

Parental investment in India: are boys and girls treated differently?

Do parents give their daughters less time and fewer resources than their sons? Silvia Helena Barcellos, Leandro Carvalho and Adriana Lleras-Muney look at data on parental investment in India.

Women in developing countries fare worse than men in many dimensions: they receive less schooling, they have lower rates of labour force participation, they earn lower salaries, they are more likely to be poor and they often lack fundamental rights such as the right to vote or the right to own property. One extreme manifestation is that mortality rates for girls are substantially higher than for boys in many developing countries, particularly in countries with 'son preferences' such as India.

Surprisingly however, research does not always support the idea that these differences are due to explicit differential treatment of boys and girls. Many studies find evidence that boys receive more nutrition, more healthcare, more breastfeeding and more vaccinations than girls. But Deaton (1997), for example, states that there is no evidence that parents spend more on boys than on girls; and Duflo (2005) concludes that 'even in the countries where the preference for boys is strongest, it is hard to find evidence that girls receive less care than boys under normal circumstances.'

Our research investigates whether parents treat girls and boys differently in India. Previous work assumes that boys and girls live in families with similar characteristics. But we show that this assumption is incorrect if families have a preference for sons and keep having children until they

have the desired number of sons, which appears to be the case in India. As a consequence of these male-biased 'stopping rules' of childbearing, empirical estimates of discrimination are biased.

We develop a novel empirical strategy that addresses these issues. It relies on the observation that – in the absence of sex-selective abortion – the child's sex is random at birth. If the child's sex is random, then families that just had a boy are identical to families that just had a girl in terms of predetermined characteristics. Therefore, any differences in terms of parental inputs can be attributed to the sex of the newborn.

But over time a correlation will develop between the youngest child's gender and family characteristics, because the families that had a girl are less likely to stop having

Households with an infant boy under the age of one spend 30 minutes more a day engaged in childcare than households with an infant girl

children. To overcome this problem, we restrict our sample to families with children that are still 'young enough' and have not had the opportunity to have other children.

The data suggest that families with boys and girls aged 0-15 months (and possibly a bit older) look identical in terms of observables.

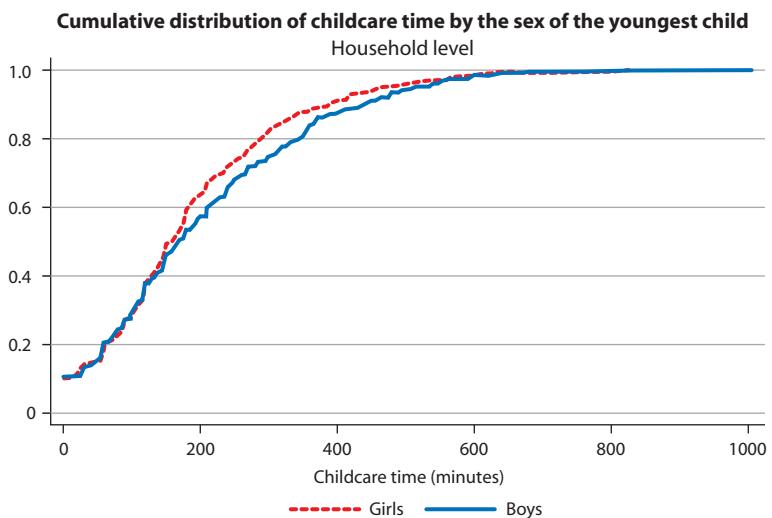
We use them to study whether boys are given more inputs than girls.

We also use our identification strategy to investigate whether boys and girls are treated differently in terms of an important but infrequently studied type of investment in children: childcare time. Starting with Becker (1965), economists have recognised that, in addition to money, time is a key input into the 'child production function'. Time is particularly important to the extent that it is complementary to many other inputs.

But there are no estimates of gender differences in parental time allocation for developing countries. Using data from the Indian Time Use Survey, we investigate whether families spend more time engaged in childcare when a boy is born instead of a girl. We also study gender differences in other

frequently studied measures of parental investments, such as vaccinations, using the Indian Demographic and Health Survey.

Our results indicate that families do indeed treat boys and girls differently. Preliminary evidence of differential treatment by gender is presented in Figure 1, which shows the

Figure 1: Childcare time by gender, Indian Time Use Survey, 1998-99

cumulative distribution of childcare separately by gender of the youngest child under the age of one. In Figure 1, the baby boy distribution appears to the right of the baby girl distribution, suggesting that boys receive more childcare than girls.

We confirm this pattern in more formal analysis. Our results show that households with an infant boy under the age of one spend roughly 30 minutes more per day – or 14% more time – engaged in childcare than

A back of the envelope calculation using estimates from research on the effects of breastfeeding and vaccinations on mortality suggests that gender differences in investments explain about 27% of excess girl mortality among children 12-36 months old (or two additional girl deaths per 1,000 children). We know of no good estimates of how parental time affects outcomes – but if we assume a modest effect of time inputs on mortality, then we can explain an additional 3.4% of girl excess mortality.

Boys are more likely to be given vaccinations and vitamin supplements, and they are breastfed for longer

households with an infant girl. The quality of the childcare also appears to be higher for baby boys. This gender difference appears for different kinds of childcare, including supervision and physical care.

The effect is larger for households with only one child under the age of six, who spend more than 60 minutes more per day (about 30% more) when their youngest is a boy. In addition, our results show that boys are more likely to be vaccinated, to be breastfed longer and to be given vitamin supplements. In general, we find these inputs to be at least 10% higher for boys.

Although we cannot provide conclusive evidence as to why parents give girls fewer resources, we investigate some possibilities. Parents might prefer boys to girls; investments in boys might have larger returns (for example, men have higher wage rates than women); boys might be seen as needing more resources; and families that have girls might anticipate that eventually their family size will be larger.

We provide suggestive evidence that boys do not in fact 'need' more than girls: if we look at South Africa, a developing country with data on investments and no evidence of son

preference, we find that there are no systematic gender differences in most inputs.

We also investigate whether our results are driven by the change in anticipated family size. We find little evidence to support this theory. Therefore our findings suggest that higher returns or preference for boys drive the differential investments.

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Further reading

Gary Becker (1991) *A Treatise on the Family*, Harvard University Press

Angus Deaton (1997) *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy*, John Hopkins University Press

Esther Duflo (2005) 'Gender Equality in Development', MIT Working Paper