## How Girls Fare Under Different Regimes of Sex Preference For Children

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The question of how girls fare in settings in which parents prefer sons has been researched extensively in demography. The existing literature has focused both on assessing the wellbeing of girls who are born into cultures with strong son preference as well as measuring the extent to which girls are eliminated from the population all together—the problem of "missing women"—in a handful of regions across the world (Oster 2009; Das Gupta and Bhat 1997; Sen 1990). These questions, important in their own right, are closely tied to other central research veins in the discipline, including women's position and status, and gendered differences in patterns of family formation and human capital investment in different societies (Mason 1986, Caldwell et al. 1992).

This literature widely assumes an inverse relationship between son preference and the wellbeing of girls (Guilmoto 2009, Bongaarts 2013). That is, as son preference diminishes, human capital investment in girls - and by extension, gender parity - increases. Yet there have been no studies to date that directly test the link between parents' stated preference for the sex composition of their children and how girls fare in a comparative perspective. The current study examines gendered differences in the wellbeing of children given their parents' preference for having sons versus daughters across 55 developing nations.

This gap in the literature is an important one to fill because son preference and the wellbeing of girls may not work in lock step. At one extreme, there are in fact only a handful of societies in which parents act on their preference for sons in a sufficiently systematic way so as to produce a change in the natural sex ratio at birth. That is, there are many more countries in which parents state that they prefer sons to daughters than there are countries with "missing women." On the other hand, although the most common response to stated sex preference for children across the developing world is that of a balanced mix (i.e., having both daughters and sons) we cannot infer that this reflects gender neutrality or a more equitable position for girls. Those families who desire a balanced mix of boys and girls may have highly gendered

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expectations of their children, such as expecting boys to go to school and girls to help with household production.

In the existing literature on sex preference for children, stated sex preference is often categorized in one of four ways. Parents may say that they prefer sons, prefer daughters, prefer (at least) one of each sex, or are indifferent to the sex of their children (Fuse 2010). Only the last of these categories (indifferent) represents true gender neutrality. The other three categories convey some gendered preference. The existing literature shows that the modal response is to prefer a balanced gender mix among one's children and interprets this finding as a signal that parents are more gender neutral than they may actually be (Arnold 1992; Arnold 1997). Our study examines this assumption empirically. If families treat sons and daughters differently, then there is no reason to interpret the prevalence of preference for equal numbers of boys and girls as a sign that girls are valued equally or fare as well as boys in those families or societies.

Previous studies have focused on assessing the extent to which son preference exists across the world. Some measure the magnitude of son preference through parents' behavior, such as contraceptive use relative to sex composition of children, as well as feeding practices and medical care sought for daughters versus sons (Arnold 1992; Arnold 1997). Others measure son preference through parents' stated preferences regarding the ideal sex composition of their children (Fuse 2010). Our study extends this literature by examining the relationship between parents' stated preference for the sex composition of their children and the wellbeing of girls relative to boys across each of the four types of sex preference. The findings of this study will contribute to ongoing debates about reliable measures of women's position in the developing world (Mason 1986).

## Data and Research Design

Using cross-national data from the Demographic and Health Surveys (DHS), we assess how girls fare given their mothers' stated preference regarding the sex composition of children. To do so, we examine 131 Demographic and Health Surveys conducted in 55 developing countries from 1993 to 2012. While DHS data are typically collected from a nationally representative sample of reproductive-aged women (aged 15-49), we limit our sample to ever-married women with at least one living child.

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We measure mother's stated sex preference for children using a series of attitudinal questions included in all DHS questionnaires since 1992. In these surveys, women with living children are asked the following questions: "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?" "How many of these children would you like to be boys, how many would you like to be girls, and for how many would the sex not matter?" We divide our sample of ever-married women with children into four analytical categories based on their responses: (1) "prefer sons," for those who desire more boys than girls; (2) "prefer daughters, for those who desire more girls than boys; (3) "prefer balance," for those who desire equal numbers of girls and boys; and (4) "indifferent," for those who respond that the sex of their children does not matter.

We measure how girls (and boys) fare using measures of wellbeing across several domains including health and human capital. For each child, the DHS surveys include measures of breastfeeding duration, immunization, medical treatment received for illnesses, such as diarrhea, fever, and cough, height and weight for age (nutrition), and school enrollment status. Indicators of nutrition and overall health are measured for children under age 5 and school enrollment status is measured for children aged 5 to 24. We also examine whether the patterns of welfare by preferred sex composition differ systematically by the child's birth order.

The data also include measures of household characteristics, including parents' literacy and education, proxy measures of household wealth, parents' occupational status, mother's empowerment and gender role attitudes, and mother's age at first marriage. We use these characteristics as controls in our multivariate analyses. To improve comparability across countries, we include only standardized questions (not country-specific) from the DHS and use a nine-component household wealth index that is directly comparable across countries (for further explanations, see Case, Paxson, and Ableidinger 2004 and Fortson 2008).

Our analyses are organized as follows. First, we assess how girls fare along our measures of health and wellbeing across the four analytical types of sex preference. We analyze this both unconditionally, and controlling for the characteristics of parents and households. Second, we examine regional differences in girls' treatment and well-being across eight geographic regions: Latin America, West Africa, Central Africa, South Africa, East Africa, West Asia and North Africa, South Asia, and Southeast Asia. Third, for a subset of 20 countries, we assess trends in

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stated sex preferences and girls' welfare across three time periods: 1993-1999, 2000-2005, and 2006-2012.

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