

Reported Preferences for Sons and Daughters

Johannes Norling
Mount Holyoke College

October 2, 2020

Short abstract

This project compares reported preferences for sons and daughters, collected by dozens of Demographic and Health Surveys in Africa, Asia, and Latin America. Women on average report wanting more sons than daughters in Africa and Asia, while daughter preference is more common in Latin America. Everywhere, husbands are more likely to report wanting sons than are their wives. In Africa, reported preferences for sons or daughters are associated with historical ethnic group characteristics and contemporary countrywide characteristics that provide incentives for having sons or daughters. In Asia and Latin America, the relationship between incentives and preferences is more mixed.

Extended abstract

Son preference is widespread across much of Asia. Especially in India, China, and several other countries in which female fetuses are more likely to be aborted than male fetuses, strategies to reduce son preference have received significant public policy attention (Zheng 2007, Das Gupta 2016). Economic research into the incidence and causes of sex preferences during childbearing has likewise focused on Asia (Das Gupta et al. 2003) and on second-generation Asian immigrants in the United States and elsewhere (Almond and Edlund 2008).

Although there is little evidence of widespread abortion of female fetuses outside of Asia, sex preferences influence childbearing decisions around the world. In previous work (Norling 2018), I use observed sequences of sons and daughters to estimate that at least one-quarter of parents in Africa, Asia, and the Americas prefer sons, daughters, or a balance of the two. Reported preferences, collected (usually from women alone) by more than 100 Demographic and Health Surveys, confirm these findings. In Africa, Asia, and Latin America, at least 60 percent of women report preference for equal numbers of sons and daughters, meaning that about one third of women in each region prefer sons to daughters or vice versa.

In this project, I first document characteristics of reported preferences for total number of children. Several dozen Demographic and Health Surveys administered since the 1980s record the number of children to whom each woman has given birth. Table 1 lists the surveys, by country (notably, there have been three surveys in India, but none in China). For women who are of childbearing age, 15–49, and who have at least one child, the surveys ask, “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?” For women without children, the surveys ask, “If you could choose exactly the number of children to have in your whole life, how many would that be?” Table 2 provides summary statistics of the responses to these questions. Women in Africa report wanting 4.9 children on average, more than two children higher than the average in Asia (2.7) and Latin America (2.6). The most common desired number of children is four or more in Africa, while Africa and Latin America have a two-child norm.

Among women aged 40 and older, average actual number of children and average ideal number of children are nearly identical in Africa, 5.7 versus 5.8. However, these averages mask

substantial variation by woman: Actual and ideal number of children match for just less than 20 percent of women. In Asia and Latin America, there is greater difference between actual and ideal numbers of children on average (with actual fertility overshooting ideal fertility by up to one child on average), but a greater share of women reach their desired family size. Finally, a small number of surveys similarly record fertility preferences from each spouse in a marriage. Everywhere, husbands report wanting larger families than do wives, and this difference is greatest in Africa.

For all women, the surveys ask a follow-up question, “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?” The first two rows of Table 3 record the percentages of women who report wanting only sons or only daughters. These values are small, and everywhere at least 88 percent of parents want a mix of sons and daughters. Sex preferences become more apparent when observing the intensive margin of how many sons versus daughters women want. In Asia, 20.6 percent of women want more sons than daughters, while only 7.2 percent want more daughters than sons. The difference between these values, which I refer to as net son preference, is 13.4 percentage points. Net son preference in Africa is smaller at 6.3 percentage points, and negative in Latin America at -6.0 percentage points. Son preference is most widespread in Asia, but is also more common than daughter preference in Africa, while daughter preference is most common in Latin America.

Sex preferences are more common among women who want large families. In Africa, net son preference is nearly zero among women who want one or two children, but 7.4 percentage points among women who want three or more children. In Asia, net son preference is 26.6 percentage points among women who want three or more children. Similarly, daughter preference is most common in Latin America among women who want three or more children. Net son preference is even stronger among women who report wanting an odd number of children. Finally, net son preference is strongest among men everywhere, including in Latin America. For example, nearly 31 percent of husbands in Africa want more sons than daughters, while only seven percent of their wives do.

In the remainder of this project, I compare the relative incidence of reported preferences for sons versus daughters across a variety of cultural, economic, and political characteristics. Eighty percent of the Demographic and Health Surveys administered in Africa record each respondent’s sub-national location. Following Fenske (2013), I use the Tribal Map of Africa (Murdock 1959) to link these locations to ethnic group characteristics recorded around the time of colonization in the Ethnographic Atlas (Murdock 1967). Several of these characteristics may provide incentives for having sons or daughters. (In ongoing work, I am alternatively matching ethnicity, self-reported by many of these same respondents, directly to the Ethnographic Atlas.)

Panel (a) of Table 4 compares the relative incidence of son and daughter preference by these characteristics. Alesina et al. (2013) show that male-favoring gender norms are more common today in areas of Africa where the plow was historically used in agriculture. I similarly find that net son preference is 9.4 percentage points where the plow was historically used in agriculture, and only 6.7 percentage points where it was not, yielding a difference of 2.7 percentage points between the two areas. Net son preference is similarly more than 14 percentage points higher where agriculture is primarily performed by men, where a dowry is paid at marriage, where couples reside with the husband’s family after marriage, and where inheritance follows patrilineal lines. There is little difference between areas where polygamy is and is not common.

Panel (b) of Table 4 performs similar comparisons by contemporary country-level characteristics. In countries where the labor force participation rate of men relative to women is above the median for Africa, net son preference is 10.8 percentage points higher than areas with greater relative labor force participation by women. Other characteristics that similarly may provide an incentive for having a son are likewise associated with greater son preference: Relative high literacy rates and income of men compared to women, a relatively high share of parliament that is male, a lower minimum legal age at marriage for women, and a high maternal mortality ratio.

Finally, panel (c) compares reported sex preferences by individual-level characteristics. Net son preference is higher among women in Africa who did not complete primary school, who are not employed, who have at least one sister, who married young, who are in a polygamous marriage, and who are more likely to send their sons to school. The pattern reverses only for child mortality: Women who have had more daughters die than sons indicate a preference for daughters.

Together, the findings in Table 4 indicate that incentives for having sons in Africa are generally associated with greater reported son preference. The relationship is more mixed in Asia and Latin America. For example, son preference is especially widespread in countries with particularly female literacy rates, but daughter preference is especially widespread in countries with a low minimum legal age at marriage.

Works cited

- Almond, Douglas, and Lena Edlund. 2008. "Son-Biased Sex Ratios in the 2000 United States Census." *PNAS*, 105 (15): 5681–5682.
- Alsina, Alberty, Paola Giuliano, and Nathan Nunn. 2013. "On the Origins of Gender Roles: Women and the Plough." *Quarterly Journal of Economics*, 128 (2): 469–530.
- Ashraf, Nava, Natalie Bau, Nathan Nunn, and Alessandra Voena. 2018. "Bride Price and Female Education." Working paper.
- Butcher, Kristin F., and Anne Case. 1994. "The Effect of Sibling Sex Composition on Women's Education and Earnings." *Quarterly Journal of Economics*, 109 (3): 531–563.
- Carranza, Eliana. 2014. "Soil Endowments, Female Labor Force Participation, and the Demographic Deficit of Women in India." *American Economic Journal: Applied Economics*, 6 (4): 197–225.
- Das Gupta, Monica, Jiang Zhenghua, Li Bohua, Xie Zhenming, Woojin Chung, and Bae Hwa-Ok. 2003. "Why is Son Preference so Persistent in East and South Asia? A Cross-Country Study of China, India and the Republic of Korea." *Journal of Development Studies*, 40 (2): 153–187.
- Das Gupta, Monica. 2016. "Is Banning Sex-Selection the Best Approach for Reducing Prenatal Discrimination?" Working paper.
- Dimitrova-Grajzl, Valentina, and Iyabo Obasanjo. 2019. "Do Parliamentary Gender Quotas Decrease Gender Inequality? The Case of African Countries." *Constitutional Political Economy*, 30 (2): 149–176.
- Ebenstein, Avraham. 2014. "Patrilocality and Missing Women." Working paper.
- Fenske, James. 2013. "Does Land Abundance Explain African Institutions." *Economic Journal*, 123 (573): 1363–1390.
- Fenske, James. 2015. "African Polygamy: Past and Present." *Journal of Development Economics*, 117: 58–73.
- Giuliano, Paola. 2018. "Gender: A Historical Perspective." In *The Oxford Handbook of Women and the Economy*, edited by Susan L. Averett, Laura M. Argys, and Saul D. Hoffman. Oxford: Oxford University Press.
- Milazzo, Annamaria. 2014. "Son Preference, Fertility and Family Structure: Evidence from Reproductive Behavior among Nigerian Women." World Bank Policy Research Working Paper 6869.
- Milazzo, Annamaria. 2018. "Why are Adult Women Missing? Son Preference and Maternal Survival in India." *Journal of Development Economics*, 134: 467–484.
- Murdock, George. 1959. *Africa: Its Peoples and their Culture History*. New York: McGraw-Hill.
- Murdock, George. 1967. "Ethnographic Atlas: A Summary." *Ethnology*, 6 (2): 109–236.
- Norling, Johannes. 2018. "Measuring Heterogeneity in Preferences over the Sex of Children." *Journal of Development Economics*, 135: 199–221.
- Qian, Nancy. 2008. "Missing Women and the Price of Tea in China: The Effect of Sex-Specific Earnings on Sex Imbalance." *Quarterly Journal of Economics*, 123 (3): 1251–1285.
- Sudha, S., and S. Irudaya Rajan. 1999. "Female Demographic Disadvantage in India 1981–1991: Sex Selective Abortions and Female Infanticide." *Development and Change*, 30 (3): 585–618.

Zheng, Zhenzhen. 2007. "Interventions to Balance Sex Ratio at Birth in Rural China." In *Watering the Neighbour's Garden: The Growing Demographic Female Deficit in Asia*, edited by Isabelle Attane and Christophe Z. Guilmoto, 327–346. Paris: Committee for International Cooperation in National Research in Demography.

Table 1: Demographic and Health Surveys

	Years		Years
Africa		Asia	
Angola	2015	Afghanistan	2015
Benin	1996, 2001, 2006, 2011, 2017	Armenia	2000, 2005, 2010, 2015
Burkina Faso	1998, 2003, 2010	Azerbaijan	2006
Burundi	2010, 2016	Bangladesh	1993, 1996, 1999, 2004, 2007, 2011, 2014
CAR	1994	Cambodia	2000, 2005, 2010, 2014
Cameroon	1998, 2004, 2011	India	1998, 2005, 2015
Chad	1996, 2004, 2014	Indonesia	1994, 1997, 2002, 2007, 2012, 2017
Comoros	2012	Jordan	1997, 2002, 2007, 2009, 2012, 2017
Congo	2005, 2011	Kazakhstan	1995, 1999
Cote d'Ivoire	1998, 2011	Kyrgyzstan	1997, 2012
DRC	2007, 2013	Maldives	2009, 2016
Egypt	1995, 2000, 2003, 2005, 2008, 2014	Nepal	1996, 2001, 2006, 2011, 2016
Ethiopia	2000, 2005, 2011, 2016	Pakistan	2006, 2012, 2017
Gabon	2000, 2012	Philippines	1998, 2003, 2008, 2013, 2017
Ghana	1998, 2003, 2008, 2014	Tajikistan	2012, 2017
Guinea	1999, 2005, 2012	Timor-Leste	2009, 2016
Kenya	1998, 2003, 2008, 2014	Uzbekistan	1996
Lesotho	2004, 2009, 2014	Vietnam	1997, 2002
Liberia	2007, 2013		
Madagascar	1997, 2003, 2008	Latin America	
Malawi	2000, 2004, 2010, 2015	Bolivia	1998, 2003, 2008
Mali	1995, 2001, 2006, 2012	Brazil	1996
Morocco	2003	Colombia	1995, 2000, 2005, 2010, 2015
Mozambique	1997, 2003, 2011	Dominican Republic	1996, 1999, 2002, 2007, 2013
Namibia	2000, 2006, 2013	Guatemala	1995, 1998, 2014
Niger	1998, 2006, 2012	Guyana	2009
Nigeria	2003, 2008, 2013	Haiti	2000, 2005, 2012, 2016
Rwanda	2000, 2005, 2007, 2010, 2014	Honduras	2005, 2011
Sao Tome & Principe	2008	Nicaragua	1998, 2001
Senegal	2005, 2010, 2012, 2015, 2017	Peru	1996, 2000, 2004, 2009, 2010, 2011, 2012
Sierra Leone	2008, 2013		
South Africa	2016		
Swaziland	2006		
Tanzania	1996, 2004, 2010, 2015		
Togo	1998, 2013		
Uganda	1995, 2000, 2006, 2011, 2016		
Zambia	1996, 2001, 2007, 2013		
Zimbabwe	1994, 1999, 2005, 2010, 2015		

Table 2: Reported fertility preferences

	Africa	Asia	Latin America & the Caribbean
Countries	40	21	15
Surveys	144	68	52
Women aged 15–49	1,162,957	1,619,288	637,035
Average age	28.5	30.4	29.5
Average ideal number of children	4.9	2.7	2.6
0 children (%)	1.5	2.9	3.5
1 child (%)	1.4	5.1	9.6
2 children (%)	12.8	50.4	44.6
3 children (%)	14.1	19.2	23.1
4+ children (%)	70.3	22.4	19.2
Women aged 40–49	191,764	347,584	130,348
Average ideal number of children	5.7	3.1	3.2
Average actual number of children	5.8	3.9	4.2
Ideal=actual number of children (%)	19.8	34.0	25.8
Women living with a husband who is also surveyed	192,948	190,665	44,401
Average ideal number of children among wives	5.4	2.8	3.0
Average ideal number of children among husbands	7.1	2.9	3.3
Wife's=husband's ideal number of children (%)	23.1	51.5	33.6

Table 3: Reported sex preferences

	Africa	Asia	Latin America & the Caribbean
Want only sons (%)	1.2	3.3	4.6
Want only daughters (%)	1.1	1.3	7.3
Difference	0.1	2.0	-2.7
Want more sons than daughters (%)	21.3	20.6	13.0
Want more daughters than sons (%)	15.0	7.2	19.1
Difference (“Net son preference”)	6.3	13.4	-6.0
Net son preference if ideal number of children is 1 or 2	-0.2	3.5	-3.7
Net son preference if ideal number of children is 3 or more	7.4	26.6	-9.0
Net son preference if ideal number of children is even	3.7	3.7	-1.8
Net son preference if ideal number of children is odd	11.2	36.9	-13.0
Net son preference among wives	7.0	14.8	-4.8
Net son preference among husbands	30.9	19.2	13.5

Table 4: Correlates of sex preferences

	Africa		Asia	Latin America & the Caribbean	
	Net son preference where factor favors				
	Men	Women	Difference		
<i>Historical ethnic group characteristics</i>					
Plow used in agriculture (Alesina et al. 2013)	9.4	6.7	2.7		
Agriculture primarily performed by men (Carranza 2014)	16.4	0.5	15.9		
Polygamy common (Fenske 2015)	6.9	7.2	-0.3		
Dowry paid at marriage (Ashraf et al. 2018, Giuliano 2018)	25.1	7.0	18.1		
Patrilocal residence after marriage (Ebenstein 2014)	9.2	-6.0	15.2		
Patrilineal kinship (Das Gupta et al. 2003)	8.3	-6.2	14.5		
<i>Country-level characteristics (above or below median)</i>					
Labor force participation men÷women (Carranza 2014)	12.7	1.9	10.8	9.6	-5.1
Literacy rate men÷women (Sudha and Rajan 1999)	10.4	2.0	8.4	14.4	7.2
Average income men÷women (Qian 2008)	11.2	2.6	8.5	11.3	-4.9
Share of parliament that is male (Dimitrova-Grajzl and Obasanjo 2019)	6.8	5.8	1.0	0.6	-7.7
Minimum legal age at marriage for women	6.7	6.0	0.7	-7.0	-4.8
Maternal mortality ratio (Milazzo 2014, 2018)	8.7	3.8	4.9	-2.9	3.6
<i>Individual-level characteristics</i>					
Not completed primary school	9.2	2.8	6.4	16.7	1.3
Not employed in past year	6.4	6.2	0.2	3.9	-2.2
Have at least one sister (Butcher and Case 1994)	5.4	4.7	0.7	0.8	0.1
First married before age 18	8.6	5.1	3.5	10.7	-1.7
In a polygamous marriage	11.3	7.3	4.0	-5.2	-8.8
Greater share of sons' schooling on track than daughters'	6.9	4.7	2.2	3.3	3.7
More daughters than sons have died	4.7	9.9	-5.1	-1.9	-7.1