The Effect of Women's Political Reservation on the Prevalence of Dowry *

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Abstract

This study examines the impact of women's political leadership in India through random reservations in village council positions. These reservations resulted in a 63.3% increase in dowry payments, a delay in marriages by an average of 2.82 years, a 6.1% rise in labor market participation and a 4.5 percentage point rise in education enrollment. However, gender norms like women's decision making power in the household remained unchanged. The empirical evidence substantiates a theoretical model positing that female leaders enhance women's education and job opportunities without affecting prevailing marriage norms. As a result, marriages are delayed, but larger dowries are paid as compensation for older brides.

Acknowledgements: I would like to thank S Anukriti, Ritwik Banerjee, Dan Bernhardt, Sonia Bhalotra, Nathan Canen, Debraj Ray, James Fenske, Lucie Gadenne, Abhiroop Mukhopadhyay, as well as various participants at the MRes Conference at the University of Warwick for their helpful comments. I would like to thank Andrew Foster for providing access to the REDS. I would also like to express gratitude to Rachel Brule, Clément Imbert, Soledad Artiz Prillaman and Aliz Barbara Toth for their valuable feedback and kindly sharing their datasets for this research. This project has received ethics approval from the Internal Review Board of the University of Warwick. All errors are my own. Email: priyama.majumdar@warwick.ac.uk.

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1 Introduction

Women in many societies, particularly those with high gender inequality, have restricted access to income opportunities and limited legal rights. Due to the lack of direct economic agency, women often seek to use marriage as a strategic choice to improve their economic opportunities. For instance, in the absence of legal rights, dowry serves as a form of inheritance and financial security for women (Anderson and Bidner, 2015). Women pay higher groom prices to marry men who migrate to urban areas, as this allows them to access regions with greater economic opportunities (Amirapu et al., 2022). On the other hand, marriage choices are also affected by economic shocks. In dowry-prevalent societies, negative shocks to the household income of women cause delaying marriages (Corno et al., 2020). Similarly, improvement in employment opportunities for women influences their likelihood of getting married (Autor et al., 2019). Reduction in the cost of education for women leads to fewer childbirths Chicoine (2020).

While there has been extensive research on the effect of economic empowerment on marital outcomes, there is a limited understanding of how women's political empowerment affects marriages. This paper aims to fill this gap by examining the impact of political empowerment, particularly through the allocation of leadership positions for women, on marital outcomes. Specifically, this study investigates whether female leaders, serving as heads of village councils in rural India, impact various aspects of marital outcomes, including dowry payments, the timing of marriages, and the overall quality of marital matches.

Two reasons motivate this research. Firstly, women face challenges related to agency and decision-making in both political and marital contexts,

suggesting that political empowerment may influence marital outcomes. For instance, in a different context, Chiappori et al. (2018) shows that improvements in economic conditions lead to changes in women's marital preferences. This prompts the question of whether political agency could translate into greater overall agency through policies, potentially influencing outcomes in marital decision-making. However, the extent to which female leaders affect policies is ambiguous. On one hand, there is evidence suggesting that female Pradhans implement policies specifically designed to address women's needs (Chattopadhyay and Duflo (2004); Bhalotra and Clots-Figueras (2014)). If policies advocated by female leaders help eliminate direct barriers to women's agency, we may expect different outcomes in marital matches. On the other hand, female leaders may not always have an impact on gender-specific public spending (Bagues and Campa, 2021), may lack the experience needed to significantly influence policies (Afridi et al., 2017) or face a male-backlash (Gangadharan et al., 2016). In these cases, female leadership could exert opposing effects on marital outcomes, emphasizing the need for empirical investigation.

Secondly, unlike direct policy interventions targeting marriage practices (Wilson (2022); Calvi and Keskar (2021)), the mechanism by which political empowerment influences marital outcomes is not straightforward. This is because political empowerment grants women decision-making power, and the policies they support may or may not directly affect marital outcomes. For instance, do women leaders work to shift norms surrounding marriage, enhance employment opportunities for women, or enforce laws related to marriage norms? The consequences can vary depending on the combination of strategies pursued by female political leaders.

To explore this question, I leverage a nationwide policy in India that

allocates one-third of all village council (Gram Panchayat, hereafter GP) leadership positions to women. Additionally, the selection of reserved GPs was carried out through a randomized process, where GPs were ranked by their pre-assigned administrative serial number, and every third GP was designated for a woman leader (Pradhan). By comparing marital choices between reserved and unreserved GPs using data from the Rural Economic and Demographic Survey, the results suggest that reservation does indeed influence marital outcomes.

In villages where Pradhan positions are reserved for women, women tend to delay their marriages by an average of 2.23 years and offer a dowry that is 62.7% higher compared to villages without reservations. While women in reserved villages receive approximately 7 months more education, there is no difference in the educational qualifications of their matches. Furthermore, there is evidence suggesting that delaying marriage can lead to improved empowerment within the household. For instance, Field and Ambrus (2008) found some indications of increased decision-making and mobility resulting from delayed marriages. Another study by Chari et al. (2017) presents mixed findings regarding household status outcomes. While delaying marriage increases a woman's ability to go places without seeking permission, it also reduces her influence in household decisions. In contrast to previous research that found some evidence indicating positive impacts of delayed marriage on female empowerment, my study finds no significant impact on any of the indicators of female autonomy. These findings are robust to a wide set of alternative samples and empirical specifications.

I propose the following theory as a potential explanation for the observed effects. According to the data, there is a 4.17% increase in women's participation in the local labour market in reserved villages where the age

of marriage is also on average higher. This suggests that female Pradhans increase employment opportunities for women in these villages causing women to work instead of getting married. Women who work longer may have contributed more to their households' overall wealth, potentially leading to higher dowry payments due to the income effect. However, this is unlikely to be the sole mechanism at play, as it would also likely impact the quality of grooms chosen by women. Chiplunkar and Weaver (2019) show that there is a positive relationship between the dowry paid and the quality of grooms, denoted by higher education. Therefore, the lack of improvement in groom quality in this paper suggests that other factors may contribute to the observed outcomes. After eliminating several potential mechanisms and considering qualitative evidence on marriage norms, I deduce the following: There are costs associated with delaying marriages or remaining unmarried, and these costs are relatively higher for women compared to men. Reservation of Pradhan positions for women does not lead to significant changes in gender norms that are potentially correlated with gender differences in marriage norms. Consequently, women compensate grooms with more dowry for delaying their marriages, enabling them to eventually get married.

To summarize the empirical findings in the paper, I develop a sequential equilibrium model of marital decisions. In this model, families make choices concerning the timing of their children's marriages and dowry payments. In the context of India, where marriages are predominantly patrilocal, the model assumes that women move to the groom's family after marriage, and parents do not receive income from their daughters thereafter. When female Pradhans are elected, they increase employment opportunities for women. This incentivizes parents with daughters to delay their

marriages to benefit from their daughters' income, increasing the age of marriage. Since men's labour remains unaffected, and there is a cost associated with delayed marriage for men, families of daughters offer higher dowry payments to grooms for the postponed marriages. The model suggests that as long as marriage norms are biased against women, increased labour force participation may raise the age of marriage for women but lead to increased dowry payments as a trade-off.

This paper contributes to three strands of the literature. First, I contribute to the understanding of how marriage markets work (Banerjee et al. (2013); Chiappori et al. (2017)) and interact with socio-economic factors (Tertilt (2005); Duflo et al. (2015); Jensen (2012); Autor et al. (2019)). Generally, empirical evidence suggests that as women experience economic empowerment, either through increased education or improved employment opportunities, they tend to postpone marriage. There is a gap in the literature regarding the effect of political empowerment on women's marital outcomes, a question this paper aims to investigate. The findings in this paper reveal a paradoxical trend: the provision of employment opportunities by female leaders results in a higher marital age, while simultaneously causing dowry inflation. Although the paper does not address the broader welfare implications of these changes, it does highlight the presence of trade-offs between the timing of marriage and dowry payments. Designing policies that effectively address this trade-off remains an open question for future research and policy considerations.

Second, this paper extends the literature on the evolution of cultural practices and institutions (Giuliano and Nunn (2020); Lowes et al. (2017); Anderson and Bidner (2015)). These studies examine the effects of macroeconomic shocks on cultural behaviour. For instance, Campa and Serafinelli

(2019) examine the impact of state socialism on attitudes, Becker et al. (2016) investigate how different historical empires have influenced culture, and Bau (2021) discusses the dynamics of modernization and policy changes on cultural shifts. Policies can alter the incentives that sustain cultural practices, and conversely, cultural norms also influence the effectiveness of policies. Results in this paper indicate that when marital norms are biased against women, policies aimed at improving women's economic opportunities may not necessarily lead to an increase in their bargaining power in dowry negotiations. Consequently, a comprehensive understanding of the role of cultural norms is essential to evaluate the effectiveness of policies. In the context of this paper, the policy recommendation is that, alongside economic empowerment initiatives, targeted interventions should be implemented to address prevailing marriage norms.

Lastly, this paper contributes to the literature on gender quotas by showing that, policies implemented by women leaders have broader implications in the marriage market. Previous research has shown the direct impact of gender quotas on education (Beaman et al., 2012), land reforms promoting gender equality, and healthcare policies (Clots-Figueras, 2011). To the best of my knowledge, this paper is the first attempt to examine the potential effects of gender quotas on the marriage market—a social institution that involves nearly every member of society.

The remainder of this paper proceeds as follows: Section (2) describes the political context of the village-level local administration, the reservation policy, and the marriage market in India. Section (3) presents a simple model. Section (4) discusses the data used in the study and the empirical strategy. Section (5) presents the main results of the paper and mechanisms. Section (6) concludes.

2 Background

2.1 Political Reservation of Women

The 73rd Amendment of the Constitution of India in 1992 formally mandated a decentralized form of government, the Panchayat system, to efficiently serve the local electorates. The Panchayat system consists of councils at the village level, block level, and district level. This paper focuses on the Gram Panchayat. Each Gram Panchayat (GP) serves as a representative body for 5-15 villages, with its council elected by the residents of the villages it represents for a duration of five years. The leader of the Gram Panchayat, known as the Pradhan, is chosen from among its members. GPs are responsible for drafting annual development plans in their villages, managing budgets, coordinating disaster relief efforts, and resolving local conflicts. GPs also implement poverty alleviation programs, select beneficiaries for government initiatives, and oversee the public distribution system. They mainly receive funds from the state, and have the flexibility to allocate these funds as needed to address local needs and priorities.

Additionally, the Amendment introduced the reservation of one-third of the seats in all Panchayat councils and one-third of the Pradhan positions for women. In these reserved Panchayats, political parties can only nominate women candidates, while the entire population in the Panchayat can vote for their preferred candidate. Seats and Pradhan positions were also reserved for the two disadvantaged minorities in India, Scheduled Castes and Scheduled Tribes, based on their population share in each district. A key feature of the reservation policy in the Panchayat system, making it suitable for this study, is the random allocation of reserved seats. All GPs

in a district are arranged based on their assigned serial legislative numbers predating the Amendment. Subsequently, these GPs are categorized into three lists: those reserved for Scheduled Caste candidates, those for Scheduled Tribe candidates, and those unreserved for any minority group. Within each list, every third GP is reserved for a female Pradhan.

The effective implementation of the Amendment varied across states in India, as reported in Table (A2). Several states already had established systems of local governance in place before the Amendment was enacted, leading to different election schedules. In many cases, state governments delayed holding new elections in compliance with the Amendment until the terms of the incumbents had expired. In contrast, some states had already incorporated provisions for women's representation into their state laws before the constitutional amendment came into effect. For instance, West Bengal made significant amendments to their state-level legislation to provide reservation for women, Scheduled Castes, and Scheduled Tribes in the 1993 election, anticipating the passage of the constitutional amendment. Some states delayed the elections due to budgetary constraints or other unspecified reasons. An example of this is Assam. Assam had its election in 1992, and should have had its first PR-compliant elections in 1997, but the elections were conducted in December 2001.

2.2 Marriage Market in India

To provide context for the model and its underlying assumptions, I discuss some characteristics of marriages in India. Traditional Indian marriages involve significant parental involvement in selecting spouses. Data from the Indian Human Development Survey (2005) reveals that parents chose part-

ners in 94.47 percent of marriages. Additionally, a prevalent practice in India is patrilocality, with 93.76 percent of couples choosing to reside with the husband's family after marriage. Marriages in India are generally monogamous, with a very low divorce rate. According to the Indian Human Development Survey (2005), only 0.68 percent of marriages end in separation or divorce.

Despite the Dowry Prohibition Act (1961), the tradition of dowry payment in Indian marriages remains prevalent where the bride's family provides a monetary payment to the groom's family before the wedding. According to some researches, dowry payments have increased significantly over the first half of the twentieth century due to slowing population growth, hypergamy and the caste system (Rao (1993), Anderson (2003), Anja (2017)). During the period of this study, dowry practices are widespread across India with substantial monetary amounts involved (Anukriti et al., 2019). Dowry is practised in 96.67 percent of marriages, according to the Rural Economic and Demographic Survey.

Furthermore, there are personal and social costs associated with delayed marriages in India, especially for women. Many parents view early marriage as a strategy to protect their daughters from potential risks such as sexual assault or unplanned pregnancy, which could impact their future marriage prospects (World Vision, 2013). This concern is well-documented, with qualitative evidence (Nanda et al., 2011) suggesting that eight out of ten parents are concerned about ensuring their unmarried daughters' safety after they reach puberty and this concern significantly influences their decision to arrange early marriages. Additionally, it has been noted that when children remain unmarried, it raises questions about the father's ability to arrange a suitable marriage or implies certain shortcomings within the fam-

ily.[1]

3 Model

This section introduces a two-period sequential equilibrium model that examines the effects of reserving Pradhan positions for females on parental decisions regarding dowry and the age of marriage for their children. The model is based on evidence that female political leaders improve education and employment prospects for women, incentivizing parents with daughters to delay their children's marriages. Parents with daughters are incentivized to postpone marriage due to the improved employment prospects, while parents with sons are not. Furthermore, parents with sons face an additional cost of delaying their sons' marriages as other families are also delaying their daughters' marriages. To compensate for this delay, parents with daughters offer a higher dowry in delayed marriages to the parents with sons. The model yields two testable predictions linking female political leaders to changes in marital outcomes. First, when women's employment opportunities are increased by female Pradhans, the dowry provided by the bride's family will increase. Second, reserving Pradhan positions for females will lead to a rise in the average age of marriage for women.

[1]One parent interviewed in Bihar explained, "When she grows up a bit, everyone's attention is on her, which is why we get them married early, so that something wrong does not happen and dishonor the family" (Source: https://www.icrw.org/publications/delaying-marriage-for-girls-in-india/).

3.1 Setup

Preferences. In the model, every household comprises parents and either a daughter or a son. Parents are the decision-makers in matters related to marriage, such as determining dowry and the appropriate age for marriage and employment. Parents' utilities are based on their consumption in both periods, denoted as c_i^1 and c_i^2 respectively. The model assumes that parents do not derive utility from their child's well-being. However, they may experience disutility if their child remains unmarried or delays marriage, which will be discussed in more detail later in this section. The preferences can be represented by the following utility function:

$$U(c_i^1, c_i^2) = u(c_i^1) + \beta u(c_i^2)$$

where u is a strictly positive ($u(.) > 0$), increasing ($u'(.) > 0$), and concave ($u''(.) < 0$) function. The utility from each period is realized at the end of the period, and the discount factor is $\beta \in (0, 1)$. There is no possibility for borrowing or saving, so households must consume all of their income before moving on to the next period.

Income. Parents have fixed incomes denoted as y_t during period t. n the second period, parents decide whether their children should work. To simplify, I normalize wages to one and assume a fixed number of labor days for men's and women's jobs. Men's jobs consist of l_m days, while women's jobs span l_w days where $l_m \geq l_w$. If sons are employed, their earnings contribute to the parents' total income, regardless of their marital status. However, daughters' wages are included in their parents' income only if they remain

unmarried and continue living with their parents in the second period.[2]

Decision in Period 1. Parents decide how much to consume and whether to marry their children. For a marriage to occur, parents exchange a dowry, denoted as d_1. The marriage market is competitive, matching is frictionless, and all agents are homogeneous, so all families pay or receive the same dowry in equilibrium. The total income of a family, denoted as $j \in m, f$, during period 1 depends on their fixed income y_1, and whether their child is married ($m_1^j = 1$) or unmarried ($m_1^j = 0$). For households with daughters, their utility is represented by $u(y_1 - m_1^w d_1)$, where m_1^w indicates the daughter's marital status (1 if married, 0 if unmarried), and d_1 is the dowry paid when the daughter is married. On the other hand, households with sons derives a utility of $u(y_1 + m_1^m(d_1 - \eta))$, where m_1^m signifies the son's marital status (1 if married, 0 if unmarried), and η denotes the income shared by the parents of the son with the married couple.[3]

Decision in Period 2. During the second period, parents decide whether to arrange marriages for their children who remained unmarried in the first period. Marriages occurring during the second period involve presenting a dowry of d_2 to the groom's family. I assume that individuals can marry only once and can not divorce. Additionally, parents consider whether their children should participate in the labor market.[4] For families with daugh-

[2]This assumption is based on the patrilocality norm observed in Indian marriages, whereby married couples reside with the husband's parents, causing a woman to leave her natal family upon marriage.

[3]As a result of patrilocality, the customary practice is for married couples to reside with the groom's family and consume their household income.

[4]Daughters who got married in the first period do not live with their parents in the second period. Parents of daughters in the second period consume their entire income for that period.

ters, the utility in the second period is calculated as $u(y_2 + e_f l_f - m_2^w d_2)$, where m_2^w indicates the marital status of the daughter in the second period (1 for married, 0 for unmarried) and e_f denotes whether the daughter is employed or not. Likewise, for families with sons, the second-period utility is formulated as $u(y_2 + e_m l_m + m_2^m(d_2 - \eta))$, where m_2^m and e_m represent the marital and employment status of sons, respectively.

Marriage-Related Costs. Families incur costs if their daughters or sons remain unmarried during the initial period, potentially due to factors like the loss of prime reproductive years or concerns about safeguarding daughters' chastity. Cost incurred by a daughter's or a son's family depends on their private types, denoted by s_f or s_m. I assume that s_f and s_m are symmetrically drawn from a uniform distribution ranging from 0 to S. When a family makes the decision to postpone the marriage of their daughter or son into the second period, they undergo a utility loss of s_f or s_m respectively, during period 1. Furthermore, families encounter an additional cost if their children remain unmarried by the end of the second period. These costs are denoted as F_f and F_m for daughters and sons respectively.[5] The values of F_f and F_m are non-zero (F_2 and F_1) with probabilities p_2 and p_1, and they become known at the beginning of the second period.[6]

[5]The baseline model makes the following simplifying assumptions. The model assumes that men are not able to marry younger women and that female leadership does not have any impact on the societal stigma associated with delayed marriages. Nevertheless, Beaman et al. (2012) suggest that female leadership can indeed influence social norms regarding the ideal age of marriage and potentially reduce the costs (s_f) associated with delayed marriage for women or the stigma (F_f) associated with unmarried daughters. Refer to Appendix B for the extended versions of the baseline model where these assumptions are relaxed.

[6]I consider the potential for uncertainty in the future state of society and assume that the values of F_f and F_m remain unknown until families reach that specific period.

3.2 Period 1

Now, I derive the demand for brides and supply of brides in period 1.

Demand for Brides. In period 1, parents with sons decide whether to marry their son or delay the decision until the subsequent period. If the son gets married in the first period ($m_1^m = 1$), the family receives a dowry denoted as d_1. The utility of the household is given by the sum of the utility derived from consumption in the first period, represented as $u(y_1 + d_1 - \eta)$, and the discounted utility derived from consumption in the second period, expressed as $u(y_2 + e_m l_m - \eta)$. This can be mathematically represented as follows:

$$U_m(m_1^m = 1) = u(y_1 + d_1 - \eta) + \beta u(y_2 + e_m l_m - \eta)$$

Let us consider a scenario where a family decides to postpone their son's marriage in the initial period ($m_1^m = 0$). In the second period, the family has two options. The first option is to marry their son during the second period, which involves receiving a dowry of d_2, but also includes a cost associated with the delayed marriage, denoted as s_m. The second option is to choose not to marry their son and bear the expected cost of never marrying, i.e., $E(F_m)$. The utility if the son is not married in period 1 is be expressed as follows:

$$U_m(m_1^m = 0) = u(y_1) + \beta \left[\max\{u(y_2 + e_m l_m + d_2 - \eta) - s_m, u(y_2 + e_m l_m) - E(F_m)\}\right]$$

Families with a higher $U_m(m_1^m = 1)$ compared to $U_m(m_1^m = 0)$ are willing to marry their sons married in the first period. The demand for brides

can be derived by solving these equations. The decision whether to marry in the initial period or to postpone it until the second period is determined by a threshold value of s_m, denoted by $\hat{s}_m(d_1, d_2)$. If families choose to delay the marriage, they will face either the value s_m or the variable F_1 in the second period, with a probability of p_1. The cost of delaying marriage for families with s_m below $\hat{s}_m(d_1, d_2)$ is lower than the expected cost of remaining unmarried. Conversely, when a family's s_m is higher, they choose to marry in the first period to decrease the probability of experiencing a positive F_m in the next period. The demand for brides can be expressed as follows:[7]

$$D_1(d_1) = \begin{cases} 0 & \text{if } d_1 < \underline{d}_1^m, \\ S - \hat{s}_m(d_1, d_2) & \text{if } \underline{d}_1^m \leq d_1 \leq \bar{d}_1^m(d_2), \\ S & \text{if } d_1 > \bar{d}_1^m(d_2) \end{cases} \tag{1}$$

$\hat{s}_m(d_1, d_2)$ is an increasing function of d_2 and a decreasing function of d_1. As the second period dowry increases, more families are willing to take the risk of a positive F_m as the potential returns from a delayed marriage increase in the form of a higher dowry.[8] When the dowry in period 1 increases, the expected returns to marrying in period 1 increase, leading to a decrease in $\hat{s}_m(d_1, d_2)$. The demand for brides in period 1 is increasing in d_1 within the range from $\underline{d}_1^m$ to $\bar{d}_1^m(d_2)$. For any value of dowry less than $\underline{d}_1^m$, no family marries their son in period 1. When dowry in period 1 exceeds $\bar{d}_1^m(d_2)$, every family chooses to marry their son in period 1. The value of $\bar{d}_1^m(d_2)$ depends on d_2 and increases as the dowry in the second period in-

[7] Refer to Appendix B for detailed derivation.

[8] Recall that F_m is not known in period 1. In period 2, F_m is revealed and can be either F_1 with probability p_1, or 0 with probability $1 - p_1$.

creases. A graphical representation of the demand for brides in period 1 is provided in Figure (1).

Supply of Brides. The utility of a family when their daughter gets married during the first period ($m_1^f = 1$) while paying a dowry of d_1 can be calculated as the sum of the utility from period 1 consumption, $(y_1 - d_1)$, and the discounted utility from period 2 consumption, y_2, expressed as follows:

$$U_f(m_1^f = 1) = u(y_1 - d_1) + \beta u(y_2)$$

However, if the family chooses not to arrange their daughter's marriage in the first period ($m_1^f = 0$), they face a choice in the second period. They can opt to proceed with the marriage by paying a dowry of d_2 along with incurring an associated delayed marriage cost of s_f. Alternatively, they can decide against the marriage, which would result in a cost of $E(F_f)$. The utility associated with the decision of not arranging the marriage in the first period is expressed as follows:

$$U_f(m_1^f = 0) = u(y_1) + \beta \left[m_2^f \{u(y_2 + e_f l_f - d_2) - s_f\} + (1 - m_2^f)\{u(y_2 + e_f l_f) - E(F_f)\} \right]$$

By comparing the utilities $U_f(m_1^f = 0)$ and $U_f(m_1^f = 1)$, the supply of brides in period 1 can be obtained as follows:

$$S_1(d_1) = \begin{cases} S & \text{if } d_1 < \underline{d}_1^f(d_2), \\ S - \hat{s}_f(d_1, d_2) & \text{if } \underline{d}_1^f(d_2) \leq d_1 \leq \bar{d}_1^f, \\ 0 & \text{if } d_1 > \bar{d}_1^f \end{cases} \tag{2}$$

The supply in period 1, $S_1(d_1)$, is determined by the threshold value $\hat{s}_f(d_1, d_2)$, which decreases with d_2 and increases with d_1. Increasing d_2 makes fewer families willing to accept the risk of a positive F_f as the potential benefits from delayed marriage decrease. An increase in d_1 reduces the expected advantages of marrying in period 1, leading to an upward rise in $\hat{s}_f(d_1, d_2)$. Therefore, the supply in period 1 drops as d_1 rises between $\underline{d}_1^f(d_2)$ and $\bar{d}_1^f$. The value $\bar{d}_1^f$ represents the dowry at which families are indifferent between marrying in the first period and not marrying at all. If the dowry in the first period exceeds $\bar{d}_1^f$, all families choose to delay marriage until the second period. When d_1 is less than $\underline{d}_1^f(d_2)$, the supply of brides equals the overall population of families with daughters, denoted as S. Higher values of d_2 result in greater $\underline{d}_1^f(d_2)$. The supply of brides in the first period is depicted in Figure (1).

Equilibrium. The equilibrium dowry which clears the marriage market in the first period is the one that solves $S_1(d_1^*) = D_1(d_1^*)$. I formalize the equilibrium in period 1 in the following theorem.

Theorem 1. *There exists an equilibrium* $\{S^*, d_1^*\}$*, where,* $d_1^* \in D_1^* \equiv [\underline{d}_1^m, \bar{d}_1^f]$ *is the equilibrium dowry in the first period and* $S^* \in (0, 1)$ *is the proportion of married families by the end of period 1 if and only if the following two conditions hold:*

1. $u(y_1 - \underline{d}_1^m) > u(y_1 + \underline{d}_1^m - \eta)$
2. $E(F_f) - E(F_m) > u(y_2 + y_2 + l_f + l_m) - \{u(y_2 + l_m) - u(y_2 + l_f)\}$

Proof: See Appendix B.

Suppose the dowry in period 1 is $\underline{d}_1^m$. If families of sons decide to marry

their sons in period 1, their first period utility is $u(y_1 + \underline{d}_1^m - \eta)$, whereas the utility of the daughter's family is $u(y_1 - \underline{d}_1^m)$. The first condition implies that first period utility of families of daughters is higher than the first period utility of families of sons when the first period dowry is $\underline{d}_1^m$. This means that there are gains of trade to be obtained if daughters are married in exchange of a dowry $\underline{d}_1^m$, thereby ensuring that there is an excess supply of brides at $\underline{d}_1^m$. The equilibrium dowry level, denoted as d_1^*, is illustrated in Figure (1) at the point where the supply curve S_1 intersects the demand curve D_1. According to the first condition in the theorem, there is an excess supply of brides at $\underline{d}_1^m$. If this condition does not hold, all families would have married in period 1. The second condition of the theorem implies that there is an an excess demand for brides at the dowry level $\bar{d}_1^f$. If this condition is violated, the demand curve would not intersect the supply curve, as it would pass through the discontinuous section of the supply curve.

3.3 Period 2

Families not marrying their children in period 1 decide whether to marry with a d_2 dowry or not in period 2. They learn the true types of F_m and F_f. According to Theorem (1), the equilibrium dowry in period 1 is within D_1^*. So, families with $s_m \leq \hat{s}_m(d_1, d_2)$ and $s_f \leq \hat{s}_f(d_1, d_2)$ delay their children's marriages until period 2. I proceed with the model focusing only for cases where $d_1 \in D_1^*$.[9]

Demand for brides. Families who strategically decide to postpone mar-

[9]When $d_1 \notin D_1^*$, it implies that either everyone marries in period 1 or no one marries in period 1. Theorem (1) eliminates such scenarios as equilibria. Consequently, I will focus on constructing the demand and supply of brides in period 2 only for the values of d_1 that belong to D_1^*.

riage in period 1 tend to have low values of s_m. This is because they would face a lower cost of delaying marriage if they choose to marry their sons in period 2, especially when F_m is revealed to be high. Consequently, when families realize that F_m is greater than zero, they marry in period 2. On the other hand, families with zero F_m do not incur any cost if their sons remain unmarried. Consequently, these families choose to marry their sons in period 2 if and only if the dowry provided is equivalent to, or exceeds, the portion of consumption they would share with the married couple. The demand for brides in period 2 is given by:

$$D_2(d_1, d_2) = \begin{cases} p_1 \hat{s}_m(d_1, d_2) + (1 - p_1) s'_m(d_2) & \text{if } d_2 \geq \eta, \\ p_1 \hat{s}_m(d_1, d_2) & \text{if } d_2 < \eta \end{cases} \tag{3}$$

Supply of brides. Families where $s_f \leq \hat{s}_f(d_1, d_2)$ choose to postpone the marriages of their daughters. All families with $F_f = F_2$ get married in period 2. Conversely, families with $F_f = 0$ do not marry in period 2 since they face no cost if their daughters remain unmarried and also do not have to pay a dowry in period 2. The supply of brides is therefore, the expected number of families in period 2 with a positive F_f.

$$S_2(d_2, d_1) = p_2 \hat{s}_f(d_2, d_1) \tag{4}$$

Equilibrium. The demand for brides in period 2 is continuous and strictly increasing in d_2. The supply of brides is also continuous and strictly decreasing in d_2. Therefore, there must exist a unique point of intersection between the demand and the supply functions that determines the equi-

librium dowry in period 2. Furthermore, if the probability of a daughter's family facing a high F_f is considerably higher compared to the probability of a son's family facing a high F_m, more families will be willing to marry their daughters in period 2. Under the conditions in Theorem (2), there will be an excess supply of brides at a dowry η. The equilibrium dowry in period 2 will be higher than η.

Theorem 2. *When p_2 is sufficiently higher than p_1, there exists an equilibrium dowry in period 2, $d_2^* > \eta$.*

3.4 Comparative Statics

The model makes two predictions. First, if female Pradhans increase employment opportunities for women, parents will delay the marriages of their daughters, resulting in a higher average marital age for women in reserved villages. The second prediction of the model is that when there is a gender disparity in the costs associated with late marriages or remaining unmarried, and these costs remain unaffected by female reservation, the delaying of marriages will lead to an increase in the average dowry paid in reserved villages.

Effect of Labor on Dowry. Suppose female Pradhans increase women's job opportunities by providing more work days. I demonstrate that this leads to more families delaying their daughters' marriages until period 2. Consequently, the dowry in period 1 decreases due to excess demand for brides in period 1. This, in turn, results in more unmarried women in period 2, causing the equilibrium dowry in period 2 to rise. When the discount rate is sufficiently low, families are willing to delay marriages to period 2 leading

to an increase in the average dowry.

Theorem 3. *When there is a high probability of women incurring costs from staying unmarried, increasing employment opportunities for women results in a higher average dowry.*

Proof: See Appendix B.

Effect of Labor on Marital Age. Rise in employment opportunities decrease the number of marriages in period 1 and increase the number of marriages in period 2.[10] Since women are older in period 2, the average age of women increases.

Theorem 4. *The reservation of Pradhan positions for women, which increases employment days, results in a rise in the average age at which women get married.*

Proof: See Appendix B.

4 Data and Empirical Strategy

4.1 Data

I use data from both the 1999 and 2006 waves of the Rural Economic and Demographic Survey (REDS), an extensive survey that represents rural households across India's 17 major states.[11] This dataset includes comprehensive retrospective information on the individual characteristics of all household

[10] I also show that the total number of marriages increase.

[11] REDS 2006 can be obtained from http://adfdell.pstc.brown.edu/arisreds_data/ .

members, including daughters who have married and moved away, as provided by the household head. I focus on women who are the daughters of the household head. Furthermore, I have limited the sample to women who were married between 1960 and 2006. This results in a dataset comprising 8,702 women from 3,958 households.

Descriptive statistics are presented in Table (A1). The mean of the logarithm of real dowry paid for this sample is 6.15, with 97% of the sample paying a positive dowry. The average age of marriage is 18.72 years, and women have an average of 3.53 years of education (equivalent to completing primary schooling in 6 years). Women, on average, receive an inheritance of 0.71 acres of land, and the average distance migrated for marriage is 39.21 kilometres.

The labour force participation data is constructed using REDS 2006, which records a panel dataset detailing the number of days worked by women from 1982 to 2006. This dataset includes information on the number of days worked in a year, the type of job performed, and whether the job was located within or outside the village. Additionally, it notes whether the individual was a student. Specifically, the logarithm of the number of days worked by women inside the village in a year averages 5.57. On average, approximately 18% of women in a given year are students.

Data on female autonomy is derived from a survey conducted on married women in REDS 2006. This is a cross-sectional survey which encompasses various indicators of women's autonomy, such as their involvement in household decisions and whether they have a bank account. Notably, 82% of women report having at least some say in household matters, although financial independence is less common, with only 11% of women in the sample owning a bank account. The survey also includes informa-

tion on the birth control practices adopted by couples, revealing that 68% of the population employs some form of birth control. Of those using birth control, roughly half opt for methods like female sterilization, birth control pills, or induced abortion. The data on the reservation status of villages is also obtained from REDS 2006.[12]

4.2 Empirical Strategy

The 73rd Amendment of the Constitution of India in 1992 mandated the reservation of one-third of Pradhan positions in gram panchayats for women. This reservation policy included rules to ensure a random selection of gram panchayats where the office of Pradhan would be reserved for a woman.

Two-way Fixed Effect. To investigate the impact of female Pradhan reservation on the prevalence of dowry, I utilize the variation in election timings across villages over time and employ a difference-in-differences strategy. I begin by estimating the following two-way fixed-effect model (TWFE):

$$Y_{ivt} = \alpha + \beta Reserved_{ivt} + \mu_t + \phi_v + \gamma' X_{ivt} + \varepsilon_{ivt} \tag{5}$$

where i represents individual women within village v and marriage year t. The main outcome Y_{ivt} analysed in the paper is the natural logarithm of the real dowry paid by women in their marriage. I also model additional outcomes including intermediate outcomes that could serve as potential

[12]Notice that in the paper, all empirical specifications utilize a Differences-in-Differences approach, except for the variables related to female autonomy. The reason for this difference is that the data on female autonomy is cross-sectional, containing observations only from the year 2006. Consequently, it is not suitable for a DiD, which typically requires both pre-and post-treatment periods for comparison. Therefore, in the case of female autonomy variables, the analysis focuses on testing mean differences between reserved and unreserved villages for the single year of 2006.

mechanisms. $Reserved_{vt}$ is a dummy variable, equaling 1 if the village v is reserved in period t; 0 otherwise. I include village and birth-year fixed effects (μ_t and ϕ_v), and cluster standard errors at the village level. The set of controls in X_{ivt} includes household income, caste, religion and the size of the household. The village-level fixed effects, ϕ_v, absorb any time-invariant differences, while the year fixed effects μ_t remove common birth cohort-specific shocks.

One potential challenge to the identification of the parameter β is the possibility that a woman's exposure to the reservation policy is determined by the year in which she gets married, which is an endogenous choice. If the timing of marriage is influenced by the reservation policy, the resulting estimates could be biased due to selection. To address the issue, I estimate β as variations within birth year cohorts rather than within marriage year cohorts. The year of birth is predetermined and not affected by the reservation policy, yet it is highly correlated with the year of marriage. With the inclusion of village and year-of-birth fixed effects, β is identified from within-location and within-year-of-birth variation in the reservation of female Pradhans.

Event Study. However, it's important to note that the TWFE estimate of β in Equation (5) may be biased when there are multiple treatment periods (Goodman-Bacon, 2021). This bias arises in a TWFE regression because observations with a consistent treatment status over time serve as the comparison group for those whose treatment status changes over time. When there is variation in the timing of treatment, units treated earlier inadvertently serve as controls for units treated later, as the former's treatment status remains constant while the latter changes. Consequently, if the treatment ef-

fect exhibits variations over time, it invariably introduces bias in the TWFE estimate, causing it to deviate from the true treatment effect. To address this issue, I employ an alternative approach by estimating coefficients using an event-study style specification, which is outlined as follows:

$$Y_{ivt} = \alpha + \sum_{k=-30}^{-2} \beta_k^{lead} Reserved_{vk} + \sum_{k=0}^{5} \beta_k^{lag} Reserved_{vk} + X_{ivt}\gamma + \mu_t + \phi_v + \varepsilon_{ivt} \tag{6}$$

Here, $Reserved_{vk}$ is a dummy variable, equaling 1 if the woman is married k periods relative to the village v's first reserved period; 0 otherwise. Equation (6) allows for the estimation of distinct coefficients for each year before (β_k^{lead}) and after (β_k^{lag}) the reservation policy is implemented. The β_k^{lead} coefficients provide a partial test of whether parallel trends exist. I also provide the Goodman-Bacon (2021) decomposition of the two-way FE estimator to test whether the aggregate treatment effect is driven by potentially biased samples.

Variation In Timing of Elections. The timing of elections and, consequently, the implementation of the reservation policy, varies from state to state. The regression analyses include village fixed effects, which account for unobserved factors contributing to state-level variations in election timings. I also conducted an event study analysis with one state excluded at a time in Table (A10) to show that the results are robust to the exclusion of any specific state. I also include additional state-by-year and block-by-year fixed effects as additional robustness checks in Table (A11).

Sensitivity to Estimator. There is a potential risk of bias from using TWFE estimators in a setting with staggered adoption and treatment effect het-

erogeneity. These estimators are unbiased for an average treatment effect under two crucial conditions: (i) the assumption of parallel trends holds and (ii) the treatment effect remains constant both between groups and over time. However, note that even when parallel trends are met, the second assumption is unlikely to hold. For instance, I show in the next section, that the effect of the reservation policy varies over time in the event study estimation. To address this issue, I report the IW estimates using the Sun and Abraham (2021) estimator. Additionally, I also estimate the effect of reservation using other estimators including the pooled event study estimator, the de Chaisemartin and D'Haultfœuille (2020) estimator and the stacked DiD estimator (Cengiz et al., 2019). The Stacked DiD estimator first calculates cohort-specific estimates, one by one restricting a sub-sample to include only the specific treated cohort and the never-treated cohort. These event-specific estimates are then stacked in relative time to calculate an average effect across all cohorts. This is analogous to the TWFE estimator except that it prevents using the earlier treated observations as a comparison group, which may occur with a staggered design. The DID_M estimator proposed by de Chaisemartin and D'Haultfœuille (2020) uses village cohorts which are never reserved to infer trends that would have affected villages that are reserved eventually if they had not been reserved.[13]

5 Results

Table (A1) provides an overview of the variables utilized in the analysis. The primary finding of the study is that the reservation of female Pradhan

[13]For further discussion on this, refer to Appendix.

positions leads to an increase in the dowry amount paid by women in the villages with reservations. Additionally, there is an increase in the average age of marriage and the number of days worked by women in reserved villages. The analysis begins by presenting empirical evidence supporting Prediction 1, followed by discussing the robustness of the primary findings. Subsequently, I present the empirical evidence for Prediction 2 and explore other potential mechanisms.

5.1 Prediction 1: Effect on Dowry

Columns $(1) - (4)$ in Table (1) report the aggregate effect of the reservation policy on dowry, including estimates from the following models: the two-way fixed effects model in Panel A, pooled event study in Panel B, stacked regression model in Panel C, the Sun and Abraham (2021) model in Panel D and the DID_M estimator following de Chaisemartin and D'Haultfœuille (2020) in Panel E. The estimates presented in Table (1) represent the average effects of the reservation policy on dowry payments in marriages that occur from the year of the election to one year after the end of the election cycle. The reservation policy can be changed only in the beginning of an election year, therefore, once the reservation is implemented, the Pradhan is the elected woman until the next election.

The reservation of Pradhan positions for women results in increases in the real dowry paid by 62.7% to 63.3% (Panel A). Results documented in Columns $(5) - (8)$ of Table (1) are based on a binary measure of whether a woman pays dowry in her marriage. The estimates, while controlling for household characteristics and election year fixed effects in Column (8), reveal that there is no significant impact on the probability of women paying

a dowry. It is noteworthy that, as shown in Table (A1), a vast majority of women (97%) interviewed in REDS 2006 reported paying dowry in their marriage. A small proportion of families chose not to pay dowry, and it is plausible that this subset of families represents specific preferences that are unlikely to be influenced by female Pradhans. The estimates obtained from alternative estimators in Panels (B)-(E) provide evidence of a positive and statistically significant impact of the reservation policy on dowry, even under a range of estimators that impose weaker assumptions regarding parallel trends. A detailed discussion of these findings is presented subsequently.

Event Study Models. The event study models following the specification outlined in Equation (6) is presented in Figures (2a) and (2b). The findings from Figure (2a) are consistent with the theoretical predictions of the model and the estimates presented in Table (1). Specifically, the figure depicts a statistically significant increase in the logarithm of the real dowry paid by women in villages subjected to the reservation policy following its implementation. Prior to the implementation of the policy, the pre-event leads appear to be flat, after which there is a gradual rise in the dowry paid starting from the second year of the election onwards.

Following the election of a woman as the Pradhan in the Panchayats, any changes she initiates must be effectively implemented in the field and accumulate over time to produce a discernible impact on the marriage market at the population level. According to the event study estimates presented in Column (1) of Table (A3), there is no statistically significant difference in the logarithmic value of real dowry payments made by women in reserved and unreserved villages during the year of the election. Specifically, it shows a 52.27 percentage increase two years after the implemen-

tation of the reservation policy and a 95.64 percentage increase in the fifth year following the policy's implementation when compared to the difference observed one year before the reservation. Furthermore, in comparison to the difference observed in the base year (one year prior to the reservation policy), dowry payments in reserved villages experience a significant increase of 117.6 percentage in the year immediately following the end of the election cycle. This indicates that the impact of the reservation policy on dowry is persistent and extends beyond the influence of Pradhans during their term.[14] The rise in dowries is attributed solely to changes at the intensive margin, since there is no significant increase in the proportion of women offering a positive dowry, as depicted in Figure (2b). In subsequent section, I will demonstrate that the dynamic effects on dowry, estimated using the Sun and Abraham (2021) estimator, align with the findings from the event study estimates.

Effect Sizes. The study's findings reveal a significant increase in the average logarithmic value of real dowry in reserved villages compared to unreserved villages following the implementation of female reservation for Pradhan positions. According to Table (1), the differences in real dowry payments before and after the policy show a substantial increase of 63%. These estimates surpass the $38.46\% - 57.69\%$ decrease in the average dowry paid by women after the implementation of the Dowry Prohibition Act of 1986, as reported in Alfano (2017). However, they are slightly lower than the 70.09% reduction in dowry payments observed following the enactment

[14]The sample used for analysis contains only 16 observations with marriage years that extend beyond two years after the end of the first election cycle. Consequently, it is not possible to draw conclusive claims regarding the long-term effects of the reservation policy based on this data. However, the findings demonstrate that the effects persist in the immediate year following the reservation.

of the Amended Dowry Prohibition Act of 1986, which introduced stringent penalties for dowry offenses (Calvi and Keskar, 2021). In comparison, Ambrus et al. (2010) illustrate that legal changes in marriage contracts in Bangladesh led to a 23,000-taka increase in dowry over the entire period from 1960 to 2000, accounting for approximately 62% of the overall increase in dowry (rising from around 5,000 to about 42,000 taka) during that period. The findings of this study indicate that the effect sizes resulting from the reservation of female Pradhans are comparable to those observed in studies that examine legal changes directly related to marriage contracts.

5.2 Robustness Checks

Now, I present additional results and robustness checks for the main findings, as discussed in Section (4).

Pre-Trends. One of the identification challenges is whether the significant increase in the logarithmic value of real dowry in reserved villages post reservation might reflect pre-existing trends. Figure (2a) displays the coefficients to the left of the vertical line, which represents the year of reservation. These coefficients provide no evidence of pre-existing trends in the data. This observation is further substantiated by formal tests of parallel trends, as demonstrated in Table (A3). Specifically, the β_k^{lead} coefficients, which measure the trends prior to the adoption of the reservation policy, are not significantly different from zero. This indicates that there are no differential trends in the log of real dowry before the implementation of the reservation policy. Additionally, the joint test for the significance of the lead coefficients is conducted, and the results reveal p-values of 0.4827 for

$Log(RealDowry)$ in Column (1) and 0.852 for $DowryPaid$ in Column (4). These p-values provide further support for the absence of significant differential trends in dowry payments before the reservation policy was introduced.

I also conduct a placebo test to assess the validity of the parallel trends assumption. In this test, I examine trends around a simulated "pseudo" reservation year, which is defined as occurring x years prior to the actual reservation year. The results of this test are presented in Table (A5), which displays the coefficients β_k^{lead} and β_k^{lag} obtained from a sample limited to the pre-reservation period and centered around the constructed "pseudo" reservation year. The purpose of this placebo test is to evaluate whether there would have been a significant difference in dowry before and after the "pseudo" reservation year, assuming that the parallel trends assumption holds. The insignificant β_k^{lag} coefficients shown in Table (A5) indicate that if the reservation year had been shifted forward by x years, there would be no significant effect of the reservation policy on dowry in the post-reservation periods. This finding suggests that the parallel trends assumption remains valid.

Sensitivity to Alternative Estimators. I re-estimate the models using several alternative estimators, such as the IW estimator (Sun and Abraham (2021)), the DID_M estimator (de Chaisemartin and D'Haultfœuille (2020)), the Pooled Event Study estimator, and the Stacked DiD estimator (Cengiz et al. (2019)). The results in Panels (B)-(D) of Table (1) indicate that the effect sizes from these five alternative estimators are similar in magnitude. Specifically, the pooled event study estimates, which represent the average of the post-reservation coefficients from Figure (2a), range from 0.5897 to

0.6121. Both the Stacked DiD estimates and the IW Estimators demonstrate an increase of 52.27% and 53.25% in the average dowry paid by women in reserved villages compared to unreserved villages following the policy implementation, respectively.

The two-way fixed effect model tends to assign more weight to short-term treatment effects and less weight to long-term effects (Borusyak et al., 2021). This might result in an average estimate that could be biased, especially in this context where treatment effects increase with time since the year of reservation, as shown in Figure (2a). To address this, I provide a breakdown of the two-way fixed effect estimator based on Goodman-Bacon (2021) in Table (A8). Notably, in this table, when comparing villages reserved earlier to those reserved later, assuming the latter as the "control," some estimates appear negative. However, when comparing the same two groups, with the former as the "control," the 2×2 DiD estimates are positive. This highlights the potential bias that can arise in conventional difference-in-differences estimates due to heterogeneous treatment effects across units or time. To mitigate this bias and provide unbiased estimates of dynamic effects, I've presented the aggregate dynamic estimates from the DID_M estimator in Table (1), as shown in Panel E. This table reveals that the average increase in dowry in reserved villages following the reservation policy is 153.58%.

In addition to presenting the standard event-study figures (2a), I've included the lags and leads estimated using the IW estimator proposed by Sun and Abraham (2021) in Figure (A1). These estimates closely resemble each other. This similarity is attributed to the results from the Goodman-Bacon Decomposition, which assigns the highest weights to estimates derived from a pure treatment versus control comparison. When compar-

ing reserved versus never-reserved villages in Table (A8), a substantial increase of 61.15% in real dowry is observed, significantly higher than the estimates obtained by comparing villages reserved at different times. Additionally, this comparison carries significantly higher aggregate weight in the weighted-aggregate total effect.

Sensitivity to Alternative Specification. The dependent variable used in the main findings is the logarithmic transformation of the real dowry payments made by a woman. The real values are calculated by adjusting the nominal dowry payments using the World Bank Indian GDP deflator. I also report the TWFE estimates in Table (A9) and plot the event study graphs in Figure (A16) using alternate definitions and functional forms of the dependent variable. Columns (1)-(2) in Table (A9) report the impact on the real dowry and the inverse hyperbolic sine transformation of the real dowry, respectively. Mullahy and Norton (2022) show that the estimated effect of the inverse hyperbolic sine transformation is significantly affected by the units used to measure the outcome, particularly when the data contains numerous zero values. However, since nearly all families in this sample pay a dowry during marriages, the concerns regarding the sensitivity of the inverse hyperbolic sine transformation discussed in Mullahy and Norton (2022) work are not applicable to my findings. The percentage increase in the real dowry in reserved villages following reservation is similar under both the logarithmic (63%) and the inverse hyperbolic sine transformations (64%). Columns (3)-(5) in Table (A9) report the effect of female reservation policy on the nominal dowry, the logarithmic value of the nominal dowry and the IHS transformation of the nominal dowry. The corresponding event study plots are in Figure (A16), where it is obvious that the effect follows a

similar trend.

To assess sensitivity to extreme values in the sample, I drop extreme values from the top and bottom one, five, and ten percentiles of the sample in Columns (1)-(3) of Table (A10) and winsorize the sample at the top and bottom one, five, and ten percentiles in Columns (4)-(6) of Table (A10). Notably, the most significant change in the effect size occurs when the bottom and top ten percentiles are eliminated. Specifically, after eliminating the bottom and top ten percentiles, the effect size diminishes from 0.63 to 0.331. However, the impact remains statistically significant at less than 0.01 p-value. Second, as discussed in Section (**??**), election timings vary across states. To examine whether the main results rely on the inclusion of specific states in the panel, one state at a time was dropped from the analysis and find that the elimination of states one-by-one has almost no impact on the estimates, illustrated in Table (A11). I also check whether the results are sensitive to the inclusion of additional fixed effects in Table (A12). The main result is robust to inclusion of other fixed effects at the district-by-year level, block-by-year level and village-by-year level.

In the main regressions, I include all the lags (5) and leads (34), and omit the first lead as the base category. In Table (A13), I provide results varying this window down to 30, 25, 20, 15 and 10 years. Columns (2)-(6) show the results after dropping the pre-reservation sample below 30, 25, 20, 15 and 10 years and Columns (7)-(11) present the results after accumulating the lead terms beyond 30, 25, 20, 15 and 10 years. The estimates are almost unchanged. To address the potential concern that the reservation implementation was temporally correlated, I estimate event studies with alternate levels of clustering, including household, block, district and state. I also estimate the TWFE model with two-way clustering of standard errors

by various region-levels and by year in Table (A14) and there is very little effect on the confidence intervals.

The identification strategy in this paper relies on the village of birth, year of birth, and timing of marriage to determine exposure to the reservation policy as indicated by Equation (5). However, in India, matrimonial arrangements, including dowry payments, are typically negotiated before the actual wedding ceremony. Thus, for the reservation policy to have a complete impact on a woman, she must have been born in a reserved village, married after the policy's implementation, and young enough to have no existing marriage contracts. As a robustness check on the main result, I re-estimate Equation (5) using variations in women's birthplace, birth year, and age at the time of the reservation. Specifically, I estimate the following:

$$Y_{ivt} = \alpha + \beta Reserved_{ivt}^{age} + \mu_t + \phi_v + X_i + \varepsilon_{ivt}$$

In this equation, all variables are defined as in Equation (5), except for the variable $Reserved_{ivt}^{age}$, which is a dummy variable equal to 1 if woman i is of marriageable age when the reservation policy is implemented in village v, and 0 otherwise. Table (A15) displays the results of the analysis, with Panel A considering marriageable age as 11 to 14 years, Panel B as 15 to 18 years, and Panel C as 11 to 18 years. Column 4 indicates that women exposed to the reservation policy between 11 to 14 years of age paid 57.6% more dowry than those who were not exposed to the policy within that age range, which is quite similar to the primary finding. The results indicate that women aged 15 to 19 years paid significantly higher dowries in reserved villages compared to unreserved villages, but the difference is now 40%. The reservation of women may have had a weaker impact on dowries in this case

since the dowry amount could have been negotiated prior to the election of a female Pradhan.

5.3 Mechanisms

As illustrated in the preceding section, the reservation of Pradhan positions for women leads to an increase in dowry payments in rural India, according to Theorem (3). In this section, I show the mechanisms that underlie this rise in dowry resulting from female reservation.

Prediction 2: Effect on Marital Age. The model suggests that the increase in dowry due to female reservation is driven by delayed marriages among women. To test this, I examine the impact of reservation on women's marital age in reserved villages. If marriages are indeed delayed, we should observe an increase in the average age of marriage for women. In Table (2), I present the estimated results of the TWFE model (Panel A) using four different specifications in Columns $(1) - (4)$. Across all specifications, I consistently find that in reserved villages, the average age of marriage for women is significantly higher compared to unreserved villages.

For instance, in the specification including household controls and fixed effects for election year (Column 4), the impact on reservation is a relative increase of 2.231 years, statistically significant at 1% level or more. Although the effect size marginally decreases in Panel (B) to (D), where I estimate the pooled event study, the stacked DiD, and the IW estimator, respectively, there still persists an average delay of one year in women's marriage decisions in reserved villages across any of the specifications. The TWFE estimates tend to overweight the immediate effects in a dynamic treatment

model. In this case, since the impact of the reservation policy is not immediately realized, the TWFE estimates may be conservative. The estimated effect size of DID_M, on the other hand, addresses the issue of negative weights and demonstrates a larger increase in the average age of marriage by 3.61 years after the reservation.[15]

The Appendix contains various alternate specifications and sample selections that validate the robustness of this result. The insignificant lead coefficients in Table (A4) indicate that parallel trends hold, both separately and jointly. The placebo reservation year test in Table (A5) further confirms the presence of parallel trends. Even after eliminating outliers, the effect sizes remain significant, and the delay in women's marriage in reserved villages is between 0.903 to 2.033 years, as shown in Table (A9). There is almost no change in the effect size after estimating the equations by eliminating one state at a time in Table (A10). Moreover, the result is robust to the inclusion of additional fixed effects by region and year as in Table (A11), alternate levels of clustering in Table (A13), and different functional forms of the variable $MarriageAge$ (age at marriage in years) in Table (A15).

Figure (3a) illustrates the dynamic changes in the age of marriage in the years following the implementation of the reservation policy. No delay in marriage decisions is observed until the first year after the reservation policy was put into effect. This suggests that families do not anticipate their village's reservation status before the reservation and do not adjust marriage timings accordingly. However, one year after female Pradhans are elected, the average age of marriage for women increases by approximately

[15]The IW estimator selects the never-treated groups or the groups treated last as a control or comparison group. In contrast, the DID_M estimator uses as controls all groups that have not been treated up to time t.

nine months or 0.765 years, as reported in Column (1) of Table (A4). This indicates that some families chose to delay their daughters' marriages when a female Pradhan was elected in their village and waited for another year to get married, resulting in an increase in the average age of marriage precisely one year after the election. This trend persists, with a steady rise in the average marital age in reserved villages in subsequent periods. In the last year of the election cycle, the age of marriage is 1.45 years higher compared to the average marital age in unreserved villages.

Remarkably, the increase in dowry closely follows a similar pattern. As mentioned previously, the effect of reservation on dowry is not immediate. No significant change in dowry payments is observed in the first two years following the village's reservation. The correspondence between the dowry trend and the rise in the age of marriage suggests that the mechanism driving the increase in dowry is the delay in daughters' marriages, in line with the model's prediction. As the age of marriage gradually increases over time, there is a corresponding rise in dowry payments. The growth of dowry aligns with the change in the age of marriage, albeit with a time lag. Additionally, the data presented in Table (A16) indicates that the impact of the reservation is reduced (48.3 percent increase) after controlling for the age of marriage. However, I find no heterogeneous effect of the reservation policy based on age at marriage as shown in Table (A6).

Based on the univariate associations between the logarithmic value of real dowry and the age of marriage in my dataset, Figure (A48) shows that dowry is an increasing function of the age of marriage. The reservation of female Pradhans raises dowry through a change in the age of marriage; however, there is no differing impact of female reservation on women who marry later. I interpret this as indicating that the election of female Prad-

hans does not alter the dowry-age of marriage function, which might have otherwise indicated a backlash.

In summary, the reservation of villages leads to a delay in daughters' marriages, resulting in an increase in the average age of marriage for women in reserved villages. As shown in Figure (3a), within two years of the election, the average age of marriage for women increased by nine months, while the dowry increased by 52 percent, as seen in Figure (2a). Over the next two years, the age of marriage continued to rise significantly, alongside an almost doubling of the dowry by the fourth year compared to its value in the second year. Taken together, these findings on dowry and the age of marriage suggest that the reservation of female Pradhans causes a delaying of marriages by women, which in turn appears to cause an increase in the dowry in reserved villages. The next question to explore is the underlying reasons motivating women to delay their marriages, which I investigate in the following sections.

Employment Opportunities. According to the model, female Pradhans create more employment opportunities, denoted as l_f, causing women to pursue employment rather than entering into marriage. To test whether female Pradhans indeed provide increased employment opportunities, I employ a TWFE model to estimate the impact of the reservation policy on female labor force participation. This model involves regressing the logarithmic value of the annual days worked by women within the village on year and village fixed effects, along with the binary variable $Reserved_{vt}$. This binary variable takes the value of 1 if the village is led by a reserved female Pradhan in year t. According to Table (2), there is a 4.17% increase in the number of days women work within their villages after a female Pradhan

is reserved. This increase in female labor force participation is in line with prior research findings, which have demonstrated that exposure to female politicians during young adulthood leads to a significant 9.6 percentage point increase in the probability of women working in wage employment (Priyanka, 2020). Moreover, policies aimed at empowering women have consistently shown to boost female labor supply (Heath and Tan, 2020), with estimated impacts ranging from 3.8 to 6.1 percentage points. In the context of rural India, Zheng et al. (2023) have shown that female reservation of Pradhans has led to an 8.9 percentage point increase in the likelihood of female labor force participation, equivalent to an 11.8% increase at the mean, of which participation in non-NREGA works comprises an estimated increase of 6 percentage points.

The positive impact on female labor force participation (FLF) remains statistically significant across various estimators, although the effect size diminishes to 0.81% in the DID_M estimator and 1.69% in the Stacked DiD estimator. In both cases, the coefficient remains statistically significant at the 10% level. Figure (3b) illustrates that this effect takes time to manifest and becomes significantly during the last two terms of office. This delayed and somewhat smaller effect aligns with prior research suggesting that women leaders in reserved seats may initially under-perform but gradually catch up with male politicians as they gain experience (Afridi et al., 2017). Given that my study focuses on the outcomes of the first-ever election with female reservations, this could explain the observed effect size. Nevertheless, female Pradhans increase the expectation of improved job prospects for women within the village while having no discernible effect on female labor outside the village or male employment within the village, as demonstrated in Table (A18). This indicates that female Pradhans create new em-

ployment opportunities specifically for women when elected as Pradhans. Furthermore, the anticipation of future employment opportunities delays families' decisions to arrange marriages for their daughters. The effect of female reservation on FLF is robust to removing extreme values in Table (A9), dropping one state at a time in Table (A10), inclusion of additional fixed effects in Table (A11), clustering at other levels in Table (A13), and to other functional forms of the dependent variable in Table (A15).

One could argue that delaying marriages leads to an increase in labor hours, rather than the reverse. If the higher number of labor days worked by women is a mechanical consequence of delayed marriages, a similar mechanical effect should be observed in the labor days worked by men since their marriages are also delayed. Additionally, we would expect to see an increase in the number of days worked by women who work outside the village. However, as shown in Table (A19), there is no observed effect of reservation on labor days worked by women outside the village or by men, whether inside or outside the village.

Gender Norms. I investigate gender norms to address two key questions: first, whether female Pradhans have an impact on the costs associated with delayed marriage (specifically s_f, s_m, F_f, and F_m); and second, whether the observed increase in dowry can be attributed to a male backlash. Since direct evidence regarding gender norms related to dowry is lacking, I analyze alternative indicators that may reveal disparities in gender norms across various dimensions. If female Pradhans do indeed affect dowry norms, it should be reflected in some of the other indicators I explore here.

A plausible explanation for these findings could be that the introduction of female reservation policies triggered a backlash against the increased

presence of women in leadership roles. This backlash could have resulted in reduced cooperation from men during dowry negotiations. To investigate the existence of such a male backlash, I analyze survey responses from women regarding their autonomy, which were collected during the REDS 2006 study. I conduct a regression analysis on measures of female autonomy, considering whether the village was reserved in the first election cycle, while also incorporating household controls and clustering standard errors at the village level. Importantly, because reservation allocation is random, the impact of reservation on these indicators can be considered causal. Furthermore, due to the occurrence of multiple elections by 2006, I include controls for reservation status in the subsequent two election cycles. If a male backlash has indeed occurred in response to the policy implementation, one might reasonably expect to observe a significant decline in these indicators.

Columns (1) and (2) in Table (3) show that the reservation policy has no significant impact on a woman's ability to borrow money from her husband or her possession of a bank account.[16] Additionally, there is no direct effect observed on a woman's influence over household decisions or on the daughter-son ratio. Furthermore, no substantial changes are noted in the likelihood of adopting birth control methods, and even when such practices are followed, there is no significant shift in the utilization of specific methods like female sterilization or induced abortion, as indicated in Columns (6) and (7).[17]

Quality of Grooms. An alternative explanation for the increase in dowry

[16] Field et al. (2021) and Almas et al. (2018) underscores the connection between a woman's control over earned income and her bargaining power.

[17] Prasad (2022) has shown that sterilization, by exogenously ending women's fertility, can influence their perceived value and bargaining power within households.

payments in villages with female political leaders could be that the greater representation of women in political leadership positions improves their social status, thereby enhancing their prospects for marriage. This could lead to a greater demand for marriages with higher-status partners, potentially resulting in an increase in dowry payments. However, the evidence presented in Table (4) contradicts this hypothesis, as it shows no significant improvement in the quality of grooms in reserved villages. Educational qualifications of spouses in marriages that occur in reserved villages do not exhibit statistically significant differences, and there is no indication of women marrying higher up in the caste hierarchy. If anything, women in reserved villages tend to be more educated, as demonstrated in Table (5). Additionally, Table (A7) indicates that the reservation policy has no differential effect on dowry payments in marriages where the groom is more educated or belongs to a higher-ranked caste group.

Education. The data indicates that in villages with reserved leadership positions, women are more likely to engage in educatio during the years of the reservation policy. This is evident in Table (2), where I show that women in reserved villages have a 4.11% higher probability of being students in the years following the appointment of a female Pradhan, compared to women in unreserved villages.[18] Previous studies have suggested that female Pradhans encourage educational attainment by reducing gender gaps in parental aspirations, as demonstrated (Beaman et al., 2012). This may be a contributing factor to the delay in marriage age and potentially higher dowries. Women in reserved villages are also 0.563 to 1.213 years

[18]However, note that the stacked and pooled DiD estimators do not yield statistically significant results.

more educated than women in unreserved villages based on the empirical specification shown in Table (5). This suggests that women in reserved villages may opt to pursue education rather than marrying at an early age. It is important to acknowledge that in this paper, I cannot isolate the causal effect of marriage timing on educational attainment, as it has been highlighted that social and financial pressures to marry young often result in lower levels of schooling (Field and Ambrus, 2008). While it remains plausible that educational attainment could be an outcome of delayed marriage, I present evidence in Table (A19) indicating that the probability of men receiving education is unaffected by reservation. This observation challenges the idea that increased education or increased labor days are mechanical outcomes of delayed marriages since we would have expected to see similar changes in these outcomes for both men and women if this were the case.

Martial Migration. An alternative hypothesis for the rise in dowry payments could be the enhanced economic opportunities offered by female Pradhans in the reserved villages. This could potentially lead to more women migrating to these areas, thereby increasing the demand for grooms and subsequently driving up dowry payments. Nevertheless, Table (4) shows that there is no statistically significant difference in the migration distances traveled by women for marriage between the reserved and unreserved villages.

Bequest. The reservation of female leaders might also contribute to an increase in dowry practices by encouraging parents to bestow greater wealth upon their daughters. Dowry is frequently perceived as a wealth transfer before death (Anderson, 2003). In order to compensate for their daugh-

ters' potential exclusion from property inheritance, parents may opt to offer more substantial dowries as an alternative form of wealth transfer (Roy, 2015). Nevertheless, as indicated in Table (3), women do not appear to borrow significantly larger sums of money from their parents. Additionally, there exists a positive correlation between dowry and land inheritance, as illustrated in Figure (A48), which contradicts the substitution narrative.

Women's Safety. Increased safety of unmarried women is unlikely to be a potential mechanism for delaying of marriages. As shown in Table (3), there is no significant difference in whether women approached Pradhans more regarding safety issues when a village is reserved.

Enforcement of Minimum Age Laws. There is evidence indicating that minimum age of marriage laws are often inadequately enforced in many countries, emphasizing the importance of monitoring for greater effectiveness of minimum age of marriage laws (Collin and Talbot, 2023). In the context of this paper, I examine whether female Pradhans enhance the enforcement of these laws, potentially leading to an increase in the age of marriage. I employ statistical tests to check for sharp, discontinuous changes in the shares of women marrying at the legal age, using a formal test of the presence of a discontinuity developed by (McCrary, 2008). For instance, the legal cutoff is 18 years, and if the law is being better enforced in reserved villages, there should be a 'jump' in the share of women married at 18 compared to those married at 17. Figure (6) shows that there are positive discontinuities around the legal cutoff in both reserved and unreserved villages, but neither of them is statistically significant.

In summary, the findings presented in this study suggest that female po-

litical leaders have a significant impact on dowry payments. However, the mechanism through which this occurs does not appear to be related to improvements in women's social status, increased demand for higher-quality partners, or migration. Instead, it seems to be driven by a delay in the age of marriage. Several plausible explanations for this delay exist in villages with reserved female Pradhans. Nevertheless, the available evidence suggests that the primary driver behind this delay is the emergence of new employment opportunities introduced by female Pradhans. Additional factors contributing to the postponed marriages among women in such villages may include pursuits of higher education and the role model effect. It is important to acknowledge a caveat in this paper: due to data limitations, I cannot rule out the possibility that women delay their marriages in reserved villages due to a role model effect that shifts societal norms regarding the ideal age of marriage. As pointed out by Beaman et al. (2012), female political representation can increase parental aspirations for their daughters, potentially increasing the likelihood of adolescent girls aspiring to marry after the age of 18.

6 Conclusion

This paper examines the effects of reserving local political seats for women on marriage outcomes in rural India using data from two rounds of the Rural Economic and Demographic Survey. The allocation of leadership positions in the Panchayat is carried out through a random rotating mechanism, providing an exogenous source of variation. Leveraging this exogenous variation, I show that reservation policies have a notable impact on delay-

ing the age of marriage, enhancing women's educational attainment, and increasing their participation in the labor market. However, the paper also highlights trade-offs that manifest in the form of dowry inflation. One potential mechanism posited by the paper for this trade-off is the persistence of gender-biased marriage norms. While the data used in this paper does not allow for a direct analysis of marriage norms, I use indicators related to women's autonomy as close proxies for gender inequality within marriage norms. This implies that reservation policies have the potential to impact marriage markets, but in complex ways that intersect with prevailing marriage norms.

These findings have broader implications for policy evaluations, indicating a trade-off between the age of marriage and dowry, which can inform more effective strategies for addressing gender-based disparities in marital practices. The overarching policy objective should be the elimination of underlying norm-driven inequalities, ensuring that families are not burdened with higher dowries when their daughters delay marriage for education and workforce participation. Additionally, the paper emphasizes the challenge of bridging the gap between women's decision-making power at the political level and their decision-making authority at the household level, presenting an open question for further exploration. More generally, my findings point to the importance of balancing economic incentives, political empowerment and interventions targeting cultural norms in policies designed to alter marriage customs.

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Tables

Table 1: Effect of Female Reservation on Dowry

	Log(RealDowry)				DowryPaid			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: TWFE								
Reserved × Post-Election	0.627***	0.627***	0.630***	0.630***	0.00625	0.00625	0.00645	0.00645
	(0.0915)	(0.0915)	(0.0930)	(0.0930)	(0.00689)	(0.00689)	(0.00692)	(0.00692)
Panel B: Pooled ES								
Reserved × Post-Election	0.5897***	0.5897***	0.6121***	0.6121***	0.0022	0.0022	0.0025	0.0025
	(0.0756)	(0.0842)	(0.0887)	(0.0924)	(0.0058)	(0.0052)	(0.0049)	(0.0058)
Panel C: Stacked DiD								
Reserved × Post-Election	0.5130***	0.5130***	0.5227***	0.5227***	0.00697	0.00697	0.00753	0.00753
	(0.1432)	(0.1432)	(0.1413)	(0.1413)	(0.0136)	(0.0136)	(0.0138)	(0.0138)
Panel D: IW Estimator								
Reserved × Post-Election	0.5101***	0.5101***	0.5325***	0.5325***	.0022	0.0020	0.0030	0.0031
	(0.1195)	(0.1195)	(0.1183)	(0.1184)	(0.0108)	(0.0108)	(0.0109)	(0.0109)
Panel E: DID_M ***Estimator***								
Reserved × Post-Election	1.8122***	1.8122***	1.5358***	1.5358***	0.07947	0.07947	0.07052	0.07052
	(0.5371)	(0.5965)	(0.5240)	(0.5523)	(0.066)	(0.0735)	(0.0738)	(0.0707)
Birth Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	No	Yes	Yes	No	No	Yes	Yes
Observations	8,702	8,702	8,700	8,700	8,702	8,702	8,700	8,700

Notes: The table displays separate reduced form estimates for each cell, with variation in estimation procedures (rows) and included controls (columns). Columns (1)-(4) show the estimated impact of reserved Pradhan positions on the log of real dowry, while columns (5)-(8) show the effect on whether dowry is paid in marriages. TWFE model employs linear regression with village and birth year fixed effects. Pooled event study estimates the impacts by pooling all post-event study coefficients. Stacked DiD estimator estimates the aggregate effect by stacking each event-specific dataset, including all observations from a cohort of villages reserved in the same year and all units that are never reserved. IW estimator refers to pooled estimates based on Sun and Abraham (2021). DID_M estimator provides pooled estimates based on de Chaisemartin and D'Haultfœuille (2020). Standard errors are estimated by clustering at the village level, and the controls include household size, income, caste, and religion. Statistical significance is denoted as follows: * p<0.10, ** p<0.05, *** p<0.01.

Table 2: Mechanism: Effect of Female Reservation on Marriage Age and Female Labor Supply

	Marriage Age				Log(Female Labor)		Was a Student?	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: TWFE								
Reserved × Post-Election	2.233***	2.233***	2.231***	2.231***	0.0417***	0.0405***	0.0451**	0.0411*
	(0.233)	(0.233)	(0.234)	(0.234)	(0.0153)	(0.0151)	(0.0224)	(0.0223)
Panel B: Pooled Event Study								
Reserved × Post-Election	1.923***	1.923***	1.926***	1.926***	0.0416*	0.0410*	0.0022	0.0002
	(0.1642)	(0.1639)	(0.1589)	(0.1522)	(0.0233)	(0.0231)	(0.051)	(0.0503)
Panel C: Stacked DiD								
Reserved × Post-Election	0.980***	0.888***	0.969***	0.878***	0.0169*	0.0169*	0.0304	0.029
	(0.3296)	(0.3349)	(0.3309)	(0.3367)	(0.0095)	(0.0096)	(0.0194)	(0.0186)
Panel D: IW Estimator								
Reserved × Post-Election	0.9929***	0.9929***	0.9963***	0.9963***	0.0513***	0.0504***	0.0546**	0.0519**
	(0.3700)	(0.3702)	(0.3752)	(0.3754)	(0.0169)	(0.0166)	(0.0259)	(0.0254)
Panel E: DID_M ***Estimator***								
Reserved × Post-Election	3.675***	3.675***	3.613***	3.613***	0.0075*	0.0081*	0.02122**	0.02096**
	(1.3276)	(1.4040)	(1.1642)	(1.3530)	(0.0170)	(0.0168)	(0.0149)	(0.0144)
Birth Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election Year FE	No	Yes	No	Yes	No	No	No	No
Controls	No	No	Yes	Yes	No	Yes	No	Yes
Observations	8,702	8,702	8,700	8,700	13,752	13,752	13,752	13,752

Notes: Each cell presents results from a separate reduced form estimate varying estimation procedures (in rows) and included controls (in columns). Columns (1)-(4) report the estimates of the impact of reserved Pradhan positions on the age at which women get married. Columns (5)-(6) report the effect on the log of days worked by females inside the village in a year. Columns (7)-(8) reports the effect of reservation on the outcome variable which is equal to 1 if the woman is a student during a given year, else 0. Model specifications and the estimators in Panels (A)-(E) are as defined in Table (1).

Table 3: Effect of Female Reservation on Gender Norms

	Borrow: Parents	Borrow: Spouse	Household Decisions?	Bank Account?	Daughter-son Ratio	Birth Control?	Female Birth Control?	Security Pradhan
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Reserved_1$	-108.4	-100.9	-0.0157	0.00462	0.0257	0.0214	-0.0612	-0.0051
	(480.9)	(441.3)	(0.0247)	(0.0141)	(0.0318)	(0.0329)	(0.0411)	(0.0058)
$Reserved_2$	-1,770	-2,614***	0.0889**	-0.0188	-0.00832	-0.0145	0.120	-0.0037
	(1,430)	(533.3)	(0.0374)	(0.0175)	(0.0489)	(0.0927)	(0.113)	(0.0059)
$Reserved_3$	89.54	-251.3	-0.00459	0.000371	0.0205	-0.0521	-0.0467	0.0118
	(578.4)	(431.1)	(0.0245)	(0.0147)	(0.0361)	(0.0340)	(0.0374)	(0.0114)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,644	8,644	8,644	8,644	8,644	8,644	5,844	9,065

Notes: The results below show the outcomes of regressing each of the variables on Reserved, which takes a value of 1 if the village was reserved in the first election cycle, and 0 otherwise. Columns (1)-(2) show the amount of money (in Rupees) that a woman can borrow from her parents and her spouse, respectively. Column (3) indicates whether the woman has a say in household decisions, with a value of 1 if yes and 0 if no. Column (4) indicates whether the woman has a bank account, with a value of 1 if yes and 0 if no. Column (5) represents the ratio of the number of daughters to the number of sons born to the woman. Column (6) indicates whether the family uses birth control methods. Column (7) indicates whether the family uses specific birth control methods such as diaphragm, pills, lactation, douche, induced abortion, or female sterilization. Column (8) indicates whether the woman approached the Pradhan for safety. $Reserved_i$ is a dummy variable which is equal to the value 1 if the village is reserved in the i-th election cycle, else 0.

Table 4: Alternate Mechanisms

	Spouse Education				Relative Caste Rank			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: TWFE								
Reserved × Post-Election	0.332	0.332	0.331	0.331	-0.00367	-0.00367	-0.00426	-0.00426
	(0.289)	(0.289)	(0.290)	(0.290)	(0.00708)	(0.00708)	(0.00706)	(0.00706)
Panel B: Pooled ES								
Reserved × Post-Election	0.0223	0.0223	0.0028	0.0028	-0.0175*	-0.0175	-0.0141	-0.0141
	(0.2467)	(0.2468)	(0.2484)	(0.2594)	(0.0103)	(0.0115)	(0.0109)	(0.0127)
Panel C: Stacked DiD								
Reserved × Post-Election	0.0335	0.0335	0.0230	0.0230	-0.0001	-0.0001	0.0001	0.0001
	(0.5678)	(0.5678)	(0.5625)	(0.5625)	(0.0183)	(0.0183)	(0.0193)	(0.0193)
Panel D: IW Estimator								
Reserved × Post-Election	-0.2166	-0.2166	-0.2363	-0.2363	-0.0177	-0.0177	-0.0166	-0.0166
	(0.5854)	(0.5857)	(0.5735)	(0.5738)	(0.0298)	(0.0298)	(0.0314)	(0.0314)
Panel E: DID_M ***Estimator***								
Reserved × Post-Election	2.5204	2.5204	2.4430	2.4430	-0.0103	-0.0103	-0.0439	-0.0439
	(1.6182)	(1.6034)	(1.9940)	(1.7185)	(0.0331)	(0.0263)	(0.0382)	(0.0422)
Birth Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	No	Yes	Yes	No	No	Yes	Yes
Observations	8,702	8,702	8,700	8,700	8,327	8,327	8,326	8,326

Notes: Columns (1)-(4) analyze the impact of reservation on the education level of the woman's spouse as recorded in 2006. Columns (5)-(8) examine the relative caste ranking between the woman and her spouse. The caste ranking is represented as follows: -1 when a woman marries into a family from a relatively lower-ranked caste, 0 when she marries within her own caste, and 1 when she marries into a family from a relatively higher-ranked caste. The model specifications and estimators in Panels (A)-(E) are defined in Table (1).

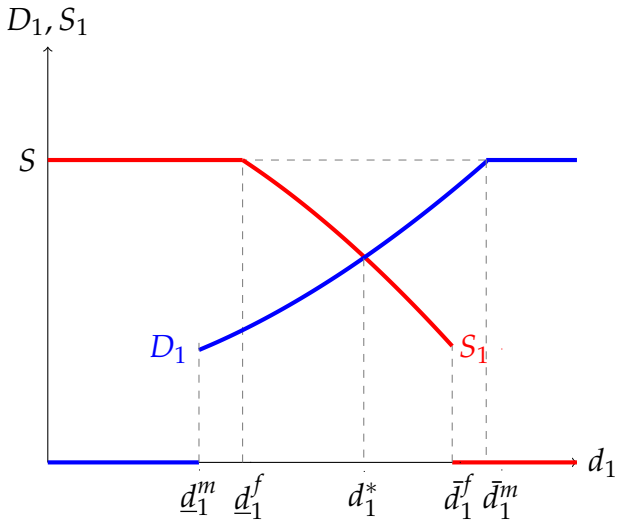
Table 5: Alternate Mechanisms

	Education				Inheritance				Δ Distance			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: TWFE												
Reserved × Post-Election	0.554*	0.554*	0.563*	0.563*	0.115	0.115	0.119	0.119	22.54	22.54	22.83	22.83
	(0.286)	(0.286)	(0.288)	(0.288)	(0.173)	(0.173)	(0.171)	(0.171)	(33.23)	(33.23)	(33.56)	(33.56)
Panel B: Pooled ES												
Reserved × Post-Election	0.5035***	0.5035***	0.5581***	0.5581***	0.0044	0.0044	0.025	0.025	-8.705	-8.705	-10.596	-10.596
	(0.1839)	(0.1824)	(0.2092)	(0.1965)	(0.1434)	(0.1318)	(0.1379)	(0.1302)	(26.1962)	(24.5202)	(24.9774)	(27.2219)
Panel C: Stacked DiD												
Reserved × Post-Election	0.7993*	0.7993*	0.8123*	0.8123*	0.3925*	0.3925*	0.3979*	0.3979*	-9.3257	-9.3257	-12.6674	-12.6674
	(0.4497)	(0.4497)	(0.4585)	(0.4586)	(0.2121)	(0.2121)	(0.2182)	(0.2182)	(18.0150)	(18.0163)	(16.7559)	(16.7571)
Panel D: IW Estimator												
Reserved × Post-Election	1.1602***	1.1602***	1.2129***	1.2129***	0.3009	0.3009	0.3219	0.3219	-26.4777	-26.4777	-26.1743	-26.1743
	(0.423)	(0.4234)	(0.4185)	(0.4189)	(0.2109)	(0.211)	(0.2036)	(0.2037)	(23.3783)	(23.39)	(20.2656)	(20.2757)
Panel E: DID_M ***Estimator***												
Reserved × Post-Election	1.2842	1.2842	1.1927	1.1927	0.8481	0.8481	0.6085	0.6085	276.3609	276.3609	263.8226	263.8226
	(1.0428)	(1.1104)	(1.1040)	(1.1433)	(0.8011)	(0.8355)	(0.7325)	(0.7426)	(184.5974)	(177.3612)	(193.0859)	(163.1429)
Birth Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election Year FE	No	Yes	No	Yes	No	No	No	No	No	No	No	No
Controls	No	No	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	4,316	4,316	4,315	4,315	8,702	8,702	8,700	8,700	8,070	8,070	8,068	8,068

Notes: Columns (1)-(4) reports the impact of reservation on the education level of women as recorded in the year 2006, Columns (5)-(8) the impact on the amount of land (measured in acres) inherited by the women and Columns (9)-(12) present the effects on the distance (measured in kilometers) between the marital home and the woman's natal home. The model specifications and estimators in Panels (A)-(E) are outlined in Table (1).

Figures

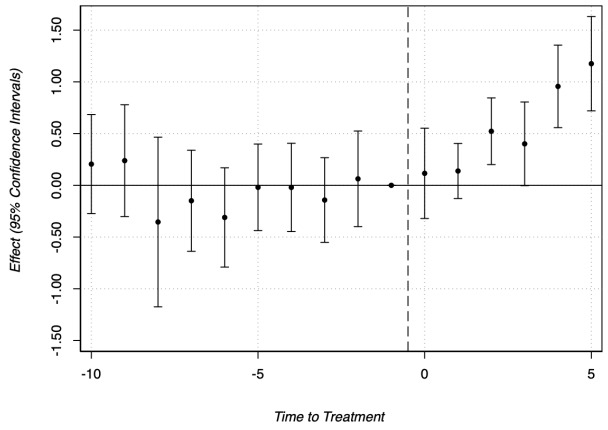
Figure 1: Equilibrium Characterization



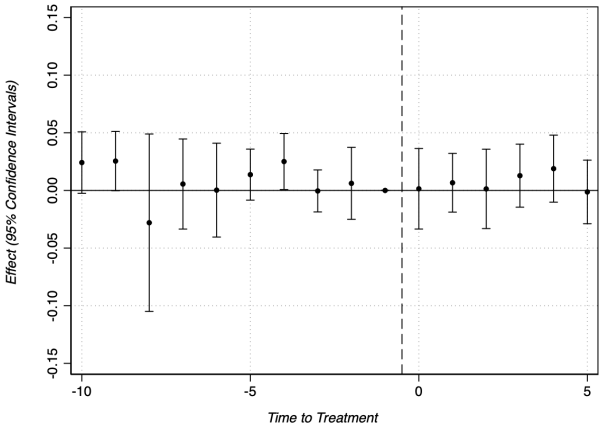
Notes: The figure shows the demand (D_1) and supply (S_1) of brides in the first period as a function of dowry (d_1), represented by equations (1) and (2), respectively. The conditions for the existence of an interior equilibrium, d_1^* is given in Theorem 1.

Figure 2: Effect of Reservation on Dowry

(a) Log(RealDowry)

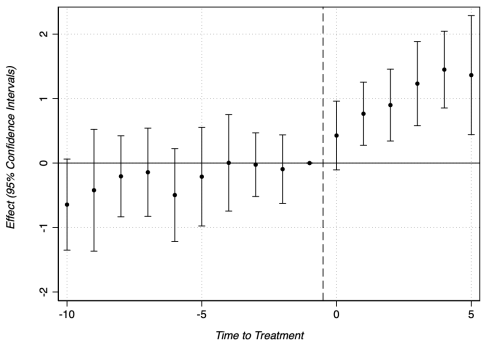


(b) Whether Paid Dowry

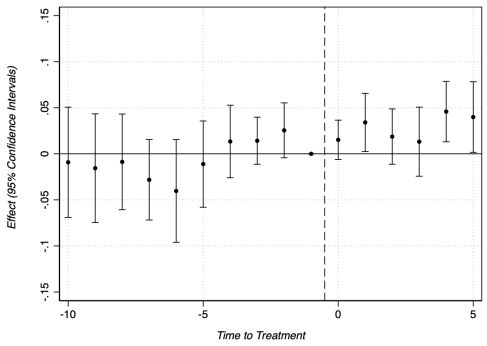


Notes: Point estimates of the lag and lead terms in the event study specification described in equation (6) are presented, along with their 95% confidence intervals. The outcome variable is the logarithmic transformation of the real value of dowry and whether dowry is paid (refer to Table (A1) for variable detail). Estimates are conditional on birth-year, election year and village fixed effects. Controls include household income, religion, caste and the size of the household. Standard errors are clustered by village. The omitted base category is taken as 1 year prior to the reservation denoted by the dotted vertical line.

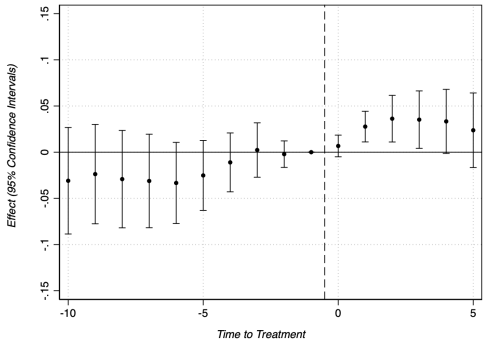
Figure 3: Mechanisms



(a) Age of Marriage



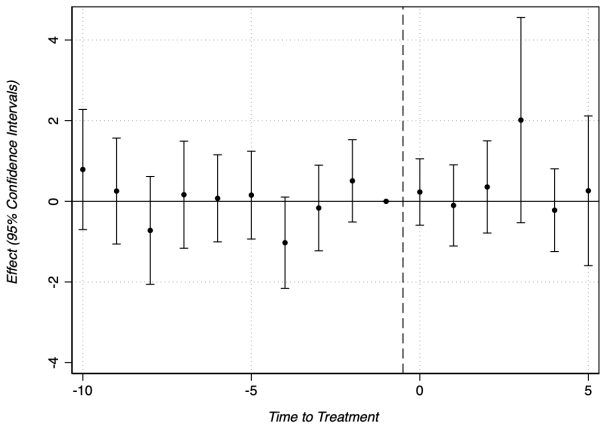
(b) Log(Days Worked)



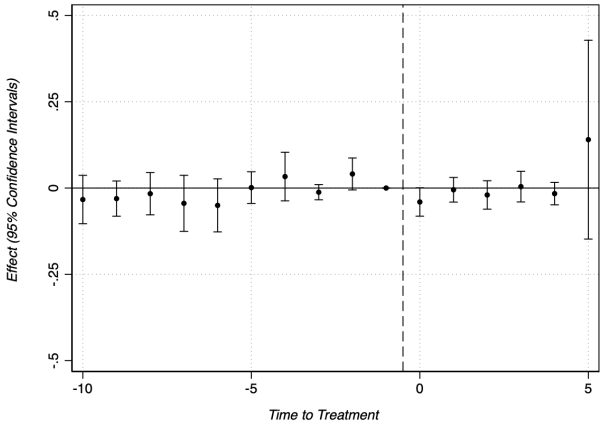
(c) Was a Student?

Notes: Point estimates of the lag and lead terms in the event study specification described in equation (6) are presented. The outcome variables are the age of marriage of women in (a), the logarithm of the number of days worked in a year in (b) and whether the woman was a student in a given year in (c). Specifications are the same as in Figure (2).

Figure 4: Alternative Mechanism



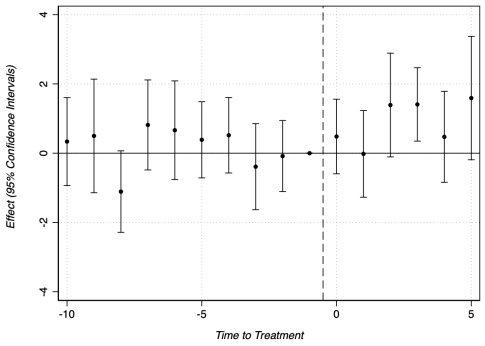
(a) Spouse Education



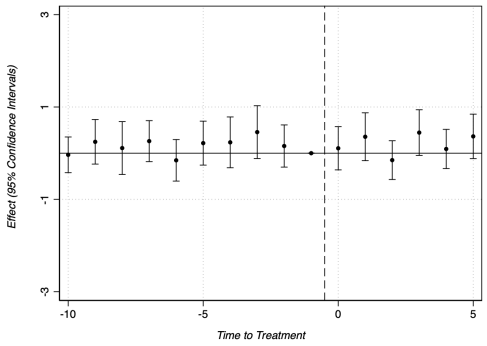
(b) Relative Caste Ranking

Notes: Point estimates of the lag and lead terms in the event study specification described in equation (6), along with their 95% confidence intervals. The outcome variables are years of education of the spouse and the relative caste ranking. Estimates are conditional on birth-year, election year and village fixed effects. Controls include household income, religion, caste and the size of the household. Standard errors are clustered by village. The omitted base category is taken as 1 year prior to the reservation denoted by the dotted vertical line.

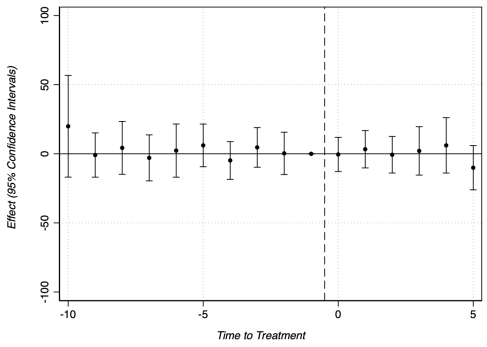
Figure 5: Alternative Mechanisms



(a) Education



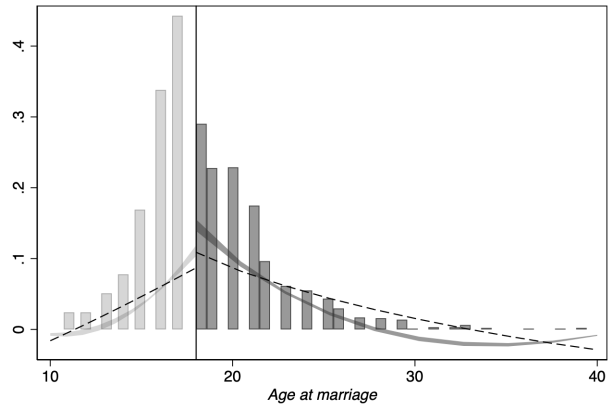
(b) Land Inheritance



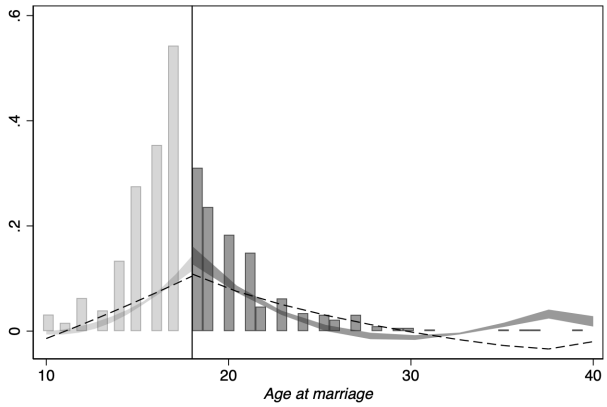
(c) Marital Migration

Notes: Point estimates of the lag and lead terms in the event study specification described in equation (6), along with their 95% confidence intervals. The outcome variables are years of education of the woman, acres of land inherited, and the distance between her marital and natal village in kilometers. Estimates are conditional on birth-year, election year and village fixed effects. Controls include household income, religion, caste and the size of the household. Standard errors are clustered by village. The omitted base category is taken as 1 year prior to the reservation denoted by the dotted vertical line.

Figure 6: Implementation of Minimum Age of Marriage



(a) Unreserved Villages



(b) Reserved Villages

Notes: Figures show results for the rddensity discontinuity test with cut-off at the legal age of marriage for women at 18 years.

7 Appendix

Online Appendix can be found on this link: Appendix.pdf.