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“We want land, all the rest is humbug”: land inheritance reform and intrahousehold dynamics in India

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Abstract

This paper investigates whether female land inheritance affects intrahousehold dynamics in India. The inheritance rights of Hindus in India are governed by the 1956 Hindu Succession Act (HSA) which discriminates against daughters. Five southern Indian states amended the HSA to equalise inheritance rights. Using data from the 2012 Indian Human Development Survey, I conduct a difference-in-differences estimation exploiting the exogenous variation in the timing and eligibility requirements which determined exposure to these reforms. As well as measuring decision-making power, I measure spousal discussion, something not yet studied in the literature. I find that women exposed to the reform are more likely to discuss community and work issues with their husbands but do not experience increased decision-making power. I suggest that decision-making power may be an inappropriate measure of intrahousehold bargaining power in this setting.

“We want land, all the rest is humbug”: land inheritance reform and intrahousehold dynamics in India

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Abbreviations

AP	Andhra Pradesh
EEP	Extra-environmental parameters
DID	Difference-in-differences
FAO	Food and Agriculture Organisation
HCB	Hindu Code Bill
HSA	1956 Hindu Succession Act
HSAA	Hindu Succession Act Amendments
IBP	Intrahousehold bargaining power
IHDS	2012 Indian Human Development Survey
IV	Instrumental Variable
NCAER	National Council of Applied Economic Research
NFHS	National Family Health Survey
RDD	Regression Discontinuity Design
REDS	Rural and Economic Demographic Survey
WEAI	Women's Empowerment in Agriculture Index

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Section I – Introduction

The quote in the title of this paper is taken from Mies, Lalita and Kumari (1986). In a group discussion with landless women in Andhra Pradesh, Mies et al. (1986) asked whether they wanted better houses, to which one replied, ‘houses are not going to feed us....we want land, all the rest is humbug’ (p. 195).

Lack of ownership of productive assets, in particular land, contributes overwhelmingly to women’s subordinate status in developing countries (Agarwal, 1994). Land is a source of material wealth and a determinant of social status (Rao, 2011). Inheritance is the main channel through which land is acquired (World Bank, 2012) and inheritance law is the main legal instrument that regulates the nature and size of these intergenerational transfers. However, gender inequality is pervasive in inheritance law. Women inherit less land globally and often access land via male kin through ‘secondary land rights’ (FAO, 2010). Overall, lack of land ownership is a key source of disempowerment for women.

A positive relationship between inheritance law reform and women’s empowerment has been identified in a number of countries including Kenya (Harari, 2019), Ethiopia (Kumar and Quisumbing 2012), Nepal (Allendorf, 2007) and Indonesia (Carranza, 2012). Increasing women’s land ownership is intrinsically valuable for women’s empowerment. It may also deliver positive spillovers via increased intrahousehold bargaining power (IBP). IBP is the power of members of the household to exert influence over household decisions.

In a bargaining model, IBP is determined by ‘threat points’ (Quisumbing and Maluccio, 1999). The threat point refers to the level of utility that one household member can expect when there is a cooperation breakdown with another household member (Katz, 1997). Many studies have found that an exogenous increase in women’s IBP improves child health and education outcomes (Duflo, 2003; Matz and Narciso, 2010; Quisumbing and de la Briere, 2000; Quisumbing and Maluccio, 2003). This paper is unique in that it opens the ‘black box’ of the household and gives insights into the process through which a higher threat point may translate into IBP.

The inheritance rights of Hindus in India are governed by the 1956 Hindu Succession Act (HSA) which favours sons in the inheritance of land. In 2005, a nationwide amendment to the 1956 HSA introduced inheritance law which equalised the inheritance rights between daughters and sons. Prior to this nationwide amendment, five southern states had equalised inheritance

rights between *unmarried* daughters and sons¹. I exploit these earlier state-level amendments (hereafter, ‘the reforms’) as a natural experiment to study the impact of women’s inheritance on intrahousehold dynamics. The primary methodological problem in identifying the relationship between land inheritance and women’s empowerment is endogeneity because unobserved heterogeneity at the household level may be correlated with both, leading to spurious results. To address these endogeneity concerns, I use a difference-in-differences (DID) strategy that treats the reforms as an exogenous shock and exploits variation in exposure to the reforms².

In contrast to other studies which have only measured women’s decision-making power as an indicator of IBP, I measure levels of spousal discussion³. I do this because decision-making power is a one-dimensional measurement of influence over household decisions. Household decision-making is a subtle and culturally grounded process of negotiation and adjustment; women may, in certain cultural contexts exert influence in less direct or overt ways. I find no increase in women’s decision-making power as a result of the reforms, however, I find a positive and statistically significant increase in levels of spousal discussion. I offer two alternative potential explanations for this increase in spousal discussion. Firstly, in a patriarchal society such as India, women may not directly challenge their husband’s authority but may, as a result of a higher threat point, be better able to exert ‘backstage influence’ (Kabeer, 2001) over household decisions. Secondly, in a patrilocal society, a woman will cede decision-making power not only to her husband but also to her in-laws; the reforms may empower the couple at the expense of in-laws, leading to increased spousal discussion.

This paper relates to two key strands of literature: (i) economic models of the household and; (ii) the relationship between legal reform, land and women’s empowerment. This paper contributes to this literature in several dimensions. Firstly, as far as I am aware, there has been no research that considers spousal discussion as an outcome variable in the context of intrahousehold dynamics. Secondly, I argue that decision-making power may be an inappropriate indicator in patriarchal societies where women may be reluctant to admit their

¹ These reforms still discriminated against *married* daughters. The 2005 nationwide amendment removed this aspect of discrimination and every daughter, whether married or unmarried, is now treated equally with sons.

² Several researchers have used similar identification strategies including: Anderson and Genicot (2015), Bhalotra, Brule and Roy (2018), Bose and Das (2017), Deininger et al. (2013), Heath and Tan (2016), Rosenblum (2015), Roy (2008, 2015) and Sakpal (2017).

³ Acosta et al. (2020) argue that household surveys should aim to uncover the process through which a decision is taken, asking questions such as; *Could you influence this decision if you wanted to? Did you participate in a conversation about this decision?*

influence on household decisions. At the methodological level, this emphasises the importance of developing more nuanced and culturally appropriate indicators of IBP. At the conceptual level, this highlights that game-theoretic models often do not adequately capture subtle processes of household decision-making. At the policy level, the findings underline the importance of considering the family structure in determining women's empowerment.

This dissertation proceeds as follows. Section II situates this paper within the literature. Section III explores the history of land inheritance in India. Section IV introduces the data, identification strategy and presents descriptive statistics. Section V discusses the results. Section VI consists of robustness checks and Section VII concludes.

Section II – Literature Review

A. Models of the household

Economic models of the household are useful to conceptualise and test the relationship between extra-household factors and intrahousehold dynamics. The interrelationships between IBP and extra-household factors is illustrated in Figure 1 (Agarwal, 1997). Intrahousehold dynamics should not be considered in isolation, disembedded from wider institutions and socio-economic conditions (Agarwal, 1997). This paper does not derive a model, nor explore the intricacies of the models discussed, but rather provides a helpful overview of developments in this area of research to inform the rest of the paper.

Becker's (1965, 1981) unitary model considers the household as a single entity rather than a collection of individuals. The unitary model relies on two key assumptions; the common preference and the common budget constraint assumptions. The first posits a joint welfare function of the household. This assumes there is an altruistic consensus within the household or that a 'benevolent dictator' represents the preferences of the family to ensure the Pareto efficient distribution of resources (McElroy, 1997). The common budget constraint assumption refers to the idea that all resources and income are pooled. This means that if one spouse gains a windfall, the allocative outcomes should remain the same (Holvoet, 2005).

The unitary household model vastly oversimplifies household dynamics (Dasgupta, 2016). Empirical studies challenged the common preference and income pooling assumption. Lundberg, Pollak and Wales (1997), for example, show that shifting the recipient of child benefit payments from the father to the mother in the UK in the 1970s increased demand for children's goods. This suggests that income is not pooled and that parents have differing preferences. The key issue with the unitary model for the purposes of this paper is that the

household is a 'black box' and the processes of decision-making within are assumed rather than studied (Blumberg, 1988).

In response to the shortfalls of the unitary model, a new set of household models were developed. Crucially, both cooperative and non-cooperative household models conceptualise intrahousehold decision-making as the consequence of bargaining between members (Agarwal, 1997) and thus conceive of the household as 'contested terrain' (Kevane, 1998). These models do not assume there is a single utility function for the household and are generally more interested in opening the 'black box' to discover intrahousehold dynamics. The central feature of these models is 'threat points' which determine the bargaining power attached to each household member. The threat point is defined by the level of utility that one household member can expect in the event of a breakdown in cooperation with another member (Katz, 1997). Threat points can therefore be understood to indicate the level of interest that each member has in maintaining cooperation; if a member has a high threat point, they have less interest in maintaining cooperation as they can attain a high level of utility in the absence of cooperation. Owning land increases a woman's threat point.

Threat points themselves are a function of individual features such as income or education and 'extra-environmental parameters' (EEPs) (McElroy, 1990). EEPs are features of the extra-household environment such as the marriage market, social welfare programmes and inheritance legislation which regulate a household member's outside options. Threat points are usually gendered. Men usually have higher market wage rates, are more likely to own property and are not socially sanctioned from remarrying after divorce. This highlights the importance of linking the intrahousehold dynamics with extra-household 'opportunity structures' rather than examining them in isolation (Agarwal, 1997; Akter and Chindarkar, 2020). This paper aligns with bargaining rather than unitary household models; however, within bargaining models, I argue that the traditional measurement of bargaining, as decision-making power, is flawed.

This overview of household models does not cover the depth, variety and detail of numerous household models and the differences between cooperative and non-cooperative household models are left unexplored. The intention of this discussion is to draw out two key points. The first relates to the way in which threat points, determined at the extra-household level, can affect intrahousehold dynamics and how this gives scope for public policy to shift intrahousehold behaviour through reform which alters threat points. Second, I highlight the

limitations of these economic household models and the associated measurement of decision-making power to understand intrahousehold dynamics. I turn to this question now.

Survey questions such as ‘who makes the decision about X?’ are traditionally used to measure IBP and the respondent is presented with dichotomous or discrete options to indicate if they, their spouse or another household member makes this decision⁴. The extent to which women participate in household decisions is often used as a metric for women’s empowerment (Alkire et al., 2013). However, few households operate with such strict divisions and there are numerous contextual factors involved in any decision-making process (Kabeer, 2001). Additionally, there is often incongruence between reported decision-making patterns by different members of the household (Allendorf, 2007; Ambler, Doss, Kieran and Passarelli, 2017; Deere & Twyman, 2012).

Quantitative studies therefore reveal little about the subtle and nuanced process of negotiation, adjustment and resistance that occurs in the household, highlighting the importance of Kabeer’s (1999) warning that ‘statistical perspectives on decision-making ... should be remembered for what they are: simply windows on complex realities’ (p. 47). Sociological approaches may better conceptualise intrahousehold dynamics. Women may choose to publicly honour the traditional decision-maker due to patriarchal constraints on action; resistance is culturally grounded and women strategize within these constraints (Kandiyoti, 1998).

Scott’s (1985) *Weapons of the Weak*, which is based on fieldwork in Malaysia, is one of the most famous explorations of resistance to social oppression. Scott (1985) focuses predominantly on physical acts of resistance such as ‘foot-dragging’, ‘pilfering’ and ‘sabotage’ and concentrates on class-based rather than gender-based marginalisation. In South Asia, Agarwal (1994) points to women resisting domination by their husbands through persistent complaining, withholding sex or threats to return to the natal home. However, as well as physical acts of resistance there is also the scope for women to exert power through discursive means, using ‘backstage influence’ (Kabeer, 2001). ‘Backstage influence’, in this paper, refers to techniques of deception, persuasion, manipulation and leverage through discussion to influence household decisions. This subtle form of bargaining is described by Kabeer (1997)

⁴ Some efforts have been made to transcend this crude way of assessing intrahousehold dynamics; the Women’s Empowerment in Agriculture Index (WEAI), for example, created a more sensitive measure to assess influence over household decision by including options for ‘not at all’, ‘small extent’, ‘medium extent’, ‘to a high extent’ (Acosta et al., 2020).

as the 'hidden expansion of possibilities and potentials, through the quiet renegotiations of allocational priorities' (p. 298). The absence of decision-making power, as it is traditionally measured, does not necessarily imply the absence of power at all. We cannot infer lack of household influence from lack of overt resistance to norms. Given this, quantitative approaches relying on decision-making variables may underestimate the informal power of women.

With regard to the validity of spousal discussion to measure 'backstage influence', Lukes' (1974) concept of non-decision-making power is useful. This refers to the power to set the agenda and boundaries of legitimate discussion. 'Non-decision-making power' stifles contestation because a topic is considered outside of what can be reasonably challenged. Discussing a certain topic suggests that it has been admitted into the realm of contestation (Agarwal, 1994). If a topic is in the realm of contestation, there is scope for women to use their 'backstage influence' in the decision-making process. While this paper does not measure the *extent to which* spousal discussion allows women to use their 'backstage influence' (for which observational data is needed), spousal discussion does suggest *some* potential for influence over household decisions and thus gives us another window through which to interpret intrahousehold dynamics.

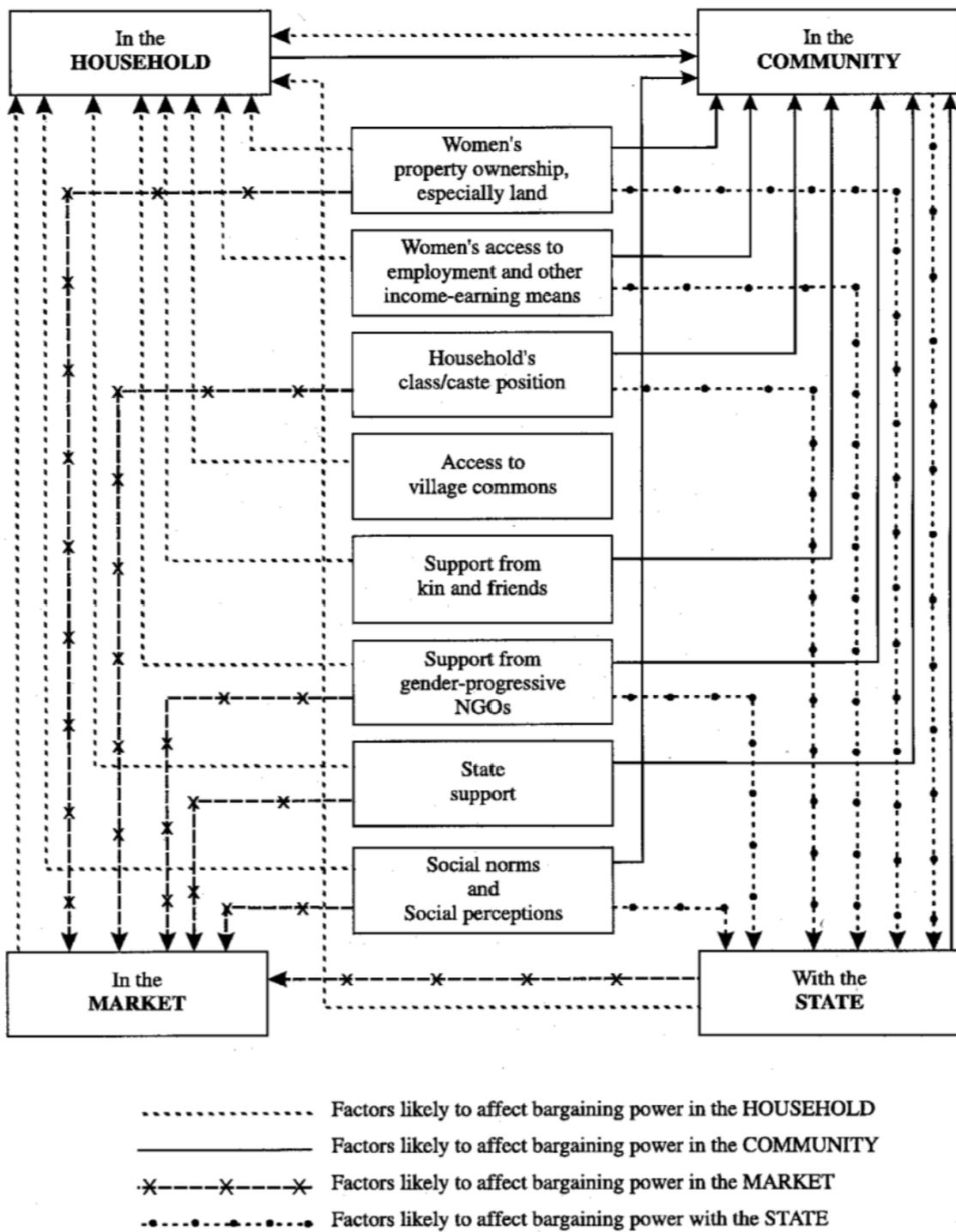


Figure 1: Factors affecting bargaining power
 Source: Agarwal (1997)

B. Land, legal reform and intrahousehold dynamics

Productive assets, in particular land, are important determinants of intrahousehold dynamics. The distribution of productive assets is heavily influenced by EEPs such as the local institutional and legal framework. This has led researchers such as Chiappori, Donni and Komunjer (2012) to emphasise the importance of family law for women's empowerment. Numerous studies show that reform to personal law can influence behaviour, despite intransigence of tradition and customary precedent. Ambrus, Field and Torero (2009) find that reforms to Muslim family law changed the behaviour of parents with regard to dowry in Bangladesh. Carranza (2012) finds that a modification to Islamic inheritance law in Indonesia reduced fertility-stopping behaviour. Rangel (2006) finds that an extension to alimony rights in Brazil increased female decision-making power.

With regard to land and land titling specifically, Melesse, Dabissa and Bulte (2018), Datta (2006) and Wiig (2013) find that women with land titles have more influence over household decisions in Ethiopia, India and Peru respectively. Harari (2019) finds that gender-progressive changes to land inheritance law in Kenya improved education outcomes for girls, decreased the likelihood of women experiencing female genital mutilation, and raised the age of marriage and childbearing. Peterman (2011) finds gender-progressive land inheritance law reform improves women's employment outcomes and earnings in Tanzania. Hallward-Driemeier and Gajigo (2015) find positive female labour supply outcomes in Ethiopia as a result of reforms that expanded women's access to marital property. In Nepal, Mishra and Sam (2015) find increased levels of women's IBP as a result of gender-progressive inheritance reform, while in Vietnam, Matz and Narciso (2010) and Menon, Rodgers and Nguyen (2014) find that gender-progressive land reform decreased the probability of female children participating in child labour and improved child outcomes in relation to health and education.

Since India is a predominantly rural society, the importance of land cannot be understated. Agarwal (1994) argues that women achieving equal rights to landed property is the 'single most critical entry point for women's empowerment in South Asia' (p. 2). Sircar and Pal (2014), in their fieldwork in three Indian states, find that 73% of land is inherited while only 25% is purchased and 2% obtained through government leases.

There have been a number of studies which have identified the causal effects of the reforms in India. These are summarised in Appendix Table 1 and therefore are not all mentioned here. The first set of literature concerns whether these reforms increased the amount of land that

women inherited. Deininger, Nagarajan and Goyal (2013) compare the likelihood of inheriting land between male and female siblings living in households exposed to the reforms. They achieve identification by using a DID approach where treatment is defined by the timing of father's death, their state of residence and their gender. Deininger et al. (2013) find that women exposed to the reform are 15 percentage points more likely to inherit land than women in the control group. Brule (2010) uses a regression discontinuity design (RDD), isolating the treatment effect by comparing groups whose fathers died just before and just after the reforms in each state. Brule (2010) finds a small, yet significant increase in the share of land inherited by women.

On the other hand, Roy (2015) finds no increase in the likelihood of women inheriting land as a result of the reforms. Using a DID specification, Roy (2015) finds evidence that brothers of treated women are more likely to be 'gifted' land by their parents, suggesting parents are circumventing the law. Roy (2015) also finds that treated women achieved higher levels of education and higher dowries, suggesting that parents compensate daughter's through in these ways rather than through land bequest, aligning with Botticini and Siow's (2003) prediction that parents bequest land to sons as sons have comparative advantage in working on family land. Marginal or non-existent increases in the likelihood of women inheriting land as a result of the reforms is consistent with the ethnographic evidence presented by Bates (2004) and Brown, Ananthpur and Giovarelli (2002). However, it is worth reiterating that the potential shift in intrahousehold dynamics as a result of the reforms does not rely on the women actually inheriting land but rather having the option to claim such rights based on the law (Harari, 2019). This institutional support increases women's threat point and their IBP even if they do not necessarily pursue formal legal claim (Rao, 2007).

Another set of quasi-experimental studies analyse the downstream effects of the reforms on women's empowerment. Roy (2008) employs a DID approach and finds that exposure to the reforms increases women's autonomy. Heath and Tan (2016) find that the reforms increased women's autonomy as well as improving children's health. Additionally, this study finds women exposed to the reforms have fewer children; women in developing countries generally prefer to have less children than their husbands (Ashraf, Field and Lee, 2010) and this finding indicates that increased IBP translates into lower realised fertility (Rasul, 2008). Sakpal (2017) finds an increase in education for both treated women and their children as a result of exposure to the reforms.

Mookerjee (2017) deploys a DID strategy exploiting variation in religion and year of marriage that determined eligibility for the reform and finds an increase in the decision-making power of treated women. However, contrary to previous literature which assumes bargaining models are spousal, Mookerjee (2017) takes into account the joint family structure prevalent in India and shows that both the husband and wife experience increased bargaining power as a result of the reforms. Since women usually move in to live with their husband's family, this suggests that the reforms empowered the couple vis-a-vis the husband's family. The reforms resulted in an intergenerational redistribution of intrahousehold bargaining power within the context of the predominant patrilocal family structure. Overall, there is evidence that gender-progressive inheritance reform can shift intrahousehold dynamics.

Section III – The history of land inheritance in India

The origins of Hindu inheritance law can be traced back to scriptural texts of the 11th century (Roy, 2015). The Mitakshara, a legal commentary on an earlier scriptural text, is considered one of the main authorities on Hindu law on the topic of property rights and inheritance.⁵ The Mitakshara school differentiates between private and joint property. Joint property consists of ancestral property (inherited from the father, paternal grandfather or paternal great-grandfather) and property jointly acquired or merged into joint property. Private property consists of self-acquired property and property inherited from outside the patriline (Agarwal, 1994). Under the Mitakshara system, four generations of male family members become coparceners (joint heirs) to joint property. While private property can be bequeathed at will, joint property can only be inherited by members of the coparcenary.

In 1772, the British colonial authorities instigated the codification of Hindu personal law and by the early 20th century, pressure from women's groups to improve women's status in society initiated contestation over the codification process (Agarwal, 1994). This culminated in the establishment of the Rau Committee in 1941, led by the retired civil servant Sir B.N. Rau. The Rau Committee drafted the Hindu Code Bill (HCB), a piece of comprehensive legislation on the subject of marriage, property and the family which included daughters as equal inheritors of *all* property in their recommendations, although this was dropped during the period of independence and partition (Majumdar, 2010). After Nehru had won the first general election of independent India, he brought the HCB into law. The HCB was split into four separate acts. In 1956 the HSA, which concerned issues of succession, was passed. However, the distinction

⁵ For a fuller discussion see Agarwal (1994), Roy (2015) and Deininger et al. (2013).

between private and joint property endured and therefore the gender progressive content of the recommendations by the Rau Committee was significantly diminished.

Like many personal laws in India, inheritance law varies by religion (Roy, 2008). The 1956 HSA only applies to Hindus, Buddhists, Sikhs and Jains⁶. I refer to this group collectively as ‘Hindus’ throughout this dissertation. The 1956 HSA states that widows and daughters are able to inherit private property of any Hindu male who dies intestate (without a will), but are not considered coparceners and are therefore not entitled to a share of ancestral property (Majumdar, 2010). The majority of Hindu men die intestate. Brule (2010), for example, finds only 5-20% of people write wills in Northern India. Therefore, the 1956 HSA ensured that only men benefitted from intergenerational transfers of productive assets, leaving women at a distinct disadvantage. Roy (2015) likens coparcenary inheritance law to an exclusive male membership club.

The Indian constitution allows both federal and state governments to legislate on issues of inheritance (Heath and Tan, 2016). Five southern Indian states passed Hindu Succession Act Amendments (HSAA) between the 1970s and 1990s, which made daughters coparceners to joint property. These amendments occurred in Kerala in 1976, Andhra Pradesh in 1986, in Tamil Nadu in 1989 and in Karnataka and Maharashtra in 1994 (see Figure 1). The reform in Kerala was different to the other four states in that it abolished joint family property completely. The state of Kerala is therefore dropped from the dataset. I will refer to the other four reforming states as ‘reform states’ and their state-level amendments as the ‘reforms’ or the ‘HSAA’ throughout this dissertation. In these states, daughters are only eligible to become coparceners if they were *unmarried* at the time that the HSAA was passed in each state. For example, a woman who lived in Maharashtra and was married for the first time in 1993 would not be considered a coparcener of joint property, while a woman who lived in Maharashtra and married in 1995 would be considered a coparcener. In 2005, an amendment to the 1956 HSA was passed at the federal level, equalising inheritance rights between genders. I exploit the earlier state-level amendments as a natural experiment to study the impact of women’s inheritance on intrahousehold dynamics in India.

⁶ The inheritance of Muslims is governed by the Muslim Personal Law Application Act of 1937, while the inheritance of Christians is governed by local customary or English law (Khan, 2000; Roy, 2015).

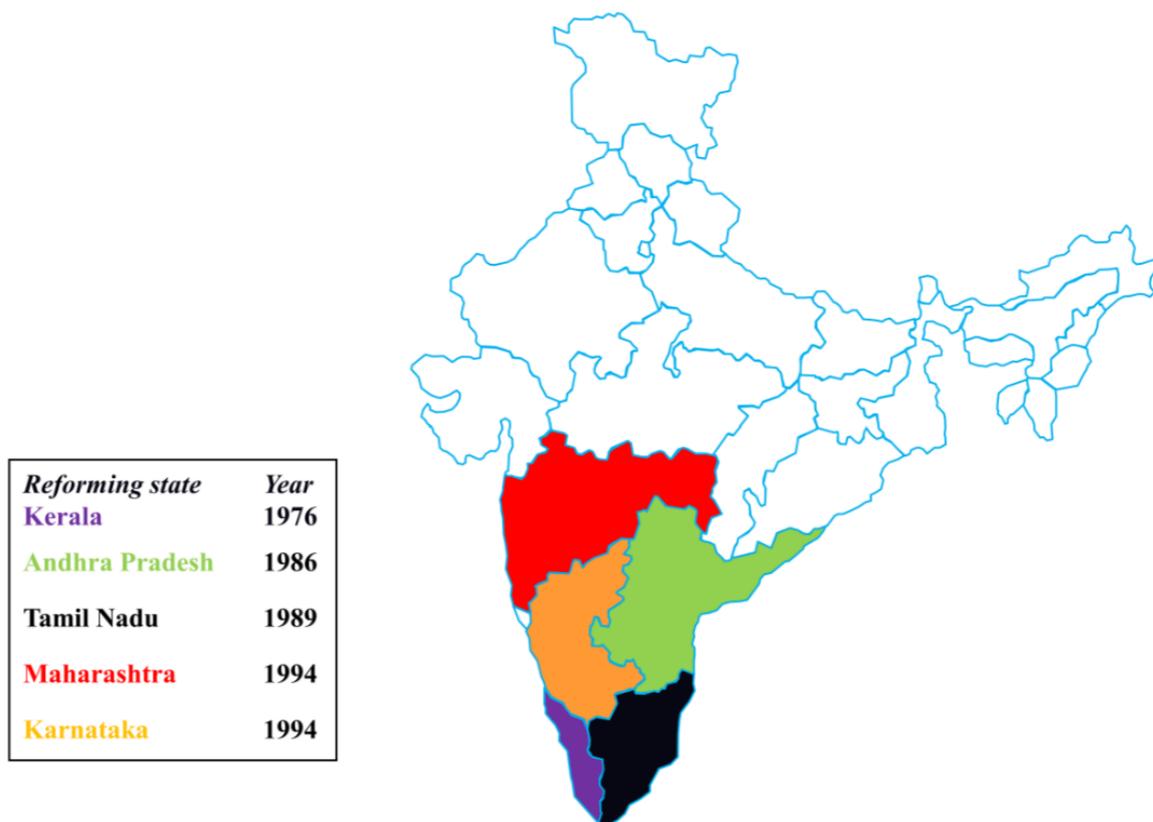


Figure 2: Reform states
Source: Roy (2015)

Section IV – Data, identification strategy, assumptions and descriptive statistics

A. Data

I use the 2012 round of the Indian Human Development Survey (IHDS) jointly organised by the University of Maryland and the National Council of Applied Economic Research (NCAER). This is a nationally representative survey of 41,554 households in 68 districts, 1503 villages and 971 urban neighbourhoods across India. As discussed above, a woman's exposure to the legal reform is jointly determined by religion, state of birth and year of marriage. The IHDS contains this information as well as indicators regarding intrahousehold dynamics including decision-making power and spousal discussion variables. Due to the nationwide inheritance law reform in 2005, I drop all women who were married after this time from my dataset. I drop those women from the state of Jammu and Kashmir where the HSA does not apply (Agarwal, 1994). I drop women from Kerala as discussed above. I also drop non-landed

households from the dataset⁷. I therefore focus on a sample of 7760 eligible women, of whom 943 are ‘treated’ (exposed to the law reforms).

B. Identification strategy

Four southern Indian states reformed their inheritance laws for Hindus⁸, making Hindu women legal coparceners of joint property in the 1980s and 90s. To be a beneficiary of this legal reform, an individual woman had to be *unmarried* at the time that the law was passed in their respective state. For women who were *married* when the HSAA was passed, their inheritance rights are regulated by the 1956 HSA and therefore did not enjoy equal inheritance rights to their brothers. A treated woman is Hindu, lives in a reform state and was unmarried when the law was passed in their respective state. The individuals in the control group are (i) Hindu women married at the time of the reform in the reform states; (ii) non-Hindu women in all states and; (iii) all women in non-reform states. I deploy a DID strategy to estimate the impact of land inheritance on women’s empowerment. Due to endogeneity in the implementation of the HSAA at the household level, I exploit the introduction of the HSAA rather than its actual implementation, following Matz and Narcisco (2010). Based on the above description, the DID specification compares intrahousehold dynamics for ‘treated’ women exposed to the reform and ‘control’ women not exposed to the reform.

Formally, the estimation equation is;

$$(1) y_{isc} = \alpha_{isc} + \beta_1 Religion_{isc} + \beta_2 Marriage_{isc} + \beta_3 (Religion_{isc} * Marriage_{isc}) + u_s + u_c + \mu_{isc} + \epsilon_{isc}$$

Where y_{isc} is the outcome for individual i , in state s , born in birth cohort c . $Religion_i$ is a dummy variable for whether individual i is Hindu, and $Marriage_{isc}$ is a dummy variable for whether individual i was unmarried at the time that the HSAA was passed in state s . $Religion_{isc} * Marriage_{isc}$ constitutes the main treatment effect and therefore β_3 is the main coefficient of interest (labelled HSAA in regression tables). u_s is the fixed effect of state s which controls for an array of unobserved or unobservable time-invariant differences between the states such as the culture or geography. u_c is the fixed effect⁹ of birth cohort c which controls for unobserved or unobservable time-varying characteristics such as economic shocks,

⁷ The dataset contains a dummy variable that indicates whether an individual owns *or cultivates* any agricultural land. I consider household ‘landed’ if this variable equals 1. There is potential for imprecision here as some households may cultivate but not own land.

⁸ As discussed earlier Hindu in this dissertation refers to Hindus, Buddhists, Sikhs and Jains.

⁹ Birth cohorts are coded in five year stints. For example, women born between 1951 and 1956 are one cohort.

trends in intrahousehold dynamics and policies enacted at the national level. A concern with DID specifications is that there may be state or religion-specific or state-specific time-varying omitted variables that introduce endogeneity (Bhalotra, Brule and Roy, 2018). This would occur, for example, if some states had gender-progressive legislatures which passed a number of laws in this direction. I include year of birth-state and year of birth-religion to control for time-varying trends occurring within particular states (e.g. state-level laws or initiatives) and time-varying trends occurring within particular religions (e.g. other legal reforms which apply only to Hindus). μ_{isc} captures a range of individual-level characteristics including age, caste and income. ϵ_{isc} is the error term. To address serial correlation concerns, the standard errors are clustered at the district level (Bertrand, Mullainathan and Duflo, 2004).

Following Deininger et al. (2013), to allow the impact of the HSAA to vary over time due to slow information dissemination or social learning, I further interact $Religion_{isc} * Marriage_{isc}$ with a series of dummies indicating when, after each reform, a woman married. These dummies cover marriage dates of 0-3, 3-6 and 6-9 year after the reform. The rationale for including these further interactions is as follows. The empowerment effect of the legal reforms for women is likely to be strongest at the time of marriage (either from the actual inheritance of land or the potential of doing so in the future) since this asset gives them status in their marital home. If they marry immediately after the reforms pass, there is a high likelihood that they, their family and or in-laws may not know about the reforms and thus the precedent for them inheriting land at this time or in the future is not established. Additionally, as noted by Deininger et al. (2013) intergenerational asset transfers also may occur at the time of marriage rather than the father's death. Alternatively, if they marry significantly after the reforms are passed, the likelihood that they, their family and in-laws know about the reforms is higher and thus the precedent for them inheriting land at the time or in the future is established. Since it often takes at least 5 years for knowledge about legal reform to disseminate into the general population (Brule, 2010), this is a reasonable assumption to make. Therefore, I hypothesise that the coefficient will be strongest for women who marry for the 6-9 years after the reform as they themselves, their families and their in-laws are likely to know about the existence of the legal reforms and therefore be more likely pursue land inheritance at marriage or in the future.

The outcome variables measured in this paper pertain to intrahousehold bargaining power as measured by decision-making power and spousal discussion as presented below in Table 1. I

measure decision-making power to verify and contrast with results from prior studies. Measuring spousal discussion is the unique contribution of this dissertation to the literature.

Table 1: Outcome variables

Survey question

Who decides¹⁰

Who decides about whether to buy an expensive item such as a TV or fridge?

Who decides how many children you have?

Who decides what to do if you fall sick?

Who decides whether to buy land or property?

Who decides how much money to spend on a social function such as marriage?

Intrahousehold Discussion

Do you and your husband discuss things that happen at work/ on the farm?

Do you and your husband talk about what to spend money on?

Do you and your husband talk about things that happen in the community such as elections of politics?

C. Key assumptions and descriptive statistics

It is important to think about conceptual reasons why the validity of the identification strategy may be undermined (Wing, Simon and Bello-Gomez, 2018). This DID specification relies on several assumptions. Firstly, the decision to ‘treat’ must be exogenous. Since the ‘treatment’ is dependent on state of birth, year of marriage and religion, there are significant endogeneity concerns. While there is no evidence for systematic pattern for the specific years the reforms took place (Anderson and Genicot, 2015; Naaraayanan, 2019), the reform states are all in the south of India. The validity of the results could be undermined if a ‘southern state effect’ is responsible for omitted variable bias (Bhalotra, Brule and Roy, 2018). Dyson and Moore (1983) refer to north and south India as two different ‘demographic regimes’. Although the empirical specification includes state fixed-effects, I also re-estimate my results and restrict the sample to only reform states thereby exploiting the variation between year of marriage and religion rather than variation between states (Appendix Table 2). The results are qualitatively similar to the results of my main regressions.

The ‘year of marriage’ could also be considered an endogenous choice. This would be of particular concern if there was anticipation of the reforms and families who did not want their

¹⁰ A question about who decides what to cook was not included because of its low correlation with the other measures of IBP. Decisions of what food to cook on a daily basis are also traditionally made by women and do not reflect bargaining power per se (Kishor, 1997).

daughters to be eligible for land inheritance pushed them to marry just before the law passed. To alleviate this concern, Figure 3 is a line graph that plots the frequency of marriages 10 years before and 10 years after the reform in each state and in total. There is no evidence of a spike in the number of marriages just before the year 0 (year of the reform), suggesting that any anticipation of the reform did not lead families to push their daughters to marry to make them ineligible for the reform. Line graphs for the frequency for individual states are presented in Appendix Figure 1.

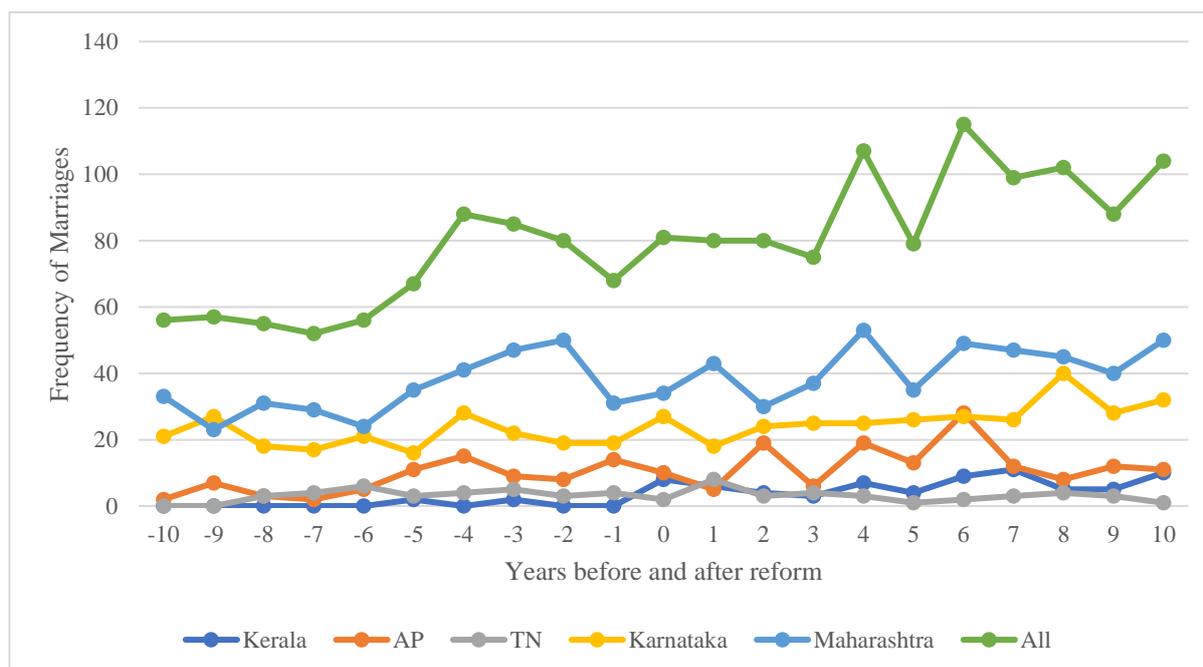


Figure 3: Frequency of marriages before and after reforms

For this identification strategy to be valid, there must also be parallel common trends between treatment and control groups conditional on control variables and fixed-effects. There are certainly considerable level differences between the treatment and control groups in relation to outcome and control variables as seen in the summary statistics in Table 2. The treatment and control columns are of the most interest, while the state and religion columns help to uncover what is driving the level differences between the control and treatment group. For example, the treatment group has higher income, are younger, marry older and are less likely to be the household head than the control group. The starkest difference between the treatment and control group is women's years of education, with means of 6.49 and 4.47 respectively. This is driven by the fact that Hindus and people living in reform states have more years of education than non-Hindus and people living in non-reform states. There are also key differences between the education of the mother, father and spouse of treated vs. control women. I control for these

variables in my regressions. While there are certainly level-differences between the treatment and control groups on a number of variables, I see no obvious reason why trends would differ between treatment and control group overall. However, in order to account for this possibility, I add year of birth-state fixed effects and year of birth-religion fixed effects as discussed earlier.

A final key concern with the identification strategy is that the state-level reforms were correlated with other legal reforms which could impact intrahousehold dynamics, such as the Dowry Prohibition Act or the Child Marriage Act; however, as argued by Anderson and Genciot (2014), most of these were implemented at the federal level and therefore would affect both the treatment and control group equally. To ensure that the results do occur as a result of the legal reforms, I conduct placebo tests throughout this paper by changing the date of the reform and the religion eligible for the reform.

Table 2: Summary statistics

Variable	Non-reform state	Reform state	Non-Hindu	Hindu	Control	Treatment
	Mean					
Age	36.90	36.26	35.74	36.01	36.64	31.65
Income	119502.7	131479.3	114793	123079.8	121217.8	130229.3
Age at marriage	16.90	17.50	17.50	16.99	16.92	17.82
Household head	0.07	0.05	0.07	0.06	0.07	0.03
Rural	0.92	0.90	0.92	0.92	0.92	0.89
Years of education	4.5	5.48	3.87	4.81	4.47	6.49
Mother years of education	1.11	1.2	1.15	1.13	1.10	1.33
Father years of education	3.7	2.53	2.92	3.46	3.52	2.71
Spouse years of education	6.99	6.55	5.69	6.99	6.82	7.39
Sometimes or always discuss work with husband	0.85	0.86	0.86	0.85	0.85	0.88
Sometimes or always discuss expenditure with husband	0.9	0.89	0.92	0.89	0.89	0.92
Sometimes or always discuss community with husband	0.75	0.64	0.73	0.72	0.73	0.69
Always discuss work with husband	0.46	0.38	0.38	0.44	0.44	0.39

Always expenditure husband	discuss with	0.55	0.43	0.52	0.52	0.53	0.44
Always community husband	discuss with	0.22	0.18	0.19	0.21	0.21	0.21
No. of obs		5895	1865	562	7198	6817	943

Section V – Results and discussion

A. Decision-making power

Table 3 presents results from estimating equation (1). HSAA constitutes the treatment effect. All regressions in Table 3 include controls traditionally used as proxies for women’s empowerment to ensure that there is no omitted variable bias driving an effect. State fixed effects and year of birth fixed effects control for unobserved or unobservable time-invariant differences between states and time-trends, respectively. A common concern with DID specifications such as (1) is that there may be state or religion-specific or state-specific time-varying omitted variables that introduce endogeneity into the specification (Bhalotra, Brule and Roy, 2018). The inclusion of year of birth-state and year of birth-religion fixed effects addresses these concerns with the former controlling for differential state-specific time trends and the latter capturing time-varying trends within different religions (Anderson and Genicot, 2015; Bhalotra, Brule and Roy, 2018; Naaraayanan, 2019; Roy, 2008).

On measures of all topics of decision-making power, the coefficient of the treatment variable is not statistically significant. As expected, both age and being the household head have a positive and statistically significant relationship with all measures of decision-making power apart from decisions about the number of children to have. This suggests that with age (which is correlated with likelihood of becoming the household head), women have more decision-making power. The average age of women surveyed is 36 years old; decisions about the number of children may have been taken at an earlier stage in life when women had less decision-making power, and thus women may report this variable slightly differently to the other decision-making variables in the survey which occur more regularly throughout life course.

These results contradict much of the literature discussed in Section II. For this reason, I re-estimate equation (1) changing the outcome variable from who decides about a particular topic to *who has the most say* about a particular topics. These results are presented in Appendix Table

3. I do this because a high proportion of eligible women respond ‘yes’ to the question ‘do you decide about X?’, but a much lower proportion of women report having the most say on these topics. For example, 78.02% women in this dataset report that they make decisions about buying expensive items, but only 8.95% of women report that they have the most say on this topic. It could be possible that women exposed to the reform were more likely to report having the *most say* than the control group. However, the results in Appendix Table 3 are qualitatively similar to those in Table 3 in the main body, with the treatment variable being statistically insignificant.

These results contradict Mookerjee’s (2017) study on the impacts of the reforms on women’s household decision-making using the 2005-2006 round of the National Family Health Survey (NFHS). Mookerjee (2017) finds that exposure to the reform increases the likelihood that a woman will make decisions about her healthcare by 2.6%, major household purchases by 3.5% and household expenditure by 1.6%. On the other hand, Heath and Tan (2016) find that exposure to the reform increases women’s autonomy, measured as the ability to go to the market, to a health facility and places outside the village alone, *but not in relation to decision-making power*.

Overall, the results in Table 4 suggest that the reforms did not improve women’s decision-making power in India as a result of a higher threat point. While decision-making power is often used as a metric of women’s IBP, I argue that in certain contexts women may be socially sanctioned from directly or overtly challenging traditional authority. This paper takes a more nuanced approach to IBP by measuring spousal discussion in the context of intrahousehold dynamics. I turn to these results now.

Table 3: Decision-making power in the household regression

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Eligible women decides about expensive item	Eligible women decides about children	Eligible women decides if falls sick no.	Eligible women decides about buying land	Eligible women decides about wedding expenses
HSAA	-0.07 (0.08)	-0.05 (0.05)	-0.01 (0.05)	0.01 (0.07)	-0.03 (0.08)
Marriage	0.12 (0.08)	0.13** (0.06)	0.09* (0.05)	0.08 (0.06)	0.08 (0.07)
Religion	0.14* (0.08)	-0.01 (0.07)	-0.99*** (0.07)	0.01 (0.12)	-0.06 (0.09)
Age	0.02*** (0.00)	0.00 (0.00)	0.01*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Household head	0.12*** (0.02)	-0.01 (0.03)	0.08*** (0.02)	0.11*** (0.02)	0.11*** (0.02)
Spouse education	-0.00** (0.00)	0.00 (0.00)	-0.00** (0.00)	-0.00 (0.00)	-0.00 (0.00)
Years of education	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Mother education	0.00 (0.00)	-0.01** (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Father education	-0.00*** (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00* (0.00)
State fixed effects			Yes		
Birth year fixed effects			Yes		
Birth year-religion fixed effects			Yes		
Birth year-state fixed effects			Yes		
Controls			Yes		
Constant	0.21 (0.22)	1.04*** (0.21)	0.43** (0.20)	0.08 (0.21)	0.18 (0.22)
Observations	7,760	7,760	7,760	7,760	7,760
R-squared	0.14	0.11	0.15	0.14	0.14

For all regressions presented in this paper, standard errors are in parentheses and are clustered at the district level. Regressions also include weights provided by IHDS. For all regressions in this paper, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

B. Spousal discussion

Findings presented so far suggest that the reforms did not necessarily increase decision-making power. However, this does not mean that intrahousehold dynamics remain unchanged. Increased threat points may allow women to exercise power effectively in more subtle, discursive ways. I measure levels of spousal discussion on the topic of work (Table 4), community issues (Table 5) and expenditure (Table 6). In each of the tables, Column 1 includes state and birth-year fixed effects as well as basic controls including age, income and caste.

Column 2 includes an interaction term of the number of years a woman was married after the reform in each state (0-3, 3-6, 6-9) with the treatment variable. Column 3 adds year of birth-state and year of birth-religion fixed effects. Column 4 adds extra controls including age at marriage, whether or not the woman is the household head, as well as individual, family and spousal educational variables. Column 4 represents the most rigorous model. Column 5 is a placebo test using a hypothetical amendment date of 1982 for all states and Column 6 is a placebo test which changes the eligibility from Hindu women to non-Hindu women. The coefficient on the treatment variable in Columns 5 and 6 in all regressions presented here are insignificant, increasing confidence that the results presented represent a causal effect.

With regard to discussions about work (Table 4), the treatment variable coefficient is not statistically significant, though mostly positive in Columns 1-4. However, the interaction term of being married 6-9 years after the reform in each state and the treatment variable is statistically significant and positive in all regressions in which it is included. In the preferred model in Column 4, the coefficient is 0.31, suggesting that treated women married 6-9 years after the amendment passed in their state are 31% more likely to always or sometimes discuss their work with their husband than the control group.

Deininger et al. (2013) interact their treatment variable with the year of death of the father of the woman, as the death of the father triggers the inheritance of land. They find that when the father of a treated women dies 0-5 years after the reform, the woman is 10.1% more likely to inherit land than the control group, whereas when the father of a treated woman dies 6+ years after the reform, they are 23.5% more likely to inherit land than the control group. This effect of the date of father's death is attributed to the learning effect whereby knowledge about the law and the rights of women with regard to inheritance diffuse slowly throughout the population after the reforms pass.

This paper measures the date of marriage after the reform rather than the date of death of the father (which is not included in this dataset). While not as precise as measuring the death of the father as a trigger for inheriting land, I argue that the year of marriage is the year in which a woman is most likely to become aware of her inheritance rights due to pressures from the marital family and thus the empowerment effect is likely to occur at this point. This is because the (future) ownership of land is likely to boost status and respect of the women with regard to her marital family and husband. In line with my hypothesis, the results from Table 4 confirm

that the women who marry significantly after the reform passes in each state are more likely to discuss work with their husband.

Table 5 present results measuring levels of spousal discussion about community issues. The results in Columns 2, 3 and 4 remain relatively similar as extra controls and fixed-effects are added. In this regression, the treatment variable is positive and statistically significant, robust to rigorous controls and fixed effects. In Column 4, the most rigorous model, women exposed to the reform are 50% more likely to sometimes or always discuss community issues with their husbands than the control group. The 0-3 and 3-6 year interaction terms are negative and statistically significant, while the interaction term of being married 6-9 years after the reform passed is not statistically significant. This suggests that this result is driven by those who were married 10+ years after the reform. For the state of AP, for example, which passed the reforms in 1986, this would mean those married 10+ years after the reform (1996 onwards) are driving this positive coefficient of the treatment on discussion about community matters.

The results in Table 6 which measure level of spousal discussion on the topic of expenditure display different patterns to those about level of discussion about community issues and work. Neither the treatment variable nor the relevant interactions are statistically significant in Column 4. This suggests that 'expenditure' is not discussed as widely in the household domain as work or community issues. Expenditure may be an area in which a woman has little scope to influence decision-making. Lukes' (1974) notion of non-decision-making can be used to conceptualise this; if other members of the household have non-decision-making power, this could mean that expenditure is barred from an acceptable arena of debate and thus both goes undiscussed and uncontested.

In Table 4, 5 and 6, being the household head is negative and statistically significant. This can be explained by the fact that the outcome variable is spousal discussion. If a woman is the household head, this suggests that the husband has either died or works away from the household, explaining why she is less likely to discuss topics with her husband.

Overall, these results give evidence that there has been a shift in intrahousehold dynamics as a result of the reforms to land inheritance laws in India. This is most clear in relation to discussion about work and community. There are two possible explanations for increased spousal discussion. Firstly, in a patriarchal society such as India, women may not directly challenge

their husband's authority but may, as a result of the reform and associated increase in their threat point, engage in subtle discursive techniques to influence household decisions in their favour when discussing topic. This can be understood as 'backstage influence' (Kabeer, 2001). Secondly, in a patrilocal society, a woman will cede decision-making power not only to her husband but also her in-laws; the reforms and associated improvement in outside options, may empower the couple at the expense of in-laws, as Mookerjee (2017) finds. This may entail increased levels of spousal discussion. Further research is needed to differentiate these two channels.

The primary insight of this paper is therefore that the reforms did not increase decision-making power but did increase spousal discussion. This suggests that an increased threat point may give women the confidence to exert 'backstage influence'. Upon this basis, decision-making power may not be an appropriate indicator of household influence in a patriarchal cultural context where women may either be reluctant to admit their household power or may exert power in more subtle, discursive ways.

C. Limitations of results

There are two main limitations of these results. Firstly, I cannot differentiate between the two possible explanations for increased spousal discussion mentioned above since the dataset does not contain variables concerning levels of discussion reported by the husband or extended family. In order to accurately capture intrahousehold dynamics, ethnographic study or participant observation would be necessary. This is a difficult task as people are understandably reluctant to let researchers observe intrahousehold dynamics. Secondly, the outcome variables measured relate to relatively vague topics (work, community and expenditure) and measure if a woman 'sometimes or always' discusses a topic with their husband. This gives us no clues to the content of the discussions. Additionally, 'sometimes' and 'always' are subjective categories and therefore I cannot conclusively argue that discussing a topic does actually allow for 'backstage influence'. It could be that a husband simply informs his wife about something¹¹. I re-estimate equation (1) changing the outcome variable to if a husband and wife *always* discuss topics rather than *sometimes or always* discuss topics. These results are presented in Appendix

¹¹ In a study on gendered patterns of intrahousehold decision-making in Northern Uganda, Acosta et al. (2020) find that one man characterises 'joint decision-making' as follows; 'I sat her down, told her my ideas and she accepted' (p. 1222). Acosta et al. (2020) find this sentiment repeated frequently amongst male spouses interviewed.

Tables 4, 5 and 6 and remain qualitatively similar, suggesting the reforms did positively impact levels of discussion in the household on these topics, however measured.

Overall, these results show that land inheritance reforms which shifted women's threat points increased levels of spousal discussion, an outcome which has not previously been studied in the literature.

Table 4: Discuss work regression

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Sometimes or always discuss work with husband					
HSAA	0.06 (0.06)	-0.02 (0.05)	0.01 (0.07)	0.05 (0.07)		
Marriage	-0.02 (0.06)	0.06 (0.07)	-0.02 (0.11)	-0.03 (0.10)		
Religion	-0.02 (0.02)	-0.02 (0.02)	0.16 (0.12)	-0.01 (0.11)		
0-3 years		-0.01 (0.07)	-0.06 (0.10)	-0.09 (0.09)		
3-6 years		0.02 (0.08)	-0.01 (0.10)	0.08 (0.12)		
6-9 years		0.39* (0.20)	0.37* (0.19)	0.31* (0.17)		
Age at marriage				-0.00* (0.00)		
Household head				-0.31*** (0.04)		
Spouse education				0.01*** (0.00)		
Education				-0.00 (0.00)		
Mother education				-0.00 (0.00)		
Father education				-0.00*** (0.00)		
Placebo date					0.09 (0.06)	
Placebo religion						-0.08 (0.05)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year-state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	0.92*** (0.17)	0.93*** (0.16)	0.90*** (0.19)	0.987*** (0.20)	0.94*** (0.20)	0.92*** (0.20)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.02	0.03	0.07	0.13	0.09	0.09

Table 5: Discuss community regression

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Sometimes or always discuss community with husband					
HSAA	0.10 (0.10)	0.55*** (0.16)	0.44** (0.18)	0.50*** (0.19)		
Marriage	-0.06 (0.09)	-0.47*** (0.16)	-0.32* (0.18)	-0.42** (0.19)		
Religion	-0.01 (0.05)	-0.01 (0.05)	-0.62*** (0.17)	-0.81*** (0.16)		
0-3 years		-0.68*** (0.19)	-0.57*** (0.21)	-0.60*** (0.21)		
3-6 years		-0.66*** (0.19)	-0.58*** (0.21)	-0.64*** (0.22)		
6-9 years		-0.18 (0.27)	-0.10 (0.28)	-0.19 (0.29)		
Age at marriage				0.00 (0.00)		
Household head				-0.24*** (0.04)		
Spouse education				0.01*** (0.00)		
Years of education				-0.00 (0.00)		
Mother education				0.01** (0.00)		
Father education				-0.00** (0.00)		
Placebo date					0.06 (0.09)	
Placebo religion						-0.09 (0.10)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year-state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	1.38*** (0.25)	1.38*** (0.25)	1.31*** (0.26)	1.20*** (0.24)	1.27*** (0.26)	1.24*** (0.26)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.08	0.08	0.10	0.14	0.12	0.12

Table 6: Discuss expenditure regression

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Sometimes or always discuss expenditure with husband					
HSAA	0.04 (0.06)	-0.04 (0.03)	-0.04 (0.04)	0.00 (0.05)		
Marriage	0.00 (0.06)	0.09** (0.04)	0.06 (0.05)	0.03 (0.06)		
Religion	-0.02 (0.02)	-0.02 (0.02)	0.20* (0.12)	0.03 (0.10)		
0-3 years		0.00 (0.04)	-0.01 (0.06)	-0.04 (0.06)		
3-6 years		0.01 (0.05)	0.01 (0.06)	-0.06 (0.05)		
6-9 years		0.38* (0.21)	0.36 (0.22)	0.30 (0.20)		
Age at marriage				-0.00 (0.00)		
Household head				-0.30*** (0.04)		
Spouse education				0.01*** (0.00)		
Years of education				-0.00*** (0.00)		
Mother education				-0.00 (0.00)		
Father education				-0.00 (0.00)		
Placebo date					0.02 (0.04)	
Placebo religion						-0.05 (0.05)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year-state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	0.91*** (0.16)	0.91*** (0.16)	0.85*** (0.20)	0.81*** (0.17)	0.87*** (0.18)	0.86*** (0.19)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.03	0.03	0.06	0.15	0.09	0.09

Section VI - Robustness

A. Marital matching

A potential threat to identification noted by Heath and Tan (2016) is marital matching. Men may be more driven to match with woman who has family wealth, knowing that they are now likely to inherit a portion of that wealth. If these changes in matching processes were correlated with intrahousehold dynamics, marital matching would be a confounding variable. In the dataset, 81.97% of woman answer that the economic status of their husband's family is either the same or worse than theirs. I conduct a t-test and fail to reject the null hypothesis ($p=0.1629$), meaning that the economic status' of the husband's family vis-à-vis the wife's are not significantly different between the treatment and control group.

B. Selective Migration

As suggested by Heath and Tan (2016), Mookerjee (2017), Roy (2008), and Sapkal (2017), a potential identification concern is selective migration. For example, if more gender progressive parents and/or empowered women migrated to reform states from non-reform states, the estimations would suffer from omitted variable bias. However, according to the Census of India 2001, inter-state migration is only 4.1% of the total population (Sapkal, 2017). In this dataset, 89.99% of women say they live within 4 hours of their natal home and 59.50% of the sample say they live close enough to visit their natal home and return on the same day. While these statistics give no guarantee that there is zero systematic migration as a result of the reforms, I argue that this is relatively unlikely.

Section VII – Conclusion

This paper investigates the effects of inheritance reform on intrahousehold dynamics by exploiting a natural experiment in the form of state-level amendments in the 1970s to 1990s to the HSA in India. These amendments gave equal rights to daughters as sons in the inheritance of joint family property. In 2005, a similar nationwide amendment was implemented nationwide. To the best of my knowledge, there has only been one quantitative evaluation of this 2005 nationwide amendment in relation to outcomes for women, by Valera et al. (2018). The scarcity of quantitative studies about the 2005 nationwide amendment can be attributed to an absence of appropriate data. Upon this background, using earlier state-level amendments as natural experiments is an important endeavour.

I find that granting inheritance rights to women on par with brothers did not increase decision-making power, contrary to other research Mookerjee (2017) and Valera et al. (2018) in the

Indian context. Instead, I find a statistically significant and positive relationship between exposure to the reforms and levels of discussion about work and community issues between husband and wife, reported by the wife. This suggests that in a bargaining model, an increased threat point as a result of land inheritance does not necessarily translate into decision-making power but may empower women to discuss topics with their husband more frequently.

I offer two interpretations for the increased spousal discussion as a result of the reforms; firstly, increased spousal discussion could indicate the couple is deferring less decision-making to the extended family and secondly, the women could have increased ‘backstage influence’ (Kabeer, 2001) over household decisions as a result of an exogenous increase in their ‘outside options’. This latter interpretation fits sociological theories that suggest that women may not directly challenge established authority figures in the household (Kandiyoti, 1998) but may rather subtly use techniques of deception, persuasion, manipulation and leverage to influence household decisions.

The primary insight of this paper is that decision-making power may not be an appropriate indicator of IBP in patriarchal setting. In order to capture the subtlety of intrahousehold dynamics, this paper emphasises the importance of moving beyond formal economic household models based on game-theoretic assumptions and developing more nuanced and culturally appropriate indicators of IBP. Researchers must also pursue qualitative, observational research opportunities. This paper also yields other important insights; these findings, in addition to Mookerjee’s (2017), emphasise the importance of considering and accounting for the family structure when measuring the women’s empowerment. These findings also highlight the possibility of unexpected or unintended consequences of legal reforms and this paper implores policy makers to be cognizant of cultural context when designing policy.

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Appendices

Appendix Table 1: Summary of microeconomic literature on impacts of the reforms on women in India

Author	Dataset(s)	Empirical approach	Outcome variables	Results
Anderson and Genicot (2015)	National Crime Records Bureau 1967-2004	Regression control, IV	Suicide rates	Increased female and male suicide rates for treated women
Bhalotra, Brule and Roy (2018)	Rural and Economic Demographic Survey (REDS) 2006 NFHS 1972-2004	DID	Child birth	Significant decrease in probability that girl child is born to treated woman where first-born child is a boy suggesting increase female foeticide
Bose and Das (2017)	IHSS 2004-2005	DID	Women's education, children's education	Increase level of education for treated women, decrease in level of education for children of treated women
Brule (2010)	REDS 2006 and qualitative field based interviews in AP	RDD	Inheritance of land for women	Increase in levels of land inherited for treated women
Deininger et al. (2013)	REDS 2006	DID	Inheritance of land for women, education of children	Increase in levels of land inherited for treated women, higher levels of education for (girl) children of treated women
Heath and Tan (2016)	NFHS 2006	2005- IV	Autonomy of women, labour supply	Increase levels of autonomy and labour supply of treated women
Mookerjee (2017)	NFHS 2006	2005- DID	Women's mobility, decision-making power	Increase in mobility of treated women, increase in decision-making power for treated women at the expense of extended family

Naaraayanan (2019)	REDS All Census of Micro, Small and Medium Enterprises	1999, India of Small	DID	Land inheritance of women, female business formation rates	Increase in levels of land inherited by treated women, increase in female business formation rates especially in industries with high financing needs
Rosenblum (2015)	NFHS 1993, 1999, 2006	1992-1998-2005-	Quadruple difference	Child mortality	Increase in female mortality for children of treated women
Roy (2008)	NFHS 2006	2005-	DID	Autonomy of women	Increase in level of autonomy of treated women
Roy (2015)	REDS 1999		Triple difference	Inheritance of land for women, dowry payments and education	No increase in land share bequeathed to treated women. Increase in dowry payments for treated women over school age when reform passed and increase in levels of education for treated women who were school age when reforms passed
Sapkal (2017)	Employment and Unemployment Survey of the National Sample Survey Organisation (NSSO) 1999-2000 round and 2004-2005 round		DID	Women's education, labour force participation, children's education	Increase in level of education for treated women and their children and labour force participation for treated women
Valera et al. (2013)	2016 Rice Monitoring Survey by International Rice Institute	Rice	IV	Inheritance of land for women, intrahousehold decision-making	Increase in levels of land inherited for treated women, increased levels of decision-making power for treated women
Panda and Agarwal (2005)	2001 household survey in Kerala		Logistic regression with controls	Experience of psychological and physical violence	Decrease in levels of psychological and physical violence of treated women

Appendix Table 2: Re-estimating main regressions exploiting variation between religion and marriage date

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Sometime s or always discuss work with husband	Sometime s or always discuss expenditu re with husband	Sometime s or always discuss communit y with husband	Always discuss work with husband	Always discuss expenditu re with husband	Always discuss communit y with husband
HSAA	0.07 (0.14)	0.03 (0.09)	0.59* (0.32)	-0.26 (0.23)	-0.02 (0.20)	0.13 (0.21)
Marriage	-0.00 (0.17)	0.07 (0.10)	-0.43 (0.32)	0.34 (0.22)	0.01 (0.20)	-0.13 (0.21)
0-3 years	-0.14 (0.14)	-0.04 (0.07)	-0.68** (0.28)	0.30 (0.19)	-0.11 (0.23)	-0.08 (0.20)
3-6 years	-0.02 (0.13)	0.01 (0.08)	-0.54* (0.28)	0.38* (0.19)	-0.01 (0.19)	-0.18 (0.19)
6-9 years	0.24* (0.14) (0.14)	0.26* (0.15) (0.14)	-0.26 (0.31) (0.32)	0.30* (0.18) (0.19)	-0.17 (0.16) (0.19)	-0.07 (0.17) (0.18)
State fixed effects				Yes		
Birth year fixed effects				Yes		
Birth year-religion fixed effects				Yes		
Birth year-state fixed effects				Yes		
Controls				Yes		
Constant	0.73** (0.28)	0.91*** (0.27)	0.63* (0.37)	-0.08 (0.45)	0.34 (0.45)	-0.20 (0.24)
Observations	1,865	1,865	1,865	1,865	1,865	1,865
R-squared	0.11	0.09	0.14	0.08	0.08	0.12

Appendix Table 3: Most say in household regression

VARIABLES	(1) Eligible women has most say about expensive item	(2) Eligible women has most say about children no.	(3) Eligible women has most say what to do if sick	(4) Eligible women has most say about buying land	(5) Eligible women has most say about wedding expenses
HSAA	-0.01 (0.06)	0.02 (0.09)	0.02 (0.09)	-0.00 (0.05)	0.01 (0.07)
Marriage	0.06 (0.07)	0.00 (0.08)	-0.02 (0.10)	0.05 (0.06)	0.02 (0.07)
Religion	-0.06 (0.09)	-0.11 (0.21)	-0.37* (0.19)	-0.00 (0.09)	-0.05 (0.16)
Age	0.00 (0.00)	-0.00 (0.01)	0.01 (0.00)	-0.00 (0.00)	0.01** (0.00)
Income	-0.00 (0.00)	-0.00* (0.00)	0.00 (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Age at marriage	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Household head	0.48*** (0.05)	0.27*** (0.04)	0.55*** (0.03)	0.42*** (0.04)	0.46*** (0.05)
Spouse education	-0.01*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Education	0.00*** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00*** (0.00)	0.00 (0.00)
Mother education	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
Father education	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)	0.00 (0.00)
State fixed effects			Yes		
Birth year fixed effects			Yes		
Birth year-religion fixed effects			Yes		
Birth year-state fixed effects			Yes		
Controls					
Constant	0.05 (0.14)	0.52* (0.31)	-0.04 (0.22)	0.09 (0.15)	-0.16 (0.21)
Observations	7,760	7,760	7,760	7,760	7,760
R-squared	0.23	0.08	0.19	0.23	0.19

Appendix Table 4: Always discuss work regression

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Always discuss work with husband					
HSAA	0.16 (0.10)	-0.18 (0.20)	-0.25 (0.23)	-0.19 (0.22)		
Marriage	-0.09 (0.09)	0.31 (0.19)	0.38 (0.24)	0.35 (0.23)		
Religion	0.01 (0.04)	0.01 (0.04)	0.72*** (0.24)	0.60** (0.23)		
0-3 years		0.35 (0.22)	0.37 (0.24)	0.34 (0.24)		
3-6 years		0.40* (0.21)	0.42* (0.25)	0.36 (0.24)		
6-9 years		0.50** (0.19)	0.52** (0.23)	0.45* (0.23)		
Age at marriage				-0.01 (0.00)		
Household head				-0.21*** (0.03)		
Spouse education				0.01*** (0.00)		
Education				-0.00 (0.00)		
Mother education				0.01* (0.00)		
Father education				-0.00 (0.00)		
Placebo date					0.11 (0.08)	
Placebo religion						-0.12 (0.10)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year-state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	0.10 (0.27)	0.09 (0.27)	0.04 (0.27)	0.03 (0.98)	0.06 (0.29)	0.16 (0.27)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.11	0.11	0.13	0.15	0.15	0.14

Appendix Table 5: Always discuss community regression

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Always discuss community with husband					
HSAA	0.11** (0.04)	0.23* (0.11)	0.19 (0.12)	0.23* (0.12)		
Marriage	-0.04 (0.04)	-0.09 (0.11)	-0.04 (0.13)	-0.14 (0.14)		
Religion	-0.00 (0.03)	-0.00 (0.03)	0.05 (0.19)	-0.07 (0.20)		
0-3 years		-0.13 (0.15)	-0.12 (0.14)	-0.13 (0.15)		
3-6 years		-0.26* (0.14)	-0.21 (0.15)	-0.22 (0.15)		
6-9 years		-0.03 (0.12)	0.02 (0.12)	-0.05 (0.14)		
Age at marriage				0.00 (0.00)		
Household head				-0.09*** (0.03)		
Spouse education				0.01*** (0.00)		
Years of education				0.01*** (0.00)		
Mother education				0.00 (0.00)		
Father education				0.00 (0.00)		
Placebo date					0.11*** (0.04)	
Placebo religion						-0.11** (0.04)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year- state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	-0.20 (0.23)	-0.21 (0.23)	-0.29 (0.23)	-0.41* (0.22)	-0.38 (0.24)	-0.42* (0.22)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.05	0.05	0.08	0.10	0.10	0.10

Appendix Table 6: Always discuss expenditure regression

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Always discuss expenditure with husband					
HSAA	0.16*	0.12	0.03	0.10		
	(0.09)	(0.29)	(0.27)	(0.28)		
Marriage	-0.12	-0.04	0.02	-0.07		
	(0.09)	(0.29)	(0.29)	(0.30)		
Religion	0.00	0.00	-0.08	-0.21		
	(0.04)	(0.04)	(0.25)	(0.24)		
0-3 years		-0.01	0.01	-0.04		
		(0.35)	(0.32)	(0.33)		
3-6 years		0.13	0.18	0.11		
		(0.31)	(0.30)	(0.31)		
6-9 years		0.09	0.12	0.04		
		(0.29)	(0.28)	(0.28)		
Age at marriage				0.00		
				(0.00)		
Household head				-0.21***		
				(0.04)		
Spouse education				0.01***		
				(0.00)		
Education				-0.00		
				(0.00)		
Mother education				0.01**		
				(0.00)		
Father education				-0.00		
				(0.00)		
Placebo date					0.13	
					(0.08)	
Placebo religion						-0.13
						(0.09)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Birth year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth year-religion fixed effects	No	No	Yes	Yes	Yes	Yes
Birth year-state fixed effects	No	No	Yes	Yes	Yes	Yes
Extra controls	No	No	No	Yes	Yes	Yes
Constant	0.21	0.20	0.03	-0.02	-0.02	0.12
	(0.32)	(0.31)	(0.33)	(0.34)	(0.34)	(0.32)
Observations	7,760	7,760	7,760	7,760	7,760	7,760
R-squared	0.09	0.09	0.12	0.13	0.13	0.13

Appendix Figure 1: Frequency of marriages before and after reform at the state level

