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Working Paper Property Inheritance Rights and Female Political Participation in India

GLO Discussion Paper, No. 1517

Provided in Cooperation with: Global Labor Organization (GLO)

Suggested Citation: Nandwani, Bharti; Roychowdhury, Punarjit (2024) : Property Inheritance Rights and Female Political Participation in India, GLO Discussion Paper, No. 1517, Global Labor Organization (GLO), Essen

This Version is available at: https://hdl.handle.net/10419/306098

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Property Inheritance Rights and Female Political Participation in India^{*}

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November 5, 2024

Abstract

This paper examines whether granting property inheritance rights to women improves their participation in politics as election candidates in India. In patriarchal societies like India, conservative gender norms often discourage women from active political engagement, reinforced by social sanctions for non-compliance. Additionally, political involvement demands significant time and financial resources, making it particularly challenging for women. Enhancing property rights has the potential to financially empower women, alleviating both social and economic constraints. Using state-level variation in legal changes to women's property rights and leveraging large-scale administrative data on elections in India, we find that improved property rights lead to a rise in female candidacy and an increased likelihood of electoral success for women. We also observe that regional parties field more female candidates, and there is a notable increase in the entry of 'new' female candidates post-reform. Furthermore, using extensive household survey data, we show that this rise in political participation is driven by improvements in women's financial autonomy, education, and economic awareness following the inheritance reforms. Our analysis confirms that these results are not confounded by pre-existing trends and are robust to treatment effect heterogeneity.

JEL: J16, D72, K11, O12

Keywords: Gender, India, Female Political Participation, Property Rights

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1 Introduction

Women's under-representation in politics is glaring, with only 27% of parliamentary seats worldwide held by women as of April 2024.¹ According to the World Economic Forum's 2023 Gender Gap Report,²75 out of 146 countries have 20% or fewer women in ministerial positions, and only 11 countries have 50% or more ministers who are women. Shockingly, the report estimates it will take another 162 years to achieve political gender equality.

India, like many other nations, faces challenges in improving women's political participation as candidates in elections. Despite marginal improvements over time, female involvement in Indian politics remains dismally low, particularly at the national and state election levels (see Figures 1 and 2). This situation is particularly concerning for two reasons. First, unlike numerous other countries, India granted universal enfranchisement to *all* adult citizens, allowing them to vote and contest in elections upon gaining independence (in 1947)³. Second, quotas for female representation at the local government level have been implemented (Brulé (2020)) for over three decades.

It is well-known that the active involvement of women in politics is an essential foundation for achieving both gender equality and a truly democratic society. It enables women to directly participate in shaping public policies and ensures greater accountability to their needs. Research indicates that increased representation of women in legislative bodies leads to a heightened focus on addressing women's concerns and advancing their interests (Chattopadhyay and Duflo (2004)). Further, female political participation has also been shown to improve economic performance (Hsieh et al. (2019); Baskaran et al. (2023)) and reduce corruption (Dollar et al. (2001)).

In this paper, we examine whether introducing legal reforms that improve women's prop-

¹https://data.ipu.org/women-averages/?date_month=4&date_year=2024

²https://www.weforum.org/publications/global-gender-gap-report-2023/

³Many developed countries restricted the right to vote and contest in elections to male property owners. However, the demand for equal voting rights gained momentum in the 19th and 20th century which culminated in equal political participation rights for women. For example, voting rights were extended to women in the United States in 1920.

erty ownership can increase their participation in politics in India. Using a natural experiment involving staggered introduction of a property rights reform, we estimate the causal impact of equalizing women's and men's property inheritance rights on their participation as election candidates in state elections for the 1974 to 2004 period.

There are multiple reasons why we expect women's improved claims to property to increase their participation in politics. Contesting in elections is costly, requiring significant contribution of time and resources (Brady et al. (1995); Verba et al. (1995); Verba et al. (1997)), and most Indian women are not financially empowered and do not tend to control household wealth. Additionally, patriarchal societies discourage women from expressing their preferences through political participation, with socially enforced sanctions for noncompliance (Bleck and Michelitch (2018)). The reforms that improve women's property rights by contesting the core construct of patriarchy, according to which control over the relations of production — economic, social, and political—is held by the senior male in the household, can potentially remove both these barriers. These reforms can increase women's lifetime wealth, unearned income and investment in education (see Deininger et al. (2013), Deininger et al. (2019), Roy (2015), Heath and Tan (2020), Mookerjee (2019)), giving them access to the financial resources required for participating in politics, particularly as election candidates. Financial autonomy can also give women the ability to violate patriarchal prescriptions without having to fear repercussions.

The property rights reforms that the paper considers involves amendments to the Hindu Succession Act (HSA) of 1956, enacted by five Indian states between 1976 and 1994. The HSA is the primary legislation that governs contemporary property rights for Hindus, Buddhists, Jains, and Sikhs. The act of 1956 states that both sons and daughters have equal inheritance rights to the private property accumulated by their father during his lifetime. Even though the act does not discriminate between men's and women's claims to individual property, there were significant gender disparities, particularly with regard to joint family property. As per HSA, sons had a birthright to an independent share of joint family property, whereas daughters did not. Given that a substantial amount of property, particularly rural land, is jointly owned in India, these biased rights severely impacted the land ownership status of women in India. Recognizing the inherent gender bias in the HSA, five Indian states between 1976 and 1994 made amendments to this central inheritance law granting daughters equal shares in joint family property. The amendments stated that women who got married after the reform was passed in their state could benefit from the new rules of inheritance.

Making use of the variation in the timing of amendment to HSA by the five states, we employ a difference-in-difference (DID) framework to estimate the impact of the enactment of HSA amendments on female political participation. We use administrative data on the political participation of women from the Election Commission of India (ECI) that is compiled by the Trivedi Centre for Political Data (TCPD). We use constituency-level information on the political participation of women from 1974 to 2004 for our analysis. Our DID results show that there is an increase in the percentage of females contesting elections in the treatment states post the amendment as compared to states that did not amend their inheritance laws. Our specifications partial out constituency-specific factors and electionyear factors that could have an influence on political participation of females. In addition, we find increase in the vote share of female candidates and increase in the likelihood of female candidates winning the elections post the amendment. We also document that it is the state and local political parties that contest more female candidates rather than the major national political parties. Further, we show that the increase in female candidates is driven by females who are relatively 'new' candidates who do not have political experience. Our findings also suggest that the increased entry of females into politics increases political competition.

Given that we use the DID strategy, the main threat to identification is that the timing of amendment to HSA is correlated with unobserved factors that affect female political participation in the treatment districts. This would lead to a differential trend in the outcome variable in the treatment group before the treatment is introduced. We provide suggestive evidence against this by estimating an event study specification and showing the absence of pre-existing differential trends in the political participation of females in the treatment states. Further, since the amendment was only applicable for Hindu women, we show that the HSA amendment has a negligible impact on female political participation in places that have very high Muslim population and the observed positive impact is driven by places with high Hindu population.

We conduct a series of robustness checks to ensure the reliability of our findings. First, we apply the two-stage estimator proposed by Gardner (2022) to address potential treatment effect heterogeneity arising from staggered treatment timing. Second, we re-estimate our baseline model using the estimator from De Chaisemartin and d'Haultfoeuille (2020), which is more reliable when the parallel trends assumption is violated and remains robust against treatment effect heterogeneity. Third, we confirm that our results are not driven by specific states or regions. Fourth, we present multiple reasons why selective migration of women into treatment states is unlikely to confound our results. Finally, we conduct a falsification test, demonstrating that the amendment has no effect on the political participation of Muslim female candidates.

We also investigate the potential mechanisms driving our main results. Specifically, we examine if the property inheritance rights reforms led to an improvement in women's financial autonomy. Further, we also check whether the reforms led to an improvement in women's education, economic awareness, and gender norms. Greater financial autonomy can enable women to spend the resources required for contesting elections. Likewise, improvements in education, economic awareness, and gender norms may help dismantle barriers to women's participation as election candidates.

To investigate the mechanisms, we use data from the 2004-05 India Human Development Survey, which provides detailed socioeconomic and demographic information on a large sample of ever-married women. By leveraging variation in women's state of residence and age at marriage at the time of the reform, we demonstrate that women exposed to the amendment exhibit greater financial autonomy. This is evidenced by higher rates of bank account ownership, access to cash for personal spending, involvement in household expenditure decisions, and reduced financial dependence on their children in the future. Additionally, we find that exposed women have more years of education, are more likely to have completed high school, are more engaged in political discussions at home, are more likely to read newspapers, and are less likely to follow the practice of purdah.

1.1 Literature

Our study contributes to the large and growing research on the impact of the HSA. Most of the existing work finds positive effects of the legislation on outcomes for women. For example, Deininger et al. (2013) show that the reforms led to a rise in level of primary education attained by girls. Mookerjee (2019) finds HSA increased women's participation in household decision-making; Roy (2015) finds that the reform improved educational attainment for women and the dowry they received as well as their involvement in household decisionmaking; Bose and Das (2017) find a positive impact of HSA reforms on girl's education attainment; Heath and Tan (2020) show that HSA enabled women to contribute more labor to higher-paying jobs; Deininger et al. (2019) find positive effects of the reform on female education, assets brought into marriage, bank account ownership, female survival rates as well as on several second-generation outcomes; and Tandel et al. (2023) show HSA influenced fertility decisions, enhanced children's health outcomes, and reduced gender inequality.

However, some studies also document mixed and negative impacts, possibly because implementing a progressive legal change such as HSA challenges entrenched norms. Rosenblum (2015), for example, shows the inheritance reform reduced girls' survival ratio, possibly led by sex-selective abortion that resulted from an increased cost of raising girls as compared to boys for landowning households. Bahrami-Rad (2021) finds that women exposed to inheritance laws are more likely to marry their paternal cousins to keep the property within the family and less likely to work, particularly in agriculture. Bhalotra et al. (2020) find the reform increased excess female infant mortality and son-based fertility stopping. Anderson and Genicot (2015) show that inheritance rights are linked to increased levels of suicide and domestic violence, possibly because of the stress induced by legislation.

Our work is also related to a growing strand of work that shows that land titling policies improve the political participation of beneficiaries. Kopas (2019) shows that land titling policies in Peru and Columbia increased political mobilisation of voters measured as voter turnout and use of courts. De Janvry et al. (2014) show that land titling program in Mexico increased vote share of pro-market political parties as asset owners vote for parties that implement low taxes on labour and capital. Nandwani (2023) shows that implementation of a property rights reform in India that improved land claims of the indigenous population increased their political representation as election candidates. Additionally, a burgeoning literature has also shown that increased property ownership in the form of home increases local political participation of the asset owners as their interests become more closely tied to the community (Kumar, 2022; Yoder, 2020; Einstein, Palmer and Glick, 2019).

We also contribute to the burgeoning literature that examines the causes of low female political participation in economics and political science. Existing work has looked at the role of factors such as differences in competitiveness between males and females (Wasserman (2023)), voters' bias against female political representatives (Fréchette et al. (2008); Beaman et al. (2006); Le Barbanchon and Sauvagnat (2022); Baskaran and Hessami (2018)), party leaders' bias against female political candidates (Esteve-Volart and Bagues (2012); Casas-Arce and Saiz (2015)), institutional barriers (Profeta and Woodhouse (2022); Baltrunaite et al. (2014), and cultural factors like lineage norms that determine men and women's control over wealth (Brulé and Gaikwad (2021)) and norms that induce discouragement effect for women (Faravelli et al. (2023)).

Finally, our work is related to the broader literature on gender gaps in leadership positions. This literature shows gender gaps exist in leadership positions not only in politics but also across various other sectors. Keller et al. (2023), Elsesser and Lever (2011) and Chakraborty and Serra (2024) examine the well-known gender gap in corporate decision making; Sarsons et al. (2021) examine gender gap in academic settings and find female professors receive less credit for group work and therefore less likely to receive tenure the more they collaborate; Grossman et al. (2019) and Brooks et al. (2014) find that professional investors and nonprofessional evaluators prefer entrepreneurial pitches presented by male as compared to female entrepreneurs, even when the content of the pitch is the same.

The rest of the paper unfolds as follows. In Section 2, we discuss the background. In Section 3, we discuss the data and empirical strategy. Section 4 presents the results and discusses the mechanism. The last section concludes.

2 Background

Inheritance in India was historically based on the *Mitakshara* system that laid down succession rules for Hindu families. This system distinguished between individual and joint property while deciding the inheritance rights. The joint property is the one that is inherited through paternal ancestors and individual property is self-acquired or inherited through any individual other than father, paternal grandfather or paternal great-grandfather(Agarwal, 1994). As per the *Mitakshara* system, only sons had inheritance rights to the ancestral property and inheritance to self-acquired property could be decided by the individual. In the post independent India, these traditional succession practices were codified which culminated in the enactment of the HSA in 1956.

As per the HSA, both sons and daughters have equal inheritance rights over father's individual property. However, in case of intestate death, daughters have no direct rights to inherit joint property (ancestral assets, the most common asset being land, that is acquired by inheritance)⁴. Sons, on the other hand, by birth, have exclusive inheritance rights over not only individual property but also joint property and thus were co-parceners. Given that 97%

⁴Daughters or widows could claim rights over joint property only in the absence of male heirs

of the property in India is joint property (Roy, 2015), women were formally excluded from claiming rights over ancestral land. The discriminatory legal framework governing women's land rights has been cited has a major reason why ownership of land has been abysmally low for women.

As the Indian constitution grants both states and the federal government the authority to legislate over matters concerning inheritance, a few progressive states recognised that excluding women from their coparcenary rights is unconstitutional and thus amended the discriminatory legal structure to recognise the inheritance right of females. In particular, five Indian states amended their HSA from the period beginning 1976 to 1994 to equalise women's inheritance rights as that of men. The state of Kerala passed the amendment to reform HSA in 1976, Andhra Pradesh in 1986, Tamil Nadu in 1989, Maharastra and Karnataka in 1994⁵ (see Table 1). In these states, women became co-parceners to the joint family property by birth and thus got equal inheritance rights as males. However, the reform was only applicable to unmarried women at the time of reform who belonged to Hindu, Buddhist, Sikh or Jain religion.

3 Data and Methodology

3.1 Data

3.1.1 Elections Data

Elections to the state assembly occur after every five years in India and the election winner, termed as the Members of Legislative Assembly (MLA), is decided based on first-past-thepost rule. The elections data is made publicly available by the Election Commission of India - an independent constitutional body that is responsible for conducting elections. We use state assembly elections data from the ECI made available online by the Trivedi Center for

⁵Maharashtra and Andhra Pradesh HSA amendment acts particularly state that the reform was also brought in to address rising dowry in the states.

Political Data (TCPD). We obtain information on all state elections that were conducted between 1974 and 2004. The reason we do not look at elections after the year 2004 is because the central HSA was amended in the year 2005 wherein daughters became co-parcenary in all states leaving no cross-sectional variation in amendments to HSA after the year 2005. The data gives detailed information on election candidates including the name and gender of all the contesting candidates in the constituency-year, the party with which the candidate is affiliated, vote share received by candidates, their position obtained in the elections, the constituency and year in which the election is conducted among others.

Table 2 presents the summary statistics and shows that only 4% of the candidates are females over our sample period and the average vote share of female candidates is just 4%. On average, the likelihood of a female winning is 5%. Most of the females contesting for elections are either from a national political party or contest as an independent candidate without being affiliated to any any political party.

Figure 1 presents the temporal variation in female candidates and female winners and Figure 2 presents the vote share of female candidates over the sample period. Figure 1 shows that the percentage of female candidates is a meagre 2.2% and around 4.7% of elected leaders are females in the beginning of the sample period. Political participation of females improve over time, both in terms of participation in elections and their likelihood of winning, and by 2003 percentage of female candidates rises to 8% and percentage of female winners also increases to 7.6%. However, we observe a dip in female participation in 2004. Thus, while overall there has been an increasing trend of female political participation, the level is still much below satisfactory.

Figure 2 suggests that the vote share of females has been going down with the highest vote share observed in 1975 (27%) with some increase in the mid-1990s, and a decline thereafter. This decline could be driven by the entry of new female candidates in politics, as shown in Figure 1. If these females did not have a large voter base, the entry of weak female political candidates could have pulled down the average female vote share.

3.1.2 Population Census and Reserve Bank of India Records

In addition to elections data, we also use population census conducted in the years 1981, 1991 and 2001 to get information on state-level demographic variables that we use as controls. These include literacy rate, work participation rate, proportion of Scheduled Caste and Tribe population, proportion of Hindu and Muslim population, and proportion of rural population. Additionally, we obtain information on development expenditure (as a percentage of revenue expenditure) in a state from the records maintained by the Reserve Bank of India. We use this as a control as well.

3.1.3 India Human Development Survey

The India Human Development Survey (IHDS) is a nationally representative multi-topic panel household survey conducted by NCAER in New Delhi and University of Maryland (Desai et al 2005). It was designed to complement existing Indian household surveys by bringing together a wide range of socio-economic topics in a single survey. The sample was drawn using stratified random sampling with survey weights provided. The 2004-05 wave of the survey covered 41,554 households in 1,503 villages and 971 urban neighborhoods across India. The data is publicly available from the Data Sharing for Demographic Research program of the Inter-university Consortium for Political and Social Research (ICPSR).⁶

The India Human Development Survey (IHDS) administered a separate health and education questionnaire to one randomly selected ever-married woman aged 15 and above from each surveyed household. This questionnaire covered topics such as marriage, reproductive history, gender norms, and health investments. We utilize information on some of these topics to examine the mechanisms linking the inheritance rights reforms and female political participation. We also draw individual and household demographic characteristics of women from the IHDS for our analysis.

⁶http://www.icpsr.umich.edu/icpsrweb/DSDR/studies/36151

3.2 Empirical Model

We use the variation in the timing of HSA amendment by the five states and examine the impact of the amendment on female political participation in a DID framework. We estimate the following regression equation:

$$Y_{c,s,t} = \alpha + \beta_c + \theta_t + \gamma HSAA_{s,t} + \delta Z'_{s,t} + \epsilon_{c,s,t} \tag{1}$$

where $Y_{c,s,t}$ measures the political participation of females in constituency c which is in state s during election year t. $HSAA_{s,t}$ is a dummy variable that indicates whether state s at time t amended the Hindu Succession Act in favour of women inheriting the joint property. The regression specification controls for constituency fixed effects (β_c) which implies that we exploit variation in political participation of women within a constituency over time for identification. We also control for election-year fixed effects (θ_t) that partial out shocks to female political participation that are common for states. In addition, we have a range of state-time varying controls as discussed in Section 3.1 ($Z'_{s,t}$). We cluster the standard errors at the state level to allow shocks to female political participation to be correlated within a state over time.

The validity of the DID strategy relies on parallel trends in the treatment and control groups before the enactment of the treatment. However, it is possible that timing of the HSA amendment was not orthogonal to female political participation and growing political clout of women influenced the timings of these amendments. While it is not possible to fully rule out this concern, we provide suggestive evidence against this by estimating the following event study specification wherein we check for differential trend in female's political outcomes for years before HSA was amended in the treatment states.

$$Y_{c,s,t} = \alpha + \beta_s + \theta_t + \sum_{k=-16}^{28} \gamma_k Treatment_s * Year + \delta Z'_{s,t} + \epsilon_{c,s,t}$$
(2)

Here the female political outcome $Y_{c,s,t}$ is regressed on the interaction between treatment

states and individual years in the sample and we expect the coefficients before the enactment of the amendment to be insignificant. The specification also allows us to check whether the observed positive effect of the amendment is bunched right after the reform or kicks in a few years later.

4 Results

4.1 Main Results

Regression results obtained from estimating equation 1 are reported in Table 3. Column 1 suggests that there is a 1% point increase in the percentage of female candidates contesting for elections after the amendment of HSA in the treatment states. This amounts to a 25% increase as compared to the average in our sample (3.85%). The second column suggests that exposure to HSA amendment increases vote share of female candidates by 2% points - a considerable increase considering the sample average. Not only do we see more women participating in elections after the amendment, we also find that the likelihood of female candidates winning the election increases by 5% points after the HSA amendment.

We next examine the validity of the parallel trends assumption. The results reported in Figures 3, 4, and 5 show that almost none of the coefficients of the interaction for the pre-reform years are statistically significant, suggesting the absence of a pre-existing trend in political participation in the treatment states before the amendment was implemented. Further the graphs show that the effect of the amendment on the outcome is evenly spread across the post-treatment years. These graphs thus suggest that it is unlikely that preexisting factors influenced the timing of amendments in the treatment states increasing our confidence in the causality of the estimates reported in Table 3.

We examine if the increased political participation of females is on account of national parties contesting female candidates or driven by parties which are regional. The ECI categorises parties based on their geographical presence into national, state or local parties. As the terminology suggests, national parties have presence across states whereas state and local parties primarily have their presence in state and local government elections, respectively. Table 4 shows that enactment of amendment to the HSA resulted in state and local parties contesting more female candidates whereas we do not find any impact on national parties and female candidates contesting independently without being affiliated to any party. This is an encouraging result which suggests that the amendment has led regional parties, which have had extremely low female representation (Table 2), to contest more female candidates.

We check if increased entry of female candidates driven by the enactment of property rights reforms increases political competition and decreases the vote share of male incumbents. Column 1 of Table 5 shows that implementation of HSA amendment decreased the vote share of male incumbent by 3 percentage points. Given that a quarter of elections in India have a margin of less than 5%, this implies that entry of female candidates is resulting in decreased wins for the incumbent. We also check if the women who already have some political experience of contesting in elections are driving the increase in female candidates or is the result driven by new candidates. Column 2 of Table 5 shows that females who are new with no prior experience of contesting for elections are driving the increase in female candidates candidates observed in Table 3.

As explained before, the HSA was applicable to only women belonging to Hindu religion (as well as Sikh, Buddhist and Jain religion) whereas Muslim women were not affected by amendment. Given this we expect the following the amendment to have more bite in places with high population proportion of Hindus. We present evidence for this in Table 6 where we interact the proportion of Hindu population ⁷ with the HSA amendment dummy variable. As expected we see that the coefficients of interactions are positive and significant suggesting that the effect of the inheritance reforms is higher wherever Hindu population is higher. Additionally, the coefficients of HSA amendment is negative (albeit weakly significant) suggesting that the HSA amendment has a negative impact on women's political

 $^{^{7}}$ We use the census years 1981, 1991 and 2001 for data on Hindu population.

participation in places with very high Muslim population. This results also suggests that if other confounding factors were to drive the political participation of women, the confounders would only have to affect political participation of Hindu women and not Muslim women.

4.2 Robustness checks

In this section, we conduct a number of tests to ensure that our reported results are robust to potential confounding factors.

4.2.1 Heterogenous Treatment Effect

The recent econometric work has highlighted that in case of staggered treatment introduction involving multiple groups and time periods, the DID regression might not identify the true Average Treatment Effect (ATE) particularly when there is treatment effect heterogeneity across groups or time periods (see De Chaisemartin and d'Haultfoeuille (2023) for a review of the literature that documents this issue). Since the effect of the amendment is likely to vary across states or time periods, it is crucial to ensure that our DID estimates are not misleading. Fortunately, this literature has also proposed estimators that are robust to treatment effect heterogeneity in case of staggered treatment timing. We employ the two-stage estimator proposed by Gardner (2022) to assess robustness of our findings.

The estimator estimates the treatment effect in two stages - in the first stage, the outcome is regressed on group and time fixed effects for the untreated observations and in the second stage the estimated group and time effects are removed from the observed outcome and the adjusted outcome is regressed on the treatment indicator. This is a computationally much more flexible and faster estimator as compared to other proposed estimators in the literature. It also performs better than other estimators in terms of efficiency under the assumption of parallel trends. The two-stage regression results are reported in Table 7. Although all three coefficients show a slight reduction in magnitude, the primary finding of increased political participation among women post-HSA amendment remains intact. The coefficients of columns 2 and 3 suggest increase in vote share and likelihood of winning of female candidates in the treated states post-amendment. Notably, the p-value in the first column is 0.16, suggesting weak significance when examining the percentage of female candidates. Overall, the Gardner (2021) estimates align closely with the earlier DID estimates, reinforcing the conclusion that female political participation increased after the HSA amendment.

4.2.2 Treatment Heterogeneity and Violation of Parallel Trend

While the two-stage estimator is highly efficient among those estimators that are robust to treatment heterogeneity in staggered treatment scenarios, its efficiency advantage diminishes if the parallel trends assumption is violated (see De Chaisemartin and d'Haultfoeuille (2023) for comparison of these (and other) estimators recently proposed in the literature). To further ensure the robustness of our results, we also present the estimator proposed by De Chaisemartin and d'Haultfoeuille (2020), which performs better when the parallel trends assumption is violated and remains robust to treatment effect heterogeneity. This estimator additionally allows us to test the parallel trends assumption by estimating placebo effects (when neither treatment nor control groups are exposed to the treatment) and dynamic effects. The confidence intervals estimated for election years before and after the amendment are reported in Figures 6 to 8. Two things stand out from these figures. First, the coefficients before the amendment was introduced are not significant in any of the three graphs. Second, the effect, while weaker for female candidates (as was the case with Gardner (2022) results as well), holds for percentage of female winners and vote share of female candidates. Additionally, figure 8 shows that the effect on female vote share gradually increases over time in the treatment states.

4.2.3 Role of Region-Specific Factors

We consider the fact that four out of five states that amended their succession act lie in the southern part of the country. It has been well known that southern India has less entrenched patriarchal norms and consequently women from southern region fare much better than other regions in the country in terms of almost all socioeconomic indicators (Dyson and Moore, 1983; Rahman and Rao, 2004). Thus, our reported impact of improved political participation of women in treatment states could be driven by the four southern states which have better women outcomes to begin with. We ensure that this is not the case by controlling for region-specific linear trends in our main specification. India is divided into six geographical regions: North, South, West, East, Central and North-East. The state of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh lie in the Southern region and Maharashtra lies in the Western region. The control states are spread across all the regions other than South. Even though, our specification controls for constituency fixed effects, these trends ensure that region-specific factors that vary linearly over time are partialled out. The results reported in Table 8 show that while the magnitude of the coefficients fall, two out three of them are still positive and significant suggesting that our results are not completely driven by region-specific factors.

4.2.4 Selective Migration of Women

Another potential confounding factor is selective migration of women into treatment states. If more progressive families migrated to the treatment states to ensure that women in their family get equal share in their ancestral property (or conservative families moved out of the treatment states), then the increased political participation could be because of presence of more empowered women in treatment states. We provide a number of explanations to argue that migration is not driving our results. First, the extent of inter-state migration for females has been very low in India. As per the 1981 census of India, inter-state migration for females constituted only 9% of the total female migration pointing that its magnitude is not large enough to completely drive our observed results. Second, as noted by Beauchamp et al. (2023), while patrilocal village exogamy (where the woman moves out of her village to join her husband's family) is the practice throughout most of India, 73% of women stay

within the same district. Roy (2015), in fact, finds that migration across states in India is estimated to be less than 3%. Additionally, as per the constitution, a person can only contest for election in a state assembly elections if he/she is a registered voter in the state. Thus migrant females would first have to get themselves removed from the voter list from their home state and register as voters in the new state which is a non-trivial task. Given that there are very few contestants who are non-residents of the state, migrant female contesting for elections is unlikely to completely drive our results.

4.2.5 Falsification Test

It is possible that the timing of amendment coincided with other political changes that improved women's representation as political candidates. If this is the case, then the observed coefficients in the previous tables are unlikely to be the effect of inheritance rights reforms. We provide suggestive evidence against this testing the impact of the HSA amendment on political participation of Muslim women. While HSA amendment brought in gender equalising inheritance rights, the amendment was not applicable to Muslim women and hence any positive significant impact on political participation of Muslim women would show that factors other HSA amendment are driving the impact. While the elections data does not have information on the religion of the candidates, we use the algorithm developed by Chaturvedi and Chaturvedi (2024) that is based on a machine learning model to predict the religion of the candidates. The algorithm probabilistically predicts whether a given name corresponds to a Muslim or a non-Muslim name. Reassuringly, our results (Table 9) confirm that the coefficient of amendment is not significant for any of the three indicators of political participation. This placebo test increases our confidence that other factors are unlikely to drive our results.

4.3 Mechanism

In this section, we provide suggestive evidence of possible mechanisms driving the increased political participation of females after the gender-equalizing property inheritance reforms. We begin by investigating if the amendment improved the financial autonomy of women. This is an important channel to investigate as participation in politics is costly and candidates contesting for elections have to spend financial resources to campaign. While election candidates are not required to pay a fee to file their nomination, they are legally allowed to spend on their election campaign from their personal wealth. For example, candidates in the Indian state of Haryana were allowed to spend up to 2.5 million rupees on election campaigns from their date of nomination. In addition, there are multiple reports that highlight that candidates spend a considerable amount even before filing their nomination.⁸ It is not surprising that the median wealth of candidates in 2014 national elections was around 2.4 million rupees which is 27 times the nominal per capita income in India in 2014-15.

Improvement in property rights of women can enable women to invest their time and money in political campaigns which is otherwise difficult for them as they typically do not own assets. Additionally, having an equal claim as a man on joint family property may give women the confidence to express their political ambitions since their financial dependence on male members of the family is reduced. There exists evidence that the enactment of reforms to HSA improved women's bargaining power and decision-making within the household (Heath and Tan, 2020; Mookerjee, 2019).

We examine the reform's effect on women's financial autonomy using the IHDS data. We use the fact that the amendment was applicable to unmarried women in the treatment states and estimate the following regression equation:

⁸https://sprf.in/when-wealth-wins-the-cost-of-indian-elections-amidst-overspendingcandidates-exchange-of-cash-liquor-drugs-and-gold-for-votes-and-an-increasingly-wealthypolitical-elite/. Also see https://carnegieendowment.org/posts/2018/07/money-matters-inindian-elections-why-parties-depend-on-wealthy-candidates?lang=en

$$Y_{ist'} = \alpha + \beta s + \theta_{t'} + \gamma Treated_{is} * HSAA_{s,t} + \delta Z'_{i,s,t'} + \epsilon_{i,s,t'}$$
(3)

where $Y_{i,s,t'}$ is the outcome for woman *i* born in year *t'* residing in state *s* and *Treated* takes a value 1 if the female's age lies in the bottom 10% of the age at marriage distribution in the year of amendment in state *s*, and 0 if the age lies in the top 90%. We use the age at marriage distribution to construct our treatment variable as the timing of the women's marriage could be endogenous to the timing of amendment. This is especially a concern if there was anticipation of the enactment of this reform and households married their daughters just before the amendment to prevent sharing the joint property with daughters. A similar strategy has been used by Heath and Tan (2020) who use the marriage distribution to identify the impact of the amendment. Thus, the estimated γ compares the outcomes for unmarried women living in the five treatment states with married women in control states. The regression specification includes state-fixed effects (β_s) and birth year dummies ($\theta_{t'}$), and also controls for individual characteristics ($Z'_{i,s,t'}$), namely, age at marriage and caste. We cluster the standard errors at the village/town level. Note that this equation is only estimated for individuals belonging to Hindu, Sikh, and Buddhist religious groups as this HSA was only applicable for these religions.

The results reported in Table 10 suggest that women eligible for inheriting joint property in the treatment states are more likely to have cash with them that they can spend, have a bank account, are more likely to participate in discussion related to expenditure in their house, and are less likely to report being financially dependent in future (although the effect is statistically insignificant for the first and last outcomes, the coefficients are economically significant). These results indicate that the reform led to an improvement in women's financial autonomy thus providing suggestive evidence in favor of improvement in women's financial autonomy being a mechanism.

We also examine the reform's effect on additional outcomes that could serve as potential mechanisms, such as women's educational attainment, political awareness, and adherence to gender norms (Tables 11 and 12). The reforms may enhance women's political participation through these channels directly. For example, if the reforms result in higher educational attainment for women or improved gender norms, they could increase the likelihood of women engaging in electoral politics. The Global Gender Gap Report 2020⁹ highlights education as a key factor shaping women's political involvement. Formal education not only creates leadership opportunities but also cultivates essential leadership skills. Similarly, traditional gender norms often limit women's roles in public life, resisting their political leadership. Progress in these norms is, therefore, likely to boost women's participation in politics.

Additionally, the reforms may indirectly enhance women's political participation by improving their financial autonomy. Education, gender norms, and political awareness are all likely contributors to greater financial independence, which could further increase women's likelihood of political involvement.

The results are reported in Tables 11 and 12. We find that the reform led to a rise in women's educational attainment and improved their likelihood of completing high school. Additionally, the reform increased their political awareness since we find an improvement in their likelihood of participating in discussions about politics within the household and the likelihood of reading newspapers. Finally, we find that the reform reduced women's adherence to the Purdah system which suggests that reform resulted in some improvement in gender norms. Overall, these results suggest, in addition to financial autonomy, improvements in women's education, political awareness, and gender norms are also likely to be important pathways driving our main results.

4.4 External Validity

While the focus of this paper is India, in this section we evaluate the external validity of our findings and examine the extent to which the findings can be generalized to other contexts. We do so by examining the relationship between inheritance rights and female

⁹https://www3.weforum.org/docs/WEF_GGGR_2020.pdf

political participation across countries. We employ a dataset covering 179 countries which categorizes each country as having either "Equal Inheritance Laws" or "Unequal Inheritance Laws," depending on whether their legal frameworks grant equal property rights to sons and daughters. Female political participation is measured using two indicators: the proportion of seats held by women in national parliaments and the proportion of women in ministerial-level positions. All data are drawn from World Bank's Gender Data Portal,¹⁰ and are current as of the end of 2022.

Our analysis reveals that countries with unequal inheritance laws exhibit significantly lower levels of female political representation in both national parliaments and ministerial positions compared to countries with equal inheritance laws. Specifically, the difference is 9.92% points for the proportion of women in national parliaments (p-value = 0.000) and 8.62% points for ministerial-level positions (p-value = 0.001) (see Figure 9). While these results are not causal, they provide valuable insights, suggesting that the positive relationship between property inheritance rights and female political participation observed in India is likely to hold across both advanced and developing economies.

5 Conclusion

Women's equal participation and leadership in political and public life are essential to achieving the Sustainable Development Goals by 2030. Political participation enables women to shape public policy and better represent women's needs and preferences. However, research shows that women are underrepresented at all levels of decision-making worldwide and that achieving gender parity in political life is far off. India, like many other nations, faces challenges in enhancing women's political participation and representation. Despite marginal improvements over time, female involvement in Indian politics remains dismally low.

We examine whether introducing laws that improve women's property ownership can increase their participation in politics in India. In theory, improving property rights by

¹⁰https://genderdata.worldbank.org/en/topics

financially empowering women can provide women with increased access to financial resources needed to contest elections. However, existing work shows that property rights reforms targeted towards marginalized groups end up being inefficiently implemented (Albertus, 2020; Albertus and Kaplan, 2013). We utilize inheritance laws reforms in India, in the form of state-level amendments to the HSA enacted by five Indian states between 1976 and 1994, to explore whether and to what extent such efforts have been effective in improving the political participation of women. Using administrative data on elections at the constituency level and employing a DID methodology, our findings suggest that improved claims to family property increase the percentage of female candidates contesting in elections as well as the likelihood of their winning. We also show that there is increased entry of females who do not have prior experience of contesting in elections. We rule out pre-existing trends in political participation in treatment states driving our result.

We provide suggestive evidence that this rise in political participation is driven by enhanced financial autonomy, as well as improvements in education, economic awareness, and evolving gender norms. While some previous studies have documented some unintended outcomes of these reforms—such as increased dowry demands or higher female infant mortality rates—our findings offer an encouraging counterpoint. By improving women's access to land and family assets, these reforms appear to contribute positively to their financial independence, which in turn supports their political agency. Our work underscores the transformative potential of property rights in advancing women's socioeconomic and political standing. By expanding women's access to assets and financial resources, such policies can play a pivotal role in closing gender gaps in political participation, driving progress toward a more inclusive and representative society.

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State	Year	
Kerala	1976	
Andhra Pradesh	1986	
Tamil Nadu	1989	
Maharashtra	1994	
Karnataka	1994	

Table 1: Timing of HSA amendment

Notes: Source: Author's own calculations.

Table 2: Summary statistics				
Variable	Obs	Mean	Std. Dev.	
Female candidates	$24,\!933$	3.85	7.99	
Female voteshare	$24,\!933$	3.75	11.34	
Female winner	$24,\!933$	0.05	0.21	
National party	$24,\!933$	1.40	0.32	
State Party	$24,\!933$	0.05	0.24	
Local Party	$24,\!933$	0.04	0.19	
Independent	24,933	1.44	4.34	

Notes: Source: Author's own calculations. Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Nationalparty is the percentage of candidates who are females and belong to national political parties. Stateparty is the percentage of candidates who are females and belong to state political parties. Localparty is the percentage of candidates who are females and belong to local political parties. Independent is the percentage of candidates who are females who are females and belong to local political parties. Independent is the percentage of candidates who are females and are not affiliated with any political party.

	(1)	(2)	(3)
	Female candidates	Female voteshare	Female winner
Amendment	0.98**	2.11^{***}	0.05***
	(0.41)	(0.64)	(0.01)
Observations	23852	23852	23852
Constituency FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 3: Inheritance rights and political participation of women

Notes: Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

		<u> </u>	<u> </u>	
	(1)	(2)	(3)	(4)
	National Party	State Party	Local Party	Independent
Amendment	0.12	0.04^{***}	0.03*	-0.01
	(0.26)	(0.01)	(0.01)	(0.20)
Observations	23852	23852	23852	23852
Constituency FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 4: Inheritance rights and political participation of women

Notes: Nationalparty is the percentage of candidates who are females and belong to national political parties. Stateparty is the percentage of candidates who are females and belong to state political parties. Localparty is the percentage of candidates who are females and belong to local political parties. Independent is the percentage of candidates who are females and are not affiliated with any political party. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

	(1)	(2)	
	Incumbent vote	New female cand	
Amendment	-3.29*	1.21***	
	(1.73)	(0.41)	
Observations	23852	23852	
Constituency FE	Yes	Yes	
Year FE	Yes	Yes	

Table 5: Inheritance rights and political participation

p-values in parentheses

Notes: Incumbentvote is the vote share percentage of male incumbents in a constituency. Newfemalecand is the percentage of female candidates who do not have prior political experience. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

	I I I I I I I I I I I I I I I I I I I		
	(1)	(2)	(3)
	Female candidates	Female voteshare	Female winner
Amendment	-20.74	-28.98	-0.35
	(12.26)	(18.39)	(0.21)
ammendment \times hinduprop	0.25^{*}	0.36	0.00^{*}
	(0.14)	(0.21)	(0.00)
Hindu (%)	-0.45**	-0.30	0.01
	(0.20)	(0.25)	(0.00)
Observations	23852	23852	23852
Constituency FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 6: Differential impact by Hindu population

Standard errors in parentheses

Notes: Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

			· · · ·
	(1)	(2)	(3)
	Female candidates	Female voteshare	Female winner
Amendment	0.80	1.62^{*}	0.03*
	(0.57)	(0.88)	(0.02)
Observations	23852	23852	23852
Constituency FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 7: Robustness check using Garnder (2021)

Notes: Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

	(1)	(2)	(3)
	Female candidates	Female voteshare	Female winner
ammendment	0.54	1.23**	0.04***
	(0.28)	(0.02)	(0.00)
Observations	23852	23852	23852
Constituency FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Region-trends	Yes	Yes	Yes

Table 8: Robustness to region specific trends

Notes: Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

	(1)	(2)	(3)
	Female candidates	Female votesha	re Female winner
Amendment	0.11	0.01	-0.00
	(0.07)	(0.11)	(0.00)
Observations	23852	23852	23852
Constituency FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 9: Placebo test - Impact on Muslim female candidates

Notes: Femalecandidates is the percentage of female candidates in a constituency year. Femalevoteshare is the average vote share received by females in a constituency year. Femalewinner is a dummy variable indicating if the constituency year has a female winner. Amendment, a dummy variable, is an interaction between states that amended their inheritance laws and the year in which the amendment was made. Standard errors are clustered at the state level in all specifications.

			<u> </u>	
	(1)	(2)	(3)	(4)
	Cashinhand	Bankaccount	Expdiscuss	Finsupport
UnmarriedXtreated states	0.02	0.03**	0.06***	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Observations	25314	22802	24876	24878
State FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes

Table 10: Mechanism - financial autonomy

Notes: Cashinhand is a dummy variable that takes a value 1 if female reports having cash in hand to spend on household expenditure. Bankaccount is a dummy variable that takes a value 1 if female reports having a bank account. Explicates is a dummy variable that takes a value 1 if the female participates in discussions on household expenditure. Finsupport is a dummy variable that takes a value 1 if female expects to be financially dependent on her son or daughter in future. UnmarriedXtreatedstates is an interaction between a dummy variable that takes a value 1 for the female eligible for HSA amendment and a dummy variable that takes a value 1 for treatment states. Standard errors are clustered at the village/town level.

Table 11: Mechanism - education				
	(1)	(2)		
	Education	Highschool		
UnmarriedXtreated states	0.75^{***}	0.03***		
	(0.15)	(0.01)		
Observations	25028	25028		
State FE	Yes	Yes		
Birth year FE	Yes	Yes		

Notes: Education is the years of education for the female. *Highschool* is a dummy that takes a value 1 if the female has completed atleast high school. *UnmarriedXtreatedstates* is an interaction between a dummy variable that takes a value 1 for the female eligible for HSA amendment and a dummy variable that takes a value 1 for treatment states. Standard errors are clustered at the village/town level.

Table 12. Weenamishi - awareness and norms			
	(1)	(2)	(3)
	Discusspolitics	Newspaper	Purdah
UnmarriedXtreated states	0.06***	0.05^{**}	-0.05***
	(0.01)	(0.02)	(0.01)
Observations	24859	25304	24905
State FE	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes

Table 12: Mechanism - awareness and norms

Notes: Discusspolitics is a dummy variable that takes a value 1 if female discusses election or politics with her husband. Purdah is a dummy variable that takes a value 1 if female observes veil (purdah). Newspaper is a dummy variable that takes a value 1 if female reads newspaper. UnmarriedXtreatedstates is an interaction between a dummy variable that takes a value 1 for the female eligible for HSA amendment and a dummy variable that takes a value 1 for treatment states. Standard errors are clustered at the village/town level.



Source: Author's own calculations using ECI data on state assembly elections







Note: The figure reports confidence intervals estimated using the event study regression.



Note: The figure reports confidence intervals estimated using the event study regression.



Note: The figure reports confidence intervals estimated using the event study regression.



Note: The figure reports confidence intervals estimated using the estimator proposed by Chaisemartin and Hultfoeuille (2020)



Figure 7: Robustness to Chaisemartin (Female winner)

Note: The figure reports confidence intervals estimated using the estimator proposed by Chaisemartin and Hultfoeuille (2020)



Figure 8: Robustness to Chaisemartin (Female vote share)

Note: The figure reports confidence intervals estimated using the estimator proposed by Chaisemartin and Hultfoeuille (2020)



Source: Author's own calculations