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Son Preference and Gender Gaps in Child Nutrition: Does the Level of Female Autonomy Matter?

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1 Introduction

A large body of literature has con rmed that son preference, the mindset that sons are more valuable than daughters, is pervasive among Indian parents.[1] Frequently, researchers have deduced the presence of son preference by examining its e ects on behavior. Studies have shown that parents who do not have the desired number of sons are less likely to use contraceptives, are more likely to continue having children and have shorter birth intervals (Clark 2000; Haughton and Haughton 1998). An alternate approach has been to focus on the patterns of discrimination against girls. This could be through the di erential allocation of resources between male and female children, which becomes evident from gender gaps in health and education outcomes (Subramaniam and Deaton 1991; Kingdon 2002; Oster 2009), or by selectively aborting female fetuses to ensure that daughters are not born at all (Arnold et al. 2002; Kishor and Gupta 2009).

Spouses do not necessarily have identical preferences, an inference made in several studies which have found that household outcomes vary with the identity of the decision maker.[2] Barring a few exceptions, most empirical studies have concluded that higher female autonomy or improvement in a woman's position within the household is associated with better child outcomes, for instance, greater investments in child health and nutrition (Maitra 2004; Smith et al. 2003).[3] These e ects are not always gender neutral; the underlying implication being that parental preferences vary with the child's gender (Du o 2003; Thomas 1990; Thomas 1994).

[1] There exist a number of economic, social and religious reasons for the evolution of these preferences. Readers may refer to Shepherd (2008) for a book length exposition on reasons for son preference in India.

[2] These studies reject the unitary model of household behavior which posits the existence of a representative household member with a single preference function (Becker 1981).

[3] Other studies have found that household and child welfare are maximized when spouses share the bargaining power (Lancaster et al. 2006; Patel et al. 2007). An exception is the study by Berman et al. (1997), who have found that maternal employment is negatively associated with health care spending when children fall ill.

What is missing from the literature is how female autonomy in uences the relationship between son preference and child nutrition outcomes. This paper seeks to examine precisely that question. To conduct this analysis, data from the 2005 06 round of the National Family and Health Survey are used. Rather than infer the existence of son preference from its e ects on behavior, direct and separate measures are created based on survey responses regarding preferred number of boys and girls. The task of nding a satisfactory measure of female autonomy has been challenging for researchers. Some studies have used proxies such as female education, wealth or physical stature (Patel et al. 2007; Thomas 1994). The drawback is that these measures directly a ect outcomes such as child's health. To get around endogeneity problems, other studies have looked at exogenous income shocks such as cash transfers (Du o 2003; Paxson and Schady 2007). But these studies frequently assume that the recipient of the income shock is also the one who decides how to spend the money, which may not always hold true. A recent approach has been to construct an index of female autonomy from survey questions on female involvement in household decisions, freedom of mobility and control of resources (Chakraborty and De 2011). But this too has come under criticism (Alfano et al. 2011) because answers to these questions are weighted equally in the index even though the relative importance of decisions may well vary with the outcome under study. The measure of female autonomy used in this analysis is based on couples' responses to the survey question on routine household purchases. Not only does this give a direct measure, it focuses on the question that is likely to be the most relevant for investments in child nutrition.

The main ndings from this analysis are as follows. Gender gaps in nutrition outcomes of children are observed when mothers have a son preference and are involved in household decision making. This suggests that mothers, who are primarily responsible for the nutrition needs of

small children, are able to manifest their son preference when they have autonomy in making decisions. In contrast, no independent association is found between child nutrition outcomes and paternal son preference.

2 Data and Descriptive Statistics

Data come from the 2005

respectively which adds to 2.77, their mean ideal number of children. Fathers report their ideal number of boys and girls to be 1.57 and 1.18 respectively, adding up to 2.75 ideal number of children. Based on wealth quintiles reported by NFHS for the entire survey sample, the majority of the households in this sample fall in the first four wealth quintiles and only 6 percent of the total 4,900 households fall in the highest wealth quintile.[9] Majority (about three-quarters) of the households belong to the Hindu community and the household is headed by a male member in 95 percent of the sample. The average number of children in these households is 3.18.

3 Measuring Son Preference

The term son preference refers to "the attitude that sons are more important and more valuable than daughters" (Clark 2000). The NFHS includes questions on the ideal number and ideal sex composition of children which are asked to both parents. Specifically, the two questions asked to obtain information on fertility preferences are: (1) "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" and (2) "How many of these children would you like to be boys and how many would you like to be girls?" A point to note is that because of the manner in which these questions have been framed, they are more likely to capture innate preferences rather than dynamic ones that could evolve due to factors such as the sex composition of children already born.

Separate measures of son preference for each parent are derived from their responses to the second question mentioned above. Using information from a parent's report on the number of

[9] NFHS reports the wealth quintiles of the surveyed households. Wealth indices are constructed from information on ownership of household assets (such as furniture and vehicles), dwelling characteristics (such as water source), home construction materials and whether a household member has a bank or post office account. These composite indices are then categorized by quintiles (relative to households in the survey round). Quintile 1 denotes the poorest households and quintile 5 denotes the wealthiest households.

boys and girls they would ideally like to have, son preference is calculated as a binary variable. If the ideal number of boys reported is greater than the ideal number of girls, then this measure has a value of one and implies that the parent has a son preference. This measure has a value of zero if the ideal number of sons is less than or equal to the ideal number of daughters.[10]

A related measure has been used by Clark (2000); the ratio of ideal number of sons to the ideal number of children, where a higher ratio implies a greater preference for sons. This measure makes it possible to assess di ering magnitudes of son preference. Due to a much smaller sample size (about 6 percent of the sample size in Clark (2000)) in this analysis, there is not su cient variation that can be exploited to use such a measure. Instead, the binary measure of son preference used can be conceived as an aggregated version of Clark's measure where parents who would like more than 50 percent of their children to be boys are designated as those with a son preference.

Variation in the son preference of parents is reported in Table 3. Approximately 34 percent of mothers and 35 percent of fathers in the sample report having a preference for sons. Parental preferences match in 63 percent of the 4,900 households. Of those households, in 2,318 cases (47 percent) neither parent has a son preference while both parents have a son preference in 780 cases (16 percent). In the remaining 1,802 households (37 percent), preferences do not match and either the mother or the father has a son preference.

Appendix Table A.1 outlines some basic characteristics associated with son preference. Household characteristics include higher probability of falling in the lower wealth quintiles as well as greater number of children. Older age and lower educational attainment of both parents

[10] Consider for example, three mothers each of whom report their ideal number of children to be four. Suppose that the rst mother wants three boys and one girl, the second mother wants two boys and two girls and the third mother wants one boy and three girls. Then only the rst mother is designated to have a son preference.

are found to be associated with son preference. It can also be seen that parents with a son preference desire a greater ideal number of children.

4 Measuring Female Autonomy

For purposes of this analysis, female autonomy is de ned as \the ability of women to make choices/decisions within the household relative to their husbands" (Anderson and Eswaran 2009). The NFHS asked adult male and female household members questions on decision making on a number of household matters, namely, household purchases, own health care, visits to family or relatives, and spending of spousal earnings. Household purchases were categorized into large purchases and purchases made for daily needs of the household. The two types of purchases di er on the amount of money to be spent and whether the purchase is routine or not: daily purchases being more routine and requiring a relatively smaller amount of money to be spent than large purchases (Kishor and Subaiya 2005).

The measure of status of female autonomy used in this paper is based on responses to the decision making question on household purchase for daily needs, which is likely to be the most directly relevant for investments in child nutrition. Fathers were asked about who they think the decision making power should rest upon while mothers were asked about who actually takes the decision in the household. Speci cally, the question posed to the father was \Who do you think *should have* the most say in making decisions on household purchases for daily needs?" while the mother was asked \Who do you think *has* the most say in making decisions on household purchases for daily needs?"

Table 4 reports parental responses to the decision making question. The father responds whether the decision should be taken by himself (1,137 households, 23 percent), jointly with

his wife (1,975 households, 40 percent) or by his wife alone (1,788 households, 36.5 percent). The mother responds whether the actual decision is taken by her husband (1,268 households, 26 percent), jointly with her husband (1,472 households, 30 percent), by herself (1,456 households, 30 percent) or by others (for instance, mother-in-law) in the household (566 households, 11.5 percent).[11] These response categories provide variation in the status of female autonomy with decision making power of the mother being the strongest when she takes (should take) the decision all by herself and weakest when the decision is taken (should be taken) solely by her husband. When the couple jointly takes a decision, female autonomy lies in between. Since identity and details on preferences of the decision maker are not available when the mother responds that \others" take the decision, observations for this category are excluded from the analysis based on the mother's response.[12]

Two features are worth noting from the cross tabulation of parental responses presented

explanations that can account for this apparent di erence in perceptions. One relates to the nature of the decision under analysis. When exploring the decisions relating to large household purchases (statistics not reported), both parents report a greater likelihood of the father being involved in decision making. This suggests that in matters which are considered more important and involve the outlay of a larger sum of money, fathers are less willing to entrust their wives with the power to make decisions than in the case of relatively routine matters. The second explanation is that in a patriarchal society such as India (as is evidenced by the majority (95 percent) of households in this sample being headed by a male member), established norms might make women less likely to perceive that she could take independent decisions that are not vetted by her spouse.

Appendix Tables A.2 and A.3 summarize household and parental characteristics separately by the fathers' and mothers' response to the decision making question. These descriptive statistics reveal characteristics that are associated with the greatest level of female autonomy (father or mother reporting that the mother should be (is) the sole decision maker). Household characteristics include fewer children and lower probability of being in the lowest (poorest) wealth quintile. Parental characteristics include high BMI of mother, greater likelihood of the mother being employed as well as older age and higher educational attainment of both parents. These accord well with the correlates of female bargaining power from previous literature and validates the separate measures of female autonomy from the fathers' and mothers' reports used in this analysis.

5 Empirical Specification

This paper first examines whether gender gaps in child nutrition are evident in the presence of parental son preference and then tests if this relationship varies with the level of female autonomy. To answer these questions, the following regression specification is estimated.

$$y_{ibs} = \beta_0 + \beta_1 Male_{ibs} + \beta_2 MotherSonPref_{is} + \beta_3 FatherSonPref_{is} + \beta_4 (Male_{ibs} \times MotherSonPref_{is}) + \beta_5 (Male_{ibs} \times FatherSonPref_{is}) + X_{is}\gamma + \alpha_b + \alpha_s + \varepsilon_{ibs} \quad (1)$$

where y is the weight-for-height z score of child i of birth order b residing in state s. $Male_{ibs}$ specifies the gender of the child. $MotherSonPref_{is}$ and $FatherSonPref_{is}$ are binary variables which indicate if the mother or the father has a son preference. X is a vector of controls and includes mother's BMI, age of mother at childbirth, reported ideal number of children, educational attainment, and dummies for work status of both parents, total number of children in the household, dummy for female household head, and dummies for wealth quintile and religion. α_b and α_s represent birth order and state fixed effects; these are included in all regressions to control for any birth order and state level heterogeneity. The regressions are estimated first for the full sample and then separately by who makes decisions in household purchases for daily needs, which are based on the fathers' and mothers' reports. The estimation method is ordinary least squares.

The basic idea of the specification equation is thus to compare the outcomes of children whose parents have a son preference to ones where they do not. The coefficients of interest are the interaction terms between gender of the child and son preference of parents. β_4 gives the difference in gender gap in nutrition when the mother has a son preference compared to when she does not. β_5 gives the analogue when the father has a son preference.

6.4 Discussion - Reconciling Results

Results from this analysis con rm the existence of a signi cant association between maternal son preference and gender bias in short run indicators of child nutrition. However, some ambiguity is observed on the exact household decision making structure where mothers can act upon their preferences. Based on the fathers' response, this association is observed when mothers are the sole decision makers while results based on the mothers' response suggest that this association exists when both parents are involved in making decisions.

One way to explain this apparent discrepancy is through the examination of the couples' responses to the decision making question, which is presented in Table 4. As discussed before, due to the routine nature of the decision and established gender roles in the society under analysis, mothers are found to report far greater involvement of fathers in deciding matters related to daily household needs. Therefore, it is not surprising that results based on the mothers' response are found in the \both" category as opposed to the \mother" category. Table 4 also indicates that parental responses to the decision making question match in 1,671 (34 percent) households. Results based on this subsample, where parental responses match, are presented in Appendix Table A.6. The results resemble those based on the fathers' response although the positive coe cient on *Male*Mother has son preference* in column (3) is statistically insigni cant.

There is another reason to place a greater emphasis on the results based on the fathers' response. These responses are indicative of the degree of autonomy husbands are actually willing to grant to their wives (Chakraborty and De 2011). Consequently, the husband's perception

likely presents a more accurate picture of female autonomy, especially in a patriarchal society such as India.

7 Interaction of Parental Preferences

The speci cation given by equation (1) examines the relationship between gender gaps in child nutrition and son preference of each parent independent of the other parent's preference. Table 3 presents evidence that parental responses match in 3,098 households (63 percent) and do not match in the remaining 1,802 households (37 percent). To analyze whether the matching of preferences matter, the following model with interaction of parental preferences is estimated.

$$\begin{aligned} y_{ibs} = {} & {}_0 + {}_1 Male_{ibs} + {}_2 MotherSonPref_{is} + {}_3 FatherSonPref_{is} + {}_4 (Mother \\ & SonPref_{is} \quad FatherSonPref_{is}) + {}_5 (Male_{ibs} \quad MotherSonPref_{is}) + {}_6 (Male_{ibs} \\ & FatherSonPref_{is}) + {}_7 (Male_{ibs} \quad MotherSonPref_{is} \quad FatherSonPref_{is}) \\ & + X_{is} + {}_b + {}_s + {}_{ibs} \end{aligned} \tag{2}$$

where y is the weight-for-height z score of child i of birth order b residing in state s. As before, $MotherSonPref_{is}$ and $FatherSonPref_{is}$ are binary variables which indicate if the mother or the father has a son preference. X includes the same controls as in equation (1). $_b$ and $_s$ represent birth order and state xed e ects.

$_2$ gives the mean di erence in the nutrition outcome of female children when only the mother has a son preference relative to the baseline case of neither parent having a son preference. $_3$ gives the analogue when only the father has a son preference. $_5$ ($_6$) gives the di erence in gender gap in nutrition when only the mother (father) has a son preference compared to neither parent having a son preference. The coe cient on the interaction of parental preferences, $_4$,

gives the di erential in uence on female outcomes of mothers having a son preference when fathers have a son preference relative to when they do not. The triple interaction term, $_7$, gives the di erential in uence on the gender gap.

The discussion in the previous section alludes to reasons why the fathers' report might be a more accurate representation of female autonomy in the household. Therefore, regressions results for equation (2) are estimated based on the fathers's response to the decision making question. These results are reported in Table 8. Similar to Table 6, gender gaps are observed only in column (3), where fathers report that their wives should be the sole decision makers. The coe cient on *Mother has son preference*Father has son preference* is 0:44, which suggests that when fathers have a son preference, the z scores of female children are 0:44 standard deviations lower if mothers also have a son preference. The di erential gender gap when both parents have a son preference is 0:48 standard deviations. Interestingly, the negative in uence of mothers' son preference on girls is only to be found when fathers have a son preference but not when only the mother has a son preference. The coe cient on *Male*Father has son preference* is 0:29, which implies that when only fathers have a son preference, female children fare better than male children. This suggests that mothers are able to protect female children against discrimination in nutrition investments if she has no son preference and greater autonomy in the household. As before, no independent association is found between child nutrition outcomes and father son preference.

8 Conclusion

Using separate reports from couples on their preference for sons and perceptions of status of female autonomy in their household, this paper examines how the relationship between parental

son preference and gender gaps in child nutrition varies with the level of female autonomy. Using data from the 2005 06 round of the NFHS, gender gaps in child nutrition are observed when mothers have a son preference and are also involved in household decision making. In contrast, no independent association is found between child nutrition outcomes and paternal preferences. Overall, these results suggest that explicitly accounting for parental preferences may be important when studying the dynamics of intra-household bargaining.

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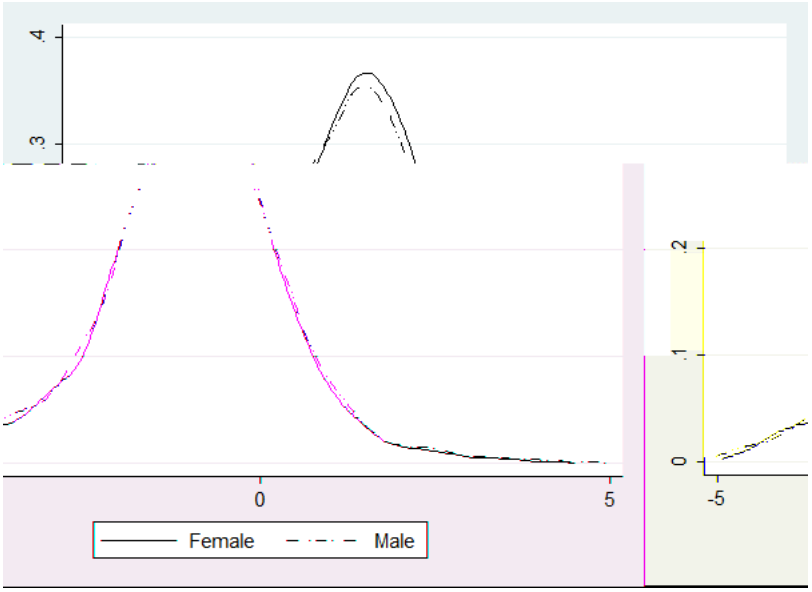

Figure 1: Distribution of weight-for-height z scores of children

Table 1: Characteristics of Children

	Female		Male	
	Mean (1)	S.D. (2)	Mean (3)	S.D. (4)
Weight-for-height z score	-0.95	1.25	-0.94	1.31
Age (months)	30.02	16.86	30.74	16.97
Birth Order				
1	0.25		0.22	
2	0.26		0.26	
3	0.18		0.20	
4+	0.31		0.32	
N	3,454		3,443	

Table 2: Parental and Household Characteristics

	Mean (1)	S.D. (2)
Mother Characteristics		
Age	27.20	5.71
Education	3.67	4.38
Worked in last year	0.41	
Ideal no. of children	2.77	1.00
Ideal no. of boys	1.56	0.66
Ideal no. of girls	1.21	0.55
BMI	19.67	2.82
Father Characteristics		
Age	32.23	6.56
Education	5.92	4.75
Worked in last year	0.97	
Ideal no. of children	2.75	1.02
Ideal no. of boys	1.57	0.70
Ideal no. of girls	1.18	0.56
Household Characteristics		
Wealth Quintile		
1	0.25	
2	0.28	
3	0.25	
4	0.16	
5	0.06	
Religion		
Hindu	0.73	
Muslim	0.10	
Christian	0.13	
Others	0.04	
Male household head	0.95	
Total no. of children	3.18	1.87
Number of households	4,900	

Table 3: Distribution of Parental Preferences

		Father has son preference		
		No	Yes	Total
		(1)	(2)	(3)
Mother has son preference	No	2,318	932	3,250
		(71.32)	(28.68)	(100.00)
		[72.71]	[54.44]	[66.33]
	Yes	870	780	1,650
		(52.73)	(47.27)	(100.00)
		[27.29]	[45.56]	[33.67]
	Total	3,188	1,712	4,900
		(65.06)	(34.94)	(100.00)
		[100.00]	[100.00]	[100.00]

Notes: Son preference for either parent is calculated as a binary variable which equals one if the parent reports that their ideal number of boys is greater than their ideal number of girls and is zero otherwise. Figures in parenthesis and square

Table 4: Decision Making: Variation in Parental Response

		Mothers' response					
		Father	Both	Mother	Others	Missing	Total
		(1)	(2)	(3)	(4)	(5)	(6)
Fathers' response	Father	**358**	326	270	153	30	1,137
		(31.49)	(28.67)	(23.75)	(13.46)	(2.64)	(100.00)
		[28.23]	[22.15]	[18.54]	[27.03]	[21.74]	[23.20]
	Both	517	**662**	535	209	52	1,975
		(26.18)	(33.52)	(27.09)	(10.58)	(2.63)	(100.00)
		[40.77]	[44.97]	[36.74]	[36.93]	[37.68]	[40.31]
	Mother	393	484	**651**	204	56	1,788
		(21.98)	(27.07)	(36.41)	(11.41)	(3.13)	(100.00)
		[30.99]	[32.88]	[44.71]	[36.04]	[40.58]	[36.49]
	Total	1,268	1,472	1,456	566	138	4,900
		(25.88)	(30.04)	(29.71)	(11.55)	(2.82)	(100.00)
		[100.00]	[100.00]	[100.00]	[100.00]	[100.00]	[100.00]

Notes: This is a cross tabulation of mothers' and fathers' responses to the decision making question. Items in bold font re ect agreement in the parents' responses. Figures in parenthesis and square brackets present the row and column percentages respectively.

Table 5: Results: Preferences and Child Nutrition

	Weight-for-height (1)
Male (= 1)	0.0090
	(0.040))
Mother has son preference (= 1)	-0.12**
	(0.049)
Father has son preference (= 1)	0.022
	(0.048)
Male * Mother has son preference	0.074
	(0.062)
Male * Father has son preference	-0.056
	(0.066)
N	6,897
R^2	0.091

Table 6: Results: Fathers' Response

	Decision Maker in HH		
	Father	Both	Mother
	(1)	(2)	(3)
Male (= 1)	-0.00096	0.0040	0.041
	(0.077)	(0.061)	(0.069)
Mother has son preference (= 1)	-0.14	0.018	-0.25***
	(0.094)	(0.075)	(0.082)
Father has son preference (= 1)	-0.029	0.12	-0.037
	(0.090)	(0.076)	(0.084)
Male * Mother has son preference	-0.00040	-0.0026	0.19*
	(0.13)	(0.099)	(0.11)
Male * Father has son preference	0.070	-0.070	-0.12
	(0.13)	(0.10)	(0.11)
N	1,585	2,792	2,520
R^2	0.131	0.099	0.098

Notes: This table presents the regression results for equation (1) where the sample is strati ed by the fathers' response to the decision making question. The dependent variable is the weight-for-height z score of a child. All controls are included but are not reported. Excluded categories include birth order 1, wealth quintile 1, Hindu religion, working father and non-working mother. Robust standard errors clustered at the primary sampling unit level are reported in parenthesis.
*** p< 0:01, ** p< 0:05, * p< 0:1.

Table 7: Results: Mothers' Response

	Decision Maker in HH		
	Father	Both	Mother
	(1)	(2)	(3)
Male (= 1)	-0.042	0.053	0.034
	(0.076)	(0.071)	(0.076)
Mother has son preference (= 1)	-0.070	-0.11	-0.12
	(0.087)	(0.093)	(0.094)
Father has son preference (= 1)	0.063	-0.033	0.032
	(0.086)	(0.087)	(0.090)
Male * Mother has son preference	-0.10	0.26**	0.014

Table 8: Results: Interaction of Parental Preferences

	Decision Maker in HH		
	Father	Both	Mother
	(1)	(2)	(3)
Male (= 1)	-0.034	-0.0026	0.085
	(0.082)	(0.065)	(0.074)
Mother has son preference (= 1)	-0.21*	0.034	-0.084
	(0.11)	(0.097)	(0.10)
Father has son preference (= 1)	-0.091	0.14	0.11
	(0.11)	(0.092)	(0.10)
Mother has son preference * Father has son preference	0.17	-0.040	-0.44***
	(0.18)	(0.15)	(0.17)
Male * Mother has son preference	0.12	0.017	0.0087
	(0.17)	(0.13)	(0.13)
Male * Father has son preference	0.18	-0.051	-0.29**
	(0.17)	(0.13)	(0.14)
Male * Mother has son preference * Father has son preference	-0.30	-0.044	0.48**
	(0.25)	(0.20)	(0.23)
N	1,585	2,792	2,520
R^2	0.132	0.099	0.101

Notes: This table presents the regression results for equation (2) where the sample is strati ed by the fathers' response to the decision making question. The dependent variable is the weight-for-height z score of a child. All controls are included but are not reported. Excluded categories include birth order 1, wealth quintile 1, Hindu religion, working father and non-working mother. Robust standard errors clustered at the primary sampling unit level are reported in parenthesis.

*** p< 0:01, ** p< 0:05, * p< 0:1.

A Appendix

Table A.1: Parental and Household Characteristics: Strati cation by Parental Preferences

	Mother has son preference				Father has son preference			
	No		Yes		No		Yes	
	Mean (1)	S.D. (2)	Mean (3)	S.D. (4)	Mean (5)	S.D. (6)	Mean (7)	S.D. (8)
Mother Characteristics								
Age	27.05	5.65	27.49	5.82	26.72	5.51	28.10	5.97
Education	4.25	4.51	2.53	3.86	4.14	4.48	2.82	4.05
Worked in last year	0.41		0.42		0.41		0.41	
Ideal no. of children	2.61	1.02	3.10	0.87	2.63	0.94	3.04	1.05
Ideal no. of boys	1.27	0.51	2.13	0.53	1.45	0.61	1.77	0.69
Ideal no. of girls	1.33	0.55	0.97	0.45	1.18	0.52	1.27	0.58
BMI	19.75	2.86	19.51	2.74	19.75	2.91	19.52	2.65
Father Characteristics								
Age	32.30	6.52	32.08	6.66	31.83	6.47	32.97	6.66
Education	6.30	4.77	5.17	4.62	6.30	4.75	5.20	4.67
Worked in last year	0.97		0.96		0.97		0.97	
Ideal no. of children	2.67	1.01	2.92	1.03	2.55	0.99	3.12	0.97
Ideal no. of boys	1.49	0.68	1.73	0.73	1.24	0.49	2.18	0.63
Ideal no. of girls	1.18	0.56	1.19	0.56	1.31	0.54	0.94	0.51
Household Characteristics								
Wealth Quintile								
1	0.21		0.33		0.21		0.32	
2	0.27		0.29		0.28		0.28	
3	0.26		0.23		0.26		0.23	
4	0.19		0.12		0.18		0.13	

Table A.2: Parental and Household Characteristics: Strati cation by Fathers' Response

	Decision Maker in HH		
	Father	Both	Mother

Table A.3: Parental and Household Characteristics: Strati cation by Mothers' Response

	Decision Maker in HH					
	Father		Both		Mother	
	Mean (1)	S.D. (2)	Mean (3)	S.D. (4)	Mean (5)	S.D. (6)
Mother Characteristics						
Age	27.31	5.71	27.68	5.72	28.38	5.64
Education	2.88	4.06	3.79	4.44	3.96	4.40
Worked in last year	0.40		0.40		0.46	
Ideal no. of children	2.66	0.91	2.84	1.02	2.94	1.11
Ideal no. of boys	1.53	0.64	1.59	0.65	1.63	0.70
Ideal no. of girls	1.13	0.49	1.26	0.58	1.31	0.61
BMI	19.29	2.67	19.70	2.85	19.99	2.97
Father Characteristics						
Age	32.22	6.35	33.04	6.54	33.51	6.48
Education	5.37	4.60	5.72	4.79	5.91	4.76
Worked in last year	0.97		0.97		0.97	
Ideal no. of children	2.64	0.95	2.82	1.05	2.93	1.14
Ideal no. of boys	1.51	0.67	1.61	0.72	1.66	0.76
Ideal no. of girls	1.13	0.50	1.21	0.58	1.27	0.63
Household Characteristics						
Wealth Quintile						
1	0.30		0.28		0.21	
2	0.29		0.28		0.28	
3	0.24		0.23		0.27	

Table A.4: Distribution of Parental Preferences: Strati cation by Fathers' Response

	Father has son preference		
	No	Yes	Total

Table A.5: Distribution of Parental Preferences: Strati cation by Mothers' Response

		Father has son preference		
		No	Yes	Total
		(1)	(2)	(3)
Panel A: Decision Maker, Father				
Mother has son preference	No	595	218	813
		(73.19)	(26.81)	(100.00)
		[71.26]	[50.35]	[64.12]
	Yes	240	215	455
		(52.75)	(47.25)	(100.00)
		[28.74]	[49.65]	[35.88]
	Total	835	433	1,268
		(65.85)	(34.15)	(100.00)
		[100.00]	[100.00]	[100.00]
Panel B: Decision Maker, Both				
Mother has son preference	No	669	304	973
		(68.76)	(31.24)	(100.00)
		[71.47]	[56.72]	[66.10]
	Yes	267	232	499
		(53.51)	(46.49)	(100.00)
		[28.53]	[43.28]	[33.90]
	Total	936	536	1,472
		(63.59)	(36.41)	(100.00)
		[100.00]	[100.00]	[100.00]
Panel C: Decision Maker, Mother				
Mother has son preference	No	716	289	1,005
		(71.24)	(28.76)	(100.00)
		[75.13]	[57.46]	[69.02]
	Yes	237	214	451
		(52.55)	(47.45)	(100.00)
		[24.87]	[42.54]	[30.98]
	Total	953	503	1,456
		(65.45)	(34.55)	(100.00)
		[100.00]	[100.00]	[100.00]

Notes: This table presents the distribution of son preference of parents where the sample is strati ed by the mothers' response to the decision making question. Son preference for either parent is calculated as a binary variable which equals one if the parent reports that their ideal number of boys is greater than their ideal number of girls and is zero otherwise. Figures in parenthesis and square brackets present the row and column percentages respectively.

Table A.6: Results: Matching Response

	Decision Maker in HH		
	Father	Both	Mother
	(1)	(2)	(3)
Male (= 1)	-0.067	-0.0027	0.076
	(0.15)	(0.10)	(0.12)
Mother has son preference (= 1)	0.092	0.023	-0.34**
	(0.14)	(0.14)	(0.15)
Father has son preference (= 1)	-0.16	-0.066	-0.14
	(0.15)	(0.13)	(0.14)
Male * Mother has son preference	-0.036	0.20	0.21
	(0.21)	(0.18)	(0.20)
Male * Father has son preference	0.0086	-0.0058	-0.15
	(0.22)	(0.17)	(0.20)
N	502	949	918
R^2	0.179	0.144	0.134

Notes: This table presents the regression results for equation (1) based on the subsample where parental responses to the decision making question match. The dependent variable is the weight-for-height z score of a child. All controls are included but are not reported. Excluded categories include birth order 1, wealth quintile 1, Hindu religion, working father and non-working mother. Robust standard errors clustered at the primary sampling unit level are reported in parenthesis.
*** p< 0:01, ** p< 0:05, * p< 0:1.