

Effect of Parental Preference for the Sex of a Child on Child Outcomes

Evidence from Korea

Won Fy Lee
University of Minnesota

Society for Research in Educational Effectiveness Conference, March 6-9, 2019, Washington DC.

Abstract

This study examines the effect of parental sex preference for children on parental inputs and child outcomes, using a nationally representative survey data of birth cohorts born in 2008. I utilize the survey question that directly ask parents' underlying gender preferences towards a newborn child and used the responses as a measure of gender preference to examine causal effect of gender preferences on parental inputs and child outcomes at the age of 4. I found that parents' sex preferences had a statistically significant and sizable effect on the parents' inputs to their child and the child's subsequent cognitive outcome (up to 0.7 SD). This is the first study to use parent-level preference measures to estimate the effect of preferences on child outcomes.

Introduction

- Parental preference for gender of child has been documented in many cultures:
 - Son preference: India (Sen, 2003; Kugler and Kumar, 2017; Robitaille and Chatterjee, 2018; Barcellos, Carvalho and Lleras-Muney, 2014) China (Yi et al., 1993) Korea (Park and Cho, 1995) Turkey (Altindag, 2016) U.S. (Dahl and Moretti, 2008; Blau et al., 2017) Finland (Andersson et al., 2006)
 - Daughter Preference: Denmark, Sweden and Norway (Andersson et al., 2006) Sweden (Miranda, Dahlberg and Andersson, 2018)
- Common ways to measure gender preference in the literature:
 - sex ratios (region, country-level, preference is inferred from the region-specific sex-ratio compared to biological norm of 105 – eg., Son-preference: China (117), India (111) –
 - aggregate (conditional or unconditional) sex differences in parental input (Baker and Milligan (2016); Choi and Hwang (2017)).
 - weak proxy – eg. conception timed properly or wanted? (Baker and Milligan (2016)) –
- The issue in the literature:
 - reliance on the aggregate data (Qian (2008))
 - * impossible to identify preference at the individual level

		(a) Group 1		(b) Group 2	
		Prefer Boy(P=B)	Prefer Girl(P=G)	Prefer Any(P=A)	Prefer Any(P=A)
Get Boy(B)	Get Boy(B)	Input=1	Input=0	Input=0.5	Input=0.5
	Get Girl(G)	Input=0	Input=1	Input=0.5	Input=0.5

Figure 1: Hypothetical Parental Input Matrix: PP × Child Sex

- $E[I|B, Group = 1]=0.5$; $E[I|G, Group = 1]=0.5$,
 $E[I|B, Group = 1]=0.5$, $E[I|G, Group = 1]=0.5$

while true, misses important and interesting heterogeneity in parental preference:

- $E[I|B, P = B, Group = 1]=1$; $E[I|B, P = G, Group = 1]=0$

Main Objectives

- Examine whether parental preferences lead to differential provision of parental inputs.
- Examine whether differential treatment by parents affect child cognitive outcome measured at age of 4.

Data

- The Panel Study of Korean Children (PSKC):
 - Nationally representative, Annually surveyed
 - Child-level panel data of a birth cohort born in 2008 (between April and July of 2008)
 - Samples 2,078 infants
 - Provides detailed information on children, parents and surrounding social and educational environment in the earlier years of development:
 - I leverage the fact that the household questionnaire asks both the mother and the father about the gender preference of their child (the children born in 2008): asks "What is the preferred sex of child during your pregnancy of the child?"

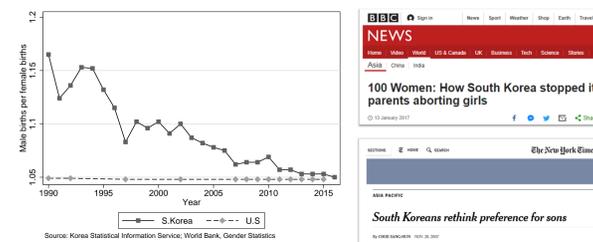


Figure 2: Declining son preference in South Korea

Identification

- I use sex of the first-born child as source of identification (Dahl and Moretti, 2008; Baker and Milligan, 2016):
- Key Assumption: randomness of sex of first-born child

$$Y_i = \alpha + \sum_{n=1}^4 \beta_n PP_{ni} + \lambda Girl_i + \sum_{n=1}^4 \delta_n (PP_{ni} \times Girl_i) + \mathbf{X}_i \phi + \varepsilon_i$$

- Y denotes the parental inputs including breast feeding, monthly expenditure on child, non-parental care and mother's depression score
- To estimate the effect of parental preference on child cognitive outcomes (expressive and receptive language scores), I split the sample by sex of child to to account for boy-girl differences in cognitive production function.
- PP_{ni} are four dummy variables for the types of parent preference:
 - 1 if both parents prefers son
 - 2 if both parents prefers daughter
 - 3 if both parents don't have any preference
 - 4 if parents have mixed preference
- δ_n is the parameter of interest that indicates differential parental inputs by parent preference-child sex matching.

Results

- Parents with specific sex preference for their first-born child are more likely to have second child if they don't get the child of their preferred sex (Figure 3).
- Parental preference do affect parental inputs including breast feeding, means of parental care and depression (Figure 4).
- Parental preference do affect cognitive outcomes of children measured at age of 4:
 - Girls who were born to the parents with daughter preference have 0.7 SD higher receptive language score compared to girls who were born to the parents with son preference.

Contact Information:

Department of Applied Economics
University of Minnesota
Email: leex5089@umn.edu



UNIVERSITY OF MINNESOTA

- Girls who were born to the parents with daughter preference have 0.4 SD higher expressive language score compared to girls who were born to the parents with son preference.
- Boys who were born to the parents with daughter preference have 0.1 SD lower receptive language score compared to girls who were born to the parents with son preference.
- Boys who were born to the parents with daughter preference have 0.6 SD lower expressive language score compared to girls who were born to the parents with son preference.

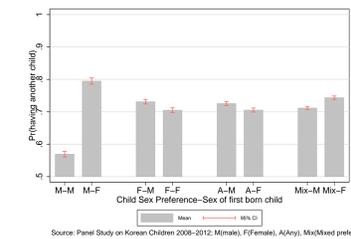


Figure 3: Probability of having second child

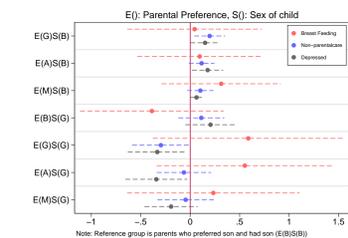


Figure 4: Effect on Parental Inputs

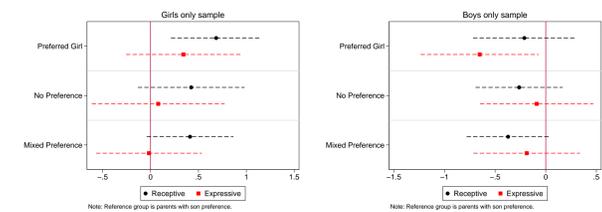


Figure 5: Effect on Language Development

Conclusions

- This study examines effect of parental preference on child outcomes using parent-specific preference information.
- Parental preference have significant and sizable effect on fertility decision, parental inputs, and cognitive outcomes of children measured at age of 4.
- This study suggests importance in measurement of parental preference at the parent-level in studies that examines the effect of parental preference on child outcomes, especially in a society that have heterogeneous preference towards the sex of the child.

Acknowledgements

Gratitude to Korea Institute of Child Care and Education (KICCE) for sharing the data.