The influence of sex of existing children on the incidence and timing of higher-order births

Ann Evans
Edith Gray
Rebecca Kippen

The Australian National University

Abstract

In this paper we use two data sources to investigate whether sex composition of existing children is an important factor in parity progression, and the timing of higher-order births in Australia. Using census data from 1986, 1991, 1996 and 2001, women are linked with their biological children, allowing investigation of family sex composition and its changing impact over time on the propensity to have another child. Using a nationally representative panel survey we examine the length of the first and second birth intervals based on the sex of existing children. This paper is part of a larger project aimed at developing an informed theory about whether there is differential value to parents of sons and daughters, and whether this influences the likelihood and timing of higher-order births, using census data, survey data and qualitative interviews.

Extended abstract

We will raise a family
A boy for you and a girl for me
Can't you see how happy we will be!

Irving Caesar, 1925, 'Tea for Two'

In Australia, the fertility rate is kept from being very low because higher proportions of women have third or higher-order births than in many other modern societies (McDonald, 1998). Previous research from other countries shows that the sex of existing children influences the likelihood of progressing to higher-order births—parents with two children of the same sex are more likely to have a third child than parents with a son and a daughter. However, there is no previous Australian research on this topic. In this paper we investigate sex of existing children as a factor in explaining third and higher-order births and compare differences between generations. We further explore the effect of sex of existing children on the first and second birth intervals.

The desire for sons and daughters and completed family size

The value of children is typically considered to facilitate understanding of fertility motivations in demographic research. Children are said to be of value to parents in nine areas. As originally proposed by Hoffman and Hoffman (1973), these areas are not explicitly formulated to represent the value of sons or daughters per se, rather they are intended as the value of being parents. The nine categories of the value scheme are: (1) Adult status and identity; (2) Expansion of the self, 'immortality'; (3) Morality; (4) Group ties; (5) Stimulation; (6) Creativity and accomplishment; (7) Power; (8) Social comparison and competition; and, (9) Economic utility. Hypothetically, having one child satisfies many of these values. For example, adult status, expansion of the self, group ties (kin relations), and stimulation are all satisfied by having a first child (Bulatao, 1981).

Certainly in Western societies becoming a parent is a sign of transition to adulthood (Hogan & Astone, 1986). Second, third and further children provide different benefits, so it is important to consider the number of children along with their sex composition.

These themes are also evident in an early comprehensive study focusing specifically on the value of sons and daughters (Williamson, 1976). However, the explanations for the reasons parents desire sons and daughters in modern societies defer to this research from the 1970s. It is surprising that no recent research is referred to, given that gender roles have changed substantially since the 1970s.

Do the different values placed on sons and daughters translate into a desire for 'one of each'. In Australia today it is common to hear that parents are having another child 'because they want a girl' or 'because they want a boy'. But does parental desire for a child of the opposite sex to their existing child really have an impact on having another child? Is it widespread behaviour for parents to 'try again'? What effect does parents' desire for children of both sexes have on the fertility rate or on the distribution of completed family size?

There has been only one demographic study of the impact of sex preference on intended fertility in Australia, authored by Young (1977). That research examines the expected ultimate family size based on the sex of existing children, and gives some indication that expected family size is larger for families with same-sex children than families with sons and daughters. However, there are limitations in that study. Firstly, it does not look at actual completed family size based on sex of existing children. Nor does it provide any comparison over generations.

Reconciling the theoretical propositions

Two theoretical propositions purportedly explain the impact of sex of existing children on the decision to have another child. One suggests parity progression because of sex preference is not important in countries with more egalitarian gender-role attitudes. The other suggests that parity progression is more important under low fertility regimes than under high fertility regimes. These propositions need greater consideration as in many cases they are in opposition (i.e. countries with egalitarian gender attitudes often have low fertility regimes).

Firstly, it is argued that less distinct gender roles lead to substitutability of the sexes and declining preference for both sons and daughters. While there is some evidence of declining sex preference in the United States, this is not found in other Western countries that also display egalitarian social attitudes. Hank and Andersson (2002) conclude that investigations should focus on a cultural approach to determine the meaning (or absence) of sex preference, and that such investigations are 'highly desirable and necessary'.

The other major theoretical proposition suggests that desire for sons and daughters becomes more important in its impact on completed family size as fertility declines. It is argued that 'contemporary manifestations of son preference *(or equally, the desire for a son and/or daughter)* are activated in part by the more modern phenomenon of declining family sizes' (Goodkind, 1999:50; Williamson, 1976). In the international literature, desire for children of a particular sex has generally been considered in Asian and high fertility societies (Pollard & Morgan, 2002). Evidence from non-Western countries varies, but where sex preference is found, son preference dominates, although preference for at least one girl and one boy is common (Arnold, 1997). However, we argue that desire for children of a particular sex is more important in *low fertility societies* than in *high fertility societies*. On the balance of probability, in societies where completed family size is high, the desire for a son and/or daughter—whether it be no preference, son preference, daughter preference, or a desire for both a son and a daughter—is usually satisfied (Williamson, 1976). In comparison, in societies with *low fertility*, sex preference has the effect of increasing completed fertility.

Given the importance of desire for both sons and daughters in low fertility settings, investigations into the role of sex preference on family size is gaining interest in modern countries. It has been consistently found in the U.S. that parents want a 'balanced family', that is, a family with at least one son and one daughter (Pollard & Morgan, 2002). Parents with two children of the same sex are more likely to have another child than parents who have a son and a daughter. However, there is no evidence that parents with two girls are more likely to have a third birth than are parents of two boys. This supports the desire for both a son and a daughter, not a child of a particular sex *per se*. The desire for both a son and a daughter is also found in many European countries, but there are some countries where parents desire a daughter (Hank and Kohler, 2000). For example, in Denmark there is a desire for a son and a daughter, but the research also finds a mild preference for girls, as women with two boys are more likely to have a third birth than women with two girls (Jacobsen, Møller & Engholm, 1999).

The impact of sex of existing children on parity progression in Australia

Low and falling fertility is one of the most important demographic issues in Australia, and the world, today. Australia's fertility has not reached the very low levels seen in some parts of Europe largely because of the high numbers of families here that have three or more children. However we know very little about *why* parents choose to have three or more children. Our preliminary research indicates that one key factor in the decision to move from two to three children is the sex composition of the first two children (Gray & Evans, 2003). In low-fertility countries, even slight parental sex preference may bolster fertility levels, as parents may need to 'adjust up' their intended family size in order to fulfill their desire for children of a particular sex, or to achieve a family with at least one son and one daughter. As discussed above, there has been only one Australian study of the impact of sex preference on intended fertility (Young, 1977), and none on the impact of sex preference on actual fertility. In other developed countries there is a growing body of quantitative research that examines either, or both, fertility intentions and actual fertility behaviour.

The impact of sex of existing children on the propensity to have higher-order births

Using the 'own-children' method, we match mothers and their own children from census household records. We order the children by birth, thereby producing birth histories giving information on the age of the mother at each birth, the year of birth, sex of each child, birth order and intervals between births (based on age in years). By splicing together data from four censuses (1986, 1991, 1996 and 2001), we obtain a run of data from the later 1970s—when fertility first fell below replacement level in Australia—until 2001.

Using these data, we carry out cohort and cross-sectional analysis examining how important it is for Australian parents to have both a son and a daughter. The sex-of-child variable allows us to calculate the changing propensity over time to have another child given a particular sex combination of existing children.

The impact of sex of existing children on the timing of higher-order births

Using a national representative panel survey we model the effect of the sex of existing children on the length of the first and second birth intervals. Previous work in the US has found that having two children of the same sex leads to faster progression to the third birth (Teachman and Schollaert, 1989). In Canada, Krishnan (1993) concluded that women with two sons are more likely to use contraception than are women with two daughters, although whether they are stopping or spacing is not clear. However, by separating the effect of birth stopping and birth spacing Yamaguchi and Ferguson (1995) found that the sex of existing children plays a role in the progression to third birth but has no effect on its timing.

References

Arnold, F. (1997). Gender preferences for children. *Demographic and Health Surveys Comparative Studies No. 23,* Maryland: Macro International.

Bulatao, R. (1981). Values and disvalues of children in successive childbearing decisions. *Demography,* Vol. 18(1):1-25.

Goodkind, D. (1999). Should prenatal sex selection be restricted? Ethical questions and their implications for research and policy. *Population Studies,* Vol. 53: 49-61.

Gray, E. and Evans, A. (2004). Sex composition of children as a determinant of parity progression. *Negotiating the Life Course Discussion Paper Series DP-001*. Canberra: The Australian National University.

Hank, K. and Andersson, G. (2002). Parental gender indifference or persistent sex preferences for children at the turn to the 21st century? A reflection on Pollard and Morgan (2002) with reference to the Swedish case. *MPIDR Working Paper WP 2002-049*. Rostock: Max Planck Institute for Demographic Research.

Hank, K. and Kohler, H-P. (2000). Gender preferences for children in Europe: Empirical results from 17 FFS Countries. *Demographic Research*, Vol. 2, Article 1.

Hoffman, L.W. and Hoffman, M.L. (1973). The value of children to parents. In J.T. Fawcett (Ed.), *Psychological Perspectives on Population* (pp.19-76). New York: Basic Books.

Hogan, D. and Astone, N. (1986). The transition to adulthood. *Annual Review of Sociology,* Vol.12: 109-130.

Jacobsen, R. Møller, H. and Engholm, G. (1999). Fertility rates in Denmark in relation to the sexes of preceding children in the family. *Human Reproduction*. Vol. 14(4): 1127-1130.

Kippen, R. (2004). Declines in first- and second-birth rates and their effect on levels of future fertility. *People and Place*. Vol. 12(1): 28-37.

Krishnan, V. (1993). Gender of children and contraceptive use. *Journal of Biosocial Science*, Vol. 25(2): 123-221.

McDonald, P. (1998). Contemporary fertility patterns in Australia: first data from the 1996 Census. *People and Place*, Vol. 6(1): 1-13.

Pollard, M. and Morgan, S. (2002). Emerging parental gender indifference? Sex composition of children and the third birth. *American Sociological Review*, Vol. 67: 600-613.

Teachman, J. and Schollaert, P. (1989). Gender of children and birth timing. *Demography,* Vol. 26(3): 411-423.

Williamson, N. (1976). *Sons or Daughters: A Cross-Cultural Survey of Parental Preferences*. Volume 31, Sage Library of Social Research, Beverly Hills: Sage Publications.

Yamaguchi, K. and Ferguson, L. (1995). The stopping and spacing of childbirths and their birth-history predictors: Rational-choice theory and event-history analysis. *American Sociological Review*, Vol. 60(2): 272-298.

Young, C. (1977). Family building differences between same sex and mixed sex families in Australia. *Australian Journal of Statistics*, Vol. 19(2): 83-95.