OXFORD

Does Local Female Political Representation Empower Women to Run for Higher Office? Evidence from State and National Legislatures in India

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Abstract

Does increasing the number of women in career stages that precede high-level positions affect female representation at the top of the career ladder? State legislature elections narrowly won by female candidates in India are exploited to examine the effect of expanding the pipeline of women in local politics on subsequent female representation and success in national legislature elections. For each additional state legislature election won by a woman, there is a 34 percent increase in the number of female candidates contesting in the subsequent national election, and a 2.6 percentage-point increase in the average vote share won per female candidate. This relationship is driven by new female politicians and not by the progression of female state legislators nor by continued candidacy of previous female candidates for the national legislature.

1. Introduction

Women continue to be underrepresented in leadership positions in academia, the corporate sector, and politics (Bertrand and Hallock 2001; Ginther and Kahn 2014; Bertrand et al. 2019; Bhalotra, Clots-Figueras, and Iyer 2018). Explanations for the low share of women in high-ranking positions include discrimination, biased beliefs regarding ability, and career–family trade-offs, among others (Wolfers 2006; Bertrand 2009; Bertrand, Golidin, and Katz 2010). These factors are also likely to affect the creation and growth of a pipeline of women in early-career positions, which can determine the availability of qualified women for higher-ranking positions and change attitudes towards women in professional capacities.

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The gender gap in high-ranking positions is particularly stark in politics.[1] Given that gender disparities in political representation at the national level have been linked to a dearth of female candidates (Lawless and Fox 2008), it is essential to understand the role of the career "pipeline" in generating candidates for high-level positions and the process by which female politicians enter public service (Myerson 2011; Finan, Olken, and Pande 2015).[2] This paper investigates the relationship between exposure to competitively elected female politicians in local government and subsequent female participation and representation in national politics using data from state and national legislature elections in India over the period 1977 to 2014. A typical national legislature constituency (hereinafter "NLC") comprises several state legislature constituencies (hereinafter "SLC") that each elect a representative to their state's legislative assembly. Voters in the NLC directly elect one representative to the lower house of parliament (the *Lok Sabha*); notably, neither body is subject to gender-based quotas. The empirical approach uses the number of close mixed-gender state legislature elections won by female candidates in a given parliamentary constituency to generate quasi-random variation in the number of women representing that constituency in the state legislature at any given time. The identifying assumption is that the winner's gender in a mixed-gender close election is as good as random. Intuitively, this implies that an additional close election won by a female candidate in a given constituency increases the number of women representing that constituency in the state assembly by exactly 1—a prediction that is verified by the data.

The results indicate that exposure to an additional female state legislator increases the number of female candidates running for national parliamentary seats during subsequent electoral cycles by 34 percent. This conclusion is not sensitive to the specific margin used to define a "close" election or the inclusion of NLC-specific linear time trends, and is quantitatively equivalent to estimates using a traditional regression discontinuity design (RDD). In addition, although imprecisely estimated (p-value = .15), the number of women winning these higher-level elections increases by a substantial 58 percent. This increase in the supply of female candidates in national races is not linked to specific women who previously ran for or held a seat in the state or national legislature, but rather by new entrants who have no recent political experience.[3] These results imply that incumbent female state legislators are not only more likely to recontest their seats, as has been found previously (Bhalotra, Clots-Figueras, and Iyer 2018), but that they are also not propelled to compete for a position in the national parliament per se.[4] Instead, it appears that these women's electoral victories into seats in state government affect the entry decisions of latent female candidates at the national level.

Greater exposure to women elected to state legislature seats also leads to an increase in the average vote share won per female parliamentary candidate while not affecting overall voter turnout. These findings on voting behavior suggest that the increased presence of women in the state legislature either changes

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1   In 2017, women comprised only 21 percent of the US Senate, 19.3 percent of the US House of Representatives (CAWP 2017), 32 percent of the UK House of Commons, and 12 percent of India's national legislature (Bhalotra, Clots-Figueras, and Iyer 2018).

2   It is firmly established that increasing female representation in government leads to policy initiatives benefiting women, increases trust in government, and leads to better outcomes for children (Chattopadhyay and Duflo 2004; Miller 2008; Iyer et al. 2012; Kalsi 2017). Other studies documenting a relationship between female representation, constituent welfare, and policy outcomes include Clots-Figueras (2012), Bhalotra and Clots-Figueras (2014), and Brollo and Troiano (2016). Ferreira and Gyourko (2014) find no effect on the policy choices of US female mayors compared to male mayors.

3   About 20 percent of representatives in the lower house of the Indian parliament served as state legislators prior to serving in the parliament. Historically in the United States, approximately 40 percent of Congressional representatives served as state legislators prior to Congressional service.

4   Jensenius and Suryanarayan (2015) argue that the legislative work of Indian state politicians has decreased over time, and that they appear to spend most of their time in their home constituencies expanding their support base, lobbying, and facilitating access to governmental services. These activities may increase their chances of reelection for their state legislature seat, but it is unclear whether they spill over to neighboring constituencies and enhance the chances of competing for a national-level seat.

preferences of existing voters towards female politicians, results in more electable women running for parliamentary positions, or a combination thereof.

Lastly, the study finds that candidacy effects are strongest in states with lower literacy rates, and are largely derived from candidates who run as part of the major conservative party (BJP). The nature of this heterogeneity indicates that in terms of higher-level candidacy, exposure to local female politicians has a larger impact in environments and institutions with a greater degree of existing gender bias. This suggests that increased success of female politicians at the local level may help reduce barriers facing new female candidates in national politics.

This paper fits into a previous literature that has focused on estimating the impact of greater female representation in politics on the persistence of the gender gap in political representation at the *same* level of government. For instance, Broockman (2014) found no subsequent spillover effect of electing a woman to a US state legislature on neighboring constituencies, and Gilardi (2015) documented only a temporary effect on subsequent female candidacy in municipalities in Switzerland. In India, Bhavnani (2009) found that gender-based quotas in local politics led to the same women subsequently continuing to run for seats in local government, while Sekhon and Titiunik (2012) showed that mandated seats for female representatives in Indian councils reduced the number of female council candidates in nonmandated regions.[5] Bhalotra, Clots-Figueras, and Iyer (2018) provided evidence that the election of a woman to a state legislative assembly in India increases the probability that a woman contests a future election in the same constituency. This effect is due to a higher rate of female incumbents recontesting their seats compared to male incumbents, rather than through an increase in the number of new female candidates competing for state legislative seats.

Despite this body of evidence, it is unclear whether increasing the representation of women in local political positions will impact the gender gap in candidacy and representation at higher levels of government. One interpretation of Bhalotra, Clots-Figueras, and Iyer (2018)'s results is that electing women to state legislature seats may reduce future female candidacy at the national level through endogenous decisions to continue running for the same state-level seat. Increasing the representation of women in local government, however, could reduce the gender gap at higher levels of politics by affecting the beliefs that voters, parties, or potential candidates themselves have about female political candidacy (Beaman et al. 2009). This paper provides new evidence on this theoretically and empirically ambiguous relationship.

Approaching a related question, O'Connell (2020) found that exposure to leadership seats reserved for women in district councils is associated with a small increase in female candidacy for state and national legislatures. This result is driven by previous local or state legislature candidates, and the additional female candidates do not win the elections they contest. One conclusion from this work is that gender-based quotas do not meaningfully reduce barriers that give rise to the gender gap in national politics, nor are they effective in generating female candidates who win nonreserved higher-office seats. In contrast, the findings of this study indicate that competitively electing female state legislators can substantially increase the share of female candidates in national politics and reduce the representation gap in national parliaments.[6]

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5   Bardhan, Mookherjee, and Torrado (2010) found that political parties in India fielded less-qualified female candidates for quota-mandated seats, and Banerjee et al. (2017) showed that seat reservation affected incumbency and challenger entry.

6   Winning a competitive election may allow a female politician to better propel her own career by providing her with relevant legislative and campaigning experience. It could also have more scope to encourage other women to pursue a political career than exposure to a woman that gained their political position through a quota. Importantly, the attitudes of political parties and voters about the likely success of female candidates are more likely to be affected by seeing a woman win a competitive election than exposure to a woman in a mandated position. This could be either because elected female politicians are (or are perceived to be) of higher quality, or because attitudes may be more reactive to the behaviors, policies, and rhetoric of a female politician that has "earned" their seat through open competition rather than by reservation.

Figure 1. Timing of State and Federal Elections, 1960 to Present.

State legislative assembly and parliamentary elections
1960-present
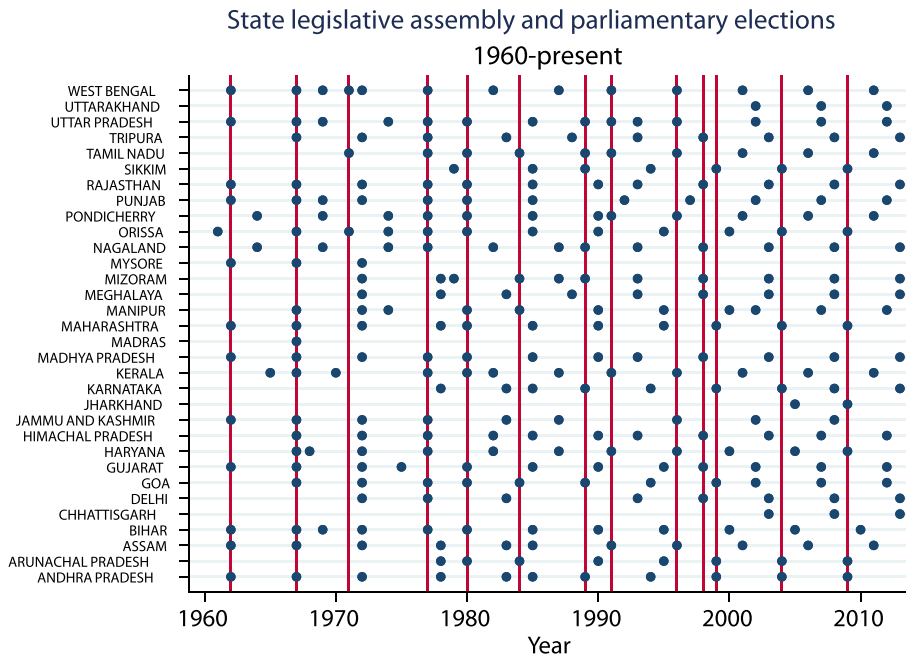
Source: Authors' calculations.

Note: Parliamentary elections are represented by vertical bars and state legislative elections are represented by dots.

2. Context and Data

2.1. Indian Elections

Since its founding, India has had a federal system of government with single-member constituencies elected on a first-past-the-post basis in both state and national legislatures. At the federal level, there is a bicameral legislature consisting of the indirectly elected upper house (Rajya Sabha) and the directly elected lower house (Lok Sabha). Both houses have equal authority in nearly all legislative areas.[7] Legally, terms of office in the Lok Sabha are five years, although at various points in history the federal government has been dissolved and reconstituted at the sole discretion of the lower house.

Each state has its own legislature, for which asynchronous elections have been held every five years since 1952, with occasional exceptions. Elections for both federal and state legislatures are administered by the federal or state elections commission. Figure 1 shows the timing of federal and state elections from 1960 to present.[8]

A typical NLC in the Lok Sabha is comprised of six SLCs that each elect a representative to their state's *legislative assembly*. Voters in the NLC directly elect one representative to the lower house of parliament (the Lok Sabha); neither state assemblies nor the parliament are subject to gender quotas. While legislative assemblies shape many state policies related to education, health, and police enforcement, the national parliament of India legislates federal policies, is in charge of approving the national budget, and is the

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7   The remainder of this paper focuses on the directly elected lower house, the Lok Sabha, in all analyses. References to "parliament" will refer solely to the Lok Sabha.

8   Redistricting has occurred twice since 1952—once taking effect in 1977, and again in 2007. Both times, redistricting occurred at both the state and federal levels. The analysis focuses on elections occurring from 1977 forwards, due to the fact that constituencies' geographic boundaries can be accurately identified before and after the 2007 redistricting, but there are no comprehensive records of state legislature constituencies prior to 1977.

body that can remove a prime minister and the cabinet through a vote of no confidence. Linking these two levels of government, this paper studies whether exposure to more female representatives in the state legislature is related to the number of female candidates competing to represent, and being elected by, parliamentary constituencies.

2.2. Elections Data

This study utilizes data available from Jensenius (2013) and the Election Commission of India that contain state legislature election returns for all states from 1977 to 2008. The data report the constituency of the election contested, the list of candidate names, their vote counts, and the sex of the candidate. Each state constituency can be identified and assigned to the parliamentary constituency it is contained within based on geographic boundary files. Data from parliamentary elections are from the Election Commission of India and contain the details of all candidates across all constituencies of the directly elected lower house of parliament (the Lok Sabha) for the same period. Unlike in many countries, state legislature constituencies in India are either found entirely within parliamentary constituency areas or share coterminous boundaries; publicly available digitized maps of constituency boundaries are used to associate state assembly constituencies to their unique parliamentary constituencies.

To explore mechanisms behind the proposed relationship of interest, the names of individual candidates are linked across state and federal elections. This allows higher-level candidacy effects to be disaggregated among repeat or new candidates. A name matching algorithm is employed that is similar to the one used by Fujiwara and Anagol (2016), which is based on a fuzzy string matching process that searches for each parliamentary candidate's name in a given state and election with potential name matches from previous state legislature and parliamentary elections.[9]

Table 1 contains summary statistics on the state legislature elections data. Panel A shows that for the full sample, on average, 9.1 candidates contest for a state legislature seat. Only 0.37 (4 percent) of those candidates are female. The average victory margin (defined as gross percentage of votes the winner garnered over the first runner-up) is 14.5 percent, and 25.9 percent of all elections were won by a victory margin of less than 5 percentage points (from hereon these are referred to as "close" elections). Approximately 8.7 percent of elections were "mixed" (i.e., the winner and first runner-up were comprised of one male and one female candidate). Following the overall pattern, approximately one-quarter of the mixed elections were close (2.1 percent of all elections) and half of the mixed-close elections were won by the female candidate (1.1 percent of all elections).

Panel B focuses on the sample of mixed-close elections. These elections had a slightly larger pool of candidates (9.8) and, by construction, a larger number of female candidates (1.4). If the outcome of close elections between male and female candidates is "as good as random" in this sample, women are expected to win approximately 50 percent of the time—which is precisely the case (50.5 percent). The mixed-close elections were more likely to occur later (average year is 1995, compared to 1991 in Panel A) which reflects the secular trend in increasing female political participation over time. From these data, the number of mixed-close elections and the number of female-won mixed-close elections by parliamentary constituency is aggregated across state legislature constituencies and then matched to later parliamentary election returns by constituency.

Table 2 provides summary statistics on the outcome data from pooled parliamentary election returns matched to state returns. The average parliamentary constituency contains 6.1 state legislature constituencies, in which there were an average of 1.6 close elections, 0.57 gender-mixed elections, 0.13 mixed close elections, with around half of those (0.07) won by the female candidate. In the parliamentary elections

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9   To validate the procedure, records were manually matched in the state and year with the largest number of female parliamentary candidates. This method resulted in agreement with the algorithmic matching in 93 percent of cases; 6 percent were classified as previous state legislature candidates by the manual matching but not the algorithm, while only one case was matched by the algorithm but not manually.

Table 1. Summary Statistics, State Legislature Elections, 1977–2008

Variable	Mean	Std. dev.	Min.	Max.
Panel A: Full sample				
Candidates	9.114	6.647	1	301
Female candidates	0.366	0.693	0	16
Victory margin	0.145	0.13	0	1
Close election	0.259	0.438	0	1
Election between male and female candidate	0.087	0.282	0	1
Female candidate won	0.044	0.205	0	1
Close election between male and female cand.	0.021	0.145	0	1
Female cand. won in M–F close election	0.011	0.103	0	1
State legis. election year	1991.4	9.631	1977	2008
High female literacy state	0.533	0.499	0	1
N		30,250		
Panel B: Mixed-close election sample				
Candidates	9.847	5.964	2	45
Female candidates	1.433	0.776	1	7
Victory margin	0.024	0.014	0	0.05
Female candidate won	0.505	0.500	0	1
State legis. election year	1995.8	9.077	1977	2008
High female literacy state	0.489	0.500	0	1
N		646		

Source: Authors' calculations.
Note: Table contains summary statistics of state legislature election returns from 1977 to 2008.

Table 2. Summary Statistics: Merged State and National Elections Returns

| Variable	Mean	Std. dev.	Min.	Max.
State legis. election year	1989.6	9.787	1977	2008
# SLC constituencies (elections)	6.147	4.583	1	60
# SLC close elections	1.585	1.956	0	27
# SLC elections with female cand. in top 2	0.567	0.847	0	9
# SLC elections won by female cand.	0.277	0.544	0	4
# SLC male–female close elections	0.132	0.382	0	4
# SLC close elections won by female cand.	0.069	0.267	0	2
Natl. legis. election year	1992.4	9.506	1980	2009
# NLC candidates	12.711	8.548	2	79
# Female NLC candidates	0.546	0.843	0	6
Whether female cand. won NLC election	0.078	0.268	0	1
Vote share for all female cand.	6.834	16.392	0	97.03
N		2,792		

Source: Authors' calculations.
Note: Table contains summary statistics of merged state legislature election returns (1977 to 2008) and parliamentary election returns (1977 to 2014). SLC, state legislature constituency; NLC, national legislature constituency.

themselves, there was an average of 12.7 candidates, of which 0.55 were female, and these national-level elections were won by a female candidate 7.8 percent of the time.

Important for external validity, the sample of mixed-close elections is drawn from a wide range of areas across India. Figure 2 plots in red the correlation between the share of overall elections that each state contributes to the sample and the share of mixed-close elections by state, while the green line represents the 45 degree line. Figure 2 shows that the contribution of each state to the sample of mixed-close elections is closely proportional to their contribution to the overall sample of elections. Thus, the sample of

Figure 2. Share of all Elections versus Share of Close Mixed-Gender Elections by State, 1977 to Present.
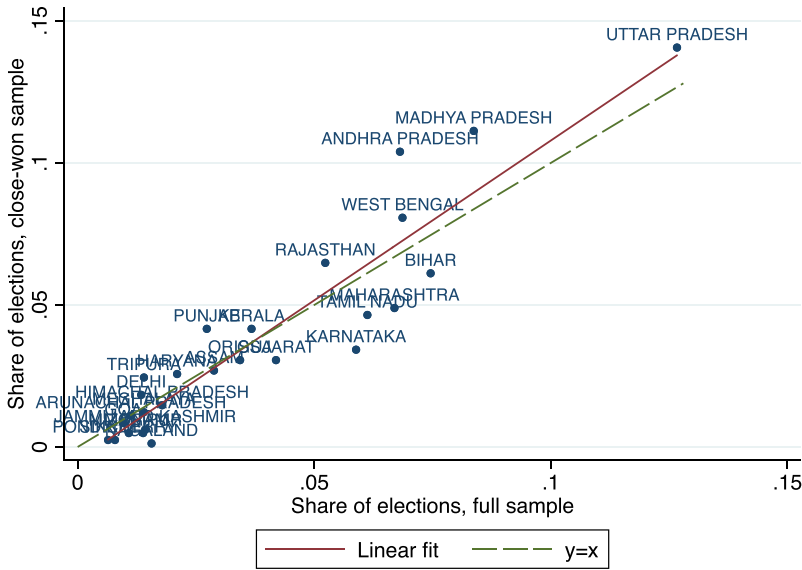
Source: Authors' calculations.

Note: The 45-degree line is plotted as a dashed line. The solid line plots the correlation between the share of all elections and the share of close mixed-gender elections across states, the slope of which is not statistically distinguishable from 1.

mixed-close elections is not driven by a few outlying or nonrepresentative states and thus captures the variation in underlying attitudes towards women across India.

3. Methodology

The goal of this study is to estimate the impact of a female candidate being elected to the state legislature on female participation and success in later national parliamentary elections. To do this, variation in the success of female candidates in state legislature elections within their corresponding parliamentary constituency is exploited. The threat to identification inherent in an observational approach to this question is that areas in which female candidates are more numerous, more competitive, and win state legislature seats are likely to be those same areas in which female political participation and representation at the national level is correspondingly higher due to observed or unobserved factors.

To address this concern, this study utilizes the quasi-random nature of the victor's gender in close state legislature elections where a male and female candidate are the top two finishers ("close mixed-gender elections") to generate variation in female representation at the local level. The identifying assumption is that, except for the gender of the candidate, other variables such as area or candidate characteristics, or preferences for female candidates more generally, vary continuously at the vote margin of zero. The validity of this identifying assumption enables an additional close mixed-gender state legislature race won by a woman to be interpreted as an exogenous increase in female representation at the state level.

3.1. Investigating the Validity of the Research Design

As is standard in the literature, several checks are conducted to confirm that preferences for female politicians are continuous at the vote margin of zero. However, the strategy used in this study also provides a directly testable check for the validity of the identifying assumption that is not typically available when using this type of variation. Specifically, a female victor in a close mixed-gender election in one of the state

Table 3. Women's Electoral Success in Mixed-Gender Elections and Number of Elected Female State Legislators

	(1)	(2)
# of close elections won by female cand.	1.019***	0.968***
	(0.040)	(0.083)
Const. fixed effects	No	Yes
Year fixed effects	No	Yes
Close elections with male & female	No	Yes
p-val, H_0: $\alpha_1 = 1$	0.64	0.71
N	2,792	2,792
R^2	0.25	0.52
Mean of outcome	0.28	0.28
Std. dev. of outcome	0.54	0.54

Source: Authors' calculations.

Note: Each column reports results from estimating equation (1). Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by * < .1, ** < .05, *** < .01.

constituencies that makes up a larger national constituency should increase the total number of female state legislators within that national constituency by precisely 1. This prediction could be violated if the likelihood of a female winning a close election in a particular SLC is indicative of a simultaneous increase in the preference for electing female politicians within the same parliamentary constituency. Under such a scenario, a close female win in an SLC would be associated with more than one additional female representing the corresponding national constituency in the state legislature. Thus, when exploiting the particular variation used for this analysis, traditional tests for continuity of variables other than gender at the threshold provide necessary but not sufficient evidence for the validity of the research design. In this context, the continuity test is formalized in the following regression:

$$[\text{SLC seats held by women}_{it}] = \alpha_1 * [\text{\# of close-mixed SLC female wins}_{it}]$$

$$+ \alpha_2 * [\text{\# of close-mixed elections}_{it}] + \Gamma_i + \Theta_t + \epsilon_{it}, \tag{1}$$

where [SLC seats held_by women$_{it}$] represents the total number of women that won a state legislature seat in a particular national constituency i, in election year t. The independent variable of interest in this model is the [# of close-mixed SLC female wins$_{it}$], which captures the number of women that won a close election against a man. In this analysis, "close" is defined as a ≤ 5 percent margin between the top two finishers. The model also controls for the total number of close mixed-gender elections in NLC i and in election year t, the [# of close-mixed elections$_{it}$], as well as fixed effects for NLC (Γ_i) and election year (Θ_t). The standard errors are two-way clustered by parliamentary constituency and year of the state legislature election.[10]

Table 3 presents the estimated α_1 for this test. Column 1 estimates equation (1) omitting the vectors of fixed effects and controls and column 2 estimates equation (1) in full. In both cases the coefficient cannot be statistically distinguished from 1.

As mentioned previously, it is also important for the validity of the research design that relevant characteristics other than the gender of the winner are not changing nonlinearly as the female candidate's vote margin crosses the threshold of zero in state legislature elections. A number of standard checks of this assumption are conducted. First, to test for manipulation of the running variable, fig. 3 plots the density of the vote margin between a male and a female candidate, and provides no evidence of a discontinuity

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10   The estimates here and below are robust to other clustering schemes, including dropping the year dimension or two-way clustering by constituency and state $*$ year.

Figure 3. Density Test for Manipulation of the Running Variable.
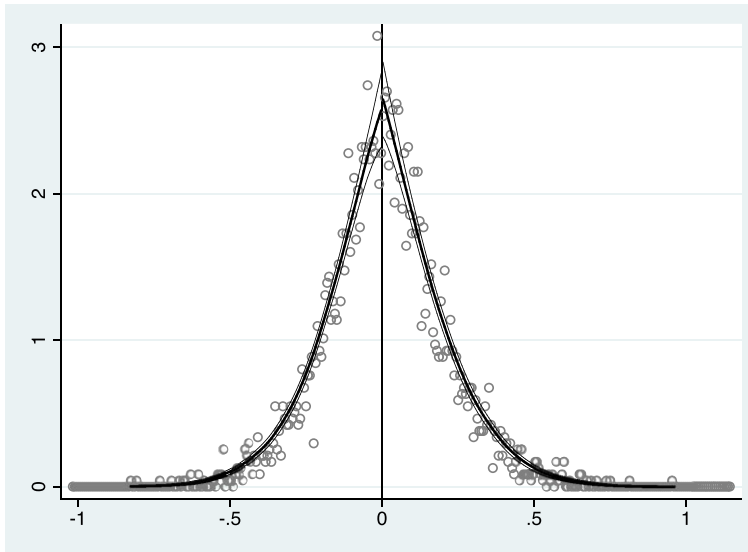
Source: Authors' calculations.

Note: The horizontal axis is the female victory margin in mixed-gender state legislature elections; positive values indicate a win by the female candidate.

at the zero vote threshold. This suggests that a female candidate is as likely to win or to lose a closely contested race (McCrary 2008).

Falsification exercises are also performed in which a traditional regression discontinuity specification, given below, is estimated using outcomes that should not be affected by a female candidate closely winning an election. Specifically, the regression estimated is as follows:

$$Y_{it} = \beta_0 + \beta_1 * [\text{female won}_{it}] + \beta_2 * [\text{win margin}_{it}]$$
$$+ \beta_3 * [\text{win margin}_{it}] * [\text{female won}_{it}] + \Gamma_i + \Theta_t + \epsilon_{it}, \quad (2)$$

where Y_{it} is the falsification outcome, which is either a characteristic of the election prior to that held in state legislature constituency i in election year t, or a characteristic of the most recent parliamentary election that should not be affected by the gender of the winner of the election in state legislature constituency i in election year t. The variable [female won$_{it}$] is an indicator for a female victory and [win margin$_{it}$] represents the vote margin by which the female candidate won or lost the election in state constituency i, in election year t. This model uses a bandwidth of 5 percent in margin of victory and applies triangular weights.

Panel A of table 4 provides estimates of β_3 in equation (2) using characteristics of the previous state legislature election as outcome variables. The results provide evidence that there is no discontinuity in previous state legislature election characteristics when a woman wins a close election at the state level. Panel B displays the estimates of β_3 using characteristics of the last national parliamentary election as outcomes in order to test whether the close female-won state legislature elections are occurring in national constituencies that are simultaneously experiencing systematically different political environments. The first column shows that a close female win is not related to the fraction of votes won by all women contesting the national parliamentary election. This test is particularly relevant, as it suggests that a close female win does not reflect a change in preferences for female politicians in both levels of government. The results also verify that a close female win is not associated with the number of female parliamentary candidates who previously had run for the state legislature (column 3) nor the number of female parliamentary candidates from the major progressive (INC) or conservative parties (BJP) (columns 4 and 5).

Table 4. Testing for Discontinuities in Election Characteristics and the Candidate Pool in Mixed-Gender Close Elections

Panel A: Previous state legislature election characteristics

Outcome	# candidates (1)	Female candidates (2)	Female vote share (3)	Close election (4)	Mixed-sex (5)	Woman won (6)	Woman won by close margin (7)
Woman won election	−0.302 (0.926)	0.103 (0.133)	−0.003 (0.040)	−0.089* (0.045)	−0.031 (0.080)	0.028 (0.093)	−0.046 (0.042)
N	822	822	822	822	822	822	822
R^2	0.31	0.12	0.07	0.08	0.07	0.07	0.07
Mean of outcome	9.25	0.74	0.19	0.10	0.39	0.28	0.05
Std. dev. of outcome	6.50	0.84	0.23	0.30	0.49	0.45	0.22

Panel B: Contemporaneous national parliamentary election characteristics

Outcome	Vote share for all female cands. (1)	Whether female incumbent ran (2)	# female previous state legis. cands. (3)	# female cands. from Indian National Congress (4)	# female cands. from Bharatiya Janata Party (5)	Whether incumbent ran (any) (6)	# prev. state legis. cands. running (7)
Woman won election	0.010 (0.010)	0.015 (0.048)	0.020 (0.059)	0.026 (0.073)	−0.016 (0.053)	−0.056 (0.060)	0.025 (0.164)
N	906	906	906	906	906	906	906
R^2	0.14	0.06	0.06	0.27	0.17	0.08	0.17
Mean of outcome	0.40	0.13	0.21	0.44	0.15	0.37	1.08
Std. dev. of outcome	0.09	0.34	0.42	0.50	0.36	0.53	1.21

Source: Authors' calculations.

Note: The table reports coefficient estimates from the estimation of a regression discontinuity specification on falsification outcomes from the local election cycle among the sample of state legislature elections in which the top two finishers were a male and a female candidate within a bandwidth of 5 percentage points in the female candidate's victory (loss) margin. All equations include fixed effects for election year and a linear term in the vote share garnered by the female candidate, as well its interaction with an indicator for the female candidate having won, and are triangular kernel weighted. Significance levels are indicated by * <.1, ** <.05, *** <.01.

A close female win also has no relationship with whether any incumbent is in the parliamentary election (column 6), with whether a female incumbent is in the race (column 2), or with the number of parliamentary candidates who previously served in the state legislature (column 7).[11] In addition, Bhalotra, Clots-Figueras, and Iyer (2018) uses variation generated by a similar sample of mixed-close elections in Indian state legislative assemblies and finds no evidence that a close female win in the state legislature is related to candidate characteristics such as education levels or net worth.[12]

3.2. Empirical Model

The main analysis estimates the impact of an increase in the number of female state legislators on women's candidacy and success in later parliamentary races. The empirical specification used is

$$Y_{ict} = \alpha_1 * [\text{\# of close-mixed SLC female wins}_{it}]$$

$$+ \alpha_2 * [\text{\# of close-mixed elections}_{it}] + \Gamma_i + \Theta_t + \delta_c + \epsilon_{ict}. \tag{3}$$

In this model, the dependent variable reflects outcomes, Y, in parliamentary constituency i, occurring in parliamentary election year c, as a function of the results of state legislature elections held in year t. Equation (3) uses the same independent variables in equation (1) and includes a fixed effect for the year of the national parliamentary election, δ_c. The primary outcomes of interest are the number of female candidates, the number of female winners, and the vote share for all female candidates in the national parliamentary elections.[13] As in equation (1) the independent variable of interest is [# of close-mixed SLC female wins$_{it}$], which represents the number of women that won an election against a man when the vote margin between the top two finishers was within 5 percent. While this 5 percent definition for a "close" election is used throughout the main analyses, evidence in the results section establishes that the estimates and conclusions are robust to alternative definitions of a "close" election.

The analyses are also separated by varying horizons to differentiate the effect of experiencing additional female state representation before ("current term") or after ("subsequent term") the elected state representative has completed their term of office. During the current term, a newly elected representative might not yet have a proven record as a legislator, and may themselves be deciding between candidacy for the state and national legislatures in the subsequent election. After the current term, the politician will have the experience from a completed term of office and exposure effects are more likely to be present among potential external candidates and among voters. Therefore the analysis is able to examine both immediate and longer-run effects of exposure to elected local politicians.[14] In addition, to conduct a placebo

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11   In all, there is only one coefficient that is significant at the 10 percent level in table 4 out of 14 tests, which is what would be expected by chance.

12   Using a similar sample to the one utilized in this study, Bhalotra, Clots-Figueras, and Iyer (2018) also show that other demographic and socioeconomic characteristics of the population (including population gender ratios, literacy rates, proportion of lower castes and backward tribes, and the male–female literacy differential) are also not correlated with a woman winning a close election.

13   An alternative strategy would be to use mixed-gender close elections won by a woman as an instrument for the endogenous number of state legislature seats held by women. Given that the first stage model would be the same as equation (1) and thus the first stage coefficient is indistinguishable from 1, the results from the two-stage least squares model and the reduced form in equation (3) are very similar. Instrumental variables (IV) estimates for the main candidacy results are available in table S1.1 in the supplementary online appendix. This IV approach, which can alternatively be formulated as a fuzzy regression discontinuity design, has been applied previously to understand the effects of female political leadership on constituents' health and education by Clots-Figueras (2012) and Bhalotra and Clots-Figueras (2014).

14   Since the unit of observation is related to time since an SLC election, it is important to verify that the sample remains representative of India as the period since the SLC election becomes more distant. In each set of national elections from 1 to 9 years after the corresponding SLC election, the observations represent 80–85 percent of all Indian states in the dataset. Observations of national elections 10 years after the focal SLC, though, are made up of only one-third of Indian states and are not geographically representative of the country. In order to be conservative in handling the potential

test for the identification strategy, outcomes from the previous parliamentary elections (i.e. one to five years before the focal state elections) are also provided. If a woman winning a mixed-gender close election at the state level is uncorrelated with trends in the relevant national constituency's parliamentary elections, there should be no effect found for elections in the previous campaign cycle.

The empirical strategy presented in equation (3) is similar in many ways to a standard regression discontinuity specification in which the independent variable is an indicator for whether a woman closely won a state legislature election and the dependent variable is measured at the parliamentary constituency level but assigned to each relevant SLC, as in equation (2).[15] Equation (3) is preferred as the main specification because it provides precision gains relative to an RDD as there is no loss of sample among parliamentary election observations via the imposition of a bandwidth. While the primary approach still uses within-bandwidth variation in the regressor to identify effects on the outcome, the sample is not subject to bandwidth-based restrictions. As a result, equation (3) is able to use the same source of variation as in an RDD to identify the parameter of interest, while preserving the full available sample to identify the fixed effects in the model. In the following section of the paper, it is verified that the advantages of estimating equation (3) do not come at the cost of adding bias to the estimates. Specifically, the estimates confirm that while the results of equation (3) are more precise, there is no difference in the estimated magnitude of the relationship of interest when using either methodology.

4. Results

4.1. Candidacy

Estimates of an additional close election won by a female candidate on the number of female candidates competing in national parliamentary races, α_1 from equation (3), are reported in table 5. The results in panel A, column 1 of table 5 indicate that the number of closely elected female state legislators does not affect the number of female parliamentary candidates in *past* parliamentary elections. This falsification test suggests that NLCs that are later exposed to additional state female politicians did not already have a differential number of female candidates running at the national level in the previous election. Also, there is no meaningful effect on higher-level candidacy during the term of office of the women who were recently elected at the state level (column 2).[16] In contrast, the results in panel A, column 3 of table 5 indicate that an increase in the number of state female legislators leads to a large and statistically significant increase in the number of female candidates in parliamentary races held during the subsequent term of the focal state legislature. Specifically, for each additional female state legislator winning a close election, there are 0.22 additional female parliamentary candidates running for office in the subsequent term—an increase of 34 percent relative to the mean number of female candidates. In other words, an additional five lower-level female representatives generates one more female candidate for the national legislature.[17]

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systematic selection into the sample for observations 10 years after the SLC, the "subsequent term" period includes elections 6 to 9 years after the SLC election. Results including year 10 in the "subsequent term" period are provided in table S1.2 in the supplementary online appendix and are qualitatively and statistically indistinguishable from the main results.

15   Unlike a regression discontinuity setup, the independent variable of interest in equations (1) and (3) is the total number of close, mixed state legislature elections won by a woman in a parliamentary constituency from a particular state legislature election year. Since this independent variable is not the outcome of one specific election, there is no analogous "running variable" included or needed for identification in these models.

16   The lack of a meaningful or significant effect on past or contemporaneous parliamentary elections persists for all of the outcomes explored throughout the rest of the analysis and are thus, for parsimony, not included in the rest of the tables. These estimates are available upon request.

17   Conditional on the number of female close wins, the coefficient on the number of close mixed-gender elections captures the effect of an increase in the number of close elections won by men on female candidacy at the national level. The

Table 5. Women's Electoral Success in State Mixed-Gender Elections and the Female Candidacy and Success in Parliamentary Elections

	Previous term (1)	Current term (2)	Subsequent term (3)
Panel A: Number of female candidates			
# state legislature constituency close elections won by female cand.	0.072	−0.014	0.217[**]
	(0.090)	(0.071)	(0.095)
N	2,792	2,792	2,792
R^2	0.40	0.41	0.39
Mean of outcome	0.39	0.55	0.64
Std. dev. of outcome	0.72	0.84	0.91
Panel B: Whether female candidate won [0/1]			
# state legislature constituency close elections won by femaile cand.	−0.003	−0.018	0.046
	(0.021)	(0.022)	(0.032)
N	2,792	2,792	2,792
R^2	0.32	0.35	0.31
Mean of outcome	0.06	0.08	0.08
Std. dev. of outcome	0.24	0.27	0.27

Source: Authors' calculations.

Note: Each column reports results from estimating equation (3). All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by [*] < .1, [**] < .05, [***] < .01.

While the identifying assumption relied upon for these estimates strongly implies that the election results used to represent quasi-random increases in female representation should be from races in which a female candidate narrowly defeats a male candidate, the exact choice of what qualifies as a "close" election is arbitrary. To ensure that the conclusions regarding the impact of an increase in the number of state female legislators on the number of female candidates in parliamentary races held during the subsequent term are not dependent on the specific choice of 5 percent to define a "close" election, fig. 4 replicates this estimate using each margin of victory from 1 percent to 10 percent in 1 percent intervals. In each case the estimate using an alternative definition of a "close" election provides qualitatively and quantitatively similar results to the primary specification. Moreover, the results are robust to the inclusion of national constituency-specific linear trends based on the national and/or state election year (see table S1.3 in the supplementary online appendix).

As discussed when introducing equation (3), an alternative approach to the main analysis would be to estimate a regression discontinuity specification analogous to equation (2) in which the running variable is the vote margin by which the female candidate won or lost the election, the independent variable is an indicator for whether a woman closely won a state legislature election, and the outcome is the number of women running in the subsequent parliamentary election in the constituency that contains the SLC. The traditional regression discontinuity approach, however, could suffer from a loss in precision relative to equation (3) due to the smaller sample size imposed by a bandwidth selector without providing any clear benefits to identification.[18]

coefficients on the number of close mixed-gender elections are small and statistically insignificant in all specifications, suggesting that the effect is driven by female politicians winning state legislature seats.

18 This is because the regression discontinuity design limits the sample to only those state legislature elections that experienced a close election, while equation (3)'s inclusion of the full sample of parliamentary elections does not alter which elections provide identifying variation, but rather allows for all observations available to identify the vectors of fixed effects.

Figure 4. Test of Sensitivity to Definition of Close Election for Estimate of Effect on Female Candidacy in the Subsequent Term.
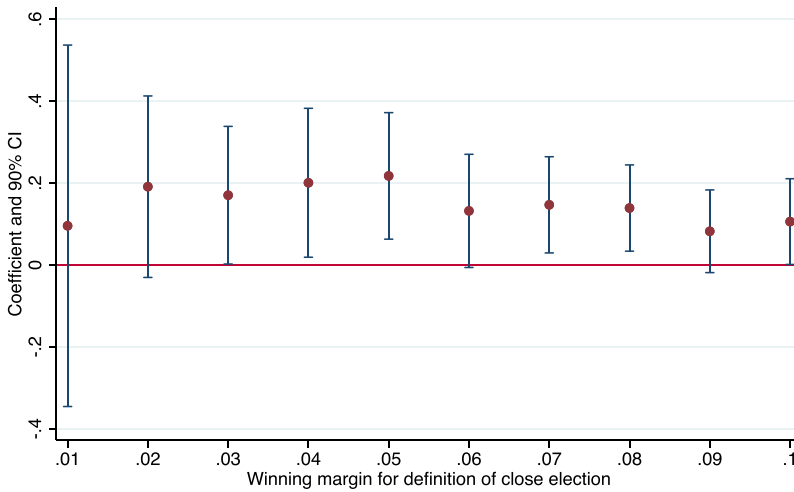
Source: Authors' calculations.

Note: Each point reports results from estimating equation (3) in the subsequent term using a different margin of victory to define a "close" election. All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. For each estimate, 90 percent confidence intervals provided.

In support of the fact that using the full sample in equation (3) is not critical to identification, table S1.4 in the supplementary online appendix estimates equation (3), limiting the sample to only parliamentary constituencies that ever experienced a close state legislature election at some point during the sample period (column 2) or, even more narrowly, only those election years that had a close state legislature election in the previous election cycle (column 3). As expected, the estimates in columns 2 and 3 are very similar in magnitude to the estimate using the full sample.

Alternatively, to provide evidence that the use of a traditional regression discontinuity specification would reduce efficiency without providing gains to identification, multiple versions of equation (2) are estimated for the number of female parliamentary candidates in the subsequent term. In these alternative estimates, the independent variable is an indicator for whether a woman closely won a state legislature race using varying bandwidth choices from 1 percent to 10 percent in 1 percent intervals, as well as the Imbens and Kalyanaraman (2012) and Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth selectors. The results are provided in fig. S1.1 in the supplementary online appendix, along with a solid blue line indicating the estimated effect reported in column 3 of table 5 and dashed blue lines providing the 90 percent confidence interval for the estimate. Comparing the regression discontinuity estimates to the solid blue line indicates that the size of the relationship between the number of female state legislators and the number of female candidates in parliamentary races held during the subsequent term is larger or equivalent when using a regression discontinuity specification. Thus, estimating equation (3) is not leading to upwardly biased results and provides, if anything, conservative estimates as compared to those from a regression discontinuity design. In addition, the size of the confidence intervals attached to the regression discontinuity estimates, as compared to those from equation (3), underline the precision gains from using the full sample. In summary, while a regression discontinuity specification represents a reasonable approach to this analysis, it is strictly dominated in efficiency by equation (3), while providing the same conclusion about the relationship of interest.

Panel B of table 5 reports the effects of an additional close election won by a female candidate on female representation in the national parliament. As before, there is no meaningful effect during the previous or current term of office of the women who were elected at the state level. Also mimicking the previous

Table 6. Women's Electoral Success in State Mixed-Gender Elections and the Number of Female Candidates in Subsequent Parliamentary Elections, by Source of Candidacy

	All cands. (1)	Prior candidacy (state and/or nat'l) (2)	No prior candidacy (3)
# state legislature constituency close elections won by female cand.	0.217[**]	0.049	0.169[**]
	(0.095)	(0.096)	(0.060)
N	2,792	2,792	2,792
R^2	0.39	0.32	0.29
Mean of outcome	0.64	0.40	0.24
Std. dev. of outcome	0.91	0.70	0.52

Source: Authors' calculations.

Note: Each column reports results from estimating equation (3). All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by [*] < .1, [**] < .05, [***] < .01.

findings, in the subsequent term (column 3), an additional lower-level female representative yields a large (58 percent) increase in higher-level representation, although this effect is imprecisely estimated (*p*-value = .15).[19]

4.2. Sources of Candidacy

What is the source of the increase in female parliamentary candidates? One possibility is that female politicians who won state legislature seats climb the political ladder and decide to compete in national elections. For example, serving in the state legislature may provide the politician with important and relevant experience that makes her a more viable national-level candidate. An alternative possibility is that the success of women in state legislature elections reduces bias and leads to updated beliefs about the viability of female candidates, which encourages new female political actors to compete in national elections.[20] Table 6 estimates the impact of increased female representation in the state legislature on the number of female parliamentary candidates who had previous experience in state or national legislature elections versus its impact on female parliamentary candidates with no prior experience.

The results from this analysis provide strong evidence that the effect of lower-level wins on candidacy in the subsequent parliamentary election is not operating solely or predominantly through career politicians (column 2). The estimate in column 2 of table 6 also implies that the main effect is not driven by the behavior of the close-winning female state legislator, as she is not more likely to subsequently run at the parliamentary level.[21] In contrast, the results in column 3 of table 6 indicate that exposure to competitively elected women at the local level facilitates the participation of novice female candidates.[22]

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19   Estimates in which the outcome is the appointment or election of women to the upper house of the Indian parliament, the Rajya Sabha, are provided in table S1.5 in the supplementary online appendix. No similar effect is found in that legislative body, although this is not a directly elected house and the process by which individuals become "candidates" for these seats is markedly different from those in the lower house.

20   In the US context, Wasserman (2018) shows that novice female candidates who compete and lose in California local elections are less likely to persist in their political career compared to male losers. Brown et al. (2021) show that US female politicians who win a state legislature seat are less likely to pursue a Congressional office compared to male politicians.

21   An alternative potential mechanism is that the new political power obtained by the elected female politician enables her to push for the nomination of other female candidates from her own party for national-level seats. However, there is no evidence to support this hypothesis. Specifically, the party affiliation of the additional female state legislator does not strongly determine the party affiliation of the additional female candidates competing in parliamentary elections.

22   While dynastic political families are quite common in India, there is no evidence that affiliation to a political dynasty is correlated with mixed-gender close elections. It is, thus, unlikely that the effects are primarily driven by female candidates from political families.

Table 7. Women's Electoral Success in State Mixed-Gender Elections and the Average Vote Share of Female Candidates, Voter Turnout, and Male Candidates in Subsequent Parliamentary Election

	Avg. female vote share (1)	Turnout (2)	Male candidates (3)
# state legislature constituency close elections	5.033**	0.004	0.095
won by female cand.	(1.817)	(0.968)	(0.514)
N	2,792	2,726	2,792
R^2	0.38	0.76	0.68
Mean of outcome	7.31	59.03	13.62
Std. dev. of outcome	16.63	12.64	9.12

Source: Authors' calculations.

Note: Each column reports results from estimating equation (3). All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by * < .1, ** < .05, *** < .01.

4.3. Vote Outcomes

The next set of analyses investigates whether an increase in the presence of women in the state legislature affects the vote share received by female parliamentary candidates. The results in column 1 of table 7 suggest that an additional female state politician leads to an increase of about 2.6 percentage points in the average vote share won per female parliamentary candidate in the subsequent term. This represents a 46 percent increase relative to the mean vote share of 5.6.[23] The results in column 2 of table 7 provide no evidence that the increase in female vote share is driven by an overall increase in voter turnout, indicating that exposure to local female politicians did not increase enfranchisement.[24]

Lastly, the results in column 3 of table 7 provide no evidence that increased female representation in state legislatures also increased male candidacy at the national level. If this were the case, it would imply that identifying variation is simply picking up a relationship between close mixed state elections won by women and an increase in overall participation of candidates at the national level. Thus, the impact of female state legislators on candidacy in national elections is, in fact, gender specific.[25]

4.4. Heterogeneity by Incumbency, Area Characteristics, and Party Affiliation

It is possible that the impact of closely electing a female state legislator varies by whether she is an incumbent or a new candidate. For example, the close election of a female politician who never served in the state assembly could provide more relevant and novel information to potential candidates and parties about voter preferences towards women than the close election of a female incumbent. To test this, equation (3) is estimated with an additional regressor that measures the count of close female wins by in-

23 Put differently, the additional 0.22 women running for a parliamentary seat are able to increase the average vote share per female candidates by 2.6 percentage points, which, on a per candidate basis, means these marginal candidates receive an 11.8 percentage-point higher vote share (2.6/0.22 = 11.8). Note that, in this analysis, the outcome in races with no female candidates is coded as zero; however, it makes no difference to the magnitude of the estimate if, instead, those outcomes are left as undefined, although the coefficient becomes only marginally significant (coefficient: 2.80, *p*-value = .13).

24 The alternative explanation that exposure to a local female politician increased voting participation by women by the same amount that it decreased voting participation among men cannot be ruled out.

25 Nearly 50 percent of female state legislature candidates are fielded by a single party, the center-left/progressive Indian National Congress (INC). This raises the concern that female electoral success may simply be reflecting a party rather than a gender effect. table S1.6 in the supplementary online appendix reports estimates from using variation from close-won elections by INC candidates instead of variation in the gender of candidates in closely won elections. The results indicate that progressive party wins lead to a small reduction in female participation in subsequent parliamentary elections. table S1.7 in the supplementary online appendix also shows that controlling for the number of close mixed-gender elections won by the progressive party does not meaningfully affect the main results or conclusions.

Table 8. Women's Electoral Success in State Mixed-Gender Elections and the Number of Female Candidates in Parliamentary Elections by State Characteristics

	State female literacy		Post-1991	
	Low (1)	High (2)	Pre (3)	Post (4)
# state legislature constituency close elections won by female cand.	0.367[**]	0.065	0.168	0.232[**]
	(0.135)	(0.135)	(0.240)	(0.103)
N	1,611	1,182	910	1,883
R^2	0.40	0.39	0.71	0.42
Mean of outcome	0.69	0.58	0.35	0.78
Std. dev. of outcome	0.96	0.84	0.65	0.98

Source: Authors' calculations.

Note: Each column reports results from estimating equation (3). All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by [*] < .1, [**] < .05, [***] < .01.

cumbents. The results in table S1.8 in the supplementary online appendix suggest that the effects found in the main analysis are driven entirely by the election of new female state politicians and not by incumbent female politicians.

The relationship between exposure to an elected female local politician and female representation and success in national elections may vary across states with different degrees of female empowerment, where a state's level of female empowerment is characterized by the female literacy rate based on the 2001 Population Census. States with literacy rates below the national median are treated as areas with low historical empowerment of women.[26]

Table 8 reports estimates from separate regressions by subsamples of states based on the female literacy rate. Column 1 indicates that the increase in the number of parliamentary female candidates is concentrated in states with low literacy rates.[27] These results are counter to the Bhalotra, Clots-Figueras, and Iyer (2018) finding that the relationship between female electoral success at the state level and the likelihood of that woman recontesting her seat in the next election is strongest in more progressive states. This divergence suggests that the dynamics of improving female political participation at the state level may substantially differ from those that generate increased participation and representation in national politics. Moreover, there is no evidence in the data that the effects in the earlier and later periods of the sample are statistically distinguishable (columns 3 and 4) and no substantial complementarity between close wins and the existence of the quota policy in local government is detected (see table S1.9 in the supplementary online appendix).

The results could also be heterogeneous based on the political party of the close female winner. To examine this, the main independent variable is split into three separate measures: the number of close female wins by the major progressive party (INC), the number of close female wins by the major conservative party (BJP), and close female wins by candidates from all other parties and independents. Although nearly half of the mixed close elections won by women are won by the progressive party, the majority of the effect on subsequent higher-level candidacy comes from lower-level wins by female candidates who run as conservatives, in smaller parties, or as independents—as shown in column 3 of table 9.

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26 The indicator for female empowerment may be endogenously related to female representation in the national parliament due to the fact that it is measured in 2001. However, the relative persistence of gender norms over time should mitigate the concerns about the use of these specific measures.

27 An increase in the probability of a female winning a parliamentary race is also concentrated in low literacy states, but the results are not statistically significant.

Table 9. Women's Electoral Success in State Mixed-Gender Elections and the Number of Female Candidates in Parliamentary Elections by State-Legislature Candidate Party

	Previous term (1)	Current term (2)	Subsequent term (3)
Close elections won by female Indian National Congress cand.	−0.022	−0.027	0.148
	(0.116)	(0.108)	(0.118)
Close elections won by female Bharatiya Janata Party cand.	0.139	−0.124	0.366*
	(0.126)	(0.100)	(0.195)
Close elections won by any other female cand.	0.140	0.060	0.215*
	(0.101)	(0.117)	(0.120)
N	2,792	2,792	2,792
R^2	0.40	0.41	0.39
Mean of outcome	0.39	0.55	0.64
Std. dev. of outcome	0.72	0.84	0.91

Source: Authors' calculations.

Note: Each column reports results from estimating equation (3) in which we disaggregate the number of close mixed-gender state legislature female victories by the female candidate's political party. All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by * < .1, ** < .05, *** < .01.

Lastly, equation (3) is estimated separately for female parliamentary candidates running for INC, BJP, other parties, and as independents. The results in panel A of table 10 suggest that the increase in female candidacy in parliamentary elections is largest within the major conservative party (BJP) and among independents. Panel B of table 10 investigates whether this differential impact by party at the parliamentary level is driven by increases in female representation at the state level from within the same party or from competing parties. Interestingly, the increase in female BJP parliamentary candidates is not driven by state-level success of women from any particular party, while the impact on female parliamentary candidates that are independents is strongly motivated by the success of female state legislature candidates from the major conservative party.[28]

5. Conclusion

Women are consistently underrepresented in high-ranking positions in both the public and private sectors around the world. This study empirically tests the implications of electing local female politicians on the supply of female candidates running for national legislature. The hypothesis is that placing women into career stages that precede top-level positions might reduce observed disparities in representation over time through increasing the supply of potential experienced candidates, encouraging new women to compete for higher-level positions and/or changing beliefs about female candidates. The findings indicate that in India, an additional woman entering the political career pipeline by winning a state legislature election increases the number of female parliamentary candidates in elections held during the subsequent term of office by 34 percent. The impact on female success in national elections follows the same temporal pattern and, while imprecisely estimated, is also positive and large in magnitude (∼58 percent).

The effects on candidacy and representation are not driven by the career progression of women with previous political experience, but rather by inducing candidacy from women who were not already career politicians at either the local or national level. This rules out a direct supply-side channel in this context, and highlights that pipeline expansion can affect the institution of politics more broadly and change the entrance and participation decisions of *latent* candidates who had not previously run for office. These

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28 Ideally, one would also observe measures of performance of the women who win close elections while in office to determine whether this has a relationship to higher-level candidacy. However, such measures are not available both comprehensively and historically. This important investigation is left for future work.

Table 10. Women's Electoral Success in State Mixed-Gender Elections and the Number of Female Candidates in Subsequent Parliamentary Elections by State and Parl. Candidate Party

	Indian National Congress (1)	Bharatiya Janata Party (2)	Other parties(3)	Independents (4)
Panel A: Effect on candidacy, by party				
# state legislature constituency close elections female cand.	0.027	0.052[**]	0.012	0.127
	(0.031)	(0.021)	(0.061)	(0.078)
# close mixed-gender elections	Yes	Yes	Yes	Yes
N	2,792	2,792	2,792	2,792
R^2	0.38	0.32	0.32	0.32
Mean of outcome	0.09	0.05	0.24	0.27
Std. dev. of outcome	0.28	0.21	0.53	0.58
Panel B: Party-specific effects				
Close elections won by female Indian National Congress cand.	0.050	0.063[*]	0.021	0.014
	(0.050)	(0.036)	(0.092)	(0.072)
Close elections won by female Bharatiya Janata Party cand.	−0.007	0.060	−0.047	0.360[**]
	(0.042)	(0.038)	(0.080)	(0.169)
Close elections won by any other female cand.	0.020	0.034	0.033	0.127
	(0.033)	(0.025)	(0.074)	(0.086)
# close mixed-gender elections	Yes	Yes	Yes	Yes
N	2,792	2,792	2,792	2,792
R^2	0.38	0.32	0.32	0.32
Mean of outcome	0.09	0.05	0.24	0.27
Std. dev. of outcome	0.28	0.21	0.53	0.58

Source: Authors' calculations.

Note: The table reports coefficient estimates from equation (3) estimated via OLS. All specifications include constituency, assembly election year, and parliamentary election year fixed effects. Standard errors are two-way clustered by parliamentary constituency and year of state legislature election. Significance levels are indicated by [*] $< .1$, [**] $< .05$, [***] $< .01$.

findings parallel those of Wolbrecht and Campbell (2006), Wolbrecht and Campbell (2007), Beaman et al. (2009), Iyer et al. (2012) and Khanna (2020), among others, who find that female leadership can change established norms by altering the decisions and behavior of those not directly affected by specific empowerment policies.

The findings also indicate that women's political success in a state election increases the average vote share received by female parliamentary candidates without increasing voter turnout. Interestingly, the effects are concentrated in states that have traditionally had higher barriers to women's political participation and empowerment. Similarly, the cross-party effects are driven by the lower-level electoral success of women who are not part of the progressive party, but rather those who run as conservatives or independents.

Given recent literature on the ability of female politicians to outperform their male counterparts in government effectiveness and economic performance (Brollo and Troiano 2016; Baskaran et al. 2018), the findings of this study are evidence of a mechanism in which exposure reduces bias, allowing for updated beliefs about the viability of *latent* female candidates who then run for higher office. Thus, initiatives to promote the candidacy of women at lower levels of the political ladder have the potential to affect the gender gap in higher office, especially in environments where the barriers to entry for female politicians are high.

Data Availability

The data underlying the analyses in this article were derived from state and national election returns held by the National Elections Commission of India, which are in the public domain. Datasets and code that replicate the analyses in this article are available in the online supplementary material.

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