Do Electoral Quotas for Historically Marginalized Groups Improve Women's Representation? Evidence from India*

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Abstract

How do electoral quotas focused on a single dimension of identity affect the representation of other disadvantaged identities? I examine the impact of quotas for historically marginalized groups on women's representation in local politics. I argue that these quotas influence women's representation through two channels: differential gender norms across social groups and distinct political dynamics in quota versus non-quota seats. Using quasi-random variation in the assignment of caste quotas for council member seats in rural Maharashtra, I find that seats with quotas for marginalized caste groups have a higher likelihood of women running for and winning political office compared to seats without quotas. The increased women's candidacy is driven by more favorable gender norms among marginalized castes, while higher women's electoral success stems from increased supply of women candidates and lower political competition. This paper demonstrates how social norms and political dynamics shape the spillover effects of electoral quotas on political representation.

Keywords: Electoral Quotas, Local Government, Gram Panchayat, Caste, Gender, India

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1 Introduction

Many countries are increasingly adopting electoral quotas to improve the descriptive political representation of disadvantaged groups. Gender quotas and quotas for marginalized groups are prominent examples of these measures (see Krook and O'Brien 2010 for a comprehensive list of countries with state-mandated electoral quotas). Research has examined these quotas' implications for public goods provision [Clots-Figueras and Iyer, 2023], policy influence [Clayton, 2021], and political participation [Htun and Ossa, 2013, Hughes, 2011, Krook, 2010]. However, most quotas address inequality along a single dimension, such as gender, class, or ethnicity, despite individuals varying across multiple cross-cutting dimensions [Crenshaw, 2013, McCall, 2005]. This raises a critical question: What are the effects of improving representation along one dimension—such as ethnicity—on representation along another, such as gender?

This question is particularly significant because electoral quotas often have effects that extend far beyond their intended target dimension, creating complex ripple effects throughout political systems [Bjarnegaard and Zetterberg, 2016, Krook and Mackay, 2011]. These cross-dimensional impacts can either challenge or reinforce existing power structures depending on the broader social and institutional context. Studying such spillover effects yields critical theoretical insights in several ways. First, examining how quotas designed for one group affect others reveals the complex interactions between dimensions of social inequality and institutional design, providing crucial guidance for crafting effective representation policies [Brulé and Toth, 2022, Hughes, 2011]. Second, investigating these extended effects illuminates whether interventions addressing underrepresentation in one category might inadvertently worsen or improve inequalities in others.

Early studies on the political representation of individuals with multiple disadvantaged identities show that women from marginalized groups are more underrepresented than men from the same groups [Darcy et al., 1993, Huang, 2012]. Recent stud-

ies emphasize that the political implications for such individuals may not necessarily lead to worse outcomes for women from marginalized groups, as outcomes would depend on differences in socioeconomic characteristics [Bejarano, 2013, Celis et al., 2014, Fraga et al., 2008, Mügge, 2016]. However, there has been limited systematic analysis examining how identity-based electoral quotas can have unintended spillover effects on political candidacy and electoral success for those at the intersection of multiple disadvantaged identities.

This paper addresses these gaps by examining how quotas for historically marginalized groups affect women's political representation. I argue that women's political candidacy is shaped by the relationship between social status and gender norms in contexts where both women and historically marginalized groups face discrimination. In India, caste determines social status, with women from privileged castes facing stricter restrictions due to norms designed to maintain their caste hierarchy [Agte and Bernhardt, 2023, Cassan and Vandewalle, 2021, Chakravarti, 1993, Field et al., 2010, Jayachandran, 2020]. These norms increase the costs of running for office for privileged-caste women, while women from marginalized castes face fewer social restrictions around mobility and public engagement. I theorize that quotas for marginalized caste groups affect women's political success through two distinct channels. First, women's candidacy increases in seats with caste quotas because marginalized caste women face fewer barriers to entering politics compared to women from other castes. Second, independent of these social dynamics, ethnic quota seats create different political conditions by design—they limit eligibility to marginalized caste households, which reduces political competition since historically politically active communities cannot contest these seats, and due to historical disenfranchisement, the number of eligible households is typically lower in marginalized caste groups [Auerbach and Ziegfeld, 2020]. The combination of increased women's candidacy due to fewer social restrictions and independently lower political competition in quota seats should enhance women's electoral success.

To test these hypotheses, I compare women's representation in seats with quotas for marginalized caste groups and seats without any quotas (open seats) in village council (GP) elections in Maharashtra, India's second-largest state. Local government in India is a crucial institution for studying quotas, as it is one of the largest adopters of electoral quotas [Beaman et al., 2009, Bhavnani, 2009, Chattopadhyay and Duflo, 2004a, Chauchard, 2017, Jensenius, 2015]. Like other states in India, Maharashtra has reserved seat electoral quotas for marginalized caste groups– Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC)– as well as for women. Since my focus is on the impact of caste quotas on women's representation, I restrict my sample to seats without quotas for women.

My empirical strategy employs a novel design that leverages quasi-random variation in the assignment of caste quotas for council member seats within GP wards. Council member seats are embedded in wards. In each ward, every seat has a separate ballot and elects a single member, but all seats share the same electorate (essentially, the same constituency). Additionally, the quota status of the seats varies, allowing for the comparison of two seats that are within the same constituency but have different quota status.

I rely on large-scale, publicly unavailable administrative data on election statistics, which includes candidates' and winners' characteristics for village elections from 2018 to 2022. First, I examine the causal effect of caste quotas on women's candidacy. I find that the likelihood of having at least one female candidate is significantly higher in seats with caste quotas compared to open seats (seats without quotas). These findings are robust to alternative measures of candidacy, such as the number of women candidates and the proportion of women candidates. Second, the positive effects extend beyond candidacy. I find that the likelihood of a woman winning in caste quota seats is higher than in open seats. In addition to council members, each GP also has a village chief (sarpanch). The assignment of caste quotas for sarpanch seats depends

on the population in the block (an administrative unit higher than the GP) and on the quota history. Controlling for block-level characteristics using block fixed effects and population shares in the GP, I find similar results for sarpanch seats.

Altogether, these findings provide strong and consistent evidence that quotas for marginalized caste groups improve women's representation both in political office and on the ballot. The effect sizes are substantial: a 40% increase in women's candidacy relative to the control mean and more than a 100% increase in women's representation in office. These findings have important implications for understanding how affirmative action policies aimed at correcting historical inequalities can have spillover effects, particularly in countries where social norms vary across social groups.

To explore the mechanism behind the candidacy results, I examine the inter-group differences in women's candidacy in open seats. I find that marginalized caste candidates are more likely to be women than upper caste candidates, suggesting variations in women's political candidacy across groups. To further investigate the role of inter-group differences, I compare the characteristics of women politicians from marginalized castes to those from upper castes who were elected in seats with gender quotas. Gender quotas provide a pathway to political entry in seats without institutional protection for women [Bhavnani, 2009, Goyal, 2024, Karekurve-Ramachandra, 2020]. I find that women politicians from marginalized castes have more electoral experience compared to women from upper castes, despite being younger and coming from poorer families, suggesting inter-group differences in the supply of women politicians if gender quotas are a pathway. Additionally, using a household survey, I find that women from marginalized castes are more likely to engage in activities outside the home, less likely to need permission to leave home, and less likely to practice restrictive norms like the purdah system. These findings support my theory that gender norms are more favorable for women from marginalized castes compared to women from upper castes, particularly regarding mobility outside the household.

Regarding the increased likelihood of women winners, I find that the effects of caste quotas diminish substantially when accounting for women's candidacy, suggesting that increased candidacy largely explains women's higher electoral success. Additionally, seats with caste quotas have fewer candidates than open seats, suggesting lower political competition. Together, both lower competition and increased women's candidacy increase the likelihood of a woman winner.

This paper makes several contributions to the existing literature on electoral quotas. Several studies demonstrate that improvements in the descriptive representation of underrepresented groups, as a result of quotas, affect policy [Barnes, 2016, Pande, 2003] and the types of public goods provided [Chattopadhyay and Duflo, 2004b, Chin and Prakash, 2011, Gulzar et al., 2023]. Studies have also shown that exposure to electoral quotas has economic and political implications even after the quotas are withdrawn [Beaman et al., 2009, Bhavnani, 2009]. In particular, this study complements a growing body of literature that examines the political effects of electoral quotas on mobilization [Dunning and Nilekani, 2013], political competition [Auerbach and Ziegfeld, 2020], upward political mobility [Goyal, 2024, Karekurve-Ramachandra, 2020], and participation in public meetings [Parthasarathy et al., 2019]. This paper highlights how the interaction between quotas for marginalized groups and gender norms shapes political candidacy. In addition, it highlights how differences in political dynamics between seats with and without quotas, such as the supply of women candidates and competition, may affect the identity of the winner. I also provide novel causal estimates on the spillover effects of quotas for marginalized groups on political representation.

Additionally, I contribute to the broader literature on women's political representation beyond gender quotas. Existing literature has examined the roles of the differential costs of running for office, voter discrimination, and gendered perceptions of self-efficacy as the main reasons for the underrepresentation of women in politics [Ashworth et al., 2024, Fox and Lawless, 2011, Lawless, 2015]. This study provides a framework to

understand, in contexts of discrimination, how high social status, which is typically associated with positive outcomes, may act as a barrier for women in politics.

Lastly, I contribute to the inter-disciplinary literature on multiple intersecting identities, particularly those focusing on women. The first strand of literature focused on examining whether individuals at the intersection of race and gender experience worse outcomes in various settings, such as the labor market [Reskin, 2000] or admission to academic institutions [Fernandez et al., 2022]. Later, the focus shifted to understanding the conditions under which intersectionality may exacerbate or mitigate inequalities [Browne and Misra, 2003].

2 Conceptual Framework

In contexts where certain groups are historically underrepresented, citizens from traditionally elite groups tend to dominate candidate pools and political offices because they typically have the lowest cost of running for office [Chattopadhyay and Duflo, 2004b]. This pattern is evident across diverse political contexts - from upper-caste dominance in Indian politics [Jensenius, 2016], to the overrepresentation of ethnic Chinese in Southeast Asian legislatures [Case, 2015], to the persistent advantage of white candidates in U.S. local elections [Shah, 2014]. These elite groups often benefit from mutually reinforcing advantages: greater financial resources to fund campaigns, established political networks that facilitate party nominations, higher education levels that aid in navigating bureaucratic requirements, and social capital that helps mobilize voters. In Brazil, for example, despite having the largest Afro-descendant population outside of Africa, only nine out of 513 deputies (2 percent) in the national congress actively identified themselves as black in 2003 [Htun, 2004]. Similarly, in Pakistan's local councils, landed elites have historically dominated elections due to their ability to leverage both economic resources and traditional patron-client networks [Mohmand, 2019].

How do electoral quotas shape the representation of those with multiple, cross-cutting identities? Specifically, what are the consequences for individuals at the in-

tersection of multiple disadvantaged identities, such as women from minority ethnic groups, in contexts where both women and minorities are underrepresented? Assuming that compounding inequalities increases the cost of running for office, different dimensions of disadvantaged identities intersect and amplify one another. Several studies have highlighted the consequences of this phenomenon by examining disparities in descriptive representation [Hughes, 2011, Karekurve-Ramachandra and Lee, 2020]. The impact of electoral institutions on intersectional representation varies based on specific design features. For instance, Darcy et al. [1993] show that in the U.S., the underrepresentation of Black politicians is primarily driven by the underrepresentation of Black women, while Black men have achieved or exceeded population parity in elected offices. The authors find that electoral institutions matter: multi-member districts are more likely to elect women, particularly Black women, compared to single-member districts - suggesting that institutional design choices can either mitigate or exacerbate intersectional barriers to representation. In contrast, in a setting with both gender quotas and quotas for indigenous groups, Huang [2012] find that the representation of indigenous women worsened over time, even as the representation of other women increased. The authors argue that this occurred because neither indigenous groups nor women's groups prioritized the representation of indigenous women, creating a political blind spot where each advocacy group focused on single-identity candidates, suggesting the need for multi-dimensional quotas that explicitly account for intersectional identities.

Other studies argue that outcomes for those at the intersection of multiple disadvantaged identities may not always be worse. The socioeconomic status of women from marginalized minority groups may be better due to the high incidence of incarceration among men, leading to poor levels of education for the latter [Philpot and Walton Jr, 2007, Scola, 2013]. Additionally, voters may prefer women from marginalized groups over men, as they may be considered less radical [Celis et al., 2014, Mügge, 2016]. For the same reason, marginalized women might find it easier to build or be a part of cross-

cutting coalitions [Bejarano, 2013, Fraga et al., 2008].

Additionally, there is another strand of literature that examines how quotas shape political dynamics like competition. Auerbach and Ziegfeld [2020] argue that electoral quotas shape political competition by constraining not just how many people can run, but who can run. Since quotas seats are typically for disadvantaged groups who face greater barriers to building independent political bases, there tend to be fewer candidates who could win significant votes.

Let's first consider the effect of reserved seat quotas for historically marginalized groups on women's candidacy. These quotas limit office to citizens of a particular group, thereby increasing their descriptive representation. I argue that the relationship between gender norms and social status crucially determines how quotas for marginalized groups affect women's political entry. If gender norms do not vary by social status, quotas for marginalized groups may simply reinforce pre-existing gender inequalities. However, if gender norms vary across different social status groups, quotas for marginalized groups will alter these gender inequalities. When quotas increase the descriptive representation of historically marginalized groups, their effect on women's representation depends on the nature of gender norms within these groups. If gender norms are less favorable for women from historically marginalized groups, women's representation will decrease in seats with quotas. Conversely, if gender norms are more favorable for women from historically marginalized groups, women's representation will increase in seats with quotas.

Building on this framework of quota effects, I argue that women's electoral success depends critically on the interaction between candidate supply and political competition. When quotas for marginalized groups are implemented, two distinct mechanisms influence women's chances of winning office. First, gender norms shape candidate supply by influencing women's ability and willingness to contest elections within marginalized communities. Second, the quota-based restriction on eligible candidates

affects political competition by limiting the pool to only those from marginalized groups. The interaction of these two mechanisms determines women's likelihood of winning. When both gender norms severely constrain women's candidacy and quotas reduce overall political competition, the few women who do contest may face better odds of winning due to the smaller candidate pool. However, if gender norms moderately constrain candidacy while political competition remains intense within the restricted pool, women candidates may face greater challenges as they compete against well-resourced male candidates from the same marginalized group.

Drawing on insights from the extensive literature on caste and gender, I argue that gender norms are particularly restrictive for women from traditionally elite groups due to norms maintaining their status, known as purity norms [Agte and Bernhardt, 2023, Cassan and Vandewalle, 2021, Chakravarti, 1993, Field et al., 2010, Jayachandran, 2020]. These norms limit their participation in activities outside the home, particularly those requiring presence in the public sphere. In contrast, women from marginalized castes face fewer such restrictions. Consequently, I expect that caste quotas will increase women's candidacy by increasing the representation of marginalized castes. Furthermore, following Auerbach and Ziegfeld [2020], since quota seats typically have lower political competition, the combination of increased women's candidacy and reduced competition should increase the likelihood of women winning elections.

This paper builds theoretically on insights from Karekurve-Ramachandra and Lee [2020] and Cassan and Vandewalle [2021], who examine how gender quotas affect the representation of less privileged groups and highlight the role of differential gender norms. A key distinction exists between gender and caste quotas: gender quotas do not restrict entire households from contesting elections, as women can replace men from the same household. In contrast, caste quotas limit the set of eligible households by restricting candidacy to marginalized caste households. Following Auerbach and Ziegfeld [2020], this restriction on eligible candidates can shape representation in two possible

ways. First, it prevents historically politically active communities from contesting elections. Second, due to historical disenfranchisement, marginalized caste groups often have fewer households that meet the eligibility criteria. These constraints on the candidate pool make political competition an important factor alongside gender norms in determining who ultimately wins representation.

3 Context

In this section, I build on the theoretical discussions from the previous section by providing context on caste and gender in rural India, followed by a discussion of the institutional details of gram panchayats in Maharashtra.

3.1 Caste and Gender in Rural India

The caste system stratifies Hindu society into four varnas and outcastes, who are excluded from the varnas [Dirks, 1992, Srinivas, 1957]. Each hierarchical group is further sub-divided into caste or Jati, which is associated with a traditional occupation [Risley, 1892]. The salience of this structure persists through strict norms on within-caste marriage. Hence, understanding the relationship between caste and gender is crucial to assessing the costs associated with running for office for women from different caste groups.

Several studies indicate that caste norms impose more restrictive conditions on upper-caste women, affecting their mobility and economic activity [Agte and Bernhardt, 2023, Cassan and Vandewalle, 2021, Chakravarti, 1993]. Upper-caste women, constrained by the responsibilities of maintaining their high status and by fears of pollution from physical proximity to lower-caste individuals, often face barriers to activities outside the home. Cassan and Vandewalle [2021] quantitatively document differences in gender norms between upper-caste and lower-caste women in rural India using the India Human Development Survey (IHDS) 2011-12, a nationally representative survey. They find that, while there seems to be no difference between upper- and lower-caste

women in measures of activities within the household, such as decision-making, upper-caste women have less freedom in labor market participation and in joining self-help groups. Additionally, Munshi and Singh [2024] highlight that, despite rapid economic development, female labor force non-participation is increasing in rural India. They argue that the withdrawal of women is often considered a signal of status, as a luxury only that upper-caste households can afford in the rural economy. Furthermore, purity norms restrict the physical mobility of women from high castes in political activities, such as village council meetings [Cassan and Vandewalle, 2021]. Altogether, these restrictions effectively hinder participation in the electoral process, where freedom to interact across caste groups is important for running a campaign as well as for governance.

3.2 Gram Panchayats in Maharashtra

With a population of around 112 million, Maharashtra has more than 25,000 gram panchayats (GPs). Elections are held every five years, with the timing varying according to a predetermined schedule. This variation is due to factors such as boundary changes, the establishment of new villages, the death or resignation of council members, and motions of no confidence. Each GP consists of 7 to 17 members and a village chief (sarpanch), with the number of seats depending on the population of the GP. Sarpanches were usually elected indirectly from among council members; however, between July 2017 and March 2020, and from August 2022 onward, they were directly elected by voters. GP office holders have several responsibilities, including organizing regular public meetings, maintaining vital records such as birth registrations, ensuring the effective implementation of government schemes and proper utilization of funds, supervising and controlling the work of GP staff and officers, and exercising additional powers and duties as directed by the state government.

In 1992, the 73rd Constitutional Amendment to the Indian Constitution mandated state governments to establish, hold regular elections for, and empower gram

panchayats. Along with mandating decentralization, the 73rd Amendment also directed states to introduce quotas to enhance the descriptive representation of historically underrepresented groups, such as women and marginalized castes, including Scheduled Castes (SC) and Scheduled Tribes (ST). Since then, a certain proportion of sarpanch seats are reserved at the block level and a specific proportion of member seats within each gram panchayat are reserved for these disadvantaged groups. Later, most states, including Maharashtra, adopted quotas of 27% for Other Backward Classes (OBCs).

In this paper, I primarily focus on village council member seats, because many sarpanch positions were indirectly elected from among council members in several GPs during the period of study. As discussed earlier, all council member seats are embedded in wards, which are sub-units of a GP. Within each ward, a seat elects one member. A ward must have at least two and at most three seats. The number of seats in a ward depends on its relative population and is determined by bureaucrats at the block level. Generally, the number of seats per ward is consistent, but geographical factors may cause some wards to be larger than others. Each GP has a minimum of three wards and a maximum of six wards. In other words, there are a minimum of three and a maximum of six constituencies in a GP.

The number of seats reserved for SCs and STs in a GP is based on their population share within the GP. Each ward is allocated a certain number of seats for SCs and STs according to their population share within the ward. In fully scheduled areas, at least 50% of the seats in a GP must have ST quotas, with the possibility of extending this based on their population percentage in the GP. [1] After reserving seats for SCs and STs, 27% of the remaining seats are reserved for OBCs. Once caste quotas are assigned, 50% of the seats within each category (SC, ST, OBC, No Quota) are reserved for women by lottery. Most wards have at least one seat without quotas (open seat), but if the SC/ST population is sufficiently large, it is possible for a ward to have no open seats. Table 3.1 shows

[1] Fully scheduled regions are identified by a high share of Scheduled Tribes (ST), an historically disadvantaged minority group, in the population.

the number of wards, the distribution of seats within each ward, and the quota status of each seat in Aambad GP. There are nine council member seats in this GP, with three seats allocated per ward. Overall, there are three open seats and three seats reserved for women, two seats reserved for OBCs (including one seat reserved for OBC women), and one seat reserved for ST women. No seats were reserved for SCs due to their small population share.[2]

Table 3.1: Seats in Aambad GP

Ward name	Seat type
Ward no. 1	Open, OBC Women, Women
Ward no. 2	Open, Women, ST Women
Ward no. 3	Open, OBC, Women

Notes: Quota status of each seat in Aambad GP, Akole Block, District Ahmadnagar.

Shifting focus to sarpanch seats, I analyze only those sarpanch seats in GPs where the sarpanch was directly elected. The quota assignment for sarpanch seats is temporary and rotates every term. The rules require reserving a certain proportion of seats for women and marginalized caste groups (i.e., SC, ST, OBC, and women from SC, ST, and OBC within a block). The process begins with the reservation of seats for SC, ST, and OBC groups. The assignment rules for caste quotas are somewhat complex and vary among SCs, STs, and OBCs. For SCs, gram panchayats (GPs) that had SC quotas in the last two terms are excluded from consideration. The remaining GPs are then listed in descending order of their SC population proportions, and the top GPs on this list are assigned SC quotas based on the required number of seats. For STs, the assignment depends on whether a block is considered a scheduled area. In non-scheduled and partially scheduled areas, the ST quota assignment follows a procedure similar to that for SCs. However, in fully scheduled areas, a sarpanch seat is always reserved for STs. After assigning SC/ST quotas, a list is prepared excluding GPs that had OBC quotas in the last three terms. From the remaining GPs, 27% of the seats are randomly assigned OBC

[2]Table A.1 shows the number of wards, the distribution of seats within each ward, and the quota status of each seat in Aambegaon GP. Unlike Ambad, this GP has seats reserved for both SC and SC women.

quotas. Once SC, ST, and OBC quotas are assigned, the remaining seats are designated as Open. Then, within each category (SC, ST, OBC, and Open), 50% of the seats are reserved for women. This means that, apart from open seats that are not reserved for women, all other seats are subject to either a caste quota, a gender quota, or both.

4 Data and Empirical Strategy

The main aim is to examine the impact of caste quotas for marginalized groups on women's representation. To systematically study this, I leverage quasi-random spatial variation in the assignment of quotas and rely on a novel administrative micro-dataset on GP elections in Maharashtra. This data, collected and compiled by the Maharashtra State Election Commission, the statutory body responsible for conducting local elections in the state, includes seat-wise election statistics, as well as candidates' and winners' characteristics, for council seats across 22,499 GPs between 2018 and 2022.

Because my main outcome is the gender of the politician, I restrict my sample to seats without gender quotas and compare those reserved for marginalized caste groups (the treated group) with those without any quotas (open seats). This restriction removes all gender quota seats and gender-specific caste quota seats, i.e., seats with quotas for women, OBC women, SC women, and ST women. Table 4.1 illustrates how this restriction affects the sample, using the example of Aambad GP. Seats in gray indicate those excluded from the sample due to the restriction, while seats in black are the ones included in the sample.

Table 4.1: Seats in Aambad GP

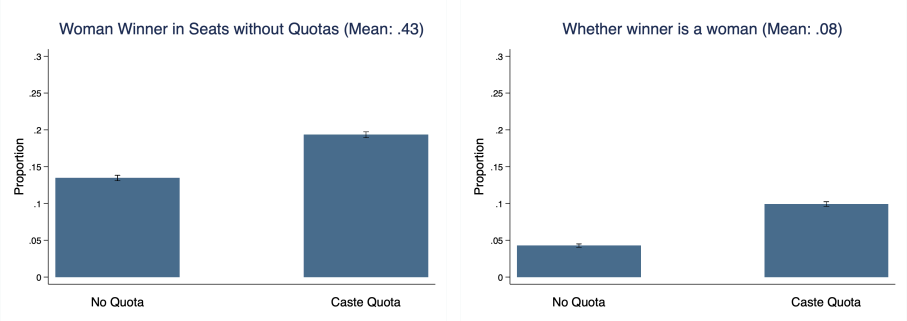
Ward name	Seat type
Ward no. 1	Open, OBC Women, Women
Ward no. 2	Open, Women, ST Women
Ward no. 3	Open, OBC, Women

Notes: Quota status of each seat in Aambad GP, Akole Block, District Ahmadnagar.

Figure 4.1 presents the distribution of outcomes by the quota status of the seats. Overall, approximately 17% of the seats have at least one woman candidate, and 8%

have a woman winner. The data also show a statistically significant difference in the proportion of women candidates and winners by quota status, with a significantly higher representation of women in seats with caste quotas. Therefore, these descriptive results provide suggestive evidence supporting the hypothesis that caste quotas improve women's representation.

Figure 4.1: Distribution of Main Outcomes



Notes: This figure shows the distribution of the main measures of women's candidacy and representation in seats with no quotas compared to those with caste quotas.

For the main analysis, I focus on council member seats and use the following empirical specification:

$$Y_{swg} = \alpha + \beta \text{Caste Quota}_{swg} + \gamma_w + \epsilon_{swg} \tag{1}$$

where Y_{swg} is an outcome of interest in a seat s, ward (sub-GP level unit) w, and GP g. The main outcomes include: 1) whether there is any woman candidate, 2) the number of women candidates, and 3) whether the winner is a woman. Caste Quota$_{swg}$ takes a value of 1 if the seat has a quota for SC, ST, or OBC, and 0 otherwise (i.e., seats without quotas or open seats). This specification controls for time-invariant, ward-specific characteristics using ward fixed effects γ_w.[3] The inclusion of ward fixed effects restricts the sample to wards with variation in quota assignment. Specifically, it limits the sample to wards with at least one seat with caste quotas and one open seat without quotas. In a ward, all

[3]Because the analysis is done on cross-sectional data, the specification cannot control ward-year fixed effects.

seats share the same electorate (constituency). Hence, this identification strategy ensures that we compare seats with different quota status but the same electorate, thereby satisfying the assumption that baseline constituency characteristics are balanced by design. Alternatively, I use a specification with GP fixed effects instead of ward fixed effects to study the effects for the sample with all council member seats.[4]Table 4.2 highlights the differences in the samples for the specifications with ward fixed effects and GP fixed effects using the example of Aambad GP. The black and dark gray seats are part of the sample with GP fixed effects, while only the black seats are included in the sample with ward fixed effects, because variation in treatment assignment within a ward occurs only in Ward No. 3. Table A.2 compares key census characteristics between analysis sample GPs and the entire state sample. Additionally, Table A.3 compares election statistics across samples.

Table 4.2: Seats in Aambad GP by specification

Ward name	Seat type
Ward no. 1	Open, OBC Women, Women
Ward no. 2	Open, Women, ST Women
Ward no. 3	Open, OBC, Women

Notes: Quota status of each seat in Aambad GP, Akole Block, District Ahmadnagar.

Additionally, I examine the heterogeneity in the effects of caste quotas by the type of gender quota seats in the excluded sample. For instance, Table 4.3 shows the seats in Aambad and Deothan GPs for the sample of wards with varying quota seats. Similar to Ward No. 3 in Aambad GP, Ward No. 6 in Deothan GP is included in the sample with ward fixed effects because there is variation in treatment assignment within the ward. However, the excluded gender quota types differ: one seat is reserved for women in Aambad, while one seat is reserved for OBC women in Deothan.

In seats with both caste and gender quotas, only women from SC, ST, or OBC

[4]Note that this analysis uses cross-sectional data, leveraging spatial variation. While there are differences in the timing of GP elections across the state, this timing doesn't vary within ward, so the ward fixed effects account for these differences, as all seats within a GP or ward have elections at the same time.

groups can run for office, while any woman can run in seats with only gender quotas. If mostly upper-caste women contest for women's quotas and, therefore, contest for fewer open seats in Aambad, then the effect of the caste quota may be overestimated. On the other hand, if seats with both women's and caste quotas are excluded, the effect of the caste quota may be underestimated. To study the heterogeneity by the type of gender quota seats, I use the following empirical specification:

$$\begin{aligned} Y_{swg} = \alpha + \beta_1 \text{Caste Quota}_{swg} + \beta_2(\text{Caste Quota}_{swg} \times \text{Women Excluded}_{wg}) \\ + \beta_3(\text{Caste Quota}_{swg} \times \text{Caste Women Excluded}_{wg}) + \gamma_w + \epsilon_{swg} \end{aligned} \tag{2}$$

where $\text{Caste Quota}_{swg} \times \text{Women Excluded}_{wg}$ takes a value of 1 if the seat has a quota for SC, ST, or OBC and there is a women's quota seat in the excluded sample, and 0 otherwise. Meanwhile, $\text{Caste Quota}_{swg} \times \text{Caste Women Excluded}_{wg}$ takes a value of 1 if the seat has a quota for SC, ST, or OBC and there is an OBC/ST/SC women's quota seat in the excluded sample.

Table 4.3: Seats in Aambad GP and Deothan GP

Ward name	Seat type
Ward no. 3 in Aambad GP	Open, OBC, Women
Ward no. 6 in Deothan GP	Open, ST, OBC Women

Notes: Quota status of each seat for two GPs in Akole, Ahmadnagar.

For examining the effect of OBC, SC, and ST quotas on women's representation, I use the following specification:

$$Y_{swg} = \alpha + \beta_1 \text{SC Quota}_{swg} + \beta_2 \text{ST Quota}_{swg} + \beta_3 \text{OBC Quota}_{swg} + \gamma_w + \epsilon_{swg} \tag{3}$$

where SC Quota_{swg} takes a value of 1 if the seat has a quota for SC and 0 otherwise (i.e., seats without SC quota). I define the variables ST Quota_{swg} and OBC Quota_{swg} in the same manner. The coefficient for the SC quota is the effect of the SC quota compared to seats without quotas, as the specification controls for seats with OBC and ST quotas.

The same logic applies to the coefficients for the ST and OBC quotas. The identification assumption for this specification is the same as that of the above specification.

Lastly, I examine the effect of caste quotas for sarpanch seats in GPs where the sarpanch is directly elected. To do this, I use the following specification:

$$Y_{pbt} = \alpha + \beta \text{Caste Quota}_{pbt} + X'\theta_{pbt} + \gamma_b + \delta_t + \epsilon_{vbt} \tag{4}$$

where Y_{pbt} is an outcome of interest for a sarpanch seat in a GP p, block b, and election year t. Since the assignment rule for SC/ST quotas is based on the population shares of the GP in the block, I control for time-invariant block-specific characteristics as well as the shares of SC and ST populations in a GP according to the 2011 census. Additionally, I control for election year-specific characteristics.[5] The 27% OBC quotas are randomly assigned to the seats remaining after the assignment of SC/ST quotas and those reserved in the recent past. Furthermore, I exclude sarpanch seats in fully scheduled areas because there is no variation in treatment assignment within a block; this is because all seats are reserved for STs. The identifying assumption is that the assignment of quotas is quasi-random in the restricted sample, controlling for block-level characteristics, election year-specific factors, and the share of SC and ST populations in the GP.

5 Results

I begin by examining the effect of caste quotas on women's representation in council member seats, both on the ballot and in political office. Table 5.1 presents the results for two measures of representation: whether any candidate is a woman (Panel A) and whether the winner is a woman (Panel B). In the baseline specification, I use GP fixed effects to account for time-invariant GP-level characteristics in Column (1). In Column (2), I include ward-specific fixed effects (instead of GP fixed effects) and present results

[5]Note that this analysis uses cross-sectional data, leveraging spatial variation. Since GP elections within a block occur over multiple years, election year fixed effects are meaningful alongside block fixed effects, as they are not collinear.

for a restricted sample with variation in treatment assignment within a ward. Recall that the constituency is the same for all seats in a ward, and hence this is the preferred specification, as baseline characteristics are balanced by design.

In Panel A, I find that the likelihood of a woman contestant is approximately 5 percentage points higher in seats with caste quotas compared to seats without quotas in Column (1). In Column (2), the results indicate that caste quotas increase the likelihood of a woman contestant by 7 percentage points. All estimates are significant at the 1% level. Furthermore, the results in Panel B, for the likelihood of a woman winner, follow a similar pattern. The likelihood of a woman winning is approximately 6 percentage points higher in seats with caste quotas compared to open seats in Columns (1) and (2), respectively. All estimates are significant at the 1% level.[6]

Additionally, I examine whether the effects of caste quotas are robust to other common measures of women's candidacy in Table A.5. The results for the proportion of women candidates (Panel A) and women winners (Panel B) are consistent across these measures. I also analyze how these effects vary based on the type of excluded gender quota seat, with results presented in Table A.6. The analysis reveals two key patterns. First, caste quotas primarily increase women's candidacy in wards where general women's quota seats (seats reserved for women without caste restrictions) are excluded. Both SC/ST/OBC and upper-caste women contest these seats in similar proportions, suggesting that the positive effect is not driven by any particular caste group (see Figure A.1). Second, the impact of caste quotas on women winning elections is lower in wards where doubly-reserved seats (those with both caste and gender quotas) are excluded. This suggests that women from marginalized caste groups prefer to contest in

[6]Note that the sample is smaller for analysis on likelihood of women winners. This is because I am unable to identify the winners for some seats in the candidate sample for the following reasons: (1) when two candidates received the same vote count, the winner was decided through a lottery and the dataset does not provide information on lottery outcomes; (2) in some cases, the vote information was missing or incorrect, as all candidates are shown to have polled the same number of votes (having the same rank), making the winner unclear. In Table A.4, panel A presents the results on candidacy of members for the same sample as likelihood of winners, and the results look similar.

Table 5.1: Effect of Caste Quotas on Women's Representation

	(1)	(2)
Panel A: Outcome–Dummy for whether any woman candidate		
Caste Quota	0.054***	0.076***
	(0.0030)	(0.0060)
Control Mean	.132	.129
No. of Observations	65822	20970
Panel B: Outcome– Dummy for whether winner is woman		
Caste Quota	0.064***	0.064***
	(0.0025)	(0.0047)
Control Mean	.041	.051
No. of Observations	58454	19699
GP FE	Yes	-
GP Ward FE	No	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

seats that combine both caste and gender quotas rather than compete against men from their own caste groups in seats with only caste quotas. This analysis demonstrates that while caste quotas increase women's political representation, the effect varies depending on which gender quota seats are excluded from the analysis. However, the findings rule out concerns that caste quotas' effect is because upper caste women predominantly contesting in seats with gender quotas.

Next, I present the results for each marginalized group separately, examining the effects of OBC, SC, and ST quotas on women's representation in Table A.7. The results indicate that SC, ST, and OBC quotas increase the likelihood of any woman entering a contest, as well as the likelihood of a woman winning. In other words, the effects of caste quotas are not limited to or driven solely by a particular marginalized caste group.

Lastly, I examine the effect of caste quotas for sarpanch seats in GPs where the sarpanch is directly elected (Table 5.2). In the baseline specification for sarpanch seats, I control for block fixed effects and election year fixed effects in Column (1). In Column (2), I additionally control for the shares of SC and ST populations in the GP. Consistent with the results for council member seats, I find that the likelihood of a woman contestant is approximately 13 percentage points higher in seats with caste quotas compared to seats without quotas (see Columns (1) and (2) in Panel A). These results are robust for alternate measures of candidacy (see Table A.8). Similarly, in Panel B, the likelihood of a woman winning is approximately 8 percentage points higher in seats with caste quotas compared to open seats, as shown in Columns (1) and (2).[7]

Overall, the results provide strong evidence that caste quotas increase women's representation. Effect sizes range from 5 to 13 percentage points for the likelihood of any woman running and from 6 to 8 percentage points for the likelihood of a woman winning. These effects are substantial, given that the control mean is less than 0.14 for the likelihood of a woman candidate and less than 0.6 for the likelihood of a woman win-

[7] In Table A.4, panel B presents the results on candidacy of sarpanch for the same sample as likelihood of winners, and the results look similar.

Table 5.2: Effect of Caste Quotas on Women's Representation for Sarpanch Seats

	(1)	(2)
Panel A: Outcome–Dummy for whether any woman candidate		
Caste Quota	0.13***	0.13***
	(0.014)	(0.015)
Control Mean	.17	.172
No. of Observations	4336	3947
Panel B: Outcome– Dummy for whether winner is woman		
Caste Quota	0.075***	0.076***
	(0.011)	(0.012)
Control Mean	.057	.057
No. of Observations	4279	3903
Block FE	Yes	Yes
Share SC pop.	No	Yes
Share ST pop.	No	Yes
Election Year FE	Yes	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a sarpanch seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

ning. This implies at least a 40% increase relative to the control mean in women's candidacy and more than a 100% increase in women's representation in office. In comparison, Cassan and Vandewalle [2021] and Karekurve-Ramachandra and Lee [2020] find effects ranging from 50% to 70% for the impact of gender quotas on the representation of marginalized groups. Furthermore, the similar results for sarpanch and council member seats suggest that the impact of caste quotas does not depend on political stakes, electorate size, or demographic heterogeneity. In particular, the sarpanch is elected by a larger and more heterogeneous electorate and holds greater powers, while council members are elected from much smaller and more homogeneous electorates.

6 Mechanisms

In this section, I examine two potential mechanisms underlying the main results: (1) inter-group differences in social norms and (2) variation in political dynamics between open seats and seats with caste quotas.

6.1 Explanations for Candidacy results

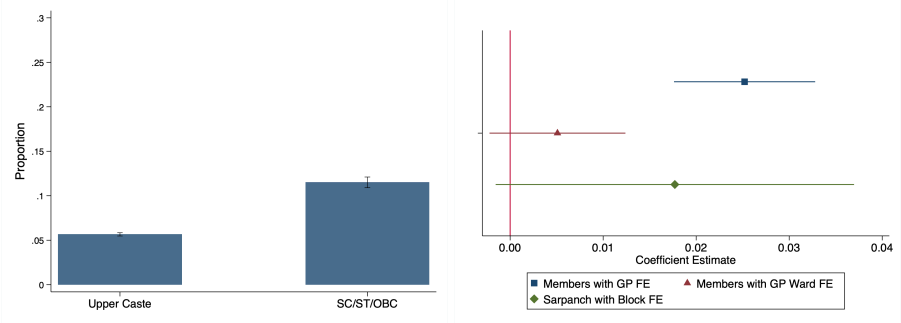
Let's first examine the mechanism behind the results on women's candidacy. I analyze the role of inter-group differences by focusing on open seats (seats without quotas). Recall my argument that women from marginalized caste groups face lower barriers to enter. In the previous section, the results showed that, in seats with caste quotas, women are more likely to run for office than in seats without such quotas. One potential interpretation of this result is that women from marginalized caste groups face stronger barriers to candidacy. Therefore, when the number of seats reserved for marginalized castes increases, women's candidacy improves.

To explore this interpretation, I examine the relationship between caste and gender in Figure 6.1. I focus on open seats to isolate caste-based differences in candidacy patterns from quota-induced effects. These open seats are typically dominated by upper-caste men, with both marginalized caste candidates and women facing low

probabilities of electoral success (See Figure A.2).

Figure 6.1 presents both descriptive and formal evidence. The left panel provides raw data on gender distribution by caste in open seats, showing a larger gender gap in candidacy among upper castes compared to marginalized castes (SC/ST/OBC). The right panel formally tests this relationship through regression analysis using candidate-level data. I estimate this relationship by regressing female candidacy ($1 =$ female, $0 =$ male) on caste status ($1 =$ SC/ST/OBC, $0 =$ upper caste), controlling for various ward and GP specific characteristics. Despite facing potential double disadvantage and low winning probabilities, the regression results confirm that marginalized castes are more likely to be women than upper-caste candidates in open seats (see Table A.9 for detailed results). These findings suggest variations in women's political candidacy across groups.

Figure 6.1: Caste, Gender and Candidacy in Open Seats



Notes: The left panel shows the raw distribution of women candidates by caste group (upper caste vs. SC/ST/OBC). The right panel presents regression estimates from candidate-level analysis, where symbols indicate point estimates and solid lines show 95% confidence intervals. The dependent variable is an indicator for female candidates, and the main independent variable indicates marginalized caste status. The regression includes ward and GP specific characteristics.

"

To further explore inter-group differences, I examine characteristics of potential women politicians.[8] Several studies suggest that exposure to gender quotas may increase political participation even in non-reserved seats [Bhavnani, 2009, Goyal, 2024, Karekurve-Ramachandra, 2020]. Thus, women winners from seats with gender and caste quotas could become candidates in seats without gender quotas.

[8]This analysis combines election winners' data with candidate affidavit data from nominations. Since affidavit data lack seat identifiers, matching required poll dates and fuzzy merging of transliterated Indian names.

For this analysis, I use the sample of seats with gender quotas (see Table 6.1). I compare characteristics of marginalized caste women to upper-caste women in seats with gender quotas.[9] Note that the sample comprises upper-caste women contesting in seats with quotas for women, while marginalized caste women are mostly from seats with both gender and caste quotas, but also from seats with gender quotas alone. I find that marginalized caste women have more electoral experience despite being younger and from poorer families. This aligns with my theory that marginalized caste women face fewer barriers to contesting elections—an activity requiring public mobility.

Table 6.1: Sample for Analysis of Potential Women Politicians

Ward name	Seat type
Ward no. 1	Open, OBC Women, Women
Ward no. 2	Open, Women, ST Women
Ward no. 3	Open,OBC, Women

Notes: Quota status of each seat in Aambad GP, Akole Block, District Ahmadnagar.

To complete the discussion on inter-group differences, I examine the role of differential gender norms and lower barriers for marginalized caste women. Following Cassan and Vandewalle [2021], I examine inter-group differences in norms about women's movement: 1) permission to move, 2) movement alone, 3) presence in public meetings, along with several other social norms using data from the 2011-12 Indian Human Development Survey. While Cassan and Vandewalle [2021] also document some of these variables but their focus is not on Maharashtra. Hence, I re-examine the differences between marginalized caste and upper caste women in Maharashtra.

To do so, I use questions on gender norms from the women-only module of IHDS and regress the variables described above on an indicator that takes value 1 when the

[9] I use the following specification:

$$Outcome_{iswg} = \alpha_0 + \alpha_1 \text{Women from marginalized Caste}_{iswg} + \delta_{\text{w or g}} + \epsilon_{iswg} \quad (5)$$

where $Outcome_{iswg}$ is the outcome for woman i in seat s, ward w, and GP g, Women from marginalized caste$_{iswg}$ is a dummy variable, and $\delta_{\text{w or g}}$ includes fixed effects similar to the main specifications.

Table 6.2: Comparing Characteristics of Potential Women Politicians by Caste

	(1)	(2)
Panel A: Log of Family Income		
Women from marginalized castes	-0.29***	-0.37***
	(0.028)	(0.039)
Dep Var Mean	11.256	11.269
No. of Observations	8434	3042
Panel B: Graduate		
Women from marginalized castes	0.0069	-0.00026
	(0.0053)	(0.0076)
Dep Var Mean	.074	.07
No. of Observations	18213	7965
Panel C: Age		
Women from marginalized castes	-1.26***	-1.14***
	(0.23)	(0.34)
Dep Var Mean	40.428	40.002
No. of Observations	18213	7965
Panel D: No. of children		
Women from marginalized castes	-0.10***	-0.15***
	(0.019)	(0.029)
Dep Var Mean	2.028	2.041
No. of Observations	18212	7965
Panel E: Contested previous election		
Women from marginalized castes	0.085***	0.098***
	(0.0073)	(0.011)
Dep Var Mean	.137	.126
No. of Observations	18181	7940
GP FE	Yes	-
GP Ward FE	No	Yes

Notes: This table uses data on village panchayat elections in Maharashtra between 2018-2020 and 2022. The analysis restricts the sample to all seats with gender quotas. Each observation is a council member seat. Women from marginalized caste takes value 1 if the women belong to SC, ST or OBC group and 0 otherwise. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

woman is from a marginalized caste and 0 if upper caste.[10] Table 6.3 presents the results on differences in gender norms for women in Maharashtra. The results show that

[10]I use the following specification:

$$Outcome_i = \alpha_0 + \alpha_1 \text{Women from marginalized Caste}_i + \alpha_2 X_i + \epsilon_i \quad (6)$$

where $Outcome_i$ is the outcome of woman *i*, Women from marginalized caste$_i$ is a dummy variable, and X_i controls for age, marital status, and education of the respondent.

women from marginalized caste groups are more likely to engage in activities outside the home alone (such as going for grocery, visiting health centers, and visiting friends), are less likely to need permission for outdoor activities, and show greater presence in public spaces or groups (such as self-help group membership and attendance at GP meetings). In addition, they are more likely to discuss politics (traditionally a male activity), and less likely to have had an inter-caste marriage. Recall my argument that women from marginalized caste groups face lower entry costs due to the absence of purity norms that limit the participation of women from privileged groups. The lower prevalence of inter-caste marriage among marginalized castes supports the role of purity norms, as sanctions against inter-caste marriage are the primary rationale behind these norms.

That said, if labor market opportunities are better for women from privileged groups, they may opt out of running for office due to better job opportunities. In such a case, results on women's candidacy may not be entirely due to differential gender norms but also due to differential labor market opportunities. Sanyal et al. [2015] argue that women from marginalized groups face relatively worse labor market opportunities than women from upper castes. However, recent trends in female labor market participation suggest that female labor force participation is decreasing in India, driven by the exit of women from high-status groups, as not working is perceived as a signal of status among elite groups in rural India [Munshi and Singh, 2024]. Hence, while it is true that women from upper castes may have better opportunities if they choose to enter the labor market, status norms may discourage them from doing so. Consistent with this, in panel E of Table 6.3, I find that marginalized caste women are more willing to work, more likely to be allowed to work, and have worked for wages. Therefore, I argue that differences in labor market opportunities are unlikely to be the primary driver of these results. Therefore, I argue that differences in labor market opportunities are unlikely to be the primary mechanism driving these results.

Table 6.3: Inter-group differences in Gender Norms

	(1)	(2)	(3)
Panel A: Doing outside home activities alone			
	Visit grocery store	Visit health center	Visit friend
Women from marginalized caste	0.073***	0.097***	0.071***
	(0.015)	(0.015)	(0.015)
Control Mean	.758	.707	.738
No. of Observations	3362	3595	3468
Panel B: Permission for outside home activities			
	Visit health centre	Visit friend	Bus trip
Women from marginalized caste	-0.054***	-0.058***	-0.019
	(0.014)	(0.015)	(0.016)
Control Mean	.784	.736	.864
No. of Observations	3813	3766	2108
Panel C: Presence in Public			
	Member Political Party	Member SHG	Attend GP Meeting
Women from marginalized caste	0.00096	0.048***	0.045***
	(0.0047)	(0.011)	(0.011)
Control Mean	.01	.049	
No. of Observations	2142	2143	2139
Panel C: Other norms			
	Practice purdah	Discuss Politics	Inter-caste marriage
Women from marginalized caste	0.0095	0.16***	0.12***
	(0.017)	(0.025)	(0.021)
Control Mean	.555	.885	.232
No. of Observations	3813	3666	1967
Panel E: Work			
	Willing	Allowed	Have worked
Women from marginalized caste	0.12***	0.12***	0.25***
	(0.027)	(0.028)	(0.021)
Control Mean	.446	.418	.312
No. of Observations	1289	1275	2136

Notes: This table uses data on from 2011-12 Indian Human Development Survey. Each observation is a respondent from the women module. Women from marginalized caste takes value 1 if the women belong to SC, ST or OBC group and 0 if belong to a upper caste group. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Altogether, these results suggest that differential gender norms across caste groups may explain the lower barriers to political entry and, consequently, the higher rates of women's candidacy in seats with caste quotas compared to open seats.

Lastly, I examine the role of differential political dynamics on candidacy. For in-

stance, the preferences of political parties may be influencing the results. Jensenius [2016] shows that the increase in female nominations over time has been driven by parties nominating women in seats reserved for SC and ST in state and national assembly elections. In this context, if parties face pressure to increase nominations due to evolving gender norms, the authors suggest two potential explanations for the increase: first, parties may seek to address multiple inequalities simultaneously; second, parties may want to avoid upsetting traditional elites, such as upper-caste men, by increasing women's representation at the expense of men from marginalized castes.

That said, preferences of political parties are less likely to be driving these results for village elections because: (1) candidates in village elections do not run on a party ticket, so not getting on a party ticket is not a barrier in these elections, although political parties may informally back certain candidates; and (2) unlike state legislatures, village councils have quotas for women as well as for women from marginalized castes, so parties do not need to back women in seats without gender quotas.

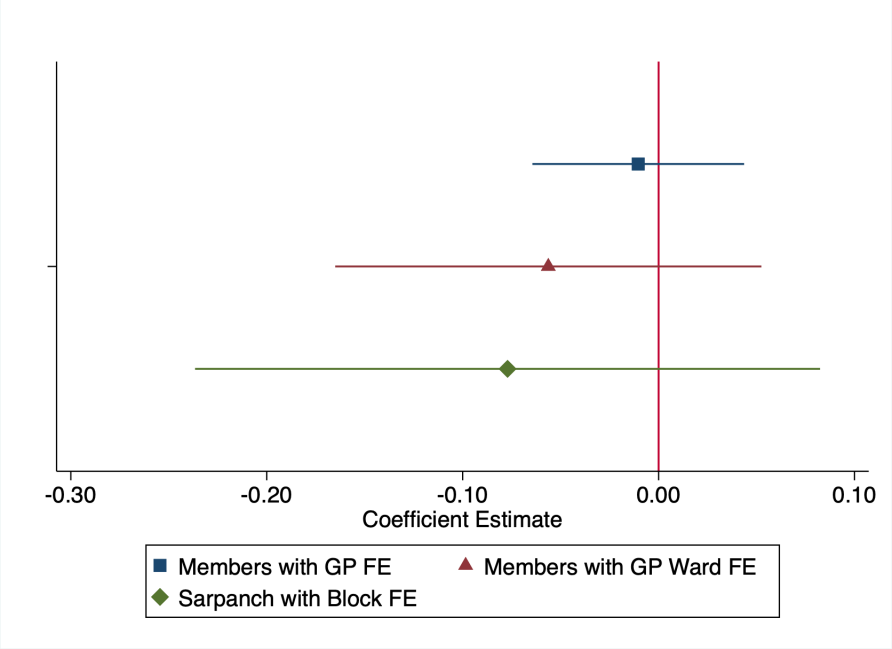
6.2 Explanations for results on winning likelihood

Now, I turn to discussing how caste quotas affect women's electoral success. The results show that women are more likely to win in seats with caste quotas compared to open seats. These results could be driven by several factors: differential voter discrimination towards women candidates across castes, higher rates of women's candidacy, or differential political dynamics, such as variations in political competition between seats with caste quotas and open seats.

To assess whether women candidates from marginalized castes face less discrimination than those from upper castes, I focus on open seats, which helps exclude the role of differential political dynamics resulting from quota status. This sort of discrimination is plausible because upper caste voters might punish women from their own caste more severely for deviating from purity norms. In Figure 6.3, using female candidate-level data, I estimate the relationship between being a winner (1 = female candidate

wins, 0 = otherwise) and caste (1 = SC/ST/OBC, 0 = upper caste) with the same specification as our main results. The results show that the coefficient on the likelihood of a woman winner from marginalized castes is negative relative to upper-caste women in open seats (see Table A.10 for results in tabular format). Hence, differential voter discrimination by caste appears unlikely to explain the results on women winners.

Figure 6.2: Caste, Gender and Winning in Open Seats



Notes: This figure shows coefficient estimates from female candidate-level regressions. The outcome variable is whether the winner is female or not, and the main independent variable is an indicator if the candidate is from a marginalized caste. The analysis uses the same set of controls as the main specification. The symbols indicate point estimates and solid lines show 95% confidence intervals.

However, the relationship between quota status and electoral outcomes appears to be driven by distinct political dynamics between seats with caste quotas and open seats, as evidenced by two key patterns. As shown in Table 6.4, seats reserved under caste quotas consistently attract fewer candidates compared to open seats, indicating reduced political competition. This pattern holds true for both ward member positions and the more prestigious sarpanch seats, likely reflecting the smaller pool of candidates aspiring to political office from marginalized caste groups. Anecdotally, it is uncommon for multiple members of the same household to contest an election within a GP. Conse-

quently, I interpret fewer candidates as reflecting fewer households aspiring to political office. Second, despite the overall lower levels of competition, women's candidacy rates are higher in seats with caste quotas compared to open seats.

Table 6.4: Effect of Caste Quotas on Political Competition

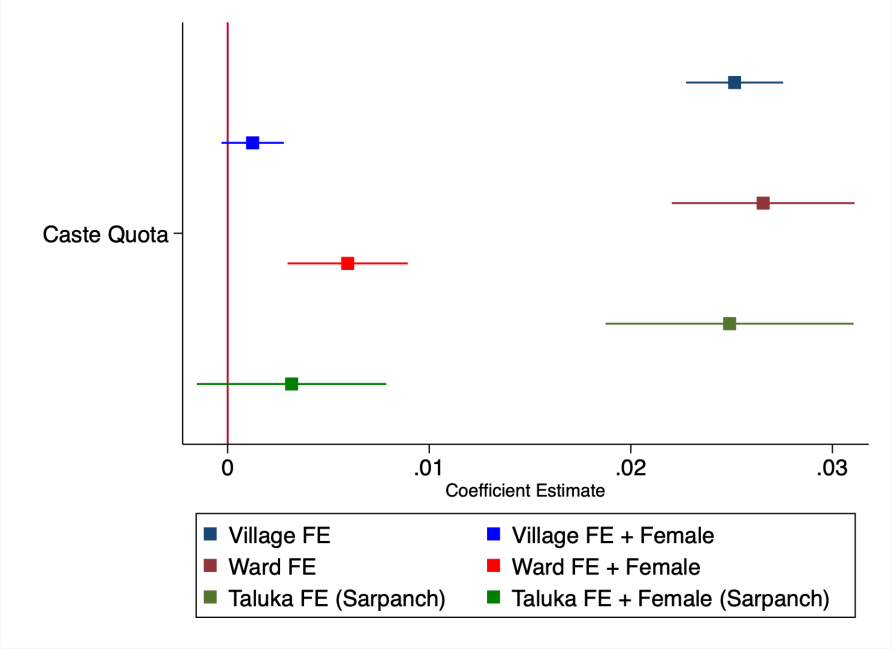
	(1)	(2)
Panel A: Ward members		
Caste Quota	-0.16***	-0.18***
	(0.0066)	(0.011)
Control Mean	2.273	2.333
No. of Observations	64707	20970
GP FE	Yes	-
GP Ward FE	No	Yes
Panel B: Sarpanch		
Caste Quota	-0.22***	-0.25***
	(0.048)	(0.048)
Control Mean	3.209	3.205
No. of Observations	4336	3947
Block FE	Yes	Yes
Share SC pop.	No	Yes
Share ST pop.	No	Yes
Election Year FE	Yes	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

To examine the role of female candidacy, I analyze the effect of caste quotas on the likelihood of female winners, with and without controlling for female candidates, using candidate-level data in Figure 6.3. If female candidacy is one of the main drivers, one would expect the effect of caste quotas on women winning to decrease substantially when controlling for the number of female candidates. Using candidate-level data in Figure 6.3, I find that the effect of caste quotas on women winning does indeed de-

cline when controlling for female candidacy (see Table A.11 for detailed results). This suggests that increased female candidacy is a key mechanism. Altogether, given that seats with caste quotas have lower political competition, the results suggest that both increased supply of women candidates and reduced political competition in quota seats contribute to women's electoral success.

Figure 6.3: Role of Women's Candidacy on Likelihood of Women Winners



Notes: This figure shows coefficient estimates from candidate-level regressions. The outcome variable is whether the winner is female or not, and the main independent variable is an indicator if the candidate is from a marginalized caste. The analysis uses the same set of controls as the main specification. The symbols indicate point estimates and solid lines show 95% confidence intervals.

7 Conclusion

This paper explores how quotas focused on a single dimension of identity, such as caste, affect political representation along another dimension, such as gender. I argue that if gender norms vary by social status and political competition is lower in quota seats, then the increase in seats for marginalized caste groups due to quotas can enhance women's representation. Using novel administrative data on village wards in rural Maharashtra, I find that caste quotas significantly increase women's representation, both in terms of candidacy and electoral success. Consistent with my theory, I find sugges-

tive evidence that this effect is driven by fewer restrictions on the mobility of women from marginalized caste groups and by lower political competition. In a context where 50% of seats are reserved for women, these results are particularly significant because they suggest that women, especially those from marginalized castes, are contesting and winning seats without quotas, despite the potential negative spillover effects of gender quotas. That said, prior exposure to gender quotas may have contributed to breaking the glass ceiling [Bhavnani, 2009, Goyal, 2024, Karekurve-Ramachandra, 2020]. Therefore, exploring the general equilibrium effects of caste and gender quota institutions on women's political representation presents an interesting avenue for future research.

This study complements existing work on the spillover effects of electoral quotas by Karekurve-Ramachandra and Lee [2020] and Cassan and Vandewalle [2021], while highlighting a key distinction in how different quota types affect representation. While caste quotas restrict the number of viable households that can field candidates, gender quotas allow traditionally elite men to maintain power by fielding proxy female candidates, typically family members [Heinze et al., 2024]. Consequently, women who win in seats without gender quotas may be more likely to be independent actors, and caste quotas may increase the supply of such independent women politicians. This has important implications for policy alignment with women voters' preferences and women's advancement to higher offices. The development of genuine women political leaders is particularly relevant given India's recent constitutional amendment reserving one-third of legislative seats for women. That said, more research is needed to systematically examine women representatives in seats without gender quotas to establish whether they are genuine political actors or proxies.

More broadly, these findings demonstrate how social hierarchies influence affirmative action outcomes, suggesting that policymakers should consider complementary measures to promote mobility and intergroup engagement, especially in contexts where gender norms remain restrictive.

This study challenges the conventional view, upheld in recent landmark cases like Students for Fair Admissions v. Harvard College (2023) in the United States and Janhit Abhiyan v. Union of India (2022), that affirmative action policies targeting a single dimension of identity inevitably create new inequalities. However, the findings demonstrate that quota effects depend critically on social norms and institutional dynamics. These results offer broader lessons for affirmative action policy design across contexts - the success of such interventions hinges not just on their formal rules, but on how these rules interact with prevailing social and institutional conditions. Future policy design should therefore carefully consider these interactions to account for the unintended spillover effects of affirmative action policies.

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A Appendix

Table A.1: Seats in Aambegaon GP

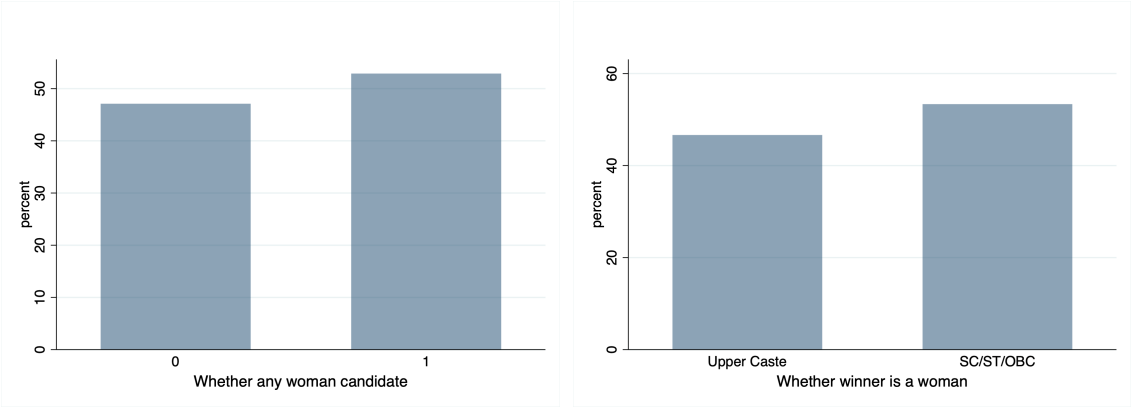
Ward name	Seat type
Ward no. 1	OBC, SC Women, Women
Ward no. 2	Open, Women
Ward no. 3	SC, OBC Women

Notes: Quota status of each seat in Aambegaon GP, Ahmadpur Block, District Latur.

Table A.2: Comparing between Sample and Non-Sample GPs

	Full State	**Sample with GP FE**	**Sample with GP Ward FE**
Total Population	2155.144	2241.483	2696.55
	(1882.163)	(1949.908)	(2176.239)
Total Area(Km)	4054.506	4073.546	1033.997
	(150480.6)	(157669.6)	(10433.27)
Total Population	2155.144	2241.483	2696.55
	(1882.163)	(1949.908)	(2176.239)
Share SC	.124	.126	.136
	(.105)	(.104)	(.102)
Share ST	.154	.15	.142
	(.258)	(.249)	(.215)
N	19423	15735	3582

Figure A.1: Caste of Women Candidates in Seats with Gender Quota



Notes: This figure shows the percent of upper caste and SC/ST/OBC women candidates in seats with quotas for women but no reservations on caste.

Table A.3: Comparing Election Statistics between Sample and Non-Sample GPs

	Full State	**Sample with GP FE**	**Sample with GP Ward FE**
No. of candidates	2.317	2.246	2.253
	(1.043)	(.932)	(.859)
Whether any candidate is a woman	.168	.158	.175
	(.374)	(.365)	(.38)
No. of female candidates	.205	.186	.212
	(.509)	(.465)	(.503)
Prop. female candidates	.101	.096	.104
	(.253)	(.248)	(.251)
Female winner	.076	.071	.091
	(.265)	(.258)	(.288)
OBC Quota	.224	.226	.331
	(.417)	(.418)	(.471)
Open (No quota)	.473	.473	.366
	(.499)	(.499)	(.482)
SC Quota	.148	.151	.188
	(.355)	(.358)	(.391)
ST Quota	.156	.15	.115
	(.363)	(.357)	(.319)
N	71110	64705	20967

Table A.4: Effect of Caste Quotas on Likelihood of a Woman Candidate

	(1)	(2)
Panel A: Members sample		
Caste Quota	0.083***	0.083***
	(0.0033)	(0.0061)
Control Mean	.096	.111
No. of Observations	57942	19165
Panel B: Sarpanch sample		
Caste Quota	0.13***	0.13***
	(0.014)	(0.015)
Control Mean	.171	.173
No. of Observations	4284	3904
GP FE	Yes	-
GP Ward FE	No	Yes

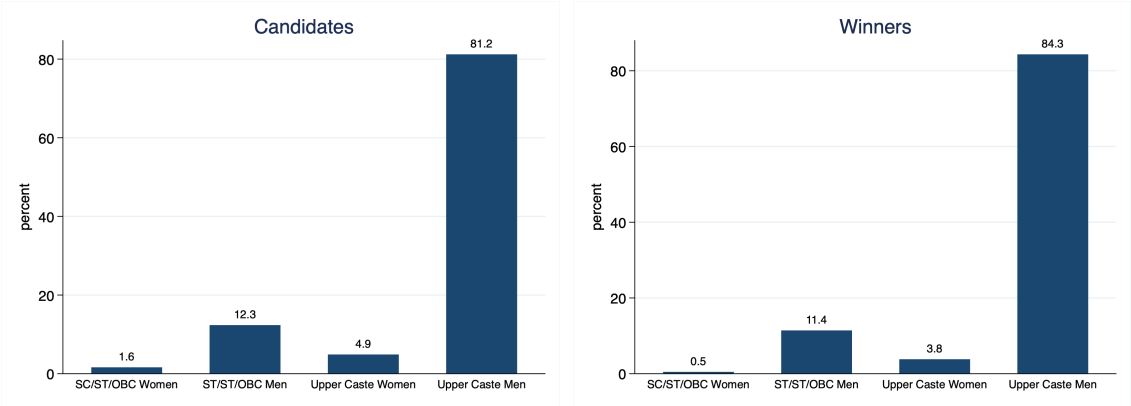
Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.5: Effect of Caste Quotas on Women Candidacy

	(1)	(2)
Panel A: Outcome– Prop. women candidates		
Caste Quota	0.049***	0.051***
	(0.0021)	(0.0038)
Control Mean	.08	.074
No. of Observations	64707	20970
Panel B: Outcome– No. of women candidates		
Caste Quota	0.10***	0.11***
	(0.0041)	(0.0077)
Control Mean	.143	.147
No. of Observations	64705	20967
GP FE	Yes	-
GP Ward FE	No	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Figure A.2: Gender and Caste in Open Seats



Notes: This figure shows the distribution of gender and caste in open seats.

Table A.6: Heterogenous Effect of Caste Quotas by Excluded Seat Type

	(1)	(2)
Panel A: Outcome– Dummy for whether any woman candidate		
Caste Quota	0.037***	0.034
	(0.0080)	(0.023)
Caste Quota x Women Excluded	0.057***	0.065***
	(0.0077)	(0.024)
Caste Quota x Caste Women Excluded	-0.021***	-0.017
	(0.0070)	(0.026)
Control Mean	.129	.129
No. of Observations	64707	20970
Panel B: Outcome– Dummy for whether winner is woman		
Caste Quota	0.052***	0.060***
	(0.0057)	(0.016)
Caste Quota x Women Excluded	0.033***	0.021
	(0.0056)	(0.017)
Caste Quota x Caste Women Excluded	-0.025***	-0.044**
	(0.0052)	(0.019)
Control Mean	.041	.051
No. of Observations	58454	19699
GP FE	Yes	-
GP Ward FE	No	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. Caste Quota x takes the value 1 if the seat is has caste quota and 0 otherwise Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.7: Effect of Caste Quotas on Women's Representation by Caste Group

	(1)	(2)
Panel A: Outcome– Dummy for whether any woman candidate		
SC Quota	0.076***	0.078***
	(0.0048)	(0.0090)
ST Quota	0.080***	0.073***
	(0.0063)	(0.011)
OBC Quota	0.067***	0.076***
	(0.0038)	(0.0066)
Control Mean	.129	.129
No. of Observations	64707	20970
Panel B: Outcome– Dummy for whether winner is woman		
SC Quota	0.058***	0.057***
	(0.0038)	(0.0072)
ST Quota	0.066***	0.066***
	(0.0049)	(0.0087)
OBC Quota	0.068***	0.066***
	(0.0031)	(0.0053)
Control Mean	.041	.051
No. of Observations	58454	19699
GP FE	Yes	-
GP Ward FE	No	Yes

Notes: Table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. OBC Quota take value 1 if the seat has OBC quota and 0 otherwise. Similarly, I code SC and ST Quota. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.8: Effect of Caste Quotas on Women Candidacy (Sarpanch)

	(1)	(2)
Panel A: Outcome– Prop. women candidates		
Caste Quota	0.078***	0.082***
	(0.0069)	(0.0076)
Control Mean	.061	.063
No. of Observations	4336	3947
Panel B: Outcome– No. of women candidates		
Caste Quota	0.22***	0.23***
	(0.021)	(0.023)
Control Mean	.202	.203
No. of Observations	4336	3947
Block FE	Yes	Yes
Share SC pop.	No	Yes
Share ST pop.	No	Yes
Election Year FE	Yes	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without any gender quotas. Each observation is a council member seat. Caste Quota takes the value 1 if the seat has caste quota and 0 otherwise. Column (1) provides results for all GP member seats, while Column (2) presents results for member seats with variation in treatment assignment within a ward. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.9: Relationship Caste and Women's Candidacy in Open Seats

	(1) Ward	(2) Ward	(3) Sarpanch
Marginalized Caste	0.025***	0.0051	0.018*
	(0.0039)	(0.0037)	(0.0098)
Control Mean	.055	.05	.06
No. of Observations	77229	73478	6836
GP FE	Yes	-	-
GP Ward FE	No	Yes	-
Block FE	-	-	Yes
Election Year FE	-	-	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to open seats. Each observation is a candidate. Marginalized Caste takes the value 1 if the candidate is from SC/ST/OBC caste and 0 otherwise. The outcome variable is 1 if the candidate is a woman and 0 otherwise. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.10: Relationship Caste and Women's Winnability in Open Seats

	(1) Ward	(2) Ward	(3) Sarpanch
Women from marginalized Caste	-0.010	-0.056	-0.077
	(0.028)	(0.055)	(0.081)
Control Mean	.51	.443	.33
No. of Observations	2042	1036	356
GP FE	Yes	-	-
GP Ward FE	No	Yes	-
Block FE	-	-	Yes
Election Year FE	-	-	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to open seats. Each observation is a female candidate. Women from marginalized Caste takes the value 1 if the female candidate is from SC/ST/OBC caste and 0 otherwise. The outcome variable is 1 if the candidate is a winner and 0 otherwise. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.

Table A.11: Women Candidacy, Caste Quotas and Women Winners

	(1) Ward	(2) Ward	(3) Ward	(4) Ward	(5) Sarpanch	(6) Sarpanch
Caste Quota	0.025***	0.0012	0.027***	0.0060***	0.025***	0.0032
	(0.0012)	(0.00079)	(0.0023)	(0.0015)	(0.0031)	(0.0024)
Control Mean	.035	.035	.024	.024	.018	.018
No. of Observations	164477	164477	157420	157420	15885	15885
Female Cand.	No	Yes	No	Yes	No	Yes
GP FE	Yes	Yes	-	-	-	-
GP Ward FE	No	No	Yes	Yes	-	-
Block FE	-	-	-	-	Yes	Yes
Election Year FE	-	-	-	-	Yes	Yes

Notes: This table uses data from village panchayat elections in Maharashtra between 2018 and 2022. The sample is restricted to seats without gender quotas. Each observation is a candidate. Caste Quota takes the value 1 if the seat is reserved for SC/ST/OBC and 0 otherwise. The outcome variable is 1 if the winner is female and 0 otherwise. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the GP level.