

Women's Work and Sex Preferences for Children in India

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Abstract

While previous research has examined the relationship between women's employment and fertility, the relationship between employment and children's sex preference in India is less clear. Patrilineal kinship systems are posited to support an economic rationale for son preference based on sons' perceived income-contributing potential. Using the National Family and Health Survey 2005-06, I examine whether women's employment is associated with their ideal sex composition of children. I examine employment types and occupations, and differentiate between son-, daughter-, and no-preference, controlling for existing sons and daughters. I find that employment per se is associated with lower son preference, but women employed in family enterprises are more likely to prefer sons. Interestingly, women in agriculture and manual labor are gender-neutral, whereas women across service sector occupations report strong daughter preferences, suggesting that future anticipated returns from investments in sons and daughters may be more equal than have been perceived in the past.

INTRODUCTION

The preference for male children and the concurrent discrimination against girls in India are considered to be key barriers to fertility decline, the main reasons why sex ratios at birth and child sex ratios in India remain inordinately higher compared to many other countries, as well as the explanations for the excess female mortality at all ages from early childhood to the reproductive years (Bhat and Xavier 2005; Jha et al 2011; Bhalotra et al 2010). Demographers have long recognized that the skewed population sex ratio in India – more males compared to females – is due to unusually high female mortality from age 1 to 35, compared to males. This is considered to result from the overall low status of women in society, their nutritional neglect and poor access to timely healthcare. In contrast, most societies where access to nutrition and healthcare are unbiased, male mortality is higher than female mortality at every age, and sex ratios at birth in most countries vary between 1.02 and 1.05 males per female, with the slight skew in favor of males compensating for their greater mortality (Coale 1991).

Existing literature on son preference in South and South-east Asia posits a strong perceived economic rationale for sons being more valuable to households than daughters. Sons receive dowry from the bride's family at the time of marriage, live with parents after marriage and provide greater social status and strength to the family, thereby being more likely than daughters to provide financial and material help to parents (Caldwell, Reddy and Caldwell 1989; Gupta et al 2003). In India, the patrilineal nature of kinship systems also supports an economic rationale. Sons constitute and continue a family's lineage in such a system, whereas daughters in a strong patrilineal kinship system get absorbed within their husbands' lineage upon marriage. Analyses of socioeconomic factors associated with greater son preference suggest that women's education, household wealth and access to mass media are negatively associated with son preference; however, once differences in marriage customs and desired family size are accounted for, socioeconomic and background characteristics are no longer significant predictors of son preference (Pande and Astone 2007; Pande and Malhotra 2006).

In this paper, I seek to examine if and to what extent is women's employment in India associated with their ideal sex composition of children, in particularly a preference for sons, daughters or no preference at all. Increasing labor force participation by women, particularly in jobs outside of family enterprises, can increase their physical mobility, social interactions, access to financial resources outside the household, and empower them for greater decision-making within the household. To the extent that women's own non-household employment informs them about the opportunities available to women in the work force and their wage-earning potential, we may expect that working women would attach a lower potential wage-earning premium to sons over daughters, and therefore exhibit lower son preference.

BACKGROUND AND LITERATURE

While academic literature has extensively examined the relationship between development, women's employment and fertility, the relationship between women's labor force participation and the preference for sons specifically is less well understood. I summarize some of the main aspects of the former, before highlighting three studies that examine women's employment and son preference.

The idea that economic growth would reduce poverty and in turn reduce the growth of population became the key principle along which economic and social welfare policies were formulated in India since Independence. But theoretically, the relationship between income and fertility in a developing country is likely to be a dynamic one. On the one hand, with an increase in incomes, a quantity-quality tradeoff might influence the decision of families to limit the number of children in order to maximize a finite set of resources available to their children. Indeed, Indian data shows that economic development has been accompanied with a decline in infant mortality, and even as neonatal mortality as a component of infant mortality remains high, a secular decline has been understood as evidence that families are more confident that their children have

fewer risks of early mortality. On the other hand, children in general and sons in particular may continue to be considered economic assets contributing to the family through income as well as potentially old-age security, suggesting that traditional patrilineal practices may remain strong and prevalent, and that there may be a base below which fertility may not decline (Dreze and Murthi 2001).

At the individual level, Becker's Human Capital theory suggests that with increasing age at marriage and greater labor force participation of women, household production complementarities in marriages would be weakened (Becker 1960, 1975). Since women in India are and expected for the vast majority to remain the primary caregivers of children, we may expect that with greater labor force opportunities and participation of women, the preference for the total number of children would decline. The economic framework on fertility expanded by Easterlin (1975) is based on the theory of consumer behavior where the individual is considered a welfare-maximizing agent, given a range of goods and services, prices, income and own tastes and preferences. In terms of fertility, children are considered a special type of good, and fertility is seen as a response to the demand for children, relative to other goods. Easterlin indicates that in addition to the demand for children and costs of fertility regulation, a key determinant of fertility is the potential output of children, i.e. the number of surviving children that parents would have if they did not limit fertility deliberately. In particular, Easterlin advances the idea of parental tastes – that individuals regulate fertility due to “attitudinal considerations” about norms related to family size, standards about childcare and upbringing. This would suggest that in communities with fewer educational and employment opportunities for women, uncertainty about the survival probabilities of daughters in the short-run, or perceived limitations in human capital investments in daughters in the long-run, prospective mothers may prefer to have sons because it directly relates to a lower total number of children they may ‘need’ to have, and be able to bring up satisfactorily.

Economists have argued that women's labor force participation reduces the demand for children as it increases the opportunity cost associated with them. Each child represents a loss of potential earnings and therefore there is a decrease in the demand for children as

more opportunities for women's labor force participation are available (Mammen and Paxson 2000). Similarly, higher education of women is also hypothesized to reduce the demand of children, since it leads to increased employment and labor market wages. Distinguishing between types of employment, Kasarda (1971) states that country-level analysis highlights the fact that female employment only in the formal sector leads to declining fertility, indicating the fertility decline may depend considerably on the specific type of employment, and that employment in strongly sex-segregated jobs may not lead to a change in gender hierarchies or even reinforce gender differences. Employment in women-dominated occupations may lead to a significant change in fertility preferences and may be associated with broader changes about the role of women as independent economic units or as wage-earners in their own right. Therefore, gender systems that provide women with limited labor force opportunities, either only part-time or as appendages in male-dominated occupations may delay the onset of fertility transitions since the opportunity costs related to childbearing and rearing, while not insignificant, are relatively low (Mason 2001). Rosenzweig and Schultz (1982) studied intra-family resource allocation in rural India, and found that parents seek to maximize household utility when making resource allocation decisions and investments in children, and therefore sons who are perceived to have greater income-earning potential may receive a proportionately greater share of family resources. Previous studies show that higher expected earnings would motivate greater human capital investments in daughters relative to sons, and that intra-household equality brought on by working women's contribution to household income may equalize expenditures on sons and daughters (Behrman et al 1999; Kingdon 2005).

Previous research also suggests that women's autonomy plays a role in their desired family size, but the relationship with the sex preference of children is less clear. In a study of total fertility differences among religious groups in India, Bhat and Zavier (2005) propose that one hypothesis regarding the relatively higher fertility of Muslim women compared to Hindu women is that in general, Muslim women enjoy lower levels of educational and financial achievements and have less of a say in household decision-making and healthcare utilization compared to Hindu women. When the authors examine

if this hypothesis extends to son preference as well, they find that while women's autonomy affects their total fertility, there is no evidence to indicate that lower levels of autonomy among Muslim women affects a preference for sons or daughters.

Three notable exceptions to the relative lack of empirical studies on the relationship between women's employment and son preference in India are Bhat and Xavier (2003), Pande and Astone (2007), and Basu and de Jong (2010). Bhat and Xavier (2003) use data from two rounds of the National Family and Health Survey (NFHS) pertaining to 1992-93 and 1998-99 to measure both the average proportion of sons in the total number of children a woman ideally wants, as well as more directly a preference for more sons than daughters in the ideal number of children. The authors find that wage-based women's work decreases the average proportion of sons a woman wants in 1998-99, controlling for the total ideal number of children, and that women employed in jobs with payments in kind were about 17% more likely to prefer more sons to daughters. The authors do not further parse differences between different occupations of wage- and no-wage-based work. Jobs with payments in kind are more likely to be located in rural areas and predominantly in agriculture where work is often related to repayment of debt, or payments include food grain or a location for residence, in lieu of wages.

Pande and Astone (2007) use data from the NFHS of 1992-93 but limit their analysis to women in rural India. The authors use measures of son preference similar to Bhat and Xavier, and find no evidence to suggest that women's wage- or non-wage work is associated with son preference. The result is similar to Bhat and Xavier (2003) who only find effects between women's wage-based work and son preference for data pertaining to 1998-99. Basu and Jong (2010) also use data from the NFHS of 1992-93 and analyzed families with completed birth histories, measuring son preference as son-targeting stopping behavior, indicated by the sequence of births such that couples cease having more children after reaching their desired number of children. They find that while age, urban residence and household wealth are all negatively associated with son preference, women's participation in the labor force decreases the likelihood of son preference, even after accounting for the overall lower levels of desired family size.

Two features of the existing research can therefore be highlighted. One, the evidence on the role of women's employment on son preference appears to suggest a negative relationship between the two, at least in the NFHS data from 1998-99. Two, studies have not sought to detail the role of women's employment by looking at different categories of employment or types of occupation. While wage- and non wage-based work provides a useful insight into understanding differences, we may look at additional information available in the NFHS to explore the relationship further. In this paper, my first research question is the examination of the relationship between women's employment status and their ideal sex composition of children, an area that few studies have examined in detail.

Following Mason's (2001) research summarized above, I hypothesize that the nature of different types of work – whether agricultural, manual labor, professional and managerial, work in sales or service – mediates the effect of women's employment on their sex preference for children. The possible direction of this effect is less intuitive than what previous research suggests may be the relationship between employment on the whole and son preference. A woman in an agricultural or manual labor job may face greater discrimination in terms of a lower wage rate, working conditions, or physical exertion especially in managing household chores in addition to agricultural work. While employment in general certainly has the potential to make opportunities for economic and physical mobility available to women that they may not have had earlier, and therefore increase the opportunity cost associated with children, women in sharply gender-stratified occupations may not experience empowering or emancipatory externalities to employment. In such a situation, women may continue to prefer sons who they perceive as being potentially less socially disadvantaged. Therefore, a second research question in this paper is to what extent do place of employment and occupation explain any differential preference for more sons.

It is important to note that a fundamental assumption in this analysis is that women's sex-preference for their children is informed by a complex interplay of factors pertaining to the woman's current role and status, as well as the perception that subsequent generations

may have similar or different life experiences and opportunities. The literature on fertility preferences in general suggests that household adapt to current circumstances and prevailing norms and preferences about fertility in terms of the number of children via the diffusion of ideas related to ideal family size and contraceptive use. However the literature on son preference suggests that the diffusion of ideas related to sex preference of children are less prone to change owing to the more entrenched nature of gender relations in society (Bhat and Xavier 2003). Moreover, the impact of a declining total fertility preference on sex preference has been acknowledged in the literature to be a complex issue, where empirical evidence that suggests an intensification of son preference as fertility declines, does not match the theoretical predictions which suggest that the reasons for a decline in fertility – namely education, income and employment – will also lead to a decline in son preference.

DATA

I use data from the last round of the nationally-representative National Family and Health Survey (NFHS) 2005-06 in India, which is modeled along the lines of the Demographic and Health Survey. The NFHS is a key source of nation-wide information on women's health and fertility and is considered to be amongst the most reliable sources of demographic information in India (Bhat and Xavier 1999). The latest wave of the NFHS in 2005-06 had a response rate of 98% in urban areas and 94% in rural areas. The final sample in the survey includes 124,385 women aged 15-49 years.

Dependent Variable: The ideal number and sex composition of children is measured in the NFHS by the question, “If you could back in time to the time you did not have any children and choose exactly the number of children to have in your own life, how many would that be?” Interviewers are instructed to probe women for a numeric response, and women who do give a numeric response are asked a follow-up question: “How many of these children would you like to be girls, how many would you like to be girls and for

how many would the sex not matter?” About 96% of the surveyed women gave a numerical response to the first question and therefore the analytical sample for this study includes 120,923 women aged 15-49.

The dependent variable related to the sex preference for children is coded as an ordinal categorical variable with three categories: son preference: a majority sons preferred, daughter preference: a majority daughters preferred, and no preference. The third category of no preference is calculated from the number of women who reported no preference for sons or for daughters for their ideal number of children, combined with women who reported an equal number of sons and daughters. Conceptually therefore we operationalize son preference as women reporting that of their ideal number of children, they prefer a majority of sons. The advantage of coding the dependent variable with three categories is that we maximize the information available related to women’s preference. Related to our hypothesis about employed women having lower son preference compared to unemployed women, we are able to ask additionally whether employed women would have lower son preference because they have greater preference for daughters or because they are more likely to be indifferent between sons and daughters.

I also include a control variable in the regression models for the ideal total number of children reported by women, in order to control for sex composition and preference differences that may occur simply due to some women wanting different ideal parities. For example, if some women want only one child, they may be more explicit about the sex of the child that they would prefer, relative to women who may want three or four children and therefore more likely naturally to achieve their ideal sex composition, making them more likely to explicitly report that they are indifferent to the preferred sex composition.

A limitation of using desired fertility as a dependent variable is that the response is likely to have been affected by ex-post rationalization (Pritchett 1994). If women’s current actual family size is greater than their ideal desired level, then they may adjust the average ideal number of children upwards so that their existing children do not appear to

be “undesired”. Women may also desire to have more children of a particular sex if their previous children of that sex have died, or on the other hand want fewer children of a particular sex if they associate that sex with a greater likelihood of mortality. Women in larger families in general may also be inclined to go either way with their own desired children – perhaps associating children with additional responsibilities and demands on household resources or on the other hand, being more receptive to the idea of a number of children. In order to account for these effects, the analysis includes control variables for the number of sons and daughters ever-born, and the woman’s family size. This approach is consistent with the method adopted in previous studies on desired fertility and son preference (Gaudin 2011; Lin 2009; Chung and Das Gupta 2007; Pande and Astone 2007; Bhat and Xavier 2003).

Independent Variables: Three distinct measures of women’s employment are used in this analysis. The first set of models use a dichotomously coded independent variable of currently employed vs. currently unemployed. About 41.7% of all women surveyed in the NFHS were currently employed. The independent variable in the second stage of regression models is the ‘employer’, with three responses available to employed women who were asked, “Who do you work for?”: self-employed, work for a family member, work for someone else. The NFHS does not include data on employed women’s wage levels or hours worked. Employment by a family member and self-employment are distinct categories, where the latter relates to an entrepreneurial activity that the woman has initiated herself. Types of occupation are professional/managerial, service, sales, agriculture, manual labor and others. The NFHS does not distinguish between skilled and unskilled manual labor, and uses these standard categories to classify types of occupation without further detail. The explanatory variable of women’s employment is thus categorized in six occupation categories – managerial/professional/technical, agricultural, manual labor, sales, service and others – with unemployed as the reference category.

Control Variables: For understanding economic status, the NFHS includes data on a wealth index, constructed from household-level data, using the Principle Components Analysis approach. This takes into account household ownership of assets ranging from

land to furniture to vehicles, home ownership, electrification, water source, sanitation facilities and whether a household member has a bank account. Given the possibilities of seasonal fluctuations in income as a result of agricultural patterns or migration and potentially multiple sources of income within a household, wealth is preferred as an economic indicator over income.

India is a country with immense social, geographical and cultural diversity, and has a number of religious and caste groups with unique social and cultural histories. Caste and tribal groups in rural India in particular have historically been, and in several regions, continue to be discriminated against in material terms by the so-called “forward-” or non-disadvantaged classes, leading to a continuing legacy of inequity and prejudice that restricts opportunities and shapes life experiences for persons in scheduled caste and tribal groups suffer. However, a more constrained economic situation compels women to seek employment, and we see that lower caste and tribal women have greater labor force participation compared to those from other higher-castes. If son preference or daughter aversion relates directly to the economic value that women in the household contribute, we may expect that women in overall poorer households are significant contributors to the household income and therefore considered to be an asset. For poorer households in general therefore, we may expect find lower levels of son preference. Religious minorities, in particular Muslims, have also been marginalized in several majority-Hindu districts and states where educational and employment opportunities more Muslim families have been scarcely equitable. This is reflected in the overall lower educational and wealth levels of scheduled-caste and tribal groups and Muslim households. There are also important reasons to consider religious differences in son preferences, since religious tenets and beliefs determine and influence social norms and customs as well as household- and community-level gender relations. Consequently, there may be important faith- or religion-based utilities that sons are believed to provide a family. Since it beyond the scope of this paper to probe those differences in detail, I include controls in the analysis for social-group and religious identities – caste, tribe and religions.

Previous literature has suggested that access to media may influence women's sex preference for their children, and given possible interactions with employment as well wealth, I control for the same. The NFHS asks women about the frequency of their reading newspapers, listening to the radio and watching television, with response options being not at all, less than once a week, at least once a week, and almost every day. I construct a media exposure variable with three categories: not at all (no exposure to any of the three mediums), low exposure (less than everyday reading of newspapers or listening to the radio, or watching television less than once a week), and high exposure (daily reading of newspapers or listening to the radio, or once a week or daily watching of television).

METHODS

Since the dependent variable is coded as a categorical variable with three categories, son preference, daughter preference and no preference, I use multinomial logistic regression comparing women with son preference, and women with daughter preference to the reference category of women with no preference. This specification will allow us to determine not only if employed women differ from unemployed women in terms of son preference but also allow us to fully utilize the variance in sex preference of children by comparing son and daughter preference to the large category of women reporting no or equal preference.

With J categories in the dependent variable ($j=1, 2 \dots J$), the model is specified as

$$\log \Omega_{j|J} = \log \left[\frac{\pi_{ij}}{\pi_{iJ}} \right] = \beta_{j|J} x_i ,$$

where π_{ij} is the probability that individual i falls into category j , π_{iJ} is the probability that individual i falls into the reference category J , and x_i is the vector for explanatory variables for individual i .

The advantages of estimating the multinomial logistic model with multiple unordered categories over a series of binary logistic regression models comparing son preference to no preference and daughter preference to no preference are that the former allows us to perform a global test of the null hypothesis that employment has no effect on the sex preference for children, as well as test for differences in the coefficients across the two comparisons. The multinomial logistic regression method makes the assumption of the Independence of Irrelevant Alternatives (IIA), which states that the relative odds of choosing between the multiple categories of the dependent variable do not depend on whether an additional choice is available. In this study, by combining the categories of indifference and equal preference under one category, we eliminate the possibility of any additional choice in terms of the sex preference for children and therefore meet the IIA assumption requirement.

The first stage of analysis relates to the total NFHS sample of 120,923 women. For the second stage, the association between employment type and occupation and women's sex preference for children, is analyzed conditional on women's employment. As such the sample is limited to 49,760 currently-employed women.

RESULTS

Table 1-3 presents the main descriptive statistics of the sample. We see in Table 1 that on average, employed women would ideally prefer a slightly higher total number of children, with women working for the family and those employed in agricultural jobs, preferring the highest number of children as well as the highest number of sons. Table 2 allows us to see the distribution of the dependent variable across the employment categories more directly. We see overall that the proportion of the population which reports an equal number of sons and daughters if their ideal parity is an even number, and those who report that they are indifferent to the ideal sex composition of their children is by far the highest. This suggests that the methodology adopted in this paper of comparing preference for majority sons and daughters to this largest category, is justified. It also

suggests that previous studies that have compared son preference to ‘all others’ may have overlooked the small but significant category of women who report preferring a majority of daughters. Son preference is most prevalent among women engaged by an individual/enterprise in the family itself, and in turn about one-third of all women in agriculture. Conversely, women in professional/managerial and sales women report the highest category of daughter preference. In Table 3, we see that about 41.2% of the total sample is employed women. Roughly the same proportion of the sample works for the family and for someone else. Working for the family relates to work on family-owned agricultural farms, care of poultry and cattle, or some part of a family enterprise. Agriculture remains the highest avenue of employment at about 20% of the total sample and 48% of the employed, which is no surprise given that about 65% of the sample is rural. About a quarter of all employed women are engaged in manual labor.

The multinomial logistic regression results are presented in Tables 4-6. I control for age, urban/rural residence, marital status (whether ever-married), family size, and the number of sons and daughters ever born in all models. For the purpose of presenting complete results from the multinomial logistic regression model, I show the odds ratios and 95% confidence intervals of the odds ratios of women preferring sons compared to no or equal preference, as well as the odds ratios for daughter preference compared to no or equal preference. Odds ratios of less than 1 would indicate the absence of an explicit sex preference for children reported by women.

The first stage of analysis, presented in Table 4, is conducted with the key explanatory variable being a dichotomously coded variable of whether the respondent woman was currently employed or not. The bivariate relationship in Model 1 indicates that employed women on average are 8% more likely than unemployed women to prefer sons compared to being indifferent or having no preference, conditional on the women not preferring more daughters. In Model 2, I include educational attainment and household wealth as explanatory variables, and we see an interesting pattern. The higher the educational attainment, the less likely is son preference among women. Similarly, as household wealth, measured in quintiles, increases, son preference declines. We see however that

employment status continues to be a significant predictor of son preference, with employed women now being 12% less likely to prefer sons compared to unemployed women. The positive relationship between employment and son preference seen in Model 1 thus appears to be operating through educational and wealth differentials, and the models appear to suggest that son preference is highest among the reference categories of the uneducated and poorest women. Interestingly, we notice that while compared to women with no formal education, those who have completed the highest level of education (12+ years) are more likely to prefer daughters, a ‘daughter preference’ appears to exist only when comparing the lower wealth quintiles. Compared to the poorest, women in the top 40% of wealth quintiles are equally likely to be indifferent to the sex of their child as they are to prefer daughters. We find that these relationships are robust to the inclusion in Model 3 of variables related to urban residence, exposure to media and religious identity. We find support for previous evidence indicating that exposure to the media is associated with lower son preference, with women with high levels of media exposure being 24% less likely than women with no media exposure to prefer sons. Overall, we see in Model 3 that employed women compared to unemployed women, are 9% less likely to prefer sons and 11% more likely to prefer daughters. Once again, these effects already account for differences that may appear due to the absolute level of children ideally preferred. In a separate set of analysis (not shown here), I also distinguish between sons and daughters deceased and currently alive, and the results do not differ in any substantial way from the models presented here, which control for sons and daughters ever born.

Stage 1 of the analysis thus confirms the hypothesis that any employment is associated with a preference for a lower son preference, as explicitly stated by women. This association is independent of the effects of education, household wealth, urban residence and media exposure. We also find evidence that employed women are more likely to report wanting a majority of daughters rather than state that they want an equal number of children or are indifferent to the sex of the child.

In Stage 2 of the analysis, we get more information on the nature of women's employment. The results are presented in Table 5. Model 1 indicates that self-employed women and women working for their own household compared to unemployed women are more likely to want sons, but women working for an external employer are no different from unemployed women in their preference for sons or for daughters. After the introduction of controls for educational attainment and wealth, we see that women who work for an external employer are less likely to want sons, whereas compared to unemployed women they are more likely to prefer daughters. The magnitude of son preference declines between Model 1 and Model 2 for self-employed and household-enterprise women but remains positive and statistically significant, whereas in the full model (Model 3), no son preference differences remain between women unemployed and self-employed. We see that self-employed women are more likely than unemployed women to report a preference for a majority of daughters. The results of Stage 2 indicate therefore that the negative association between women's employment and son preference appears to be true for women who are working for an external non-household employer. Self-employed women, those who are generally engaged in small and medium enterprises, or income-generating activities financed by India's booming rural micro-credit industry, are no more likely than unemployed women to prefer sons but are 26% more likely to prefer daughters.

In Stage 3 of the analysis, results of which are presented in Table 6, we see that initially women in professional/technical/managerial jobs are more likely than unemployed women to report an equal preference for sons and daughters or no preference for the sex of their children, compared to a preference for more sons. On the other hand, they are 83% more likely to report a preference for daughters. Son preference is strongly prevalent among women in agricultural and in the 'others' categories of occupation. On inclusion of education and wealth controls in Model 2, women in professional jobs do not any longer prefer sons and this lack of difference with unemployed women holds for Model 3 as well. Their preference for daughters however remains strongly positive and significant, with about 42% greater likelihood of preferring daughters. We find that the absence of son preference seen for women in manual labor and service jobs in Model 2, a

statistically significant result remains only for manual labor in the full model. This is interesting for it suggests that women in manual labor jobs are the only category of employed women to explicitly state more indifference or no preference. On the other hand, employed women in all but agricultural and manual labor jobs are more likely to prefer daughters, indicating that while most employed women are indifferent to a son preference, they clearly prefer a majority of daughters. With all sets of dependent variables, we see that women in urban areas are less likely than rural women to desire more sons, likely reflecting the higher social status overall that women in urban areas may enjoy compared to their rural counterparts.

DISCUSSION

This study provides support for the hypothesis that women's employment is associated with lower levels of son preference, as measured by women's ideal sex preference for their children. Importantly, this study extends previous analysis on this subject by modeling son preference independent of women's preference for a majority of daughters, and finds that employed women, particularly those who are self-employed, or in professional/managerial, sales and service occupations are also likely to prefer a majority of daughters compared to an equal number of sons and daughters or a majority of sons.

The results show that compared to those who are employed by their family, women who are either self employed or employed by others are less likely to indicate son preference. This suggests that the influence of the family is more pervasive if the woman also works for them. Working outside homes or working for oneself likely provides women with greater independence, a sense of autonomy and enterprise, which is also reflected in gender-neutral preferences for children. On the other hand, son preference may be related, as previous research has suggested, to the effects of a patrilineal kinship structure in large parts of India, where inheritance especially that of land, privileges sons almost exclusively. Working for somebody else also represents higher wages in many instances,

and therefore increase the opportunity cost of children in general. As a result, while we may expect a lowered total number of desired children, we see that it reduces son preference as well. This suggests that women who are employed by external employers may have higher levels of autonomy of movement and deeper connections with their work environment, thereby broadening their horizons to the opportunities available to women in the work force. Most importantly, it appears to indicate that working women may be seeing both their sons and daughters as having equal opportunity for earning wages themselves, and therefore do not attach a premium to the economic value that sons signify. The finding that women employed in service sector occupations, such as managerial/professional jobs, sales and services, have a strong daughter preference is especially interesting. Women in these occupations likely see the potential that women in the labor force already have, and that while gender-based discriminations especially in terms of wage or working environments continue, women are increasingly participating in these occupations and able to contribute to their own and/or their household's incomes.

This study establishes an association between women's employment and son preference, but does not explain the underlying mechanism by way of which employment leads women to prefer fewer sons or more daughters, independent of the effects of education, wealth, media, urban residence or religion. Furthermore, a study of cross-sectional data such as this does not allow us to locate son preference in the context of declining total fertility preferences over time. The next step in this research agenda would be to study trends in employment and their relationship with fertility sex preferences over time, using data from the previous waves of the NFHS.

Both Goldin (1993) and Mammen and Paxson (2000) propose that the relationship between economic development and women's labor force participation depends on how men's employment opportunities change with development. A future direction for this research needs to include information on the employment of males in the household and further study interactions between education and employment for both men and women in the household.

The NFHS is not a detailed survey of women's work and as such does not include information on working hours or wage levels. We are therefore unable to differentiate meaningfully between the different occupations other than using the six-fold classification provided by the data. Nonetheless, we find while employment in all but manual jobs makes women as likely to prefer sons as to be indifferent to the sex of their children, there is a strong association with daughter preference. A strong daughter preference may reflect that women have transcended traditional occupational hierarchies and find that labor market opportunities may indeed be available for their daughters and that daughters may no longer be critically disadvantaged. It may reflect the aspiration that labor markets in the future as their own children are born and grow up may increasingly be female-friendly.

To the extent therefore that increasing women's labor force participation opportunities signal that future anticipated returns from investments in sons and daughters may be more equal than they have been in the past, we can expect that employed women have lower levels of son preference, or may be compensating for past biases in favor of sons, by desiring a higher ideal proportion of daughters. Future analysis will also indicate whether increasing female labor force participation is able, at the population level, to increase women's social status and financial resources, and ultimately reverse the determinants of high female mortality and India's skewed population sex ratios.

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Table 1: Ideal Number of Children Desired by Women aged 15-49 in India, 2005-06

	All Children		Sons		Daughters	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
All-India	2.30	0.96	1.03	0.78	0.85	0.64
Employment Status						
Unemployed	2.24	0.92	0.99	0.76	0.82	0.62
Employed	2.40	1.03	1.11	0.81	0.89	0.67
Employer						
Self-Employed	2.37	1.02	1.08	0.80	0.89	0.67
Work for Family	2.61	1.10	1.29	0.87	1.00	0.69
Work for Someone Else	2.26	0.92	1.00	0.77	0.82	0.63
Occupation						
Professional/Managerial	1.95	0.84	0.69	0.68	0.67	0.65
Agriculture	2.64	1.07	1.32	0.82	1.01	0.67
Sales	2.42	1.07	1.09	0.81	0.95	0.72
Service	2.19	0.87	0.94	0.72	0.79	0.61
Manual Labor	2.33	0.94	1.07	0.78	0.87	0.62
Other	2.02	0.91	0.74	0.72	0.71	0.69

Source: National Family and Health Survey 2005-06.

Table 2: Percentage Distribution of Women's Ideal Sex Preference for Children in India, 2005-06

	Majority of Sons	Majority of Daughters	Percentage Preferring Equal No. of Sons and Daughters, or No Preference
All-India	19.7	3.7	76.6
Employment Status			
Unemployed	18.6	3.6	77.8
Employed	21.8	3.8	74.4
Employer			
Self-Employed	20.9	4.3	74.8
Work for Family	27.1	3.6	69.3
Work for Someone Else	19.1	3.8	77.1
Occupation			
Professional/Managerial	9.4	6.6	84.0
Agriculture	29.4	2.8	67.8
Sales	18.7	6.3	75.0
Service	16.5	3.8	79.7
Manual Labor	20.4	3.3	76.3
Other	11.1	7.2	81.7

Source: National Family and Health Survey 2005-06.

Table 3: Distribution of Key Explanatory Variables

	% of Total Sample	% of Employed
Employment Status		
Employed	41.2	100
Employer		
Self-Employed	7.2	17.7
Work for Family	16.5	40.7
Work for Someone Else	16.8	41.5
Occupation		
Professional/Managerial	4.2	10.3
Agriculture	19.1	47.6
Sales	2.5	6.3
Service	3.6	8.8
Manual Labor	9.4	23.5
Other	1.4	3.5

Source: National Family and Health Survey 2005-06.

Table 4: Multinomial Logistic Regression Models Predicting Women's Ideal Sex Preference for Children in India by Employment Status, 2005-06

	Model 1				Model 2				Model 3			
	Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Employed (Ref.=Unemployed)	1.06***	(1.03 - 1.10)	1.03	(0.96 - 1.11)	0.92***	(0.89 - 0.95)	1.12**	(1.04 - 1.21)	0.91***	(0.88 - 0.94)	1.11*	(1.02 - 1.20)
Educational Attainment (Ref.=None)												
Primary					0.82***	(0.79 - 0.86)	1.00	(0.88 - 1.14)	0.86***	(0.82 - 0.90)	0.98	(0.87 - 1.12)
Secondary					0.60***	(0.58 - 0.63)	1.21***	(1.09 - 1.35)	0.64***	(0.61 - 0.67)	1.16**	(1.04 - 1.30)
Higher					0.43***	(0.39 - 0.47)	1.68***	(1.44 - 1.96)	0.47***	(0.42 - 0.52)	1.57***	(1.34 - 1.84)
Household Wealth Quintile (Ref.=Lowest 20%)												
Poorer					0.92***	(0.88 - 0.96)	0.85*	(0.74 - 0.97)	0.97	(0.92 - 1.01)	0.84*	(0.73 - 0.96)
Middle 20%					0.80***	(0.77 - 0.84)	0.96	(0.84 - 1.09)	0.91***	(0.87 - 0.95)	0.92	(0.80 - 1.06)
Richer					0.71***	(0.67 - 0.75)	1.1	(0.97 - 1.26)	0.89***	(0.84 - 0.94)	1.02	(0.88 - 1.18)
Upper 20%					0.65***	(0.61 - 0.69)	1.24**	(1.08 - 1.44)	0.89**	(0.83 - 0.96)	1.1	(0.93 - 1.30)
Urban Residence (Ref.=Rural)									0.81***	(0.78 - 0.85)	1.12*	(1.03 - 1.23)
Exposure to Media (Ref.=None)												
Low									1.00	(0.96 - 1.05)	0.87*	(0.76 - 1.00)
High									0.76***	(0.73 - 0.79)	1.03	(0.91 - 1.16)
N	120,923				120,923				120,923			

Source: National Family and Health Survey 2005-06.

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. OR=Odds Ratios.

Note: National-level Household Weights were used to maximize the representativeness of the sample. All models control for age, marital status, religious and social group, family size, and number of sons and daughters ever-born.

Table 5: Multinomial Logistic Regression Models Predicting Women's Ideal Sex Preference for Children in India by Employer, 2005-06

	Model 1				Model 2				Model 3			
	Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Employer (Ref.=Unemployed)												
Self-Employed	1.19***	(1.11 - 1.26)	1.22**	(1.06 - 1.40)	1.07*	(1.01 - 1.14)	1.26**	(1.10 - 1.46)	1.04	(0.98 - 1.11)	1.26**	(1.09 - 1.45)
Family	1.31***	(1.27 - 1.36)	0.95	(0.86 - 1.05)	1.09***	(1.05 - 1.13)	1.09	(0.98 - 1.21)	1.05*	(1.00 - 1.09)	1.08	(0.98 - 1.21)
Someone Else	1.01	(0.97 - 1.06)	1.02	(0.93 - 1.13)	0.84***	(0.81 - 0.88)	1.13*	(1.02 - 1.25)	0.84***	(0.81 - 0.88)	1.10	(1.00 - 1.22)
Educational Attainment (Ref.=None)												
Primary					0.83***	(0.79 - 0.86)	1.00	(0.89 - 1.14)	0.86***	(0.82 - 0.90)	0.99	(0.87 - 1.12)
Secondary					0.61***	(0.58 - 0.63)	1.21***	(1.09 - 1.35)	0.64***	(0.61 - 0.67)	1.16**	(1.04 - 1.30)
Higher					0.43***	(0.39 - 0.48)	1.68***	(1.44 - 1.96)	0.47***	(0.43 - 0.52)	1.57***	(1.34 - 1.84)
Household Wealth Quintile (Ref.=Lowest 20%)												
Poorer					0.91***	(0.87 - 0.95)	0.85*	(0.74 - 0.97)	0.96*	(0.91 - 1.00)	0.85*	(0.74 - 0.97)
Middle 20%					0.80***	(0.76 - 0.84)	0.97	(0.85 - 1.10)	0.90***	(0.85 - 0.94)	0.93	(0.81 - 1.07)
Richer					0.71***	(0.67 - 0.75)	1.12	(0.98 - 1.28)	0.88***	(0.83 - 0.93)	1.03	(0.89 - 1.19)
Upper 20%					0.66***	(0.62 - 0.70)	1.26**	(1.09 - 1.45)	0.88***	(0.82 - 0.94)	1.11	(0.94 - 1.31)
Urban Residence (Ref.=Rural)									0.83***	(0.80 - 0.86)	1.12*	(1.02 - 1.23)
Exposure to Media (Ref.=None)												
Low									1.01	(0.97 - 1.06)	0.87*	(0.76 - 0.99)
High									0.77***	(0.73 - 0.80)	1.03	(0.91 - 1.16)
N	120,923				120,923				120,923			

Source: National Family and Health Survey 2005-06.

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. OR=Odds Ratios.

Note: National-level Household Weights were used to maximize the representativeness of the sample. All models control for age, marital status, religious and social group, family size, and number of sons and daughters ever-born.

Table 6: Multinomial Logistic Regression Models Predicting Women's Ideal Sex Preference for Children in India by Occupation, 2005-06

	Model 1				Model 2				Model 3			
	Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference		Equal or No Preference vs. Son Preference		Equal or No Preference vs. Daughter Preference	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Occupation (Ref.=Unemployed)												
Manager/Professional	0.67***	(0.59 - 0.76)	1.83***	(1.56 - 2.16)	0.99	(0.87 - 1.13)	1.47***	(1.24 - 1.75)	1.02	(0.89 - 1.16)	1.42***	(1.19 - 1.69)
Agriculture	1.32***	(1.27 - 1.36)	0.84***	(0.76 - 0.92)	1.04*	(1.00 - 1.08)	0.97	(0.88 - 1.08)	0.98	(0.95 - 1.02)	0.98	(0.88 - 1.09)
Manual Labor	1.03	(0.97 - 1.08)	0.94	(0.83 - 1.07)	0.89***	(0.84 - 0.94)	1.04	(0.91 - 1.18)	0.90***	(0.86 - 0.96)	1.02	(0.90 - 1.16)
Sales	0.89	(0.78 - 1.01)	1.45**	(1.14 - 1.85)	0.89	(0.78 - 1.01)	1.45**	(1.14 - 1.84)	0.92	(0.81 - 1.05)	1.39**	(1.09 - 1.76)
Service	0.92	(0.84 - 1.01)	1.32**	(1.10 - 1.60)	0.85***	(0.77 - 0.93)	1.42***	(1.18 - 1.72)	0.92	(0.83 - 1.01)	1.35**	(1.12 - 1.64)
Other	0.65***	(0.51 - 0.82)	2.02***	(1.52 - 2.69)	0.87	(0.68 - 1.10)	1.70***	(1.27 - 2.27)	0.89	(0.70 - 1.13)	1.61**	(1.20 - 2.15)
Educational Attainment (Ref.=None)												
Primary					0.83***	(0.79 - 0.87)	0.99	(0.88 - 1.12)	0.86***	(0.82 - 0.90)	0.98	(0.86 - 1.11)
Secondary					0.61***	(0.58 - 0.64)	1.18**	(1.06 - 1.32)	0.64***	(0.61 - 0.67)	1.14*	(1.02 - 1.28)
Higher					0.43***	(0.39 - 0.48)	1.52***	(1.29 - 1.79)	0.46***	(0.42 - 0.51)	1.44***	(1.22 - 1.70)
Household Wealth Quintile (Ref.=Lowest 20%)												
Poorer					0.92***	(0.88 - 0.96)	0.84*	(0.73 - 0.96)	0.96	(0.92 - 1.01)	0.84*	(0.73 - 0.96)
Middle 20%					0.81***	(0.77 - 0.85)	0.94	(0.82 - 1.07)	0.91***	(0.87 - 0.95)	0.92	(0.80 - 1.05)
Richer					0.73***	(0.69 - 0.77)	1.06	(0.92 - 1.21)	0.89***	(0.84 - 0.94)	1.00	(0.86 - 1.16)
Upper 20%					0.68***	(0.64 - 0.72)	1.18*	(1.02 - 1.37)	0.90**	(0.84 - 0.96)	1.08	(0.91 - 1.28)
Urban Residence (Ref.=Rural)									0.83***	(0.79 - 0.86)	1.08	(0.99 - 1.19)
Exposure to Media (Ref.=None)												
Low									1.01	(0.96 - 1.05)	0.86*	(0.75 - 0.99)
High									0.76***	(0.73 - 0.79)	1.02	(0.91 - 1.15)
N	120,923				120,923				120,923			

Source: National Family and Health Survey 2005-06.

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. OR=Odds Ratios.

Note: National-level Household Weights were used to maximize the representativeness of the sample. All models control for age, marital status, religious and social group, family size, and number of sons and daughters ever-born.