Women's Political Representation and Intimate Partner Violence*

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November 25, 2022

Abstract

Recent studies demonstrate that female leaders can improve gender-specific outcomes along multiple dimensions through better provision of public goods and legislative changes that benefit women. Using quasi-random exposure to female leaders in India, we show that there may also be an unintended effect: an increase in rural women's reported experience of physical spousal abuse. We find that a plausible channel underlying this effect is an increase in women's modern contraceptive use—potentially resulting from improvements in public provision of health services—which leads to marital conflict, especially when the husband's son preference is stronger than the wife's.

Keywords: Intimate Partner Violence; Female Leaders; Elections, India; Contraception; Representation

JEL codes: D72, J16, J13

*We thank Kathleen Beegle, Sonia Bhalotra, Martin Fiszbein, Raymond Fisman, Tarun Jain, Nicholas Kuipers, Mindy Marks, Dilip Mookherjee, Alessandra Voena, and seminar participants at Boston University for their comments and suggestions. We also thank Kevin Dunne, Owen Graham-O'Regan, Mizuhiro Suzuki, Tianyi Tao, and Amin Younis for their excellent research assistance. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent. Bilge Erten gratefully acknowledges the hospitality of the Institute of Economic Development at Boston University. Support for this research was provided by the Research and Development Initiative at Northeastern University and the Office of the Vice Chancellor for Research and Graduate Education at the University of Wisconsin-Madison, with funding from the Wisconsin Alumni Research Foundation.

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1 Introduction

Intimate partner violence (IPV) is the most common form of violence experienced by women. The global lifetime prevalence of IPV among women who have ever been partnered is 27 percent (Sardinha et al. 2022). In developing countries, IPV prevalence is even higher. For instance, approximately 35 percent of ever-partnered women in South Asia report experiencing physical or sexual abuse by their partners. IPV exacts an enormous toll in terms of mental and physical health, economic capability, and child well-being (WHO 2013). The global cost of IPV is estimated to be USD 4.4 trillion or 5.2 percent of global GDP—higher than the combined costs of civil wars, terrorism, and homicides (Fearon and Hoeffler 2014). Consequently, the societal benefits from understanding the determinants of spousal violence and identifying policy interventions that can reduce and prevent IPV are potentially substantial.

We investigate whether exposure to female leaders influences IPV experienced by women. Recent studies demonstrate that female leaders can improve gender-specific outcomes along multiple dimensions through better provision of public goods and legislative changes that benefit women.[1] Similarly, female leaders could potentially reduce the prevalence of IPV through legal reforms governing violence against women (Burnet 2011; Delaporte and Pino 2022), by lowering public acceptance of IPV (Kuipers 2020), or by strengthening women's bargaining power through better access to education (Beaman et al. 2012) and employment opportunities (Deininger et al. 2020). On the other hand, if exposure to female leaders empowers women, it could heighten intrahousehold conflict and trigger backlash effects from male partners (Bobonis et al. 2013; Ashraf et al. 2014).[2] Hence, the overall impact of exposure to female leaders on the prevalence of IPV against women is *a priori* ambiguous.

More specifically, we examine the impact of female leaders elected to state legislatures in India on the risk of domestic violence experienced by women in the districts from which these leaders are elected. To address potential endogeneity in the gender of the elected leader, we exploit a widely used instrumental variable (IV) strategy based on close elections between male and female politicians. Following Bhalotra and Clots-

[1] These studies include Chattopadhyay and Duflo (2004); Beaman et al. (2009); Bardhan et al. (2010); Clots-Figueras (2011); Ford and Pande (2011); Iyer et al. (2012); Beaman et al. (2012); Bhalotra and Clots-Figueras (2014).

[2] Using lab-in-the-field experiments, Gangadharan et al. (2016) find evidence of significant male backlash against female leaders due to transgression of social norms related to gender.

Figueras (2014) and Clots-Figueras (2011), we instrument the share of seats occupied by female candidates in a given district by the share of seats that women won against men in a close election. We use data from the 2015–16 National Family Health Survey (NFHS) of India, the 2012–13 District-Level Household and Facility Survey (DLHS) of India, and the Election Commission of India (ECI).

We find that exposure to female leaders increases female constituents' reported experience of physical spousal abuse. Our estimates imply that a one standard deviation (s.d.) increase in the fraction of seats held by women in a district leads to a 0.07 s.d. increase in reported physical spousal violence experienced by rural women, with no evidence of a significant impact in urban areas. We find no evidence of significant changes in attitudes toward violence, women's labor market outcomes, female education, or partner characteristics due to exposure to female leaders, ruling out these changes as potential channels underlying our IPV results.

Instead, we show that a plausible channel underlying the increase in IPV against women is an increase in women's modern contraceptive use, that is potentially driven by an increase in the local availability of family planning and reproductive health services, due to exposure to female leaders. The village-level data on public health infrastructure show that districts with a higher share of seats held by female politicians experience improvements in access to health facilities, the implementation of programs which target maternal and adolescent girls' health, and the availability of female health workers. Moreover, rural female constituents in districts with female leaders increase their use of modern methods of contraception, and experience an increase in birth spacing, with no evidence of a significant impact in urban areas. Although higher take-up of contraceptive methods can benefit women in various ways (Joshi and Schultz 2013; Miller and Babiarz 2016), as Ashraf et al. (2014) show, it can also lead to spousal conflict among couples with discordant fertility preferences. In the Indian context, married couples exhibit significant misalignment in their self-reported ideal number of sons. When the husband desires more sons than the wife, the wife's take-up of modern contraception might lead to backlash from dissatisfied and aggrieved husbands. Indeed, we find that our IPV results are driven by couples in which the husband has a stronger son preference than the wife.

We note upfront that using self-reported data on IPV has potential disadvantages. If female leaders increase female constituents' sense of self-worth, they might start recognizing violent acts by their spouses as IPV and might be more likely to report IPV.

While we cannot entirely rule out the presence of such reporting bias, we find no evidence of a significant change in women's attitudes toward IPV in response to increased exposure to female leaders. In addition, we do not observe any significant impacts on more subjective evaluations of IPV, including women's likelihood of reporting being subjected to psychological violence.[3] Lastly, unless we believe that the positive effect of female leaders on reporting of IPV varies by discordance in spousal preferences over the ideal number of sons, higher reporting cannot fully explain why our IPV findings are driven by discordant couples.

Our study contributes to a growing literature that documents the effects of female leaders on a range of health and economic outcomes, including infant mortality and health-seeking behaviors (Bhalotra and Clots-Figueras 2014), local public goods and female-oriented policies (Chattopadhyay and Duflo 2004; Clots-Figueras 2011; Bardhan et al. 2010), attitudes toward female leaders (Beaman et al. 2009), and aspirations and education of girls (Beaman et al. 2012; Clots-Figueras 2011).[4] We complement this literature by showing that female leaders improve village-level public health infrastructure, especially for services that benefit women directly. However, unlike prior studies, we also find that female leaders may have unintended negative consequences for their female constituents if their policy formulations lead to intrahousehold conflict.

Our work also relates to studies documenting that female leaders induce an increase in the reporting of crimes against women, such as rape and kidnapping, to the police (Iyer et al. 2012) and a decrease in women's acceptance of spousal violence (Kuipers 2020).[5] Although our findings complement these studies, our work differs in several ways. First, we focus on women's experience of violence based on survey data collected by female surveyors in a confidential setting rather than data from police reports. Given the social norms and stigma surrounding IPV in our context, women are more likely to report IPV in a survey context than to the police. In fact, the under-reporting of crimes against women, especially those perpetrated by family members, could partly

[3]While administrative data on IPV, such as police or hospital reports, represent more objective measures of IPV, the restricted access of abused women in developing countries to police stations and hospitals also raises concerns about the reliability of such data. For instance, we observe that in our data only 0.6 percent of physically abused women filed a police report and that only 0.1 percent of them visited a doctor or medical personnel.

[4]A broader literature explores the role of increased political representation for minority groups on the provision of public goods and services. For instance, greater representation of Scheduled Castes in India has been shown to increase public goods provision for these castes (Pande 2003).

[5]Iyer et al. (2012) find evidence for a weak but positive relationship between the proportion of female legislators in state assemblies in India and crimes against women in their constituencies.

explain why Iyer et al. (2012) find a weaker relationship between exposure to female leaders and violence against women than we do. Second, we focus on IPV rather than crimes against women more generally. IPV is not only more prevalent than other types of gender-based violence, but the mechanisms underlying IPV are also likely to be different. Our study sheds light on several channels through which IPV against women may respond to increased exposure to female leaders.

Moreover, our work relates to a limited literature showing that women's improved access to family planning services may lead to intrahousehold conflict (Ashraf et al. 2014; Anukriti 2020). More generally, we contribute to an emerging literature on how misaligned fertility preferences can prevent efficient information sharing between spouses, leading to suboptimal outcomes for women (Ashraf et al. 2020). Finally, our paper also contributes to the extensive literature on the drivers of IPV (Aizer 2010; Anderberg et al. 2016; Erten and Keskin 2018; Bhalotra et al. 2021).

The rest of the paper is organized as follows. Section 2 describes the data. Section 3 explains the empirical strategy. Section 4 presents the main results and discusses the evidence on potential mechanisms. Section 5 concludes the paper.

2 Data

We use data from the 2015–16 NFHS, or NFHS-4, a nationwide household survey of both men and women. The Woman's Questionnaire in NFHS-4 was administered to all women aged 15–49 and included a domestic violence module administered to one randomly selected eligible woman per household from 15 percent of the households (IIPS 2017).[6] The NFHS is the only source of information on several dimensions of IPV experienced by women in India, including physical, sexual, and psychological violence.[7] The Man's Questionnaire in NFHS-4 was administered to men aged 15-54 in a subsample of households selected for the women's surveys.

Our NFHS estimation sample consists of 65,292 ever-married women and 70,923 men from 628 districts covering 30 state election constituencies. Appendix Table A.1 presents descriptive statistics for the female and male NFHS samples for our variables

[6]Following the WHO's guidelines, the module was not implemented if privacy could not be obtained.

[7]While the 2005–06 round of the NFHS implemented a domestic violence module, the dataset lacks district identifiers. The 1998–99 round of the NFHS has district identifiers, but it only asked three questions about whether the respondent has been beaten or physically mistreated by any person, who this person was, and how often this had occurred in the last twelve months.

of interest. The NFHS data include binary variables on whether a woman reports having experienced various forms of violent acts at the hands of her husband. Following Anderson (2008) and Erten and Keskin (2018), we construct three indices to capture physical, sexual, and psychological violence by averaging the z-scores of the underlying IPV indicators over the previous 12 months.[8]

Based on a respondent's state of residence at the time of the survey and the survey month and year, we identify the last statewide election year for each respondent.[9] The year of the last state election ranges from 2010 through 2016 for respondents in the NFHS data. We merge the NFHS data with electoral data for statewide elections obtained from the ECI. Since the election data are at the level of the constituency—a smaller geographical unit than a district—we follow Bhalotra and Clots-Figueras (2014) and aggregate election data to the district level before merging it with the NFHS data using the election year and respondent's district of residence. Districts in our data have between 1 and 40 electoral constituencies, and the median district has 6 constituencies.

The electoral data comprise candidate-level information within each state assembly constituency that allows us to identify the gender of winners and runners-up as well as the victory margins. We construct a district-level aggregated variable that measures the fraction of constituencies in district d in state s that were won by female politicians—both overall (F_{ds}) and in close elections against a male runner-up (FC_{ds})—in any given election year. We define an election to be close if the margin of victory in terms of vote share was less than 3 percent.[10]

To analyze effects on fertility and birth spacing, we reshape the cross-sectional NFHS dataset to construct a retrospective woman–year panel spanning the time period between the last state election and the year of the survey. Moreover, we use the 2012–13 DLHS to examine whether female leaders influence village-level health infrastructure. The DLHS is merged with the election data using the last round of state elections and district information. Finally, we utilize data from the Socioeconomic High-Resolution Rural–Urban Geographic Dataset on India (SHRUG) (Asher et al. 2021) to obtain information on district characteristics, as per the 2011 census of India.

[8] Definitions of variables are available in the Appendix.

[9] We assume that the respondent lived in the same state at the time of the last state election. This is a reasonable assumption to make in our context. Fulford et al. (2013) shows that cross-state migration by females is quite small (applicable to less than 1 percent of women in most cases). Among individuals aged 25 years or older surveyed in the 2008 National Sample Survey of India, 89 percent of women and 93 percent of men lived in the state where they were born.

[10] In Section 4.1, we show that our results are robust to alternative bandwidth selections for close elections.

Table A.2 describes the characteristics of 628 districts covered by our NFHS estimation sample using election and census data. On average, 9 percent of constituencies in a district had a female winner; 3 percent of constituencies had a close election between a male and a female candidate; and 1 percent of constituencies had both. Table A.3 presents summary statistics for the 245 districts included in our DLHS sample and describes the DLHS data on public health infrastructure in 7,726 villages.

3 Empirical Strategy

Our goal is to estimate the effect of female leaders on the prevalence of IPV experienced by women. Since there may be unobservable factors correlated with both the likelihood of having a female winner and the prevalence of violence against women in a given district, the OLS estimates may suffer from selection bias. For instance, less gender-biased districts may be more likely to elect female leaders and have a lower incidence of violence against women. Therefore, to identify the effects of exposure to female leaders in a causal manner, we employ an IV strategy based on the existence of close elections between male and female candidates in a given district. Given that the identity of the winner in a close election is quasi-random, we use the fraction of constituencies in a district won by a woman in a close election against a man as an instrument for the fraction of constituencies in a district won by a woman.

Our identification strategy closely follows previous studies (Clots-Figueras 2012; Bhalotra and Clots-Figueras 2014) and is illustrated in Figure 1, which plots the fraction of constituencies won by female politicians in a district against the margin of victory in male–female elections. A positive margin denotes that a female politician won. Panel A of Figure 1 uses all elections where the top two candidates are a male and a female, while Panel B uses only districts that had a single male–female election. In both panels, there is a clear discontinuity: the fraction of seats in a district that are won by female candidates increases by 15–20 percentage points when a woman wins a close election against a man in the district. This is not surprising since the average district has 5 to 6 constituencies.[11]

[11] Appendix Figure A.1 shows no evidence of manipulation around the cutoff point.

We estimate the following specifications using two-stage least squares (2SLS):

$$Y_{ids} = \beta_0 + \beta_1 F_{ds} + \beta_2 TC_{ds} + \sum_j \phi_{1j} I_{jds} G(M_{jds}) + \sum_j \phi_{2j} I_{jds} + X'_{ids}\theta_1 + Z'_{ds}\theta_2 + \delta_s + \epsilon_{ids} \quad (1)$$

$$F_{ds} = \gamma_0 + \gamma_1 FC_{ds} + \gamma_2 TC_{ds} + \sum_j \alpha_{1j} I_{jds} G(M_{jds}) + \sum_j \alpha_{2j} I_{jds} + X'_{ids}\eta_1 + Z'_{ds}\eta_2 + \delta_s + u_{ids} \quad (2)$$

where Y_{ids} denotes the outcome of interest for woman i in district d in state s. The key explanatory variable of interest in the second stage is F_{ds}, the fraction of constituencies in a district with female winners in the most recent state election. We instrument for F_{ds} with the variable FC_{ds}, the fraction of constituencies in a district where a woman won in a close election against a man in the most recent state election. We control for the fraction of constituencies in the district that had a close male–female election, TC_{ds}, and include a third-order polynomial, $G(M_{jds})$, in the victory margin, M_{jds}, between the winner and the runner-up for every (close or nonclose) male–female election, j. We also interact these polynomials with I_{jds}, an indicator for whether there was a male–female election in the district. We include district-level controls, Z_{ds}, comprising the shares of the district population that are female, urban, and low caste, as well as female and male literacy rates and individual-level controls, X_{ids}, including the woman's age, years of schooling, and indicator variables for religion, caste, and rural location.[12] We use robust standard errors clustered at the district level for inference.

Lastly, we estimate the following specification using our retrospective woman–year panel to examine the effects on fertility behavior:

$$Y_{idst} = \beta_0 + \beta_1 F_{ds} + \beta_2 TC_{ds} + \sum_j \phi_{1j} I_{jds} G(M_{jds}) + \sum_j \phi_{2j} I_{jds} + K'_{ids}\theta_1 + Z'_{ds}\theta_2 + \delta_s + \tau_t + \mu_{idst} \quad (3)$$

where Y_{idst} is the outcome for a woman i in district d in state s and year t. We include a vector of individual-level controls, K_{ids}, comprising the number of children that the

[12] In the regressions based on men's data, we include the same set of individual-level controls that are instead measured for the male respondents.

woman had at the time of the last election and the individual-level controls specified in equations (1) and (2). We also include year fixed effects, τ_t, to account for year-specific shocks at the national level. We cluster standard errors at the district level. Similarly to our estimation strategy described in equations (1) and (2), we instrument F_{ds} with FC_{ds} and include the same set of controls as in equation (3) in the first stage.

In Appendix Table A.4, we use the same IV approach to examine whether the fraction of female leaders in the district predicts predetermined individual or district characteristics. The estimates in Panel A indicate that women's characteristics, including age, residence in a rural area, religion, and caste, are not predicted by the proportion of female politicians in a district who won in a close election against a male politician. Similarly, the estimates in Panel B indicate that district characteristics, including the shares of the district population that are female, urban, or members of scheduled castes or scheduled tribes (SC/ST), do not significantly vary with respect to the gender of the winner in close elections.

4 Results

Nearly 25 percent of women in our sample reported experiencing physical IPV at some point during their marriage, and 22 percent reported being physically abused by their husbands during the last 12 months. Below, we first present the estimates for the impact of exposure to female leaders on female constituents' self-reported experience of IPV. Thereafter, we delve into the mechanisms underlying these effects.

4.1 Intimate Partner Violence

Table 1 reports estimates from equations (1) and (2). In Panel A, the OLS estimates show that there is a positive relationship between the fraction of seats held by women at the district level and female constituents' risk of experiencing physical IPV. However, the OLS estimates are likely to underestimate the true effect if women are more likely to be elected in districts with a lower acceptability of violence against women. Indeed, the 2SLS estimates for the full sample are positive, significant, and larger in magnitude than the OLS estimates. Column 6 indicates that increasing the share of seats held by women at the district level by one s.d. (i.e., by 0.13) increases a female constituent's

experience of physical IPV during the last year by 0.05 s.d.[13] This also implies that electing one additional female politician in a district increases a female constituent's experience of physical IPV by 0.07 s.d.[14] Appendix Table A.5 shows that these effects are larger for women aged 35 or younger compared to older ones. The reduced-form results reported in Appendix Table A.6 are consistent with the 2SLS estimates in Table 1. The estimates in columns 7 and 8 of Table 1 show that the results for the full sample are driven by rural women. A one s.d. increase in the fraction of seats held by women in a district leads to a 0.07 s.d. increase in physical IPV against rural female constituents.[15]

Panel B of Table 1 reports estimates from the first stage of the 2SLS regressions. The F-statistics are quite large, implying that the instrument has predictive power. The coefficient estimate of 0.90 does not statistically differ from one, implying that the share of female winners across all elections in a district varies almost one to one with the share of women who win in close elections against male politicians in a district.[16] However, the instrument is still useful to isolate the variation resulting from close elections against male politicians.

In Panel A of Appendix Table A.8, we examine the robustness of our physical IPV results for rural women using alternate specifications. Columns 1–3 show that our findings are robust to using polynomials of different degrees for the vote margin as controls. Columns 4–6 indicate that the coefficient estimates remain significant and positive when the bandwidth for close elections is reduced to 2 or 2.5 percent or when it is increased to 3.5 percent; if anything, the estimates become larger and more precise as we narrow the bandwidth. In column 7, we restrict the sample to districts in which there

[13]The magnitude of the estimated effect is similar to the effect sizes estimated in studies that examine the impacts of other policy changes on IPV indices. For example, Erten and Keskin (2018) find that an additional year of schooling in Turkey increased the reporting of psychological violence by rural women by 0.06 s.d. Erten and Keskin (2021a) show that a one s.d. increase in the Syrian refugee share in a Turkish province resulted in a 0.05 s.d. decline in the experience of physical violence reported by Turkish women.

[14]Since the median district has six constituencies and the median share of seats held by women is zero, election of an additional female politician increases the median number of seats from zero to one, with the share increasing from zero to 1/6 or 0.17. Thus, an increase in the share of female politicians by 0.17 percentage points corresponds to a 0.07 s.d. increase in physical IPV reported by the woman.

[15]This implies that the election of an additional female politician corresponds to a 0.09 s.d. increase in physical IPV experienced by women in rural areas of the district. In addition, the estimates reported in Appendix Table A.7 indicate no evidence of a statistically significant impact of women's political representation on women's risk of being subjected to psychological or sexual violence by their partners, although the coefficients are positive.

[16]This relationship has also been observed in previous studies (Bhalotra and Clots-Figueras 2014).

was at least one election between a female and a male politician since our identifying variation comes from these observations, finding very similar results. Columns 8–10 show that our results are robust to the addition of fixed effects for a woman's age, removal of outlier districts where the share of female leaders exceeds 50 percent, or inclusion of controls for political party affiliations and the share of seats reserved for SC/ST.

4.2 Women's Contraceptive Use

Prior evidence shows that female leaders differ from male leaders in their policy choices (Pande 2003) and tend to invest more in infrastructure that is more directly relevant for women (Chattopadhyay and Duflo 2004). This suggests that female leaders may have a higher probability of investing in family planning and reproductive health services than male leaders, thereby increasing the supply of contraceptive services available to women. Moreover, if a female leader has fewer children than an average woman in her constituency, she might serve as a role model for her female constituents and alter their demand for family planning (Anukriti and Chakravarty 2019).

Public health infrastructure. Bhalotra and Clots-Figueras (2014) show that female leaders improve the public provision of child health services in the districts from which they are elected. We find that female leaders similarly improve the village-level provision of, and thereby female constituents' access to, family planning and reproductive health services. The outcomes in columns 1 and 2 of Table 2 are indices that capture the presence of public health facilities in a village and a village's connection to public health facilities through an all-weather road, respectively.[17] Both the presence of health facilities and the *connections* to health facilities are greater in places with a female leader in office.[18] As 77 percent of contraceptive users in rural areas report public providers as their source of contraceptives, this improved access to public health facilities is likely to enhance access to family planning services. This finding is consistent with Bhalotra et al. (2022) who find that parliamentary gender quotas for women in developing countries improve coverage of reproductive health services, including contraceptive services. Furthermore, column 3 indicates that female leaders improve

[17]The variable definitions are available in the Appendix.

[18]The disaggregated results for each component of the two indices are shown in Panels A and B of Appendix Table A.9. The set of outcomes examined in Panel A of Appendix Table A.9 are the same as those analyzed in Bhalotra and Clots-Figueras (2014); the remaining outcomes in Table 2 explore a new set of outcomes.

the implementation of programs, such as *Janani Suraksha Yojana* and *Kishori Shakti Yojana*, which target maternal and adolescent girls' health, among other services.[19] Increasing the share of seats held by women at the district level by one s.d. improves the availability of health facilities by 0.23 s.d., connections to health facilities by 0.28 s.d., and the implementation of programs targeting women's health by 0.13 s.d.

Finally, exposure to female leaders increases the availability of female health workers, such as female doctors and auxiliary nurse midwives (ANMs), in the village. These health workers are crucial for the delivery of programs that target women's health, including family planning services.

Modern contraceptive use and birth spacing. Table 3 shows that increasing women's political representation significantly increases modern contraceptive use and decreases the use of traditional contraception, with stronger effects on rural women, potentially due to improvements in the supply of family planning services that we document above. Rural women's likelihood of using any contraceptive method also increases significantly. Our estimates imply that increasing the share of seats held by women by one s.d. results in an increase in modern contraceptive use among rural women by 4 percentage points (an 8 percent increase relative to the mean).[20]

Consistent with the contraception results, exposure to female leaders increases birth spacing in rural areas (Panel D of Table 3). These estimates are based on the woman–year panel dataset and imply that increasing the share of seats held by women at the district level by one s.d. increases birth spacing among rural women by 0.15 years, corresponding to 2 percent of the mean.[21]

Intrahousehold misalignment of fertility preferences. Previous studies show that household decision-making about childbearing and contraceptive use may be characterized by inefficiency and noncooperative behavior (Ashraf et al. 2014; Anukriti 2020; Ashraf et al. 2020). As women's use of contraceptives may not be perfectly observable to the male partner, moral hazard can arise due to hidden action and asymmetric information. Ashraf et al. (2014) show that an increase in the supply of family planning services can make the influence of moral hazard more salient in couples with

[19] The index captures the implementation of four programs, namely, *Janani Suraksha Yojana*, *Janani Shishu Suraksha Yojana*, *Kishori Shakti Yojana*, and *Balika Samriddhi Yojana*.

[20] Panel B of Appendix Table A.8 shows that these results are robust to alternative specifications with polynomials of different degrees, different bandwidths and additional controls. Only two estimates are imprecise, with p-values of 0.10 and 0.21.

[21] Consistent with this result, Appendix Table A.10 suggests that exposure to female leaders reduces a woman's likelihood of giving birth and her number of children; however, these estimates are not significant at conventional levels.

misaligned preferences over the number of children, leading to spousal conflict.

Spousal discordance in fertility preferences is prevalent in our sample—44 percent of couples disagree on their ideal number of sons and, in 23 percent of couples, the husband's ideal number of sons exceeds the wife's.[22] Moreover, 30 percent of husbands express that they want to have more sons than they currently have. In such a setting, greater use of contraception by the wife may lead to spousal conflict if the husband is opposed to contraceptive use because he desires additional sons. To explore this channel, we examine heterogeneity in the impact of exposure to female leaders on IPV by whether the husband's ideal number of sons differs from the couple's actual number of sons and from his wife's ideal number of sons.

Panel A of Table 4 shows that the increase in physical IPV is driven by couples in which the husband currently desires more sons than the couple currently has. Moreover, this pattern of heterogeneity is observed only in rural areas where women experience a significant increase in their access to family planning.[23] Column 3 of Panel A implies that a one s.d. increase in the fraction of seats held by women in a district leads to a 0.08 s.d. increase in physical IPV against rural female constituents whose husbands desire more sons than the couple already has. Panel B of Table 4 reveals the same pattern when we compare the husband's and the wife's ideal numbers of sons.[24] Interestingly, the coefficient estimate for the impact of female leaders on contraceptive take-up among discordant couples is not lower than the impact on nondiscordant couples in rural areas (Table A.12). However, it is only among discordant couples that wives' contraceptive use leads to IPV, implying that only husbands with a stronger son preference relative to their wives' resort to physical violence when their expectations are not met. These results are consistent with Appendix Table A.5 where we show that the effects on IPV are larger for younger women for whom contraceptive decision-making is more relevant.

Altogether, Tables 1–4 provide a consistent set of results on how increased contraceptive use by women may trigger IPV from male partners who have stronger son preference than their wives.

[22]Indian households are characterized by substantial "son preference" (Das Gupta et al. 2003; Jain 2014; Jayachandran 2017), which significantly influences fertility and family planning outcomes in India (Bhalotra and Van Soest 2008; Anukriti 2018).

[23]Our data do not allow us to examine the impact of female leaders on the provision of family planning and reproductive health services in urban areas. However, it is reasonable to assume that access to health services in general and family planning services in particular is better in urban areas, even in the absence of female leaders.

[24]Table A.11 confirms that exposure to female leaders does not affect the husband's or the wife's desired number of sons in rural areas.

4.3 Alternate channels

Attitudes toward violence. Having women in key political leadership positions could shape both women's and men's beliefs about what women can achieve and why they should be treated with respect. Studies exploiting village-level random assignment of female leaders in India show that girls' aspirations and educational attainment significantly improve in villages that are assigned to a female leader (Beaman et al. 2012). Similarly, exposure to local female leaders may lower women's acceptance of IPV, as shown by Kuipers (2020) in Indonesia. While men's attitudes toward violence may also improve due to the same role model effect, men may also feel threatened by the authority of female leaders and may express more support for attitudes that justify violence against women. Appendix Table A.13 examines the effects of exposure to female leaders on IPV attitudes of women in Panel A and those of men in Panel B. In both cases, there is no evidence of a significant change in the attitudes justifying the use of partner violence. We conclude that our IPV results are unlikely to be driven by changes in attitudes towards domestic violence.

Labor market outcomes. Another channel through which exposure to female leaders may increase women's risk of experiencing IPV is by influencing local labor markets in a way that increases women's employment and income relative to their husbands.[25] Consequently, IPV may increase due to male backlash when traditional gender roles are breached and if violence is used as an instrument of control by male partners (Bobonis et al. 2013; Erten and Keskin 2018, 2021b).[26] However, in Appendix Table A.14, we find no evidence of a significant impact on women's probability of having worked in the last week (Panel A) or in the last 12 months (Panel B) or the probability of having worked in agriculture or nonagricultural sectors in the last week (Panels C and D). These results also hold for the full, rural, and urban samples, suggesting that our IPV results cannot be explained by changes in women's labor market outcomes.

Female education. Another channel underlying our IPV results could be a change in female educational attainment due to exposure to female leaders. For instance, if

[25] Deininger et al. (2020) find that women's participation in public work programs and private employment increases in villages with a randomly assigned female leader in India, albeit after the reservation period has ended. Similarly, Ghani et al. (2014) explore how political reservations for women in India affect female entrepreneurship and labor force participation in the manufacturing sector.

[26] On the other hand, increased female employment could also decrease the risk of experiencing IPV by improving women's outside option and reducing their exposure to husbands.

female leaders increase women's access to education and years of schooling (Beaman et al. 2012; Clots-Figueras 2012), it could lead to male backlash against female constituents. However, given that our sample women were in the 15-49 age group at the time of the survey, most of them have already completed schooling before the last statewide election. The estimates in Appendix Table A.4 also show no evidence of a significant treatment effect on women's years of schooling. Moreover, our results are robust to excluding education controls—women's years of schooling at the individual level, and male and female literacy rates at the district level—as shown in Appendix Tables A.16, A.17, A.18, and A.19.

Marriage market outcomes. Increasing women's political representation may also affect marriage market outcomes and partner characteristics if changes in women's bargaining power or perception of their status affect the matching process between potential partners. However, in Appendix Table A.15, we find no evidence of a significant impact of female leaders on their husbands' years of schooling (Panel A), the schooling difference between partners (Panel B), the age difference between partners (Panel C), or whether the husband worked in the last week (Panel D). We conclude that the marriage market channel does not explain our main results.

5 Conclusion

We study the effects of female leaders on the prevalence of IPV against women in their constituencies by exploiting close elections between male and female politicians at the state level in India. Our findings indicate that a one s.d. increase in the fraction of seats held by women in a district corresponds to a 0.07 s.d. increase in physical spousal violence against women in rural areas.

Exploring potential channels, we document that female leaders invest more in the provision of family planning and reproductive health services at the village level. The increase in the local availability of such services coincides with greater use of modern contraceptive methods by women and greater IPV against women whose husbands desire more sons. Thus, while the increased access to contraceptive methods is likely to benefit women in terms of giving them more control over their reproductive capacity, it may also impose significant costs on them by increasing their probability of experiencing physical violence from their husbands. These findings present a mixed view of the impacts of increasing women's political representation in a context with significant

spousal discordance in fertility preferences. Identifying and evaluating the efficacy of policies that can help address such unintended consequences of female leadership are important areas for future research.

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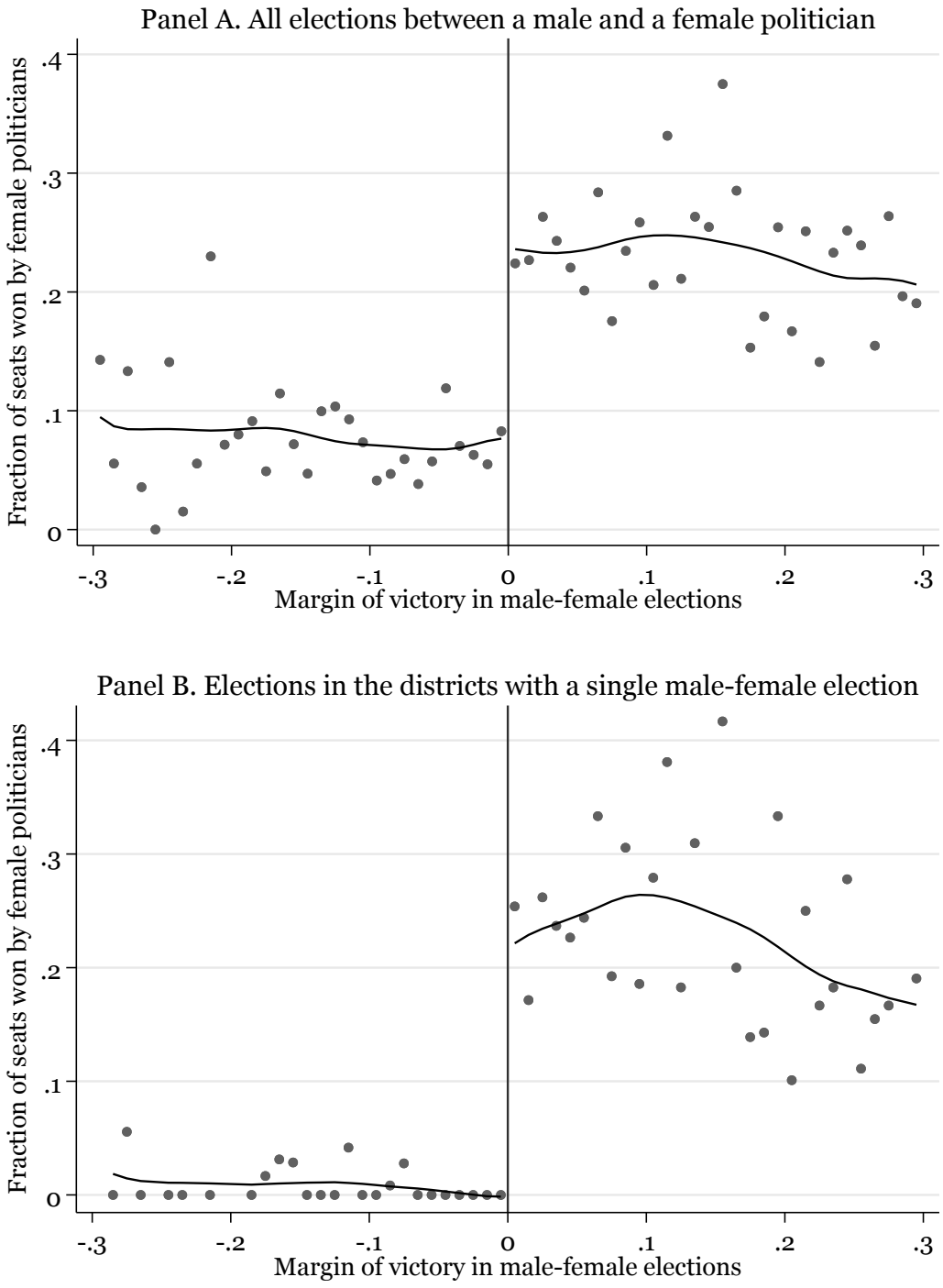
Figures and Tables

FIGURE 1: FIRST STAGE ILLUSTRATION



Notes: The figures plot the fraction of seats in a district won by female candidates against the margin of victory in elections between male and female politicians. Panel A uses all male-female elections in a district, whereas Panel B only uses the elections in districts with a single male-female election.

Table 1: Intimate Partner Violence

	Full Sample						Rural	Urban
	OLS			2SLS			2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Physical violence index								
Fraction of female leaders	0.064	0.057	0.080	0.348*	0.378**	0.393**	0.543**	-0.046
	(0.056)	(0.053)	(0.055)	(0.190)	(0.186)	(0.189)	(0.228)	(0.218)
Observations	65,292	65,292	62,122	65,292	65,292	62,122	43,981	18,141
Outcome mean	0.000	0.000	0.006	0.000	0.000	0.006	0.031	-0.052
Panel B: First-stage regressions								
Dependent variable: Fraction of female leaders								
Fraction of female leaders in close elections				0.908***	0.903***	0.901***	0.890***	1.004***
				(0.096)	(0.098)	(0.098)	(0.098)	(0.092)
Observations				65,292	65,292	62,122	43,981	18,141
Outcome mean				0.087	0.087	0.089	0.089	0.089
First stage F-stat				89.238	84.848	84.853	82.787	119.584
State fixed effects	x	x	x	x	x	x	x	x
District characteristics		x	x		x	x	x	x
Individual characteristics			x			x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. Columns (1)–(6) show estimates for the full sample of women, while columns (7) and (8) restrict the sample to those living in rural and urban areas, respectively. Columns (1)–(3) present OLS estimates and columns (4)–(8) present 2SLS estimates as specified in equations 1 and 2. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table 2: Village-Level Public Health Infrastructure

	Health facility index (1)	Connection index (2)	Public program index (3)	Auxiliary Nurse Midwife (4)	Female doctor (5)
Fraction of female leaders	1.730*	2.138***	0.973**	0.980***	0.837***
	(0.919)	(0.528)	(0.455)	(0.246)	(0.263)
Observations	7,696	7,700	7,722	7,723	7,722
Outcome mean	0.000	0.000	0.000	0.646	0.219
State fixed effects	x	x	x	x	x
District characteristics	x	x	x	x	x

Notes: Data comes from the 2012-13 District-level Household and Facility Survey (DLHS) of India. The columns present 2SLS estimates specified in the following equations:

$$Y_{vds} = \beta_0 + \beta_1 F_{ds} + \beta_2 TC_{ds} + \sum_j \phi_{1j} I_{jds} G(M_{jds}) + \sum_j \phi_{2j} I_{jds} + Z'_{ds}\theta_2 + \delta_s + \epsilon_{vds} \tag{4}$$

$$F_{ds} = \gamma_0 + \gamma_1 FC_{ds} + \gamma_2 TC_{ds} + \sum_j \alpha_{1j} I_{jds} G(M_{jds}) + \sum_j \alpha_{2j} I_{jds} + Z'_{ds}\eta_2 + \delta_s + u_{ds} \tag{5}$$

where Y_{vds} is an outcome for village v in district d in state s. The other variables in these specifications have the same definitions as in our main specifications described in Section 3. Standard errors are clustered at the district level. The outcomes are as follows: an index for the presence of health facilities in a village (column 1), an index for connection to health facilities with an all-weather road (column 2), an index for public program implementation in a village (column 3), an indicator for the presence of Auxiliary Nurse Midwives in a village (column 4), and an indicator for the presence of a female doctor in a village (column 5). All regressions include district controls, and state fixed effects. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table 3: Contraceptive Use and Birth Spacing

	Full Sample (1)	Rural (2)	Urban (3)
Panel A: Using any contraceptive method			
Fraction of female leaders	0.102	0.207*	-0.189
	(0.112)	(0.123)	(0.174)
Observations	62,122	43,981	18,141
Outcome mean	0.526	0.519	0.544
Panel B: Using modern contraception			
Fraction of female leaders	0.184*	0.295**	-0.104
	(0.108)	(0.124)	(0.132)
Observations	62,122	43,981	18,141
Outcome mean	0.463	0.457	0.478
Panel C: Using traditional contraception			
Fraction of female leaders	-0.082*	-0.088*	-0.084
	(0.047)	(0.047)	(0.094)
Observations	62,122	43,981	18,141
Outcome mean	0.063	0.062	0.066
Panel D: Birth spacing (years)			
Fraction of female leaders	0.647	1.178*	-0.440
	(0.678)	(0.696)	(1.075)
Observations	235,036	166,801	68,235
Outcome mean	6.962	6.711	7.575
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. Panels A–C present 2SLS estimates as specified by equations 1 and 2 and using cross-sectional data. Panel D presents 2SLS estimates as specified by equation 3 using the retrospective woman-year panel data. Column (1) shows estimates for the full sample, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the gap in votes between the winner and the runner up is less that 3 percent of votes. The outcomes in the table are as follows: indicator for whether the woman is using any contraceptive method (Panel A), indicator for whether the woman is using a modern contraceptive method (Panel B), indicator for whether the woman is using a traditional contraceptive method (Panel C), and the number of months since the last birth (Panel D). All regressions include individual controls, district controls, and state fixed effects. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. The regressions in Panel D also include year fixed effects and control for the number of children at the time of the previous election. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table 4: Intimate Partner Violence by Spousal Discordance in Fertility Preferences

Panel A: Heterogeneity by husband's desire to have more sons

	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> actual number	≤ actual number	> actual number	≤ actual number	> actual number	≤ actual number
	(1)	(2)	(3)	(4)	(5)	(6)
Physical violence index						
Fraction of female leaders	0.537**	0.063	0.627**	0.213	0.223	-0.242
	(0.267)	(0.189)	(0.301)	(0.231)	(0.425)	(0.254)
Observations	13,111	31,011	9,371	21,681	3,740	9,330
Outcome mean	-0.019	-0.001	0.002	0.028	-0.069	-0.070

Panel B: Heterogeneity by difference in husband's and wife's ideal number of sons

	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal
	(1)	(2)	(3)	(4)	(5)	(6)
Physical violence index						
Fraction of female leaders	0.470	0.136	0.810*	0.204	-0.459	-0.044
	(0.342)	(0.198)	(0.434)	(0.235)	(0.456)	(0.267)
Observations	9,887	34,005	6,864	24,013	3,023	9,992
Outcome mean	0.018	-0.013	0.046	0.013	-0.048	-0.075
State fixed effects	x	x	x	x	x	x
District characteristics	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. All columns present 2SLS estimates as specified by equations 1 and 2. We define close elections as those in which the victory margin is less that 3 percent of votes. The dependent variable is the physical violence index. Panel A shows heterogeneity by husband's desire to have more sons than what the couple currently has. Panel B examines heterogeneity by the discordance in husband's and wife's desired number of sons. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

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List of Variables

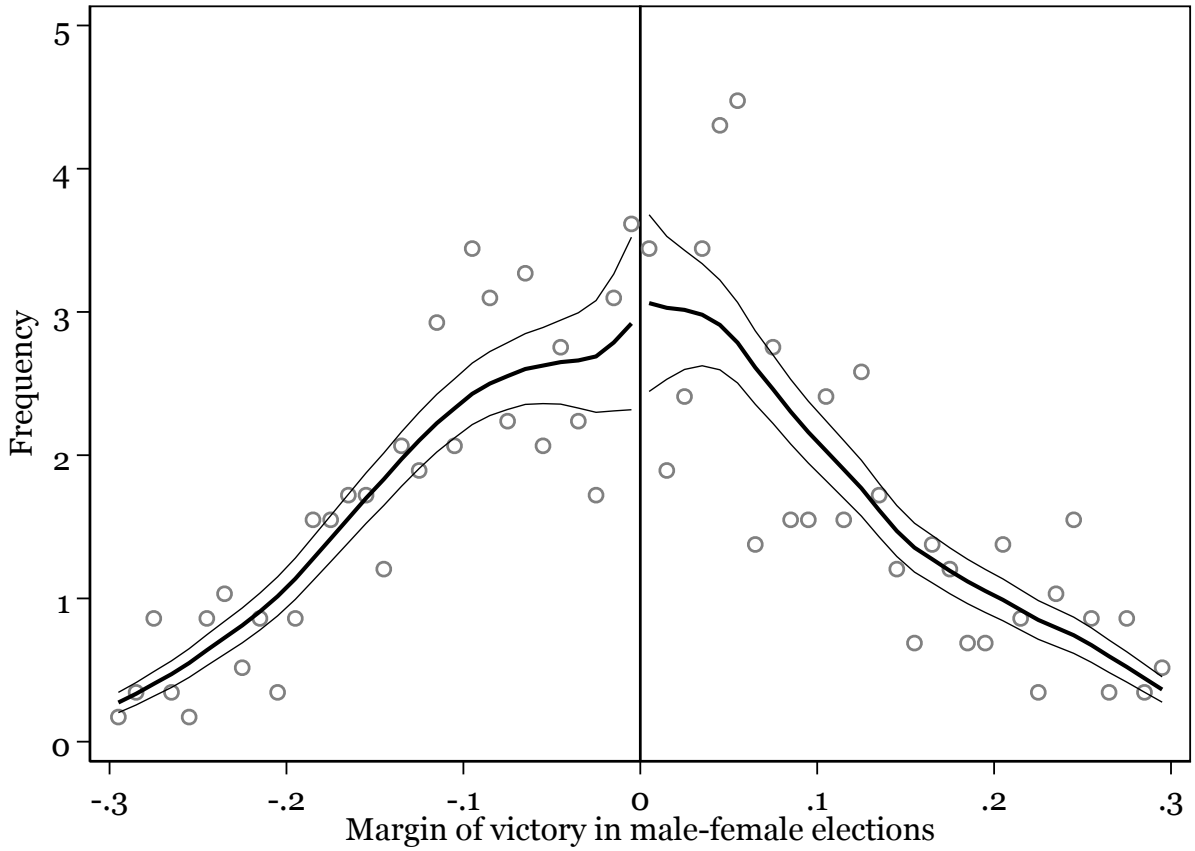
- Physical violence index: A z-score calculated by averaging the z-scores of indicator variables that take a value of one if the respondent reported experiencing one of the following violent acts from her husband in the last 12 months: slapping; twisting her arm or pulling her hair; pushing, shaking, or throwing an object at her; hitting with the partner's fist or in a way that hurts; kicking, dragging, or beating; choking or burning; attacking with a knife, gun, or other weapon.
- Sexual violence index: A z-score calculated by averaging the z-scores of indicator variables that take a value of one if the respondent reported experiencing one of the following acts from her partner in the last 12 months: forced into unwanted sex, forced into other unwanted sexual acts, and forced with threats to perform unwanted sexual acts.
- Psychological violence index: A z-score calculated by averaging the z-scores of indicator variables that take a value of one if the respondent reported experiencing one of the following acts from her partner in the last 12 months: insulting, humiliating, and threatening to hurt or harm.
- Women's attitudes index: A z-score constructed by averaging the z-scores of indicator variables that take a value of one if the respondent disagrees that violence is justified if (i) the wife goes out without telling her husband, (ii) the wife neglects the children, (iii) the wife argues with her husband, (iv) the wife refuses to have sex with her husband, and (v) the wife burns food.
- Worked last week: A dummy variable equal to one if the respondent worked last week.
- Worked last 12 months: A dummy variable equal to one if the respondent worked last 12 months.
- Worked in agriculture last week: A dummy variable equal to one if the respondent worked in the agricultural sector last week.
- Worked in non-agriculture last week: A dummy variable equal to one if the respondent worked in the non-agricultural sector last week.
- Using any contraception: A dummy variable equal to one if the respondent is currently using any contraceptive method.
- Using modern contraception: A dummy variable equal to one if the respondent is currently using a modern contraceptive method, including female sterilization, intrauterine devices (IUDs), injectables, pills, condoms, male sterilization, female condoms, foam or jelly.
- Using traditional contraception: A dummy variable equal to one if the respondent is currently using a traditional contraceptive method, including periodic abstinence, withdrawal, lactational amenorrhea, or standard days.

- Husband's ideal number of sons: The ideal number of sons of the husband of the respondent as reported by the respondent.
- Wife's ideal number of sons: The respondent's ideal number of sons.
- Husband's ideal number of sons greater than actual number: A dummy variable equal to one if the respondent reports that her husband's ideal number of sons exceeds the couple's actual number of sons.
- Husband's ideal number of sons greater wife's ideal: A dummy variable equal to one if the respondent reports that her husband's ideal number of sons exceeds her own ideal number of sons.
- Years since last birth: The number of years since the respondent's last birth took place.
- Gave birth: A dummy variable equal to one if the respondent gave birth in a particular year since the last state election.
- Number of children: The number of children a respondent has in a particular year since the last state election.
- Men's attitudes index: A z-score constructed by averaging the z-scores of indicator variables that take a value of one if the responding man disagrees that violence is justified if (i) the wife goes out without telling her husband, (ii) the wife neglects the children, (iii) the wife argues with her husband, (iv) the wife refuses to have sex with her husband, and (v) the wife burns food.
- Husband's years of schooling: The number of years of schooling that the husband completed as reported by the respondent.
- Schooling difference between husband and wife: The difference between years of schooling completed by the husband and years of schooling completed by the wife.
- Age difference between husband and wife: The difference between husband's age and wife's age.
- Husband worked last week: A dummy variable equal to one if the husband worked last week.
- Health facility index: constructed by standardizing and then averaging 5 dummy variables that take a value of one if the following health facilities are present in the village: a sub-center, a primary health center, a block primary health center, a community health center, a government hospital, and a government dispensary.
- Connection index: is constructed by standardizing and then averaging 5 dummy variables that take a value of one if the village is connected to the following health facilities through an all-weather road: a sub-center, a primary health center, a block primary health center, a community health center, and a government hospital.
- Public program index: is constructed by standardizing and then averaging 4 dummy variables that take a value of one for the existence a public program targeting women's health and well-being in the village: namely, *Janani Suraksha Yojana*, *Janani Shishu Suraksha Yojana*, *Kishori Shakti Yojana*, and *Balika Samriddhi Yojana*.

- Auxiliary nurse midwife: a dummy variable that takes a value of one if the village has any Auxiliary Nurse Midwives (ANMs).
- Female doctor: a dummy variable that takes a value of one if the village has a female doctor.
- Share of constituencies won by women in a district: The fraction of state assembly constituencies in a district in which a female candidate won in the most recent state election before the woman-level outcome variable survey.
- Share of close male-female elections won by women in a district: Fraction of state assembly constituencies in a district where a woman won in a close election against a man in the most recent state election before the woman-level outcome variable survey.
- Share of male-female close elections in a district: Fraction of state assembly constituencies in the district that had a close male-female election, in the most recent election before the woman-level outcome variable survey.
- Whether the district had at least one male-female election: A dummy variable for whether a district had at least one male-female election, in the most recent election before the woman-level outcome variable survey.
- Whether the district had at least one male-female close election: A dummy variable for whether a district had at least one male-female close election, in the most recent election before the woman-level outcome variable survey.
- Whether the district had at least one male-female close election won by a woman: A dummy variable for whether a district had at least one male-female close election in which a woman was the winner, in the most recent election before the woman-level outcome variable survey.
- Age: The age of the respondent.
- Rural: A dummy variable equal to one if the respondent lives in a rural location.
- Hindu: A dummy variable equal to one if the respondent reports that her religion is Hindu.
- Muslim: A dummy variable equal to one if the respondent reports that her religion is Muslim.
- Christian: A dummy variable equal to one if the respondent reports that her religion is Christian.
- Sikh: A dummy variable equal to one if the respondent reports that her religion is Sikh.
- SC/ST: A dummy variable equal to one if the respondent reports that her caste is a scheduled caste or tribe (SC/ST).
- OBC: A dummy variable equal to one if the respondent reports that her caste is other backward caste (OBC).
- Years of schooling: The number of years of schooling that the respondent reports having completed.

Appendix Figures and Tables

Figure A.1: McCrary test



Notes: The figure shows the frequency in each margin-of-victory bin in elections between male and female candidates. The sample includes all male-female elections within 3 percent margin of victory. Gray lines show 95 percent confidence intervals around the local linear density estimates. The p-value for the McCrary test is 0.89.

Table A.1: Individual Characteristics, NFHS

	N	Mean	S.D.
Panel A: NFHS ever-married sample, women			
Physical violence index	65,292	0.00	1.00
Psychological violence index	65,292	0.00	1.00
Sexual violence index	65,292	0.00	1.00
Attitudes index	65,221	-0.02	1.01
Worked last week	65,292	0.25	0.43
Worked last 12 months	65,292	0.33	0.47
Worked in agriculture last week	64,727	0.12	0.33
Worked in non-agriculture last week	64,727	0.12	0.32
Using contraception	65,292	0.53	0.50
Using modern contraception	65,292	0.46	0.50
Using traditional contraception	65,292	0.07	0.25
Female sterilization	65,292	0.33	0.47
Other modern method	65,292	0.13	0.34
Difference between husband's ideal number of sons and actual number	46,355	-0.01	1.09
Difference between husband's and wife's ideal number of sons	46,112	0.02	0.85
Age	65,292	33.02	8.11
Rural	65,292	0.71	0.45
Hindu	65,292	0.75	0.43
Muslim	65,292	0.13	0.34
Christian	65,292	0.07	0.25
Sikh	65,292	0.02	0.14
SC/ST	62,122	0.38	0.49
OBC	62,122	0.41	0.49
Years of schooling	65,292	5.93	5.20
Panel B: NFHS woman-year variables			
Years since the last birth	235,036	6.96	6.57
Giving a birth	235,036	0.09	0.29
Number of children	235,036	2.39	1.61
Panel C: NFHS ever-married sample, men			
Attitudes index	70,829	0.03	0.97
Worked last week	70,922	0.91	0.29
Age	70,923	37.58	8.81
Rural	70,923	0.70	0.46
Hindu	70,923	0.76	0.43
Muslim	70,923	0.13	0.34
Christian	70,923	0.07	0.25
Sikh	70,923	0.02	0.14
SC/ST	67,152	0.38	0.49
OBC	67,152	0.41	0.49
Years of schooling	70,923	7.56	4.94

Notes: The table presents the number of observations, the means, and standard deviations (S.D.) for demographics, intimate partner violence outcomes, attitudes outcomes, labor market outcomes, contraceptive use, fertility preferences and behavior, and husband's characteristics. The samples in Panels A and B include ever-married women in the domestic violence module from the 2015-16 National Family Health Survey (NFHS), with Panel A presenting the summary statistics for the cross-sectional data and Panel B presenting them for the retrospective woman-year panel. The sample in Panel C includes ever-married men from the 2015-16 NFHS.

Table A.2: Election and District Characteristics

	N	Mean	S.D.
Panel A: Election data			
Share of constituencies won by women in a district	628	0.09	0.13
Share of close male-female elections in a district	628	0.03	0.08
Share of male-female close election won by women in a district	628	0.01	0.05
Share of districts with at least one seat won by a woman	628	0.40	0.49
Share of districts with at least one male-female election	628	0.57	0.49
Share of districts with at least one male-female close election	628	0.13	0.34
Share of districts with at least one male-female close election won by a woman	628	0.07	0.25
Panel B: Census data			
Fraction of female population	628	0.49	0.02
Fraction of urban population	628	0.26	0.20
Fraction of SC/ST population	628	0.33	0.22
Female literacy rate	628	0.55	0.12
Male literacy rate	628	0.69	0.09

Notes: The table presents the number of observations, the means, and standard deviations (S.D.) for district-level characteristics of the election data and the Census data. Panel A presents these summary statistics for the electoral data from the Election Commission of India, which was obtained at the constituency level and aggregated to the district level. Panel B presents them for the district characteristics obtained from the SHRUG dataset as per the 2011 Census of India (Asher et al. 2021).

Table A.3: Election and District Characteristics (DLHS samples)

	N	Mean	S.D.
Panel A: Election data			
Share of constituencies won by women in a district	245	0.05	0.09
Share of close male-female elections in a district	245	0.02	0.06
Share of male-female close election won by women in a district	245	0.01	0.04
Share of districts with at least one seat won by a woman	245	0.33	0.47
Share of districts with at least one male-female election	245	0.56	0.50
Share of districts with at least one male-female close election	245	0.16	0.36
Share of districts with at least one male-female close election won by a woman	245	0.07	0.25
Panel B: Census data			
Fraction of female population	245	0.49	0.02
Fraction of urban population	245	0.33	0.21
Fraction of SC/ST population	245	0.34	0.25
Female literacy rate	245	0.63	0.11
Male literacy rate	245	0.74	0.08
Panel C: Village data (DLHS)			
Any sub-center	7,721	0.55	0.50
Any primary health center	7,721	0.23	0.42
Any block primary health center	7,722	0.06	0.24
Any community health center	7,718	0.07	0.25
Any government hospital	7,722	0.06	0.23
Any government dispensary	7,713	0.11	0.32
Connected to a sub-center	7,726	0.86	0.34
Connected to a primary health center	7,726	0.81	0.39
Connected to a block primary health center	7,702	0.55	0.50
Connected to a community health center	7,725	0.72	0.45
Connected to a government hospital	7,725	0.75	0.43
Any accessible auxiliary nurse midwife	7,723	0.65	0.48
Any accessible female doctor	7,722	0.22	0.41
Janani Suraksha Yojana implemented	7,726	0.92	0.27
Janani Shishu Suraksha implemented	7,726	0.63	0.48
Kishori Shakti Yojana implemented	7,725	0.50	0.50
Balika Samriddhi Yojana implemented	7,725	0.42	0.49

Notes: Data comes from the 2012-13 District-level Household and Facility Survey (DLHS) of India. The table presents the number of observations, the means, and standard deviations (S.D.) for district-level characteristics of the election data and Census data matched to DLHS data in Panels A and B, and village-level public health infrastructure data from DLHS data in Panel C.

Table A.4: Balanced Covariates

Panel A: Women's Characteristics									
	Age	Rural	Hindu	Muslim	Christian	Sikh	SC/ST	OBC	Schooling
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fraction of female leaders	0.530	-0.247	0.027	-0.119	0.143	-0.028	0.197	-0.037	-0.303
	(1.057)	(0.184)	(0.209)	(0.095)	(0.156)	(0.055)	(0.153)	(0.120)	(1.407)
Observations	62,122	62,122	62,122	62,122	62,122	62,122	62,122	62,122	62,122
Outcome mean	33.012	0.708	0.776	0.102	0.072	0.021	0.378	0.409	5.957
State fixed effects	x	x	x	x	x	x	x	x	x

Panel B: District Characteristics					
	Share of female population	Share of urban population	Share of SC/ST population	Female literacy rate	Male literacy rate
	(1)	(2)	(3)	(4)	(5)
Fraction of female leaders	-0.020	0.202	0.072	-0.103	-0.068
	(0.014)	(0.126)	(0.137)	(0.074)	(0.071)
Observations	627	627	627	627	627
Outcome mean	0.486	0.258	0.327	0.550	0.691
State fixed effects	x	x	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India in Panel A and from the 2011 Census of India (obtained from SHRUG) in Panel B. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. The dependent variables in Panel A include woman's age, years of schooling, and indicator variables for living in a rural area, religion, and caste. The dependent variables in Panel B include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.5: Intimate Partner Violence by Age

	Full Sample (1)	Age≤35 (2)	Age>35 (3)
Panel A: Physical violence index			
Fraction of female leaders	0.398**	0.485**	0.193
	(0.190)	(0.213)	(0.246)
Observations	62,122	39,263	22,859
Outcome mean	0.006	0.014	-0.006
Panel B: First-stage regressions			
Fraction of female leaders in close elections	0.891***	0.896***	0.910***
	(0.084)	(0.097)	(0.100)
Observations	62,122	39,263	22,859
Outcome mean			
First stage F-stat	112.419	85.130	82.231
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. Panels A and B present 2SLS estimates as specified by equations 1 and 2. Column (1) shows estimates for the full sample, while column (2) restricts the sample to women aged 35 and younger and column 3 restricts it to women older than 35. We define close elections as those in which the gap in votes between the winner and the runner up is less that 3 percent of votes. All regressions include individual controls, district controls, and state fixed effects. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.6: Physical Intimate Partner Violence: Reduced-form Estimates

	Full Sample			Rural	Urban
	(1)	(2)	(3)	(4)	(5)
Fraction of female leaders in close elections	0.316**	0.323**	0.358**	0.484***	-0.018
	(0.161)	(0.155)	(0.157)	(0.185)	(0.216)
Observations	65,292	65,292	62,122	43,981	18,141
Outcome mean	0.000	0.000	0.006	0.031	-0.052
State fixed effects	x	x	x	x	x
District characteristics		x	x	x	x
Individual characteristics			x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents the reduced-form regression results. Columns (1)-(3) include all women in the regressions, while columns (4) and (5) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, and the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.7: Psychological and sexual violence

	Full sample (1)	Rural (2)	Urban (3)
Panel A: Psychological violence index			
Fraction of female leaders	0.138	0.270	-0.092
	(0.164)	(0.189)	(0.229)
Observations	62,122	43,981	18,141
Outcome mean	0.002	0.011	-0.019
Panel B: Sexual violence index			
Fraction of female leaders	0.014	0.098	-0.028
	(0.182)	(0.208)	(0.262)
Observations	62,122	43,981	18,141
Outcome mean	0.003	0.019	-0.037
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are psychological violence index in Panel A and sexual violence index in Panel B. Column (1) presents estimates for the full sample of women, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.8: Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Physical violence index										
Fraction of female leaders	0.420**	0.470**	0.541**	0.607***	0.584**	0.291*	0.506**	0.536**	0.602**	0.563**
	(0.188)	(0.223)	(0.225)	(0.229)	(0.262)	(0.176)	(0.237)	(0.231)	(0.246)	(0.231)
Observations	43,981	43,981	43,981	43,981	43,981	43,981	24,783	43,981	42,711	43,981
Outcome mean	0.031	0.031	0.031	0.031	0.031	0.031	0.060	0.031	0.031	0.031
Panel B: Using modern contraception										
Fraction of female leaders	0.226**	0.267**	0.292**	0.279**	0.203	0.149	0.341***	0.270**	0.238*	0.301**
	(0.110)	(0.119)	(0.123)	(0.127)	(0.124)	(0.117)	(0.130)	(0.120)	(0.139)	(0.121)
Observations	43,981	43,981	43,981	43,981	43,981	43,981	24,783	43,981	42,711	43,981
Outcome mean	0.457	0.457	0.457	0.457	0.457	0.457	0.466	0.457	0.457	0.457
Robustness check	No polynomial	1st order polynomial	2nd order polynomial	BW=2%	BW=2.5%	BW=3.5%	At least one male-female election	Women's age fixed effects	Removing outliers	Political party controls
State fixed effects	x	x	x	x	x	x	x	x	x	x
District characteristics	x	x	x	x	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x	x	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The sample is restricted to women living in rural areas. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are physical violence index in Panel A and an indicator for using a modern contraception method in Panel B. Columns (1)-(3) use alternative functional forms for the victory margin, and columns (4)-(6) change the bandwidth for the definition of close elections. In column (7), we restrict the sample to districts with at least one male-female election. In column (8), we control for women's age fixed effects instead of controlling for women's age linearly. In column (9), we exclude districts whose share of female leaders is equal to or above 50% (99th percentile). In column (10), we add political party controls (the shares of winners from each of the seven political party groups) and the share of reservation seats for SC/ST population. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.9: Components of Village-level Public Health Infrastructure

Panel A: Presence of health facilities						
	Sub center	Primary health center	Block primary health center	Community health center	Government hospital	Government dispensary
	(1)	(2)	(3)	(4)	(5)	(6)
Fraction of female leaders	0.398	0.004	0.405***	0.161	0.200	0.731**
	(0.372)	(0.175)	(0.133)	(0.106)	(0.124)	(0.368)
Observations	7,721	7,721	7,722	7,718	7,722	7,713
Outcome mean	0.550	0.233	0.061	0.069	0.057	0.114
Panel B: Connection to health facilities						
	Sub centers	Primary health centers	Block primary health centers	Community health centers	Government hospitals	
	(1)	(2)	(3)	(4)	(5)	
Fraction of female leaders	0.207	0.633***	1.044***	1.189***	1.101***	
	(0.154)	(0.206)	(0.232)	(0.293)	(0.288)	
Observations	7,726	7,726	7,702	7,725	7,725	
Outcome mean	0.865	0.814	0.553	0.724	0.752	
Panel C: Health workers and public programs						
	Janani Suraksha Yojana	Janani Shishu Suraksha	Kishori Shakti Yojana	Balika Samriddhi Yojana		
	(1)	(2)	(3)	(4)		
Fraction of female leaders	0.183*	0.121	0.542*	0.387		
	(0.101)	(0.265)	(0.295)	(0.274)		
Observations	7,726	7,726	7,725	7,725		
Outcome mean	0.923	0.631	0.495	0.420		
State fixed effects	x	x	x	x	x	x
District characteristics	x	x	x	x	x	x

Notes: Data comes from the 2012-13 District-level Household and Facility Survey (DLHS) of India. The columns present 2SLS estimates specified in Table 2. We define close elections as those in which victory margin is less that 3 percent of votes. In Panel A, the dependent variables are indicators for the presence of each health facility. In Panel B, the dependent variables are indicators for whether a village is connected to each health facility with all-weather roads. In Panel C, the dependent variables are indicators for whether each public program has been implemented in the village. All regressions include district controls and state fixed effects. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.10: Child Birth and Number of Children

	Full sample (1)	Rural (2)	Urban (3)
Panel A: Gave birth			
Fraction of female leaders	-0.021	-0.017	-0.036
	(0.016)	(0.018)	(0.028)
Observations	235,036	166,801	68,235
Outcome mean	0.092	0.099	0.076
Panel B: Number of children			
Fraction of female leaders	-0.054	-0.033	-0.113
	(0.038)	(0.039)	(0.075)
Observations	235,036	166,801	68,235
Outcome mean	2.394	2.505	2.124
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the retrospective woman-year panel data based on the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are an indicator for giving birth in a given year in Panel A and the number of children born up to a given year in Panel B. Column (1) presents estimates for the full sample of women, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and year fixed effects, and control for the share of seats in the district that had close elections between women and men and the number of children at the time of the previous election. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.11: Husband's and Wife's Fertility Preferences

	Full sample (1)	Rural (2)	Urban (3)
Panel A: Husband's ideal number of sons			
Fraction of female leaders	-0.021	0.026	-0.269
	(0.156)	(0.180)	(0.203)
Observations	44,130	31,059	13,071
Outcome mean	1.209	1.253	1.105
Panel B: Wife's ideal number of sons			
Fraction of female leaders	0.184	0.162	0.158
	(0.120)	(0.131)	(0.170)
Observations	61,735	43,676	18,059
Outcome mean	1.187	1.243	1.053
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are husband's ideal number of sons in Panel A and wife's ideal number of sons in Panel B. Column (1) presents estimates for the full sample, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

TABLE A.12: MODERN CONTRACEPTIVE USE BY SPOUSAL DISCORDANCE IN FERTILITY PREFERENCES

Panel A: Heterogeneity by husband's desire to have more sons

	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> actual number	≤ actual number	> actual number	≤ actual number	> actual number	≤ actual number
	(1)	(2)	(3)	(4)	(5)	(6)
Using modern contraception						
Fraction of female leaders	0.159	0.252*	0.354***	0.375**	-0.490*	-0.033
	(0.117)	(0.137)	(0.134)	(0.161)	(0.277)	(0.180)
Observations	13,111	31,011	9,371	21,681	3,740	9,330
Outcome mean	0.299	0.582	0.286	0.585	0.333	0.573

Panel B: Heterogeneity by difference in husband's and wife's ideal number of sons

	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal
	(1)	(2)	(3)	(4)	(5)	(6)
Using modern contraception						
Fraction of female leaders	0.305	0.198*	0.482**	0.335**	-0.206	-0.132
	(0.187)	(0.110)	(0.210)	(0.133)	(0.269)	(0.174)
Observations	9,887	34,005	6,864	24,013	3,023	9,992
Outcome mean	0.486	0.502	0.483	0.499	0.492	0.509
State fixed effects	x	x	x	x	x	x
District characteristics	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. All columns present 2SLS estimates as specified by equations 2 and 1. We define close elections as those in which the victory margin is less that 3 percent of votes. The dependent variable is an indicator for whether the woman is using modern contraception. Panel A shows heterogeneity by husband's desire to have more sons than what the couple currently has. Panel B examines heterogeneity by the discordance in husband's and wife's desired number of sons. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

TABLE A.13: ATTITUDES TOWARD VIOLENCE

	Full sample (1)	Rural (2)	Urban (3)
Panel A: Women's attitudes index			
Fraction of female leaders	0.281	0.169	0.552
	(0.257)	(0.282)	(0.350)
Observations	62,060	43,936	18,124
Outcome mean	-0.006	-0.049	0.098
Panel B: Men's attitudes index			
Fraction of female leaders	-0.290	-0.353	-0.100
	(0.288)	(0.331)	(0.347)
Observations	67,065	47,088	19,977
Outcome mean	0.036	0.003	0.115
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are an index of women's attitudes towards IPV in Panel A and an index of men's attitudes towards IPV in Panel B. Column (1) presents estimates for the full sample, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of education, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.14: Women's employment outcomes

	Full Sample (1)	Rural (2)	Urban (3)
Panel A: Worked last week			
Fraction of female leaders	-0.023	-0.073	0.120
	(0.105)	(0.121)	(0.122)
Observations	62,122	43,981	18,141
Outcome mean	0.250	0.267	0.209
Panel B: Worked last 12 months			
Fraction of female leaders	-0.032	-0.080	0.038
	(0.096)	(0.106)	(0.150)
Observations	62,122	43,981	18,141
Outcome mean	0.334	0.365	0.259
Panel C: Worked in agriculture last week			
Fraction of female leaders	0.014	0.008	0.024
	(0.085)	(0.107)	(0.051)
Observations	61,573	43,650	17,923
Outcome mean	0.126	0.166	0.031
Panel D: Worked in non-agriculture last week			
Fraction of female leaders	-0.046	-0.083	0.074
	(0.051)	(0.054)	(0.100)
Observations	61,573	43,650	17,923
Outcome mean	0.117	0.096	0.168
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are indicator variables for whether the woman worked last week (Panel A), whether she worked last 12 months (Panel B), whether she worked in agriculture last week (Panel C), and whether she worked in non-agricultural sector last week (Panel D). The column (1) presents estimates for the full sample, while the columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.15: Marriage market outcomes and partner characteristics

	Full Sample (1)	Rural (2)	Urban (3)
Panel A: Husband's years of schooling			
Fraction of female leaders	-0.241	-0.364	1.419
	(0.952)	(1.008)	(1.718)
Observations	44,714	31,479	13,235
Outcome mean	7.548	6.851	9.204
Panel B: Schooling difference between husband and wife			
Fraction of female leaders	-0.505	-0.305	-0.441
	(0.493)	(0.560)	(1.013)
Observations	44,714	31,479	13,235
Outcome mean	1.542	1.788	0.957
Panel C: Age difference between husband and wife			
Fraction of female leaders	-0.624	-0.622	-0.419
	(0.576)	(0.664)	(0.835)
Observations	44,714	31,479	13,235
Outcome mean	4.684	4.592	4.904
Panel D: Husband worked last week			
Fraction of female leaders	-0.024	-0.013	-0.052
	(0.074)	(0.085)	(0.083)
Observations	67,151	47,147	20,004
Outcome mean	0.907	0.893	0.939
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. The table presents 2SLS estimates using the fraction of female leaders in a district in close elections as an instrument. The dependent variables are husband's years of schooling (Panel A), the difference in years of schooling between husband and wife (Panel B), the differences in ages between husband and wife (Panel C), and an indicator for whether the husband worked last week (Panel D). Column (1) presents estimates for the full sample, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, years of schooling, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district, and the female and male literacy rates. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.16: Intimate Partner Violence without Education Controls

	Full Sample						Rural	Urban
	OLS			2SLS			2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Physical violence index								
Fraction of female leaders	0.064	0.057	0.080	0.348*	0.378**	0.393**	0.543**	-0.046
	(0.056)	(0.053)	(0.055)	(0.190)	(0.186)	(0.189)	(0.228)	(0.218)
Observations	65,292	65,292	62,122	65,292	65,292	62,122	43,981	18,141
Outcome mean	0.000	0.000	0.006	0.000	0.000	0.006	0.031	-0.052
Panel B: First-stage regressions								
Dependent variable: Fraction of female leaders								
Fraction of female leaders in close elections				0.908***	0.903***	0.901***	0.890***	1.004***
				(0.096)	(0.098)	(0.098)	(0.098)	(0.092)
Observations				65,292	65,292	62,122	43,981	18,141
Outcome mean								
First stage F-stat				89.238	84.848	84.853	82.787	119.584
State fixed effects	x	x	x	x	x	x	x	x
District characteristics		x	x		x	x	x	x
Individual characteristics			x			x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. Columns (1)–(6) show estimates for the full sample of women, while columns (7) and (8) restrict the sample to those living in rural and urban areas, respectively. Columns (1)–(3) present OLS estimates and columns (4)–(8) present 2SLS estimates as specified in equations 1 and 2. We define close elections as those in which the victory margin is less that 3 percent of votes. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, and the share of SC-ST population in the district, . Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.17: Village-Level Public Health Infrastructure without Education Controls

	Health facility index (1)	Connection index (2)	Public program index (3)	Auxiliary Nurse Midwife (4)	Female doctor (5)
Fraction of female leaders	1.833*	2.121***	0.996**	0.968***	0.872***
	(0.949)	(0.519)	(0.454)	(0.248)	(0.276)
Observations	7,696	7,700	7,722	7,723	7,722
Outcome mean	0.000	0.000	0.000	0.646	0.219
State fixed effects	x	x	x	x	x
District characteristics	x	x	x	x	x

Notes: Data comes from the 2012-13 District-level Household and Facility Survey (DLHS) of India. The columns present 2SLS estimates specified in equations (4) and (5) as in Table 2. Standard errors are clustered at the district level. The outcomes are as follows: an index for the presence of health facilities in a village (column 1), an index for connection to health facilities with an all-weather road (column 2), an index for public program implementation in a village (column 3), an indicator for the presence of Auxiliary Nurse Midwives in a village (column 4), and an indicator for the presence of a female doctor in a village (column 5). All regressions include district controls and state fixed effects. District-level controls include the share of female population, the share of urban population, the share of SC-ST population in the district. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

Table A.18: Contraceptive Use and Birth Spacing without Education Controls

	Full Sample (1)	Rural (2)	Urban (3)
Panel A: Using any contraceptive method			
Fraction of female leaders	0.086	0.181	-0.180
	(0.113)	(0.124)	(0.175)
Observations	62,122	43,981	18,141
Outcome mean	0.526	0.519	0.544
Panel B: Using modern contraception			
Fraction of female leaders	0.164	0.260**	-0.089
	(0.110)	(0.124)	(0.134)
Observations	62,122	43,981	18,141
Outcome mean	0.463	0.457	0.478
Panel C: Using traditional contraception			
Fraction of female leaders	-0.077*	-0.079*	-0.091
	(0.047)	(0.046)	(0.097)
Observations	62,122	43,981	18,141
Outcome mean	0.063	0.062	0.066
Panel D: Birth spacing (years)			
Fraction of female leaders	0.616	1.024	-0.126
	(0.705)	(0.696)	(1.248)
Observations	235,036	166,801	68,235
Outcome mean	6.962	6.711	7.575
State fixed effects	x	x	x
District characteristics	x	x	x
Individual characteristics	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. Panels A–C present 2SLS estimates as specified by equations 1 and 2 and using cross-sectional data. Panel D presents 2SLS estimates as specified by equation 3 using the retrospective woman-year panel data. Column (1) shows estimates for the full sample, while columns (2) and (3) restrict the samples to those living in rural and urban areas, respectively. We define close elections as those in which the gap in votes between the winner and the runner up is less that 3 percent of votes. The outcomes in the table are as follows: indicator for whether the woman is using any contraceptive method (Panel A), indicator for whether the woman is using a modern contraceptive method (Panel B), indicator for whether the woman is using a traditional contraceptive method (Panel C), and the number of months since the last birth (Panel D). All regressions include individual controls, district controls, and state fixed effects. Individual controls include age, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, and the share of SC-ST population in the district. The regressions in Panel D also include year fixed effects and control for the number of children at the time of the previous election. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.

TABLE A.19: INTIMATE PARTNER VIOLENCE BY SPOUSAL DISCORDANCE IN FERTILITY PREFERENCES WITHOUT EDUCATION CONTROLS

Panel A: Heterogeneity by husband's desire to have more sons						
	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> actual number	≤ actual number	> actual number	≤ actual number	> actual number	≤ actual number
	(1)	(2)	(3)	(4)	(5)	(6)
Physical violence index						
Fraction of female leaders	0.628**	0.032	0.720**	0.180	0.259	-0.295
	(0.264)	(0.191)	(0.300)	(0.233)	(0.440)	(0.261)
Observations	13,111	31,011	9,371	21,681	3,740	9,330
Outcome mean	-0.019	-0.001	0.002	0.028	-0.069	-0.070
Panel B: Heterogeneity by difference in husband's and wife's ideal number of sons						
	Full Sample		Rural		Urban	
	Husband's ideal number of sons:		Husband's ideal number of sons:		Husband's ideal number of sons:	
	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal	> wife's ideal	≤ wife's ideal
	(1)	(2)	(3)	(4)	(5)	(6)
Physical violence index						
Fraction of female leaders	0.468	0.149	0.788*	0.221	-0.451	-0.073
	(0.352)	(0.198)	(0.445)	(0.236)	(0.470)	(0.275)
Observations	9,887	34,005	6,864	24,013	3,023	9,992
Outcome mean	0.018	-0.013	0.046	0.013	-0.048	-0.075
State fixed effects	x	x	x	x	x	x
District characteristics	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x

Notes: Data are from the 2015-16 National Family Health Survey (NFHS) of India. All columns present 2SLS estimates as specified by equations 1 and 2. We define close elections as those in which the victory margin is less that 3 percent of votes. The dependent variable is the physical violence index. Panel A shows heterogeneity by husband's desire to have more sons than what the couple currently has. Panel B examines heterogeneity by the discordance in husband's and wife's desired number of sons. All regressions include state fixed effects and control for the share of seats in the district that had close elections between women and men. Individual controls include age, and indicator variables for living in a rural area, religion, and caste. District-level controls include the share of female population, the share of urban population, and the share of SC-ST population in the district. Robust standard errors are clustered at the district level. ***, **, and * denote significance at the 1, 5, and 10 percent levels.