

Impact of 'Having a Son' on Women's Intra-household Status: Evidence from India

Suparna Das^{1*}

Abstract

Intra-household bargaining power differs between men and women for various reasons, primarily due to unequal social norms and differences in income. Patriarchal societies often put higher values to son(s) due to perceived higher utility gains from them compared to daughter(s). In such societies, child-bearing and childcare are considered to be women's primary responsibility, thus, women's fertility outputs can play an important role in their intra-household bargaining status. Using the National Family and Health Survey (2015) data on Indian couples, this paper examines the son-effect on women's say in different decision-making in the family. The *probit* estimations show that women with at least a son are 2 - 4 percent more likely (significantly) to have a say in different decisions compared to women with no son. Women with first born son have around 1 percent higher probability of having say in decisions compared to women with first born daughter.

Keywords: household bargaining, son preference, women's status, son-effect, decision making

1. Introduction

In intra-household settings, individual bargaining power is crucial for positions and control over decisions that influences resource allocation and individual well-being. Bargaining power also impacts individual labor allocation in different activities within household, his or her consumption basket, access to provisions in household, and children's education and health. Literature have measured bargaining power by individual's earning capacity, his or her monetary contribution to the family and asset holding. Bargaining power may differ between men and women for various reasons, often due to differential access to education and occupation.

Bargaining power may also differ due to unequal social norms in terms of class, caste and gender. Patriarchal societies commonly see men as superior to women even when both have same education and working status. Such societies also put higher values to having a son than having a daughter. Preference for son comes from the perception of higher utility gains from son(s) compared to daughter(s). Higher utility from son is seen in terms of future investment and insurance for parent's old ages. If it is so, then individual's fertility outputs can play an important role in bargaining power. Also, in such societies with prevalence of patriarchy and preference for son, child-bearing and childcare are considered to be women's virtue and sole responsibility and often women are blamed for not giving birth to the preferred gender composition of children. Then, fertility output may play a more important role in women's bargaining power than men.

In Asian societies, women who do not have a son often experience humiliation and negligence by family members and even abandoned by the family. Thus, the question arises what happens to women's position and status if they succeed to provide a son to the family. It would be interesting to examine whether having a son has any implications in women's intra-household bargaining power. Therefore, the research questions of this paper are:

- Does having a son impact women's status in family?
- Does having a son change women's bargaining power and their role in household decision making?

The rest of the paper is organised as follows: *Section 2* reviews relevant literature on the topic; *Section 3* gives description on data and *Section 4* explains the identification strategy and estimation methodology; *Section 5* presents the results as well as its robustness tests; and finally, *Section 6* concludes with discussion on results.

¹ PhD, Central European University (Budapest). Assistant Professor, Asian University for Women (Bangladesh). Email: suparnamu@gmail.com Phone: +91 9073229395

*I thank Andrea Weber and Gábor Kézdi for valuable advice.

2. Literature Review

Intra-household bargaining power is often measured by earning (Friedberg, 2006; Bittman et al., 2003), wage rate (Pollak, 2005), asset holding (Fafchamps, 2002; Doss, 2013; Gray, 1998), land holding and savings (Doss, 1996; Deere & Doss, 2006; Lise & Seitz, 2011). A paper by Bittman et al. (2003) used United States and Australian data to show that bargaining power has increased with the rise in income and women decrease their time in housework as their earnings rise, up to the point where both spouses contribute equally to income. Pollak (2005) explained that the individual whose earning is higher due to higher wage rate will gain higher bargaining power at home instead when his/her earning is higher due to longer working hours at the job and less at home.

Women's bargaining power also depends on her education level compared to other family members, and if she comes from higher social background (Beegle, Frankenberg & Thomas, 2001; Frempong et al., 2017). Agarwal (1997) explained the complex nature of intra-household dynamics and links them with household bargaining power. She has pointed out that social norms play a crucial role in determining bargaining power.

After pointing out the determinants of the bargaining power, it is also important to understand the impacts of bargaining power on individuals. Bargaining power of an individual within household affects his or her access to consumption basket, control over expenses, access to other provisions in the household, labor allocation in variety of work, and child's education and health.

As consistent with the exchange-bargaining theory, Bittman et al. (2003) has shown that women's household-labor hours are negatively related with her earnings. Using UK family expenditure survey data, a paper by Lise and Seitz (2011) shows that the difference in earnings between the couples translates into differences in consumption allocations within the household. This paper also indicates that increases in marital sorting on wages and labor-hours explain the decline in intra-household inequality.

Within household, women's bargaining power is an important parameter to influence various social and economic decision-makings. It is often claimed that men spend larger share of their earnings on alcohol, cigarettes, and on entertainment; whereas women, if have earning or access to the household earning/savings, are more likely to spend on general household welfare and children's education and health. Using information on Cote D'Ivoire, Hoddinott and Haddad (1995) show that the increasing bargaining status for women would influence household expenses and would lead to higher welfare to children and household all-together.

Brown (2009) has shown that bargaining power instrumented with dowry payment is related to women's individual welfare and wellbeing in China. Using information on Ghana, a study by Tolhurst et al. (2008) found that treatment seeking behavior for children was influenced by bargaining power in decision making and ownership of children, access to and control over resources to pay for treatment, norms of responsibility for payment, marital status, household living arrangements, and the quality of relationships between mothers, fathers and elders.

In respect to Indonesia, a paper has linked women's bargaining power with prenatal and delivery care positively (Beegle et al., 2001). A paper by Schmidt (2012) found a positive correlation between children's health and mother's role in decision making within household. He also found that in case of Bangladesh, mother's role in decision making, in terms of say in child's healthcare is associated with larger child height-for-age z-scores. A study on India has found a positive relation between women's bargaining status with children health and household nutritional status (Imai et al., 2012).

Therefore, there are no shortages of literature which examined different determinants and dynamics of bargaining power, and also have explored the consequences of unequal bargaining power, the impacts of gaining higher status in decision making on individual and household welfare. In spite of the wide range of research in respect of intra-household bargaining power, only few have examined the links between bargaining status of individuals' and their fertility output. More in patriarchal societies and in moderate extent everywhere in general, composition of children is a crucial factor to influence resource allocation, division of income and expenses in the household. Therefore, the hypothesis is that families which have preference for any particular gender would provide higher status to the individuals, especially women, who could provide that preferred composition of children. Therefore, it is important to examine women's bargaining power and role in household decision-making in respect to the gender composition of children the women have.

A paper by Raley and Bianchi (2006) shows that in American families with sons; fathers invest higher money and time into family; mothers face lower risk of marriage disruptions and enjoy higher marital happiness than families with daughters/without sons.

Using data on the United States, another paper by Morgan, Lye and Condran (1988) found that parents with one or two children, and at least a son have lower divorce risks than parents with only daughters. Another similar kind of research on Sweden by Andersson and Woldemicael (2001) found that among couples with mixed child, divorce risks are slightly lower than couples with two daughters.

Using Chinese data, Li and Lavelly (2003) investigated why women prefer son and why women give more importance to son, so the authors have used importance of son as outcome variable and found that the importance of a son is negatively associated with respondents' education, personal autonomy, the extent to which husband shared housework, and exposure to the world beyond the village. The paper also finds that sex specific rates of infant mortality vary systematically with mother's response on the importance of son.

Warner (1991) considered women in the United States and Canada and men in the United States and found that having female children is associated with more egalitarian views than couples with male child. Washington (2008) used data on the voting behavior of the United States House of Representative between 1991 to 2004 to show that parenting of an additional girl child improves a representative's voting propensity towards egalitarian rights, conditional on total number of children. A descriptive paper by Mason (1986) argues that women's '*status*' seems likely to be related to the supply of children because of its links with age at marriage.

Though there are many works which have shown that how gender composition of children influences marital happiness/life, father's investment in the family and parents' egalitarian views, but so far, as best of my knowledge, only one paper examines women's role in decision making in respect of their fertility output. Li and Wu (2011) investigated women's role in purchasing consumer durable items for household with respect to gender of the 1st born child and found women with a 1st born son have a 3.9 percentage points greater role in household item purchases than a woman with a 1st born daughter (in China).

This paper can be called an improvement from Li and Wu's paper as it explores broader definitions of both gender composition of children and household status of women. In the analysis it estimates the impact of having at least a son and also 1st born son on women's say. As the dependent variables, the analysis uses larger number of indicators describing multiple aspects of bargaining power within the household (HH), such as large purchase, spending own and husband's money, visiting relatives, and contraception use. As samples of analysis, this paper uses women who are still in the reproductive cycle and also women who have completed or opted out from the cycle. As gender composition of women's fertility output can be a determinant of their value in the family and can have important implications on their bargaining status within household; and as literature in this direction is scarce, the paper contributes to fill this gap in the literature.

3. Data

Data for this paper is taken from the National Family and Health Survey of fourth round (NFHS-4) conducted during 2015-16 in India. NFHS-4 collected information from a nationally representative sample of 568,200 households, 699,686 women of age 15-49, and 74,369 men. The NFHS-4 sample represents the characteristics of 99 percent of India's population living in all 36 states. The analysis primarily uses 'the couple data' from the survey that covers randomly selected 63,696 couples (NFHS-4, 2015). Under the survey the husbands and wives were interviewed separately. The husbands' responses are used in the estimations as a proxy for household's view. The analysis uses information on household member's say in various household decisions and also on household attributes; individual characteristics and spouse's background; reproductive behavior, childbearing and children's birth history; and contraception use.

To address the under-reporting issue, the module was specially designed to allow the interviewer to be concerned about the interruptions by other household members and/or neighbors during the interview. The interviewers took precautions that during the interview interruptions and interferences remain nil or low from the family and outside the family. The survey records information on the interruptions during interviews. As the interruptions can significantly influence the responses, the empirical analysis also controls for such interruptions.

One concern may arise that the responses can be biased if the women respondents themselves are with patriarchal views, and therefore themselves do not put importance to their own voices in decision-making. However, as the research investigates how '(importance of) women's say' in household decision-making may change due to their fertility output; the respondents' biased views are less likely to influence the objective responses when they were asked about the reality in households that is whether they have any say over such and such decisions. The subjective views are more likely to influence the responses if they were asked that whether they should have a say or not in the family decision making. Instead, women were asked about their actual position in decision making, such as:

- *Who decides how the money you earn will be used: mainly you, mainly your husband, or you and your husband jointly?*
- *Who decides how your husband's earnings will be used: mainly you, mainly your husband, or you and your husband jointly?*
- *Who usually makes decisions about making major household purchases: mainly you, mainly your husband, you and your husband jointly, or someone else?*
- *Who usually makes decisions about visits to your family or relatives: mainly you, mainly your husband, you and your husband jointly, or someone else?*
- *Would you say that using contraception is mainly your decision, mainly your husband's decision, or did you both decide together?*

Here, four cases may arise, such as (i) women who are in-support of the patriarchal values and have lower say in household decisions would truly reveal whether they have any say in decisions or not as they don't have any low self-esteem due to lack of say; (ii) women who are supporters of patriarchal norms but enjoy higher bargaining status in the household would more likely report the true status as they don't have any incentives to hide; (iii) women who are of more liberal view and have higher say in decisions also have no incentives to hide the actual state; but (iv) women who have liberal view but do not enjoy equal say in household decisions may or may not hide their true status; may not hide if they believe that revealing their true status can bring some change or may hide if reporting their low status is embarrassing for them. I assume that the miss-reporting or hiding cases are rare when asked about their objective bargaining status, mostly the women would report their true status in decision making within the household. But this can be a problem when considering husband's responses as they were asked that:

In a couple, who do you think should have the greater say in each of the following decisions: the husband, the wife or both equally:

- *Deciding what to do with the money the wife earns from her job?*
- *Making major household purchases?*
- *Deciding about visits to the wife's family or relatives?*
- *Deciding how many children to have?*

Thus, husbands were asked these subjective questions, then husbands' responses may not reflect the scenario within the household but their views in general and that can be polluted by their own and societies patriarchal values.

In the total sample of 63,696 couples around 5596 couples are without a child, these observations are dropped from the total sample for the purpose of this analysis and the total sample size becomes 58,100.

4. Empirical Strategy

As estimation method, I use probability model to estimate the equation:

$$\Pr(Y_i = 1 | X_i, C_i) = \Phi(\beta \cdot X_i + \gamma \cdot C_i + \epsilon_i) \quad (1)$$

Where i denotes individual respondents; X represents women having a son and C denotes other variables that may influence women's bargaining status in the household.

In equation (1), the dependent variable, Y refers to different indicators for women's bargaining power in household decisions, such as women's say in large purchases in the household; spending own money; spending husband's money; visiting relatives; contraception use; and number of children. Women were asked whether they have a say in the household matters, and the reply categories were: '*Only she, herself has a say*'; '*Only her husband has a say*'; '*Both she and her husband have joint/equal say*'; and '*Someone else in the household has a say*'. Based on these responses, say variables are constructed as binary variables by the rule that if a woman has a say independently or jointly with husband, she will get value 1, and 0 otherwise.

Husbands were asked that in a couple who should have the greater say when deciding about the similar matters such as, spending husband's money, large purchases, spending wife's earning; visits to wife's family and/or friends; and in decision of number of children. The reply categories of husbands were: '*Only husband should have a say*'; '*Only wife should have a say*'; '*Both husband and wife should have equal say*'; and '*Someone else should have a say*'. Similarly, the say indicators are constructed as binary variable if a husband thinks that in a couple wife should have a say independently or jointly with husband will get value 1, and 0 otherwise.

I construct the main explanatory variable 'women having son(s)' as 'women who have at least a son' (X in equation (1)) from children ever born. As the purpose of this research is to examine whether having a son influence women's status than not having one, the comparison between having higher number of sons than only one or two becomes less relevant. Therefore, using at least a son would justify the question of interest.

Women having at least a son can be endogenous due to fertility decisions and preference for son. For example, women who have higher bargaining power may decide to keep the girl child and to stop having another child after having a daughter. But a woman, who lacks importance in household decision-making, may not have the power to decide about choices of childbearing and may be compelled into giving more births until she succeeds to provide the preferred choices of children to the family. Though the gender of a child is a random selection, the choices of child-bearing and actual fertility output are not random and often polluted by not only mother's choices but also depend on family members' demands. I identify three mechanisms that can possibly influence the gender composition of children ever born.

Women's biological factors may influence the gender of the child. But literature has shown gender of a child as a natural phenomenon and random event. Literature found that the probability of having a boy is 0.513 and sex ratio at birth is about 1.05, irrespective of race, societies and nations (Teitelbaum, 1972; Johansson & Nygren, 1991; Waldron, 1983; Waldron, 1993).

The second mechanism is sex-selective abortion to get preferred gender composition of children. Couples may decide to not keep the child after knowing the sex of the fetus, abort it depending on the preference for a particular gender. There is a ban on sex detection test and revealing sex of the fetus is a punishable offense in India by the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994. Further, one can infer that sex selective abortion is rare if the sex ratio of children is statistically indistinguishable from 50 percent or sex ratio of boy : girl is 51:49, which is agreed as the natural in many literature. Thus, according to the order of birth, such as for children born at first, second, third and so on, sex ratio at each birth should be similar as the natural one (51:49) when sex-selective abortion is rare.

The third mechanism that can influence composition of children in a family is differential stopping behavior (DSB) among couples. On the one hand, parents can stop having children after attaining the desired gender composition of children and family size. On the other hand, parents may continue having more children until they reach the desired number of children of preferred gender, even if have reached desired family size. Therefore, DSB depends both on desired number of children and desired gender composition of children.

Followed by the above discussion, the main explanatory variable 'women having son(s)' and/or 'women having at least a son' is endogenous in nature and therefore will provide a biased estimator if not treated for endogeneity. One potential instrument for women having son(s) can be 'gender of the 1st born'.

Let's consider 'gender of the 1st born' as an instrument Z for the main explanatory variable 'having at least a son', earlier defined as X in equation (1). I can write,

$$\begin{aligned} Z &= 1 \text{ if the 1}^{\text{st}} \text{ born is a son} \\ &= 0 \text{ if the 1}^{\text{st}} \text{ born is a daughter.} \end{aligned}$$

Considering having at least a son is similar as a treatment (let's say treatment X), Z is a binary instrumental variable for this treatment. The potential treatment indicators are thus,

$$X(0) = 1 \text{ if woman having at least a son but 1}^{\text{st}} \text{ born a daughter } (Z = 0)$$

$$X(1) = 1 \text{ if woman having at least a son and also 1}^{\text{st}} \text{ born a son } (Z = 1).$$

The actual treatment indicator is: $X = Z.X(1) + (1 - Z).X(0)$. Based on this definition, I can categorize the total sample as,

- $X(0) = 0$: The women (94.8 percent) whose 1st born is a daughter ($Z = 0$), and don't have at least a son, even if they have continued child-bearing.
- $X(0) = 1$: The women (37.7 percent) whose 1st born is a daughter ($Z = 0$), may still have at least a son if had continued child-bearing and had a son(s) later.
- $X(1) = 1$: The women (62.2 percent) whose 1st born is a son ($Z = 1$), and thus have at least a son.
- $X(1) = 0$: The women (5.2 percent) whose 1st born is a son ($Z = 1$), but don't have at least a son.

This can only happen if the 1st son has died and the women didn't have a son afterwards.

The last category of never takers is not applicable for this analysis, as I only consider children *ever born*. The choice of being in the treatment group is endogenous, that is having at least a son is a choice the couple can make. Further, the gender of the 1st child can be a valid instrument if and only if two conditions are satisfied.

The instrument, gender of the 1st born (Z) should be correlated with having at least a son (X). The condition can be proved by the non-zero correlation coefficient between Z and X , and it is found that this condition holds.²

The other condition is that the instrument must be exogenous that is $Cov(Z, \epsilon)$ should be equal to zero. Therefore, the binary variable, 'gender of the 1st born' should be a random event.

Table 1 shows the ratio between boy child and girl child according to the birth order without fixing the total number of children of the respondents. The ratio of having son to having daughter in the first born is 52.5:47.5, higher than the ratio 51:49 shown by various literature as natural sex ratio at birth³. Therefore, the question remains, 'is the gender of the 1st birth random?'

Table 1. Sex ratio of Children across the order of birth

Order of Birth	Ratio (Boy:Girl)
1 st born	52.5 : 47.5
2 nd born	51.3 : 48.7
3 rd born	52.5 : 47.5
4 th born	52.5 : 47.5
5 th born	51.6 : 48.4
6 th born	51.6 : 48.4

To get children of preferred gender, sex selective abortion is a tool couples may use, however intuitively, in case of 1st pregnancy the chances of sex selective abortion can be considered as rare as couples are typically more excited about the pregnancy than strictly adhering to their preference. It can be assumed that couples usually start adopting tools to get preferred gender composition of children from the second pregnancy, conditional on the gender of the first birth. To examine this, I look into the abortion pattern in respect of gender composition of the children.

Table 2. Abortion and Gender composition of children

Panel A:			Gender Composition of children by order of birth	Panel B:	Abortion done (Percent)
Parity	1 st Born	Abortion done (Percent)	Without fixing for parity	Last born B	16.53
Without fixing for parity:	B	16.23	Parity 1:	Last born G	16.98
	G	17.26		B	16.35
Parity 1:	B	16.35	G	16.11	
	G	16.11	Parity 2:	BB	16.63
Parity 2:	B	16.25		BG	15.83
	G	17.41	GB	16.47	
Parity 3:	B	16.03	GG	19.13	
	G	17.79	Parity 3:	BBB	16.01
		BBG		16.15	
		BGB		15.41	
		BGG		16.87	
		GBB		16.12	
		GBG		18.15	
		GGB	17.81		
		GGG	20.93		

The abortion data in the NFHS do not provide information on the time of abortion across the birth order of children, instead the women were asked if 'she ever had terminated a pregnancy'.

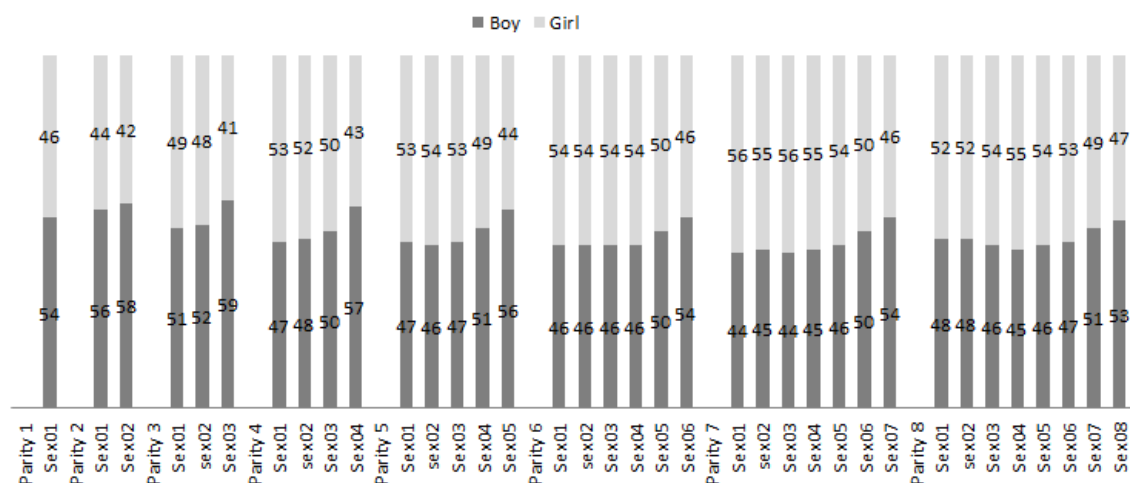
²Correlation coefficient between at least a son and 1st born a son: 0.3242*** (0.00294). [Standard error is in parentheses and *** implies statistical significance at 1 percent level].

³The sex ratio of children fixing for parity is not included in the paper, but can be available from the author upon request.

In spite of this shortcoming in the data, we can still get an idea in general about what proportion of women ever had an abortion with respect to gender composition of their children. *Table 2* shows the abortion rate among women according to the children composition they have. Looking at the abortion rate as per the 1st born child (*Panel A*: left side table), it is evident that the abortion rate is higher in case of 1st born daughter (17.26 percent) than 1st born son (16.23 percent) without fixing for parity size. Taking into account of the parity size, for parity one, the percentage of women ever aborted a pregnancy is similar (16 percent) between women with a son and women with a daughter. However, starting from parity two onwards, I find that on the one hand, the percentage of women who have ever terminated a pregnancy increases among women with 1st born a daughter and on the other hand, the percentage of women who have aborted decreases for women with 1st born a son.

Table 2 also exhibits the abortion rate of women across the gender composition of children by birth order (*Panel B*: right side table). Generally, the proportion of women had an abortion is similar (16.53 percent in case of last child a boy and 16.98 percent if the last child is a girl) irrespective of the gender of the last child without fixing for parity. Fixing for parity, similar proportion of mothers who have single child have terminated a pregnancy irrespective of the gender of the child they already had (16.35 percent of mothers with a boy child and 16.11 percent with a girl child). However, starting from parity two, it becomes evident that abortion pattern is influenced by the gender composition of children, especially percentage of abortion is higher when couples have more daughters compared to sons. From this abortion pattern, it can be said that women after having more daughters are less willing to have another child, than women having a mixed composition. This implies that abortion is used as more of a method of stop having more daughters than stop having daughter at all. As we are interested in the gender of the 1st born, *Table 2* for women had abortion without fixing the parity and in parity 1 indicate that sex selective abortion is not a case for the 1st born.

Figure 1. Parity-wise Sex ratio in Birth-order



Further, if I examine the parity-wise (that is holding the number of children of the respondent constant) sex ratio across birth orders in *Figure 1*, I find that sex ratio is biased towards male child at the last birth in case of each parities and from parity three onwards this biasedness is clearly visible. The couples are more likely to decide to stop having another child if the last born is a son than a daughter, thus this implies that the stopping behavior is influenced by the sex of the last child. Therefore, on the one hand, the abortion pattern implies that couples, who already have as many daughters as their desired number of children in total, are more likely to have an abortion than who have mixed children, probably they fear to have another daughter exceeding their expected family size. On the other hand, parity-wise sex ratio of birth orders indicates that couples are more likely to stop having more children as soon as their demand for son is met. Both these together indicate that stopping behavior is related to both family size and preference for son; but do not provide evidence of sex selective abortion at the 1st birth.

The birth of the 1st child is not influenced by differential stopping behavior. Referring to the exclusion condition, that is having at least a son seems the only channel through which gender of the 1st born can influence the outcome variable of women's bargaining status in the household after controlling for the other covariates. Based, on the above arguments, gender of the 1st born, or 1st born a son can be a valid instrument for women having at least a son.

The control variables used throughout the analysis are different demographic variables of household, such as, located in rural/urban areas, female-headed, wealth index, sex ratio within household, religion, age

difference between husband and wife, education difference between husband and wife, wife earning or not, whether interview was interfered or interrupted. To control for state level unobserved characteristics, such as social norms and customs, people's relation and dynamics, which can also influence individual's role and status within the household, I use state fixed effects (FEs) in the estimation process.

5. Results

5.1. Descriptive Statistics

Around 30 percent of the couples live in urban areas and 70 percent in rural areas. By wealth index the households are categorized; around 40 percent of the households fall in rich categories (19 percent are richest and 20 percent are richer); 21 percent of the total sample belong to middle income/wealth group; 21 percent and 18 percent are poorer and poorest respectively. Majority of the households are Hindu (75 percent), followed by Muslim (13 percent) and Christian (6.8 percent). Among total, 94 percent household have male household head.

Table 3. Summary of Individual Characteristics

Variables	Obs	Mean	Std. Dev.	Min	Max
Wealth Index	58100	-0.0085	1.0001	-2.4115	2.8261
Sex ratio (No of women/No of men)	58100	0.5671	0.4083	0.0769	5
Women's Age (in years)	58100	33.6732	7.7457	15	49
Husband's Age (in years)	58100	38.3259	8.2130	17	54
Women's education (in years)	58100	5.7073	5.1079	0	20
Husband's education (in years)	58100	7.4182	4.9162	0	20
Whether Women earn	58100	0.2410	0.4330	0	1
Whether Husbands earn	58100	0.8837	0.3206	0	1
Children born	58100	2.7719	1.5432	1	15
Son	58100	1.3365	0.9535	0	9
Daughter	58100	1.2397	1.1098	0	10

Table 3 shows summary statistics of individual characteristics. The survey has covered women between age of 15-49 years. The mean age of women in the sample is 33 years and mean education is around 6 years. The husbands are of age between of 17 to 54 years, the mean age of husbands is 38 years and their mean education is 7 years. Considering the total sample of the survey which also includes the childless women, the average number of children born from a woman is 2.5, however excluding the childless women the average number of children per women is 2.8. Mean number of boy child ever born from a woman is 1.3 and average number of girls ever born from a woman is 1.2.

In total sample, 82.9 percent women have at least a son. Among women respondents, 82 percent said that they have some say (independently and/or jointly with husband) and 15 percent have independent say in spending their own money; 72 percent have independent and/or joint say in spending their husband's money and only 5 percent have independent say in spending husband's money. Around 75 percent women have independent and/or joint say in any large purchase in the household whereas only 6 percent women have independent say in large purchases. In visiting relatives, 76 percent women have a say independently and/or jointly with husband and 6 percent have independent say in the same. In contraception use, around 91 percent of women reported to have either independent and/or joint say with husband and 7.6 percent can decide on their own about the same.

Using husbands' responses, around 75 to 85 percent husbands think that wife should have either an independent or joint say with husband in decisions of spending husband's earning and wife's own earning, large purchases, and visiting family and friends. In deciding about number of children, 90 percent husbands responded that wife should have a say either independently or jointly with husband.

5.2. IV Probit Estimation results

Full sample of couples who have at least a child: This section presents the results using the full sample of 58100 couples who have been parents at least once. In all the estimations, the state FEs are used to control for the state level patriarchal values and other unobserved factors that may influence bargaining power of women within the household. Bargaining power of women in the same locality can be correlated with each other due to the factors that are common in a locality.

Therefore, the standard errors are clustered at the level of primary sampling units (PSU) in all the estimations. Other control variables used in the estimations are same as mentioned in the earlier section.⁴

The probit estimations are suspected to provide a biased result due to the potential endogeneity in the main explanatory variable 'having at least a son'⁵. Therefore, to resolve the endogeneity issue, I use gender of the 1st born or '1st born a son' as an instrument for 'having at least a son'. *Table 4* shows the instrumental variable probit estimation results using 'women having a say' in various household decisions as the dependent variables in five separate regressions and 'having at least a son' as the main explanatory variable. The sample sizes of these estimations with five different indicators of say are not equal, because some questions were not eligible for all women, and not all women were asked all the questions of decision-makings, such as: 'spending own money' question was asked conditional on women's earning status, and only 24 percent women earn money in the total sample and were eligible for the question. Also, the question of spending husband's money was asked conditional on husbands' earning status. Similarly, husbands were asked spending money questions conditional on husband's and wife's earning status. Due to different attributes of eligibility in the decision-making questions, sample sizes differ between estimations and I do not treat for missing observations in these estimations to equate the sample size.

The coefficients and marginal effects in *Table 4 Panel A* are estimated using women's responses and in *Panel B* using husbands' responses. The marginal effects measure the impact of discrete change in the explanatory variable that is from having no son to having at least a son on the probabilities of women having say in household decision.

Table 4. IV Probit Regression Results

Panel A. Women's responses about own say						
Dependent Variable:		Spending	Large	Husband's	Visiting	Contraception
Women's Say in:		Own	Purchase	Money	Relatives	Use
		Money				
At least a son	Coefficients	-0.131 (0.107)	0.0814** (0.0412)	0.123*** (0.0404)	0.142*** (0.0415)	0.0101 (0.0953)
	Marginal effects	-0.0324 (0.0265)	0.0245** (0.0124)	0.0391*** (0.0129)	0.0413*** (0.0121)	0.00149 (0.0141)
First stage regression: <i>Dependent Variable: At least a son</i>						
Gender of the 1 st born		0.274*** (0.00673)	0.328*** (0.00362)	0.329*** (0.00364)	0.328*** (0.00362)	0.240*** (0.00427)
Controls #		Yes	Yes	Yes	Yes	Yes
Observations		11085	43648	43319	43648	26706
Panel B. Husband's perception about women's say						
Dependent Variable:		Spending	Large	Wife's	Visiting	Number
Women's Say in:		Husband's	Purchase	Money	Relatives	Children
		Money				
At least a son	Coefficients	0.0505 (0.0407)	-0.00459 (0.0411)	0.0493 (0.137)	0.00847 (0.0427)	0.0649 (0.0506)
	Marginal effects	0.0157 (0.0126)	-0.00143 (0.0128)	0.01112 (0.0308)	0.00231 (0.0116)	0.01091 (0.0085)
First stage regression: <i>Dependent Variable: At least a son</i>						
Gender of the 1 st born		0.328*** (0.00365)	0.328*** (0.00362)	0.283*** (0.00857)	0.328*** (0.00362)	0.328*** (0.00362)
Controls#		Yes	Yes	Yes	Yes	Yes
Observations		42932	43648	6833	43648	43648

Note: Marginal effects represent change in outcome variables (women's say) due to discrete change in binary explanatory variable from 0 (having no son) to 1 (having at least a son).

: Control variables used in the regressions are: rural/urban; wealth index; women earning or not; female headed HH; difference of age between husband and wife; difference in education between husband and wife; ratio of female and male members in HH; religion; state fixed effects and interrupted by HH members during interview.

⁴The multicollinearity between the covariates is tested with correlation coefficients between them and also with variance inflation factor, and multicollinearity is not found.

⁵The probit results are not included in the paper, though these can be available from the author upon requests.

Standard errors clustered at PSU level are in parentheses. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

When we consider intra-household bargaining over resources, it is the joint income and/or partner's income in which individual's bargaining should matter, as generally, individual would have higher say in own earning than anyone else. Therefore, when we want to examine the son effect on women's say in household matters, it should be more appropriate to test on say in husband's money rather than say in own money. Because women, who have the freedom to work and earn, are expected to also have say in own money irrespective of having son or not. Thus, the outcome variable 'spending own money' can be considered as a placebo check for the household bargaining status of women. Therefore, the insignificant impact of having at least a son on 'spending own money' supports the placebo check.

IV Probit results using women's responses indicate that women with at least a son have significantly higher probability by 2.4 percent to have say in large purchases; compared to women with no son. The survey didn't specify what can be considered as large purchases, the perception of large purchases may differ between men and women. For women it may happen that they consider consumer durables, jewelry, car etc as large purchases and women with son(s) may have higher say in these purchases compared to women who do not have a son. For men, they may consider purchase of stock, land, property etc as large purchases and they may or may not recognize women's voice in such purchases, irrespective of children composition they have.

Having a role in decisions of going to visit relatives/friends can be an indicator of women's autonomy. Women with at least a son may have significantly higher freedom in mobility, on average by 4 percent in comparison to women without a son. Women's autonomy can be restricted not only by her status in the household but can be due to general safety concern of going out. It may also have an implication on autonomy of women, who often take their children along with while going outside. In patriarchal society, women accompanying a boy child may gain higher autonomy compared to women with girl child. Taking daughters while going anywhere outside home may cause higher restrictions due to both safety concern and patriarchal norms, depending on the societal and local characteristics.

In the decision of child bearing, women with at least a son have higher probability of having a say in contraception use though the result is statistically insignificant. If the say in contraception use improves then it can be seen as after providing a son, decision to have more children or not and about family size can be trusted upon women as the demand for a son is already satisfied. But a woman, who does not have a son so far, also does not have a say in family planning matters until she succeeds to provide a son to the family. Using women's responses, the marginal effects of all covariates on say in decision-making from IV probit estimations are presented in appendix *Table A.1*.

In *Table 4 Panel B*, using husbands' responses, I find that the estimated marginal effects of having at least a son on husbands' subjective views about women's say in a couple remain insignificant in all cases of household decisions. Using husbands' responses, the (IV-Probit) estimated marginal effects of the full set of variables on women's say in different matters are presented in appendix *Table A.2*.

Table 5. Reduced Form Regression Results

Panel A. Women's responses about own say						
Dependent Variable:		Spending	Large	Husband's	Visiting	Child
Women's Say in:		Own Money	Purchase	Money	Relatives	Bearing
1 st born a son	Coefficients	-0.0362 (0.0295)	0.0266** (0.0135)	0.0406*** (0.0133)	0.0462*** (0.0136)	0.00248 (0.0228)
	Marginal effects	-0.00892 (0.0073)	0.00802*** (0.0041)	0.01295*** (0.0042)	0.01350*** (0.0040)	0.00037 (0.0034)
Controls #		Yes	Yes	Yes	Yes	Yes
Observations		11085	43648	43319	43648	26706
Panel B. Husband's perception about women's say						
Dependent Variable:		Spending	Large	Wife's Money	Visiting	Child
Women's Say in:		Husband's Money	Purchase		Relatives	Bearing
1 st born a son	Coefficients	0.0166 (0.0134)	-0.00119 (0.0135)	0.0140 (0.0386)	0.00291 (0.0140)	0.0214 (0.0166)
	Marginal effects	0.00517 (0.0042)	-0.00037 (0.0042)	0.00316 (0.0087)	0.00079 (0.0038)	0.00359 (0.0028)
Controls #		Yes	Yes	Yes	Yes	Yes
Observations		42932	43648	6833	43648	43648

Note: Marginal effects represent change in outcome variables (women's say) due to discrete change in binary explanatory variable from 0 (having 1st born daughter) to 1 (having 1st born son). #: Control variables used in regressions are: rural/urban; wealth index; women earning or not; female headed HH; difference of age between husband and wife; difference in education between husband and wife; ratio of female and male members; religion; state fixed effects and interrupted by HH members during interview. Standard errors clustered at PSU level are in parentheses. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table 5 shows the reduced form regression where the dependent variable is women's say and the main explanatory variable is 1st born a son. Panel A presents estimated coefficients and marginal effects using women's responses and Panel B provides results using husbands' responses. The results are similar as the IV probit, but magnitude of the effects of having 1st born son is lower than the effects of (instrumented) at least a son. Women with 1st born son are significantly more likely to have a higher say by, 0.8 percent in large purchases, 1.3 percent in spending husband's money and 1.3 percent in visiting relatives / friends, compared to women with 1st born daughter. The effect of 1st born son on say in spending own money remains insignificant as the effect of at least a son. Using husbands' responses, the effects of 1st born son on women's say remain insignificant as Panel B in Table 4 as well. From reduced form regressions, the full set of marginal effects of variables on women's say are shown in appendix Tables A.3 and A.4 using women's and husbands' responses respectively.

Outside reproductive cycle sample of couples: So far the results have used the total sample that includes both women who have stopped child bearing and women who are still in the age of reproduction and may have more children in future. When I examine women's bargaining power in respect of their fertility output, it may be the case that women who are still in the reproductive cycle and have only daughters may get higher importance in household decisions in expectation that they may provide son in future than women who have only daughters and stopped child bearing. Women who have already decided herself or by family to not have more children, either sterilized or declared in-fecund can be considered as outside reproductive cycle sample. If these women have only daughters, or only sons or both son(s) and daughter(s) when outside reproductive cycle, their reported role in decision-making will give us more accurate realization of bargaining power as without any expectation for getting preferred gender composition of children in future.

Table 6. IV Probit Regression Results - Out of reproductive cycle sample

Panel A. Women's responses about own say					
Dependent Variable:	Spending	Large	Husband's	Visiting	Child
Women's Say in:	Own Money	Purchase	Money	Relatives	Bearing
Marginal effects:					
IV Probit regression: <i>Dependent Variable: At least a son Instrumented with 1st born a Son</i>					
At least a son	-0.0421 (0.0456)	0.0344 (0.0249)	0.0554** (0.0257)	0.0539** (0.0247)	-0.00072 (0.0240)
Reduced form regression: <i>Dependent Variable: 1st born a Son</i>					
1 st born a son	-0.0074 (0.0080)	0.0063 (0.0046)	0.0102** (0.0048)	0.0099** (0.0046)	-0.00011 (0.0036)
Controls #	Yes	Yes	Yes	Yes	Yes
Observations	9274	33864	33593	33864	23492
Panel B. Husband's perception about women's say					
Dependent Variable:	Spending	Large	Wife's	Visiting	Child
Women's Say in:	Husband's	Purchase	Money	Relatives	Bearing
	Money				
Marginal effects:					
IV Probit regression: <i>Dependent Variable: At least a son Instrumented with 1st born a Son</i>					
At least a son	0.0102 (0.0257)	-0.00056 (0.0258)	0.0149 (0.0526)	0.0040 (0.0237)	0.0152 (0.0171)
Reduced form regression: <i>Dependent Variable: 1st born a Son</i>					
1 st born a son	0.00197 (0.0047)	0.00005 (0.0047)	0.00283 (0.0096)	0.00080 (0.0044)	0.00291 (0.0031)
Controls #	Yes	Yes	Yes	Yes	Yes
Observations	33251	33864	5723	33864	33864

Note: #: Control variables used in regressions are: rural/urban; wealth index; women earning or not; female headed HH; difference of age between husband and wife; difference in education between husband and wife; ratio of female and male members in HH; religion; state fixed effects and interrupted by HH members during interview. Standard errors clustered at PSU level are in parentheses. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

The results using sample of couples where women are already outside reproductive cycle, *Table 6 Panel A* shows the marginal effects of having son on women's say using women's responses and *panel B* presents marginal effects using husbands' responses. The results include both IV probit and reduced form estimations and both the results remain robust with the full sample results in *Tables 4 and 5*. The magnitude of the impact of having at least a son increases using the out-of reproductive cycle sample. From women's responses, women with at least a son are more likely to have say; 3.4 percent in large purchases, 5.5 percent (significant) in husband's money and 5.4 percent (significant) more chances to have say in visiting relatives/friends, compared to women with no son. The impact of 'having at least a son' on say in spending own money remains negative and insignificant and therefore is consistent with placebo check. In this case, the say in use of contraception doesn't have important implication as these women are already out-of reproductive cycle. Overall, the results imply that the son-effect on the intra-household status is higher for women who have already completed the reproductive responsibilities (5 percent), compared to women who continue child-bearing (4 percent).

5.3. Ordered Probit Estimation: Using Categories of Responses

Table 7. Ordered Probit Regression: Couples Sample

<i>Women's responses about own say</i>					
Dependent Variable: Women's Say in -	Spending Own Money	Large Purchase	Husband's Money	Visiting Relatives	Child Bearing
<i>Panel A: IV probit regression</i>					
Marginal effects: Pr[<i>Say</i> At least a son]					
Only woman has a say	0.00380 (0.0161)	0.01391*** (0.0041)	0.00975*** (0.0037)	0.01444*** (0.0044)	0.00468 (0.0071)
Woman has a joint say with husbands	0.00007 (0.0003)	0.02156*** (0.0064)	0.01996*** (0.0076)	0.01980*** (0.0060)	0.00054 (0.0008)
Only husband have a say	-0.00357 (0.0152)	-0.02743*** (0.0081)	-0.02686*** (0.0102)	-0.02770*** (0.0083)	-0.00506 (0.0077)
Someone else has a say	-0.00030 (0.0013)	-0.00804*** (0.0024)	-0.00285*** (0.0011)	-0.00655*** (0.0020)	-0.00016 (0.0002)
Observations	43648	43648	43648	43648	43648
<i>Panel B: Reduced form regression</i>					
Marginal effects: Pr[<i>Say</i> 1 st born a son]					
Only woman has a say	-0.00395 (0.0051)	0.00391*** (0.0013)	0.00328*** (0.0012)	0.00504*** (0.0014)	0.00255 (0.0023)
Woman has a joint say with husbands	-0.00042 (0.0005)	0.00605*** (0.0021)	0.00670*** (0.0025)	0.00694*** (0.0020)	0.00023 (0.0002)
Only husband have a say	0.00401 (0.0052)	-0.00770*** (0.0027)	-0.00902*** (0.0033)	-0.00969*** (0.0027)	-0.00269 (0.0025)
Someone else has a say	0.00036 (0.0005)	-0.00226*** (0.0008)	-0.00096*** (0.0003)	-0.00229*** (0.0006)	-0.00009 (0.0001)
Observations	11085	43648	42884	43648	26706

Note: Control variables used in regressions are: rural/urban; wealth index; women earning or not; female headed HH; difference of age between husband and wife; difference in education between husband and wife; ratio of female and male members in HH; religion; state fixed effects and interrupted by HH members during interview. Standard errors clustered at PSU level are in parentheses. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

So far, the 'say' variables were constructed considering that either women have an independent say and/or women have a say jointly with husband getting value 1, otherwise if only husband has a say or someone else in the household has a say then say variables get 0.

For further analysis in detail, the estimations in this section keep the four answer categories intact, that is (i) only woman has a say; (ii) woman has a joint say with husband; (iii) only husband has a say; and (iv) someone else in the family has a say/others. For this analysis ordered probit regression method is used. Using women's responses, *Table 7 Panel A* shows the ordered IV probit estimated marginal effects of having at least a son on women's say, couple's joint say, husbands' say and someone else's say in different household matters.

Due to having at least a son, the probability of women's independent say (highly significantly) in large purchases increases by 1.4 percent; the probability of their joint say with husband also significantly increases by

2.2 percent; but the probability of husband's independent say in the matter decreases by 2.7 percent comparing with couples who do not have a son. Women who have at least a son, the likelihood of their independent say in spending their husband's earning significantly increases by around 1 percent; the likelihood of having joint say with husband significantly increases by 2 percent; whereas the likelihood of their husband's independent say in spending their own earning declines by 2.7 percent and also the likelihood of someone else say declines by 0.3 percent, when compared with the couples who have no son. In spending wife's own money, the change in individuals' say in couples due to son-effect is very small in magnitude and remains statistically insignificant. When comparing with couples without a son, women with son(s) are significantly more likely to have an independent say in visiting women's relatives and/or friends by 1.4 percent; to have a joint say with husband by 2 percent; and the probability of husband's independent say declines by 2.8 percent. The son-effects on say in contraception use are statistically insignificant.

In *Table 7 Panel B*, from the reduced form of ordered probit regression results using women's responses, it is evident that women with 1st born son are more likely to have an independent say; such as 0.4 percent (significant) in large purchases; 0.3 percent (significant) in husband's money; 0.5 percent (significant) in visiting relatives; and 0.2 percent in contraception use when compared with women with 1st born daughter. Also, women with 1st born son have around 0.6 to 0.7 percent higher probabilities to have a joint say with husband in matters of large purchases, spending husband's money, and visiting relatives/friends, comparing with women having 1st born daughter. However, husbands, who have at least a son, are significantly less likely to have an independent say such as, 0.8 percent less in large purchases, 0.9 percent lower in husband's own money and around 1 percent lower in visiting relatives/friends comparing with them whose 1st born is a girl. The results using husbands' responses are not included in the paper, but these are available from the author upon request.

5.4. Other important factors to women's bargaining power within household

This section discusses the impacts of other crucial factors on women's say in different decision making within households.⁶ Also, to examine the heterogeneity in the son-effect with respect to other covariates, the interaction terms of different control variables with having son(s) are used. These results are included in the appendix of the paper in *Tables A.5* and *A.6*. It is found that village women have significantly lower chances to have say in different household decisions, compared to women living in cities (*Tables A.1-A.4*). Also, it is found that due to having 1st born daughter, the rural women have significantly lower say in household matters, compared to urban women with 1st born daughter (*Table A.6*).

Women in wealthy households have significantly higher bargaining power compared to women in poor households. The interactions between wealth and women having son(s) imply that in wealthy families' women with son(s) have higher say in own money than women with son(s) in poor families. This can be explained that in wealthy families when resources are not constrained women with son(s) can enjoy higher say in own earning, but in poor families with constrained resources women cannot enjoy full liberty to even spending own money. But in wealthy families, even women without a son have significantly higher say in different matters, compared to women without a son in poor household (*Table A.5*). Women who earn money have significantly higher bargaining within household compared to women who do not earn (*Tables A.1-A.4*). Even after having no son, earning women have 8-12 percent significantly higher say in household matters compared to non-earning women with no son (*Table A.5*). Women, who are lower educated than their husbands, are significantly less likely to have say in household matters, around 0.1 - 0.4 percent lower probability to have say compared to women who are equally educated as their husband (*Tables A.1- A.4*). Women with lower education compared to their husbands, if having no son, have significantly lower probability to have a say in different household matters compared to women without son but similarly educated as husband. (*Tables A.5 and A.6*).

The higher the ratio of women compared to men within households, the higher will be women's say within households compared to lower ratio of women to men (*Tables A.1- A.4*). The female headed household does not improve women's intra-household say compared to male headed household, rather it is found that in female headed household, women have significantly lower probability to have say in visiting relatives (by 2 percent) and in contraception use (by 1.5 percent) compared to male dominated household (*Tables A.1-A.4*). By having at least a son, women's say in own money can improve significantly by 8.6 percent in female-headed household and not-having at least a son can reduce the say by 8.7 percent in female-headed household compared to male-headed household (*Table A.5*). Muslim households have significantly lower bargaining power for women in household decisions compared to households in other religion.

⁶The marginal effects of the full set of variables are given in appendix *Tables A.1* and *A.4*.

5.5. Robustness Check

To examine the robustness of the results, I estimate the impact of having at least a son on women's say using linear probability models and find robust results⁷ in size and in statistical significance level. For another robustness check, the regressions are also performed with the say indicators constructed with stricter condition, i.e., women's say variables get value 1 only if women independently have a say, otherwise 0. From women's responses, I found that women who have at least a son and/or 1st born a son are more likely to have an independent say in matters of spending husband's money, visiting relatives, contraception use and significantly higher independent say in large purchases compared to women without a son, keeping other things same. From husbands' responses, it is found that husbands with son(s) do not feel statistically different from husbands without a son about wife having an independent say in different household matters. When regressions are estimated using individual women sample of NFHS-4, the results remain robust in all estimations.

Further, I also performed the estimations using third round data of NFHS, which was conducted in 2005-06 and published in 2009 (NFHS-3, 2009). Using women sample data, it is found that women with at least a son have significantly higher chances to have say in large purchases (3.2 percent), to go visiting friends and relatives (2 percent) and contraception use (12 percent), compared to women without a son. In spending husband's money, the women with a son have chances to have a better say than women without son, but this effect is statistically insignificant. The estimation results of different robustness checks are not included in the paper, but can be available from the author upon request.

6. Conclusion

In societies with patriarchal values and custom of patrilocality, sons get more importance than daughters with expectation of higher utility gain from sons in future. Traditionally in Indian society, on the one hand, a boy is widely viewed as an asset to the family, his birth is celebrated and his mother is praised and rewarded by the family/society. On the other hand, a girl is considered as '*paraya dhan*' that is someone else's assets or considered that she belongs to in-laws family, thus, birth of a girl is not praised considering girls as liabilities to the family, and her mother faces humiliation and neglect until she provides a son to the family. Based on this, it seems reasonable to expect that mothers of son(s) get higher status in the household compared to mothers without any son.

This paper examines whether having a son improves women's bargaining status or say within household compared to women without a son. The probit estimation results show that having at least a son significantly improves women's say in economic decisions in household, such as by 2.4 percent in large purchases and 4 percent in spending husband's money. Having a son also improves women's autonomy (4 percent), mother of a son can independently or jointly with partner decides on whether to make a visit to friends and relatives. Impact of having son(s) is found insignificant on women's say of 'spending own money'. It can be considered that individuals should have a higher say in spending own money than anyone else, and thus, an earning woman should have a higher say in own money irrespective of gender composition of her children. Therefore, the insignificant son-effect on spending own money is consistent with the placebo check. Further, in different household matters, such as large purchases, spending husband's money and visiting relatives, women with an eldest son have significantly higher chances to have a say compared to women whose first child is a daughter. This paper also uses husbands' subjective responses about women's say in a couple in general and found that having son(s) does not significantly change husbands' general views.

When including the detail categories of responses in terms of women having independent say; having joint say with partner; only husband having say or someone else having say, the ordered probability model estimations reveal that especially in large purchases, spending husband's money and visiting relatives and friends, women with at least a son have significantly higher probability to have an independent say by around 1 percent and having a joint say with probability of 2 percent compared to women with no son. Similarly, for such women with son(s), it is less likely by around 2.7 percent that only their husbands make decisions on household matters, compared to women with no son. Women with first born son also have significantly higher probability to have a say in household matters, both independent say and joint say with husbands compared to women whose first born is a girl. Overall, the results in this paper imply that women with a son can realize higher value or status in family decision making than women without a son. However, having son(s) is not effective to change husbands' view to more egalitarian values in terms of individual's say in various decisions in a couple. The examination of the women who stopped child-bearing and thus are out-of reproductive cycle also reveals the chances of improvements in their say if having son, compared to women without any son.

⁷The results are not included in the paper, however, these are available from the author upon request.

Among other factors, the one that has the most important implications on women's say in household matters is her earning status, it is found that earning status has significant and largest positive influence on women's say in household decisions. Apart from this, household wealth and urban location also have higher significant influences on women's household status. But, religion, especially Muslim religion can influence women's say in a negative manner compared to women in any other religions. Additionally, it is found that household characteristics, such as rural location, female headed household, Muslim families etc can punish women significantly for not providing a son by ignoring their say in household decisions and reducing their autonomy in meeting relatives/friends.

Appendix

Table A.1. Marginal Effects from IV-Probit Estimations – Using Women Responses

Explanatory Variables	Dependent variable: Women's say in -				
	Spending Own Money	Large Purchase	Husband's Money	Visiting Relatives	Contraceptio nUse
At least a son	-0.0324 (0.0265)	0.0245** (0.0124)	0.0391*** (0.0129)	0.0413*** (0.0121)	0.0015 (0.0141)
Rural HH	-0.0368*** (0.0107)	-0.0248*** (0.0061)	-0.0184*** (0.0063)	-0.0207*** (0.0062)	0.0010 (0.0049)
Wealth	0.0261*** (0.0052)	0.0312*** (0.0029)	0.0249*** (0.0030)	0.0307*** (0.0028)	0.0146*** (0.0024)
Female Headed	-0.0202 (0.0170)	-0.0106 (0.0091)	-0.0078 (0.0095)	-0.0200** (0.0090)	-0.0146* (0.0079)
Age(Husband)-Age(Wife)	0.0010 (0.0011)	-0.0005 (0.0006)	-0.0006 (0.0006)	-0.0003 (0.0006)	-0.0003 (0.0005)
Edu(Husband)-Edu(wife)	-0.0041*** (0.0009)	-0.0036*** (0.0005)	-0.0035*** (0.0005)	-0.0029*** (0.0005)	-0.0013*** (0.0004)
Sex ratio in HH	0.0011 (0.0119)	0.0313*** (0.0064)	0.0277*** (0.0067)	0.0231*** (0.0063)	-0.0006 (0.0056)
Hindu	-0.0226 (0.0204)	-0.0063 (0.0123)	-0.0077 (0.0125)	-0.0158 (0.0123)	0.0231** (0.0094)
Muslim	-0.0714*** (0.0248)	-0.0541*** (0.0139)	-0.0563*** (0.0142)	-0.0624*** (0.0139)	0.0107 (0.0109)
Christian	-0.0301 (0.0271)	0.0226 (0.0173)	0.0223 (0.0177)	0.0241 (0.0174)	0.0252* (0.0143)
Earning women		0.0635*** (0.0052)	0.0964*** (0.0055)	0.0599*** (0.0052)	0.0057 (0.0042)
Interrupted interview	during -0.0481*** (0.0096)	-0.0421*** (0.0059)	-0.0530*** (0.0061)	-0.0415*** (0.0058)	-0.0449*** (0.0047)
Observations	11085	43648	43319	43648	26706

Note: Standard errors in parentheses. State fixed effects are used and standard errors are clustered at the PSU level. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table A.2. Marginal Effects from IV-Probit Estimations - Using Husbands Responses

Explanatory Variables	Dependent variable: Women's say in -				
	Spending Money	Husband's Large Purchase	Wife's Money	Visiting Relatives	Number of Children
At least a son	0.0157 (0.0126)	-0.0014 (0.0128)	0.0111 (0.0308)	0.0023 (0.0116)	0.0109 (0.0085)
Rural HH	-0.0049 (0.0077)	-0.0197*** (0.0077)	-0.0245* (0.0129)	-0.0081 (0.0071)	0.0051 (0.0052)
Wealth	0.0214*** (0.0032)	0.0198*** (0.0032)	0.0106* (0.0059)	0.0273*** (0.0029)	0.0234*** (0.0023)
Female Headed	0.0017 (0.0096)	-0.0165* (0.0094)	-0.0028 (0.0202)	-0.0148* (0.0088)	-0.0038 (0.0067)
Age(Husband)-Age(Wife)	-0.0017*** (0.0006)	0.0001 (0.0006)	-0.0026** (0.0012)	-0.0004 (0.0006)	0.0004 (0.0004)
Edu(Husband)-Edu(Wife)	-0.0006 (0.0005)	-0.0005 (0.0005)	-0.0008 (0.0011)	0.00002 (0.0005)	-0.0002 (0.0003)
Sex ratio in HH	0.0018 (0.0067)	0.0028 (0.0066)	-0.0042 (0.0138)	-0.0002 (0.0060)	0.0049 (0.0045)
Hindu	-0.0036 (0.0151)	0.0102 (0.0144)	-0.0295 (0.0255)	-0.0146 (0.0140)	-0.0006 (0.0109)
Muslim	-0.0269 (0.0170)	-0.0151 (0.0164)	-0.0615** (0.0302)	-0.0500*** (0.0160)	-0.0224* (0.0126)
Christian	0.0139 (0.0199)	0.0383* (0.0209)	-0.0361 (0.0348)	0.0112 (0.0190)	0.0018 (0.0142)
Earning women	0.0232*** (0.0054)	0.0113** (0.0052)		0.0066 (0.0048)	0.0035 (0.0036)
Interrupted during interview	-0.0050 (0.0061)	-0.0115* (0.0061)	-0.0025 (0.0117)	-0.0148*** (0.0056)	-0.0178*** (0.0040)
Observations	42932	43648	6833	43648	43648

Note: Standard errors in parentheses. State fixed effects are used and standard errors are clustered at the PSU level. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table A.3. Marginal Effects from Reduced form Estimations: Women Responses

Explanatory Variables	Dependent variable: Women's say in -				
	Spending Own Money	Large Purchase	Husband's Money	Visiting Relatives	Contraception Use
1 st born a son	-0.0089 (0.0073)	0.0080** (0.0041)	0.0129*** (0.0042)	0.0135*** (0.0040)	0.0004 (0.0034)
Rural HH	-0.0372*** (0.0107)	-0.0245*** (0.0061)	-0.0179*** (0.0063)	-0.0202*** (0.0062)	0.0010 (0.0049)
Wealth	0.0266*** (0.0052)	0.0309*** (0.0029)	0.0244*** (0.0030)	0.0302*** (0.0028)	0.0145*** (0.0024)
Female Headed	-0.0184 (0.0169)	-0.0118 (0.0090)	-0.0098 (0.0095)	-0.0222** (0.0089)	-0.0146* (0.0078)
Age(Husband)-Age(Wife)	0.0011 (0.0011)	-0.0005 (0.0006)	-0.0006 (0.0006)	-0.0003 (0.0006)	-0.0004 (0.0005)
Edu(Husband)-Edu(Wife)	-0.0043*** (0.0009)	-0.0034*** (0.0005)	-0.0033*** (0.0005)	-0.0027*** (0.0005)	-0.0013*** (0.0004)
Sex ratio in HH	0.0060 (0.0107)	0.0280*** (0.0060)	0.0225*** (0.0063)	0.0175*** (0.0059)	-0.0008 (0.0052)
Hindu	-0.0228 (0.0204)	-0.0062 (0.0123)	-0.0075 (0.0126)	-0.0156 (0.0123)	0.0231** (0.0094)
Muslim	-0.0726*** (0.0248)	-0.0535*** (0.0139)	-0.0551*** (0.0142)	-0.0612*** (0.0139)	0.0108 (0.0109)
Christian	-0.0298 (0.0271)	0.0225 (0.0173)	0.0224 (0.0177)	0.0242 (0.0174)	0.0253* (0.0143)
Earning women		0.0643*** (0.0052)	0.0975*** (0.0055)	0.0611*** (0.0052)	0.0057 (0.0042)
Interrupted during interview	-0.0482*** (0.0096)	-0.0421*** (0.0059)	-0.0530*** (0.0061)	-0.0414*** (0.0058)	-0.0449*** (0.0047)
Observations	11085	43648	43319	43648	26706

Note: Standard errors in parentheses. State fixed effects are used and standard errors are clustered at the PSU level. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table A.4. Marginal Effects from Reduced form Estimations: Husbands Responses

Explanatory Variables	Dependent variable: Women's say in -				
	Spending Husband's Money	Large Purchase	Wife's Money	Visiting Relatives	Number of Children
1 st born a son	0.0052 (0.0041)	-0.0004 (0.0042)	0.0031 (0.0087)	0.0008 (0.0038)	0.0036 (0.0028)
Rural HH	-0.0047 (0.0077)	-0.0197*** (0.0077)	-0.0244* (0.0129)	-0.0081 (0.0071)	0.0052 (0.0052)
Wealth	0.0212*** (0.0032)	0.0198*** (0.0032)	0.0104* (0.0058)	0.0273*** (0.0029)	0.0233*** (0.0023)
Female Headed	0.0009 (0.0096)	-0.0164* (0.0094)	-0.0036 (0.0201)	-0.0149* (0.0088)	-0.0044 (0.0066)
Age(Husband)-Age(Wife)	-0.0017*** (0.0006)	0.0001 (0.0006)	-0.0026** (0.0012)	-0.0003 (0.0006)	0.0004 (0.0004)
Edu(Husband)-Edu(Wife)	-0.0006 (0.0005)	-0.0005 (0.0005)	-0.0007 (0.0010)	0.00003 (0.0005)	-0.0002 (0.0003)
Sex ratio in HH	-0.0003 (0.0063)	0.0029 (0.0062)	-0.0060 (0.0123)	-0.0005 (0.0057)	0.0035 (0.0042)
Hindu	-0.0035 (0.0151)	0.0102 (0.0144)	-0.0295 (0.0255)	-0.0147 (0.0140)	-0.0006 (0.0109)
Muslim	-0.0265 (0.0170)	-0.0151 (0.0164)	-0.0611** (0.0301)	-0.0499*** (0.0160)	-0.0221* (0.0126)
Christian	0.0139 (0.0199)	0.0383* (0.0209)	-0.0367 (0.0348)	0.0112 (0.0190)	0.0018 (0.0142)
Earning women	0.0237*** (0.0054)	0.0112** (0.0052)		0.0067 (0.0048)	0.0038 (0.0036)
Interrupted during interview	-0.0050 (0.0061)	-0.0115* (0.0061)	-0.0025 (0.0117)	-0.0148*** (0.0056)	-0.0178*** (0.0040)
Observations	42932	43648	6833	43648	43648

Note: Standard errors in parentheses. State fixed effects are used and standard errors are clustered at the PSU level.

*, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table A.5. Marginal Effects from IV-Probit Estimations with Interaction terms: Women Responses

Explanatory Variables	Dependent variable: Women's say in				
	Spending Own Money	Large Purchase	Husband's Money	Visiting Relatives	Contraception Use
At least a son	-0.7091 (0.5193)	-0.0459 (0.2713)	0.3690 (0.2788)	0.4249 (0.2626)	-0.0673 (0.2694)
Rural HH	-0.1562* (0.0849)	-0.0357 (0.0414)	0.0189 (0.0425)	0.0370 (0.0402)	-0.0024 (0.0490)
At least a son * Rural	0.1426 (0.1006)	0.0133 (0.0500)	-0.0454 (0.0512)	-0.0701 (0.0484)	0.0041 (0.0557)
Wealth	-0.0188 (0.0247)	0.0248* (0.0145)	0.0390*** (0.0149)	0.0504*** (0.0140)	0.0146 (0.0202)
At least a son * Wealth	0.0521* (0.0274)	0.0076 (0.0169)	-0.0169 (0.0175)	-0.0236 (0.0164)	-0.0002 (0.0224)
Earning Women		0.0747*** (0.0167)	0.1204*** (0.0168)	0.0845*** (0.0160)	0.0034 (0.0181)
At least a son * Earning Women		-0.0132 (0.0193)	-0.0296 (0.0199)	-0.0302* (0.0188)	0.0026 (0.0201)
Female Headed	-0.0872** (0.0435)	-0.0008 (0.0223)	0.0185 (0.0230)	-0.0050 (0.0219)	0.0104 (0.0235)
At least a son * Female Head	0.0857* (0.0493)	-0.0126 (0.0257)	-0.0336 (0.0263)	-0.0189 (0.0250)	-0.0289 (0.0256)
Age Difference	-0.0064 (0.0054)	-0.0010 (0.0026)	0.0026 (0.0027)	0.0028 (0.0026)	-0.0017 (0.0028)
At least a son * Age Diff	0.0090 (0.0064)	0.0007 (0.0032)	-0.0039 (0.0033)	-0.0039 (0.0031)	0.0016 (0.0033)
Education Difference	-0.0055** (0.0025)	-0.0052*** (0.0012)	-0.0052*** (0.0013)	-0.0045*** (0.0012)	-0.0007 (0.0013)
At least a son * Edu Diff	0.0017 (0.0026)	0.0019 (0.0014)	0.0021 (0.0014)	0.0019 (0.0013)	-0.0007 (0.0014)
HH Sex Ratio	-0.0594 (0.0564)	0.0366 (0.0310)	0.0680** (0.0319)	0.0744** (0.0299)	-0.0180 (0.0326)
At least a son * Sex ratio	0.0846 (0.0712)	-0.0074 (0.0395)	-0.0561 (0.0408)	-0.0712* (0.0381)	0.0229 (0.0390)
Hindu	-0.4526 (0.3248)	-0.0605 (0.1617)	0.2018 (0.1666)	0.2204 (0.1575)	-0.0223 (0.1620)

At least a son * Hindu	0.5047 (0.3794)	0.0654 (0.1958)	-0.2547 (0.2013)	-0.2862 (0.1901)	0.0522 (0.1858)
Muslim	-0.5006 (0.3383)	-0.1143 (0.1677)	0.1497 (0.1737)	0.1710 (0.1638)	-0.0442 (0.1681)
At least a son * Muslim	0.5037 (0.3949)	0.0724 (0.2031)	-0.2501 (0.2094)	-0.2825 (0.1973)	0.0632 (0.1929)
Christian	-0.4845 (0.3299)	-0.0256 (0.1626)	0.2414 (0.1670)	0.2519 (0.1580)	-0.0014 (0.1648)
At least a son * Christian	0.5324 (0.3830)	0.0574 (0.1954)	-0.2666 (0.2007)	-0.2750 (0.1899)	0.0302 (0.1892)
Interrupted by someone	-0.0741** (0.0334)	-0.0455*** (0.0147)	-0.0536*** (0.0156)	-0.0385*** (0.0148)	-0.0266 (0.0162)
At least a son * Interrupted	0.0270 (0.0357)	0.0041 (0.0162)	0.0012 (0.0170)	-0.00305 (0.0160)	-0.0205 (0.0170)
Observations	11085	43648	43319	43648	26706

Note: State fixed effects are used and standard errors in parentheses are clustered at PSU level. *, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

Table A.6. Marginal Effects from Probit Estimations with Interaction terms: Women Responses

Explanatory Variables	Dependent variable: Women's say in -				
	Spending Money	Own Large Purchase	Husband's Money	Visiting Relatives	Contraception Use
1 st born son	-0.0078 (0.0419)	0.0006 (0.0223)	0.0268 (0.0232)	-0.0083 (0.0222)	0.0412** (0.0170)
Rural HH	-0.0461*** (0.0149)	-0.0323*** (0.0084)	-0.0246*** (0.0087)	-0.0273*** (0.0083)	0.0038 (0.0071)
1 st born son * Rural	0.0167 (0.0193)	0.0142 (0.0103)	0.0123 (0.0107)	0.0130 (0.0100)	-0.0045 (0.0088)
Wealth	0.0219*** (0.0069)	0.0273*** (0.0038)	0.0230*** (0.0040)	0.0293*** (0.0038)	0.0158*** (0.0033)
1 st born son * Wealth	0.0083 (0.0084)	0.0063 (0.0046)	0.0025 (0.0048)	0.0016 (0.0046)	-0.0022 (0.0040)
Earning Women		0.0650*** (0.0075)	0.0961*** (0.0078)	0.0619*** (0.0074)	0.0084 (0.0060)
1 st born son * Earning Women		-0.0015 (0.0098)	0.0019 (0.0102)	-0.0016 (0.0096)	-0.0050 (0.0076)
Female Headed	-0.0105 (0.0251)	-0.0153 (0.0130)	-0.0228* (0.0136)	-0.0369*** (0.0127)	-0.0097 (0.0116)
1 st born son * Female Head	-0.0144 (0.0333)	0.0070 (0.0179)	0.0254 (0.0187)	0.0292* (0.0176)	-0.0092 (0.0157)
Age Difference	-0.0005 (0.0016)	-0.0014 (0.0009)	-0.0003 (0.0009)	-0.0015* (0.0009)	0.0005 (0.0007)
1 st born son * Age Diff	0.0028 (0.0020)	0.0016 (0.0012)	-0.0005 (0.0012)	0.0022** (0.0011)	-0.0015 (0.0010)
Education Difference	-0.0048*** (0.0013)	-0.0036*** (0.0007)	-0.0044*** (0.0007)	-0.0037*** (0.0007)	-0.0009 (0.0006)
1 st born son * Edu Diff	0.0009 (0.0017)	0.0003 (0.0009)	0.0020** (0.0010)	0.0019** (0.0009)	-0.0008 (0.0008)
HH Sex Ratio	0.0181 (0.0150)	0.0390*** (0.0084)	0.0320*** (0.0085)	0.0267*** (0.0081)	0.0079 (0.0070)
1 st born son * Sex ratio	-0.0269 (0.0219)	-0.0241** (0.0122)	-0.0209* (0.0125)	-0.0205* (0.0118)	-0.0187* (0.0102)
Hindu	-0.0173 (0.0292)	-0.0078 (0.0159)	0.0035 (0.0170)	-0.0202 (0.0166)	0.0337*** (0.0126)
1 st born son * Hindu	-0.0089 (0.0371)	0.0029 (0.0194)	-0.0191 (0.0201)	0.0091 (0.0196)	-0.0186 (0.0143)
Muslim	-0.0407 (0.0358)	-0.0496*** (0.0181)	-0.0413** (0.0191)	-0.0620*** (0.0186)	0.0220 (0.0147)
1 st born son * Muslim	-0.0579 (0.0456)	-0.0067 (0.0219)	-0.0241 (0.0225)	0.0022 (0.0219)	-0.0197 (0.0167)
Christian	-0.0353 (0.0360)	0.0282 (0.0218)	0.0357 (0.0228)	0.0187 (0.0221)	0.0362* (0.0192)
1 st born son * Christian	0.0109 (0.0457)	-0.0106 (0.0258)	-0.0239 (0.0261)	0.0104 (0.0259)	-0.0195 (0.0223)
Interrupted by someone	-0.0459*** (0.0142)	-0.0439*** (0.0082)	-0.0658*** (0.0085)	-0.0411*** (0.0080)	-0.0435*** (0.0069)
1 st born son * Interrupted	-0.0035 (0.0183)	0.0032 (0.0104)	0.0237** (0.0108)	-0.0006 (0.0102)	-0.0022 (0.0086)
Observations	11085	43648	43319	43648	26706

Note: State fixed effects are used and standard errors in parentheses are clustered at PSU level.

*, ** and *** represent statistical significance levels at 10%, 5% and 1% respectively.

References

- Agarwal, B. (1997). "Bargaining" and gender relations: Within and beyond the household. *Feminist economics*, 3, 1–51.
- Andersson, G., & Woldemicael, G. (2001). Sex composition of children as a determinant of marriage disruption and marriage formation: Evidence from Swedish register data. *Journal of Population Research*, 18, 143–153.
- Beegle, K., Frankenberg, E., & Thomas, D. (2001). Bargaining power within couples and use of prenatal and delivery care in Indonesia. *Studies in Family Planning*, 32, 130–146.
- Bittman, M., England, P., Sayer, L., Folbre, N., & Matheson, G. (2003). When does gender trump money? Bargaining and time in household work. *American Journal of Sociology*, 109, 186–214.
- Brown, P.H. (2009). Dowry and intrahousehold bargaining evidence from China. *Journal of Human Resources*, 44, 25–46.
- Deere, C.D., & Doss, C.R. (2006). The gender asset gap: What do we know and why does it matter? *Feminist economics*, 12, 1–50.
- Doss, C. (2013). Intrahousehold Bargaining and Resource allocation in Developing Countries. Policy Research Working Paper, WPS6337, Washington, DC: World Bank. [Online] Available :<http://documents.worldbank.org/curated/en/701071468155969077/Intrahousehold-bargaining-and-resource-allocation-in-developing-countries>
- Doss, C. (1996). Women's bargaining power in household economic decisions: Evidence from Ghana. Technical Report. No 13517, University of Minnesota, Department of Applied Economics.
- Fafchamps, M., & Quisumbing, A.R. (2002). Control and ownership of assets within rural Ethiopian households. *Journal of development Studies*, 38, 47–82.
- Frempong, R.B., & Stadelmann, D. (2017). Does Female Education have a Bargaining Effect on Household Welfare? Evidence from Ghana and Uganda. CREMA Working Paper Series 2017-18, Center for Research in Economics, Management and the Arts (CREMA).
- Friedberg, L., & Webb, A. (2006). Determinants and consequences of bargaining power in households. NBER Working Papers 12367, National Bureau of Economic Research.
- Gray, J.S. (1998). Divorce-law changes, household bargaining, and married women's labor supply. *The American Economic Review*, 88, 628–642.
- Hoddinott, J. & Haddad, L. (1995). Does female income share influence household expenditures? Evidence from Cote d'Ivoire. *Oxford Bulletin of Economics and Statistics*, 57, 77–96.
- Imai, K.S., Annim, S.K., Gaiha, R., & Kulkarni, V.S. (2012). Does women's empowerment reduce prevalence of stunted and underweight children in rural India? *The School of Economics Discussion Paper Series*, 1209, The University of Manchester.
- Johansson, S., & Nygren, O. (1991). The missing girls of China: A new demographic account. *The Population and Development Review*, 35–51.
- Li, J., & Lavelly, W. (2003). Village context, women's status, and son preference among rural Chinese women. *Rural Sociology*, 68, 87–106.
- Li, L., & Wu, X. (2011). Gender of children, bargaining power, and intrahousehold resource allocation in China. *Journal of Human Resources*, 46, 295–316.
- Lise, J., & Seitz, S. (2011). Consumption inequality and intra-household allocations. *The Review of Economic Studies*, 78, 328–355.
- Mason, K.O. (1986). The status of women: Conceptual and Methodological Issues in Demographic Studies. *Sociological Forum*, 1(2), 284–300.
- Morgan, S.P., Lye, D.N., & Condran, G.A. (1988). Sons, daughters, and the risk of marital disruption. *American journal of sociology*, 94, 110–129.
- NFHS-3, (2009). India national family health survey, 2005-06.
- NFHS-4, (2015). India national family health survey, 2012-14.
- Pollak, R.A. (2005). Bargaining power in marriage: Earnings, wage rates and household production. Technical Report. National Bureau of Economic Research.
- Raley, S., & Bianchi, S. (2006). Sons, daughters, and family processes: Does gender of children matter? *Annual Review of Sociology*, 32, 401–421.

- Schmidt, E.M. (2012). The effect of women's intrahousehold bargaining power on child health outcomes in Bangladesh. *Undergraduate Economic Review*, 9(4). [Online] Available: <http://digitalcommons.iwu.edu/uer/vol9/iss1/4>.
- Teitelbaum, M.S. (1972). Factors associated with the sex ratio in human populations. In Harrison, G. A., & Boyce, A. J. (Eds.), *The Structure of Human Populations*. 90–109. Clarendon Press: Oxford.
- Tolhurst, R., Amekudzi, Y.P., Nyongator, F.K., Squire, S.B., & Theobald, S. (2008). "He will ask why the child gets sick so often": The gendered dynamics of intra-household bargaining over healthcare for children with fever in the Volta region of Ghana. *Social Science & Medicine*, 66, 1106–1117.
- Waldron, I. (1983). Sex differences in human mortality: the role of genetic factors. *Social Science & Medicine*, 17, 321–333.
- Waldron, I. (1993). Recent trends in sex mortality ratios for adults in developed countries. *Social Science & Medicine*, 36, 451–462.
- Warner, R.L. (1991). Does the sex of your children matter? Support for feminism among women and men in the United States and Canada. *Journal of Marriage and the Family*, November 1, 1051–1056.
- Washington, E.L. (2008). Female socialization: How daughters affect their legislator fathers. *American Economic Review*, 98, 311–32.