Better than nothing? : dowry in the absence of the legal protection of women's inheritance rights

INSTITUTE OF DEVELOPING ECONOMIES

IDE Discussion Papers are preliminary materials circulated
to stimulate discussions and critical comments

IDE DISCUSSION PAPER No. 537

Better than Nothing? Dowry in the Absence of the Legal Protection of Women's Inheritance Rights

Momoe MAKINO*

Abstract

The practice of dowry is often thought to be the root cause of the unequal treatment of women in India. For women without inheritance rights, however, dowry may function as their only source of protection. Using a nationwide dataset and exploiting a natural experimental situation, this study explores the effects of dowry on women's empowerment in India, a society where women do not have inheritance rights. In such a society, dowry seems to enhance women's status in the marital household. The effects reverse when women have equal inheritance rights as their brothers. Empirical analysis suggests that the outright ban on dowry that ignores the context may not necessarily benefit women.

Keywords: Dowry, Women's empowerment, Inheritance rights, Amendment, India
JEL classification: J12, J16, K11, N35, Z13

---

* Research Fellow, Area Studies Center, IDE (momoe_makino@ide.go.jp)

The Institute of Developing Economies (IDE) is a semigovernmental, nonpartisan, nonprofit research institute, founded in 1958. The Institute merged with the Japan External Trade Organization (JETRO) on July 1, 1998. The Institute conducts basic and comprehensive studies on economic and related affairs in all developing countries and regions, including Asia, the Middle East, Africa, Latin America, Oceania, and Eastern Europe.

INSTITUTE OF DEVELOPING ECONOMIES (IDE), JETRO
3-2-2, WAKABA, MIHAMA-KU, CHIBA-SHI
CHIBA 261-8545, JAPAN

Better than Nothing? Dowry in the Absence of the Legal Protection of Women's Inheritance Rights[*]

Momoe Makino [†]

October, 2015

Abstract

The practice of dowry is often thought to be the root cause of the unequal treatment of women in India. For women without inheritance rights, however, dowry may function as their only source of protection. Using a nationwide dataset and exploiting a natural experimental situation, this study explores the effects of dowry on women's empowerment in India, a society where women do not have inheritance rights. In such a society, dowry seems to enhance women's status in the marital household. The effects reverse when women have equal inheritance rights as their brothers. Empirical analysis suggests that the outright ban on dowry that ignores the context may not necessarily benefit women.

Keywords: Dowry, Women's empowerment, Inheritance rights, Amendment, India

JEL classification: J12, J16, K11, N35, Z13

1. Introduction

Women's empowerment, broadly defined as gaining control over their own lives,[1] has attracted

[*] I am grateful to Claus Pörtner for his advice and guidance throughout the development of this paper. I owe thanks to Shelly Lundberg, Seik Kim, Aimee Chin, and seminar participants at the University of Washington for their insightful suggestions. I greatly appreciate the financial support from the Department of Economics at the University of Washington, the James K. and Vilola M. Hall Fellowship, and the Grover and Creta Ensley Fellowship in Economic Policy.
[†] Institute of Developing Economies, JETRO, 3-2-2 Wakaba, Mihama-ku, Chiba-shi, Chiba 261-8545, Japan, momoe_makino@ide.go.jp, +81-43-299-9589.

the attention of people engaged in development issues, as it seems important in alleviating poverty and promoting economic development (World Bank 2011; Duflo 2012). In addition to it being a potential means leading to poverty alleviation, women's empowerment in itself should be an objective to assure women's rights and dignity. Thus, no one would deny the importance of achieving women's empowerment. Given its importance, researchers have investigated the methods to enhance women's empowerment. Microeconomists consider that women's bargaining position within the household is the key to determining women's empowerment. Women with more outside options have a higher reservation utility and thus have relatively more bargaining power within the household (the Nash bargaining model: for example, Manser and Brown 1980; McElroy and Horney 1981). A typical outside option is based on the working opportunities for women because it is easier for women with a lucrative job to make a living without their husband. The amount of immovable assets (e.g., land and houses) that women possess is also considered to be important because securing a place to stay is most indispensable when leaving their husbands (Panda and Agarwal 2005). Outside options may also be broadened by the easiness of divorce without spousal consent (Friedberg 1998; Wolfers 2006) and favorable marriage-market situations (e.g., Becker 1991; Chiappori et al. 2002).

In the context of South Asian countries, where divorce is very rare and women usually do not work outside the home or have access to immovable property in reality, the aforementioned outside options are irrelevant in most cases. While the outside options are usually interpreted in terms of opportunities when the current marriage dissolves (Manser and Brown 1980; McElroy and Horney 1981), they do not necessarily require divorce. Theoretically, noncooperative equilibrium can be an outside option (Lundberg and Pollak 1993). Without divorce, women may go back to their natal families. In this case, the level of support that the natal families can offer is important, as measured by the strength of the women's bond with their natal families and the

[1] In empirical studies, it is often measured by the extent to which women can decide various matters, have autonomy of their own, are free from mental and physical threats within the household, and can move freely and independently by themselves.

assets owned by the natal families. Furthermore, the status of working women is not particularly high in South Asian countries. Several studies indicate that women's working opportunities and wages do not affect the bargaining position of women within the household, whereas the possession of immovable assets such as land and houses does affect their bargaining position (e.g., Panda and Agarwal 2005). In particular, the northern states of India are well known for women's lower status in every aspect, such as property rights, sex ratio, fertility, and gender gap in education and mortality (Dyson and Moore 1983; Jejeebhoy and Sathar 2001). In northern India, the traditional factors such as the number of sons to whom women gave birth and the amount of dowry that women brought at the time of marriage are believed to positively affect women's empowerment (Jejeebhoy 2000).

This study examines the above hypothesis suggested by Jejeebhoy (2000). The focus is on the effect of dowry on women's status in the marital household. In particular, we investigate the difference between the environments where women have no access and where women have equal access to immovable assets as their brothers. We exploit a natural experimental situation in India that generated such environmental differences across states, namely, the amendment of the Hindu Succession Act of 1956 that occurred in five states from 1976 to 1994. The empirical results reveal that the amount of dowry is positively associated with women's empowerment in the context where women have no access to immovable assets.

The closest to this study may be those by Zhang and Chan (1999) and Brown (2009), which test the Nash bargaining model with the amount of dowry as an outside option using datasets for Taiwan and China, respectively. Using the same theoretical framework, this study tests whether dowry enhances women's welfare in the context of India where, traditionally, women have had no property rights. While the study by Jejeebhoy (2000) demonstrates that dowry enhances women's decision-making power in a northern state (i.e., Uttar Pradesh) but not in a southern state (i.e., Tamil Nadu), it does not investigate which factor generates such regional differences. By explicitly examining the relationship between women's empowerment

and the legal provision of inheritance rights, this study fills the gap. The results also suggest that the argument that dowry represents a pre-mortem inheritance (Tambiah 1973; Botticini and Siow 2003) is also applicable in modern India.

The results have several important policy implications. They suggest that the universal ban on dowry does not necessarily achieve its intended policy consequences such as the welfare improvement and empowerment of women. Rather, dowry may function as the only measure to protect women in the context where their property rights do not exist in reality. If so, then the bride's parents would be willing to pay the highest dowry amount possible at the time of their daughter's marriage, with the expectation of better treatment of their daughter in the marital household. This may be one of the reasons of the well-known ineffectiveness of India's Dowry Prohibition Act of 1961. The results simultaneously suggest that the legal provision of equal inheritance rights for both daughters and sons, regardless of whether equal inheritance is actually realized, may be effective if the policymakers' aim is to end the dowry practice. This is because the parents would not have any incentive to give dowry to their daughters if it would not affect their daughters' welfare in the marital household after the daughters are given equal inheritance rights as their brothers.

The remainder of the paper is organized as follows. Section 2 describes the background, namely, the practice of dowry and the amendment of the Hindu Succession Act, 1956. Section 3 describes the dataset used in the empirical study. Section 4 presents the estimation strategy. Section 5 provides the empirical results. Section 6 presents the conclusions.

2. Background: Dowry Practice and Amendment of the Hindu Succession Act, 1956

2.1. Dowry Practice

Dowry, broadly defined as the transfer at the time of marriage from the bride's parents to their daughter as well as the groom and his family, was traditionally observed only among the Hindu higher caste. Nowadays, the practice is prevalent in South Asia not only among Hindus but also

among people such as Muslims who had originally practiced bride price (i.e., a transfer from the groom's parents to the bride's parents).

Dowry in India is often considered to be the root cause of the unequal treatment of girls vis-à-vis boys, as represented by sex-selective abortion, female infanticide, and the undernourishment of girls. This treatment leads to the notorious phenomenon of "missing women," which refers to an unnaturally high male to female ratio in South Asia (e.g., Sen 1990). Dowry is also severely criticized by the media as well as academics as it can lead to "dowry murder" and "dowry suicide" (Stone and James 1995; Rudd 2001; Bloch and Rao 2002; Sekhri and Storeygard 2014).[2] Given these alleged negative consequences, the Dowry Prohibition Act of 1961 prohibits the practice. However, this legal prohibition is well known for its ineffectiveness.

Although dowry is believed to be an evil practice, empirical evidence is scarce. One of the main reasons may be that data concerning dowries are unavailable or unreliable. Because it is a banned practice, questionnaire respondents are unwilling to reveal the correct amounts of dowry, especially the dowry recipients. Moreover, the respondents retrospectively state the dowry amount paid at the time of their own marriages, and thus, recall errors are common. The empirical evidence under these limitations of data is consequently limited and mixed. Some studies show that dowry enhances women's welfare in the marital household (e.g., Bloch and Rao 2002; Srinivasan and Bedi 2007),[3] but the opposite is found in other studies (e.g., Suran et al. 2004). The mixed empirical evidence is not surprising because the effects of dowry may be different across different contexts, even in South Asia. For example, Jejeebhoy (2000) shows

[2] "Dowry murder" is officially defined as any instance where the death of a woman is caused by any burns or bodily injury or occurs in circumstances other than under normal circumstances within 7 years of her marriage, and it is proven 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 (the Dowry Prohibition Amendment Act, 1986). Some criticize the term "dowry murder" because it is likely to include any kind of homicide, including those presumably unrelated to dowry (for example, Kishwar 1989; Narayan 1997; Leslie 1998; Oldenburg 2002; Palriwala 2009).

[3] Using datasets other than those from South Asia, some evidence exists showing a positive effect of dowry on women's welfare in the marital household (e.g., Zhang and Chan 1999; Brown 2009).

that dowry leads to women's empowerment in the northern part of India, where women's status is relatively low, while it does not have this effect in the southern part of the country.

Dowry has attracted economists' interest more in theoretical studies than in empirical studies. According to Becker (1991), the one who gains in the marriage pays the price at the time of marriage (the price model). Being consistent with the price model, dowry is often interpreted as the compensation by the bride's parents to the groom and his parents, which reflects people's perception in South Asia that women do not contribute to family income because they usually do not participate in the market labor (Boserup 2007; Anderson 2007). Another interpretation is that dowry is a pre-mortem bequest from the bride's parents to the bride (the bequest model). According to Becker (1991), daughters who have no property rights and do not inherit their parents' assets may be given dowries at the time of marriage. The necessary conditions to the bequest model are patrilocality and poor property rights (Botticini and Siow 2003; Arunachalam and Logan 2015). Most parts of South Asia are characterized by patrilineal and patrilocal societies where, in practice, women have no property rights. The price and bequest models are not necessarily mutually exclusive, although studies seem to focus on the distinction between the two (e.g., Anderson 2004, 2007; Arunachalam and Logan 2015).[4] Furthermore, some refute the bequest model based on the fact that the value of dowry is usually much lower than that of immovable assets inherited by male siblings (e.g., Agarwal 1994). No matter how much lower the value is, this fact does not necessarily refute the bequest nature of dowry; that is, gifts by the bride's parents to their daughter. In a society where, in practice, women do not inherit parental land, dowry may be the only asset for women and their only source of protection (Kishwar 1988, 1989).

2.2. Amendment of the Hindu Succession Act, 1956

[4] Quite recently, Anderson and Bidner (2015) formalize the simultaneous dual role of dowry as a price and a bequest.

Inheritance practices and their legal provisions, which differ by the religion to which one belongs, are very complicated in India. The Hindu Succession Act, 1956, is applicable to Hindus, Buddhists, Jains, and Sikhs, who represent more than 80% of the population in India.

The Hindu Succession Act, 1956, embodies the gender discriminatory nature of inheritance practices in India. While it assures equal inheritance rights for sons and daughters concerning separate or non-ancestral property, it excludes daughters from joint family property, which is estimated to constitute 84% of the total household property in India (Roy 2015). Several states have amended this discriminatory provision to assure equal inheritance rights for both daughters and their brothers with respect to joint family assets: Kerala in 1976, Andhra Pradesh in 1986, Tamil Nadu in 1989, and Maharashtra and Karnataka in 1994 (Figure 1). The Hindu Succession Act was finally amended at the central government level in 2005. These amendments, either at the state or central government levels, are along the same lines: they stipulated that the daughter of a coparcener will acquire coparcenary rights equally with her brothers at birth, but only if she were unmarried at the time of the amendment.

Empirical evidence on whether the amendment actually led to women inheriting immovable property is mixed. Some studies indicate that the amendment increased women's likelihood of inheriting land (e.g., Deininger et al. 2013). In contrast, other studies such as that by Roy (2015) find that the amendment had no impact on the likelihood of inheritance by women. Whether or not an actual inheritance is realized, the studies seem to agree that the amendment affects people's expectation and perception about women's inheritance rights, and enhances women's empowerment, which may be represented by several aspects, such as the characteristics of a woman's spouse and his family; her level of education, age at marriage, and reproductive decisions; and her status in the marital household, including her vulnerability to domestic violence. For example, despite the fact that she finds no impact of the amendment on the actual likelihood of inheritance by women, Roy (2015) finds that it enhances women's level of education, whereby parents are believed to compensate their daughters with more schooling

in place of their disinheritance.

3. Data

The data used for this study are from the India Human Development Survey (IHDS), 2005, which covers 41,554 households in 1,503 villages and 971 urban neighborhoods across India. The IHDS includes information such as marriage, fertility, and gender relations, as well as socioeconomic characteristics of households and individual members. One of the salient features of the IHDS is that the education and health questionnaire is answered by "eligible women," defined as those who were ever married between the ages of 15 and 49. The education and health questionnaire includes specific questions closely relevant to this study, such as dowry payments and detailed gender relations within the household. We restrict our sample to 20,321 married women aged 15 to 49 whose husbands are the heads of households.

The IHDS reports variables that measure the extent of the women's bargaining position, specifically, the women's decision-making power within the household. When the female respondent has the "most say" in a specific household decision-making matter, it is indicated by the binary variable taking the value one. We use these variables as proxies to measure the women's welfare and empowerment in the marital family. Figure 2 presents the extent to which women have the decision-making power within the household on each of five matters. Among all female respondents who answered the questions, 82.5% and 29.7% have decision-making power about what to cook on a daily basis and when their children fall sick, respectively, while few women have decision-making power about the matters that are strategically important in the long term, such as the purchase of expensive items (9.5%), the number of children (18.3%), and the marriage of their children (8.5%).

Table 1 shows the descriptive statistics of socioeconomic variables. The average age of the women is 34.5 years and their average age at marriage is 17.5 years. Almost half of the women are illiterate. Their average schooling is 4.2 years, while their husbands' average is 6.3 years.

Our sample has 39% of respondents living in urban areas. Household income is the sum of all sources, namely, family farm income, wages and salaries, net business income, income from property, remittances, and transfers from the government. The average annual household income is Rs.49,804.[5] Although the typical test of the Nash bargaining model considers wages as an outside option, we do not consider them here, given that they are less likely to affect the outside options in the context of South Asia.[6] Wages are reported by only 27.2% of married women and 71.5% of their husbands, which characterizes Indian society where women usually do not work outside their home and a considerable number of men are self-employed. Thus, wages only partially capture information about the earning capacity or wealth of the individual. The variables related to gender relations within the household and those specific to Indian society, such as caste and religion variables, are also reported in Table 1. We consider two variables reflecting gender relations: one is the relative wealth of the natal household, which takes the value one when the woman's natal family is better off than her husband's family at the time of marriage, and the other is endogamy, which takes the value one when any member of the woman's family is married into her husband's family, the woman is related to her husband by blood, or the woman has grown up in the same village/town as her husband. The endogeneity of endogamy is treated using the methodology described in the next section.

The average amount of dowries is Rs.101,039, which is almost twice as large as the average annual household income, while the average bride price is Rs.65,683. This seems consistent with the common view that dowries are several times greater than annual household incomes. The IHDS asks the amount of money usually spent by the bride's (or groom's) family at the time of marriage. Since the questionnaire allows for some range in the amounts responded, we take the median value spent by the bride's (or groom's) family for our definition of dowry

[5] In the regression analysis, non-wage income (i.e., total income minus wages and salaries) is used as a control variable for the endogeneity concern. The use of total income is alternatively checked and does not affect the estimation results.

[6] Inclusion of wage information does not affect the main results. The results are available upon request.

(or bride price). It should be noted that the dowry (or bride price) in the IHDS is not the amount paid at the time of the respondent's marriage, but the customary amount paid in the community of the respondent. The reason the question does not ask for the personal amount of dowry may be due to the fact that dowry is a banned practice in India. Another reason may be to formulate the exogenous variables of dowry that do not capture the individual household characteristics. Rahman and Rao (2004) insist on the importance of using the community-based variables on the right hand side (RHS) to deal with endogeneity in their study of women's decision-making power in the household.[7] However, it is still possible that the community-based dowry variable captures the respondent's unobserved characteristics. The potential endogeneity of the community-based dowry variable is further addressed in the next section.

4. Estimation Strategy

The identification relies on a difference-in-differences strategy that compares the effects of dowry on the women's status in the marital household when women married before and after the amendment across the reform and nonreform states.[8] The control group comprises women who are not affected by the amendment. This includes those women who reside in the reform states and married before the amendment as well as those who reside in the nonreform states and those other than Hindus, Buddhists, Jains, and Sikhs. The treatment group consists of

[7] They study how kinship affects the women's decision-making power. Their measure of kinship is community-based, such as the village exogamy, and not based on whether the husband and wife are blood relatives.

[8] Precisely speaking, the amendment is applied to those who marry and whose paternal grandfather died after the amendment. Moreover, the states where women currently reside are not necessarily the same as their natal or marital states, while the latter determines the reform and nonreform states. Since the IHDS does not include information on the timing of the woman's paternal grandfather's death or her natal/marital states, the timing of a woman's marriage in her current resident state is used in the difference-in-differences strategy. The unavailability of information on the women's natal states may not be serious in this study, given that inter-state marriages before the amendment were not very common in the southern states where the amendment was preceded. We believe that the timing of marriage in the current resident state vis-à-vis the amendment is more important for the purpose of this study because a woman's status can be affected not only by whether she actually inherits ancestral property but also by changes in attitude following the amendment (see Roy 2015).

women who married after, and are thus affected by, the amendment in the reform states, namely, Andhra Pradesh in 1986, Tamil Nadu in 1989, and Maharashtra and Karnataka in 1994.[9]

Although the variable of dowries (bride prices) in the IHDS is the customary amount paid in the community of the respondent, it may possibly capture some individual household characteristics. For example, when the female respondent has more decision-making power about her daughter's marriage and treats her daughter and son equally, she may report a smaller amount of dowry that is prevalent in her community than the respondents who have a strong "son preference." The endogeneity problem is a real challenge because finding good candidates for instruments of dowry is usually very difficult. This study addresses the endogeneity problem in two ways. First, we check how important the remaining unobservables should be in explaining the current results by following the procedure developed by Altonji et al. (2005) although a set of covariates cannot control for the possible correlation between unobserved household characteristics and women's decision-making power in the household.[10] Second, while there is no good candidate for the instrumental variable (IV) in the dataset, we take the IV approach by constructing an instrument of dowry utilizing the "- i method," following Aizer (2010) and Vogl (2013). The IV is constructed as follows:

$$\overline{D_{ij}} = \frac{1}{n-1}\sum_k D_{k-i} \quad (1)$$

where $\overline{D_{ij}}$ is the average amount of dowry (or bride price) reported by women in the same village, j, except for respondent i. By construction, $\overline{D_{ij}}$ is not correlated with the respondent's

[9] Kerala amended the Hindu Succession Act in 1976, but it is excluded here based on the literature that points out the abnormality of Kerala, especially with respect to the status of women and the necessity of excluding this state when studying gender-related issues (e.g., Deininger et al. 2013; Anderson and Genicot 2015). At any rate, the inclusion of Kerala does not substantially alter the main estimation results. The results including Kerala are available upon request.

[10] For examples of studies using the same procedure, see Kingdon and Teal (2010) and Bellows and Miguel (2009).

individual household's unobserved characteristics, while it may correlate with the amount of dowry personally paid at the time of the respondent's marriage by, say, capturing the marriage-market situation in the village and the village-level wealth. A higher dowry implies that the bride's threat point is also higher, in the sense that she has more of an incentive to go back to her parents or that any repeated transfers from the bride's parents are more meaningful. The instrument for bride prices is constructed in the same manner. As expected, the correlations between the individual dowry and the average village dowry, as well as between the individual bride price and the average village bride price, are positive and high, at 0.55 and 0.49, respectively. $\overline{D_{vj}}$, in fact, has a significantly positive effect on D_{ij} (see the first-stage regression in Table 2).

We test the Nash bargaining model with the amount of dowry that represents the women's outside option, as in Zhang and Chan (1999) and Brown (2009). The refutable implication is that the amount of dowry increases the women's bargaining position and their welfare in the marital family. In order to estimate the relationship between a dowry and the variables showing the women's decision-making power, we use the following linear probability model (LPM):[11]

$$y_{is} = \beta_0 + \beta_1 A_{is} + \beta_2 D_{is} + \beta_3 A_{is} \times D_{is} + \beta_4 B_{is} + \beta_5 A_{is} \times B_{is} + \boldsymbol{\beta_6}' \boldsymbol{x}_{is} + \eta_s + \varepsilon_{is} \qquad (2)$$

Our interest lies in β_2 and β_3 (or β_4 and β_5), the difference between the treatment and control groups in the impact of dowry (or bride price) on the probability of women in household i in state s having a high bargaining position in the marital household, namely, the women's decision-making power. A_{is} takes the value one when a woman married after the amendment in the reform states. The vector $\boldsymbol{x}_{is}$ is a set of covariates: household socioeconomic

[11] The implication given by the probit model instead of the LPM is not substantially different. The probit estimation results are available upon request.

characteristics shown in the summary statistics, and η_s is the state fixed effects.[12] The unearned household incomes are controlled in our estimations. We have also checked the set of covariates that include the total household income from all sources and/or the husbands' wages.[13] The results are not substantially different with respect to which income variables are included. Two variables that reflect gender relations within the household are included: one is the relative wealth of the natal household and the other is endogamy. We construct a community-based variable for endogamy using the "- i method" because such a marriage practice is possibly endogenous (Rahman and Rao 2004). The variables specific to Indian society such as the caste and religion variables are also included. These variables are considered exogenous because one's caste or religion is not chosen by the individual.

5. Estimation Results

5.1. Main Results

The LPM given in equation (2) is estimated and the results are reported in Table 3. Dowry has significantly positive effects on the decision making of women who are not affected by the amendment. The positive effects are consistently observed across different decision-making matters: how to treat sick children, the purchase of expensive items, how many children they have, and the marriage of their children. The fact that there is no significant effect on decision making about what to cook is understandable, given that the majority of women has this power by default. These positive effects are significantly reversed for women affected by the amendment with respect to decision making on the purchase of expensive items and fertility. On the other hand, a bride price has a significantly negative effect on women's decision making on

[12] We cannot include the village fixed effects because the IV based on the "- i method" captures the village-level marriage-market situation. Also, the endogamy variable is treated by the "- i method," and thus multicollinearity occurs with the village fixed effects.

[13] We do not include the women's wages as an explanatory variable, since it is difficult to impute the missing values due to various possible reasons for non-reporting. Wages are reported by only 27.2% of married women. For the remaining 72.8%, it is not clear whether the women work at home or in family enterprises without pay. The inclusion of wages is not critical in testing our model.

how to treat sick children and no consistent effect on the decision making of women who are affected by the amendment. In sum, dowry is positively associated with women's status in the states where women do not have equal inheritance rights as their brothers and it is negatively associated with women's status in the states where women have equal inheritance rights as their brothers.

Following the method by Altonji et al. (2005), we examine how important the remaining unobservables should be to completely remove the effects observed in Table 3. The estimation procedure is repeated without a set of covariates and the coefficient estimates are reported in Table 4. Comparing the coefficient estimates of dowry in Table 3 and Table 4 suggests that the inclusion of a set of covariates reduces the effects of dowry on women's decision-making power respecting the treatment of sick children, the purchase of expensive items, and fertility by 0.1, 0, and 0.06 percentage points, respectively. The estimated effects of the unobservables have to be 2 times, 18 times, and 2 times larger than the effects of the observables to completely remove the above respective effects of dowry on women's decision-making power. Given a rich set of observables such as a household's socioeconomic variables, caste, religion, and state fixed effects in Table 3, it is unlikely that the effects of the unobservables are large enough to completely remove the effects of dowry. Furthermore, the effect on the women's decision making concerning the marriage of their children becomes significant and larger in magnitude by the inclusion of a set of covariates, which implies that the removal of the effects by the unobservables is highly unlikely.

Next, we estimate equation (2) using the IVs given by equation (1). The IV coefficient estimates of interest are reported in Table 5. Overall, the results support the implication given by the LPM estimates. The base effects of dowry are much larger than those estimated by the LPM, which implies that the status of women without equal inheritance rights as their brothers is enhanced by a higher dowry. These positive effects are not negligible in magnitude. One standard deviation above the dowry mean enhances the women's decision-making power

regarding how to treat sick children, the purchase of expensive items, the number of children, and the marriage of their children by 31, 7, 11, and 6 percentage points, respectively. The effect on the status of women who could be affected by the amendment becomes ambiguous with larger standard errors, except for the women's decision making on fertility. The decision-making power on fertility of women who have the same inheritance rights as their brothers is reduced by a higher dowry. Likewise, the effects of a bride price are greater than those estimated by the LPM. The effects of a bride price are mostly opposite to the effects of dowry, except for the decision making on the marriage of children. The overall results support the hypothesis derived from the Nash bargaining model that implies that the assets brought into marriage; for example, a dowry by the bride, enhances her bargaining position in the marital household, while a bride price brought by the groom reduces her bargaining position in a society where women's property rights are not protected. Women's bargaining position is not enhanced or it becomes worse by a higher dowry when women have equal inheritance rights as men.

5.2. Robustness Checks

The Nash bargaining model implies that the assets brought into marriage by both sides determine the bargaining position of the wife and husband, and thus, the effect of the net dowry (dowry minus bride price) matters in determining the women's status in the marital household. The estimation procedure is repeated with and without IVs, and the coefficient estimates of net dowry are reported in Table 6. Overall, the results support the implication of the Nash bargaining model that the assets brought into the marriage (i.e., the net amount of dowry by the bride) enhance her decision-making power regarding how to treat sick children, the purchase of expensive items, how many children she has, and the marriage of her children. These positive effects are observed for the women without equal inheritance rights as their brothers. These effects are not surprising, given that the effects of a bride price are mostly opposite to those of a dowry in the previous estimations. Being consistent with the previous results, these positive

effects seem to disappear when women have equal inheritance rights as their brothers, especially on their decision making respecting the purchase of expensive items and fertility.

Because the states that experienced the amendment are all located in southern India, the opposite effects of dowry between the reform and nonreform states may not be due to the amendment itself, but to the pro-gender nature of southern India. With this concern, the main estimation procedure is repeated by replacing the amendment with an indicator taking the value one when a woman resides in a southern state. The coefficient estimates of interest are reported in Table 7.[14] The base effects of dowry are very similar to those shown in Table 3, but the coefficient estimates of the interaction term are very different. This means that the non-positive effects of dowry on the status of women who are affected by the amendment are not derived by the fact that they reside in southern states.

The women who are affected by the amendment and marry after the year when the amendment passed in the state where they live are thus naturally younger. Because the modern dowry is often criticized as a symbol of gender discrimination, while the traditional dowry is not (Billig 1992; Srinivas 1994), it is possible that the non-positive effects of dowry are only observed in the younger cohort. Therefore, the opposite effects of dowry between the reform and nonreform states may simply capture the marriage-year cohort effect. To examine this possibility, the estimation procedure is repeated by including four marriage-year cohort dummies (the reference cohort is women who married before 1976) and their interactions with dowry and bride price, respectively. The results are reported in Table 8.[15] The base effects of dowry are not significant, except for the decision making on how to treat sick children, but the magnitudes are similar to those presented in Table 3. No interaction term is significant, which means that the non-positive effects of dowry on the status of women who are affected by the

[14] The estimation with IVs is also repeated by replacing the amendment with the southern indicator. The results support the estimation results given in Table 7 and are available upon request.

[15] The estimation with IVs is similarly conducted. The results support the estimation results given in Table 8 and are available upon request.

amendment are not derived by the marriage-year cohort effects.

6. Conclusion

Exploiting the natural experiment given by the state-level amendment of the Hindu Succession Act, our estimations provide evidence that dowry enhances women's status in the marital household when women have no inheritance rights. When they are given equal inheritance rights as their brothers, the effects of dowry are non-positive and sometimes negative. The results are consistent with Jejeebhoy's (2000) hypothesis that dowries empower women in the northern states where women's status is relatively low, while they do not function as such in the pro-gender southern states. This study has further examined a mechanism proposed by Jejeebhoy in terms of generating such north–south differences and suggests that property or inheritance rights are the key.

The results have some policy implications. The total ineffectiveness of the legal ban on dowry is well known. If the policy's objective is to effectively let people abandon the practice of dowry, a more effective way may be to assure property and inheritance rights for women. On the other hand, an outright ban on dowry does not necessarily lead to the better treatment of women. In the context of India, where women do not have equal inheritance rights as their brothers in reality, dowries may function as the only way to enhance women's status in the marital household. In this case, dowry may be an example of a social institution that complements an imperfect legal system. Examples of such social institutions include *watta-satta* (exchange marriage, see Jacoby and Mansuri 2010), *purdah* (women's segregation), and caste/cousin endogamy. How these seemingly costly practices alleviate formal institutional failures is left for future research.

References

Agarwal, Bina. 1994. *A Field of One's Own: Gender and Land Rights in South Asia*, Cambridge, Great Britain: Cambridge University Press.

Aizer, Anna. 2010. "The Gender Wage Gap and Domestic Violence," *American Economic Review* 100(4): 1847–1859.

Altonji, Joseph G., Todd E. Elder, and Christopher R. Taber. 2005. "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools," *Journal of Political Economy* 113(1): 151–184.

Anderson, Siwan. 2004. "Dowry and Property Rights," Bread Working Paper, 80.

Anderson, Siwan. 2007. "The Economics of Dowry and Brideprice," *Journal of Economic Perspectives* 21(4): 151–174.

Anderson, Siwan and Chris Bidner. 2015. "Property Rights Over Marital Transfers," *Quarterly Journal of Economics* 130(3): 1421–1484.

Anderson, Siwan and Garance Genicot. 2015. "Suicide and Property Rights in India," *Journal of Development Economics* 114: 64–78.

Arunachalam, Raj, and Trevon Logan. 2015. "On the Heterogeneity of Dowry Motives," *Journal of Population Economics forthcoming*.

Becker, Gary S. 1991. *A Treatise on the Family*. Cambridge MA: Harvard University Press.

Bellows, John and Edward Miguel. 2009. "War and Local Collective Action in Sierra Leone," *Journal of Public Economics* 93 (11&12): 1144–1157.

Billig, Michael S. 1992. "The Marriage Squeeze and the Rise of Groomprice in India's Kerala State," *Journal of Comparative Family Studies* 23(2): 197–216.

Bloch, Francis and Vijayendra Rao. 2002. "Terror as a Bargaining Instrument: a Case Study of Dowry Violence in Rural India," *American Economic Review* 92(4): 1029–1043.

Boserup, Ester. 2007. *Women's Role in Economic Development*, London, UK: Earthscan.

Botticini, Maristella and Aloysius Siow. 2003. "Why Dowries?" *American Economic Review* 93(4): 1385–1398.

Brown, Phillip H. 2009. "Dowry and Intrahousehold Bargaining: Evidence from China," *Journal of Human Resources* 44(1): 25–46.

Chiappori, Pierre-Andre, Bernard Fortin and Guy Lacroix. 2002. "Marriage Market, Divorce Legislation, and Household Labor Supply," *Journal of Political Economy* 110(1): 37–72.

Deininger, Klaus, Aparajita Goyal, Hari Nagarajan. 2013. "Women's Inheritance Rights and Intergenerational Transmission of Resources in India," *Journal of Human Resources* 48(1): 114–141.

Duflo, Esther. 2012. "Women Empowerment and Economic Development," *Journal of Economic Literature* 50(4): 1051–1079.

Dyson, Tim and Mick Moore. 1983. "On Kinship Structure, Female Autonomy, and Demographic Behavior in India," *Population and Development Review* 9(1): 35–60.

Friedberg, Leora. 1998. "Did Unilateral Divorce Raise Divorce Rates? Evidence from Panel Data," *American Economic Review* 88(3): 608–627.

Jacoby, Hanan and Ghazala Mansuri. 2010. "*Watta Satta:* Bride Exchange and Women's Welfare in Rural Pakistan," *American Economic Review* 100(4): 1804–1825.

Jejeebhoy, Shireen J. 2000. "Women's Autonomy: Dimensions and Context," in Harriet B. Presser, and Gita Sen eds. *Women's Empowerment and Demographic Processes*, New York, NY: Oxford University Press.

Jejeebhoy, Shireen J. and Zeba A. Sathar. 2001. "Women's Autonomy in India and Pakistan: The Influence of Religion and Region," *Population and Development Review* 27(4): 687–712.

Kingdon, Geeta and Francis Teal. 2010. "Teacher Unions, Teacher Pay and Student Performance in India: A Pupil Fixed Effects Approach," *Journal of Development Economics* 91(2): 278–288.

Kishwar, Madhu. 1988. “Rethinking Dowry Boycott,” *Manushi* 48: 10-13.

Kishwar, Madhu. 1989. “Towards More Just Norms for Marriage: Continuing the Dowry Debate,” *Manushi* 53: 2-9.

Leslie, Juliea. 1998. “Dowry, ‘Dowry Deaths’ and Violence against Women: A Journey of Discovery,” in Werner Menski ed *South Asians and the Dowry Problem*, New Delhi: Vistaar Publications, pp. 21-35.

Lundberg, Shelly and Robert A. Pollak. 1993. “Separate Spheres Bargaining and the Marriage Market,” *Journal of Political Economy* 101(6): 988-1010.

Manser, Marilyn and Murray Brown. 1980. “Marriage and Household Decision-Making: A Bargaining Analysis,” *International Economic Review* 21(1): 31-44.

McElroy, Majorie B. and Mary Jean Horney. 1981. “Nash-Bargained Household Decisions: Toward a Generalization of the Theory of Demand,” *International Economic Review* 22(2): 333-349.

Narayan, Uma. 1997. *Dislocating Cultures: Identities, Traditions, and Third World Feminism*, New York, NY: Routledge.

Oldenburg, Veena Talwar. 2002. *Dowry Murder*, New York, NY: Oxford University Press.

Panda, Pradeep and Bina Agarwal. 2005. “Marital Violence, Human Development and Women’s Property Status in India,” *World Development* 33(5): 823-850.

Palriwala, Rajni. 2009. “The Spider’s Web: Seeing Dowry, Fighting Dowry,” in Tamsin Bradley, Emma Tomalin, and Mangala Subramaniam eds. *Dowry: Bridging the Gap between Theory and Practice*, New Delhi, India: Women Unlimited, pp. 144-76.

Rahman, Lupin and Vijayendra Rao. 2004. “The Determinants of Gender Equity in India: Examining Dyson and Moore’s Thesis with New Data,” *Population and Development Review* 30(2): 239-268.

Roy, Sanchari. 2015. “Empowering Women? Inheritance Rights, Female Education and Dowry Payments in India,” *Journal of Development Economics* 114: 233-251.

Rudd, Jane. 2001. “Dowry-Murder: An Example of Violence against Women,” *Women’s Studies International Forum* 24(5): 513-22.

Sekhri, Sheetal and Adam Storeygard. 2014. “Dowry Deaths: Response to Weather Variability in India,” *Journal of Development Economics* 111: 212-223.

Sen, Amartya. 1990. “More than 100 Million Women are Missing,” *New York Review of Books* 37: 61–66.

Srinivas, Mysore N. 1994. *Some Reflections on Dowry*. New Delhi, India: Oxford University Press.

Srinivasan, Sharada and Arjun S. Bedi. 2007. “Domestic Violence and Dowry: Evidence from a South Indian Village,” *World Development* 35(5): 857-880.

Stone, Linda and Caroline James. 1995. “Dowry, Bride-burning, and Female Power in India,” *Women’s Studies International Forum* 18(2): 125-34.

Suran, Luciana, Sajeda Amin, Lopita Huq, and Kobita Chowdury. 2004. “Does Dowry Improve Life for Brides? A Test of the Bequest Theory of Dowry in Rural Bangladesh,” Policy Research Division Working Paper 195, Population Council.

Tambiah, Stanley J. 1973. “Dowry and Bridewealth and the Property Rights of Women in South Asia,” in Jack R. Goody and Stanley J. Tambiah eds. *Bridewealth and Dowry, Cambridge Papers in Social Anthropology, No.7*, Cambridge, MA: Cambridge University Press.

Vogl, Tom S. 2013. “Marriage Institutions and Sibling Competition: Evidence from South Asia,” *Quarterly Journal of Economics* 128(3): 1017-1072.

Wolfers, Justin. 2006. “Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results,” *American Economic Review* 96(5): 1802-1820.

World Bank. 2011. *World Development Report 2012: Gender Equality and Development*. Washington D.C.: World Bank.

Zhang, Junsen and William Chan. 1999. “Dowry and Wife’s Welfare: A Theoretical and Empirical Analysis,” *Journal of Political Economy* 107(4): 786-808.

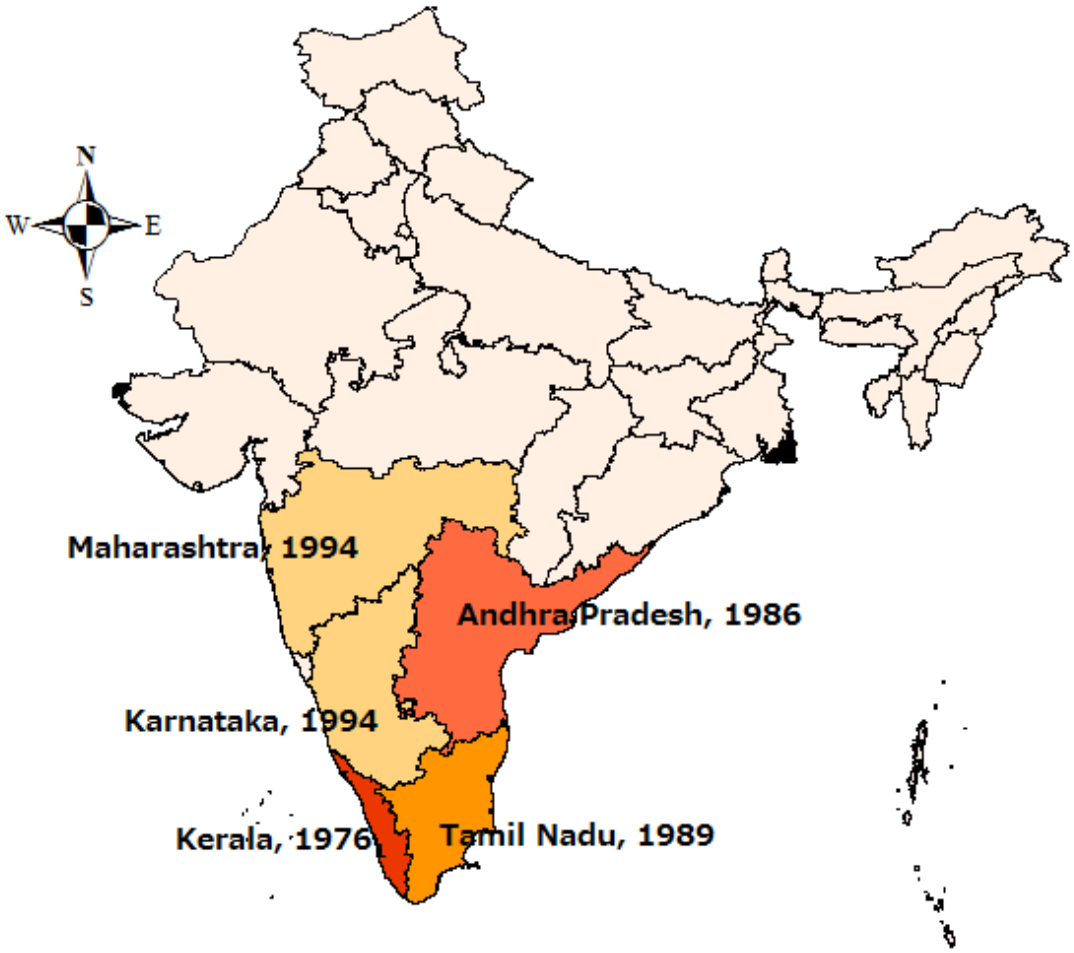

Figure 1: Years of amendment of the Hindu Succession Act, 1956 in each state

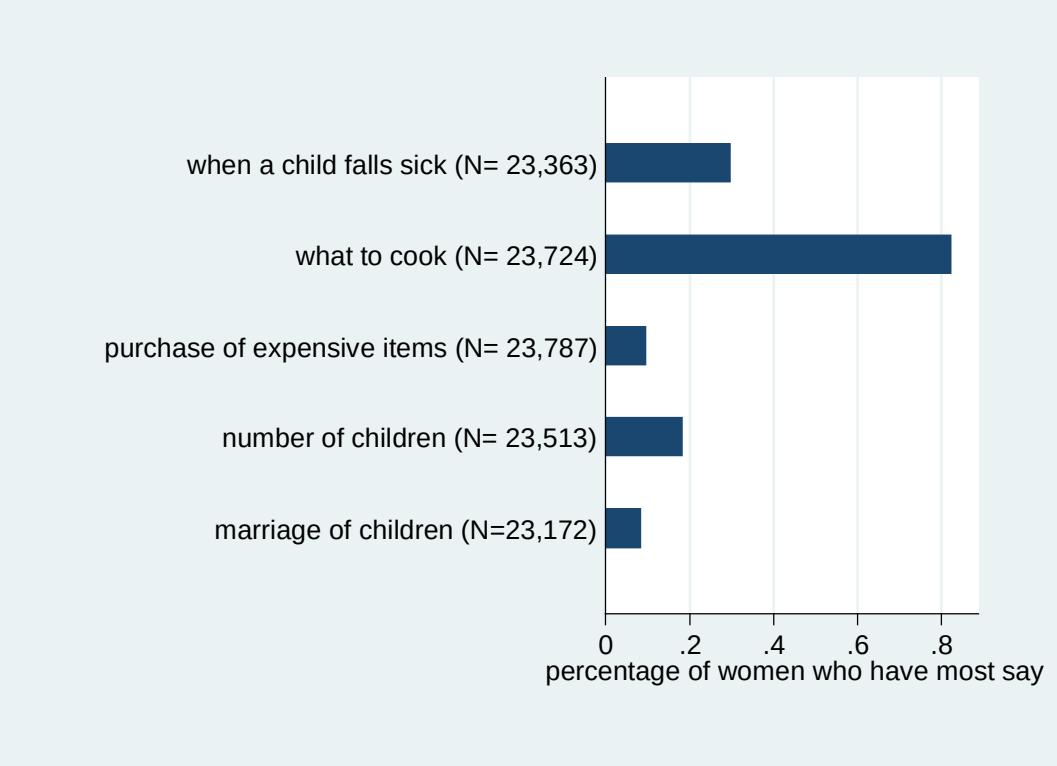

Figure 2: Women's decision-making power within the household (woman has the most decision-making power = 1)

Table 1
Summary statistics

	Mean
Woman's age	34.51
	(7.56)
Woman's age at marriage	17.45
	(3.63)
Age difference (husband-wife)	5.60
	(3.68)
HH income (Rs.)	49804
	(64143)
Agricultural land owned (acre)	10.94
	(184.18)
Dowry (Rs.)	101039
	(108182)
Bride Price (Rs.)	65683
	(78536)
Women's literacy (yes =1)	0.526
	(0.499)
Women's school years	4.18
	(4.68)
Husband's school years	6.32
	(4.89)
Urban (yes =1)	0.385
	(0.487)
Brahmin (yes =1)	0.053
	(0.223)
Highcaste (yes =1)	0.166
	(0.372)
Scheduled caste (yes =1)	0.211
	(0.408)
Scheduled tribe (yes =1)	0.083
	(0.275)
Other backward caste (yes =1)	0.394
	(0.489)
Hindu (yes =1)	0.807
	(0.395)
Muslim (yes =1)	0.121
	(0.326)
Christian (yes =1)	0.030
	(0.170)
Sikh (yes =1)	0.021
	(0.143)
Buddhist (yes =1)	0.007
	(0.083)

(Table 1 continued)

Other religions except for Hindu (yes =1)	0.015
	(0.121)
Wealth (natal>husband's family, =1)	0.191
	(0.393)
Endogamous marriage (yes =1)	0.274
	(0.446)
Number of observations	24098

Standard deviations are in parentheses.

Table 2
First stage regression (only coefficient estimates of the excluded variables are reported)

	Dowry (Rs.10,000)	Dowry × amendment	Bride Price (Rs.10,000)	Bride price × amendment	Net dowry (Rs.10,000)	Net dowry × amendment
Village(-i) dowry (Rs.10,000)	0.467***	-0.0110***	0.117***	-0.0040***		
	(0.0381)	(0.0016)	(0.0223)	(0.0012)		
Village(-i) dowry × amendment	0.0451	0.709***	-0.0025	0.198**		
	(0.108)	(0.108)	(0.0961)	(0.0967)		
Village(-i) bride price (Rs.10,000)	0.182***	-0.0041**	0.427***	-0.0064***		
	(0.0528)	(0.0021)	(0.0411)	(0.0017)		
Village(-i) bride price × amendment	-0.0750	0.191*	-0.0951	0.444***		
	(0.109)	(0.109)	(0.138)	(0.138)		
Village(-i) net dowry (Rs.10,000)					0.366***	-0.0095***
					(0.0304)	(0.0017)
Village(-i) net dowry × amendment					0.0542	0.565***
					(0.0871)	(0.0858)
Observations	22,922	22,922	22,922	22,922	22,922	22,922
R-squared	0.362	0.612	0.305	0.524	0.106	0.256
F statistics	115.42	64.74	87.24	40.62	81.85	50.84

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). The included variables are the same as those in Table 3.

Table 3
Effects of dowry/bride price on women's decision-making power in the reform and nonreform states with control variables (woman has the most decision-making power = 1): estimated by LPM

	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
Dowry (Rs.10,000)	0.0019***	0.0002	0.0009***	0.0012***	0.0007**
	(0.0005)	(0.0004)	(0.0003)	(0.0004)	(0.0003)
Dowry × amendment	-0.0006	-0.0001	-0.0017**	-0.0027**	-0.0002
	(0.0015)	(0.0009)	(0.0009)	(0.0012)	(0.0009)
Bride price (Rs.10,000)	-0.0014**	-0.0003	0.0003	-0.0005	-0.0001
	(0.0006)	(0.0005)	(0.0004)	(0.0005)	(0.0004)
Bride price × amendment	0.0028	0.0000	-0.0006	0.0037**	-0.0021*
	(0.0020)	(0.0012)	(0.0013)	(0.0018)	(0.0011)
Amendment	0.0086	0.0147	0.0126	0.0056	0.0170*
	(0.0167)	(0.0131)	(0.0108)	(0.0141)	(0.0102)
Caste variables (dummies, the excluded is middle caste):					
Brahmin	0.0118	-0.0114	-0.0039	0.0092	-0.0019
	(0.0205)	(0.0181)	(0.0130)	(0.0176)	(0.0122)
Highcaste	0.0259	-0.0081	-0.0061	0.0196	0.0045
	(0.0175)	(0.0154)	(0.0108)	(0.0144)	(0.0105)
Scheduled caste	0.0189	-0.0377**	0.0099	0.0104	0.0018
	(0.0169)	(0.0152)	(0.0107)	(0.0140)	(0.0102)
Scheduled tribe	0.0044	-0.0340**	-0.0131	-0.0035	0.0100
	(0.0184)	(0.0168)	(0.0118)	(0.0154)	(0.0117)
Other backward caste	0.0107	-0.0341**	0.0025	0.0084	0.0019
	(0.0154)	(0.0140)	(0.0098)	(0.0128)	(0.0094)
Socio-economic variables:					
Woman's age	0.0137***	0.0092***	0.0042**	0.0046*	0.0017
	(0.0033)	(0.0029)	(0.0020)	(0.0027)	(0.0020)
Woman's age^2	-0.0002***	-0.0001***	-0.0001*	-0.0001	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Woman's age at marriage	0.0007	-0.0015*	0.0009	-0.0011	0.0001
	(0.0009)	(0.0008)	(0.0006)	(0.0008)	(0.0006)
Age difference (husband-wife)	0.0015*	0.0000	0.0015**	0.0018**	0.0005
	(0.0009)	(0.0007)	(0.0006)	(0.0008)	(0.0006)
Women's school years	0.0054**	0.0013	-0.0022	-0.0008	-0.0003
	(0.0021)	(0.0018)	(0.0014)	(0.0018)	(0.0013)
Women's school years^2	-0.0001	0.0000	0.0004***	0.0005***	0.0001
	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
Husband's school years	-0.0044**	-0.0034**	-0.0034***	-0.0006	-0.0024**
	(0.0020)	(0.0017)	(0.0013)	(0.0017)	(0.0012)
Husband's school years^2	0.0002	0.0001	0.0001	-0.0001	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
HH non-wage income (Rs.10,000)	-0.0008	-0.0004	-0.0006*	-0.0007	-0.0007**
	(0.0005)	(0.0005)	(0.0003)	(0.0004)	(0.0003)
Agricultural land owned (10 acre)	-0.0002**	-0.0002	0.0000	0.0001	-0.0000
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)

(Table 3 continued)

Urban (yes =1)	0.0249***	0.0350***	0.0209***	0.0241***	0.0087**
	(0.0071)	(0.0059)	(0.0047)	(0.0060)	(0.0044)
Religion variables (dummies, the excluded is Hindu):					
Muslim	0.0057	-0.0097	-0.0143*	-0.0184	-0.0135*
	(0.0131)	(0.0123)	(0.0084)	(0.0114)	(0.0075)
Christian	0.0173	0.0319*	0.0111	0.0094	0.0188
	(0.0242)	(0.0180)	(0.0169)	(0.0205)	(0.0158)
Sikh	0.0186	0.0306	0.0251	0.0201	0.0204
	(0.0291)	(0.0253)	(0.0153)	(0.0220)	(0.0149)
Buddhist	-0.0066	0.0098	-0.0038	-0.0208	0.0108
	(0.0384)	(0.0262)	(0.0208)	(0.0224)	(0.0217)
Other non-Hindu religions	0.0131	0.0328*	-0.0132	-0.004	-0.0128
	(0.0256)	(0.0188)	(0.0177)	(0.0222)	(0.0169)
Gender relations variables (dummies):					
Wealth (natal>husband's family, =1)	-0.0126*	-0.0426***	0.0257***	-0.0166***	0.0089*
	(0.0074)	(0.0067)	(0.0053)	(0.0064)	(0.0048)
Village: Endogamous marriage	0.125***	-0.0660***	0.0343***	0.0611***	0.0539***
	(0.0144)	(0.0121)	(0.0096)	(0.0119)	(0.0089)
Constant	-0.103	0.574***	-0.0766*	0.0444	0.0967
	(0.0962)	(0.0943)	(0.0456)	(0.0770)	(0.0823)
Observations	22,240	22,578	22,632	22,377	22,073
R-squared	0.122	0.058	0.115	0.133	0.142

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). State dummies are included in the RHS.

Table 4
Effects of dowry/bride price on women's decision-making power in the reform and nonreform states without control variables: estimated by LPM

	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
Dowry (Rs.10,000)	0.0030***	0.0003	0.0009***	0.0018***	0.0004
	(0.0005)	(0.0004)	(0.0003)	(0.0004)	(0.0003)
Dowry × amendment	-0.0017	0.0003	-0.0006	-0.0005	0.0009
	(0.0014)	(0.0009)	(0.0009)	(0.0013)	(0.0009)
Bride price (Rs.10,000)	-0.0007	-0.0012**	-0.0007*	-0.0005	-0.0009**
	(0.0006)	(0.0005)	(0.0004)	(0.0005)	(0.0004)
Bride price × amendment	0.0031	0.0019	0.0004	0.0049**	-0.0012
	(0.0022)	(0.0012)	(0.0013)	(0.0020)	(0.0011)
Amendment	0.0632***	0.0423***	0.0149	-0.0271**	-0.0040
	(0.0145)	(0.0110)	(0.0091)	(0.0118)	(0.0086)
Constant	0.263***	0.825***	0.0907***	0.170***	0.0873***
	(0.0044)	(0.0038)	(0.0032)	(0.0038)	(0.0032)
Observations	22,430	22,776	22,831	22,566	22,264
R-squared	0.005	0.003	0.001	0.002	0.000

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%).

Table 5
Effects of dowry/bride price on women's decision-making power in the reform and nonreform states with control variables: IV estimation (only coefficient estimates of interest are reported)

	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
Dowry (Rs.10,000)	0.0287***	-0.0018	0.0066***	0.0105***	0.0060***
	(0.0039)	(0.0027)	(0.0022)	(0.0027)	(0.0020)
Dowry × amendment	0.0315	0.0052	-0.0011	-0.0156**	0.0086
	(0.0192)	(0.0052)	(0.0054)	(0.0061)	(0.0066)
Bride price (Rs.10,000)	-0.0362***	0.0012	-0.0080***	-0.0099**	-0.0072***
	(0.0057)	(0.0039)	(0.0030)	(0.0039)	(0.0028)
Bride price × amendment	-0.0572	0.0011	-0.0070	0.0247**	-0.0221*
	(0.0377)	(0.0092)	(0.0101)	(0.0116)	(0.0120)
Amendment	0.0457	-0.0379*	0.0421**	0.0127	0.0457**
	(0.0630)	(0.0210)	(0.0198)	(0.0213)	(0.0232)
Observations	22,240	22,578	22,632	22,377	22,073
Robust regression test of exogeneity (p-value)	25.95 (0.0000)	3.43 (0.0082)	2.68 (0.0299)	5.31 (0.0003)	5.49 (0.0002)

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). The included variables are the same as those in Table 3.

Table 6
Effects of net dowry on women's decision-making power in the reform and nonreform states with control variables (only coefficient estimates of interest are reported)

	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
A. LPM estimation					
Net dowry (Rs.10,000)	0.0018***	0.0002	0.0007**	0.0011***	0.0006**
	(0.0004)	(0.0004)	(0.0003)	(0.0004)	(0.0003)
Net dowry ×	-0.0008	-0.0001	-0.0015	-0.0028**	0.0001
amendment	(0.0015)	(0.0008)	(0.0009)	(0.0011)	(0.0009)
Amendment	0.0205	0.0141	-0.0008	0.0108	0.0044
	(0.0140)	(0.0104)	(0.0092)	(0.0105)	(0.0083)
B. IV estimation					
Net dowry (Rs.10,000)	0.0251***	-0.0023	0.0061***	0.0108***	0.0055***
	(0.0030)	(0.0024)	(0.0019)	(0.0023)	(0.0017)
Net dowry ×	0.0179**	0.0090**	-0.0058*	-0.0105***	0.0006
amendment	(0.0081)	(0.0036)	(0.0032)	(0.0040)	(0.0036)
Amendment	-0.0391	-0.0195	0.0167	0.0417**	0.0042
	(0.0314)	(0.0173)	(0.0138)	(0.0171)	(0.0149)
Observations	22,240	22,578	22,632	22,377	22,073

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). The included variables are the same as those in Table 3.

Table 7
Effects of dowry/bride price on women's decision-making power in the southern states and other states: estimated by LPM (only coefficient estimates of interest are reported)

	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
Dowry (Rs.10,000)	0.0014***	-0.0001	0.0009***	0.0011***	0.0006**
	(0.0005)	(0.0004)	(0.0003)	(0.0004)	(0.0003)
Dowry × south	0.0025**	0.0015**	-0.0002	-0.0009	0.0004
	(0.0011)	(0.0007)	(0.0008)	(0.0009)	(0.0008)
Bride price (Rs.10,000)	-0.0009	-0.0001	0.0003	-0.0004	0.0000
	(0.0006)	(0.0006)	(0.0004)	(0.0005)	(0.0004)
Bride price × south	-0.0010	-0.0001	-0.0003	0.0013	-0.0022**
	(0.0017)	(0.0012)	(0.0012)	(0.0014)	(0.0011)
Southern states	0.0182	-0.0036	0.0321**	0.0172	0.0168
	(0.0221)	(0.0187)	(0.0157)	(0.0186)	(0.0146)
Observations	22,240	22,578	22,632	22,377	22,073

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). The included variables are the same as those in Table 3.

Table 8

Effects of dowry/bride price on women's decision-making power by marriage cohort: estimated by LPM (only coefficient estimates of interest are reported)

Variables	if a child falls sick	what to cook	purchase of expensive items	number of children	marriage of children
Dowry (Rs.10,000)	0.0025**	-0.0001	0.0007	0.0016	0.0012
	(0.0013)	(0.0016)	(0.0007)	(0.0011)	(0.0011)
Dowry × cohort2	0.0003	0.0018	0.0000	0.0000	-0.0004
	(0.0015)	(0.0017)	(0.0009)	(0.0013)	(0.0011)
Dowry × cohort3	-0.0020	-0.0002	-0.0005	-0.0014	-0.0016
	(0.0016)	(0.0019)	(0.0009)	(0.0013)	(0.0012)
Dowry × cohort4	0.0008	-0.0003	0.0003	0.0009	0.0002
	(0.0016)	(0.0018)	(0.0009)	(0.0014)	(0.0012)
Dowry × cohort5	-0.0022	-0.0008	0.0003	-0.0020	-0.0008
	(0.0015)	(0.0018)	(0.0009)	(0.0013)	(0.0011)
Bride price (Rs.10,000)	-0.0029**	0.0015	-0.0005	-0.0015	-0.0020**
	(0.0014)	(0.0022)	(0.0009)	(0.0015)	(0.0010)
Bride price × cohort2	0.0012	-0.0026	0.0012	0.0011	0.0021*
	(0.0017)	(0.0023)	(0.0011)	(0.0018)	(0.0011)
Bride price × cohort3	0.0037*	-0.0014	0.0014	0.0031*	0.0040***
	(0.0020)	(0.0026)	(0.0013)	(0.0018)	(0.0015)
Bride price × cohort4	-0.0004	-0.0010	0.0000	-0.0018	0.0001
	(0.0019)	(0.0024)	(0.0012)	(0.0018)	(0.0012)
Bride price × cohort5	0.0027	-0.0025	0.0006	0.0023	0.0015
	(0.0017)	(0.0024)	(0.0011)	(0.0017)	(0.0011)
Cohort2	0.0249	-0.0090	-0.0075	-0.0232	-0.0168
	(0.0198)	(0.0182)	(0.0129)	(0.0175)	(0.0125)
Cohort3	0.0313	0.0036	-0.0062	-0.0432*	-0.0181
	(0.0261)	(0.0233)	(0.0170)	(0.0225)	(0.0165)
Cohort4	0.0488*	0.0285	-0.0016	-0.0066	-0.0171
	(0.0286)	(0.0250)	(0.0183)	(0.0247)	(0.0177)
Cohort5	0.0480	0.0438	-0.0057	-0.0092	-0.0346
	(0.0344)	(0.0301)	(0.0220)	(0.0293)	(0.0213)
Observations	22,240	22,578	22,632	22,377	22,073

Robust standard errors are in parentheses (* significant at 10%; ** significant at 5%; *** significant at 1%). The included variables are the same as those in Table 3. The marriage-year cohorts are separated by the year when the Hindu Succession Act was amended in each state. The shares of women who are in cohort 1 (married before 1976), cohort 2 (married 1976–1985), cohort 3 (married 1986–1988), cohort 4 (married 1989–1993), and cohort 5 (married after1993) are 6.9 %, 33.5%, 12.2%, 19.8%, and 27.6%, respectively.