenuates) the magnitudes of the effects posited in hypotheses I3-I13, e.g. for hypotheses I3-I9, $\beta_9 > (<)0$ in equation (11) if $\beta_1 > 0$ in equation (7) and $\beta_{10} > (<)0$ in equation (11) if $\beta_2 > 0$ in equation (7). [1T]

The sequence of hypotheses contained within hypothesis C2 complements the prior tests designed to tease out whether education and information provision are complements are substitutes, e.g. whether education increases knowledge, participation, and responses to performance metrics absent information provision, and whether the uneducated can process and update from the information provided. These tests are described in greater detail in the previous subsection.

As in the case of the information treatment hypotheses in the previous subsection, information about incumbent responsibilities may also play a role in supporting electoral accountability, especially if education complements information provision (because such information is unlikely to be necessary if education substitutes for performance information). To investigate this, we interact all variables in equations (7) and (8) with $Information_v$ (we omit this specification due to the large number of variables). This allows us to test the following hypotheses regarding whether information and education combine or oppose in complementary or substituting for information provision:

C3 If information complements (substitutes) for education, access to education accentuates (attenuates) the magnitudes of the effects posited in the hypotheses contained within hypothesis C2. [1T]

4.3 Political responses to the information provided

To examine whether low-scale information provision can induce voter coordination, we use our endline survey to test whether information, or its interaction with education, affects discussion of the information with others, and whether such discussion affected either the respondents' vote or the vote of others. In each case we test for whether information, whether positively or negatively updating voter beliefs increases coordination among voters:

P1 The incumbent and benchmark treatments increase measures of voter coordination, i.e. $\beta_1 > 0$ in equation (7) and $\beta > 0$ in equation (8). [1T]

P2 If education complements (substitutes for) the incumbent and benchmark treatments, the effect of the incumbent and benchmark treatments on measures of voter coordination will be increasing (decreasing) in access to schooling, i.e. $\beta_9 > 0$ and $\beta_{10} > 0$ in equation (11) and $\beta_6 > 0$ in equation (12). [1T]

Similarly, we examine the effects of information provision, and its interaction with the education access of the village, on incumbent and challenger party responses. Although our information is provided on a small scale, one party may perceive itself as disadvantaged by the information provided—especially that they believe it reached enough people; accordingly, at least one party may respond. The information could also induce a direct reaction, or an indirect reaction responding to the action of the other party, from parties that benefit from the information. Accordingly, we examine whether:

P3 The incumbent and benchmark treatments increase incumbent and challenger responses and vote buying, i.e. $\beta_1 > 0$ in equation (7) and $\beta > 0$ in equation (8).[1T]

However, it is not obvious *a priori* whether incumbent responses are increasing or decreasing in the level of performance reported or level of education of respondents:

P4 The effect of incumbent and benchmark treatments on incumbent and challenger responses and vote buying varies with levels of incumbent performance and performance difference (defined above), i.e. $\beta_4 \neq 0$ and $\beta_4 \neq 0$ in equation (9) and $\beta_3 \neq 0$ in equation (10). [2T]

P5 If education complements (substitutes for) the incumbent and benchmark treatments, the effect of the incumbent and benchmark treatments on incumbent and challenger responses and vote buying will be increasing (decreasing) in access to schooling, i.e. $\beta_9 > 0$ and $\beta_{10} > 0$ in equation (11) and $\beta_6 > 0$ in equation (12). [2T]

4.4 Further tests

We also intend to examine heterogeneous effects, in order to understand which types of individuals are most affected by education and information provision. We do so with respect to pre-treatment covariates—those asked before the information treatment is provided and those not affected by the schooling reform. In particular, this entails examining how the effects of education and information provision on electoral accountability vary with the following groups of variables (and their associated indexes): engagement with politics, local democratic appraisal, contacting politicians,

political knowledge, previous voting behavior, beliefs about the role of deputies, and baseline covariates. To do so, further interaction the specifications above with these variables. Since the goal of estimating these effects is primarily descriptive (which may be policy-relevant), we do not propose specific hypotheses.

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A Appendix

A.1 Treatment leaflets

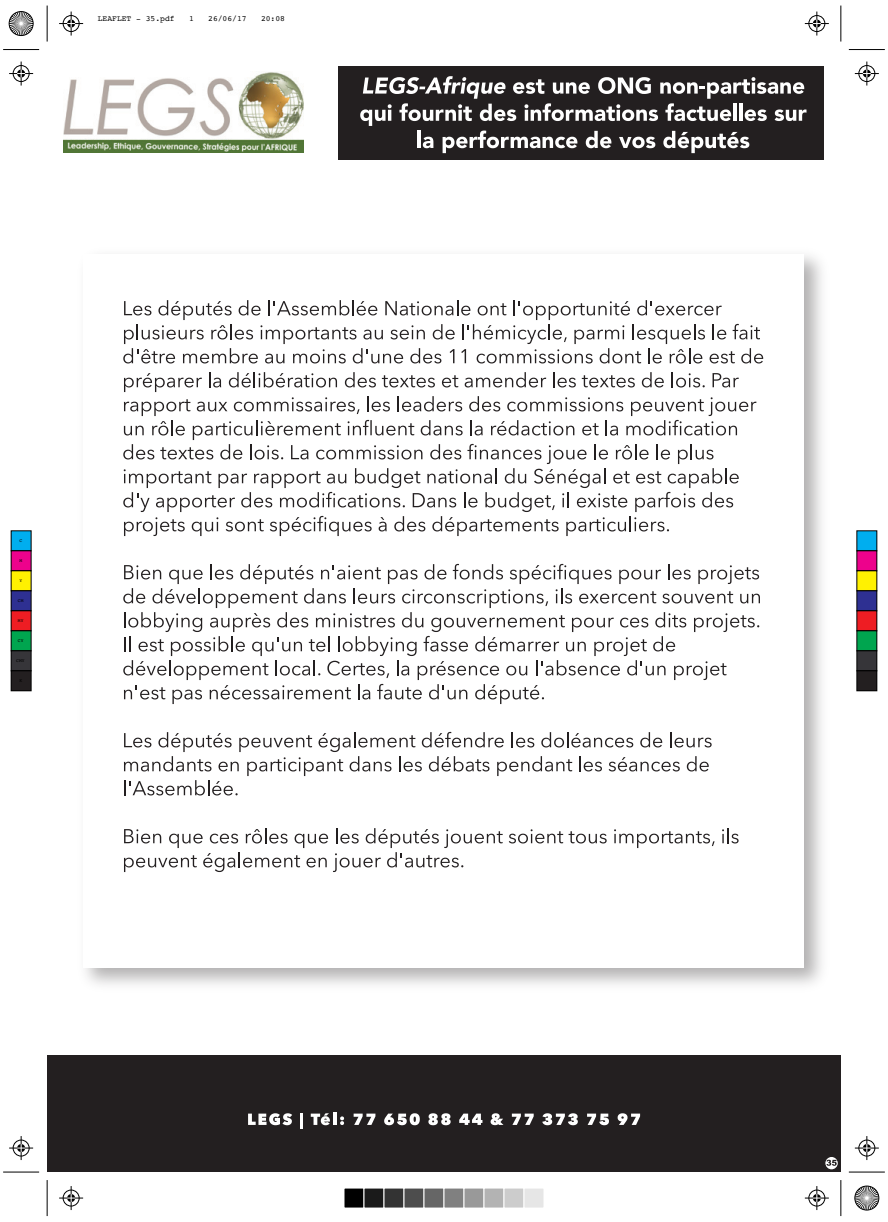

Figure 5: Example of “duties” treatment

Figure 6: Example of "incumbent" treatment in Oussouye

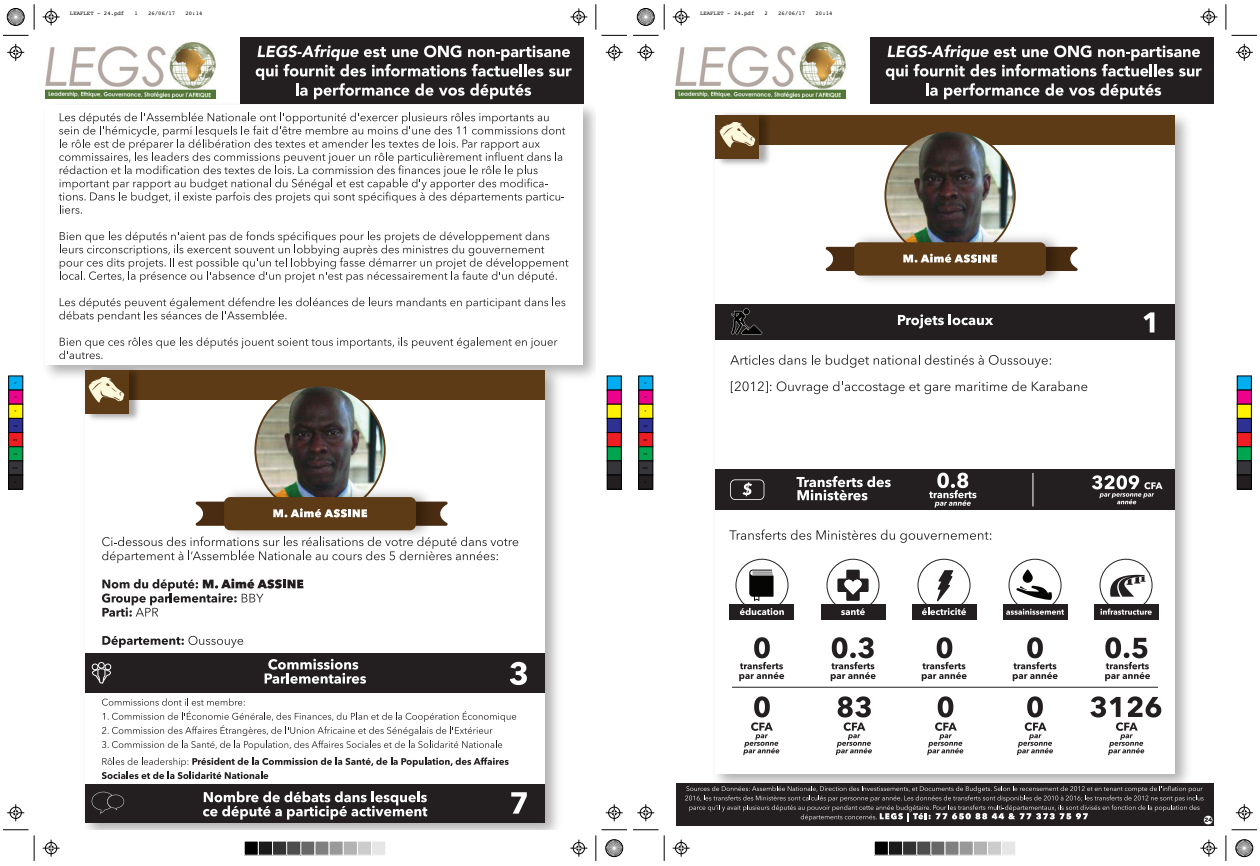

Figure 7: Example of "duties + incumbent" treatment in Oussouye

Figure 8: Example of "benchmark" treatment in Oussouye

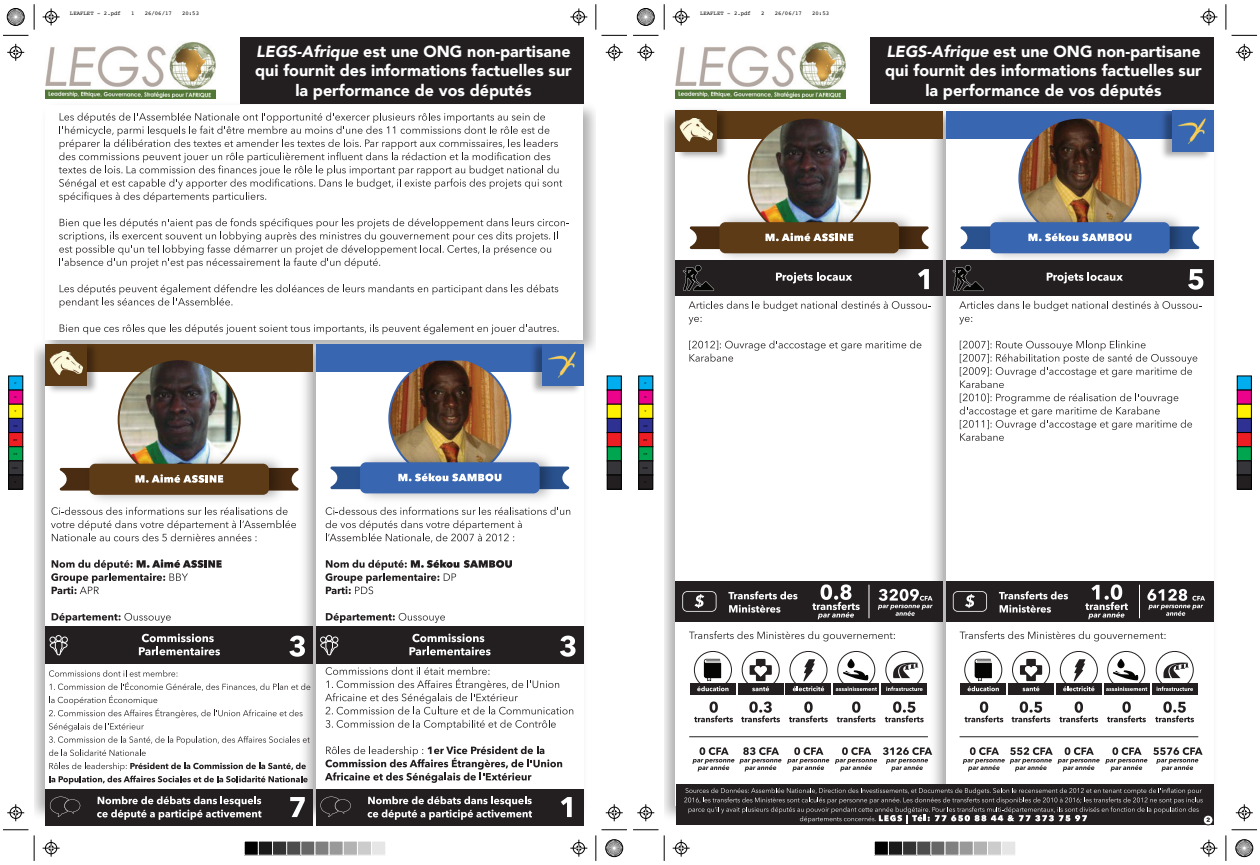

Figure 9: Example of "duties + benchmark" treatment in Oussouye

A.2 Survey instruments

A.2.1 Baseline

I will now ask you few questions to assess if you satisfy all the eligibility requirements.

Question: Were you born in this village, or have you lived in this village since you were young [pre-primary school]? Value label: 0=No, 1=Yes, 99=Don't know; 98=refused to answer. [Double check that the individual was born in village or has lived there since before primary schooling age]

Question: Which year were you born? Value label: 0-2000; 99=Don't know; 98=Refused to answer [Double check that the individual was born between 1979 and 1997]

Question: Approximately how old are you? Value label: 0-100; 99=Don't know; 98=Refused to answer [Double check that the individual is between 20 and 38 years old]

Question: Are you a registered voter? Value label: 0=No, 1=Yes; 99=Don't know; 98=Refused to answer [Double check that the individual is registered voter]

Question: Do you have a cellphone that we could contact you on? [require correct number of digits] Value label: 0=No, 1=Yes; 99=Don't know; 98=Refused to answer [Double check that the individual has a cellphone number that we could contact him or her on.]

[If the individual does not satisfy one or more of the eligibility requirements, explain to him or her that.] I am sorry but you do not satisfy one or more of the eligibility requirements to be part of this study. Thanks for your time and have a wonderful day.

[If the individual satisfies all eligibility requirements, inquire about his or her interest to be part pf the study.] Question: You satisfy all the eligibility requirements; may I interview you? Value label: 0=No, 1=Yes; 99=Don't know; 98=Refused to answer [End survey, if there is no consent.]

We would like to start by asking you some questions about yourself.

Question: What is your first name? Value label: Response: _; 99=Don't know; 98=Refused to answer

Question: What is your surname? Value label: Response: _; 99=Don't know; 98=Refused to answer

Question: What is your gender? Value label: 1=Male; 2=Female; 98=Refused to answer

Question: What is your marital status? Value label: 1=Single/never married; 2=Married/Monogamous union; 3=Man in polygamous union/marriage, 1 wife; 4=Man in polygamous union/marriage, 2 wives; 5=Man in polygamous union/marriage, 3 or more wives; 6=Woman in polygamous union/marriage, first wife; 7=Woman in polygamous union/marriage, second wife; 8=Woman in polygamous union/marriage, third or higher order wife; 9=Separated/divorced/spouse absent; 10=Widowed; 98=Refused to answer; 99=Don't know

Question: What is your highest educational attainment in terms of grades or levels of schooling completed? Value label: 1=None; 10=Informal schooling only (including Koranic schooling); 20=Pre-school; 31=Primary, initiation; 32=Primary, grade 1; 33=Primary, grade 2; 34=Primary, grade 3; 35=Primary, grade 4; 36=Primary, grade 5; 41=Secondary, grade 6; 42=Secondary, grade 7; 43=Secondary, grade 8; 44=Secondary, grade 9; 45=Secondary, grade 10; 46=Secondary, grade 11; 47=Secondary, grade 12; 51=Higher, year 1; 52=Higher, year 2; 53=Higher, year 3 (Bachelors); 54=Higher, year 4 (Masters); 55=Higher, year 5 or more; 99=Don't know; 98=Refused to answer

Question: Can you tell us the cellphone number where you said that we can reach you on for a very short follow survey in around a month? Value label: Response: _; 98=Refused to provide phone number [End survey if unwilling to provide phone number.]

Now I'd like to ask you a few questions about public affairs.

Question: How often do you talk about political issues with your friends, family, neighbors, or other members of the community? [Read out options] Value label: 1=Never; 2=Occasionally; 3=Frequently; 4=Very Frequently, 99=Don't know; 98=Refused to answer.

Question: How interested would you say you are in public affairs? [Read out options] Value label: 0=Not at all interested, 1=Not very interested, 2=Somewhat interested, 3=Very interested, 99=Don't know; 98=Refused to answer.

Question: How often do you usually get political news from the radio? [Read out options] Value label: 0=Never, 1=Less than once a month, 2=Once a month, 3=Once every two weeks, 4=Once a week, 5=A few times a week, 6=Every day, 99=Don't know; 98=Refused to answer.

Question: How often do you usually get political news from television? [Read out options] Value label: 0=Never, 1=Less than once a month, 2=Once a month, 3=Once every two weeks, 4=Once a week, 5=A few times a week, 6=Every day, 99=Don't know; 98=Refused to answer.

Question: How often do you usually get political news from newspaper? [Read out options] Value label: 0=Never, 1=Less than once a month, 2=Once a month, 3=Once every two weeks, 4=Once a week, 5=A few times a week, 6=Every day, 99=Don't know; 98=Refused to answer.

Now I'd like to ask you a few questions about how democracy and politics works in this department.

Question: Overall, how satisfied are you with the members of the National Assembly? [Read out options] Value label: 1=Not at all satisfied, 2=Not very satisfied, 3=Fairly satisfied, 4=Very satisfied, 99=Don't know; 98=Refused to answer.

Question: How much of the time do you think that the members of the National Assembly try their best to listen to what people like you have to say? [Read out options] Value label: 0=Never 1=Only sometimes, 2=Often, 3=Always, 99=Don't know; 98=Refused to answer.

Question: How likely is it that, if you contact the members of the National Assembly about a developmental need of your community, they will be responsive and assist you? [Read out options] Value label: 1=Very unlikely, 2=Unlikely, 3=Likely, 4=Very likely, 99=Don't know; 98=Refused to answer.

Question: During the past year, how often have you contacted a member of the National Assembly about some important problem or to give them your views? [Read out options] Value label: 0=Never, 1=Only once, 2=A few times, 3=Often, 99=Don't know; 98=Refused to answer.

Question: In general, why would you contact a representative in the National Assembly? [read out options, can choose more than one] Value label: 1=To articulate which policies that you would like to see implemented, 2=To request a personal favor, 3=To let him or her know that you are following what they are doing for the community, 4=To let him or her know that you are not happy with the way things are going in your community, 5=There is no purpose; 99=Don't know; 98=Refused to answer.

Let me now ask you a few questions about the last elections for representatives in the National Assembly in 2012. Again, everything you tell me is confidential and will only be used for research purposes. We cannot and will not share anything you tell me today with anyone outside our research team with your name attached to it.

Question: Understanding that some people were unable to vote in the last election for members of the National Assembly which were held in July 2012, which of the following statements is true

for you? [Read options] Value label: 1=You voted in the elections; 2=You decided not to vote; 3=Not registered or eligible to vote; 4=Could not reach polling station; 5=You were prevented from voting;6=You did not have time to vote; 7=You did not vote because you could not find your name in the voters' register; 8=Did not vote for some other reason; 99=Don't Know; 98=Refused to answer.

Question: Can you tell me the coalition or party of the candidate for representative in the National Assembly that you voted for in 2012? Value label: 1=Benno Bokk Yakkar, 2=RES les verts, 3=DC, 4=Petaw, 5=PVD, 6=MPSFax, 7=SPD, 8=PSA, 9=Salam, 10=Pencoo, 11=URD, 12=CAP21, 13=AJ PAD, 14=CPJE, 15=Bes Du Nakk, 16=Bokk Gis Gis, 17=And Taxawal, 18=PDS, 19=Lii Dal Na Xel, 20=Tekki 2012, 21=DSTC, 22=WA Senegal, 23=Leeral , 660=Parti Dmocratique Sngalais (PDS), 661=Parti Socialiste (PS), 662=Alliance des Forces du Progrs, 663=Alliance Pour la Rpublique, 664=Rewmi, 665=Union pour le Renouveau Dmocratique, 666=Front pour le Socialisme et la Dmocratie/Benno Jubbel, 667=Parti pour lIndpendance et le Travail, 668=Mouvement pour le Rassemblement Dmocratique Sngalais, 669=JEF JEL, 670=Ligue Dmocratique /Mouvement Populaire pour le Travail, 671 =RES, 672=RES les verts, 673=DC, 674=candidat indpendant, 9995=Autre, 9997=Not applicable, 98=Refus de rpondre, 99=Ne sait pas ;

Question: Can you tell me the name of the candidate for representative in the National Assembly that you voted for in 2012? Value label: Response: _; 5 =Don't know/forgot the name ; 99=Don't know; 98 =Refuse to respond

Now I'd like to ask you a few questions about the characteristics of your representative in the National Assembly.

Question: Can you tell me the party or coalition of your representatives [singular for Ranérou Ferlo and Oussouye] in the National Assembly? Value label: 1=Benno Bokk Yakkar, 2=RES les verts, 3=DC, 4=Petaw, 5=PVD, 6=MPSFax, 7=SPD, 8=PSA, 9=Salam, 10=Pencoo, 11=URD, 12=CAP21, 13=AJ PAD, 14=CPJE, 15=Bes Du Nakk, 16=Bokk Gis Gis, 17=And Taxawal, 18=PDS, 19=Lii Dal Na Xel, 20=Tekki 2012, 21=DSTC, 22=WA Senegal, 23=Leeral , 660=Parti Dmocratique Sngalais (PDS), 661=Parti Socialiste (PS), 662=Alliance des Forces du Progrs, 663=Alliance Pour la Rpublique, 664=Rewmi, 665=Union pour le Renouveau Dmocratique, 666=Front pour le Socialisme et la Dmocratie/Benno Jubbel, 667=Parti pour lIndpendance et le Travail, 668=Mouvement pour le Rassemblement Dmocratique Sngalais, 669=JEF JEL, 670=Ligue Dmocratique /Mouvement Populaire pour le Travail, 671 =RES, 672=RES les verts, 673=DC, 674=9995=Other, 9997=Not applicable, 9998=Refused to answer, 9999=Don't know

Question: Can you tell me the name of any of your representatives ["your representative" for Ranérou Ferlo and Oussouye] in the National Assembly? Value label: Response: _; 5 =Don't know/forgot the name ; 99 =Don't know; 98 =Refuse to respond

Question: Are any of your representatives in the National Assembly ["your representative" for Ranérou Ferlo and Oussouye] from the same commune or rural community as you? Value label: 0=No; 1=Yes; 98=Refused to answer, 99=Don't know

Question: Are any of your representatives in the National Assembly ["your representative" for Ranérou Ferlo and Oussouye] from the same village as you? Value label: 0=No; 1=Yes; 98=Refused to answer, 99=Don't know

Question: Are any of your representatives in the National Assembly ["your representative" for Ranérou Ferlo and Oussouye] from the same ethnic community or brotherhood as you? Value label: 0=No; 1=Yes; 98=Refused to answer, 99=Don't know

Now I'd like to ask you a few questions about the work of representatives in the National Assembly.

Question: What do you see as the main role of members of the National Assembly? [Do not read the options and record all mentioned below] Value label: 1=Propose laws in the National Assembly; 2=Pass laws in the National Assembly; 3=Serve on committees in the National Assembly; 4=Help decide how funding is allocated in the national budget; 5=Make petitions on behalf of the constituency; 6=Lobby ministers to bring government transfers to their constituencies; 7=Lobby ministers to bring development projects to their constituencies such as wells, roads, electrification, schools, health centers, etc.; 8=Follow up on the implementation of development projects in their constituencies; 9=Pay school fees, burial, wedding, health or other personal costs for individual constituents; 10=Bring donor projects/foreign aid to their constituencies; 95=Other; 99=Don't know; 98=Refused to answer.

The following set of questions are all based on the role that a member of the National Assembly plays under the Constitution of Senegal. Please just tell me whether you think each of the following statements is true or false.

Question: The members of the National Assembly serve in committees that draft and amend laws. Value label: 1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: The members of the National Assembly approve the national budget. Value label:

1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: The members of the National Assembly are responsible to bring government transfers and development projects to their constituencies. Value label: 1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: Next I will read you the case of two hypothetical representatives to the National Assembly and ask you about your relative perception of them. Case 1: The representative is characterized by working hard to amend and improve legislation and budget to improve the welfare of his constituents. Case 2: The representative is characterized by helping to solve daily problems in the communities in his constituency. Abstracting from your personal experience with your representative, which of these two representatives do you think that would be more responsive to a request for a development project by a community in his constituency requiring an intervention from the central government. Value label: 1=Case 1, 2=Case 2, 99=Don't know; 98=Refused to answer.

Now I'd like to ask you a few questions about your assessment of the work of your representative in the National Assembly.

Question: Overall, how good of a job do you think that [name of relevant deputy], one of your representatives to the National Assembly ["your representative" for Ranérou Ferlo and Oussouye], have done since they were elected in 2012? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: How do you think that the overall work of [name of relevant deputy] compares to how good of a job overall that your previous representatives [singular for Ranérou Ferlo, but not Oussouye] in office between 2007 and 2002 did? [Read out options] Value label: 1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: Overall, how good of a job do you think that [name of relevant deputy] would do if they were re-elected? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: Overall, how good of a job do you think that other candidates for deputy at this election would do if elected to the National Assembly? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Now, let me ask you a few questions about the upcoming election for representative in the National Assembly.

Question: When it comes to voting, what are the most important factors in determining which candidate for representative at the National Assembly you choose to vote for? I will read you a list of options and I want you to tell me the three most important factors and their order of importance. 1. The village or commune of the candidate. 2. The ethnicity or religion of the candidate. 3. The education or profession of the candidate. 4. The candidate's party. 5. The candidate's political experience. 6. The work you expect the candidate will do in the amending and approval of laws or the budget. 7. The work you expect the candidate will do in lobbying Ministers to bring development projects or to increase the government transfers to his or her constituents. 8. His or her campaign promises. 9. The gifts that she or he distributes around elections. Value label: 1-9 [up to 3]; 10=None.

Question: Understanding that some people might be unable to vote in the coming election for members of the National Assembly, do you intend to vote in the coming elections? Value label: 1=Yes, 2=No, 99=Don't know; 98=Refused to answer.

Question: [Remind respondent of confidentiality] (If the respondent answered yes to the previous question) Can you tell me the party or the coalition of the candidate for representative in the Na-

tional Assembly that you intend to vote for? Value label: 660=Parti Dmocratique Sngalais (PDS), 661=Parti Socialiste (PS), 662=Alliance des Forces du Progrs, 663=Alliance Pour la Rpublique, 664=Rewmi, 665=Union pour le Renouveau Dmocratique, 666=Front pour le Socialisme et la Dmocratie/Benno Jubbel, 667=Parti pour lIndpendance et le Travail, 668=Mouvement pour le Rassemblement Dmocratique Sngalais, 669=JEF JEL, 670=Ligue Dmocratique/Mouvement Populaire pour le Travail, 9995=Other, 9997=Not applicable, 9998=Refused to answer, 9999=Don't know.

Question: Can you tell me the name of the candidate for representative in the National Assembly that you intend to vote for? Value label: Response: _

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you that you will for vote this party on election day? Value label: 1-10; 99=Don't know; 98=Refused to answer.

[REMINDER FOR ENUMERATOR ABOUT WHICH TYPE OF TREATMENT TO PROVIDE]

Control: do not do anything. Treated: Now I would like to show some information about the responsibilities AND/OR performance of your representative at the National Assembly since elected to office in 2012. This information comes from the non-partisan NGO, LEGS Africa. [Show and walk through treatment if applicable.]

Question: [Only for treated respondents] Who do you think is responsible for distributing this leaflet? [Read out options] Value label: 1=A non-partisan NGO, 2=Your current MP, 3=Opposition parties, 4=The national government, 5=A foreign government, 6=Other: _; 99=Don't know; 98=Refused to answer.

Question: How many committees are there in National Assembly? [Read out options; randomize answer order] Value label: 1=5; 2=8; 3=11; 4=14; 99=Don't know; 98=Refused to answer.

Question: Do representatives to the National Assembly have specific funds available for them to use for development projects in their constituencies? [Read out options] Value label: 0=No, 1=Yes; 99=Don't know; 98=Refused to answer.

Question: How many local projects were initiated during your representatives to the National Assembly's term in office? [Read out options; randomize answer order] Value label: [Four options, including district-specific correct response]; 99=Don't know; 98=Refused to answer.

Question: How many debates do you think that previous representatives to the National Assembly for your department participated in parliament over the course of their term in office? [Read out options; randomize answer order] Value label: [Four options, including district-specific correct response]; 99=Don't know; 98=Refused to answer.

To assess whether you have changed your mind during the course of this survey, let me repeat to you a few questions about the coming election for representative in the National Assembly.

Question: Understanding that some people might be unable to vote in the coming election for members of the National Assembly, do you intend to vote in the coming elections? Value labels: 1=Yes, 2=No, 99=Don't know; 98=Refused to answer.

Question: (If the respondent answered yes to the previous question) Can you tell me the party or coalition of the candidate for representative in the National Assembly that you intend to vote for? Value labels : 1=Benno Bokk Yakkar, 2=Mankoo Taxawu Senegaal, 3=DEFAR Senegal, 4=UFD, 5=PVD, 6=MRLD, 7=Manko Yeesal Senegal, 8=M2R, 9=REVE, 10=CET/JSR, 11=Manko Wattu Senegal, 12=PUR, 13=Soppali, 14=UC/Bunt Bi, 15=FEDES, 16=CPJE/Naay Leer, 17=IPD, 18=PAC, 19=CLP, 20=SNR/RDP, 21=Leeral, 22=Senegal Ca Kanam, 23=CCN, 24=And Suxali Senegal, 25=FPR, 26=SEVE, 27=Coalition La 3eme Voie/euttou askan wi, 28=FN/BAW, 29=Joyyanti, 30=SUNU PSDS, 31=Fal Askan Wi, 32=CIS, 33=VISA, 34=DS/AP, 35=ARD/AAR Senegal, 36=Assemblee Bi Nu Begg, 37=And Saxal Liggeey , 38=Mbollo Wade, 39=Osez L'avenir, 40=Coalition Gagnante/Wattu Senegal, 41=Pole Alternatif 3eme voie/Senegal Dey Dem, 42=PDP/Jamm, 43=Ndawi Askan Wi/Alternative du peuple, 44=ADS/GARAP, 45=Convergence patriotique/kaddu askan wi, 46=CREDI, 660=Parti Dmocratique Sngalais (PDS), 661=Parti Socialiste (PS), 662=Alliance des Forces du Progrs, 663=Alliance Pour la Rpublique, 664=Rewmi, 665=Union pour le Renouveau Dmocratique, 666=Front pour le Socialisme et la Dmocratie/Benno Jubbel, 667=Parti pour lIndpendance et le Travail, 668=Rassemblement Dmocratique Sngalais (RDS), 669=JEF JEL, 670=Ligue Dmocratique/Mouvement Populaire pour le Travail, 674=Candidat indpendant, 9997=Not applicable, 98=Refus de rpondre, 99=Ne sait pas.

Question: Can you tell me the name of the candidate for representative in the National Assembly that you intend to vote for? Value label: Response: _

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you that you will vote for this candidate or party on election day? Value label: 1-10; 99=Don't know; 98=Refused to answer.

We also wanted to know whether you would be interested in receiving a poster from any of the candidates for representative in the National Assembly. We intend to reach out the main candidates a week before the election with the list of those interested in receiving a poster from them, and thus this is your opportunity to be a possible poster recipient.

Question: [If expressed intention to vote for a party post-treatment] Would you want to receive a poster from the [party of vote intention]? Value labels: 0=No; 1=Yes; 99=Don't know; 98=refused to answer.

Question: Would you want to receive a poster from any ["other" if expressed intention to vote for a party post-treatment] party? Value labels: 0=No; Yes: specify: _; 99=Don't know; 98=refused to answer.

We also wanted to know whether you would be interested in the winning candidate visiting your village after the election so that you all to express him or her your views about the most pressing needs in your community. We intend to reach out the winning candidate after the election with the list of those interested in having the winning candidate visit their village.

Question: [If expressed intention to vote for a party post-treatment] Would you want a deputy from the [party of vote intention] to visit your village in case that he or she candidate is elected? Value labels: 0=No; 1=Yes; 99=Don't know; 98=refused to answer.

Question: Would you want a deputy from any ["other" if expressed intention to vote for a party post-treatment] party to visit your village in case that he or she candidate is elected? Value labels: 0=No; Yes: specify: _; 99=Don't know; 98=refused to answer.

We also wanted to know whether you would be interested in meeting with the winning candidate after the election to express him or her your views about the most pressing needs in your community. We intend to reach out the winning candidate after the election with the list of those interested in sharing their views. I will now mention few of the candidates for representative in the National Assembly and I want you to tell me if you would like to express him or her your views in case that the candidate is elected.

Question: [If expressed intention to vote for a party post-treatment] Would you want to express your views to a deputy from the [party of vote intention] in case that she or he is elected? Value labels: 0=No; 1=Yes; 99=Don't know; 98=refused to answer.

Question: Would you want to express your views to a deputy from any ["other" if expressed

intention to vote for a party post-treatment] party in case that she or he is elected? Value labels: 0=No; Yes: specify: _; 99=Don't know; 98=refused to answer.

To assess whether you have changed your mind during the course of this survey, let me repeat a few questions about the work of your representative in the National Assembly.

Question: The members of the National Assembly serve in committees that draft and amend laws. Value label: 1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: The members of the National Assembly approve the national budget. Value label: 1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: The members of the National Assembly are responsible to bring government transfers and development projects to their constituencies; Value label: 1=True, 2=False, 99=Don't know; 98=Refused to answer.

Question: Overall, how good of a job do you think that [name of relevant deputy], one of your representatives to the National Assembly ["your representative" for Ranérou Ferlo and Oussouye], has done since they were elected in 2012? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: How do you think that the overall work of [name of relevant deputy] compares to how good of a job overall that your previous representatives [singular for Ranérou Ferlo, but not Oussouye] in office between 2007 and 2002 did? [Read out options] Value label: 1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: Overall, how good of a job do you think that [name of relevant deputy] would do if they were re-elected? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: Overall, how good of a job do you think that other candidates for deputy at this election would do if elected to the National Assembly? [Read out options] Value label: 1=Very bad; 2=Bad; 3=Neither good nor bad; 4=Good; 5=Very good; 99=Don't know; 98=Refused to answer.

Question: On a scale from 1 to 10, where 1 is not at all certain and 10 is completely certain, how certain are you about this assessment? Value label: 1-10; 99=Don't know; 98=Refused to answer.

Question: How often do you think that [name of relevant deputy] serves on committees that draft and amend laws? [Read out options] Value label: 1=Never; 2=Occasionally; 3=Frequently; 4=Very Frequently, 99=Don't know; 98=Refused to answer.

Question: How do you think that their work in these committees compares to the work in these committees of your previous representatives [singular for Ranérou Ferlo]? [Read out options] Value label: 1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average; 99=Don't know; 98=Refused to answer.

Question: How often do you think that [name of relevant deputy] is active in amending and approving the national budget? [Read out options] Value label: 1=Never; 2=Occasionally; 3=Frequently; 4=Very Frequently, 99=Don't know; 98=Refused to answer.

Question: How do you think that their work in amending and approving the national budget compares to the work of amending and approving the national budget by your previous representatives [singular for Ranérou Ferlo]? [Read out options] Value label: 1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average; 99=Don't know; 98=Refused to answer.

Question: How often do you think that [name of relevant deputy] is active in lobbying Ministers to increase government transfers to their constituencies and bring development projects to their constituents? [Read out options] Value label: 1=Never; 2=Occasionally; 3=Frequently; 4=Very Frequently, 99=Don't know; 98=Refused to answer.

Question: How do you think that their work in lobbying Ministers to increase government

transfers to their constituencies and bring development projects to his or her constituents compares to the work of your previous representatives [singular for Ranérou Ferlo]? [Read out options] Value label: 1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average; 99=Don't know; 98=Refused to answer.

Finally, I'd like to ask you some questions about yourself and your household.

Question: What is your ethnic community, cultural group, or tribe? Value label: 1=Bainouk; 2=Badiaranke; 3=Balante; 4=Bambara; 5=Bassari; 6=Bedick; 7=Coniagui; 8=Creole; 9=Diakhanke; 10=Dialonke; 11=Diola; 12=Fulani; 13=Khassonke; 14=Laobe; 15=Lebou; 16=Malinke; 17=Mancagne; 18=Mandinka; 19=Manjack / Manjago; 21=Maures; 22=Pulaar; 23=Peul; 24=Sarakole; 25=Serer; 26=Soce; 26=Soninke; 27=Soussou; 29=Tandanke; 30=Toucouleur; 31=Wolof; 80=Foreigner; 90=Senegalese only or doesn't think in those terms; 95=Other; 98=Refused to answer, 99=Don't know

Question: What is your religion, if any? Value label: 0=None, 1=Christian only (i.e., respondents says only Christian, without identifying a specific sub-group), 2=Roman Catholic, 12=Evangelical, 13=Pentecostal (e.g.,Born Again and/or Saved), 14=Independent (e.g., African Independent Church), 18=Muslim only (i.e., respondents says only Muslim, without identifying a specific sub-group), 19=Sunni only (i.e., respondents says only Sunni Muslim, without identifying a specific sub-group), 20=Ismaeli, 21=Layenne Brotherhood; 22=Mouridiya Brotherhood/ Mouride, 23=Tijaniya Brotherhood/ Tidjane, 24=Qadiriya Brotherhood/ Khadrya, 25=Shia, 26=Traditional/ethnic religion, 29=Agnostic (Do not know if there is a God), 30=Atheist (Do not believe in a God), 95=Other, 98=Refused to answer, 99=Don't know

Question: Does your household have electricity? Value label: 0=No, 1=Yes, 9=Don't know; 98=Refused to answer.

Question: Does your household have piped water or well water ? Value label: 0=No, 1=Yes, 9=Don't know; 98=Refused to answer.

Question: How many bedrooms are there in your household? Value label: Response: _

Question: How much income do you earn in a typical week? Value label: 0=None; 1=1F-1.500F; 2=1.501F-5.000F; 3=5.001F-10.000F; 4=10.001F-20.000F; 5=20.001F-40.000F; 6=40.001F-60.000F; 7=60.001F-80.000F; 8=80.001F-100.000F; 9=More than 100.000F; 99=Don't know; 98=Refused to answer.

Thank you very much for participating in this survey. We really value your views in our endeavor to understand how politics works in Senegal, and would like to very briefly interview you again in around a month.

Question: Earlier you gave me the phone number [program phone number given at beginning of the survey]. Can I double check that this is the primary cellphone number that we can reach you on? Value label: 0=No, 1 =Yes, 99 =Don't know, 98 =Refuse to respond

Question: What is your relationship with the owner of this cellphone number? Value labels: 1=It is my cellphone, 2=Father; 3=Mother, 4=Brother, 5=Sister, 6=Neighbor, 7=Spouse, Other: _, 99=Don't know

Question: In case we are unable to reach you in that cellphone number, can you give me an alternative one that we can contact you on? Value label: Response: _

Question: What is your relationship with the owner of this cellphone number? Value label: 1=It is my cellphone, 2=Father; 3=Mother, 4=Brother, 5=Sister, 6=Neighbor, 7=Spouse, Other: _, 99=Don't know

Question: If we cannot contact you by calling to any of these two cellphone numbers, do you have an address where we could try to reach you in person? (If you're at their home, write the location) Value label: Response: _

Question: Is there any day of the week and time where we will be more likely to find you there? Value label: Response: _

A.2.2 Endline

The post-election endline survey will be submitted as a modification once finalized.