# Show Me the Dowry: How Traditional Customs Affect Education in Rural India<sup>\*</sup>

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#### Abstract

This study examines the impact of a law that increased penalties for dowry on educational attainment in rural India, using data from the Rural Economic and Demographic Survey. A difference-in-differences approach reveals that the law effectively reduced dowry payments, but also female education, with the decline in female education being most pronounced in communities with higher dowry prevalence. Since dowry payments signal adherence to traditional values, after anti-dowry laws, families must come up with an alternative signal. Consequently, lowering female education becomes the alternative signal showing adherence to tradition. Hence, while the anti-dowry law combats an exploitative system, it inadvertently reduces female education.

Keywords: Dowry; Marriage payments; Education; India

JEL Classifications: J16, I21, I28, N35

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## 1 Introduction

Efforts to change harmful customs through policies can lead to unintended negative consequences. For instance, more gender-equal inheritance laws in India increased suicide rates for both men and women by engendering more conflict over household resources (Anderson and Genicot, 2015). Ali et al. (2014) demonstrated that in Rwanda, legal reforms to improve women's land access positively affected plans to bequeath land to girls in male-headed households, but had a negative impact for female-headed households due to concerns about jeopardizing old age support. In this paper, I study changes in educational attainment of women as a response to a law aimed at addressing the harmful custom of dowry in India.

Contemporary dowry transfers are substantial, typically exceeding household annual income, and remain widely prevalent in India (Chiplunkar and Weaver, 2023).<sup>1</sup> Additionally, dowry has an impact on a number of different household related outcomes. Economic theories on dowry discuss the mediating effects on outcomes such as female inheritance, marriage market matching, and household social status (Anderson, 2003; Botticini and Siow, 2003; Rao, 1993; Roulet, 1996). Despite its prevalence, there is substantial evidence of the negative consequences of dowry, particularly its severe impact on gender disparity. Prior work establishes a link between the custom of dowry and sex-selective abortion favoring strong son preference, and gender-based violence including bride-burning and dowry related deaths (Alfano, 2017; Bhalotra et al., 2020). Given the widespread prevalence of dowry and the extensive scope of associated outcomes, legal changes that curb this practice can modify household behavior in complex ways.

It may seem that in the absence of dowry, parents would invest household surplus into educating daughters to increase their economic value. However the desire to adhere to traditional views may impede this investment. There are two substantial channels through which this may operate. First, the additional education does not increase their earning value as in rural regions, there are restrictions on labor force participation of women due to traditional views (Agte and Bernhardt, 2022). Second, higher female education increases

<sup>&</sup>lt;sup>1</sup>Dowry a transfer of wealth from the bride's family to the groom's family at the time of marriage. This custom dates back to 200 C.E and practicing the social custom of dowry increases the value of women at the time of marriage (Anderson, 2007).

women's bargaining power in marital homes. Educated women can claim a larger share of household surplus, which may lead to conflict, especially in the absence of dowry and limited contribution to the household surplus through employment. In such contexts, households may opt not to educate girls as an alternative signal of adherence to traditional views and consequently avoid conflict in marital homes. This raises key questions: Do households redirect the reduced dowry towards girls' education, or do they keep girls uneducated to prevent clashes with traditional views? In practice, how do rural Indian households adjust girls' education when faced with legal restrictions on dowry payments? This paper examines the impact of stricter enforcement of anti-dowry laws on dowry practices and educational attainment in rural India.

In 1985 the Indian government amended the Dowry Prohibition Act, 1961 (hereafter the Act) to enhance enforcement through increased punitive measures, fines, and additional manpower. The amendment, however, did not apply to Muslims, creating a natural experiment. The research design employs a difference-in-differences approach, combining age-based and religion-based variations in exposure. Using data from the Rural Economic and Demographic Survey, I analyze changes in dowry practices and educational attainment between Muslim and non-Muslim households and across age cohorts exposed versus not exposed to the amendment. I also examine if the relationship between dowry and education varies by length of exposure to the amendment. Extended exposure to the amendment may either diminish the importance of signaling traditional views or increase progressive attitudes toward women's labor force participation. In either case, longer exposure could influence the effect of dowry restrictions on education, leading parents to invest more in their daughters' education.

This paper presents three key findings. First, the amendment significantly impacted dowry customs, reducing average dowry payments by 52% since their introduction. This finding is significant given the challenges previously noted in enforcing laws that conflict with social practices (Barfield, 2010; Parsons, 2010). The amendment aimed to strengthen enforcement of an initially ineffective Act. By analyzing changes in dowry practices, the study provides insights into how effective enforcement can influence social norms (Collin and Talbot, 2023). Second, efforts to reduce dowry payments have led to unintended gendered

consequences. The amendment did not affect boys' educational attainment but caused a 36% reduction in educational attainment for non-Muslim girls, as compared to Muslim girls. This decline in education correlates with reductions in dowry payments. In regions where dowry amounts decreased more sharply, non-Muslim girls experienced greater declines in education. Non-Muslim families, despite having more resources, tend to invest less in daughters' education compared to Muslim families. This gap is particularly pronounced in households that are more invested in dowry and practice gender segregation during meals. The analysis rules out the possibility that the decline in education is due to a shift of wealth transfer from dowry to more expensive bequests. Robustness checks confirm the decline in education is consistent across different definitions of exposure and controls for other legal changes that might affect education trends. Third, the impact on girls' education diminished over time. In regions with longer exposure to anti-dowry regulations due to prior state-level amendments, non-Muslim girls received more education compared to Muslim girls. The negative effect on education for non-Muslim girls was observed primarily in areas with shorter exposure. This suggests that the duration of enforcement affects educational outcomes, with longer exposure leading to better results for non-Muslim girls.

My study contributes to three key areas in the literature. First, it provides empirical evidence on the unintended consequences of laws interacting with social customs, an area often explored through theoretical work. The amendment's exemption of Muslims and the widespread practice of dowry create a unique setting to examine causal effects. While existing literature is largely theoretical (Chen and Yeh, 2014; Deffains and Fluet, 2020), or focuses on experimental designs in contexts like tax evasion and substance abuse (Besley et al., 2014; Musick et al., 2008), this paper shifts the focus to educational attainment. It highlights how legal changes targeting social customs can lead to unintended adverse outcomes with long-term effects on well-being.

Second, my paper builds on previous research about unintended consequences of laws aimed at improving women's status (Anderson and Genicot, 2015; Bhalotra et al., 2020; Calvi and Keskar, 2023). It documents a decline in female education, showing how prowomen laws can inadvertently worsen women's conditions in areas not addressed by the legislation. When underlying traditional views on labor force participation or the role of women in the household remain unchanged, laws intended to improve women's status are ineffective or may result in adverse consequences. Additionally, the paper contributes to the literature on gender gaps in education by exploring how marriage market policies can create educational disparities (Hausmann et al., 2012; Vogl, 2013). It reveals how in the presence of restrictions on marriage market matching households may respond by altering educational attainment for females as a signal of traditional views.

Third, my study contributes to the growing literature on the economic impacts of culture by examining the effects of a social custom on human capital. Other studies that contribute to the literature on economic impacts of culture examine the effect of religious practices on outcomes such as agricultural productivity, sentencing, and lending (Campante and Yanagizawa-Drott, 2015; Mehmood et al., 2022; Montero and Yang, 2022). Studies examining ceremonial expenses, such as *quinceañera* celebrations in Mexico find impacts on maternal labor supply as a means of funding extravagant expenses (Suzuki, 2021). My paper looks at educational attainment, a factor that has long run implications on an individual's life path. Related to the outcome and the kind of social custom I examine, Ashraf et al. (2020) explores the role of bride price, a custom common across parts of Africa, on educational outcomes. My study is distinct in that it focuses on the impact of dowry, which involves a transfer of wealth from the bride's family to the groom's and often relates to gender disparities in India.

It is important to acknowledge that Calvi and Keskar (2023) examine the impact of the same dowry amendment on domestic violence. However, their findings additionally point towards improved educational outcomes for women exposed to the amendment. In contrast, my research identifies a decline in educational attainment among girls exposed to the dowry amendment in rural India. This discrepancy can be attributed to differences in sample characteristics and context. While Calvi and Keskar (2023) focus on cohorts of married women (born 1956-1990) across urban and rural settings, my analysis examines cohorts with birth years closer to the amendment and only within rural areas, where traditional views and limited labor force participation of women may undermine the effectiveness of compensatory education. To reconcile these differences, I applied Calvi and Keskar (2023) estimation strategy to my data and still observed a negative impact on educational attainment.

## 2 Background

In India, dowry is a key institution for signaling social status and prestige across castes. Anthropologists highlight its role in defining social standing, with dowry negotiations being a central part of marriage discussions (Roulet, 1996). Dowry items, including cash, jewelry, and household goods, are publicly displayed, reinforcing its function as a visible symbol of a family's status (Nishimura, 1994). However, existing economic models often overlook dowry's role in signaling adherence to traditional values. These models typically focus on bequest motives, market-clearing prices for grooms, and upward social mobility, missing the significance of dowry in maintaining social prestige through adherence to customs.<sup>2</sup> In contexts where social capital is built through adherence to traditional views, these models fail to fully capture dowry's role in reflecting and reinforcing traditional values and social standing.<sup>3</sup>

Responding to the extractive nature of dowry practices, the Government of India enacted the Dowry Prohibition Act of 1961 as the primary legal means of regulating and controlling dowry. Under this act, any dowry exchange was prohibited. An important feature of this act was that Muslims were exempt from the purview of this law and subsequent amendments. All Muslims in India are governed by the Muslim Personal Law (Shariat) Application Act, 1937. This law deals with marriage, succession, inheritance and charities among Muslims. The Muslim personal Law is Shariat law based on the teachings of the Koran, which prescribe retributive penalties for lawbreaking. This feature of the Indian legal system allows for the use of Muslims as a control group in the analysis.

Anecdotal evidence suggests that the legal provisions under the Act were insufficient and poorly executed. Recognising what was widely perceived as a "failed" law, the Government of India amended the law in 1985, and introduced stricter penal provisions and expanded enforced capacity. The amendments included a more inclusive definition of dowry.<sup>4</sup>

<sup>&</sup>lt;sup>2</sup>(Anderson, 2003; Becker, 1973; Bhaskar, 2019; Botticini and Siow, 2003)

<sup>&</sup>lt;sup>3</sup>Social capital refers to the social norms, values, and networks that facilitate coordinated actions and enhance societal efficiency (Putnam, 1993, p. 167). Households value social skills that aid in non-formal contracts and navigating imperfect information, such as trust (Zak and Knack (2001)) and participation in associations.

<sup>&</sup>lt;sup>4</sup>The definition of dowry was expanded to include "any property of valuable security given or agreed to be given either directly or indirectly, by i) one party to a marriage to another party to a marriage, ii) by

The amendment increased the scope of punitive actions and fines for dowry exchange. Notably the sentence for imprisonment was more than doubled from a minimum of six months and maximum of two years to five years imprisonment. Additionally, fines were increased from a maximum of Rs 10,000 (5,500 current dollar value) to a minimum of Rs 15,000 (8,3000 current dollar value) or the value of the dowry, whichever is more. The amendment also made the offence non-bailable moving dowry offences to the same category as murder under the Indian Penal Code. The act also instituted punishments for dowry deaths wherein if a married woman died within seven years of marriage under mysterious circumstances and it is shown that she was subjected to cruelty by her husband or his relative the husband or the relative may be punished with a jail term comprising a minimum of seven years to up to lifetime incarceration. The amendment also outlined fines and banned the advertisement of any offers of money, property, share in business as consideration for marriage of any relative.<sup>5</sup> To improve enforcement of the law, the amendment authorized state governments to appoint manpower in the form of Dowry Prohibition Officers with a responsibility to prevent dowry payments and collect evidence for prosecution of offenders. The state governments were authorized to confer the same powers as police officers to Dowry Prohibition Officers. These officers received complaints from individuals, relatives, or recognized institutions and registered them in a designated register. They scrutinized the complaints to determine if they fall under relevant sections of the Act and conducted inquiries to gather evidence. After evaluating the evidence and conducting hearings, they issue directions or make findings, aiming to resolve the issue within three months, with a possible one-month extension. If the officer finds that an offense has been committed, the officer transfers the case, along with all relevant documents, to the police for prosecution. The law also facilitated the reporting of dowry offenses by exempting those aggreeved by the offense from prosecution, ensuring that a statement made by the person aggrieved shall not subject them to prosecution. Additionally, the amendment shifted the burden of proof, stipulating that if a person is prosecuted under the Act, the responsibility to prove that they did not commit an offense under these sections rests with them.

parents of either party to a marriage or by any other person to either party to the marriage or any other person" (GOI 1986).

<sup>&</sup>lt;sup>5</sup>Further details are presented in Appendix section C.2.

Alfano (2017) documented a phenomenal jump in reported dowry cases from 400 cases per year to 2,000 cases per year across the pre- and post-periods. Apart from increases in dowry reporting, dowry cases under litigation also saw a marked increase during the 1980s (Menksi 1998). Furthermore, the average number of dowry cases under trial at the Supreme Court in India doubled from 2 to 4 cases annually after the amendment (Alfano, 2017). These insights suggest that the amendment had high expressive value.<sup>6</sup>

## 3 Conceptual Framework

This section presents a discussion on the impact of the amendment on three variables of interest - practice of dowry exchange, educational attainment and age at marriage.

**Practice of Dowry Exchange:** The amendment increased enforcement of a preexisting law that outlawed dowry exchange (Menski, 1998). I would expect that there should be a reduction in the incidence of any dowry payment as well as the amount of dowry paid post amendment. If enforcement of the law was absolute and the penalties on being caught were sufficient to dissuade any dowry exchange, the practice would have resulted in a reduction in the incidence of dowry exchange to near-zero levels.

However, dowry is a deeply rooted traditional custom in India. As is the case with sticky norms, one would expect a gradual decline in the practice of dowry exchange following the amendment. Such a scenario would be consistent with a fall in dowry amounts being exchanged but with the incidence of any dowry exchange still being prevalent. Thus, while the amendment may not have wiped out *any* dowry exchange it would have had an impact at curbing exorbitant dowry payments due to the greater visibility of such exchanges combined with measures of legal redress available to the bride's family after the amendment.

Educational Attainment: Dowry payments are an expense for the bride's family. Reducing average dowry amounts increases the disposable income of households with daughters, potentially allowing families to invest these savings into their children's education. This could lead to higher educational attainment for both boys and girls following the amendment. Moreover, due to the historically gender-biased distribution of resources in Indian

 $<sup>^{6}\</sup>mathrm{Expressive}$  value is derived from the very act of passing a particular law that serves as a signal regarding a social custom.

families, a larger share of this investment may be directed towards boys (Jayachandran and Pande, 2017). However, there is potential for extracting a higher dowry for a more educated groom, dowry is a one-time payment and a small portion of the lifetime returns to education for men. Thus, the amendment is unlikely to impact the educational attainment for boys.

For girls, dowry and education are interlinked through both the labor and marriage markets. Recent literature on schooling and marriage choices in India finds that parents perceive a high marriage market return for pre-marital investment in girls' education (Andrew and Adams, 2022). In theory, a more educated bride is able to attract higher quality grooms through assortative matching. However, a more educated bride can also assert stronger claims to the household surplus generated in her marital home thereby engendering greater conflict within households. When the girls' share of unearned income in the form of dowry is lowered by the amendment, it remains unclear if families in rural India would still value a more educated bride in marriage markets. On one hand, increasing female education has positive returns on the marriage market. On the other hand, it can lead to conflict within households due to heightened claims. This tension is more likely to be aggravated in rural households that hold traditional views favoring an unequal gender distribution of resources and where educated girls are perceived as more rebellious and less likely to be controlled (Karim et al., 2022).

Additionally within the Indian context engaging in dowry custom serves as a signal of adherence to traditional views. In India where arranged marriages make bride characteristics less observable to grooms (Vogl, 2013), dowry payments serve as a strong signal of bridal adherence to traditional views. The amendment increases the cost of engaging in dowry payments, making dowry payments a less preferred way to signal adherence to traditional values. In this context, where the bride's contribution to the marital household surplus is reduced—due to lower dowry from the amendment and lower earned income due to traditional views on labor force participation—but her claims on the surplus are higher with more education, families might prefer to under-educate girls. Lower education levels can signal adherence to traditional views and help reduce marital conflicts. Consequently, the absence of dowry creates a tension between securing higher-quality grooms and managing increased household conflict from the bride's higher educational status. Thus, the amendment encourages families to align with traditional views by limiting female education.

I examine the relationship between educational attainment and dowry for males and females in my sample using the raw data shown in Figure 1. The analysis reveals a positive correlation between educational attainment and dowry for both genders. Higher educated men receive more dowry, while families pay higher dowries to marry off more educated females. However, the relationship between dowry and educational attainment is stronger for women, with a noticeably steeper slope. This result is consistent with prior studies in the South Asian context, which find that more educated brides have higher dowry payments, and female education serves as a negative signal in the presence of gendered attitudes (Buchmann et al., 2023).



Figure 1: Correlation between Education and Dowry

The figure combines a scatter plot and a linear regression of years of education on dowry payments. The sample comprises the entire married population and contains 11,054 observations over the time period 1960-1999. Outliers are capped at the 99th percentile level. Dowry amounts are in 2015 prices. For males, the correlation coefficient is 0.214, and for females, it is 0.341. Source: REDS 1999.

Age at Marriage: Economic literature finds evidence to support a marriage market premium on youth (Buchmann et al., 2021; Low, 2024). If households are able to use a higher dowry to compensate for a higher age at marriage, women can choose to marry late and

increase schooling. In the absence of large dowry payments, as is the case post-amendment, households may respond to the amendment by rushing girls into the marriage market to compensate for the lack of dowry. Alternatively if dowry negotiations play a prominent role in matchmaking, a higher search time on account of the lack of dowry would increase the age at marriage. Thus, the impact on age at marriage remains ambiguous.

## 4 Data

The analysis uses data from the 1999 ARIS-REDS survey conducted by the National Council of Applied Economic Research in Delhi, India. This survey covers 17 major states and offers detailed information on rural households. The REDS data provide a nationally representative sample and include comprehensive details on each household member, as reported by the household head.

The REDS dataset is notable for recording dowry payments, with nearly 79% of the sample reporting such payments (Table 1), underscoring the practice's widespread prevalence. Summary statistics reveal that average dowry payments are substantial, often exceeding annual household income. The dataset also includes detailed individual-level information on education and demographics, enabling a thorough analysis of the relationship between dowry payments and educational attainment for both individuals and their spouses. This facilitates a precise examination of the first-stage impact of the amendment.

Concerns about the accuracy of dowry payment data may arise due to its recall nature and the practice's illegality post-1960. However, given that dowries are significant expenses, households are likely to remember these transactions accurately (Chiplunkar and Weaver, 2023). Furthermore, the law restricts complaints to victims, their relatives, or recognized welfare institutions, which helps mitigate reporting bias. This paper addresses these concerns and empirically examines reporting bias in Appendix section D.1. The analysis indicates no significant variation in reporting before and after the amendment across treatment (non-Muslim) and control (Muslim) groups.

The empirical investigation focuses on the sons and daughters of the household head to eliminate inter-generational confounding. The sample includes all birth cohorts up to 1994, comprising 21,095 observations: 9,797 daughters and 11,298 sons. Sibling relationships are identified through detailed birth rosters, which provide information on birth order, marriage year, and gender. Data on household landholding, occupation, and social customs are obtained from the household roster. Table 1 presents descriptive statistics. The sample includes approximately 7.5% individuals practicing Islam, an important factor in the empirical analysis. On average, each household has 2.08 boys and 1.68 girls, reflecting the strong son preference in rural India from 1950 to 2000.

	(1)	(2)	(3)	(4)
Variable	Mean	SD	Pre	Post
Number of households	7,002			
Family size	6.76	3.66		
Number of boys	2.08	1.32		
Number of girls	1.68	1.42		
Muslim	7.5%			
Years of education of household head	5.12	4.70		
Income (2015 Rs)	$101,\!357$	$151,\!932$		
Number of marriages	11,063		3,772	6,803
Marriages with dowry	$8,\!678$		2,913	5,382
Dowry amount (Rs)	136, 127	$287,\!133$	$1,\!54,\!894$	$79,\!673$
Observations	21,095			

Table 1: Descriptive statistics for REDS 99 dataset

Notes: Columns (3) and (4) report statistics on marriage and dowry practice across pre- and post-periods only for married sons and daughters in the sample.

## 5 Empirical Strategy

This paper aims to causally identify the impact of the amendment along two fronts- changes in dowry payments as a measure of social customs and changes in educational attainment as a measure of human capital formation. A cross-sectional comparison of children by birth parity across households is unable to credibly identify impacts due to presence of unobservables impacting both exposure to dowry payments and educational attainment. Comparison of children within households across time is also insufficient, as educational attainment presumably increases mechanically as a function of time. To address these identification concerns, the empirical strategy exploits both within, as well as across birth cohort variation, in exposure to the amendment. The following sections discuss details on treatment assignment, estimation equations, and challenges to identification.

#### 5.1 Treatment Assignment

Individuals vary in their exposure to the amendment based on household religion and if they were already likely to be married when the amendment was enacted. Treatment assignment within birth year cohorts is based on household religion. Individuals belonging to non-Muslim households are considered treated. Across cohort exposure is determined by using a reference age at marriage interval and the birth year of individual.

Birth year cohorts older than the upper limit of the reference age at marriage interval at the time of amendment are considered pre-cohorts. Post-cohorts consist of birth year cohorts that are younger than the reference age at marriage interval at the time of amendment. The use of birth year in defining cohort exposure is deliberate and done to avoid endogeneity concerns associated with year of marriage.<sup>7</sup> The birth cohorts between 1963-1969 are partially treated and dropped to obtain clean estimates. Figure 2 details this process for women.



Figure 2: Cohort Assignment for women with reference age at marriage interval [15,21]. If year of birth is less than the upper limit on the age of marriage interval in 1985, then the individual is assigned to the pre-cohort. If the year of birth is greater than the lower limit on the marriage interval in 1985, then the individual is considered as treated.

The reference age at marriage interval is determined using the sample data. Figure 3 plots distributions of age at marriage by gender. On average, women marry earlier with lower variance in the distribution, whereas men typically marry later and experience greater variability in the age at marriage. The reference age at marriage incorporates these key differences and is defined as the median age plus or minus 1 standard deviation (SD). As per the definition, the interval of marriage for men is between 16-26 years, and for women, it is 15-21 years. Since these intervals also include the legal age of marriage, as a robustness check the legal age of marriage is also used to define across cohort exposure.

<sup>&</sup>lt;sup>7</sup>Prior literature has used age of menarche as an instrument for marriageable age for girls (Field and Ambrus, 2008); however, the REDS survey does not collect information on the age of menarche Moreover, age of menarche is not a valid instrument for boys.



Figure 3: Reference Age at Marriage Distribution

The figure plots the probability density for age at marriage using an Epanechnikov kernel function with optimal bandwidths. The sample comprises the entire married population and contains 11,054 observations over the time period 1960-1999. Source: REDS 1999.

### 5.2 Empirical Equation

The exposure of an individual is jointly determined by their religion as well as the age at the time of the amendment. Based on this definition, the exposure provides the necessary spatial and temporal variations required to identify the causal impact of the policy.

**Exposure using Year of Marriage:** The impact of the amendment on dowry payments are examined using the equation

$$y_{icst} = c_1 + \beta_{1t} + \beta_2 Post_t * Non - Muslim_i + \beta_3 Non - Muslim_i + X_i \gamma + \alpha_s + \delta_{st} + \varepsilon_{icst}$$
(1)

The analysis sample is restricted to married girls. First, I test the impact of the amendment on if any dowry is paid and second on the dowry amount paid. To study the extensive margin,  $y_{icst}$  is an indicator equal to 1 if any dowry was paid in the marriage of individual i, born in cohort c in state s, and married in year t. To study the intensive margin,  $y_{icst}$  captures the monetary amount of dowry<sup>8</sup> conditional on any dowry being paid, for individual i, born in cohort c in state s, and married in year t.  $Post_t$  is an indicator equal to 1 if the marriage occurred in the post-amendment period and  $Non - Muslim_i$  identifies the religion of the individual.  $\beta_{1t}$  are year of marriage fixed effects to absorb year-specific shocks.

The coefficient of interest is  $\beta_2$ , which captures the impact of the amendment on difference in dowry payments for non-Muslim girls in the pre versus post-period, as compared to differences in dowry payment for Muslim girls.  $X'_i$  are individual family-level controls that include total number of household members, reported household income, caste of individual, and birth order.  $\alpha_s$  and  $\delta_{st}$  are state fixed effects and state time trends to control for timeinvariant state and unobservable state specific trends respectively. Results are reported in columns 1 (intensive) and 2 (extensive) of Table 2.

**Exposure using Marriage Interval:** To estimate the impact of change in dowry practices on educational attainment, the following difference-in-differences framework is employed

$$y_{ics} = c_1 + \beta_{1c} + \beta_2 Post_{ic} * Non - Muslim_i + \beta_3 Non - Muslim_i + X_i \gamma + \alpha_s + \alpha_g + \delta_{st} + \varepsilon_{ics}$$
(2)

 $y_{ics}$  is the years of education for individual *i*, born in cohort *c*, and in state *s*. Equation 2 refers to the main estimation equation, in which  $\beta_{1c}$  are cohort of birth fixed effect equivalent to a year fixed effect and controls for year-specific unobservables. *Post*<sub>ic</sub> is an indicator variable equal to 1 when individual *i* in birth cohort *c* belonged to the post cohort based on the reference age at marriage definition. *Non* – *Muslim<sub>i</sub>* is an indicator variable equal to 1 if individual followed any religion except Islam. Finally,  $X_i$  is a vector of household co-variate, including reported household income, total household members and caste group fixed effects, as well as birth order fixed effects. Caste group fixed effects are included to account for differences in household characteristics by caste group that may contribute to differences in educational attainment. Similarly, household income is included to control for differences in educational attainment due to household income.  $\alpha_s$  and  $\delta_{st}$  includes state-

<sup>&</sup>lt;sup>8</sup>Dowry amounts are recorded in rupees and deflated to ease comparison across years.

fixed effects and state time trends to absorb time-invariant and state specific unobservable trends across states.  $\alpha_g$  are gender fixed effects that are used in the pooled regression.

The coefficient  $\beta_2$  is the main coefficient of interest and provides the impact of the policy on the treated (non-Muslim) religious groups. The preferred specification uses birth order fixed effects to interpret coefficients as the effect of changes in dowry practices on the educational attainment of the average child in the cohort.

#### 5.3 Identification

In this section I present four pieces of evidence to support my identification strategy that relies on the appropriateness of using non-Muslim and Muslim groups as treatment and control. I also discuss benefits of my empirical strategy over an alternate estimation strategy that uses across gender and within religion variation to compare educational attainment across boys and girls within Muslim and non-Muslim households.

First, the definition of Muslim and non-Muslim groups should be stable through the time period of analysis. Within India, religious conversions are rare and intermarriages comprise only 1% of the sample. Thus, identification of family religion is equivalent to individual-level exposure to the amendment.

Second, Muslim dowry practices should not have been directly affected by the amendment. For matters of marriage, divorce, adoption, succession, and inheritance the Indian legal system applies religious personal laws for designated minorities such as Muslims. Personal law in contemporary India follows from colonial efforts to govern Indians according to indigenous norms going as far back as 1772 (Lemons, 2018). Under this framework Muslims are governed by Shariat laws and it is hard to imagine a scenario wherein authorities or Indian Muslims felt they are under the ambit of the Act. Figure 4 provides supporting evidence that the amendment impacted non-Muslim dowries only. Payments declined for non-Muslim households, with no discernible trend for Muslim households.

Third, educational attainment across treatment and control groups should trend in a similar manner prior to the amendment. India's constitutionally mandated secular directive does not allow for any religion-based targeting of educational policy. Thus, the institutional context rules out religion based differential educational policy. To empirically test for the



Figure 4: Trend in Dowry Amounts by Religion Pre and Post Amendment

parallel trend assumption the sample is restricted to pre-cohorts and equation 2 is estimated. Using years of education as the outcome the estimation compares outcomes across Muslim and non-Muslim individuals by birth cohort across the pre-period. The coefficient of interest gives the difference in educational attainment across Muslim and non-Muslim individuals within a birth cohort. Figure 5 graphs the coefficient on the interaction along with standard errors.

Figure 5 does not suggest the presence of a pre-trend across treatment and control groups for the sample of males (panel (a)) and females (panel (b)). Across year of birth, the deviation in years of education of non-Muslim women (men) born in the considered year as compared to Muslim women (men) born in 1948 (1943) is not statistically different. Additionally, the gap in education across Muslim and non-Muslim individuals was not consistently increasing or decreasing across the pre-period.

An alternate test for parallel trends also restricts the sample to pre-treated cohorts and defines placebo post exposures. Seven different placebo year of amendment are defined (as if the amendment came into action in the placebo years 1969-1975). Birth cohorts are classified

The figure plots estimates from a kernel-weighted local polynomial regression of dowry paid amounts on year of marriage. Bandwith is 2. Dowry amounts are in 2015 prices. Source: REDS 1999.



Figure 5: Parallel Trends

The figures plots the regression coefficient on the interaction between individual birth cohort with religion using specification 2 for all pre-exposure male cohorts in panel (a) and female cohorts in panel (b). 95% confidence intervals are reported. The sample comprises all pre-exposure males and females comprising 999 observations and 1,496 observations respectively. Source: REDS 1999.

as being exposed to the placebo year of amendment based on the age at marriage interval. Equation 2 is used to estimate the difference in educational attainment across Muslim and non-Muslim individuals within pre-treated birth cohorts relative to the placebo post variable on the sample of all male and female, using different definitions of the placebo post variable. The interaction coefficient and standard errors are plotted in Figure 6. Estimates presented in Figure 6 find no significant differences in educational attainment for pre-treatment cohorts across a range of placebo post definitions.

I now discuss an alternate estimation strategy that compares educational attainment within religion and across child gender. First, such an estimation assumes away any educational attainment trends across gender. This is problematic in the Indian context given the wide body of literature that documents differences in human capital formation by gender (Jayachandran and Pande, 2017). Second, such an estimation strategy is unable to inform the research question on the impact of the amendment on girl's education. The idea that the amendment impacts dowry payments for non-Muslim girls as compared to Muslim girls is critical for identification. However, the results from this estimation do provide clues on the presence of differential trends in education across Muslim and non-Muslim girls. If female education in non-Muslim households versus Muslim households was trending in opposite directions in the post period, then my empirical strategy is likely to pick up this divergence rather than an impact on educational attainment. However, if both non-Muslim and Muslim girls education moved in the same direction then the alternate empirical strategy provides evidence in support of the estimation strategy preferred by my paper. Appendix A report estimation results from the alternate strategy along with a discussion in support of educational attainment for Muslim and non-Muslim girls trending in the same direction.

Additionally, to account for potential confounding from state-specific trends, all specifications include state time trends. This adjustment addresses the concern that varying state trends impact educational attainment and affect the estimates. Prior studies on pro-women inheritance reforms in India have examined their effects on fertility, son preference, educational attainment, and dowry (Bhalotra and Cochrane, 2010; Roy, 2015). The amendment analyzed in these studies was implemented at different times across states, influencing the sample states as follows: Kerala (1976), Andhra Pradesh (1986), Tamil Nadu (1989), Ma-



Figure 6: Placebo Test

The figures plots the regression coefficient on the interaction between post with religion using specification 2. Post is defined using placebo values for the year of amendment. Panel (a) reports coefficients for for all pre-exposure male cohorts and panel (b) reports coefficients for pre-exposure female cohorts. 95% confidence intervals are reported. The sample comprises all pre-exposure males and females. Source: REDS 1999.

harashtra (1994), and Karnataka (1994). To control for differing time paths across states, state time trends are incorporated in the main specification.

Contemporaneous policies affecting schooling costs may also bias estimates. The District Primary Education Program (DPEP) is the closest policy to the study period. Launched in 1994, the DPEP aimed to achieve universal primary education and was implemented gradually in areas with low maternal education (Sunder, 2020). Given its launch date and phased rollout, the DPEP's potential impact on the study's identification is minimal.

## 6 Results

#### 6.1 Effects on Dowry and Education

The first set of estimations assesses the amendment's impact on the prevalence of dowry practice. As detailed in Section 5.2, exposure to the amendment is influenced by both religion and the year of marriage. I use variations in year of marriage and household religion to evaluate the effect on dowry payments. Figure 7 provides graphical evidence on the impact of the amendment on dowry payment practice, using a local polynomial regression of dowry amounts over a time trend. This figure documents a decline in dowry payments over time, with steeper declines in the post-amendment indicating a higher pace of reduction in dowry amounts across the post-amendment period.

I estimate changes in dowry practices—both in the prevalence of any dowry paid and the amount paid—before and after the amendment. Specifically, I analyze the amount of dowry (column 1) and whether any dowry was paid (column 2). Table 2 shows a 52% reduction in the log amount of dowry paid, indicating lower average dowry payment postamendment. There is no significant change in the incidence of dowry payments in marriages. The amendment increased fines proportionally to the dowry amount and raised the minimum fine, thereby deterring large dowry payments which are easier to detect. Given the slow adjustment of social customs and the widespread prevalence of dowry in India, these results suggest that the amendment had significant expressive value. It impacted average dowry amounts and effectively signaled a shift in institutional attitudes towards dowry. These



Figure 7: Trend in Dowry Amounts Pre and Post Amendment

The figure plots estimates from a kernel-weighted local polynomial regression of dowry paid amounts on year of marriage. Bandwith is 5. Dowry paid is defined as net dowry paid. All dowry amounts are deflated using the year 2015 as baseline. Sample comprises all marriages since 1975 and includes of 10,014 observations. Source: REDS 1999

findings align with previous literature on the amendment's impact on dowry practices (Calvi and Keskar, 2023).

The second set of estimates evaluates the amendment's impact on educational attainment. As outlined in Section 5.2, this analysis determines the effect of changes in dowry practices on education by considering age at the time of the amendment relative to marriage age. Equation 2 is used for estimation, and column (3) of Table 3 indicates a decline in educational attainment for girls due to the amendment. The coefficient on the interaction term *Post X Non – Muslim* is the coefficient of interest and measures the change in education for non-Muslim children in cohorts exposed to the amendment compared to exposed Muslim cohorts.

The results indicate a significant reduction in years of education for non-Muslim girls in the exposed cohorts. On average, these girls receive 1.30 fewer years of education, reflecting a 36% decrease compared to the mean (column (3) in Table 3).

We might expect that changes in dowry payments would have less impact on boys' ed-

	Female	
	Log Dowry Amount (Rs)	Dowry Paid $(0/1)$
	(1)	(2)
Post X Non-Muslim	-0.52***	-0.03
	(0.18)	(0.05)
Non-Muslim	0.21	-0.06
	(0.19)	(0.05)
Control Mean	11.23	.75
Household Control	Х	Х
Birth Order Fixed Effect	Х	Х
Observations	4198	5446
$R^2$	0.46	0.33

#### Table 2: Impact on Dowry Payments

Notes: This table reports results from estimating equation (1) on the sample of all married women in the son and daughter module of the 1999 wave of the REDS data. The outcome variable Log Dowry Amount (Rs) is used to capture intensive margin changes, conditional on any dowry being paid and is measured as the log of deflated dowry amount in rupees. The outcome variable Dowry Paid (0/1) is an indicator to capture extensive margin changes and measures if any positive dowry amount was paid. The variable Post is an indicator equal to 1 if the marriage occurs after 1985. Non-Muslim is an indicator to identify if the female belongs to a non-Muslim household. Household controls include reported income in 1999, caste and total number of household members. All regressions control for state fixed effects, state time trends as well as year of marriage fixed effects. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

	Fen	nale School	-Yrs
	(1)	(2)	(3)
Post X Non-Muslim	-1.55***	-1.43***	-1.30***
	(0.46)	(0.46)	(0.45)
	[0.002]	[0.004]	[0.008]
Non-Muslim	2.36***	1.81***	2.92***
	(0.43)	(0.44)	(0.48)
Control Mean	3.6	3.6	3.6
Household Control	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х
Upper Caste F.E		Х	
ALL Caste F.E			Х
Effect Size	-43%	-40%	-36%
Observations	9797	9797	9797
$R^2$	0.33	0.35	0.36

Table 3: Impact on Years of Schooling for Females

Notes: This table reports results from estimating equation (2) on the sample of all females in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *Female School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the female belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify if the female belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects, state time trends and cohort fixed effects. Robust standard errors are reported in parentheses. Brackets report p-values based on a t-test against the null for the coefficient of interest, using wild bootstrap heteroskedasticity robust errors. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

	Mal	Male School-Yrs			
	(1)	(2)	(3)		
Post X Non-Muslim	-0.42	-0.25	-0.08		
	(0.80)	(0.80)	(0.79)		
	[0.631]	[0.776]	[0.929]		
Non-Muslim	1.32*	0.76	1.20		
	(0.79)	(0.78)	(0.80)		
Control Mean	6.91	6.91	6.91		
Household Control	Х	Х	Х		
Birth Order Fixed Effect	Х	Х	Х		
Upper Caste F.E		Х			
ALL Caste F.E			Х		
Effect Size	-6%	-3%	-1%		
Observations	11298	11298	11298		
$R^2$	0.31	0.32	0.33		

Table 4: Placebo-Impact on Years of Schooling for Male

Notes: This table reports results from estimating equation (2) on the sample of all males in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *Male School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the male belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify whether the male belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects, state time trends and year of birth fixed effects. Robust standard errors are reported in parentheses. Brackets reports p-values based on a t-test against the null for the coefficient of interest, using wild bootstrap heteroskedasticity robust errors. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

ucational attainment. Investment in boys' education can increase their future dowry, as education enhances their attractiveness and earning potential. However, since dowry is a relatively minor component of the lifetime returns to education for men, changes in dowry payments are unlikely to significantly affect their educational attainment. Additionally, men are less influenced by gender-specific customs. Therefore, examining the amendment's impact on boys' education serves as a placebo test. Table 4 presents the results from estimating equation 2 for male educational attainment. The results consistently show no significant change in educational attainment for non-Muslim males in the post-period, indicating that the dowry amendment did not affect their education.

#### 6.2 Age at Marriage

The amendment is likely to impact the age at marriage due to its effect on dowry payments. With reduced dowries, households might either expedite marriages to offset the lower dowry or face longer search times to find suitable matches. If the former effect prevails, one would expect a decrease in the age at marriage. Conversely, if the latter effect dominates, an increase in the age at marriage for post-amendment cohorts would be observed.



Age at Marriage Distribution

Figure 8: Age at Marriage Distribution by Gender and Time Period

The figure plots shifts in the probability density for age at marriage by gender across pre and post amendment periods. Probability densities are calculated using an Epanechnikov kernel function with optimal bandwidths. The sample comprises the entire married population and contains 11,054 observations over the time period 1960-1999. Source: REDS 1999.

I first examine shifts in the age at marriage distribution by gender across pre- and postamendment cohorts. Figure 8 shows a rightward shift in marriage age for both males and females, suggesting an increase in age at marriage. To test this shift's statistical significance, I estimated Equation 1 for males, females, and a pooled sample, with results in Table 5. The analysis reveals that while the age at marriage increased by about 0.8% for both genders post-amendment, this change is not statistically significant. The results account for potential time trends that may have influenced the shift observed in Figure 8. Thus households did not marry off girl children at a younger age as a response to the amendment.

	Age	e at Marri	age
	Male	Female	ALL
	(1)	(2)	(3)
Post X Non-Muslim	0.16	0.16	0.26
	(0.45)	(0.47)	(0.33)
Non-Muslim	$1.13^{**}$	$2.06^{***}$	$1.85^{***}$
	(0.57)	(0.55)	(0.42)
Post	4.29***	2.73***	4.15***
	(1.19)	(0.80)	(0.72)
Control Mean	19.8	17.19	18.47
Gender Fixed Effect			Х
Household Control	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х
Observations	5600	5434	11034
$R^2$	0.44	0.35	0.42

Table 5: Age at Marriage

Notes: This table reports results from estimating equation (1) on the restricted sample of all married males and females in the son and daughter module of the 1999 wave of the REDS data. Columns (1), (2), and (3) report estimation results for the sample of male, female, and pooled individuals. The outcome variable is the reported age at marriage in years. The variable *Post* is an indicator equal to 1 if the marriage occurs after 1985. *Non-Muslim* is an indicator to identify if the female belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects, state time trends and year of marriage fixed effects. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \*\* mean statistical significance at 1, 5 and 10 percent levels.

#### 6.3 Variation in Reaction to Amendment

Across States: One might expect that the longer a law has been in place, the greater the awareness and enforcement, potentially shifting traditional views on dowry towards greater gender equality. In India, several states implemented anti-dowry legislation between 1975 and 1976 <sup>9</sup>, creating a natural experiment to compare households in "early" versus "late" compliance states. If households adjust educational investments for daughters in response to anti-dowry laws, we should observe differences in educational attainment between these early and late compliance states.

Following Alfano (2017)<sup>10</sup>, states are classified as "Early State-Level Amendment" or "No State-Level Amendment," based on whether they had a state-level amendment before the 1985 amendment to the federal Act. Using variations in age relative to the marriage interval and household religion, Equation 2 is estimated for the two samples of states. One with pre-existing state level amendments ("Early") and the second with no existing state-level amendments ("No"). Results are reported in Table 6.

The findings show that female education declined in states with no prior amendments or short exposures to amendments to the anti-dowry law. Daughters in these states received 1.53 fewer years of education. In contrast, states with early amendments saw a significant increase in female education, with daughters receiving 1.59 additional years of education. This suggests that in states with existing legislation and thus longer exposure to strengthening amendments to the act, households invested more in daughters' education, possibly due to weakened dowry norms or changing attitudes. However, in states facing the amendment for the first time, educational attainment for daughters decreased.

Across Districts: One may expect to see larger shifts in dowry amounts in districts where residents were either more compliant with the law change or less attached to the dowry norm. Districts that experienced dowry payment shifts greater than the state median are classified as "above median exposure." If households adjust their investment in daughters' education proportionally to the decline in dowry amounts, we should observe a greater reduction in female education in these districts.

<sup>&</sup>lt;sup>9</sup>Bihar in 1975, followed by Haryana, Himachal Pradesh, and Punjab in 1976

<sup>&</sup>lt;sup>10</sup>This approach examines birth rates by gender across states with early versus no state-level amendments.

	State Level Amendment		Median Ex	xposure
	Early	No	Above	Below
	(1)	(2)	(3)	(4)
Post X Non-Muslim	$1.59^{**}$	-1.53***	-2.03***	0.55
	(0.72)	(0.42)	(0.53)	(0.55)
Non-Muslim	1.12	2.76***	2.93***	1.15*
	(1.18)	(0.46)	(0.58)	(0.70)
Control Mean	3.72	3.58	4.29	2.89
Household Control	Х	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х	Х
Observations	1253	8544	4741	5056
$R^2$	0.42	0.29	0.34	0.31

 Table 6: Variation in Reaction - Females

Notes: This table presents results from estimating equation (2) on all females in the son and daughter module of the 1999 REDS data. The estimation is conducted separately for states with preexisting legislation termed "Early State-Level Amendment" states (column 1) (Bihar, Haryana, Himachal Pradesh, and Punjab), and states without such legislation, termed "No State-Level Amendment" states (column 2). Households in districts with a change in dowry payments greater than the state's median change are classified as "Above Median Exposure," (column 3) while those with a change less than the median are classified as "Below Median Exposure." (column 4). The outcome variable is years of education. *Post* is an indicator for individuals in the post-cohort based on the reference age at marriage. *Non-Muslim* identifies individuals from non-Muslim households. Household controls include income in 1999, caste, and total number of members. All regressions control for state fixed effects and state time trends. Robust standard errors are in parentheses. \*\*\*, \*\*, \* indicate statistical significance at 1%, 5%, and 10% levels, respectively.

To test this, I estimate Equation 2 for districts with above and below median exposure, using variations in age relative to the marriage interval and household religion. The results are reported in columns (3) and (4) of Table 6. In districts with above median exposure, girls' education levels decrease by 2.03 years, whereas there is no statistically significant effect in below median exposure districts.

It is unclear whether the difference in educational attainment is due to greater compliance with the law or lower attachment to the dowry norm. Districts with less attachment to the dowry norm might be less concerned with traditional views and thus less likely to reduce female education as an alternate signal. Conversely, if the reduction in education is driven by greater compliance with the law, households in these districts might cut back on education as a form of backlash.

Within Households: Given that the dowry primarily affects the bride's family by depleting their financial resources, the amendment, which reduces dowry expenses for families with daughters, should increase disposable income. If these additional resources are used for education, we should observe different impacts on the educational attainment of siblings in families with a firstborn daughter as compared to those with a firstborn son. To test this hypothesis, I utilize exogenous variation in the gender of the firstborn and employ the following triple difference estimation strategy (Anukriti et al., 2022) to compare the effects on educational attainment between families with a firstborn daughter exposed to the amendment and those with a firstborn son.

$$y_{icfs} = c_1 + \beta_{1ct} + \beta_2 Post_{ic} * Non - Muslim_{fs} + \beta_3 FB \ Female_{ifs} + \beta_4 Non - Muslim_{fs} * FB \ Female_{ifs} + \beta_5 Post_{ic} * FB \ Female_{ifs} + \beta_6 Post_{ic} * Non - Muslim_{fs} * FB \ Female_{ifs} + X'_{ifs}\gamma + \alpha_s + \alpha_g + \delta_{st} + \varepsilon_{ifsc}$$

(3)

*FB Female*<sub>*ifs*</sub> is an indicator equaling 1 when the gender of the firstborn individual *i* in family *f* in state *s* is female. *Post*<sub>*ic*</sub> = 1 if individual *i* in birth cohort *c* belonged to the post cohort based on the reference age at marriage definition. Estimation results for males, females, and pooled samples are reported in columns 1 through 3 of Table 7.

Findings in Table 7 indicate that girl children in families where a female firstborn was exposed to the amendment had lower levels of education by 2.7 years as compared to families where a male firstborn was exposed. There are no significant differences in educational attainment for male children across female and male firstborn exposure families. This finding suggest that despite having more resources to invest in the education of younger children, families prefer to keep daughters uneducated to signal adherence to traditional views.

		School-Yi	S
	Male	Female	ALL
	(1)	(2)	(3)
Post X Non-Muslim X FB Female	-0.91	-2.73***	-2.66***
	(2.52)	(0.80)	(0.76)
Post X FB Female	0.74	2.31***	2.48***
	(2.49)	(0.78)	(0.74)
Non-Muslim X FB Female	0.35	3.18***	2.49***
	(2.49)	(0.73)	(0.72)
Post X Non-Muslim	0.73**	1.06***	0.96***
	(0.37)	(0.34)	(0.26)
First Born Female	0.17	-2.59***	-2.03***
	(2.46)	(0.71)	(0.70)
Control Mean	6.91	3.6	4.92
Gender Fixed Effect			Х
Household Control	Х	Х	Х
Observations	8142	7423	15565
$R^2$	0.29	0.29	0.30

 Table 7: Heterogeneity by Firstborn Gender

Notes: This table reports results from estimating equation (3) on the sample of all second birth or higher males and females in the son and daughter module of the 1999 wave of the REDS data. Columns (1), (2), and (3) report estimation results on the sub-sample of males, females, and the pooled, respectively. The outcome variable *School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the individual belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify if the individual belongs to a non-Muslim household. The variable *FB Female* is an indicator equal to 1 if the individual belongs to a household with a firstborn female. The test statistic *Post<sub>ic</sub>* \* *NonMuslim* + *Post* \* *NonMuslim* \* *FBFemale* represents the overall effect on educational attainment of having a female firstborn exposed to the amendment, as compared to a male firstborn. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects and state time trends. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

## 7 Mechanisms

#### 7.1 Dowry and Education as Signals of Traditional Adherence

To explore how dowry and female education signal adherence to traditional views, I analyze how declining female education is more pronounced in households with stricter dowry customs and stronger adherence to traditional values.

Anthropological research indicates that dowry practices vary by occupation. In mercantile households, such as those in the "Non-farm Salary & Wage" category, dowry acts as a source of capital investment, making it more significant and prevalent (Nishimura, 1994). Conversely, in the "Agricultural Wage Earners" category, where households are typically poorer, dowry is less common (Madan, 1975; Roulet, 1996).<sup>11</sup> To assess if the impact of occupation on dowry customs affects female education differently, I estimate Equation 2 for each occupation class. The results are shown in columns (1), (2), and (3) of Table 8.<sup>12</sup>

Households in the Non-farm Salary & Wage category exchange the most dowry, followed by those in Self-Employed Farming, while Agricultural Wage Earners exchange the least. Non-Muslim females in Non-farm Salary & Wage households experience a 4.62 year decrease in education compared to Muslim females over the pre- and post-reform period. Conversely, females in agricultural wage earning households, where dowries are less prevalent, show educational improvements after the reform. The decline in educational attainment is mainly seen in households with high dowry exchange. This result suggests that the decline in female education in households with strong dowry customs is linked to the reduction in dowry. The stronger the dowry practice, the more significant the decline in female education, highlighting the role of both in signaling adherence to traditional views.

 $<sup>^{11}</sup>$ "Self-Employed Farming" includes self employed farming and agricultural family worker. "Non-farm Salary & Wage" includes categories of self-employed, non-farming salary , non-agricultural wages and non-agricultural family worker. For close to 9% of total households the primary occupation is listed as "Other". These households have been dropped from the analysis.

<sup>&</sup>lt;sup>12</sup>Columns (3), (4), and (5) in Tables 18 and 19 report estimation results for males and all respondents respectively. I find no effect on educational attainment for males belonging to Non-Farm Salary & Wage households.

		Occupation		Norm	Adherence
	Self-Employed Farming (1)	Non-farm Salary & Wage (2)	Agricultural Wages (3)	Traditional (4)	Non-Traditional (5)
Post X Non-Muslim	-1.35 (0.85)	$-4.62^{***}$ (1.62)	$4.94^{***}$ $(0.90)$	$-4.37^{***}$ (1.51)	-0.67 (0.80)
Non-Muslim	2.67*** (0.80)	5.74*** (1.66)	-2.61** (1-20)	6.57*** (1 55)	2.39*** (0.83)
Control Mean	3.33	4.64	2.09	(1.00) 2.66	4.23
Household Control	Х	Χ	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х	Χ	Х
Pre-reform Dowry Amount	189	229	137		
Observations	4872	2580	1427	3027	4876
$R^2$	0.37	0.55	0.49	0.40	0.43
Notes: This table reports results from (formed separately for females belonging above or below the region-specific pre-1 Wage, or Agricultural Labor respective); in the household. The variable <i>Post</i> ind. Controls include 1999 household income	stimating equation (2) on the samples to different household sub-samples. 385 median. Column (3),(4), and (7) $\cdot$ . Columns (6) and (7) classify hous cates whether the female belongs to cates whether the female belongs to $\cdot$ , caste, household size, state fixed	ble of all females in the son and daug Column (1) and (2) split households 5) subset based on the primary occup scholds based on reported gender segr- othe post-reform cohort based on the effects and state time trends. Robust	hter module of the 1999 wave based on whether their state-1 ation of the household head (f egation during mealtimes, with reference age at marriage. Nov t standard errors are reported	of the REDS dat. evel median pre-16 Self-Employed Farr h "Traditional" inc <i>n</i> - <i>Muslim</i> identifie, in parenthesis. *	<ol> <li>The estimation is per- 85 dowry payments were ning, Non-farm Salary &amp; icating segregation exists inon-Muslim households.</li> <li>**, **, * mean statistical</li> </ol>

Female
1
Heterogeneity
Effect
Treatment
$\ddot{\mathbf{x}}$
Table 8

significance at 1, 5, and 10 percent levels.

I next examine what happens to female education in the post period among households with greater adherence to traditional views other than dowry. If the decline in female education is concentrated among households with stronger adherence to traditional views, then it indicates a broader pattern where female education is undervalued in favor of maintaining traditional practices. To identify households with greater adherence to traditional views, household proscription to a patriarchal norm— gender segregation during meals - is used as a proxy. Households are classified as "Traditional" and "Non-Traditional," based on whether there is mixing by genders during meal time. "Traditional" households in the sample are those where men and women consume meals separately and men consume meals first, suggesting the presence of gendered social attitudes in these households (Hathi et al., 2021; Ibnouf, 2009; Neogy, 2010). I then estimate Equation 2 on the sub-samples of "Traditional" and "Non-Traditional" households. Results on female education are reported in columns (4) and (5) of Table 8.<sup>13</sup>

Females in Traditional households receive about half the average years of education as compared to those in Non-Traditional households. After the amendment, the decline in female education is particularly noticeable in Traditional households, where non-Muslim girls lose 4 years of education compared to Muslim girls from similar households. With a control mean of 2.6 years, this suggests that some girls may have had no formal education. In contrast, boys in both Traditional and Non-Traditional households show no significant difference in educational attainment.<sup>14</sup> Both pieces of evidence together suggest that dowry and female education are intertwined signals of traditional adherence. The stronger decline in female education in households with pronounced dowry practices, coupled with a similar pattern in households with other traditional customs, highlights that these elements are used to communicate commitment to traditional views.

#### 7.2 Competing Mechanisms

Dowries and bequests are alternative methods for transferring wealth across generations. Without dowries, families might turn to the more expensive option of bequests, thus limiting

 $<sup>^{13}\</sup>mathrm{Estimation}$  results for males and all respondents are reported in Tables 18 and 19.

 $<sup>^{14}</sup>$  columns 6 and 7 of table 18

resources available for female education. If the decline in female education due to the removal of dowry payments is associated with increased reliance on bequests, we would expect to see a more significant drop in education in households with higher bequest capacity. Thus, families with the ability to make larger bequests should experience greater declines in female education when dowries are abolished, suggesting that the reduced educational attainment is linked to the shift towards bequests.

To test this, I use landholding status as a proxy for bequest capacity. Households are classified as marginal or non-marginal based on their landholding size, with marginal landholding defined as less than 2 hectares (or 5 acres). The impact on educational attainment is evaluated using these sub-samples and estimates are reported in Table 9.

Contrary to the hypothesis of a substitution effect between bequests and dowries, Table 9 reveals that families with lower bequest capacity experience greater reductions in educational attainment. In contrast, those with high bequest capacity show no significant difference in female education, and educational attainment is actually higher among high bequest-capacity families in the pooled sample (column 6). This suggests that families are not substituting bequests for dowries and that the decline in female education is not due to the costliness of bequests. This finding is consistent with the well-documented aversion to increasing female bequests in the Indian context (Roy, 2015).

## 8 Robustness

Sensitivity Analysis and Alternate Specifications: Table 10 presents results from robustness checks on the effect of the amendment on educational attainment. Column 1 reports estimates using the legal age of marriage to define exposure, rather than a marriage interval. These estimates indicate a significant reduction in female education, consistent with the age of marriage interval exposure definition. Columns (2) and (3) demonstrate the results' robustness to different clustering levels: state-year (column 3) and state level (column 4). This accounts for potential within-state correlation in errors due to unobservable shocks within states and across state years.

A major concern is whether the amendment to the Act correlates with other legal changes

	Marginal			Non-marginal			
	Male	Female	ALL	Male	Female	ALL	
	(1)	(2)	(3)	(4)	(5)	(6)	
Post X Non-Muslim	-0.13	-0.86*	-0.58	1.91	1.71	$2.01^{*}$	
	(0.90)	(0.48)	(0.44)	(1.70)	(1.14)	(1.14)	
Non-Muslim	1.41	3.35***	2.43***	-1.76	-0.71	-1.65	
	(0.92)	(0.57)	(0.48)	(1.70)	(1.09)	(1.12)	
Control Mean	6.82	3.46	4.8	7.34	4.21	5.46	
Gender Fixed Effect			Х			Х	
Household Control	Х	Х	Х	Х	Х	Х	
Birth Order Fixed Effect	Х	Х	Х	Х	Х	Х	
Observations	8239	7063	15302	3059	2734	5793	
$R^2$	0.33	0.36	0.32	0.47	0.44	0.41	

Table 9: Heterogeneity in Educational Attainment by Bequest Ability

Notes: This table reports results from estimating equation (2) on the sample of all males and females in the son and daughter module of the 1999 wave of the REDS data. The estimation is performed separately for individuals belonging to households based on landholding size. Marginal households have land ownership less than 2.5 acres, whereas "Non-marginal" households are households with greater than 2.5 acres of land. Columns (1), (2), and (3) report estimation results on years of education for the sample of male, female, and pooled individuals belonging to "Marginal" households. Columns (4), (5), and (6) report estimation results on years of education for the sample of male, female, and pooled individuals belonging to "Non-marginal" households. The variable *Post* is an indicator equal to 1 if the individual belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify if the individual belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of members. All regressions control for state fixed effects and state time trends. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels. affecting female education. The empirical strategy controls for these factors by comparing effects across Muslim and non-Muslim females, thus netting out the impact of other law changes. To address potential differential impacts of laws on Muslim and non-Muslim women, I examine several key Indian laws affecting women. These include the Prevention of Sati<sup>15</sup>, amendments to the Hindu Marriage Act, amendments to the Hindu Succession Act, and the State Commission for Women Act. While these laws are targeted at women, none directly address education. However, the amendment to the Hindu Succession Act might have had indirect effects on Hindu female education.

Since the original Hindu Succession Act of 1956, some states have amended the Act to grant both sons and daughters rights to joint family property (Kerala, 1976; Andhra Pradesh, 1986; Tamil Nadu, 1989; Maharashtra and Karnataka, 1994). In other states, men remained sole coparceners until 2005. Research by Roy (2015) finds that amendments to the Hindu Succession Act affected both dowries and education for Hindu females. To test whether these amendments confound the key educational result, equation 2 includes a variable equal to one if the state-level amendment to the Hindu Succession Act was in place for the cohort. Column (4) of Table 10 shows that the main result remains robust even when accounting for this variable.

Finally, differences in educational attainment between Muslim and non-Muslim girls might be correlated with wealth disparities across religious groups. If non-Muslim families have lower incomes, this could explain a reduction in educational attainment, rather than a specific effect of the amendment. However, data show that non-Muslim households have an average income of Rs 108,161, compared to Rs 86,026 for Muslim households. This aligns with research documenting higher poverty rates among Indian Muslims (Committee, 2006). Additionally, all regression analyses include household income as a control to address this concern.

<sup>&</sup>lt;sup>15</sup>Sati is a historical and outlawed practice where a widow was compelled or voluntarily chose to selfimmolate on her husband's funeral pyre.

	Legal Age	Sc Cluster State Year	chool-Yrs Cluster State	Hindu Succession Act
	(1)	(2)	(3)	(4)
Post_Legal X Non-Muslim	$-0.92^{*}$ (0.48)			
Post X Non-Muslim		$-1.30^{***}$ (0.47)	$-1.30^{**}$ (0.57)	$-1.30^{***}$ (0.45)
Non-Muslim	$2.48^{***}$ (0.51)	$2.92^{***}$ $(0.50)$	$2.92^{***}$ $(0.51)$	$2.92^{***}$ (0.48)
Control Mean	3.6	3.6	3.6	3.6
Household Control	Х	Χ	Х	Х
Birth Order Fixed Effect	Х	Χ	Х	Х
Control for Hindu Succession Act				Х
Observations	9984	26797	9797	2626
$R^2$	0.29	0.36	0.36	0.36
Notes: This table reports results from estimating wave of the REDS data. The outcome variable & with cohort exposure assigned using the leval are	g variants of eque School-Yrs measu	ation (2) on the sample of a trees reported years of school $(2)$ (3) removes estimated of $(2)$ (3) removes estimated of $(2)$ (3) removes estimated of $(2)$ (3) removes $(2)$ (4) removes $(2)$ (4) removes $(2)$ (4) removes $(2)$ (5) removes $(2)$ (4) removes $(2)$ (5) removes $(2)$ (5) removes $(2)$ (5) removes $(2)$ (5) removes $(2)$ (6) removes $(2)$ (7) removes $($	Il females in the son z ing. Columns (1) rep.	and daughter module of the 19 orts estimates using equation ( ) with distances have and de-

Table 10: Sensitivity Analysis and Alternate Specifications

II 0 ~ level clustered standard errors respectively. The variable *Post* is an indicator equal to 1 if the female belongs to the post-cohort based on the reference age at marriage. The variable *Post Legal* is an indicator equal to 1 if the female belongs to the post-cohort based on the reference age at marriage. The variable *Post Legal* is an indicator equal to 1 if the female belongs to the post-cohort based on the *legal* age at marriage. *Non-Muslim* is an indicator to identify whether the female belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects and state time trends. Robust standard errors are reported in parentheses for columns (1). \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels. Heterogenous and Dynamic Treatment Effects: A further concern is that the results may mask heterogeneous treatment effects of the amendment across different states and cohorts. To address this, an alternate estimator is employed. Table 11 shows results on educational attainment using the estimator proposed by De Chaisemartin and d'Haultfoeuille (2020), which accounts for heterogeneous and dynamic treatment effects. The findings confirm that the decline in educational attainment is consistent with the use of this alternate estimator, reinforcing confidence in the estimated effects.

Table 11: Heterogenous and Dynamic Treatment Effects

	Estimate	SE	LB CI	UB CI	Ν	Switchers
School-Yrs	6994971	.3186149	-1.323982	075012	6118	4661

Notes: This table reports results using the difference-in-differences Estimator proposed in de Chaisemartin and D'Haultfoeuille (2021). The sample comprises all females in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *School-Yrs* measures the reported years of schooling.

**Replication Using Alternate Estimation Strategy:** As a final check, the estimation strategy is altered to match that of Calvi and Keskar (2023), who examined impacts on education for women using an alternate dataset that used the same policy shock. Two empirical specifications are considered with results reported in Table 12. The first specification retains cohort-level exposure assignment relative to the age of marriage interval, but replaces cohort of birth fixed effects with a post indicator. The second specification alters the exposure assignment to consider all cohorts born post 1985 to be exposed to the amendment. Under both specifications the results of this paper remain unchanged, and the coefficient of interest retains a negative magnitude.

	Scho	ol-Yrs
	(1)	(2)
Post X Non-Muslim	-0.85**	
	(0.36)	
Non-Muslim	2.29***	1.94***
	(0.42)	(0.30)
Post	4.50***	
	(0.37)	
Born after 1985		-2.17***
		(0.27)
Born after 1985 X Non-Muslim		-0.81***
		(0.26)
Control Mean	3.6	4.66
Household Control	Х	Х
Birth Order Fixed Effect	Х	Х
Observations	9797	10934
$R^2$	0.24	0.25

Table 12: Alternate Estimation Strategy

Notes: This table uses the sample of all females and males belonging to the sons and daughters module of the 1999 wave of REDS data. Columns (1) reports results from estimating equation (2) by swapping out cohort fixed effects with an indicator for post-period, for the sample of males, females, and the pooled sample, respectively . The variable *Post* is an indicator equal to 1 if the individual belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify if the individual belongs to a non-Muslim household. Columns (2) report results for the sample of females from replacing Post in equation (2) with a indicator variable *Born after 1985* which equals 1 if the individual was born after 1985. Household controls include reported income in 1999, caste, and total number of members. All regressions control for state fixed effects and state time trends. Robust standard errors are reported in parentheses. \* p < 0.10 , \*\* p < 0.05 , \*\*\* p < 0.01 .

## 9 Discussion

This paper studies the interaction between human capital production, culture, and formal institutions by exploiting an institutional change in India. By drawing attention to the consequences of altering customs, the paper provides an empirical setting to study the interaction of laws with social customs. The observed decrease in educational attainment for non-Muslim women, is proportional to changes in dowry payments. To explain these results, the role of dowry payments and female education as signals to communicate adherence to traditional views is proposed. The paper also finds that with longer exposure to the law the negative impact on educational attainment for women reverses on account of reduction in the significance of dowry as a signal of adherence to traditional views or people adopt more progressive attitudes.

The findings of this paper should be interpreted with certain caveats given the data limitations. Land ownership is used as a proxy for bequest ability. Though this assumption cannot be directly tested, I reason that greater landholding is more conducive to passing on land as inheritance. Additionally, without household-level measures of adherence to traditional views, the analysis relies on proxies such as the importance of dowry practices across different occupations and gender segregation during mealtimes. Similarly, the paper is unable to definitively comment on if the greater educational decline in districts with above median dowry payment changes is driven by lower attachment to the norm or higher compliance with the amendment. Finally, in the absence of spousal age, the inferences drawn from examining age at marriage are incomplete, and thus, are unable to round out inferences on the marriage market matching process.

While the paper effectively rules out bequests as a primary mechanism, a few alternative explanations remain. First, there is the possibility that public resources were redistributed to support the amendment, potentially reducing funding for education. However, this seems unlikely given the paper's findings of a gender-specific impact on education and the lack of evidence for such a redistribution. Second, it is possible that the decline in dowry payments increased the demand for education, and the reduced female education could be a result of a price effect. This scenario also seems improbable, given the public provision of education in India during this period. The results showing improved educational outcomes in resource-constrained households contradicts this explanation. Third, if girls' education declined without a corresponding increase in early marriages, it is possible that households might have shifted their focus to non-school skills to enhance bridal value. Without data on skill accumulation, this remains a possibility and a potential area for further research.

The findings of this paper have significant policy implications, especially in light of recent dowry prohibition developments in Southeast Asia, such as Bangladesh's 2018 and Nepal's 2009 anti-dowry laws. In India, there are calls for new amendments to address the recent misuse of the Act **by** women. Additionally, states like Kerala are facing pressure to introduce state-level amendments to address gaps in what has become an outdated law.<sup>16</sup> Although this study focuses on a specific context, the broader takeaway is that social customs can react to increased enforcement capacity. However, gender-specific customs like dowry, when challenged, may lead to adverse outcomes. These insights challenge previous beliefs about human capital formation and highlight the complex interactions between child-specific and general human capital investments in a gender-unequal environment. Consequently, they emphasize the ongoing relevance of anti-dowry laws, which are continually updated and revised to adapt to changing societal and legal contexts.

<sup>&</sup>lt;sup>16</sup>https://www.onmanorama.com/news/kerala/2023/12/08/no-action-to-amend-dowry-prohibition-act-even-2-thml

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## A Supplementary Analysis

The within-religion and across gender identification strategy presented here relies on the identification assumption that sons and daughters were impacted similarly by the amendment and that the amendment had an impact on both Muslim and non-Muslim households. Social norms around dowry exchange and greater value and significance of dowries for the bride's family makes this a difficult assertion to support. Furthermore the amendment should not have had an impact on dowry practice for Muslims. Thus the identifying variation is unclear.

$$y_{ics} = c_1 + \beta_{1c} + \beta_2 Post_{ic} * Female_i + \beta_3 Female_i + X_i \gamma + \alpha_s + \delta_{st} + \varepsilon_{ics}$$
(4)

 $y_{ics}$  is the years of education for individual *i*, born in cohort *c*, and in state *s*.  $\beta_{1c}$  are cohort of birth fixed effect. *Post<sub>ic</sub>* is an indicator variable equal to one if individual *i* in birth cohort *c* belonged to the post cohort based on the reference age at marriage definition. *Female<sub>i</sub>* is an indicator equal to one if individual is female. Finally,  $X_i$  is a vector of household co-variate, including reported household income, total household members, birth order, and caste group fixed effects.  $\alpha_s$  and  $\delta_{st}$  are state-fixed effects and state-time trends to absorb time-invariant and state-specific un-observable trends across states.

The results presented suggest that while the education gender gap fell for both non-Muslim and Muslim households, the gains for Muslim girls was higher. The overall effect on education attainment for females was lower than males for both religious groups. These results are consistent with the trend of increasing educational attainment for women since independence in 1947.

		School-Yrs	5
	(1)	(2)	(3)
Post X Female	1.79***	$1.76^{***}$	1.75***
	(0.23)	(0.22)	(0.22)
Female $(=1)$	-3.46***	-3.44***	-3.42***
	(0.22)	(0.22)	(0.21)
Control Mean	4.98	4.98	4.98
Household Control	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х
Upper Caste F.E		Х	
ALL Caste F.E			Х
Effect Size	36%	35%	35%
Observations	19508	19508	19508
$R^2$	0.28	0.29	0.30

Table 13: Impact on Years of Schooling within Non-Muslim Households

Notes: This table reports results from estimating equation (4) on the sample of members belonging to non-Muslim households in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the member belongs to the post-cohort based on the reference age at marriage. *Female* is an indicator to identify whether the member is a female. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects as well as state time-varying trends. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

		School-Yrs	5
	(1)	(2)	(3)
Post X Female	$3.35^{***}$	3.34***	$3.36^{***}$
	(0.85)	(0.86)	(0.86)
Female $(=1)$	-4.66***	-4.68***	-4.69***
	(0.82)	(0.82)	(0.82)
Control Mean	3.77	3.77	3.77
Household Control	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х
Upper Caste F.E		Х	
ALL Caste F.E			Х
Effect Size	89%	89%	89%
Observations	1587	1587	1587
$R^2$	0.32	0.33	0.33

Table 14: Impact on Years of Schooling within Muslim Households

Notes: This table reports results from estimating equation (4) on the sample of members belonging to Muslim households in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the member belongs to the post-cohort based on the reference age at marriage. *Female* is an indicator to identify whether the member is a female. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects as well as state time-varying trends. Robust standard errors are reported in parentheses. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

# **B** Appendix Tables

		School-Yrs	5
	(1)	(2)	(3)
Post X Non-Muslim	-0.92**	-0.80*	-0.67
	(0.43)	(0.43)	(0.43)
	[0.033]	[0.066]	[0.123]
Non-Muslim	1.75***	1.19***	1.96***
	(0.41)	(0.41)	(0.44)
Control Mean	6.91	6.91	6.91
Household Control	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х
Upper Caste F.E		Х	
ALL Caste F.E			Х
Effect Size	-1.2%	1.1%	2%
Observations	21095	21095	21095
$R^2$	0.30	0.31	0.32

Table 15: Education Effect - Pooled Sample

Notes: This table reports results from estimating equation (2) on the sample of all children in the son and daughter module of the 1999 wave of the REDS data. The outcome variable *School-Yrs* measures reported years of schooling. The variable *Post* is an indicator equal to 1 if the individual belongs to the post-cohort based on the reference age at marriage. *Non-Muslim* is an indicator to identify if the individual belongs to a non-Muslim household. Household controls include reported income in 1999, caste, and total number of household members. All regressions control for state fixed effects. Standard errors in parentheses are clustered by state year. Brackets reports p-values based on a t-test against the null for the coefficient of interest, using wild-cluster bootstrapped errors by state year.. \*\*\*, \*\*, \* mean statistical significance at 1, 5 and 10 percent levels.

	State Level Amendment	Ν	ledian Ex	kposure
	Early	No	Above	Below
	(1)	(2)	(3)	(4)
Post X Non-Muslim	0.77	-0.39	-0.22	0.18
	(1.19)	(0.86)	(0.95)	(1.06)
	0.01	1.00	0.00	
Non-Muslim	-0.01	1.20	0.02	0.97
	(1.94)	(0.85)	(0.92)	(1.10)
Control Mean	6.94	6.91	7.61	6.16
Household Control	Х	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х	Х
Observations	1618	9680	5661	5637
$R^2$	0.41	0.28	0.33	0.28

 Table 16: Variation in Reaction - Males

Notes: This table presents results from estimating equation (2) on all males in the son and daughter module of the 1999 REDS data. The estimation is conducted separately for states with preexisting legislation termed "Early State-Level Amendment" states (column 1) (Bihar, Haryana, Himachal Pradesh, and Punjab), and states without such legislation, termed "No State-Level Amendment" states (column 2). Households in districts with a change in dowry payments greater than the state's median change are classified as "Above Median Exposure," (column 3) while those with a change less than the median are classified as "Below Median Exposure." (column 4). The outcome variable is years of education. *Post* is an indicator for individuals in the post-cohort based on the reference age at marriage. *Non-Muslim* identifies individuals from non-Muslim households. Household controls include income in 1999, caste, and total number of members. All regressions control for state fixed effects and state time trends. Robust standard errors are in parentheses. \*\*\*, \*\*, \* indicate statistical significance at 1%, 5%, and 10% levels, respectively.

	State Level Amendment	N	fedian Ez	xposure
	Early	No	Above	Below
	(1)	(2)	(3)	(4)
Post X Non-Muslim	1.20	-0.84*	-0.94*	0.38
	(0.76)	(0.44)	(0.52)	(0.58)
Non-Muslim	0.55	1.87***	1.23**	1.08*
	(1.21)	(0.45)	(0.53)	(0.64)
Control Mean	5.33	4.87	5.64	4.18
Household Control	Х	Х	Х	Х
Birth Order Fixed Effect	Х	Х	Х	Х
Gender Fixed Effect	Х	Х	Х	Х
Observations	2871	18224	10402	10693
$R^2$	0.39	0.28	0.33	0.29

#### Table 17: Variation in Reaction - Pooled Sample

Notes: This table presents results from estimating equation (2) on all respondents in the son and daughter module of the 1999 REDS data. The estimation is conducted separately for states with preexisting legislation termed "Early State-Level Amendment" states (column 1) (Bihar, Haryana, Himachal Pradesh, and Punjab), and states without such legislation, termed "No State-Level Amendment" states (column 2). Households in districts with a change in dowry payments greater than the state's median change are classified as "Above Median Exposure," (column 3) while those with a change less than the median are classified as "Below Median Exposure." (column 4). The outcome variable is years of education. *Post* is an indicator for individuals in the post-cohort based on the reference age at marriage. *Non-Muslim* identifies individuals from non-Muslim households. Household controls include income in 1999, caste, and total number of members. All regressions control for state fixed effects and state time trends. Robust standard errors are in parentheses. \*\*\*, \*\*, \* indicate statistical significance at 1%, 5%, and 10% levels, respectively.

		Occupation		Norm	Adherence
	Self-Employed Farming (1)	Non-farm Salary & Wage (2)	Agricultural Wages (3)	Traditional (4)	Non-Traditional (5)
Post X Non-Muslim	2.35** (1 10)	-0.84 (2 96)	-4.28*** (0.86)	-0.38	-0.86 (1.35)
Non-Muslim	-0.53	1.39	3.16***	1.85	1.60
	(1.20)	(2.98)	(1.04)	(1.87)	(1.35)
Control Mean	6.5	7.5	3.93	6.9	6.96
Household Control	Χ	Χ	Χ	Χ	Х
Birth Order Fixed Effect	Χ	Х	Χ	Х	Х
Pre-reform Dowry Amount	189	229	137		
Observations	5651	2995	1526	3408	5411
$R^2$	0.34	0.51	0.52	0.41	0.40
Notes: This table reports results from e separately for males belonging to differ below the region-specific pre-1985 medi cultural labor respectively. Columns (6) The variable <i>Post</i> indicates whether th 1999 household income, caste, household	stimating equation (2) on the sample ant household subsamples. Column ( an. Column (3),(4), and (5) subset b and (7) classify households based on e male belongs to the post-reform cc l size and state fixed effects. Robust	e of all males in the son and daughter (1) and (2) split households based on ased on the primary occupation of the reported gender segregation during m- ohort based on the reference age at m- standard errors are reported in parentl	module of the 1999 wave of th whether thier state-level medi household head (self-employe ealtimes, with "Traditional" in arriage. Non-Muslim identific hesis. ***, ** mean statistic	ie REDS data. Th ian pre-1985 dowry da farming, non-far dicating segregatic se non-Muslim hou cal significance at 1	e estimation is performed payments were above or m salary & wage, or agri- n exists in the household. seholds. Controls include , 5, and 10 percent levels.

Table 18: Treatment Effect Heterogeneity - Males

		Occupation		Norm	Adherence
	Self-Employed Farming (1)	Non-farm Salary & Wage (2)	Agricultural Wages (3)	Traditional (4)	Non-Traditional (5)
Post X Non-Muslim	0.57 (0.73)	$-2.57^{**}$ (1.24)	$-3.39^{***}$ (0.49)	-1.36 (1.08)	-0.66 (0.67)
Non-Muslim	1.01 (0.74)	$3.61^{***}$	$4.23^{***}$ (0.61)	$2.84^{**}$	$1.86^{***}$ (0.68)
Control Mean	4.49	5.71	2.71	4.18	5.29
Household Control	Χ	Χ	Х	Χ	Х
Birth Order Fixed Effect	Х	Х	Х	Х	Х
Pre-reform Dowry Amount	189	229	137		
Observations	10523	5575	2953	6435	10287
$R^2$	0.33	0.47	0.44	0.36	0.38

-ט ר -È . -Ľ . Ц Ц Ц --Ę 10. Table were above or below the region-specific pre-1985 median. Column (3),(4), and (5) subset based on the primary occupation of the household head (self-employed farming, non-farm salary & wage, or agricultural labor respectively. Columns (6) and (7) classify households based on reported gender segregation during mealtimes, with "Traditional" indicating segregation exists in the household. The variable *Post* indicates whether the respondent belongs to the post-reform cohort based on the reference age at marriage. *Non-Muslim* identifies non-Muslim households. Controls include 1999 household income, caste, household size and state fixed effects. Controls for respondent gender are also included. Robust standard errors are reported in parenthesis. \*\*\*, \*\* mean statistical significance at 1, 5, and 10 percent levels.

## C Dowry and Legislation Context

### C.1 Dowry

The historical emergence of dowry in the Indian context can be traced back to the practice of *stridhan*-"woman's property" as mentioned in the *Manu-smriti*.<sup>17</sup> Dowry began as an exclusive practice associated with Brahmanic (priestly) cases and has since evolved to a near universal social custom across caste and class (Chiplunkar and Weaver, 2023). British rule in India altered the practice considerably. First, through institution of property rights that made land and its produce a privately owned commodity (Tambiah et al., 1989), and later, with the creation of white-collar jobs in the British bureaucracy, which resulted in highquality grooms in the urban marriage market (Srinivas, 1984).<sup>18</sup>

Traditionally, dowry composition can be broadly classified under three categories. The first, personal clothes and ornaments for the bride, usually transferred on her person after marriage. The second component comprises gifts for the groom, as well as his family and close kin. The third component comprises articles of household use, including cooking and eating utensils (Madan 1975).

The process of dowry valuations are often based on factors beyond groom and bride characteristics. The most important of these are household characteristics with limited emphasis on groom characteristics outside of a groom's future ability to provide for the bride (Rao, 1993).<sup>19</sup>

#### C.2 Details on the 1985 Amendment

Along with expansions in the pecuniary and penal provisions, the amendment was followed by changes to the Indian Penal Code. The definition of dowry deaths were included as part of the Indian Penal code. Dowry deaths covered situations "where the death of a woman is caused by any burns or bodily injury or occurs otherwise than under normal circumstances within seven years of her marriage and it is shown that prior to her death she was subjected to cruelty or harassment by her husband or any relative of her husband for, or in connection with, any demand for dowry, such death shall be called dowry death, and such husband or relative shall be deemed to have caused her death." The slew of legal measures also included an amendment of the Indian Evidence Act, 1871, to allow for the presumption of guilt in cases of dowry deaths.

 $<sup>^{17}\</sup>mathrm{A}$  prescriptive code of behaviors compiled around 200 C.E.

<sup>&</sup>lt;sup>18</sup>The data is unable to capture changes in urban groom quality, given the exclusive coverage of rural areas in my sample.

<sup>&</sup>lt;sup>19</sup>Within the entire arranged marriage process, the last stage is usually when the bride and groom see each other for the first time.

## D Data

#### D.1 Dowry Reporting

Concerns about underreporting issues associate, with dowry are examined. Despite the law having no provisions for retrospective penalty associated with dowry payments, households may systematically underreport dowry for marriages in the post-period. To test for underreporting variance in reporting amounts are explored. Dowry payments are modeled using the following equation :

$$\mathbf{y}_{it} = \triangle_i + \triangle_t + \triangle_{it}$$

 $\Delta_t$  captures the recall bias,  $\Delta_i$  are family characteristics and comprise the observable components of reported dowry  $y_{it}$ . The observable components are parcelled out, and a measure of dispersion for the error terms is calculated for the overall, treatment, and control subsamples. The empirical test checks association between variance in dowry reporting with treatment status. If the variance in dowry reporting is associated with treatment then there is evidence of systematic misreporting, which is problematic for the estimation. To test for systematic misreporting the distribution of the variance of errors across years for the treatment (Figure 11) and control (Figure 10) populations are created. A visual inspection of the graphs suggests that the distribution of errors remains fairly consistent across treatment and control populations. Additionally, the error distribution does not seem to vary across years, and thus, is presumably uncorrelated with the timing of the amendment. These insights are interpreted to suggest that the amendment timing is not salient for households while recalling dowry payments.

#### D.2 Sampling methodology for REDS-1999

The sampling strategy follows a variable probability sampling with oversampling of households residing in areas with high-yielding variety (HYV) of seeds. The sampling strategy is in line with the objective of the original study, which sought to examine the impact of HYV seeds. The data comes from three stratum of villages based on different agricultural development programs operational across the country.<sup>20</sup> The sampling design varied across stratums. For the first stratum (IADP villages) for each village a stratified random sample of 20-30 households were selected with oversampling of households in the high-and-middle income groups relative to low-income households. This oversampling implied greater households belonging to cultivators. For stratum two (IAAP) and three, the selection of households was based on a three-stage sample design based on block, village, and household comprising the three units. The survey documentation suppresses the 1999 weights and prevents their use in the final analysis.

<sup>&</sup>lt;sup>20</sup>Intensive Agricultural Development Program-IADP and the Intensive Agriculture Area Program-IAAP



Figure 9

The figure plots the mean and two standard deviation of a measure of dispersion of the reported dowry payments across years. The measure of dispersion captures the standard deviation of the error term from a regression of dowry payments on co-variates to control for recall period and individual level characteristics. The sample comprises of all married women over the time period 1970 - 1999. Source: REDS 99.



Figure 10

The figure plots the mean and 2 standard deviations of a measure of dispersion of the reported dowry payments across years. The measure of dispersion captures the standard deviation of the error term from a regression of dowry payments on co-variates to control for recall period and individual-level characteristics. The sample comprises all Muslim married women over the time period 1970-1999. Source: REDS 99.



Figure 11

The figure plots the mean and 2 standard deviations of a measure of dispersion of the reported dowry payments across years. The measure of dispersion captures the standard deviation of the error term from a regression of dowry payments on co-variates to control for recall period and individual-level characteristics. The sample comprises all non-Muslim married women over the time period 1970-1999. Source: REDS 99.

#### **Occupation Classes** D.3

Figure 12 presents the correlation across occupation classes used in the analysis. The Figure documents variation in the occupation class across households.

	Marginal	Irrigated	Self-employed farming	Non-farming & Salary	Agricultural Wages
Marginal	1				
Irrigated	-0.1105	1			
Self-employed farming	0.0041	0.2764	1		
Non-farming & Salary	-0.0363	-0.1579	-0.5449	1	
Agricultural Wages	-0.0068	-0.2011	-0.3962	-0.222	1

Marginal is an indicator (=1) if household landholding is less than 1 hectare of land Irrigated is an indicator (=1) if households have above average irrigated land Self-employed farming is an indicator (=1) if households are engaged in self employed farming or are agricultural family workers Non-farming & Salary is an indicator (=1) if households are self-employed on non-farm activities, salaried, non-agricultural wage earners or non-agricultural family workers

Figure 12: Correlation across Occupation Types