



The Effect of Inheritance Law Amendment of Equal Rights in Ancestral Property on Married Women Participation in Household Decisions in India: Non-parametric Difference-in-Difference Estimation

T. Lakshmanasamy

Formerly ICSSR Senior Fellow and Professor, Department of Econometrics, University of Madras, Chennai, India. E-mail: tlsamy@yahoo.co.in

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Abstract: The Hindu Succession Amendment Act, 2005 provides Hindu women equal inheritance rights in their ancestral property. This legal reform empowers married women, enhances autonomy and increases married women's decision making power in marital households. This paper estimates the impact of HSAA 2005 on women's empowerment and autonomy in their marital household in 24 states of India where the HSSS law was implemented after 2005 using the 2015-17 National Family and Health Survey data and applying the nonparametric difference-in-difference (DID) method. The DID estimates show that the property rights reform has increased the decision making power of the post-2005 Hindu married women with respect to their health care, visit family and friends and major household purchases by 2 percent, and spending husband's earnings by 9 percent, and also of non-Hindu women. The HSAA 2005 reform of legal property rights to women has impacted married women with greater autonomy and more say in household decisions.

Keywords: Hindu Succession Amendment Act, inheritance, property rights, marital household decision making, treatment effect, difference-in-difference estimation

Introduction

Gender inequality and discrimination remain an overwhelming injustice against women across the globe. Women lag behind men in terms of access to education, labour market opportunities, political representation, decision making and basic

legal rights. Gender equality is not only a fundamental human right but a necessary foundation for women's empowerment. Beyond the essential importance of guaranteeing women basic human rights, it is widely believed that social rights and economic independence of women lead to other desirable outcomes such as higher economic productivity, improved health status and higher educational attainment for children. Women empowerment and socioeconomic development are closely related and development alone can drive down the inequality between men and women (Duffo, 2012).

Women empowerment refers to increasing and improving the social, economic, political and legal strength of women by creating an environment where they can make decisions of their own for their personal benefits as well as the society (Yogendrarajah, 2013). Women empowerment encompasses many dimensions and has components. Principal among them is women's sense of self-worth, their right to have the power to control their own lives both within and outside the home, and their ability to influence the direction of social change to create a just social and economic order (Singh and Gupta, 2013).

In India, women's empowerment heavily depends on various aspects of life including age, education, occupation, social status (caste and class), geographical location, culture, demography, family structure, etc. Policies for women's empowerment exist at national, state and local levels in many sectors including health, education, economic opportunities, violence and political participation. In spite of implementing various schemes and programmes aiming to empower women and gender equality, there exists a significant gap between policy achievements and actual practice in the country.

The basic foundation for women's empowerment is their position within their household, especially their position to make decisions. Evidence shows that the labour force participation of women and their contribution to the household budget as the key sources of women's decision making power within the household (Sapkal, 2017, Roy, 2008). However, low education and occupational stereotyping make women's contribution and role in household resource allocation decisions marginal and vulnerability of women to marginalisation and discrimination within the household despite their economic independence. Research on the intrahousehold allocation of resources demonstrates that income in the hands of women will be mainly used for child health and education especially for girl children compared to income in the hands of men. The economic independence

of women improves their status in the family and society and the progress towards gender equality.

The economic independence of women and their income contribution to the family are not the only factors that influence the decision making power within the household (Roy, 2008). Women need more rights especially legal protection against male prejudice to actively participate in household decisions. A more formal empowerment process is therefore required to enhance women's decision making power in the household. Granting women property rights i.e. land titles can help them attain such economic independence (Roy and Tisdell, 2000), empower women (Mishra and Sam, 2016), increase women's bargaining power (Friedemann-Sanchez, 2006), and labour market participation (Garikipati, 2009). Owing property has a transformative effect not only on women's lives but also on their families and children like child health (Allendorf, 2007; Lahoti *et al.* 2016). Women's ownership of property sharply reduces property turnover in urban settlements (Datta, 2006), household food security (Rao, 2005), budget share on food (Doss, 2006) and marital violence (Panda and Agarwal, 2005; Bhattacharyya, 2011).

Realising that women's position within the family is weak and the only way to empower women is to support them with legal rights, the union and state governments in India have come out with various legislative measures. An important legal reform that aims to improve the position of women is the reform in inheritance rights. The legal provision of women's land rights provides them with economic security in their marital relations and can make a notable difference to women's bargaining power within the household and community. Further, ownership of property enhances their confidence and sense of self-worth (Agarwal, 1994). Inheritance rights improve the 'outside options' for women like labour force participation leading to greater bargaining power within the household (Roy, 2008). Land rights reduce women's own as well as the household risk of poverty and discrimination. An important legal remedy to women's empowerment was provided by The Hindu Succession Act, 1956 (HSA).

Being a patriarchal society, Indian women have no access to family property in the Hindu tradition, especially land rights. The absence of land ownership by women affects their social status, imposing the patriarchal views stringently and women's status is low within the social strata and their family (Roy, 2008). Gender inequality in inheritance rights in India was entrenched in The Hindu Succession

Act (HSA) of 1956. The Hindu Succession Act of 1956 governed the property rights of Hindus, Buddhists, Sikhs, and Jains nationally. Section 14 of the HSA 1956 provides that daughters of males dying intestate i.e. without a will, who are unmarried at the time of law have equal rights with their brothers to inherit their father's owned property but not to the ancestral property. Sons as coparceners have the right to inherit not only separate property but also joint family property.

Such a weakness in the eligibility of women for the right to inherit joint family property has caused inefficient investment in female children and weaker position of women within their household (Duflo, 2004). Realising this important gap in the legal provision and eliminating gender inequality, five state governments in India - Kerala (1976), Andhra Pradesh (1986), Tamil Nadu (1989), Karnataka (1994) and Maharashtra (1994) - have reformed the law, between 1976 and 1994, with equal property rights in the ancestral property among all siblings. Subsequently, there has been a significant improvement in the autonomy of women in these states after the implementation of the inheritance reform (Sanchari Roy, 2008, Deininger *et al.* 2013; Mookerjee, 2019). Following suit, the Government of India also enacted the Hindu Succession Amendment Act, 2005 (HSAA 2005) making the inheritance rights of women applicable nationwide, ensuring the eligibility of women of India who are married and born after 2005 for an equal share in ancestral property. Under the amended law, daughters are eligible to inherit not only their father's owned property but also ancestral property equally with their brothers from 5th September 2005. This has been recognised as a significant move toward gender equality since land rights were heavily biased against women in India before 2005 (Agarwal, 1994).

In the five states that legislated equal property rights for women much earlier than the national amendment of the Hindu Succession Act, very few women have inherited joint family property from their parental family. However, there has been a significant increase in the decision making power of women after the HSAA 2005. As Figure 1 shows, women's decision making role in major household decisions over time has increased significantly. Still, a significant gender bias remains and only a few women have inherited joint family property from their parental family after the implementation of the law in the five states. The likelihood of inheriting land by women has only slightly increased as many women in remote areas are not aware of their right to inherit property (Sanchari Roy, 2008, Deininger *et al.* 2013; Mookerjee, 2019).

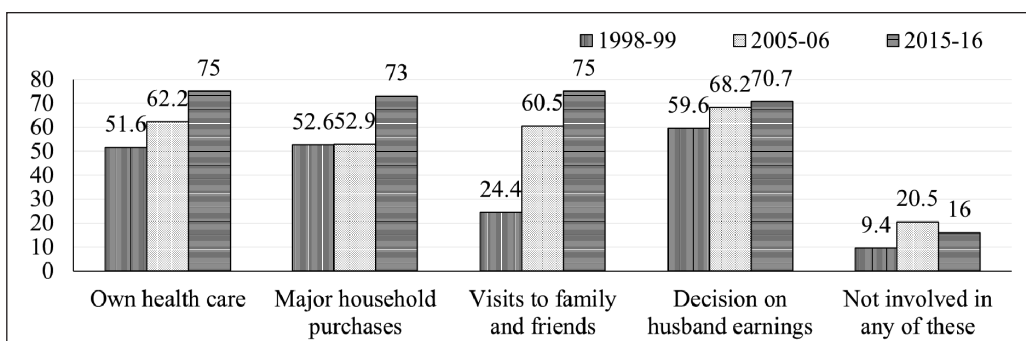


Figure 1: Married Women's Participation in Household Decision Making

Source: Computed from the NFHS data.

Though the 2005 amendment of the law is significant for women's status, the exact impact of the law on women's inheritance and empowerment within the household is less understood. The literature on the impact of inheritance reform on women shows that the legal reform has enabled women to gain in multiple dimensions viz, education, health, labour force participation, female mortality and decision making power. However, evidence shows that the proportion of women inheriting ancestral property is negligible, son preference and female foeticide are prevalent, and empowerment and decision making power in the marital household is highly restrictive and severely limited. The studies have analysed the effect of the legal reform on empowerment using data from the states of Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra and Karnataka where their laws enacted prior to 2005 did not include women inheriting ancestral property. The impact of the 2005 amendment of HSA to the inheritance law applicable to the entire nation which gives each and every Hindu woman in the country to inherit the ancestral property is not known, especially in north Indian states where the strong patriarchal system possibly overturns the laws. Virtually no evidence exists on the impact of the 2005 amendment in those states which implemented the law after 2005.

Hence, it is imperative to know whether there has been any change in the decision making power of women in India after the amendment of the HSA in 2005. This study attempts to examine the impact of the legal provision of property rights to women in the rest of the states i.e. 24 states where the law has been implemented after 2005. The main objective of this study is to identify and estimate the extent to which the HSAA 2005 has empowered women and improved their autonomy within their marital household based on their involvement in decision-making

in the family. The power of women in decision making within the household is analysed through the indicators of women empowerment as presented in Figure 1. As the law applies to Hindu women (also Jain, Sikhs, and Buddhists) who are married after the implementation of the law, i.e. after 2005, this study captures empowerment by the difference in the indicators between women married before and after 2005. In the empirical analysis, this study uses the 2015-17 National Family and Health Survey data for 24 major states of India in which the law was implemented after 2005. Empirically, the nonparametric difference-in-difference (DID) method is used to estimate the impact of inheritance rights on the decision making power of women within the marital household.

Literature Review

Roy (2008) investigates whether a woman enjoys a better status in her marital family if she brings property inherited from her parental family, using the 2005-06 NFHS data and the difference-in-difference method in the five states that enacted the law prior to the 2005 nationwide HSA Act 2005. The study argues that women's income contribution to the household budget is the key source of decision making authority within the household. The impact of the reform is determined by the interaction of women married after the implementation of the reform in their state with religion as the act is applicable to Hindu women only. The study observes a statistically significant higher average level of autonomy status of the Hindus than non-Hindus. It includes a variable which is whether a husband is engaged in agriculture as an occupation. Including whether agricultural households belong to a higher caste, the study finds that exposure to the law has increased the autonomy of women whose husband own land. Greater female autonomy has been witnessed in landholding higher caste households by increasing the bargaining power of women in household decision making after the amendment of the law.

Deininger *et al.* (2013) analyse whether the generation of women has benefitted in terms of the proportion of total property received whose mothers have been exposed to the reform, using the 2011 Urban Property Ownership Records (UPOR) household survey data conducted by the Indian National Council for Applied Economics Research in Karnataka and applying the difference-in-difference model. In an innovative application, the study considers three generations where only the second and third generations are exposed to the reform. The results show that third-generation Hindu females who married after the amendment received 17% more

assets in value than those who married before the amendment relative to their male siblings, but comparatively less amount than their siblings. Second-generation Hindu females who married after the amendment raised more female children, both absolute and relative ratio, than their sisters who married before the amendment and could invest more in their daughters' education. These women believe that asset transfers to daughters alone are not enough to achieve inter-sibling equality. The study also finds that the share of assets to be received by third-generation Hindu females whose mothers married after the amendment is 11% higher than those whose mothers married before the amendment relative to their male siblings, but they remained behind their male siblings.

Rosenblum (2013) examines the impact of women's inheritance rights on female child mortality and fertility with the 1992-1993, 1998-1999 and 2005-2006 NFHS data in pre-2005 HSA act states where the matrilineal system is prevalent, applying the quadruple difference equation method. The study investigates the impact of the law before and after the reform, reform states versus non-reform states, Hindu households versus non-Hindu households, and landowning households versus non-landowning households. The study finds that there is a small, but meaningful increase in female mortality caused by the reform. This unintended negative consequence of the law is due to a lack of parental preference to bequest their land to their daughters but the law made them do so. The results show that there was a small, but meaningful increase in female mortality caused by the reform. Giving women inheritance rights increases the cost of daughters and thus raises female child mortality and/or lowers female fertility. The reform causes parents to want fewer daughters and thus reduce fertility. Non-reform states are able to catch up to lower mortality rates of the reform states after the implementation of the law.

Sakpal (2016) analyses the impact of the inheritance reform on education, labour force participation and educational attainment of women in India using the 55th round (1999-2000) and 64th round (2004-05) of NSSO data and difference-in-difference model. In the context of intra-household resource allocation decisions, the study examines the effect of property rights as a substitution effect, complementary effect, and equalising effect. The estimated result supports the complementary and equalising effect of women's property rights but not the substitution effect as there is no literature showing daughters are preferred over sons. The results show that the legal amendment has increased human capital accumulation, and female labour supply and had a positive impact on the daughter's education.

Mookerjee (2019) examines the impact of inheritance rights on the intrahousehold decision making power of women in southern India for the period 2005-06 using the NFHS data and difference-in-difference method. The study notes that women's social status is tied to their financial worth, gender-neutral employment and asset ownership rights. The study notes that the married woman's relationship with the natal family as approved by her in-laws is likely to be affected by inheritance of property. The results show that 4.9 percent of women are more likely to have a say in visits to natal family and relatives. The study also finds that the shift away from the traditional joint family system is responsible for the improvement of women's autonomy. The legal reform has increased women's participation in decision making at the expense of the older generation of household members and not at the expense of husbands. Interestingly, husbands benefitted more than wives at the expense of other household members. The reform has increased the likelihood of women making decisions jointly with their husbands, depressing the probability of husband's individual decision making.

Bhalotra *et al.* (2020) investigate whether the amendment of inheritance rights for women modifies the historic preference for sons in southern India for the period 1972-2004 using the NFHS and REDS data and difference-in-difference method. The study also analyses the effect of the ultrasound technology that makes possible the prenatal detection of the sex of the foetus on son preference. Families use ultrasound technology for sex-selective abortion in order to manipulate the sex composition of their births in favour of sons. The study finds a significant decline in the probability that birth is a girl by 3.8-4.3 percentage points and families with firstborn girls are more likely to prefer sons over daughters relative to families with firstborn sons post-reform and post ultrasound. The study observes that the adjustment of the sex composition of the family in favour of boys is reflected in the excess girl mortality after birth and the increase in the families without a son to continue fertility.

Data and Methodology

The data used in this study is derived from the National Family Health Survey (NFHS-4) 2015-16, the fourth in the NFHS series, which contains information on various aspects of households for India and each state and union territories. All four NFHS surveys have been conducted under the stewardship of the Ministry of Health and Family Welfare (MoHFW), Government of India. The primary

objective of the 2015-16 National Family Health Survey is to provide essential data on health and family welfare, as well as data on emerging issues in these areas. NFHS administers five types of questionnaires - household, men, women, village and biomarker questionnaires. The women's schedule provides information on socio-demographic characteristics for all women between the ages of 19 and 49 in each household. Besides, the women's schedule contains a wealth of information that represents the autonomy of women within the household and their role in household decision making. The data has 5,00,918 married women and among them, 1,70,368 women are married after the HSA amendment i.e. after 5th September 2005. Hence, these women constitute the sample for this study.

Public policies such as the HSA and its amendment are implemented with the expectation of improving the welfare of individuals by impacting the current status. Many intervention programmes might appear potentially promising before implementation yet fail to generate the expected benefits. A better understanding of whether welfare programmes actually work as well as the likely level and nature of the impact on the intended beneficiaries is crucial for better planning and execution of any programme. Such needs impact evaluation help policymakers decide whether programmes are generating intended effects, promote accountability in the allocation of resources across public programs, and fill gaps in understanding what works and what does not. However, the challenge in programme evaluation is how to measure the outcome of the programme and how to attribute the measured changes in well-being to the particular project or policy intervention, as the benefits are many and are influenced by other factors.

The aim of programme evaluation is to measure the causal effect of a policy on some outcome of interest, on which it is expected to have an impact. Actually, the programme's causal effect is identified as the difference between the outcome of the units affected by the programme i.e. actual outcome and the outcome that these same units would have experienced had the programme not been implemented i.e. potential outcome. If it is possible to identify the potential outcome of the programme - the counterfactual - then it is easy to measure the causal effect. The fundamental problem is that it is impossible to observe the same unit in the two scenarios simultaneously, i.e. the scenarios of the programme implemented and not implemented. The counterfactual is an elusive one to produce or simulate. The impact evaluation literature has suggested certain methods to estimate the required counterfactual that will help understand whether programmes actually confer

the desired benefits to the targeted people. The difference-in-difference (DID), proposed by Ashenfelter and Card (1985), is one of the programme evaluation methods that is widely used in empirical analyses.

Difference-in-Difference (DID) Method

The DID is a nonparametric estimation method that does not require a priori specification of the distribution function. Rather the data itself reveals its empirical distribution. The DID is typically used to estimate the effect of a specific intervention or treatment by comparing the changes in outcome over time between the population participating in the programme (the treatment group) and a population that is not (the control group). The DID makes use of pre/post-intervention data to obtain an appropriate counterfactual to estimate the causal effect. The difference in the before-and-after outcome for the treated group - the first difference - controls for factors that are constant over time in that group, since the comparison is within the same group. However, the outside time-varying factors may also influence the outcome. The effect of these time-varying outside factors can be captured by measuring the before-and-after changes in the outcome for a (control) group that did not undergo the treatment but was exposed to the same set of environmental conditions - the second difference. The difference between the two difference eliminates the main source of bias in the estimate of the outcome of the programme. The DID approach thus combines the two counterfactuals, the before-and-after comparisons, that compare the outcomes of programme participants prior to and subsequent to the introduction of a programme, and with and without comparisons between the treated and not-treated, to produce a better estimate of the counterfactual. The DID method gives an effective estimator of the average change in the key outcome of those exposed to the treatment.

Figure 2 illustrates the difference-in-difference method. The red line represents the treatment group who are participants and the green line is the comparison group who are non-participants in the programme. The blue vertical line is the cut-off point of the eligibility criterion for intervention. In the pre-intervention period, both the treatment and comparison groups are the same over time. But in the post-intervention, period the direction of the treatment group changes while the comparison group is the same. This is because, as the intervention is for the treated people, after the implementation, the treated people undergo changes i.e. benefit from the programme, so the line rises upward. The dotted line represents

the counterfactual, the outcome for the treated group without intervention. The difference between the dotted line and red line in the post-intervention period is the estimated causal impact of the programme.

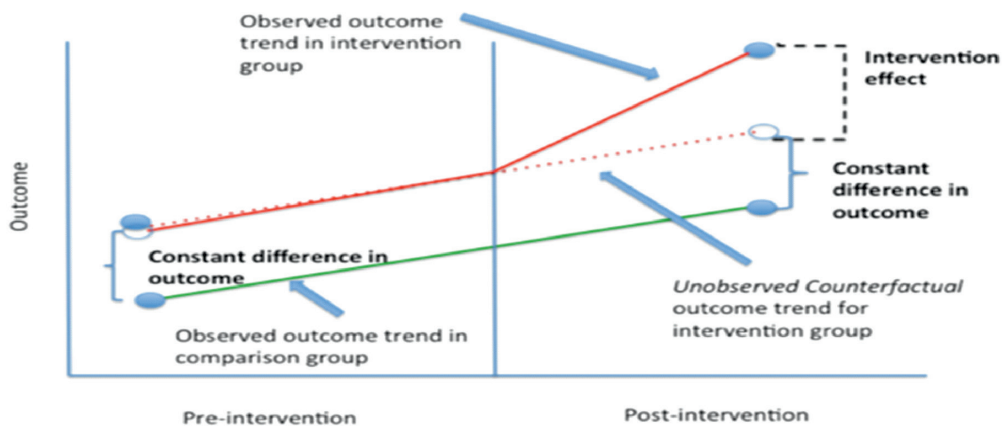


Figure 2: Difference-in-Difference Method of Impact Evaluation

Let y be the outcome of the intervention programme, d be the treatment status, $d=d$ the treatment group i.e. individuals who receive treatment and $d=c$ the control group i.e. individuals who do not receive the treatment. Let individuals be observed in two time periods, $t=0$ before the treatment group receives treatment i.e. pre-treatment, and $t=1$ after the treatment group receives treatment i.e. post-treatment. Individuals will typically have two observations each, one pre-treatment and one post-treatment. Let y_0^d and y_1^d respectively be the outcomes for the treatment group before and after treatment and let y_0^c and y_1^c be the corresponding sample outcomes for the control group. The subscripts correspond to the time period and the superscripts to the treatment status.

For individual i , the potential outcomes be y_0^i and y_1^i , the value of the outcome variable under non-treatment and treatment respectively. However, the problem is that both y_1^i and y_0^i are not observed simultaneously as the each individual is either in the control group or in the treatment group. A solution to this problem is to use average outcomes. Let \bar{y}_0^d and \bar{y}_1^d respectively be the sample average of the outcomes for the treatment group before and after treatment and let \bar{y}_0^c and \bar{y}_1^c be the corresponding sample average of the outcomes for the control group. The average treatment effect is the difference in the mean (average) outcomes between units exposed to the treatment and units in the control:

$$ATE = \frac{1}{n} \sum (y_1^i - y_0^i) \quad (1)$$

where the summation occurs over all n individuals. Then, the causal effect or the true impact of the intervention programme is obtained as:

$$ATE = (\bar{y}_1^d - \bar{y}_0^d) - (\bar{y}_1^c - \bar{y}_0^c) = [E(\bar{y}_1^d) - E(\bar{y}_0^d)] - [E(\bar{y}_1^c) - E(\bar{y}_0^c)] \quad (2)$$

Empirically, the regression controlling for the treatment is specified as:

$$y_i = \alpha + \beta d_i + \gamma t_i + \delta (d_i * t_i) + \varepsilon_i \quad (3)$$

$$\text{Treatment outcome}_i = \varepsilon + \beta * \text{treated}_i + \gamma * \text{time}_i + \delta * (\text{treated}_i * \text{time}_i) + \varepsilon_i \quad (4)$$

where the coefficient β is the treatment group-specific effect that accounts for the average permanent difference between treatment and control, γ is the time trend common to control and treatment groups, and δ is the true effect of treatment. The causal effect of the intervention δ is obtained as the difference-in-difference:

$$\delta = \alpha + \beta + \gamma + \delta - (\alpha + \beta) - (\alpha + \gamma - \gamma) = (\gamma + \delta) - (\gamma) \quad (5)$$

The $\hat{\delta}$, the DID value is the difference in average outcome in the treatment group before and after treatment minus the difference in average outcome in the control group before and after treatment.

Empirical Analysis

The states of Andhra Pradesh, Kerala, Karnataka, Maharashtra, and Tamil Nadu gave women equal inheritance rights over agricultural land prior to 2005. After the HSA amendment in 2005 nationwide making women eligible to inherit joint family property, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Telangana, Tripura, Uttaranchal, Uttar Pradesh and West Bengal implementation of the HSA amendment law. The method of DID impact evaluation is applied to these 24 states to see whether there has been any change in the decision making power of women after the implementation of the law.

From Table 1, it can be observed that more than one-fourth of Hindu married women have the right to decide alone on each of the four decisions, in contrast to one-tenth of Muslim women. Nearly two-thirds of women in rural areas have more autonomy in decision making compared to one-third of urban women. About one-

third of illiterate women, but only one-tenth of higher educated women have a say in decisions. The figures reveal the economic role of rural women in household activities and the housewife status of women in urban areas. Not surprisingly, the decision making role of Muslim women within the household is rather limited.

Table 1 Women Alone Takes Decision on Specific Issues (Percent)

<i>Characteristics</i>		<i>Own healthcare</i>	<i>Major household purchase</i>	<i>Visit her family and friends</i>	<i>Spending husband's earnings</i>
Religion	Hindu	80.7	80.8	81.9	75.2
	Muslim	19.2	19.1	18.1	24.8
Residence	Urban	33.3	33.5	32.2	34.6
	Rural	66.7	66.5	67.7	65.4
Education	Primary	14.0	15.9	14.8	15.2
	Secondary	42.1	40.2	41.9	42.7
	Higher	11.6	8.4	10.7	9.3
	No education	33.4	35.5	32.6	32.8

Table 2 reveals that more than half of women (59%) and more than two-thirds (68.6) of women do not own a house or land respectively. The proportion of women owning a house or land either alone or jointly is much less, clearly showing the poor status of women's rights even after a decade of the implementation of the law.

Table 2: Proportion of Women Owning a Property

<i>Property owned</i>	<i>No</i>	<i>Alone</i>	<i>Jointly</i>	<i>Both</i>
Land	68.4	7.1	14.1	10.4
House	59.0	10.4	17.7	12.9

The treatment variable considered in this study is the year 2005, as the HSAA 2005 is applicable only to Hindu women married after the implementation of the law in 24 states. The outcome variables of this study which represent women's empowerment, autonomy and decision making power, are based on questions in the NFHS survey related to bargaining power within the marital household. They are defined as four dummy variables denoting whether the woman has a say in decision making on (i) her own healthcare, (ii) major household purchases, (iii) visit her family and friends, and (iv) spending husband's earnings.

The empirical specification for the nonparametric DID estimation is:

$$y_{ist} = +\beta m_{ist} + \gamma s_t + \delta(s_t * m_{ist}) + \theta x_{ist} + \varepsilon_{ist} \quad (6)$$

where y_{ist} is binary outcome variable for woman i in state s married in year t , s_t is the dummy for the states that implemented the HSAA after the 2005 amendment, m_{ist} is a dummy for whether the woman married after 2005, $s_t * m_{ist}$ is a dummy if the woman belongs to the amended state and has been married after the amendment, and x_{ist} is a set of socioeconomic and demographic control variables. The $y_{ist} = 1$ if the woman alone has a say with respect to decisions on her own healthcare, major household purchases, family and friends visits and spending husband earnings, and 0 otherwise. The coefficient of interest is δ which captures the impact of the reform on the women married in the states after the 2005 amendment, compared to women married in the states that implemented the reform before 2005. The sign of the estimated coefficient is expected to be positive. The DID model is estimated separately for Hindus (including Jain, Sikhs, and Buddhists) and non-Hindus (including Muslims and Christians), as the legal reform is applicable only to Hindus.

Table 3 presents the definition and descriptive statistics of the variables used in the study. Women belonging to the 24 states constitute 83 percent and the average age of women is 33. The proportion of women married after 2005 is 34%. With respect to the empowerment of women, 11% of women have a say on their own healthcare decisions, 7% have the right to make the decision on major household purchases, 8% have the right to decide on visits to family and friends, and 6% of women have the right to decide on how to spend husband earnings. About 62% of households have less than 4 members in the family, 13% of households are women-headed.

Table 4 presents the difference-in-difference estimate of the causal effect of being exposed to the amended law on each of the outcome variables. The coefficient of $s_t * m_{ist}$ is β_3 from the specification captures. The pre-reform average level autonomy status of Hindu women is significantly lower than the post-reform autonomy i.e. there has been a significant increase in the decision-making power of women after the amendment of HSA in 2005 in the 24 states. Hindu women married post-reform in states that implemented the HSAA 2005 are significantly more likely to have a say in their healthcare and other household decisions. The HSAA 2005 led to a statistically significant increase of 2% that a woman alone has a say in her

decisions on her healthcare, visiting family and friends and spending her husband’s earnings. It also caused a statistically significant increase of 9% that a woman alone has a say in major household purchases.

Table 3: Descriptive Statistics of Variables

Variable	Description	Mean	Std. dev.	Obs.
Outcome variables				
Own healthcare	If woman alone has a say = 1, 0 otherwise	0.11	0.31	65695
Major household purchases	If woman alone has a say = 1, 0 otherwise	0.07	0.25	65695
Visits to family and friends	If woman alone has a say = 1, 0 otherwise	0.08	0.27	65695
Spending husband’s earnings	If woman alone has a say = 1, 0 otherwise	0.06	0.24	65695
Treatment variables				
Year married	If married after 2005 =1, 0 otherwise	0.34	0.47	403521
State	If woman belongs to the states that implemented the HSA amendment act 2005 = 1, 0 otherwise	0.83	0.37	447281
Religion	If woman is Hindu (including Jain, Sikhs, and Buddhists) = 1, 0 otherwise	0.80	0.40	538318
Control variables				
Age	Age of woman (years)	33.00	8.48	447281
No.of household members	If no. of household members is less than 4 = 1, 0 otherwise	0.62	0.48	440180
Community	If woman belongs to non-scheduled caste/tribe = 1, 0 otherwise	0.90	0.29	438789
Household head	If woman is head of family = 1, 0 otherwise	0.13	0.34	440180

Table 4: DID Estimates of Hindu Married Women Participation in Household Decisions

Variable	Own healthcare	Major household purchase	Visits to family and friends	Spending husband’s earnings
Married after HSAA 2005	0.027** (0.002)	0.291** (0.011)	0.033** (0.003)	0.032** (0.002)
Treatment ($s_t * m_{1st}$)	0.023** (0.006)	0.092** (0.026)	0.019** (0.007)	0.026** (0.006)
R-square	0.03	0.03	0.09	0.02
Observations	63886			

Note: Standard errors in parentheses. ** significant at 5% level.

Adding covariates also does not alter the estimate of the causal effect of the legal reform on women's decision making power in the marital household, as the results in Tables 5 and 6 reveal. With controls, there has not been any change in own healthcare, major household purchases and visits to family and friends decisions. There has been a 1% statistically significant increase in women having a say in spending their husband's earnings in urban Hindu households. Table 6 shows that rural women have an additional 1% autonomy in decision making compared to urban women in spending their husband's earnings. Thus, the amended inheritance rights regime in 24 states improved the autonomy status of the Hindu women married post-2005, both in urban and rural areas of India.

Table 5: DID Estimates of Urban Hindu Married Women Participation in Household Decisions

<i>Variable</i>	<i>Own healthcare</i>	<i>Major household purchase</i>	<i>Visits to family and friends</i>	<i>Spending husband's earnings</i>
Married after HSAA 2005	0.031** (0.005)	0.252** (0.004)	0.039** (0.006)	0.036** (0.005)
Treatment ($s_t * m_{ist}$)	0.027** (0.006)	0.029** (0.005)	0.024** (0.007)	0.102** (0.026)
Residence	0.0131** (0.003)	0.016** (0.002)	0.014** (0.002)	-0.077** (0.010)
Community	-0.007 (0.004)	-0.003 (0.003)	-0.005 (0.004)	0.038 (0.016)
No. of household members	-0.014** (0.003)	-0.021** (0.002)	-0.017** (0.002)	0.20** (0.010)
Household head	0.100** (0.004)	0.069** (0.003)	0.079** (0.003)	-0.084** (0.015)
R-square	0.21	0.22	0.20	0.21

Note: Standard errors in parentheses. ** significant at 5% level.

Though the legal reform pertains only to Hindu families, there may be some spillover effect of the law on other religious communities also, as there are separate inheritance laws for non-Hindu women. Table 7 presents the difference-in-difference estimates of the causal effect of HSAA 2005 on the decision making roles among non-Hindu women married post-2005 in these 24 states. The estimated results show that there has been a slight increase, but relatively less compared to that of treated Hindu women, in women decision making power in some household decisions. There has been only a 1% increase in non-Hindu women having a say

in their own healthcare decisions, a 2% increase in major household purchase decisions, 3% increase in autonomy to their spend husbands' earnings. However, there has been no increase in women's decisions on visits to family and friends, married post-HSAA 2005. The results reveal that Hindu women enjoy greater autonomy compared to non-Hindu women.

Table 6: DID Estimates of Rural Hindu Married Women Participation in Household Decisions

<i>Variable</i>	<i>Own healthcare</i>	<i>Major household purchase</i>	<i>Visits to family and friends</i>	<i>Spending husband's earnings</i>
Treatment ($s_t * m_{ist}$)	0.025** (0.007)	0.026** (0.006)	0.022** (0.006)	0.117** (0.026)
Residence	0.012** (0.003)	0.016** (0.002)	0.014** (0.002)	-0.077** (0.011)
Community	-0.007 (0.004)	-0.003 (0.003)	-0.005 (0.004)	0.035 (0.016)
No. of household members	-0.015** (0.003)	-0.021** (0.002)	-0.017** (0.002)	0.203** (0.010)
Household head	0.100** (0.004)	0.069** (0.003)	0.079** (0.003)	-0.082** (0.015)
R-square	0.23	0.22	0.20	0.21

Note: Standard errors in parentheses. ** significant at 5% level.

Table 7 DID Estimates of Non-Hindu Married Women Participation in Household Decisions

<i>Variable</i>	<i>Own healthcare</i>	<i>Own healthcare</i>	<i>Major household purchase</i>	<i>Visits to family and friends</i>
Treatment ($s_t * m_{ist}$)	0.012 (0.015)	0.024 (0.015)	0.001** (0.014)	0.033 (0.055)
Residence	0.014** (0.005)	0.007** (0.005)	0.011** (0.005)	-0.062** (0.019)
Community	-0.005 (0.006)	-0.073** (0.005)	-0.017 (0.005)	0.313** (0.02)
No. of household members	-0.011** (0.005)	-0.020** (0.005)	-0.016** (0.005)	0.136** (0.020)
Household head	0.122** (0.014)	0.109** (0.007)	0.094** (0.007)	-0.107** (0.027)
R-square	0.33	0.34	0.27	0.30
Observations	14712			

Note: Standard errors in parentheses. ** significant at 5% level.

Conclusion

This paper econometrically analyses the causal effect of women's inheritance rights to ancestral property on their empowerment and participation in various household decisions within the marital household. The Hindu Succession Act 1956 (HAS) entitles married daughters to have an equal share of their father's property. Five Indian states have reformed the law to bestow equal property rights in the ancestral property among all siblings. Expanding this nationwide, the Hindu Succession Amendment Act 2005 (HSAA) provides an equal share in ancestral property also including land along with their brothers throughout the country. Only if she was married after the amendment was passed would she be eligible to inherit shares as per the new rule of the Hindu Succession Act. Hence, this study has examined women's empowerment in the 24 states that implemented the law post-2005. The exposure to the law amendment was jointly determined by the year of marriage and the 24 states that the woman belonged to. Four decision indicators are used to measure decision the decision making power of women within the marital household. The data used is derived from the 2015-16 NFHS-4. The causal effect of the legal reform on property rights for women is estimated by the nonparametric difference-in-difference estimation method.

The empirical results of this study show that granting inheritance rights to women at par with their brothers increases the degree of autonomy in their marital families. There has been a significant increase in women alone having a say in household decisions. The legal reform has increased the decision making power of women with respect to their healthcare, visit family and friends and major household purchases by 2%, and more importantly by 9% on spending their husband's earnings among post-2005 married women in the 24 states. Non-Hindu women also experienced an increase in decision making power but not as much as Hindu women, as they have their own laws of inheritance. The findings of this study point to the importance of gender equity in land rights where women's inheritance rights enhance their status and decision-making power in the marital household. Overall, the estimated results reveal that women enjoy greater autonomy and have more say in household decisions as a result of the legal entitlement to equal inheritance rights in ancestral property post-Hindu Succession Amendment Act 2005 in India.

References

- Agarwal, B. (1994) *A field of one's own: Gender and land rights in South Asia*, Cambridge, MA: Cambridge University Press.

- Allendorf, K. (2007) "Do women's land rights promote empowerment and child health in Nepal?", *World Development*, 35, 1975-1988.
- Bhalotra, S., R. Brule and S. Roy (2020) "Women's inheritance rights reform and the preference for sons in India", *Journal of Development Economics, Special Section on Child Development in India*, 146, Article 102275.
- Bhattacharyya, M., A.S. Bedi and A. Chhachhi (2011) "Marital violence and women's employment and property status: Evidence from north Indian villages", *World Development*, 39, 9, 1676-189.
- Datta, N. (2006) "Joint titling - A win-win policy? Gender and property rights in urban informal settlements in Chandigarh, India", *Feminist Economics*, 12, 1, 271-298.
- Deininger, K., A. Goyal and H. Nagarajan (2013) "Women's inheritance rights and intergenerational transmission of resources in India", *Journal of Human Resources*, 48, 1, 114-141.
- Doss, C. (2006) "The effects of intrahousehold property ownership on expenditure patterns in Ghana", *Journal of African Economies*, 15, 1, 149-180.
- Duflo, E. (2012) "Women empowerment and economic development", *Journal of Economic Literature*, 50, 4, 1051-1079.
- Friedemann-Sanchez, G. (2006) "Assets in intrahousehold bargaining among women workers in Colombia's cut-flower industry", *Feminist Economics*, 12, 1-2, 247-269.
- Garikipati, S. (2009) "Landless but not assetless: Female agricultural labour on the road to better status, Evidence from India", *Journal of Peasant Studies*, 36, 3, 517-545.
- Lahoti, R., J.Y. Suchita and H. Swaminathan (2016) "Not in her name: Women's property ownership in India", *Economic and Political Weekly*, 51, 5, 17-19.
- Mishra, K. and A.G. Sam (2016) "Does women's land ownership promote their empowerment? Empirical evidence from Nepal", *World Development*, 78, 360-371.
- Mookerjee, S. (2019) "Gender-neutral inheritance laws, family structure, and women's status in India", *World Bank Economic Review*, 33, 2, 498-515.
- Panda, P. and B. Agarwal (2005) "Marital violence, human development, and women's property status in India", *World Development*, 33, 5, 823-850.
- Rao, N. (2005) "Gender equality, land rights, and household food security: Discussion of rice farming systems", *Economic and Political Weekly*, 40, 25, 2513-2521.
- Rosenblum, D. (2015) "Unintended consequences of women inheritance rights on female mortality in India", *Economic Development and Cultural Change*, 63, 2, 223-248.
- Roy, K.C. and C.A. Tisdell (2002) "Property rights in women's empowerment in rural India: A review", *International Journal of Social Economics*, 29, 4, 315-334.

-
- Roy, S. (2015) "Empowering women? Inheritance rights, female education and dowry payments in India", *Journal of Development Economics*, 114, 233-251.
- Sapkal, R.S. (2017) "From mother to daughter: Does equal inheritance property laws reform improve female labour supply and educational attainments in India?", *Asian Journal of Law and Economics*, 8, 1, 1-36.
- Yogendrarajah, R. (2013) "Women empowerment through decision making", *International Journal of Economics and Business Management*, 3, 1, 1-9.