

Together We Will: Experimental Evidence on Female Voting Behavior in Pakistan

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Abstract

We assess the impact of a voter awareness campaign on female turnout, candidate choice and party vote shares. Geographic clusters within villages were randomly assigned to treatment or control, and within treated clusters, some households were left untreated. Compared to women in control clusters, both treated and untreated women in treated clusters are 12 percentage points more likely to vote, and are also more likely to exercise independence in candidate choice, indicating large spillovers. Data from polling stations suggests that treating 10 women increased female turnout by about 9 votes, resulting in a cost per vote of US\$ 2.3.

JEL: D72, D83, O12, Z13

Keyword: spillovers, diffusion, information campaign, voting behavior, field experiment

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1. Introduction

A basic premise of representative democracy is that those who are subject to policy should have a voice in its making. Although women account for half of the world's population, they have historically lagged behind men in legal and political rights. In recognition of this, suffrage was extended to women in most western democracies in the early 20th century and the new democracies that emerged after WWII followed suit and granted women *de jure* rights to political participation in all democratic institutions.¹

Despite these improvements, women are still far less likely than men to stand for public office, even in developed countries with older democracies. In emerging democracies, they are also less likely to participate in the electoral process as voters or to exercise independence in candidate choice when they do vote.² Instead, women report voting in accordance with the preferences of the caste, clan or household head in contrast to men of all ages (CLRAE, 2002).³

While women's relative absence from elected public office has received considerable policy attention in recent years⁴, there have been fewer attempts to understand or reduce barriers to women's participation as voters. If preferences over the allocation of public resources vary by gender, this neglect could have implications for public policy, in addition to equity related concerns.⁵

¹ These rights were also brought into international law by several important agreements to which most countries are signatories. These include the Universal Declaration of Human Rights (1948), the Convention on the Political Rights of Women (1952); the International Covenant on Civil and Political Rights (1966); and the Convention on the Elimination of All Forms of Discrimination against Women (1979).

² By the early 2000s, voter turnout rates were 10 percent lower in India for females relative to men while this gender gap had been closed for developed economies like Finland, Germany, Iceland and New Zealand (International IDEA, 2002).

³ See also Zia and Bari (1999) and Bari (2005) for Pakistan.

⁴ A number of countries have passed legislation requiring fixed quotas for women. In South Asia, for example, India, Pakistan and Bangladesh have all instituted quotas for women in both local and national assemblies.

⁵ Chattopadhyay and Duflo (2004) exploit the quota introduced for women in the Indian Gram Panchayats and find that elected women leaders are more likely to provide public goods preferred by women. Lott and Kenny (1999) find that women's suffrage in the US increased overall government revenues and expenditures and has led to more liberal voting patterns. Edlund and Pande (2002) find that the decline in marriage has contributed to the shift by women voters in the US towards the Democratic Party. Several studies of intra-household resource allocation (e.g. Thomas (1990), Lundberg and Pollack (1997) and Hodinott and Haddad (1995)) have also shown that women tend to make different choices over the allocation of household budgets, such as higher investments in health and the education of children. Croson and Gneezy (2009) review the experimental literature on gender differences in preferences related to risk, social attitudes and competition.

Although many factors affect the decision to vote, women in emerging democracies may face distinct barriers to participation. First, costs of participation may be too high, whether due to traditions or cultural stereotypes that discourage the exercise of own preferences, or mobility constraints that limit participation. If there are expectations of voter intimidation or violence, personal security concerns may also loom larger among females. Second, husbands may not want their wives to vote, or may seek to control whom they vote for, if this maintains their bargaining power within the household. Third, women may have fewer or poorer sources of information about the significance of political participation or the balloting process, perhaps due in part to illiteracy and limited mobility. Lack of information may also reinforce stereotypes that further disengage women from public life.

If lack of awareness limits participation, then access to information could enhance both equity and allocative efficiency as women select candidates that best reflect their preferences.

Moreover, while attitudes and social mores tend to change slowly, the mere act of participation may serve to weaken pejorative perceptions about female efficacy and enhance women's engagement in public life (Beaman et al., 2007, Bagues and Esteve-Volart, 2012, Mansuri and Rao, 2012).⁶

We test these ideas by conducting a field experiment that provided information to women on the balloting process and the importance of voting in the context of the 2008 national elections in Pakistan. The main outcomes of interest are female turnout, independence of candidate choice and party vote shares at the polling station level.

The setting for the experiment is rural Pakistan where women still face significant barriers to effective political participation, despite legislative reforms aimed at enhancing female participation in public life. Zia and Bari (1999), for example, report that women are often not registered as voters because they face opposition from male household heads and that female turnout is low because women lack knowledge about the electoral system and about voting.⁷

⁶ A number of recent studies have looked at the role of geography, shifts in technology and the development of institutions in the formation of cultural attitudes and beliefs about gender roles. See for e.g. Alesina et al (2010), Alesina and Giuliano (2010), Fernandez (2007), Fernandez and Fogli (2009) and Fortin (2005).

⁷ In 2007, the female voter registration rate was 43 percent, while the male registration rate was 51 percent (Government of Pakistan, 2010).

The door-to-door awareness campaign was conducted just before the 2008 national elections, after the voter registration period had ended. Study villages were divided into geographical clusters that were randomly assigned to treatment or control. Further, within each treated cluster, only a *subset* of sample households was randomly assigned to receive the awareness campaign. This allows us to measure information spillovers within treated clusters without confronting the usual set of identification problems (Manski, 1993; 1995). Since voting involves a civic duty, and is likely to be influenced by the behavior of those in one's peer group or social network,⁸ this aspect of the design is central for understanding the impact of the awareness campaign.

The campaign was developed as a set of simple visual aids with two different messages: the importance of voting which focused on the relationship between the electoral process and policy, and the significance of secret balloting which explained the actual balloting process. Treated women received either the first message or both messages, allowing us to test whether knowledge about the voting process, including the fact that ballots are cast in an environment of secrecy, enhances female participation and independence in candidate choice.

We find that turnout increases by about 12 percent for women in treated households compared to women in control clusters, with somewhat larger and more precise effects for women exposed to both messages. More importantly, we find comparable turnout rates for the untreated close neighbors of treated women, indicating large geographical spillovers. We then assess whether spillovers among close friends are larger than those among neighbors. The results are qualitatively similar. This is not too surprising given that close friends typically reside nearby. In addition, we use the GPS location of households to estimate spillovers beyond the (arbitrary) boundaries of the treatment clusters and find even larger effects. These results confirm that restrictive social norms and lack of bargaining power, important though they are, do not fully explain women's lack of engagement with the electoral process. If they did, a one-off awareness campaign should have had little or no effect. This is clearly not the case.

Moreover, the large spillover effects we find are not well explained by a conformity effect where non-treated women simply mimic those who are treated (or are pressured by those treated (Funk,

⁸ On the relevance of peer pressure and social norms in the decision to vote, see Riker and Ordeshook (1968), Knack (1992) and Opp, (2001). On the importance of talking to one's peers in choosing among candidates see Lazarsfeld, Berelson and Gaudet (1944).

2010)). Instead, the evidence confirms that the informational content of the campaign mattered. Control women in treated clusters are not just more likely to vote, they are also far more likely than women in control clusters to discuss political issues with their neighbors, including political party and candidate positions and the importance of voting in accordance with one's own preferences.⁹

In addition, using administrative data on turnout at the polling station level, we find that for every 10 treated women (roughly 4 households), female turnout increases by about 9 additional votes.¹⁰ Once we take this externality into account, the cost of the intervention drops from US \$16.7 to about US \$2.2 per additional vote. In contrast, using the same administrative data we find no effect on male turnout, suggesting either that the provision of information on the electoral and balloting process is less salient for men or that men are simply not influenced by information provided to women.¹¹

We turn next to whether the campaign influenced candidate and party choice. We find that it did. Treated women are significantly more likely to vote for the party with the second highest vote count. Further, control women in treated clusters behave as if directly treated, confirming once more the importance of spillovers. Polling station data also show that a 10 percent increase in the share of treated women in a polling station led to a decrease in the share of female votes for the winning party of 6 percent. These results suggest that the campaign could have influenced the share of votes at the constituency level and thus the policy agenda, had it been implemented at a larger scale (Fujiwara, 2011).

Given this result, we next check whether treatment decreases the male head's knowledge of the candidate choice of women in his household. Follow-up survey data asked the male head and

⁹ While the objective of the campaign was to provide information rather than to persuade women to vote, we cannot rule out that it did. One could also argue that the increase in turnout was due to the salience of the campaign (e.g. Zwane et al. 2011). However, at the time of the visit, households were already subject to multiple stimuli to vote. Indeed, over 75 percent of them reported receiving a visit prior to the election from party volunteers asking for their vote. Alternatively, one could argue that the visit itself could have motivated treated women to vote (if they felt special for having been chosen and voted out of reciprocity), but this is unlikely because untreated women in treated clusters (not chosen to receive the visit) show turnout rates that are comparable to those of directly treated women.

¹⁰ About three polling stations were mapped to each sample village and each polling station included three clusters, on average.

¹¹ One could also argue that there is little communication about political matters between men and women. The post-election survey refutes this view since about one half of sample women report frequently discussing political issues with men in their households before the election.

each woman in the household about whether other women in the household had cast a vote and for whom they had voted. Using these data we construct cross-reports regarding candidate choice. We find that male heads in treated clusters are indeed significantly less informed about the candidate choice of women in their households. These results provide further evidence of the campaign's informational content.

Moreover, even the more nuanced message about the secrecy of the ballot was apparently transmitted to control women in clusters treated with both messages. Male heads in control households in these clusters were significantly less informed about the candidates chosen by women in their household, compared to male heads in control households in clusters only treated with the message about the importance of voting.

Interestingly, we also find evidence of cognitive dissonance (e.g., Mullainathan and Washington, 2009). Women in the randomly assigned control clusters, among whom turnout was lower, were more likely to report witnessing or hearing instances of violence in the village, compared to reports by women in treated clusters.

This paper therefore contributes to two literatures. First, it adds to the nascent literature on pre-election voter information campaigns in developing countries. Second, it contributes to the burgeoning literature on social networks and peer effects (see, for example, Kremer and Miguel, 2001; Duflo and Saez, 2003; Kling, Liebman and Katz, 2007 and Bobonis and Finan, 2009).

While there is an extensive literature on the impact of Get-out the Vote or GOTV campaigns in developed countries, and in the US in particular (see Gerber and Green, 2000a and 2000b), much less is known about the impact of such campaigns in developing countries where voters tend to have poorer access to information, institutionalized party structures are less developed and voters are often engaged in clientelist relationships that influence voting decisions (see Aker et al. 2011, Banerjee et al. 2011 and Guan and Green 2006; see Pande 2011 for a review).¹²

¹² In developing countries there is a small experimental literature that has focused on electoral violence, clientelism and vote buying. Collier and Vicente (2007), for example, study the effect of an information campaign on electoral violence in Nigeria. Wantchekon (2003) has examined the effectiveness of clientelist messages in Benin and Vicente (2007) analyzes the impact of an information campaign on vote buying in Sao Tome and Principe, Vicente and Wantchekon (2009) provides a review.

To our knowledge, this is also one of the first papers to systematically assess the impact of information externalities on voter turnout and candidate and party choice.¹³ Understanding the scope for such spillovers is important for measuring the cost-effectiveness of an information campaign and for assessing the types of information that can be successfully transmitted through social networks.

The remainder of the paper is organized as follows. Section 2 describes the context of the 2008 election, the design of our experiment and the data. Section 3 describes the empirical strategy and results. In particular, Section 3.1 discusses the impact of the information campaign on turnout and assesses the size and significance of information spillovers, Section 3.2 discusses the evidence on independence of candidate choice, Section 3.3 examines the interaction between electoral competition and information provision and Section 3.4 assesses the impact of the campaign on knowledge and perceptions. Section 4 provides a cost-benefit analysis of the intervention and Section 5 concludes.

2. Context and Experiment Design

The experiment was carried out in collaboration with the Pakistan Poverty Alleviation Fund (PPAF), the Marvi Rural Development Organization (MRDO), Research Consultants (RCons), ECI and the World Bank. PPAF is an apex institution created in 2000 with World Bank funding. PPAF provides capacity building and funding for community based development and microfinance to its partner organizations which are mostly NGOs. MRDO, a non-partisan organization that works with rural women, is one such NGO. RCons, a survey firm, helped MRDO implement the awareness campaign and collected the baseline and follow-up data. ECI, a non-partisan local training firm, collaborated in the design of the campaign. ECI had prior

¹³ In an experiment in the US where voters received postcards with information about their voting record, Gerber et al. (2008) find that turnout increased by about 8 percent in households that were shown their voting records as well as that of their neighbors. This increase in turnout is comparable to the impact of direct canvassing. Our paper is perhaps closest, in spirit, to Nickerson (2008), which assesses information spillovers within the household. The paper reports on a door-to-door canvassing experiment, which targeted households with two registered voters. The author finds that the member that did not answer the door is nearly 60% as likely to vote as the directly treated member. In contrast, Nahomi (2011) looks at the spillover effects of domestic observers on voter registration and turnout in non-monitored polling stations in Ghana, and Guan and Green (2006), designed their experiment to limit the spillover effects of a GOTV information campaign conducted in China.

experience with the development of visual aids and pamphlets related to electoral participation and the balloting process. It was also actively engaged in the training of local election officers nationwide prior to the elections.

2.1 Context

The campaign was carried out in the districts of Sukkur and Khairpur in the southern province of Sindh.¹⁴ The districts were selected because of sharp electoral competition between the two main political parties, the Pakistan People's Party Parliamentarians (PPPP), which has had a secular-left leaning platform and the Pakistan Muslim League Functional (PMLF), which was then allied with the military regime.

The initial sample included 12 villages,¹⁵ 6 from each district, and 24 polling stations from two constituencies.¹⁶ All candidates from both parties in these two constituencies were male. Villages were chosen to ensure variation in expected political competition at the polling station level, but given the context of the 2008 elections, 3 villages (3 polling stations) had to be dropped because the safety of the canvassing teams could not be guaranteed. The polling stations in these 3 villages were relatively more contested than those in our final sample of 9 villages and 21 polling stations. According to Panel A of Table 1, these 21 polling stations had an average of 434 registered women. In the sample, we have 89 treated women per polling station, on average. In Section 3 we exploit the random variation in the percentage of treated women per polling station (ranging from 8 to 66 percent) to assess the impact of treatment on turnout and the share of PPPP among female voters.

Indeed, the 2008 national elections were held in an environment that was politically charged. After seven years of military rule, culminating in widespread opposition, the government

¹⁴ The population of Sukkur is estimated at 650,000 (2011) while that of Khairpur at about 130,000 (2006)

¹⁵ The average size of a village in Sindh is just under 300 households, though villages can be as small as 80 households and as large as 1500 households. Study villages are close to the average with roughly 350 households per village.

¹⁶ Twelve polling stations were from the National Assembly constituency NA-199 (Sukkur) and the remaining 12 from NA-215 (Khairpur). NA-199 had a total of 242 polling stations while NA-215 had 270 polling stations. The same 12 polling stations belonged to Provincial Assembly constituencies PS-4 (Sukkur) and PS-32 (Khairpur), respectively. PS-4 had 125 polling stations in total and PS-32 had 114. Sukkur and Shikarpur districts have 2 National Assembly constituencies (NA-198 and NA-199), while Khairpur has 3 constituencies (NA-215, NA-216 and NA-217). There are 4 Provincial Assembly constituencies in Sukkur and Shikarpur (PS-1 to PS-4) and 6 in Khairpur district (PS-29 to PS-34). See <http://www.ecp.gov.pk/> for more information.

declared emergency rule. The sitting judges of the Supreme Court were dismissed and there were fears that the incumbent government would engage in massive rigging. Scheduled initially for January 8th, 2008, the elections were postponed to February 18th, 2008 because Benazir Bhutto, the leader of the PPPP, and a twice-elected Prime Minister, was assassinated on December 27th, 2007.

In Sindh, traditionally a PPPP stronghold, a large turnout and a PPPP landslide was being anticipated due to a possible sympathy vote for Bhutto. At the same time, the expected PPPP landslide could have served to discourage supporters of PML-F, depressing turnout. Finally, there were concerns about electoral rigging and voter intimidation by the incumbent military government, though these decreased after Bhutto's assassination and the increased visibility of the elections. The net effect of these tendencies on turnout and party choice, particularly for women, was uncertain.

The campaign was delivered door-to-door by a team of two women and was only attended by the women in each household. Neighbors and men in the household were not allowed to be present during the sessions.¹⁷ It was designed as a set of simple visual aids accompanied by a well-rehearsed and limited script. The campaign included two nonpartisan messages: the first focused on the importance of voting, the relationship between the electoral process and policy, including village development outcomes, while the second focused on the actual balloting process, including the structure of a typical voting station and booth, the fact that male and female booths are separate, the secrecy of the ballot and the basic appearance of the ballot paper.¹⁸ Since the objective of the second treatment was to inform women about the balloting process as a whole, we cannot separately identify the impact of ballot secrecy, from other aspects of the process. The information campaign never mentioned a political party or candidate by name.¹⁹ It is worthwhile

¹⁷ In many cases, men were not at home at the time of the visit, which took place during the morning and early afternoon. If men were home, they were requested to allow the female team members to meet with the women alone. In most cases this did not pose a problem since men are not usually present in an all-women's gathering. In the few cases where men were reluctant to leave, the male supervisor discussed the information campaign in general terms with them and obtained agreement.

¹⁸ Even in developed democracies where ballot secrecy is perfectly enforced, Gerber et al. (forthcoming) find that a significant fraction of respondents in a nationally representative survey in the US do not believe that their ballot choices are kept secret.

¹⁹ A GOTV campaign can be partisan or not, though a number of experimental studies have shown that partisan messages are less successful in motivating turnout. Cardy (2005), for example, finds that neither partisan direct mail nor partisan phone calls - used independently or together - managed to garner a significant voter response. In a

stressing that unlike most GOTV campaigns, whose main objective is to increase turnout by persuading subjects to vote, the objective of the voter awareness campaign was to inform women about their rights in the electoral process and how to exercise them. Appendix A contains the translation of the script and Appendix B the translated visual aids.

The campaign was implemented door-to-door for two main reasons. First, it provided a high degree of control over which households received the campaign and which did not, which was critical for measuring information spillovers as well as the cost-effectiveness of the intervention. Second, door-to-door information campaigns in the US have been more effective in inducing turnout than other strategies like phone calls and direct mailings.²⁰ In our context, door-to-door visits were also the most feasible choice given the low levels of literacy and cell-phone ownership among women, combined with low female mobility.²¹

Table 1 Panel C indicates that female literacy rates are indeed very low in our study area, as they are all over rural Sindh. Less than 20 percent of adult women have any formal schooling. Women also have limited mobility even within their own villages. Most women in our sample can travel within the village on their own or accompanied by other females but not outside the village, where the presence of a male is required.

Appendix Table A2 presents gender differences in access to media, knowledge of current events and participation in public life. The sample is confined to comparisons between the male head and his spouse. Women are far less likely to listen to local, national or international news channels (10 percent of women report listening to BBC compared to 48 percent of men, for example) and are far less informed about any political issue, including major events like the imposition of emergency rule in the country, which only 6 percent of women knew about, as

similar vein, Gerber and Green (2000b) find that non-partisan messages are particularly effective in mobilizing unaffiliated past voters. The authors hypothesize that partisan voters may already receive adequate encouragement from their respective political parties while unaffiliated voters do not. Moreover, they speculate that politically unattached voters may also have been impressed by the non-partisan appeal to civic responsibility. Horiuchi et al. (2007) also find that voters are less likely to abstain when they receive policy information about *both* ruling and opposition parties through their official party websites. The information effects are larger among those voters who were planning to vote, but were undecided about which party to vote for.

²⁰ Gerber and Green (2000a) report on a randomized GOTV campaign conducted in New Haven, Connecticut, just prior to the 1998 election. The campaign delivered non-partisan messages through personal canvassing, direct mailings and telephone calls. The study found that personal canvassing had a substantially greater impact on voter turnout as compared with other modes of contact. Green et al., (2003) and Michelson (2003) find similar results.

²¹ See Jacoby and Mansuri (2011).

compared to 82 percent of men. Women are also less likely to be able to correctly identify political party signs and names. Interestingly, this difference is not due to differential access to TV or radio. Instead it appears that men and women use media very differently.²² Women are also less engaged with any aspect of village public life. They are far less likely, for example, to attend community meetings related to village development, attend demonstrations or contact their local councilor or local party official for any matter. Interestingly, though, when they do engage, women tend to avoid formal authority and reach out to traditional or religious leaders (66 percent among women compared to 49 among men).²³

2.2 Experimental Design and Data

The timeline of the study is shown in Figure 1. The information campaign was deliberately carried out after the voter registration period had ended, two weeks prior to the elections (from February 5th to 15th 2008). Each sample village was covered in approximately one day. The campaign was implemented by 8 teams, which consisted of one MRDO female staff member, and one female enumerator, from RCONs.²⁴ Each village was completely divided into geographical clusters, consisting of one or two contiguous streets, with about 40 households per cluster, on average. A cluster always fell inside the catchment area of a polling station. This yielded one to nine clusters per polling station, with an average of 3.2 clusters, of which zero to seven clusters were treated, yielding an average of 2.7 treated clusters per polling station. Clusters were based on geography because social interactions are mostly dictated by physical proximity given the restrictions to female mobility.

²² Table A2 indicates that both radio and TV are widely available and that if anything, women report higher access than men. Approximately, 42 percent of men and 47 percent of women had access to a radio and about 65 percent of men and 67 percent of women had access to a TV.

²³ These statistics are also consistent with Pakistan's rather dismal performance on a range of development indicators. According to the 1998 Human Development Report, for example, Pakistan ranked 138 out of 174 on the Human Development Index (HDI), 131 out of 163 on the Gender Development Index (GDI), and 100 out of 102 on the Gender Empowerment Measure (GEM).

²⁴ While RCONs team members were new in the villages, MRDO staff had been working in the area, although their coverage was still low. According to Table 1, only around 11 percent of the women in the sample were MRDO members. We ensured, however, that MRDO staff did not conduct the campaign in the villages where they had been working previously. MRDO staff was also not engaged in the collection of the follow-up data. When asked informally about whether women in the household they had visited to deliver the campaign had voted and for whom, they did not know. As a result, it is clear that MRDO staff did not have any authority over the household and there was no expectation that they would obtain future favors in exchange for casting a vote.

In each village, clusters were randomly assigned to receive the importance of voting message (T_1), or T_1 plus the voting process message (T_2), or nothing leaving a gap cluster between selected clusters to ensure that two selected clusters would never be contiguous. More specifically, the canvassing team selected one cluster in each village at random and began there. T_1 was delivered in this cluster. Moving in random order from this point, every other cluster was selected for the study, thereby creating a gap cluster between any two selected clusters. In the second selected cluster a coin toss determined whether T_2 was delivered or all selected households were left as controls. The third selected cluster was then assigned to the opposite treatment of the second cluster and so on.²⁵

For the pre-election visit, vote verification and the survey, only one control cluster from each village was selected at random, with the exception of one larger village where two control clusters were selected. All treated clusters were selected. A typical sample village had about 11 geographical clusters in all, of which 7 on average were included in the study sample (3 T_1 , 3 T_2 and 1 control cluster), leaving the rest as gap clusters. The final sample has 67 clusters in total, 30 assigned to T_1 , 27 assigned to T_2 and 10 left as controls.

Within each selected cluster, irrespective of the specific treatment, every 4th household was selected and surveyed, starting at either end of the cluster. In T_1 and T_2 clusters, all selected households were assigned to the respective treatment, with the exception of every 5th selected household, which was left as a control. This generated 2 to 4 control households in each T_1 and T_2 cluster in addition to the households selected in the control clusters. In this regard, our paper is perhaps closest to Duflo and Saez (2003) in that the peer group is fixed by location and only a subset of the peer group in a treatment cluster is treated.

A typical sample cluster yielded about 17 sample households and 48 sample women. All women from a particular household were given the same treatment. It is important to stress that the border of a given cluster does not coincide with the beginning or end of a street or the village, since the location of clusters was also randomly chosen. In other words, households in the periphery of the randomly generated cluster are on average similar to households in the center of the cluster. This generates exogenous variation in the number of treated households near each

²⁵ The selection process is therefore equivalent to a random listing of clusters in each village.

household that will be exploited in some specifications.²⁶ In total, 2,735 women from 1,018 households were reached. Figure 2 displays a section of a study village containing three clusters delimited by a white solid line. Notice that the boundaries of clusters do not coincide with the natural boundaries of the village. The dots, squares, stars and triangles indicate the location of the study households. A dot denotes a household in a control cluster, a square (star) denotes a treated household in a T_1 (T_2) cluster and a triangle is a control household in a treated cluster (either T_1 or T_2). These three clusters are mapped to a polling station whose boundary falls outside the map.

During the door-to-door visit, basic data on each sample household was collected, including the GPS location of the house, a basic roster of all adult women with their past voting record and the name and address of their closest friend or confidant in the village. The door-to-door visit lasted about 20 to 25 minutes for treated households and 5 to 10 minutes for control households. All households were found, although in a few cases a repeat visit took place on the same day. None of the households refused to participate in the awareness campaign.

Instead of relying on self-reported voting behavior, we verified it by taking advantage of a requirement in Pakistan of marking a voter's finger with indelible ink.²⁷ To assist the canvassing team with the post-election verification, a local woman in each village, usually a primary school teacher, was identified during the awareness campaign. This woman was provided the list of sample women whose finger ink stain had to be verified on Election Day and the day after the election. This list included all surveyed women and one confidant from each household. The confidant was selected as follows: in every even numbered household, the confidant of a woman who was either a daughter or a daughter in law of the household head was selected, while in every odd numbered household, the confidant of the household head (if the head was a woman) or the head's wife, sister, mother or aunt was selected. Not all households yielded at least one

²⁶ A comparison of households in the periphery to those in the center, defined by whether or not they are closer than the median household to the cluster center, yields no significant differences among the 12 household characteristics of Panel B in Table 1. Alternatively, we regress an indicator variable, which takes the value 1 if the household's distance to the cluster center is smaller than the median household distance to the cluster center on all 12 household characteristics. The p-value of an F-test that all household variables are jointly zero is 0.83. We therefore conclude that the location of the cluster center is random and that households in the center and periphery of the cluster are comparable.

²⁷ The Representation of the People Act of 1976 states in Paragraph 33.2.cc that the voter "shall be required to receive a personal mark, made with indelible ink, on any finger of either hand as indicated by the Commission".

“eligible” woman using this rule, so the final sample includes 727 confidants whose vote was verified.

Voting verification of the 2,735 women and the 727 confidants took place between the evening of February 18th, Election Day, and the evening of February 19th. The field teams visited each village on February 19th to check 10 percent of the verifier’s assignment at random and found no significant differences.

During the verification exercise, the verifiers were unable to locate 98 women (and 27 households). This leaves us with a sample of 2,637 women and 991 households. We were able to verify all 727 confidants.

Attrition is therefore quite low, with roughly 3% of households not reached during verification. It is also unrelated to treatment assignment (see Panel A of Appendix Table A3).²⁸ In addition, 158 women claimed to have cast a vote but did not have the requisite ink mark. To be conservative, we treat these women as not having voted, although the results do not change if we consider them as voters.

Verification was followed by a post-election survey of the same 2,637 women in March 2008. We ensured that the team of enumerators that visited a given household at follow-up was different from the one that had delivered the awareness campaign. The survey collected information on household demographics, recall of the door-to-door visits, access to and use of various media, and knowledge of the balloting process and political candidates, among other issues. Finally, we collected the official electoral results by gender, candidate and political party for each of the 21 polling stations that served our sample villages.²⁹

Average turnout among sample women was 59 percent, if we include all women and 67 percent if we include only those who were registered to vote. In comparison, female turnout in the 21 polling stations was 54 percent (see Table 1). At the constituency level, total turnout was 39.2 percent in Khairpur and 48.6 percent in Sukkur. The corresponding turnout rate (i.e., by district and including both males and females) in the sample polling stations was 44.1 percent and 53.6

²⁸ Though households in T₂ clusters are marginally more likely to attrit (see Panel B of Appendix Table A3).

²⁹ Results by gender are tabulated at each polling station. This is possible because polling areas and polling booths in Pakistan are separated by gender.

percent, respectively. While there is significant variation in contestation at the polling station level, the vote share of the PPPP at the constituency level was a large 70 percent in Khairpur and 73 percent in Sukkur.

Table 2 reports the difference in means of household and woman characteristics across different samples. See Appendix Table A1 for the definition of the variables used in the paper. Column 1 in Panel A compares treated households to all control households, irrespective of whether they live in treated or control clusters. Columns 2 and 3 compare T_1 and T_2 households, respectively, to all control households. Column 4 compares all households in treated clusters (both treated and control households) to those in control clusters, Column 5 compares treated households to households in control clusters only and finally Column 6 compares control households in treated clusters to households in control clusters. Overall, there is little difference in household characteristics across samples. Treated households have a little more land than control households in some comparisons, but no difference in assets or housing quality. The P-value of an F-test that all variables are jointly insignificant can never be rejected. In Panel B, the same comparisons are reported for woman characteristics. Women in treated households are somewhat younger in some comparisons and have more young children as a result. They also appear to have less access to cable TV. An F-test that all woman level variables are jointly insignificant cannot be rejected in 5 out of 6 comparisons. However, to alleviate any concerns regarding balance, we always control for the household and woman characteristics that lack balance across treatment and control groups.

Appendix Table A4 suggests that the intervention was successfully implemented: all treated women correctly recall having received a visit in which information about the electoral process was provided. Almost all women in the T_1 treatment group correctly recalled that the issues raised during the visit concerned the importance of voting while 70 percent of women assigned to the T_2 treatment group correctly recalled that the visit included information on the importance of voting and the actual balloting process. In contrast, control households recall a visit but none report having received information about the electoral process. Finally, control women in treated clusters are far more likely to report talking to their neighbors about political issues related to party or candidate positions and the importance of voting in accordance with one's own preferences, providing the first piece of evidence of information spillovers.

Follow-up data also suggest that there were no major incidents during Election Day in the study villages.³⁰ Virtually all sample women had possession of their National Identification Cards (NICs) before they left for the polling station and ninety percent of the women who voted also found that the instructions in the polling station were appropriately displayed and that no one else was present inside the booth when they cast their vote. While most women (61 percent) report travelling to the polling station by foot, a substantial number (26 percent) report using transportation provided by a political party, which is legal in Pakistan. However, almost all women went to the polling station with others. Most were accompanied by other female household members (62 percent) or went with their spouse or another household male (11 percent). However, a significant number also went with a female friend or relative (25 percent).

3. Empirical Strategy and Results

3.1 Turnout and Information Spillovers

Because treatment is assigned randomly at the geographical cluster level, its impact on female turnout can be estimated via the following OLS regression equation:

$$Y_{ihcpv} = \beta T_{hcpv} + \gamma X_{ihcpv} + u_v + \varepsilon_{ihcpv} \quad (1)$$

where Y_{ihcpv} indicates whether woman i in household h in cluster c in polling station p in village v is verified as having voted (1=Yes), T_{hcpv} is the treatment indicator (1 if woman i in household h in cluster c in polling station p in village v received the voting awareness campaign), and X_{ihcpv} is a vector of polling station, household and individual woman characteristics. We follow Bruhn and McKenzie (2009) and include household and woman characteristics from Table 2 that lack balance (total land owned, age, access to cable, number of children under 5 years old) as well as variables which are likely to influence voting behavior such as *zaat* (caste), having an NIC, mobility, schooling and whether the women seeks advice from a religious leader or “Pir”.³¹

³⁰ In contrast, media reports from the northwest of the country indicate that several female polling stations remained empty because village elders actively prevented women from voting (AP, February 18th, 2008).

³¹ Although the NIC is required to vote, some women in our sample were verified as having voted, though they did not have an NIC.

Finally, we include in X_{ihcpv} the total number of women registered to vote in the polling station. Inclusion of X_{ihcpv} corrects for baseline imbalances and increases efficiency by absorbing residual variation in the data.³² We also include a village fixed effect u_v to remove the influence of village specific unobservable characteristics. The term ε_{ihnpv} is a mean-zero error. Since the unit of randomization is the geographical cluster, standard errors are always clustered at this level (Moulton 1986).³³

A modified version of Equation (1) measures the effect of T_1 and T_2 separately:

$$Y_{ihcpv} = \beta_1 T_{1,hcpv} + \beta_2 T_{2,hcpv} + \gamma X_{ihcpv} + u_v + \varepsilon_{ihcpv} \quad (2)$$

The coefficients β_1 and β_2 capture the impact of treatment on turnout and are the main coefficients of interest.

Table 3 reports the results. In order to capture the importance of within cluster spillovers, we run Equation (1) in Panel A and Equation (2) in Panel B using four different subsamples. In column 1, we simply compare treated women to all control women, regardless of their location (comparison T-C). This comparison ignores spillovers altogether by grouping control women in treated clusters together with (control) women in control clusters. In column 2, we compare treated clusters with control clusters (comparison T_N-C_N). Here treated and control women in treated clusters are grouped together. In column 3, we compare treated women in treated clusters with women in control clusters (comparison T- C_N). We therefore drop from the analysis control women in treated clusters. Finally, in column 4 we compare control women in treated clusters to women in control clusters by dropping treated women from the analysis (comparison $C_{TN}-C_N$). If spillover effects are important, the coefficient of interest in the first (naïve) comparison should be smaller since control women in treated clusters are likely to have been influenced by treated women.

We indeed find that the naïve estimate in column 1, panel A, is lower than that of columns 2-4 by 6 percentage points. Thus, accounting for within geographical cluster spillovers increases the

³² Some of the variables were collected at baseline, prior to the campaign, while others were collected in the follow up survey. When collected at follow-up, the value prior to the intervention was collected. As a result, none of these characteristics could be affected by the campaign.

³³ We note that in some households more than one woman was treated. While the intra and inter household correlation within a cluster could differ, we only allow for a unique within cluster correlation.

impact of treatment to about 12 percentage points. More importantly, control women in treated clusters are about as likely to vote as directly treated women.³⁴ In Panel B, the pattern of lower estimates in column 1 compared to those in columns 2-4 is repeated and, as expected, estimates for the impact of T_2 are larger. They are also more precisely estimated, although we are unable to detect statistically different effects between T_1 and T_2 .³⁵

While this strategy allows us to assess spillovers within treatment clusters effectively, it does not account for spillovers beyond the geographical cluster. It is plausible that women talk to other women outside the geographical cluster, especially women located near the boundary of the cluster. The design included gap clusters to ensure that control clusters were isolated from treated clusters, but women in these control clusters might have been affected directly or indirectly by the intervention and, as a result, even the estimates of columns 2-4 in Table 3 could be downward biased.

We use two strategies to assess spillover effects beyond the geographical cluster. First, we use the GPS location of every household in the study to compute the number of other treated and control households within a given distance radius and run the following OLS regression equation:

$$Y_{ihcpv} = \beta T_{hcpv} + \theta C_{T_{hdpv}} + \rho N_{dpv} + \gamma X_{ihcpv} + u_v + \varepsilon_{ihcpv} \quad (3)$$

where $C_{T_{hdpv}}$ is an indicator for whether household h is not treated but has at least one treated household within a distance radius of d meters, and N_{dpv} is the total number of surveyed households within distance radius d of household h .³⁶ According to Table 1, the average distance between any two sample households in a cluster is 194.2 meters (0.12 miles) and the median distance is roughly 100 meters. In contrast, the median distance between any two surveyed

³⁴ A regression that includes both a treatment dummy and a dummy for control households in treated clusters shows that the coefficient on the treatment dummy is 0.117 and the coefficient on the dummy for control households in treated clusters is 0.124, though neither coefficient is statistically significant at conventional levels. The P-value of the t-test that both coefficients are equal is 0.798.

³⁵ The impact of information on turnout for friends is in the same range as that for other control women in treated clusters, ranging from 10 to 12 percent. This is not surprising given that the vast majority of confidants reside in the same cluster as the woman who identified them as her friend.

³⁶ It is clear that the dummies T_{hcpv} and $C_{T_{hdpv}}$ cannot both take value 1, since households are either treated or not. Both dummies take value zero if the household was not treated ($T_{hcpv} = 0$) and was located more than d meters from the closest treated household.

households in a village is roughly one kilometer (0.67 miles). We consequently use a radius of 75, 100 and 200 meters, which corresponds roughly to the 25th, 50th and 75th percentile of the distance between any two households within a cluster. The rest of the terms are as defined in Equation (1), and as before, standard errors are clustered at the geographical cluster level. The coefficients of interest are β and θ . This specification allows for a simple test of the extent to which female turnout among control households near treated households resembles female turnout among directly treated households.

Panel A of Table 4 reports the results from Equation (3). The combined treatment effect of T1 and T2 is significant, ranging between 10 to 12 percentage points. The estimate of θ is also significant in column 2 and is comparable to the direct treatment effect, suggesting that geographical spillovers are large. Indeed, the t -test for $\beta = \theta$ is never rejected. The coefficient on the number of households within a given radius, which can be interpreted as household density, is always significant, suggesting that turnout is higher in more densely populated areas within a village, perhaps because polling stations tend to locate there. Panel B reports the results for the OLS regression equation analogous to Equation (2). We again find that the direct (and indirect) effect of T₂ is quite a bit larger and robustly significant, compared to that of T₁, but the difference is, again, not statistically significant, at conventional levels, in our sample.

Our second strategy to study spillover effects beyond the geographical cluster is inspired by Kremer and Miguel (2001). In order to assess how treatment density within a given radius affects turnout, we rely on exogenous variation in the local density of treated women, by virtue of the cluster level randomization.³⁷ Specifically, we construct non-overlapping concentric rings that are 200 meters wide around each sample woman. For each ring (or band) we compute the number of treated women within the band, as well as the total number of sample women. Since the median distance between any two households in the village is about one kilometer, the bands start at 0-200 meters and extend up to 1,200 meters. The regression specification in this case is

$$Y_{ihcpv} = \beta T_{hcpv} + \sum_{dD} (\alpha_{dD} N T_{dD} + \tau_{dD} N_{dD}) + \gamma X_{ihcpv} + u_v + \varepsilon_{ihcpv} \quad (4)$$

³⁷ Kremer and Miguel (2001) assess cross-school externalities using exogenous variation in the local density of treatment school pupils generated by the school-level randomization.

where NT_{dD} is the number of treated women between distance d and D from each sample woman, and N_{dD} is the number of interviewed women between distance d and D from each sample woman. The rest of the terms are as defined in Equation (1) and standard errors are clustered at the geographical cluster level.

The estimates for α_{dD} can be used to estimate the average spillover gain for sample women from having treated women residing in close proximity. The coefficients are reported in Column 2 of Table 5. Spillover effects are significant up to 1,000 meters. The number of treated women ranges from 0 to about 161 women, with the largest number of treated women in the 0-200 meter range. Columns 1 and 2 in Table 5 report the mean and median number of treated women. Using only the coefficients that are significant, we estimate a mean increase in the odds of voting of 68 percentage points and a median increase of 45 percentage points.³⁸ Consistent with our earlier results, once proximity to other treated women is controlled for, the residual effect of being directly treated is nil (i.e. $\beta = 0$). Clearly, social interactions among women with mobility constraints are largely dictated by geographic proximity. Communication is easy and can happen over laundry, cooking and childcare, which require little movement away from home.

Finally, we assess the size of information spillovers at the polling station level, using official electoral results by gender. Using polling station level information allows us to look at spillovers for all registered voters in the village and to check potential spillover effects of the information campaign on both men and women. Sample villages have between 1 and 3 polling stations each and the average distance of households from their matched polling station is roughly one kilometer (see Table 1). The outcome of interest in this case, Y_{pv} , is the turnout rate in polling station p in village v , that is, the number of votes cast by women (men) divided by the number of registered women (men). Correspondingly, the impact of treatment, ST_{pv} , is the share of treated women measured as the number of women treated in polling station p in village v divided by the number of registered women.³⁹ Recall that the intervention took place after the voter registration period, ensuring that registration is orthogonal to treatment assignment. We include a vector of

³⁸ To see this, note that the spillover gain is the average number of treated women located within 0-200 meters times the average effect of having an additional treated woman in this range (α_{0-200}) plus the analogous spillover effects due to treated women located between 200-400, 400-600, 600-800 and 800-1,000 meters from a woman.

³⁹ The variable ST_{pv} ranges from 0 to 0.77.

polling station level variables, X_{pv} to control for polling station level differences. This yields the following regression specification:

$$Y_{pv} = \delta_0 ST_{pv} + \gamma X_{pv} + \varepsilon_{pv} \quad (5)$$

Columns 1 and 2 in Panel A of Table 6 show that an increase in the share of treated women in the polling station increases female turnout by 86 to 99 percentage points, depending on whether polling station controls are included. In contrast, there is no effect for male turnout (Table 6, columns 3 and 4). The fact that men are not influenced by information provided to women could reflect men's greater exposure to political information, wider networks or simply lack of effective communication between men and women on political issues.

These polling station level results provide further confirmation of the size and significance of the spillover effects among women found in Tables 3, 4 and 5 and further confirm that both treated and control women were influenced by other women, well beyond their own geographic cluster. More importantly, Tables 3, 4 and 5 report estimates of increases in the probability of voting for women in our sample, while the estimates in Table 6 include the effect of treatment and spillovers on all women registered to vote in the polling station, regardless of whether they are in our sample. Inclusion of these non-sample women substantially increases the impact of treatment, as we would expect.

In fact, we can use these polling station-level results, along with those of Table 4, to infer the minimum number of untreated women that would need to have been influenced by treatment in order to reconcile both sets of estimates. We aggregate a version of Equation (3) up to the polling station level and equate it to a version of Equation (5) that includes the same controls.⁴⁰ This gives

$$\beta NT_{pv} + \theta NC_{Tpv} = \delta_0 NT_{pv}, \text{ which yields}$$

$$NC_{Tpv} = \frac{\delta_0 - \beta}{\theta} NT_{pv}$$

Since $\beta = \theta$ is never rejected (see Table 4), this implies

⁴⁰ In particular, we run Equation (5) with weighted averages of the individual controls of Equation (3). In this specification, the coefficient on the share of treated women ST_{pv} is 1.07 and significant at the 2 percent level.

$$NC_{T_{pv}} = \frac{\delta_0 - \beta}{\beta} NT_{pv}$$

Plugging in the estimates for the various distance radiuses considered, the number of affected untreated women ranges between 6 and 8. Because every 4th household was selected to participate in the study, and there are 2.7 women, on average, in each household, it is reasonable to expect that treated women in treated clusters would have spoken to at least this number of their untreated close neighbors.

3.2 Candidate Choice

We now turn to the impact of the awareness campaign on candidate choice. Table 7 reports the results of specifications (1) and (2) above where Y_{ihcpv} now indicates whether woman i in household h in cluster c in polling station p in village v reported voting for PPPP and is verified as having voted. The number of observations is lower relative to Table 3 because only females verified as having voted are included in the regressions. As before, the estimates in column 1 compare treated households to control households in both treated and control clusters. They do not account for spillover effects and as a result, the coefficient is about one third smaller in magnitude than those of columns 2-4 which do account for spillover effects. Panel A shows that the campaign reduced the probability of voting for PPPP by 15 to 22 percentage points. In Panel B, the impacts for T_2 are again larger in absolute value and more precisely estimated than those of T_1 , but we cannot reject the null that the estimates are equal.⁴¹

Columns 1 and 2 of Panel B of Table 6 confirm these results at the polling station level. The share of treated women in a polling station reduces the PPPP female vote share. In particular, a 10 percent increase in the share of treated women in a polling station leads to a reduction of 6 percent in the share of PPPP female votes. Similar to the turnout results of Panel A, columns 3 and 4 of Panel B show that the campaign had no effect on the PPPP male vote share. Given that the awareness campaign did not mention any candidate or party by name, the fact that it appears to have affected not just turnout, but also party vote shares is remarkable and could have

⁴¹ The point estimate for control women in treated clusters (column 4) is also larger than the point estimate for women in treated households (column 3), though this difference is again not statistically significant (p-value of a t-test that the coefficients are equal from a pooled regression of Panel A is 0.20). This may suggest that treated women exert more influence on untreated women than on other treated women and that they talk not only about the information campaign but also about their candidate choice, as reported in Panel B of Appendix Table A4.

important policy consequences. One plausible explanation for the impact on party vote shares is that in an environment where one party (the PPPP) was likely to get a landslide, the awareness campaign may have encouraged women supporters of PML-F to turnout in greater numbers, thereby increasing the share of PML-F.⁴²

With these results in hand, we now turn to a more direct test of the relevance of the information content of the campaign by assessing the quality of information acquired by the male head on the candidate choice of women in his household. In the follow-up survey, the male head was asked about whether or not each woman in the household had voted and, if she had, whom she had voted for. The same information was solicited from each woman about all the other women in the household. Using these unique data, we can check the extent to which these cross-reports, i.e., the reporter's choice of candidates for a woman, are in agreement with the candidate choice reported by the woman herself. The indicator of agreement takes the value 1 if the two reports match, and is zero otherwise.⁴³ Candidate choice information is available for all women who self-report that they voted, but we restrict the sample to women who were verified as having voted. The final sample includes 3,713 cross reports and 1,220 women, with the number of observations per woman varying by household size.⁴⁴

If the campaign successfully conveyed information on the secrecy of the ballot then household members, and particularly the male head, should have less information on the candidate choice of women in the household. We test this with the following regression

⁴² Though the PML-F is not generally reputed to be pro-women, much of its political leadership, in the districts we study, carries the mantle of spiritual leadership (as "pirs") and women are far more inclined to seek the advice of spiritual leaders for addressing local problems as well as for conflict resolution. In contrast, men are far more likely to solicit redress from more formal sources (see Appendix Table A2). Overall, some two-thirds of sample women report that they had sought the advice of a spiritual leader or "pir" in the past year (see Table 1).

⁴³ If the reporter stated that a woman did not vote when she reported voting and was verified as doing so, the agreement indicator is coded as missing. This is the case for less than 5 percent of the reports by men and roughly one percent of the reports by other women. Likewise, if the reporter answers "I don't know" when asked whom a given woman voted for, we code the agreement indicator as missing. This is the case for 7 out of 1,421 reports by men (less than 0.5 percent) and only one report by other women. We follow this approach because lack of knowledge about a woman's voting behavior could reflect either indifference or freedom to select whomever she desires. Given the low percentage, results do not change if we recode them with a value 0. Note that out of the 1,220 women who report having voted, and were verified as doing so, only one declined to answer whom she voted for.

⁴⁴ Among the 2,637 women in the sample, 1,543 were verified as having voted. The discrepancy in sample size comes from the fact that 21 percent of women that were verified as having voted, self-reported as not having done so. These women appear as voters in the turnout analysis of Table 3 but are not used in the analysis of candidate choice because we do not know whom they voted for. Interestingly, we also find evidence of conformity bias (Silver et al., 1986; Harbaugh, 1996) since treated women that had not voted are significantly more likely to self-report as having done so compared to women in control clusters (40.6 percent vs. 34.8 percent, p -value = 0.001).

$$M_{ijhcv} = \beta_0 T_{hcv} + \beta_1 H_{ihcv} + \beta_2 (T_{hcv} * H_{ihcv}) + \gamma X_{ihcv} + u_v + \varepsilon_{ijhcv} \quad (6)$$

where M_{ijhcv} is an indicator that takes the value 1 if the report of individual i on individual j 's choice of candidate is correct (according to j 's self-report); H_{ihcv} is an indicator for whether reporter i is the male head; and X_{ihcv} is reporter i 's vector of polling station, household and individual characteristics. The error term is likely to be correlated across all observations with the same reporter i and reportee j , but we still cluster standard errors at the geographical cluster level, which is more conservative than using QAP (Krackhardt, 1988) or the correction in Fafchamps and Gubert (2006).

The results are presented in Table 8. The coefficient of interest, β_2 , captures the differential effect of treatment on the quality of male reports about the candidate choice of women in the household. The results indicate that treatment reduces male knowledge about women's chosen candidates by about 8 percentage points. As before, effects are larger and measured more precisely for T_2 . Interestingly, the reduction in male knowledge is larger and significant for controls in treated clusters (column 3) and is the only instance where the effects for T_2 are significantly different from T_1 (p -value=0.067). These results are consistent with reported conversations on political matters with neighbors in Panel B of Table A4. Controls in treated clusters are far more likely to discuss political issues with their neighbors as compared to women in control clusters and are equally likely to do so when compared to directly treated women. This confirms the importance of the information provided in the campaign. Even the more nuanced message about the secrecy of the ballot was apparently conveyed to women not directly treated.

Table A5 complements these results by assessing the extent to which the electoral behavior of women corresponds to that of their household head. Comparing treated women with women in control clusters (column 1 and 2) we find that treated women are far more likely to vote for a party (candidate) other than the one selected by the male head (from 2.8 to 10.1 percentage points). We then check whether the information campaign affected women who had no prior voting experience. The results in columns 4-9 suggest that this is not the case since the intervention increased independent choice mainly among women who had voted in the past. As it turns out, women without a prior voting history are also much less likely to possess NIC cards or be registered to vote and are significantly younger. Given that the time between the information

campaign and the election was too short to allow for the acquisition of an NIC or a change in registration status, this is perhaps not surprising. However, it is also possible that these women face other barriers to participation.

3.3 Knowledge and Perceptions

An important question, given the large effects we find on turnout and candidate choice, is the extent to which the campaign affected women's knowledge about political issues, perceptions and behavior other than voting. Each cell in Table 9 reports the coefficient on the treatment dummy from a regression analogous to Equation (1). The dependent variables are the average of two knowledge questions on current events, an index of pro-democratic views, for example disagreement with "Only the educated should vote" and disapproval of various forms of government such as "Only one party is allowed to stand for election and hold office" or "The army comes in to govern the country". (Appendix Table A1 describes all variables in detail). A higher index is associated with more pro-democratic views. We consider three additional questions: whether the woman checked her name in the voter list after the intervention and before Election Day; whether the woman believes that elections were free and fair and finally whether the woman had witnessed or heard about instances of violence in the village.

The results indicate that treated women were more likely to check if their name was in the voter list but were not more knowledgeable about current events nor did they have more pro-democratic views. Interestingly, column 5 suggests that treatment increased the belief in the legitimacy of the voting process, as women in treatment clusters were more likely to report that elections were free and fair. Column 6 is consistent with evidence of cognitive dissonance in voting, as women in control clusters were less likely to believe that elections were free and fair and more likely to report instances of violence. Given that control clusters were randomly located in the village, it is particularly hard to believe that violence was concentrated precisely in these clusters. Rather, it appears that women in control clusters justified their behavior ex-post by reporting more security concerns and holding the belief that elections were not free and fair.

4. Cost-Benefit Analysis

The estimates from tables 3 and 6 can be used to evaluate the cost effectiveness of the information campaign. The initial development of the campaign cost \$3,600. The training of the canvassing team cost \$753 and the delivery of the information campaign cost \$5,671. This last amount includes the costs of collecting basic information about treatment and control households, which would not be incurred in practice if research were not being conducted. Since roughly two-thirds of sample households were treated, we impute the costs to include 2/3rd of this amount in the intervention cost. This gives us a total intervention cost of roughly \$8,130, including the costs of developing the information campaign and training enumerators. This is an overestimate since the development of the information campaign and the training of canvassing teams represents a fixed cost that can be sizeable if the scale is small. In our case, it constitutes over 50 percent of the overall cost—which, if the campaign were scaled up, would be distributed over a much larger population base. We therefore present the cost under two scenarios: inclusive of the development of the campaign and enumerator training costs; and without it. Both estimates include the labor and transport costs of delivering the campaign.

Since we have 673 treated households, we get a cost of about \$5.6 per household using variable costs only, and \$12 per household if we include fixed costs. This implies a cost per vote of \$2.3 (\$4.9 if we include fixed costs).⁴⁵ To see this note that a household has 2.7 women on average, so we treat about 10 women for every 3.7 households visited. Since the cost of treating 3.7 households is about \$21 (\$44 if we include fixed costs), and this yields 9 additional votes, the implied per vote cost is about \$2.3 (\$4.9). If we ignore spillover effects and use woman level estimates, we would obtain a cost per vote of \$17.5 (\$36.7).⁴⁶

5. Conclusions

This paper examines the role of pre-election voter information campaigns in inducing broader participation in one of the largest new democracies of the world. We focus on two related questions. First, does a lack of information on the electoral process and voting procedures

⁴⁵ This is about Rs. 201 (Rs. 453 including fixed costs), using the exchange rate in February 2008.

⁴⁶ Green and Gerber (2004) provide a nice summary of the price-per-vote in the US using various methods. They estimate the cost of a vote in door-to-door campaigns, which are perhaps closest to what we do, to be around \$19 per vote using contract labor but ignoring spillover effects.

constitute an important barrier to political participation by women? Second, to what extent can social interactions among women be instrumental in fostering participation beyond those directly targeted by an information campaign?

We find overwhelmingly positive answers to both questions. Turnout among women that received the information campaign increased by about 12 percentage points on average, which amounts to little more than one additional female vote for every 10 women or about 4 households treated. We also find evidence of independent candidate choice. In treated households, men were significantly less likely to correctly assess the candidate choices made by women in their households. In addition, treated women were more likely to vote for a different party than the male head, especially among women who had voted in the past. Treated women also voted in larger numbers for PML-F which was seen as less likely to win, thereby changing the vote share of the losing party in sample polling stations. This is perhaps even more remarkable given that the field teams were mostly PPPP supporters. This suggests that the intervention empowered women and thus may have modified the rational calculus of voting (Downs, 1957) by including a utility gain from the mere act of voting (Riker and Ordeshook, 1968). Consistent with this utility gain from voting, women in the randomly assigned control clusters are more likely to report that elections were unfair (and to recall higher instances of violence) in an attempt to justify not casting a vote ex-post. Among women who had not voted in the past, the campaign was less effective. To some extent, this was due to the timing of the awareness campaign, which took place after the voter registration period. That said, more intensive interventions may be required for such women, including assistance with voter registration.

We also find evidence of large spillover effects dictated by geographic proximity. Control women in treated clusters respond to cluster treatment assignment about as much as do directly treated women. Moving beyond clusters we examine spatial spillovers more generally and find still larger peer effects. The importance of spillover effects and peer pressure resonates well with the theoretical literature on voter turnout that emphasizes the role of the group in coordinating participation either because group members are rewarded by leaders or because they each believe

they are ethically obliged to vote and reinforce one another (see Shachar and Nalebuff, 1999 and Feddersen, 2004 for a review).

The presence of significant spillovers also alters the cost benefit analysis quite substantially. An additional vote costs more than seven times as much in the absence of spillovers. Given the relatively low cost of an additional vote (\$2.3, using variable costs only), once spillovers are accounted for, information campaigns appear to provide a relatively cost effective mechanism for enhancing the participation of rural women in the democratic process.

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Figure 1: Timeline

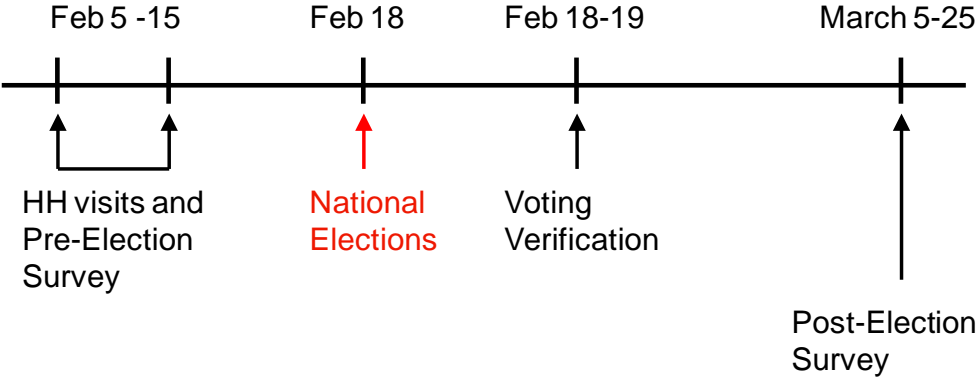


Figure 2: Section of Village with geographical clusters



Notes: The solid white lines delimit a geographical cluster. A square represents the location of a T_1 household, a star represents a T_2 household and a dot represents a control household in a control cluster. A triangle represents a control household in a treated cluster (either T_1 or T_2).

Table 1: Summary Statistics

	N. Obs	Mean	St. Dev	Pct 10	Pct. 50	Pct. 90
Panel A: Polling Station Characteristics						
Number of women registered in each polling station	21	434.0	196.7	195.0	464.0	656.0
Number of treated women in each polling station	21	89.0	54.2	34.0	82.0	150.0
Share of treated women	21	0.24	0.19	0.07	0.22	0.43
Turnout for women	21	0.54	0.27	0.30	0.54	0.91
Turnout for men	21	0.49	0.15	0.32	0.51	0.66
Share of PPPP among female voters	21	0.62	0.26	0.39	0.66	0.88
Share PPPP among male voters	21	0.63	0.25	0.33	0.67	0.93
Percentage of women with access to cable in the polling station	21	0.34	0.26	0.06	0.23	0.75
St. Dev of asset index	21	1.76	0.30	1.46	1.72	2.09
St. Dev of distance index	21	0.79	0.52	0.16	0.69	1.31
Panel B: Household Characteristics						
Household size	963	10.2	5.17	5	9	16
Number of women in the household ¹	991	2.69	1.48	1	2	5
Asset Index	963	0.00	1.85	-2.03	-0.49	2.66
Total owned land (in acres)	963	2.58	7.55	0.01	0.04	7.02
Average monthly expenditure (in Rs. thousands)	963	8.80	4.71	3.00	9.00	12.50
House quality index	963	0.00	1.38	-1.62	-0.32	1.97
Low Zaat Status	963	0.26	0.44	0	0	1
Received visit from political party staff prior to election (1=Yes)	963	0.86	0.35	0	1	1
Attended political rally before intervention (1=Yes)	963	0.24	0.43	0	0	1
Distance to polling station (Km.) ⁺	991	0.97	0.91	0	1	2
Distance between households within geographical cluster (meters)	8,263	194.2	283.9	27.9	107.1	456.5
Distance between households within village (meters)	48,430	1,472.9	1,304.9	109.4	1,070.5	2,962.8
Panel C: Woman Characteristics						
Age	2,637	37.76	16.09	20	35	60
Woman has formal schooling (1=Yes)	2,637	0.18	0.39	0	0	1
Woman is married (1=Yes)	2,637	0.80	0.40	0	1	1
Number of children under 5 years old	2,637	0.86	1.19	0	0	3
Woman has a National Identity Card (NIC or CNIC) (1=Yes)	2,637	0.70	0.46	0	1	1
Woman voted in last local elections (1=Yes) ¹	2,735	0.70	0.46	0	1	1
Access to radio (1=Yes)	2,637	0.48	0.50	0	0	1
Access to TV (1=Yes)	2,637	0.70	0.46	0	1	1
Access to cable (1=Yes)	2,637	0.30	0.46	0	0	1
Mobility Index (0 to 3)	2,637	2.17	0.42	2	2	3
Woman allowed to join an NGO (1=Yes)	2,637	0.73	0.44	0	1	1
Woman is a member of MRDO (1=Yes) ¹	2,735	0.11	0.31	0	0	1
Woman seeks advice from a religious leader or "Pir" (1=Yes)	2,637	0.64	0.48	0	1	1

Notes: ¹ indicates that the variable is created using only the sample from the pre-election visit. Variables are defined in Appendix Table A1.

Table 2: Differences by treatment status

	Treatment vs control households T-C (1)	Treatment 1 vs control households T ₁ -C (2)	Treatment 2 vs control households T ₂ -C (3)	Treated clusters vs control clusters T _N -C _N (4)	Treated households vs households in control clusters T-C _N (5)	Control households in treated clusters vs households in control clusters C _{TN} -C _N (6)
Panel A: Household Characteristics						
Household size	0.206 [0.336]	0.282 [0.387]	0.101 [0.395]	0.404 [0.446]	0.394 [0.419]	0.450 [0.571]
Number of women in the household ¹	0.107 [0.106]	0.136 [0.124]	0.078 [0.118]	0.102 [0.158]	0.116 [0.148]	0.023 [0.171]
Asset index	0.023 [0.131]	0.078 [0.148]	-0.046 [0.177]	-0.040 [0.206]	-0.025 [0.201]	-0.115 [0.206]
Total owned land (in acres)	1.041** [0.409]	1.417*** [0.513]	0.570 [0.497]	0.820 [0.508]	1.006* [0.535]	-0.097 [0.387]
Average monthly expenditure	424.451 [411.233]	441.015 [466.759]	384.979 [426.860]	217.498 [585.957]	312.897 [604.880]	-312.974 [516.998]
House quality index	-0.059 [0.102]	-0.097 [0.124]	-0.011 [0.118]	-0.224* [0.129]	-0.206 [0.129]	-0.333** [0.141]
Distance to polling station (Km)	0.241** [0.099]	0.228* [0.120]	0.257* [0.134]	0.330** [0.162]	0.345** [0.160]	0.240* [0.132]
Low Zaat status	0.028 [0.057]	0.017 [0.070]	0.035 [0.065]	0.068 [0.097]	0.065 [0.095]	0.095 [0.071]
Received visit from political party staff prior to election (1=Yes)	0.004 [0.027]	-0.001 [0.029]	0.009 [0.030]	-0.009 [0.040]	-0.006 [0.037]	-0.025 [0.041]
Attended political rally before intervention (1=Yes)	-0.039 [0.033]	-0.010 [0.037]	-0.080** [0.039]	-0.059 [0.044]	-0.061 [0.045]	-0.047 [0.049]
N. Observations	989	692	607	989	856	310
P-value F test joint significance	0.132	0.209	0.123	0.537	0.434	0.278
Panel B: Woman Characteristics						
Age	-0.763 [0.517]	-0.872 [0.582]	-0.674 [0.608]	-1.410** [0.627]	-1.392** [0.638]	-1.478** [0.700]
Woman has formal schooling (1=Yes)	0.008 [0.019]	-0.002 [0.023]	0.025 [0.022]	0.015 [0.031]	0.016 [0.029]	0.018 [0.037]
Woman is married (1=Yes)	-0.009 [0.015]	-0.020 [0.016]	0.005 [0.021]	-0.017 [0.015]	-0.017 [0.015]	-0.017 [0.022]
Number of children under 5 years old	0.087* [0.046]	0.114** [0.055]	0.048 [0.058]	0.147*** [0.050]	0.150*** [0.048]	0.139* [0.083]
Woman has a National Identity Card (NIC or CNIC) (1=Yes)	0.028 [0.026]	0.021 [0.032]	0.033 [0.024]	0.042 [0.035]	0.044 [0.035]	0.034 [0.032]
Woman voted in last local elections (1=Yes) ¹	0.021 [0.023]	0.002 [0.028]	0.042* [0.025]	0.036 [0.030]	0.036 [0.030]	0.036 [0.033]
Access to radio (1=Yes)	0.012 [0.033]	0.032 [0.034]	-0.014 [0.039]	-0.014 [0.045]	-0.008 [0.046]	-0.046 [0.045]
Access to TV (1=Yes)	0.022 [0.034]	0.041 [0.035]	0.000 [0.046]	0.026 [0.053]	0.028 [0.053]	0.028 [0.053]
Access to cable (1=yes)	-0.059 [0.043]	-0.064 [0.050]	-0.045 [0.049]	-0.118* [0.066]	-0.116* [0.065]	-0.116** [0.051]
Mobility Index (0 to 3)	0.033 [0.043]	0.055 [0.044]	0.005 [0.051]	0.012 [0.057]	0.020 [0.053]	-0.036 [0.077]
Woman allowed to join an NGO (1=Yes)	-0.004 [0.026]	0.008 [0.027]	-0.020 [0.032]	-0.022 [0.032]	-0.019 [0.033]	-0.031 [0.037]
Woman is a member of MRDO (1=Yes) ¹	-0.004 [0.026]	0.018 [0.029]	-0.029 [0.032]	0.030 [0.036]	0.023 [0.035]	0.073 [0.044]
Woman seeks advice from a religious leader or "Pir" (1=Yes)	-0.052 [0.033]	-0.031 [0.039]	-0.079* [0.043]	-0.057 [0.048]	-0.062 [0.049]	-0.042 [0.053]
N. Observations	2,637	1,827	1,577	2,637	2,303	767
P-value F test of joint significance	0.282	0.124	0.187	0.401	0.304	0.001

Notes: T refers to the sample of treated households, C control households, C_{TN} control households in treated clusters, T_N households in treated clusters (including both treated and control households) and C_N households in control clusters (all are control households). ¹ indicates that the variable is created using only the sample from the pre-election visit. Variables are defined in Appendix Table A1.

Table 3: Effect on Female Turnout

	Treatment vs control households	Treated clusters vs control clusters	Treated household s only vs control clusters	Control households in treated clusters vs households in control clusters
	T-C (1)	T _N -C _N (2)	T-C _N (3)	C _{TN} -C _N (4)
Panel A: Treatment				
Treatment (T)	0.06 (0.045)	0.118 (0.073)	0.120* (0.071)	0.121* (0.062)
R-squared	0.18	0.19	0.19	0.21
Panel B: T ₁ vs T ₂				
Importance of voting (T ₁)	0.034 (0.052)	0.095 (0.077)	0.094 (0.075)	0.109 (0.070)
Importance of voting and secret balloting (T ₂)	0.093* (0.048)	0.145* (0.077)	0.152** (0.074)	0.135* (0.079)
R-squared	0.18	0.19	0.2	0.21
N. Observations	2,637	2,637	2,304	767
Mean dependent variable among C _N	0.52	0.52	0.52	0.52
<i>P-value</i> (T ₁ = T ₂)	0.223	0.308	0.229	0.752
<i>P-value</i> (F-test for joint significance of T ₁ and T ₂)	0.146	0.159	0.106	0.152

Note: The dependent variable takes the value 1 if a woman reports having voted in the February 2008 elections and had a verifiable ink mark on her thumb. The symbols *, **, *** represent significance at the 10, 5 and 1 percent respectively. All specifications include village fixed effects and the following controls: number of registered female voters, whether woman has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from "Pir". Standard errors are reported in parentheses below the coefficient and are clustered at the geographic cluster level.

Table 4: Spillover Effects using distance - I

	75m (1)	100m (2)	200m (3)
Panel A: Treatment			
Treatment (T)	0.118* [0.063]	0.146** [0.072]	0.103 [0.067]
Control with T within radius (C_T)	0.098 [0.059]	0.121* [0.071]	0.059 [0.062]
Number of households within radius	0.003** [0.001]	0.003*** [0.001]	0.002*** [0.001]
R-squared	0.191	0.196	0.20
<i>P-Value</i> (T= C_T)	0.551	0.458	0.238
Panel B: T_1 vs T_2			
Importance of voting (T_1)	0.088 [0.064]	0.127* [0.068]	0.106 [0.074]
Importance of voting and secret balloting (T_2)	0.140** [0.062]	0.172** [0.068]	0.146** [0.073]
Control with T1 within radius (C_{T1})	0.039 [0.054]	0.060 [0.057]	-0.011 [0.060]
Control with T2 within radius (C_{T2})	0.108* [0.064]	0.137* [0.071]	0.136 [0.083]
Number of households within radius	0.003** [0.001]	0.002** [0.001]	0.002** [0.001]
R-squared	0.193	0.20	0.20
<i>P-value</i> ($T_1 = C_{T1}$)	0.429	0.329	0.163
<i>P-value</i> ($T_2 = C_{T2}$)	0.403	0.43	0.844
<i>P-value</i> ($T_1 = T_2$)	0.263	0.334	0.384
<i>P-value</i> ($C_{T1} = C_{T2}$)	0.428	0.417	0.227
N. Observations	2,637	2,637	2,637
Mean dependent variable among C_N	0.58	0.58	0.58

Note: The dependent variable takes the value 1 if a woman reports having voted in the February 2008 elections and had a verifiable ink mark on her thumb. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively. All specifications include village fixed effects and the following controls: number of registered female voters, whether woman has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from "Pir". Standard errors are reported in parentheses below the coefficient and are clustered at the geographic cluster level.

Table 5: Spillover Effects using distance - II

	Mean (1)	Median (2)	Coefficients (3)
Treatment (T)			0.037 (0.031)
Number of treated women within 0-200 radius	40.40	35.00	0.007*** (0.001)
Number of treated women within 200-400 radius	20.47	16.00	0.009*** (0.002)
Number of treated women within 400-600 radius	11.91	4.00	0.007*** (0.002)
Number of treated women within 600-800 radius	15.50	6.00	0.005** (0.002)
Number of treated women within 800-1000 radius	11.08	1.00	0.005* (0.003)
Number of treated women within 1000-1,200 radius	7.88	0.00	0.002 (0.003)
Number of women within 0-200 radius	56.78	47.00	-0.002** (0.001)
Number of women within 200-400 radius	29.84	24.00	-0.004*** (0.001)
Number of women within 400-600 radius	18.33	7.00	-0.005*** (0.001)
Number of women within 600-800 radius	21.28	8.00	-0.003* (0.002)
Number of women within 800-1000 radius	15.81	4.00	-0.004* (0.002)
Number of women within 1000-1,200 radius	11.50	0.00	0.000 (0.002)
Observations			2,637
R-squared			0.234

Note: The dependent variable in the regression of column 3 takes the value 1 if a woman reports having voted in the February 2008 elections and had a verifiable ink mark on her thumb. In column 1 (2), the mean (median) of each variable is reported. Column 3 reports the coefficient along with the standard errors in parentheses below the coefficient, clustered at the geographic cluster level. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively. All specifications include village fixed effects and the following controls: number of registered female voters, whether woman has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from "Pir".

Table 6: Spillovers at the Polling Station Level

	Women		Men	
	(1)	(2)	(3)	(4)
Panel A: Turnout				
Share of Treated Women	0.864*** (0.259)	0.991*** (0.240)	-0.044 (0.187)	-0.149 (0.183)
R-squared	0.370	0.601	0.003	0.247
Mean of Dependent Variable	0.584	0.584	0.487	0.487
Panel B: Share of PPPP				
Share of Treated Women	-0.614** (0.277)	-0.614* (0.314)	-0.372 (0.290)	-0.456 (0.270)
R-squared	0.205	0.215	0.080	0.368
Mean of Dependent Variable	0.621	0.623	0.630	0.630
Polling Station Controls	No	Yes	No	Yes
N. Observations	21	21	21	21

Note: The dependent variable in Panel A is the share of valid votes cast by women (columns 1-2) and men (columns 3-4) over the total number of registered women/men. In Panel B, the dependent variable is the share of votes obtained by PPPP over the total number of valid votes. 'Share of treated women' is calculated by dividing the total number of women treated, in a polling station, by the number of registered women in the polling station. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively. Robust standard errors in parentheses.

Table 7: Effect on Female PPPP Vote

	Treatment vs control households T-C (1)	Treated clusters vs control clusters T_N-C_N (2)	Treated households only vs control clusters $T-C_N$ (3)	Control households in treated clusters vs households in control clusters $C_{TN}-C_N$ (4)
Panel A: Treatment				
Treatment (T)	-0.056 (0.041)	-0.157*** (0.052)	-0.146*** (0.047)	-0.218*** (0.077)
R-squared	0.166	0.175	0.196	0.285
Panel B: T_1 vs T_2				
Importance of voting (T_1)	-0.023 (0.052)	-0.130* (0.069)	-0.114* (0.065)	-0.202** (0.091)
Importance of voting and secret balloting (T_2)	-0.093 (0.057)	-0.190*** (0.057)	-0.183*** (0.055)	-0.246*** (0.090)
R-squared	0.171	0.179	0.201	0.286
N. Observations	1,133	1,133	974	299
Mean dependent variable among C_N	0.950	0.950	0.950	0.950
<i>P-value</i> ($T_1 = T_2$)	0.328	0.403	0.346	0.652
<i>P-value</i> (F-test for joint significance of T_1 and T_2)	0.264	0.005	0.004	0.017

Note: The dependent variable takes the value 1 if a woman reports having voted for PPPP in the February 2008 elections and was verified as having voted. The symbols *, **, *** represent significance at the 10, 5 and 1 percent respectively. All specifications include village fixed effects and the following controls: number of registered female voters, whether woman has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from "Pir". Standard errors are reported in parentheses below the coefficient and are clustered at the geographic cluster level.

Table 8: Effect on Candidate Choice Using Cross Reports from Family Members

	Treated clusters vs control clusters $T_N - C_N$ (1)	Treated households only vs control clusters $T - C_N$ (2)	Control households in treated clusters vs control clusters $C_{TN} - C_N$ (3)
Panel A: Treatment			
Treatment (T)	-0.007 (0.023)	-0.015 (0.025)	0.024 (0.025)
Man reporting about woman	-0.012 (0.019)	-0.010 (0.019)	-0.021 (0.020)
Man reporting x T	-0.085*** (0.027)	-0.082*** (0.028)	-0.104* (0.054)
R-Squared	0.065	0.069	0.125
Panel B: T_1 vs T_2			
Importance of voting (T_1)	-0.016 (0.026)	-0.026 (0.028)	0.012 (0.025)
Importance of voting and secret balloting (T_2)	0.002 (0.027)	-0.003 (0.030)	0.024 (0.029)
Man reporting about woman	-0.012 (0.019)	-0.010 (0.019)	-0.021 (0.020)
Man reporting x T_1	-0.064* (0.037)	-0.072* (0.039)	-0.025 (0.040)
Man reporting x T_2	-0.107*** (0.032)	-0.093** (0.035)	-0.189** (0.084)
R-squared	0.064	0.070	0.126
N. Observations	3,713	3,200	914
Mean dependent variable among C_N	0.983	0.983	0.983
<i>P-value</i> ($T_1 = T_2$)	0.496	0.443	0.734
<i>P-value</i> (Male Report x $T_1 =$ Male Report x T_2)	0.306	0.645	0.0626

Note: The dependent variable takes the value 1 if a woman's self-report about candidate choice matches the report of the reportee, either another woman in the household or the male head. Each observation is therefore a pair with several observations for each woman. If a reporter believes that a woman did not vote or does not know whom she voted for, the dependent variable is coded as missing. All specifications include village fixed effects and the following controls: number of registered female voters, whether reportee has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from a "Pir". Standard errors are reported in parentheses below the coefficient and are clustered at the geographic cluster level. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively.

Table 9: Effect on Knowledge and Perceptions

	N. Obs	Index of knowledge of current events	Index of opinion on democracy	Woman checked voter list after intervention	Woman believes elections were free and fair	Woman witnessed or heard about violence in village
	(1)	(2)	(3)	(4)	(5)	(6)
Treated clusters vs control clusters ($T_N - C_N$)	2637	0.005 (0.072)	0.066 (0.041)]	0.051* (0.030)	0.070** (0.034)	-0.104** (0.044)
Treated households only vs control clusters ($T - C_N$)	2304	0.012 (0.070)	0.069 (0.042)]	0.053* (0.031)	0.075** (0.033)	-0.101** (0.042)
Control households in treated clusters vs households in control clusters ($C_{TN} - C_N$)	767	-0.025 (0.094)	0.046 (0.052)	0.048 (0.035)	0.060 (0.037)	-0.122** (0.049)
Mean dependent variable among C_N		-0.05	-0.03	0.55	0.83	0.31

Note: The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively. All specifications include village fixed effects and the following controls: number of registered female voters, whether woman has a NIC or CNIC, level of schooling, age, zaat status, TV access, number of children between 0-5, total land owned, index of mobility and whether woman seeks advise from "Pir". Standard errors are reported in parentheses below the coefficient and are clustered at the geographic cluster level. Variables are defined in Appendix Table A1.

Appendix A: Visit Script

Importance of Voting (T1)

Picture 1: Ask “In your opinion, who do you consider responsible for the situation shown in this picture?” If women respond that politician, feudal lords, bureaucrats and influential personalities, etc. then clarify that in fact you may be responsible for this state. Also, responsible are all those who do not cast a vote or choose a wrong candidate. You are the ones who empower them. Hence you need to understand how you can individually affect the decision of who finds solutions to your problems/issues. Do realize your power and importance of your vote?

Picture 2: Ask “Could your one vote bring a change in your life?” Explain that your vote is of great importance. Through this vote a representative is elected. It is this elected representative who then sits in the provincial or national Assembly and makes decisions with regard to what facilities are provided in your area with regard to education, health, security, roads, income earning options, etc.

Picture 3: Many women think that casting a vote makes no difference. Ask women what they think. If they respond that they are women or are underprivileged and therefore it will make no difference, stress that every Pakistani vote is of equal importance, regardless of whether the voter is rich or poor, male or female. If they as women do not cast their vote then individuals who have no interest in women related issues may get elected. Tell the women that there is a lot of power in their vote. People consider that women are weak. Should all Pakistani women begin to vote, their vote has the power to alter a Government!

Picture 4: Ask the women whether they are aware that when they cast a vote in the General Elections, they actually select two members: one for the large assembly, which is known as the “National Assembly” on the green ballot paper; and the second for the small assembly which is “Provincial Assembly” on the white ballot paper. Both the assemblies work separately, with different domains and duties assigned.

Picture 5: Explain that the major responsibility of the members of the national assembly is legislation. Like setting-up laws for the protection of women rights; establishing law for peace and stability in the country; relations with foreign countries and construction of major roads. Reiterate that the color of ballot for the member of national assembly is green.

Picture 6: Ask women whether they know about the responsibilities of the members of the provincial assembly. Explain that provincial assembly member has a more direct link to the area they live in. It is this member’s responsibility to ensure the provision of facilities such as girl’s and boy’s schools, health centers, irrigation and small and home based industries. Remind women that the color of ballot for the member of provincial assembly is white.

Remind women that in the pictures previously shown they must have noted that the members of National and Provincial Assemblies are tasked with a lot of work for local and national progress. Ask women whether they think “good” candidates should have specific qualities in order to be effective at their job. Encourage active participation. Then, show **Picture 7** and list the characteristics of an effective candidate: educated, well reputed, respected for their good character and benevolent to poor; interested to promote projects that will reduce poverty; ability to understand problems; not misused national resources in the past; and have a positive attitude.

Ask women whether they have information about all the candidates that are contesting elections from their constituency. Show **Picture 8** and ask women about their impression. Explain that there may be many women who do not know about the candidates that are contesting in their constituency. How then can they compare the qualities of the candidates in order to decide who is the best candidate?

Ask women if they would cast their vote. If “Yes” then ask how they would decide whom to vote for. “Do they have enough information about all the members?” and “Do they really know who the best candidate is?” If “Not” then ask where they would obtain information about the candidates. Show **Picture 9** and tell them where information about the candidates could be obtained, e.g. male members within the family (since they are more aware and exposed), neighbors, teachers/respected members of the community and party workers.

Picture 10: Ask women what they see. The picture is self explanatory, showing a before and after behavior of a candidate – before the election the candidate is humble and attentive. After the election they just whisk off without even acknowledging your presence! Ask the women if this has happened to them. Highlight that this happens when one does not get correct information about the member and thus one chooses the wrong candidate. Ask women if they ever wonder “why cast a vote when nobody has done anything for us so far? Everyone is the same and all exploit resources.” Tell women that they may have had bad experiences, but it is still important to keep the electoral process alive. Show **Picture 11** and explain that one can select the best amongst the lot – and only then will better candidates come forward. This would make clear to the member that you cast your vote sensibly. If this practice continues then soon sincere people would also contest elections and we would vote for them because of their genuine attributes. (As shown in **Picture 7**).

Secrecy of Balloting (T2)

Tell women that we have so far established that voting is important. But does everyone have to vote for the same person? Tell women that even when two sisters go to the market to buy a dress, they generally come away with two different designs, colors, and fabric. Why does this happen? Because people may have different preferences.

Explain that secrecy is a legal right and responsibility of every citizen. When you vote, you have the right to keep your vote confidential. No one may see you cast your vote, not even the election commission staff, polling agent, or another voter. It is only if a voter has a disability such as weak eyesight or a physical problem that can prevent you from stamping the ballot paper that you may seek assistance. Otherwise, any other presence would be considered illegal. Lack of ability to read or write does not justify any kind of assistance (since one does not need to read or write to understand the ballot paper). Show **Picture 12** and explain the basic process of balloting as follows: (i) Voter enters the polling station; (ii) Polling officer inspects National ID Card; marks thumb with indelible ink and after calling the name and serial number of the voter, marks off her name from electoral list; (iii) The First Presiding Officer issues a ballot paper for the national assembly. She stamps and signs it on the reverse side and marks the counterfoil; (iv) The Second Presiding Officer issues ballot paper for provincial assembly. She stamps and signs it on the reverse side, and marks the counterfoil; (v) Voter goes to the polling booth and stamps on both the ballot papers; (vi) Voter puts her ballot in the specified ballot boxes; (vii) Voter leaves the polling station.

Tell the women that to keep voting confidential, all polling stations will be equipped with a Voter Screen. This screen will ensure that no one sees you while stamping the ballot paper. Show **Picture 13** and highlight that the Election Commission has undertaken special arrangements to make voting easy for women – e.g. separate polling stations for women, female polling staff, and ensuring that polling stations and polling booths are located in easy to reach places, e.g. nearby schools.

Show **Picture 14** and explain the right procedure of balloting. Show how the ballot should be stamped and more importantly folded, and then put in the appropriate ballot box i.e. green ballot paper into green ballot box and white ballot paper into the white ballot box.

Ask the women, how many of them have voted before? Ask them how they have felt after casting the vote? Some may say nervous or afraid while others may say satisfied. Show **Picture 15** and explain that as shown in the picture, once a voter comes out everyone is interested in knowing whom she has voted for. Tell the women that this should not make them anxious or nervous. If they want, they can make everyone happy!

Appendix B: Visual Aids



Who is responsible for the situation shown in the picture?



Elected representatives make decisions about developmental activities.



Every Pakistanis vote is of equal importance; regardless whether the voter is rich or poor, male or female

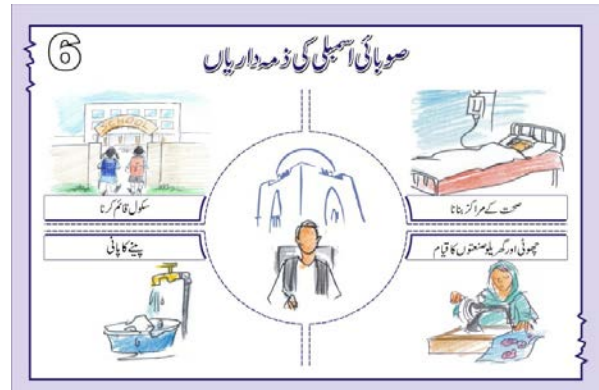


One vote casted results in selection of two members; one from National Assembly and other from Provincial Assembly. a. National assembly; b. Provincial assembly



Major responsibilities of members of the National Assembly are:

- Setting-up laws for the protection of women rights;
- Establishing law for peace and stability in the country;
- Relations with foreign countries and
- Construction of major roads



Responsibilities of the members of provincial assembly are to ensure:

- Provision of facilities such as girls & boys schools,
- Health centers,
- Irrigation and
- Small and home based industries in their own areas



Characteristics of effective member are:

- Interested to promote projects that will reduce poverty;
- Well reputed,
- Not misused national resources in the past;
- Respected for their good character;
- Has a positive attitude towards poor
- Ability to understand problems;
- Educated,



9. Getting information about the candidate from:

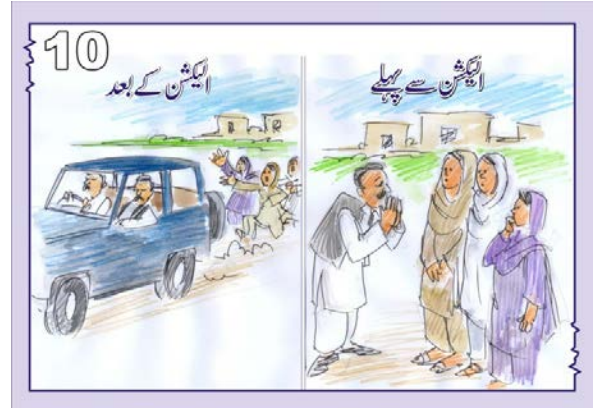
- Neighbors,
- Male members within the family
- Party workers
- Teachers/respected members of the community



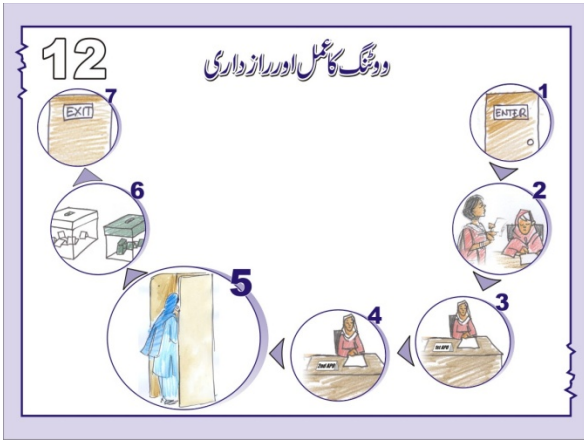
11. One has to choose the best from the lot available.



Who are the candidates contesting elections from their constituency?



10. Pre-election, Post-election

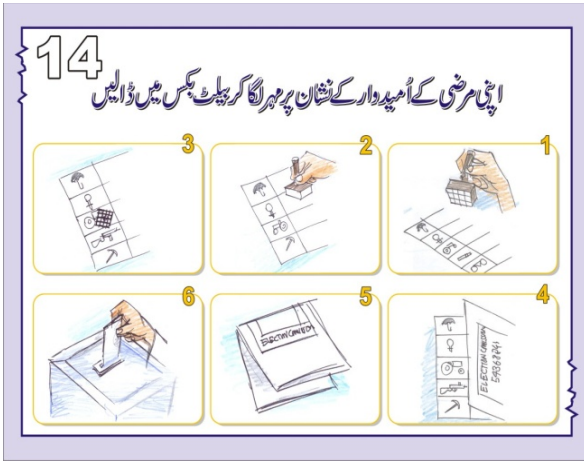


12. The importance and confidentiality of the Voting Process

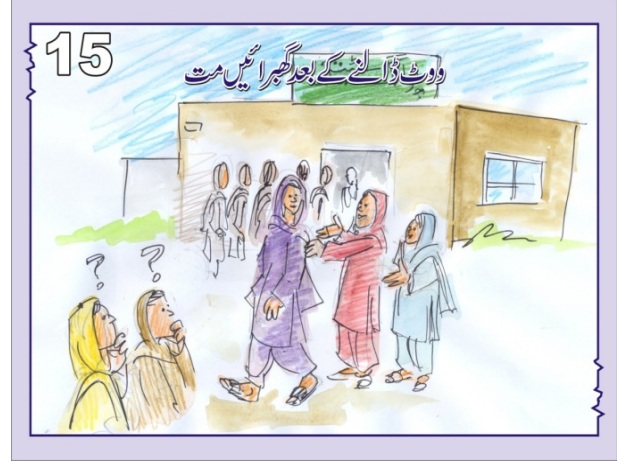


Separate Polling Arrangements for Women (from right to left)

1. Female Polling Agent
2. Separate Polling Space for Women
3. Male Polling Station
4. Female Polling Station



14. Stamp against the symbol/name of your chosen political candidate and place the vote in the ballot box



15. Don't be afraid after casting your vote!

Appendix Table A1. Definition of Variables

Variable	Definition
Polling Station Characteristics	
Share Valid Votes	Share of valid votes cast by women (columns 1-2) and men (3-4)
Share PPP	Share of votes obtained by PPP over the total number of valid votes
Share of treated women	calculated by dividing the total number of women treated, in a polling station, by the number of registered women in the polling station.
St. Dev of asset index	Standard Deviation of household asset Index
St. Dev of distance to polling station	Standard deviation of distance to polling station
Pct. of Women with Access to Cable TV	Percentage of Women with Access to Cable TV
Household Characteristics	
Household size	Total number of individuals in the household including children
Asset Index	The first component of a PCA including the number of refrigerators, freezers, fans, geysers, washing machines/dryers, cooking stoves, TVs, VCRs, VCPs/ CD players, Radios/ cassette players, sewing/knitting machines, dish antennas, cable services, bicycles, motorcycles, cows, buffalos and goats, as well as a dummy variable that takes value 1 if household owned any major agricultural assets/ machinery.
Total owned land (in acres)	Total acres of owned land by the household
Average monthly expenditure (in thousands)	Average monthly expenditure computed using the mid point of the following options: less than 2,000, greater than 2,000 but less than 4,000, greater than 4,000 but less than 6,000, greater than 6,000 but less than 8,000, greater than 8,000 but less than 10,000, greater than 10,000 but less than 15,000, greater than 15,000 but less than 25,000, greater than 25,000 but less than 35,000.
House quality index	Index constructed using principal components analysis using number of rooms and dummy variables that take value 1 if house has pacca walls, a roof made of concrete, iron/brick/tile or wood/brick/tile, the toilet is flush connected to public sewerage, flush connected to pit or flush connected to open drain latrine and the main source of drinking water for the household is either piped water or hand pump.
Distance to polling station (Km.)	Total distance in Km. from household to polling station.
Low Zaat (Caste) Status	Household belongs to service or menial zaat groups
Woman Characteristics	
Woman has formal schooling (1=Yes)	Dummy variable equal to 1 if woman has any formal schooling.
Woman is married (1=Yes)	Dummy variable equal to 1 if woman is married.
Number of children under age 5	Number of children under 5 years old over total number of children that the woman has.
Woman would be allowed to join a NGO (1=Yes)	Dummy variable equal to 1 if woman would be allowed to get involved in an NGO if one were to start working in their village.
Has a NIC (1=Yes)	Dummy variable equal to 1 if the woman has a national identity card
Access to radio (1=Yes)	Dummy variable equal to 1 if woman has access to a radio.
Access to TV (1=Yes)	Dummy variable equal to 1 if woman has access to TV.
Access to cable (1=Yes)	Dummy variable equal to 1 if woman has access to cable.
Hours of Radio in an average week	The product of number of hours of radio listened in an average day times number of days respondent listens to the radio in an average week.
Gets World new from BBC's Urdu Service	Dummy variable equal to 1 if respondent reported turning to BBC radio first for getting world news
Number of hrs of TV watched in avg week	The product of number of hours of TV watched in an average day times number of days respondent watches TV in an average week
Mobility Index	Index based on questions about whether woman would be allowed to go to bazaars, doctors or for social visits outside her village and her settlement. 1= No to all three; 2=accompanied by adult male and 3= Accompanied by adult female, children or alone. The index is the sum of responses divided by 3
MRDO membership (1=Yes)	Dummy variable equal to 1 if woman is a member of a community organization in her village.
Index of community action taken	Index constructed using principal components analysis of 3 questions on mediums tried to resolve different situations for both men and women (election officials left name off voter list, police wrongly arrested someone in family, someone wrongly seized family's land). The 3 questions were recorded to 1 if respondent had either lodged a complaint, used connections with influence, offer a tip or participated in a protest to resolve the situation. 0 if they had not.
Index of contact with formal authority	Index constructed by adding 1 (0 otherwise) if the answers is YES to following questions whether during the past year he/she contacted a local government councilor (Nazim, Naib Nazim) and contacted a political party official. The total is divided by 2.
Index of contact with informal authority	Index constructed by adding 1 (0 otherwise) if the answers is YES to following questions whether during the past year he/she contacted a religious leader (Pir, Murshid) and contacted a traditional ruler (Wadera, Maalik, Numberdar). The total is divided by 2.

Appendix Table A1. Definition of Variables (cont.)

Variable	Definition
<i>Knowledge of current events and the political process</i>	
Aware of imposition of Emergency Rule (1=Yes)	Dummy variable equal to 1 if respondent had heard about the imposition of the emergency rule, the removal of Chief Justice of the Supreme Court and the house arrest of various lawyers.
Index of knowledge of current events	Average score of the following knowledge questions: "Aware of imposition of emergency/house arrest of lawyers and removal of Chief Justice" and "Knows name of newly elected Prime Minister".
Share of political party signs correctly identified	Proportion of signs (out of 7) that respondent were able to correctly match to a political party contesting for a National Assembly seat.
Share of political party names correctly identified	Proportion of party's names contesting for National Assembly that the respondent was able to recall perfectly out of 2.
Recalls winning candidate (1=Yes)	Dummy variable equal to 1 if woman perfectly recalled the name of the candidate that won the National Assembly seat in her constituency
Recalls names of main candidates (1=Yes)	Dummy variable equal to 1 if woman perfectly recalled the names of the candidates from the two main parties that contested a National Assembly seat
Knows the gender of main candidates (1=Yes)	Dummy variable equal to 1 if woman perfectly identified the gender of the candidates from the two main parties that contested a National Assembly seat
<i>Voting behavior and perceptions</i>	
Checked voter list after February 5th (1=Yes)	Dummy variable equal to 1 if after February 5th woman or a family member checked to see if she was on the voter list.
Voted in last elections (local) (1=Yes)	Dummy variable equal to 1 if woman voted in the last local body elections.
Voted in Feb 08 (1=Yes)	Dummy variable equal to 1 if respondent voted in this national elections.
Witnessed or heard of any type of violence in/near village (1=Yes)	Dummy variable equal to 1 if woman personally witnessed or heard of any type of violence in/near her village.
Elections were free and fair (1=Yes)	Dummy variable equal to 1 if woman believes that the national elections held in February 18th 2008 were "Completely free and fair" or "Free and fair, but with minor problems" instead of "Free and fair but with minor problems" and "Not free and fair". Disagreement with the following statement: "Only educated should vote" and average disapproval of the following forms of government: "Only one party is allowed to stand for election and hold office.", "The army comes in to govern the country", "There are no elections, no MPA or MNA and the president decides everything"
Index of opinion on democracy	
<i>Recall of Intervention</i>	
Visit before elections (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that she was visited before the elections to tell her about the importance of the elections and voting.
Present in visit before elections (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that she was present in the visit before the elections to tell her about the importance of the elections and voting.
Attend presentation in a neighbor's house (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that she was present in the visit that took place in a neighbor's house before the elections to tell them about the importance of the elections and voting.
Neighbors joined during visit (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that some neighbors were present in the visit that took place at her house before the elections to tell them about the importance of the elections and voting.
Issues raised: importance of voting (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that the issue raised during the visit before the elections was about the importance of voting.
Issues raised: importance of secret voting (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that the issue raised during the visit before the elections was about the importance of voting secrecy.
Issues raised: importance of voting and secrecy (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that the issues raised during the visit before the elections were the importance of voting and importance of voting secrecy.
Talked about visit (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that she talked about the visit and the issues raised during the visit with others in her neighborhood.
Neighbor talked about meeting to woman (1=Yes)	Dummy variable equal to 1 if woman confirmed in the follow-up survey that some women from her neighborhood talk to her about the meeting which she had attended in the days preceding the election.

Appendix Table A2. Gender Differences

	N. Obs	Means		P-value of t-test of (2)-(3) (4)
		Female (2)	Male (3)	
(1)	(2)	(3)	(4)	
Panel A: Access to Media				
Access to Radio (1=Yes)	1,923	0.47	0.42	0.025
Number of hours of radio listened to in an average week	852	9.7	9.63	0.955
Access to TV (1=Yes)	1,923	0.70	0.629	0.004
Number of hours of TV watched in an average week	1,222	15.3	11.0	0.000
Access to cable TV (1=Yes)	1,923	0.29	0.23	0.000
Listens to BBC's urdu service for world news (1=Yes)	852	0.10	0.48	0.000
Panel B: Knowledge of Political Parties and Elections				
Share of political party signs correctly identified	1,923	0.28	0.42	0.000
Share of political party names correctly identified	1,923	0.86	0.96	0.000
Knows the gender of main candidates (1=Yes)	1,923	0.95	0.98	0.547
Recalls names of main candidates (1=Yes)	1,923	0.82	0.86	0.442
Recalls winning candidate (1=Yes)	1,923	0.90	0.95	0.201
Aware of Emergency Rule (1=Yes)	1,923	0.10	0.51	0.000
Panel C: Participation in Public Life				
Attends community meetings (1=Yes)	1,923	0.18	0.52	0.000
Attends demonstrations (1=Yes)	1,923	0.12	0.23	0.000
Attended political rally before intervention (1=Yes)	1,923	0.05	0.24	0.000
Takes action				
If name missing in voter list (1=Yes)	1,923	0.76	0.92	0.000
If police mistakenly arrest family member (1=Yes)	1,923	0.93	0.98	0.000
If family land is seized (1=Yes)	1,923	0.92	0.98	0.000
Index of community action taken	1,923	-0.29	0.69	0.000
Contacts local councilor (1=Yes)	1,923	0.25	0.37	0.000
Contacts a local political party official (1=Yes)	1,923	0.22	0.38	0.000
Index of formal authority contact	1,923	-0.10	0.34	0.000
Contacts a religious leader (1=Yes)	1,923	0.66	0.49	0.000
Contacts a traditional ruler (1=Yes)	1,923	0.45	0.32	0.000
Index of informal authority contact	1,921	0.12	-0.30	0.000

Note: Data come from follow-up survey. Male refers to head of household while female to their spouse. P-values were calculated from a regressions of each variable on a gender dummy. The regression included village fixed effects and standard errors were clustered at the geographical cluster level.

Appendix Table A3. Attrition

	Women Level		Household Level	
	(1)	(2)	(3)	(4)
Panel A: Treatment				
Treatment (T)	-0.004	-0.003	0.005	-0.005
	(0.010)	(0.011)	[0.012]	[0.011]
Baseline Contols?	N	Y	N	Y
R-squared	0.02	0.02	0.01	0.06
Panel B: T ₁ vs T ₂				
Importance of voting (T ₁)	-0.022	-0.022	-0.016	-0.018
	(0.012)	(0.012)	[0.013]	[0.015]
Importance of voting and secret balloting (T ₂)	0.020	0.021	0.032*	0.030
	(0.013)	(0.017)	[0.016]	[0.019]
Baseline Contols?	N	Y	N	Y
R-squared	0.03	0.03	0.02	0.03
Mean dependent variable	0.035	0.035	0.026	0.026
Observations	2,734	2,734	1,018	1,018

Note: Regressions (1) and (2) are at the women level and (3) to (4) are at the household level. In the latter the controls take the average value of the women within a household. The dependant variable takes the value 1 if woman attrited. All regressions include village fixed effects and the following control variables collected during pre-election visit are included when noted: Woman has NIC or CNIC, voted in last elections, woman is a member of MRDO and the number of females in the household. Standard errors are reported in parenthesis below the coefficients and are clustered at the geographical cluster level. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively.

Table A4. Information about intervention and about political discussions

	N. Obs	All	T	T ₁	T ₂	C in T	C in T1	C in T2	C in control clusters
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Information about visit									
Received visit and information before elections (1=Yes)	2,637	0.71	1.00	1.00	1.00	0.00	0.00	0.00	0.00
Neighbors joined during visit (1=Yes)	1,867	0.11	0.11	0.08	0.15	--	--	--	--
Issues raised during visit									
Importance of voting	1,867	0.64	0.64	0.98	0.19	--	--	--	--
Balloting process and secrecy of ballot	1,867	0.06	0.06	0.02	0.12	--	--	--	--
Both	1,867	0.30	0.30	0.01	0.69	--	--	--	--
Discussed visit with neighbors (1=Yes)	1,867	0.41	0.41	0.35	0.50	--	--	--	--
Panel B: Information about political discussions									
Discuss political issues with women in neighborhood (1=Yes)	2,637	0.44	0.55	0.50	0.62	0.40	0.30	0.51	0.18
Issues raised during conversations									
Party/Candidate Positions	847	0.61	0.62	0.61	0.63	0.59	0.58	0.61	0.59
Importance of voting	847	0.86	0.85	0.85	0.86	0.86	0.89	0.83	0.88
Importance of voting in accordance to own preferences	847	0.52	0.53	0.53	0.53	0.47	0.49	0.45	0.51

Notes: Data come from follow-up survey. Column (1) refers to the number of observations for column (2). Columns (3)-(5) report data for treated women. Columns (6)-(8) report data for control women in treated clusters. Column (9) reports data for control women in control clusters.

Appendix Table A5: Impact on Women's Participation and Candidate Choice

	All Women			Not voted in the past			Voted in the past		
	T	C _N	<i>P-value of t-test (1)-(2)</i>	T	C _N	<i>P-value of t-test (4)-(5)</i>	T	C _N	<i>P-value of t-test (7)-(8)</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Percentage of women who									
Voted for the same party as male head	44.6	41.7	0.500	13.5	11.6	0.326	57.25	56.94	0.950
Voted for different party from head	10.1	2.8	0.010	2.2	1.4	0.647	13.15	3.47	0.000
Voted but male head did not	6.1	3.7	0.220	1.7	2.7	0.274	7.89	4.17	0.090
Did not vote	38.6	50.9	0.010	82.0	84.2	0.526	21.04	34.03	0.010
N. Observations	1,870	434		539	146		1,331	288	

Note: P-values are from regressions with village fixed effects, woman characteristics as controls and robust standard errors clustered at the geographic cluster level. The symbols *, **, *** represent significance at the 10, 5 and 1 % respectively.