# Fertility and son preference in Korea 

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#### Abstract

In Korea, total fertility declined from 6.0 in 1960 to 1.6 in 1990, in spite of a strong preference for male offspring. This paper addresses the notion that son preference hinders fertility decline, and examines the effects of patriarchal relations and modernization on fertility using the 1991 Korea National Fertility and Family Health Survey. It was found that women who have a son are less likely to have another child, and that women with a son who do progress to have another child, take longer to conceive the subsequent child. This pattern prevailed for women of parity one, two, and three, and became more pronounced with higher parity. A multivariate analysis showed that preference for male offspring, patriarchy, and modernization are all strong predictors of second, third, and fourth conceptions.


## INTRODUCTION

In the last 35 years fertility has declined very rapidly in Korea, despite the traditional emphasis on having at least one son. Total fertility declined from 6.0 in 1960 to 2.8 in 1980, 2.1 in 1983 (about replacement level), and 1.6 in 1990 (Choe et al. 1995).

Park and Cho's seminal work on the imbalance of the sex ratio at birth in Korea has drawn worldwide attention to the extent of son preference and to the consequences of son preference in Korea (see, for example, Park 1983; Park and Cho 1995). With respect to fertility decline and son preference, Park and Cho (1995) show that, as fertility went down, the sex ratio became more skewed, i.e. relatively more boys compared to girls were born, and the sex ratio in 1990 reached the level of 1.13 .

Often it has been argued that societies with pronounced son preference will not be able to reduce their fertility to below replacement level. In the case of Korea, Hong (1978) and Kwon and Lee (1976) have argued that son preference has prevented a more rapid fertility decline. Arnold (1985) concluded that in Korea son preference will have a dampening effect on the fertility decline, but it will not be a major obstacle. Clearly, these predictions proved to be quite accurate, even though made without knowledge of the role a preference for male offspring actually played in childbearing decisions and achieved fertility in Korea.

The present study addresses the factors influencing fertility behaviour in Korea, in particular the influence of son preference, patriarchal family relations, and modernization on fertility decisions. The study analyses childbearing patterns (i.e. variations in the duration of waiting time to next
conception, and variations in transitions to next conception) in the light of hypotheses about the relationship between fertility, son preference, patriarchy, and modernization. The main thrust of the analysis is the hypothesis that patriarchal family relations and son preference have slowed down the fertility decline, while modernization has accelerated it. A subordinate hypothesis, following from this, is that today Koreans have only one child if their first child is a boy; if the first child is a girl, they are more likely to have a second child. Have Koreans therefore been able to achieve below replacement fertility, and have they still maintained their pervasive preference for having at least one son?

## BACKGROUND

Korea is a very clear example of a strongly patriarchal society, one which can be expected to generate strong son preference that will influence fertility decisions. Sons are critical to families in a variety of ways, for continuity of the lineage, for performing ancestor worship rites, and for providing support in old age. Daughters cannot perform these functions in traditional Korean society, and are therefore of far less consequence to families than are sons. In addition to this general pressure to bear sons, which would tend to increase family size, there is additional pressure on the eldest son of the family to bear sons because of his important position in the family. Thus, we would expect that being the eldest son would be associated with higher fertility. To test this hypothesis, we included the variable 'husband is the eldest or only son' in the analysis, as a measure of patriarchy.

It is often asserted that son preference is rooted in Confucian religious beliefs in East Asia. To the
extent that formal religion plays a role in this, one would expect the Confucians, and to a lesser extent the Buddhists, to subscribe to beliefs supporting son preferences. There are, however, a very substantial number of Christians in Korea, mostly Protestants, and it is of considerable interest to see whether Christianity has removed the sources of son preference in this society, given that ideas of the afterlife in Christianity do not require descendants to perform ancestor worship. Here we test whether a person's formal religious affiliation significantly alters his or her childbearing decisions.
Korean society has been exposed to major economic and social changes. There has been rapid urbanization, industrialization, and the spread of education. These changes would be expected to affect pre-existing traditions and to make for lower fertility. Together with these changes have come changes at the level of the family. In particular, a substantial proportion of marriages are no longer arranged by parents. We would predict that women who have had a role in choosing their own spouse would be subject to fewer constraints of traditional lifestyle, including less pressure to bear children. To examine the effect on fertility of modernization in marriage patterns, we introduced variables regarding own-choice marriage and how long the partners knew each other before marriage. Other measures of modernization and of socio-economic change with attendant ideational change are included in the multivariate analysis. These include measures of residential, educational, and occupational status, and the woman's occupation. The last influences the extent to which women participate in new roles in society, as well as altering the extent to which women's roles are compatible with childbearing.

## DATA AND METHODS

The analysis was based on the 1991 Korea National Fertility and Family Health Survey (KNFFHS) conducted by the Ministry of Health and Social Affairs (Kong et al. 1992). This is a nationally representative survey of 7,462 ever-married women aged 15-49. Complete marriage and birth histories, as well as information about women's socioeconomic characteristics were gathered. The survey is the most recent nationally representative survey in Korea to collect this kind of detailed information.
In the first part of the analysis, Kaplan-Meier life tables were calculated to assess whether the childbearing strategies of Korean couples were guided by an a priori preference for the sex
composition of their children. That is, variation in waiting time to conception, or the proportion who had conceived by specific time durations since previous birth, were analysed by the sex of previous births for women of parity one, two, and three (Kaplan and Meier 1958). The main analysis used a Cox model to determine variation in conception risk by the sex of previous births, together with various measures of patriarchy and modernization (Cox 1972). The multivariate analysis was conducted for women of parity one, two, and three.

At parity one, two, and three, respectively, 109, 7, and 1 children had no information about their sex. These mothers were excluded from analysis, as well as 157 women with inconsistent responses. In the sample analysed, 906 women had a fourth birth and 326 women had a fifth birth, and these high parity births were primarily born to women married before 1980 . Only 32 women had a fourth child in the marriage cohort of 1980-91. Since these numbers were small, the analysis was restricted to women of parity one ( 6,483 women), two ( 5,233 women), and three ( 2,281 women). Nulliparous women ( 527 women) were not included in the analysis because it is concerned with assessing the effects of the sex of previous births on subsequent childbearing. Furthermore, the recent low fertility rates in Korea cannot be attributed to widespread childlessness. The vast majority of Koreans choose to have at least one child: the proportion childless included $0.008,0.019$, and 0.242 of the women married in the periods 1957-79, 1980-84, and after 1985, respectively. Childlessness is high among women married after 1985, because they had not yet had the time to bear children; a lifetable analysis showed that less than six per cent of the women married after 1985 were still childless after five years. As a last step, data on women married after 1985 were analysed separately to assess better the influence of patriarchy, modernization, and son preference on childbearing decisions in a population with below-replacement fertility.

## ANALYSIS

## Waiting times to conception

Waiting time to conception by sex of previous children was analysed for women of parity one, two, and three. If a preference for sons prevailed, we would expect to find a shorter time to next livebirth conception (subsequently referred to as conception, and it is the reported date of birth minus nine months), as well as a higher progression ratio to next conception for women who had only


Figure 1. The proportion conceiving by the sex of previous births and the time since previous birth for women at parity one, two, and three in Korea.
daughters, compared to women with only sons. Furthermore, we would expect this pattern to be more pronounced the higher the parity of the woman, and (presumably) the more desperate to have a son (see Park and Cho 1995). Indeed, this
pattern did prevail, as illustrated in Figure 1. For example, at parity one the median waiting time to next conception was 18 months for women with a daughter and 20 months for women with a son; at parity two the median was 27 months for women with two daughters, while less than 50 per cent of the women with two sons progressed to parity three. In general, women whose previous children were all girls were significantly more likely to conceive another child compared to women whose previous children were all boys. For instance, by five years after the previous birth: 0.90 of women with one daughter compared to 0.84 of women with one son had conceived a second child; 0.72 of women with two daughters compared to 0.37 of women with two sons had conceived a third child; and 0.72 of women with three daughters compared to 0.33 of women with three sons had conceived a fourth child. Finally, at both parity two and three women with both sons and daughters behaved very much like women with no daughters, suggesting that it is the preference for male offspring that affects subsequent childbearing; there is no evidence of a desire to have at least one daughter to balance the sex composition of the family.
Because only 129 women had a third child in the 1980-91 marriage cohort, transitions from third to fourth births are mainly based on women married before 1980. In the light of the rapid decline in fertility we would expect waiting time to conception to be affected by the woman's parity and the sex of previous births. However, it is not feasible to divide the sample into more subgroups, because each subgroup would include too few cases. In order to analyse both the trend and the main differentials in transitions to next conception we adopted a modelling approach.

## Differentials in conception risks

The variables hypothesized to affect childbearing and transitions to next conception were grouped into three submodels, which are referred to as the Socio-economic, Demographic and Marriage, and Son Preference models. First, univariate models and the three submodels were estimated. Subsequently, the variables that added significantly (at the 0.05 level based on the likelihood ratio test) to one of the submodels were pooled, and the final model was estimated. This modelling strategy was used in the analysis of transitions to next conception for women of parity one, two, and three.

The estimated effects yielded by the Socioeconomic, Demographic and Marriage, and Son

Table 1. Relative risks of second conception in Korea yielded by socio-economic, demographic and marriage, and son preference models (sample frequencies are given in parentheses)

| Socio-economic |  | Demographic and marriage |  | Son preference |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Variable/category | Relative risk | Variable/category | Relative risk | Variable/category | Relative risk |
| Marriage year |  | Spousal age difference |  | Sex of first child |  |
| $<1970$ | 1.52*** (1,020) | Husband older | 1.13** (5,526) | Son | $1.00 \quad(3,328)$ |
| 1970-79 | 1.53*** $(2,373)$ | Wife same/older | 1.00 (683) | Daughter | 1.22*** (3,048) |
| $1980+$ | $1.00 \quad(2,827)$ | Wife's age at marriage |  | Son died | 2.32*** (60) |
| Residence |  | <21 | 1.08 (835) | Daughter died | 1.82*** (47) |
| Urban | $1.00 \quad(3,016)$ | 21-24 | 1.15*** $(3,998)$ | Son preference |  |
| SW rural | 1.18*** (1,161) | $25+$ | 1.00 (1,376) | Must have son | $1.48{ }^{\text {*** }}(2,835)$ |
| Other rural | 1.01 (2,043) | Met husband |  | Indifferent | 1.00 (3,648) |
| Husband's education | n.s. | Through others | 1.08* $(4,555)$ | Reason for |  |
| Elementary |  | Herself | $1.00 \quad(1,654)$ | son preference | n.s. |
| Middle |  | Months known husband |  | Lineage |  |
| High |  | before marriage |  | Economic |  |
| College |  | 0 | 1.20*** (1,343) | Other |  |
| Wife's education | n.s. | 1-6 | $1.07 *$ (1,863) |  |  |
| Elementary |  | $7+$ | 1.00 (3,003) |  |  |
| Middle |  | Arranged marriage |  |  |  |
| High |  | Parents | 1.20*** $(2,238)$ |  |  |
| College |  | Herself | 1.00 (3,971) |  |  |
| Husband's occupation | n.s. | Husband's birth order |  |  |  |
| Agriculture |  | First, or only | 1.09*** $(2,798)$ |  |  |
| Other |  | Otherwise | 1.00 (3,411) |  |  |
| Wife's occupation |  |  |  |  |  |
| Agriculture | 1.37*** (439) |  |  |  |  |
| Housework | 1.14*** (4,040) |  |  |  |  |
| Other | 1.00 (1,741) |  |  |  |  |
| Husband's religion | n.s. |  |  |  |  |
| Buddhist |  |  |  |  |  |
| Christian |  |  |  |  |  |
| Confucian |  |  |  |  |  |
| Wife's religion n.s. |  |  |  |  |  |
| Buddhist |  |  |  |  |  |
| Christian |  |  |  |  |  |
| Confucian |  |  |  |  |  |
| Sample size | 6,220 |  | 6,209 |  | 6,483 |

n.s. Variable did not add significantly to the model at the 5 per cent level of significance based on the likelihood ratio test statistic.

* 0.05 level of significance using the Wald test statistic; ${ }^{* *} 0.01$ level of significance using the Wald test statistic; *** 0.001 level of significance using the Wald test statistic.

Preference models for transitions from first birth to second conception are listed in Table 1. It appears that most of the variables hypothesized to affect childbearing are significant, and the effects are in the directions hypothesized. There is one exception: neither religion of the woman nor religion of the husband has an effect on transition to second conception, or for that matter to higher-order conceptions (results not shown). Religion of the woman or the husband was also not significant in the respective univariate models. For transitions to second conception, the estimates of effects in the univariate models were all in the same direction, and did not deviate substantially from the estimates in the three submodels presented in Table 1. This
finding holds also for transitions to third and fourth conception (results not shown).

Table 2 shows the estimated effects from the final models for transitions from first birth to second conception, second birth to third conception, and third birth to fourth conception. The finding that the estimates from the three submodels were modified only slightly in the pooled models suggests that none of the variables is highly correlated. (This is confirmed by the correlation matrix of the variables analysed.) The interaction between 'Arranged marriage' and 'Months known husband before marriage' added significantly to the model for transitions to second conception. This interaction is not included in the model presented

Table 2. Relative risks of second, third, and fourth conception in Korea (sample frequencies are given in parentheses)

| Variable/category | Relative risks |  |  |
| :---: | :---: | :---: | :---: |
|  | Second conception | Third conception | Fourth conception |
| Marriage year |  |  |  |
| $<1970$ | 1.33*** $(1,151)$ | 4.75*** $(1,101)$ | 2.43*** (907) |
| 1970-79 | 1.47*** $(2,466)$ | 2.89*** ( 2,300 ) | 1.31 (1,051) |
| 1980+ | $1.00 \quad(2,866)$ | 1.00 (1,685) | 1.00 (191) |
| Residence |  |  |  |
| Urban | $1.00 \quad(3,146)$ | $1.00 \quad(2,416)$ | 1.00 (841) |
| SW rural | 1.09* (1,210) | 1.38 *** (1,026) | 1.57*** (583) |
| Other rural | $0.96 \quad(2,127)$ | 1.04 (1,644) | 1.13 (725) |
| Wife's education | - |  |  |
| Elementary |  | 1.75*** $(1,517)$ | 1.78* (1,059) |
| Middle |  | $1.33 * *(1,494)$ | 1.20 (593) |
| High |  | 1.02 (1,707) | 1.32 (419) |
| College |  | 1.00 (368) | 1.00 (78) |
| Wife's occupation |  |  |  |
| Agriculture | 1.27*** (460) | 1.15 (432) | 1.21 (334) |
| Housework | 1.14*** (4,073) | 0.99 (3,031) | 0.98 (1,116) |
| Other | 1.00 (1,950) | $1.00 \quad(1,553)$ | 1.00 (699) |
| Spousal age difference |  | - | - - |
| Husband older | 1.14** (5,773) |  |  |
| Wife same/older | 1.00 (710) |  |  |
| Wife's age at marriage |  |  |  |
| $<21$ | 0.95 (910) | 1.11 (822) | 1.36* (506) |
| 21-24 | $1.10^{*} \quad(4,145)$ | 1.22** $(3,354)$ | 1.10 (1,412) |
| $25+$ | $1.00 \quad(1,428)$ | 1.00 (910) | 1.00 (231) |
| Met husband |  |  |  |
| Through others | 1.07* (4,765) |  |  |
| Herself | 1.00 (1,718) |  |  |
| Months known husband before marriage |  |  |  |
| 0 | 1.07 (1,449) | 1.14* (1,321) | 1.23 (856) |
| 1-6 | 1.06 (1,927) | 1.05 (1,529) | 1.18 (579) |
| $7+$ | $1.00 \quad(3,107)$ | $1.00 \quad(2,236)$ | 1.00 (714) |
| Marriage arranged by |  |  |  |
| Parents | 1.12*** (2,379) | 1.14* $(2,121)$ | 1.30** (1,205) |
| Herself | 1.00 (4,104) | $1.00 \quad(2,965)$ | 1.00 (944) |
| Husband's birth order |  |  |  |
| First, or only | 1.06* (2,941) | 1.12** (2,387) | 1.28*** (1,079) |
| Other | $1.00 \quad(3,542)$ | $1.00 \quad(2,699)$ | 1.00 (1,070) |
| Sex of previous child(ren) |  |  |  |
| Only sons | $1.00 \quad(3,328)$ | $1.00 \quad(1,252)$ | 1.00 (164) |
| Only daughters | 1.24*** $(3,048)$ | $3.29 * * *(1,188)$ | 4.58*** (299) |
| Sons and daughters | * | 1.41 *** $(2,435)$ | 1.12 (1,440) |
| Son died | 2.19*** (60) | 3.24*** (120) | 2.82*** (138) |
| Daughter died | 1.62*** (47) | 3.20*** (91) | 3.18*** (108) |
| Son preference |  |  |  |
| Must have a son | 1.31 *** $(2,835)$ | 1.41*** $(2,455)$ | 1.49** (1,350) |
| Indifferent | $1.00 \quad(3,648)$ | $1.00 \quad(2,631)$ | 1.00 (799) |
| Reason for son preference | - |  |  |
| Lineage |  | 1.09 (1,063) | $0.94 \quad$ (671) |
| Economic |  | 0.98 (1,018) | 0.99 (522) |
| Other |  | 1.00 (3,005) | $1.00 \quad$ (956) |
| Sample size | 6,483 | 5,086 | 2,149 |

[^0]because it did not modify the findings substantively, and it was not significant in the models of transitions to third and fourth conceptions. No other interaction was explored because none was deemed important on the basis of theoretical considerations; the correlations between variables in the final model were negligible.
The multivariate models all reveal a strong preference for sons: for transitions to second conception, women with a daughter have a risk of 1.24 relative to women with a son; for transitions to third conception, women with two daughters have a risk of 3.29 relative to women with two sons; and for transitions to fourth conception, women with three daughters have a risk of 4.58 relative to women with three sons. Thus, the women with daughters but no sons are significantly more likely to conceive another child, and the effects of the sex of previous children become stronger the higher the parity. In contrast, there is no evidence of a preference for both a daughter and a son. At parity two, women with a son and a daughter have significantly higher risks of conceiving a third child relative to women with no daughters. At parity three, there is no significant difference between these two groups.
Infant and child mortality are relatively low in Korea (Han and Kim 1990). For example of the 6,483 parity-one women used for the analysis, 107 had lost their first child. It appears from the analysis that women whose first child died are significantly more likely to have conceived a second child, and the risk is higher if the dead child was a boy. At parity two, women with a dead child (boy or girl) have about the same risk of conceiving a third child as women with two daughters, and each of these three groups of women have about 3.2 times as high a risk of conceiving a third child as women with two boys. At parity three, the risk of conceiving a fourth child is 3.16 for women who had a daughter who died, and 2.83 for women who had a son who died, relative to women who have three sons. This may reflect some selective mortality of daughters to make room in the family for a son. However, inferences based on the estimated effects of the death of a child need to be cautiously made, because the date of death of dead children was not collected in the 1991 KNFFHS. It is not possible. therefore, to determine whether a child died before or after the woman conceived the index child.
Women who reported that one 'must have a son' were significantly more likely to have another conception at both parity one, two, and three, and women whose husband had been a first or only son were also more likely to conceive a subsequent
child; in both cases the estimated effects increase with parity. It is conceivable that the variable 'must have a son' represents a pathway along which other variables influence childbearing and that the interpretation of results would be facilitated if this variable were removed. To investigate this possibility, we ran the final model excluding the variable 'must have a son'. The result was that the estimated effects of the remaining variables were virtually unchanged. In addition to being influenced by the preference for male offspring, transitions to next conception were affected by patriarchal relations or conformity to traditional roles. For instance, women whose marriage had been arranged by the parents were significantly more likely to conceive another child at each parity. Similarly, women who had been with their husband for less than one month at marriage had higher risks of conception at each parity. At parity one, women who had met their husband through others had significantly higher risks of conceiving a second child, although this variable did not add significantly to the models at parity two and three. These results suggest that when women choose their own spouse, and if they are relatively familiar with their spouse before marriage, they tend to have lower fertility. This may be because they and their spouses have less traditional attitudes and better spousal communication, making for more balance of power between the sexes than in more traditional marriages.

Women in the southwest rural areas of Korea had higher risks of conceiving relative to urban and other rural women, and this discrepancy increased with parity. The reasons for this need to be investigated elsewhere. Finally, marriage year, spousal age difference, and the wife's age at marriage showed the expected effects. For instance, women married after 1980 had lower risks of conceiving compared to women married before 1980, at parity one, two, and three.

## Fertility of women married in 1985 or later

In the cohort of women married after 1985, 46 per cent had one child, 29 per cent had two children, and one per cent had three or more children at survey date in 1991. Of the women whose first child was a boy, 0.57 conceived a second child after three years of exposure, compared to 0.70 of the women whose first child was a girl. Thus, there is support for the hypothesis that 'often a first girl becomes a sibling and a first boy completes the family', and it would be interesting to analyse more recent data to see whether childbearing patterns are becoming more in line

Table 3. Relative risks of second conception in Korea for women married after 1985 (sample frequencies are given in parentheses)

| Variable/category | Relative risks |  |
| :--- | :--- | :--- |
| Wife's occupation |  |  |
| Agriculture | $1.86^{* *}$ | $(39)$ |
| Housework | $1.63^{* * *}$ | $(974)$ |
| Other | 1.00 | $(258)$ |
| Husband's birth order | $1.32^{* * *}$ | $(515)$ |
| First, or only | 1.00 | $(756)$ |
| Other |  |  |
| Sex of first child | 1.00 | $(656)$ |
| Only sons | $1.29^{* *}$ | $(615)$ |
| Only daughters | $1.28^{* *}$ | $(357)$ |
| Son preference | 1.00 | $(914)$ |
| Must have a son | 1,271 |  |
| Indifferent |  |  |
| Sample size |  |  |

${ }^{* *} 0.01$, level of significance using the Wald test statistic; ${ }^{* * *} 0.001$ level of significance using the Wald test statistic.
with our explanation of low fertility in Korea, despite a preference for male offspring.
The results are quite striking in that they show that son preference is currently the dominant force affecting second conceptions (Table 3). The multivariate analysis of women married after 1985 included the same covariates and modelling strategy as for the above analysis of all women. The results show little variability in transitions to second conceptions for women married after 1985 by the covariates, except for son preference and patriarchy. The categories 'son died' and 'daughter died' were not included in the variable 'Sex of first child', because only seven children had died. More specifically, in the post-1985 marriage cohort, women whose first child was a girl have 29 per cent higher risk of a second conception, women reporting 'one must have a son' have a 28 per cent higher risk, and if the husband is the oldest or only son the risk is 32 per cent higher; each risk is relative to all other women. The only additional differential in second conception risk is by occupation of the woman: women in agriculture and housewives have significantly higher risks of a second conception relative to women in professional, clerical, and sales categories.

## DISCUSSION AND CONCLUSION

The Korean fertility decline provides a strong example of evidence against the notion that pervasive son preference impedes a transition to low fertility.

The analysis of waiting times to conception and progression ratios shows that the effects of the sex of previous births become stronger with parity, i.e. if the previous child or children is a boy or boys the woman takes longer to conceive the subsequent child, and she is less likely to progress to have another child. For instance, the percentages who had conceived their third child after five years of exposure reached 37,72 , and 40 for women with respectively two sons, two daughters, and one son and one daughter. Thus, in Korea the pattern still prevails of discrimination against girls increasing with parity, as it does in India, Bangladesh, and China (Choe 1987; Das Gupta 1987; Muhuri and Preston 1991; Zeng et al. 1993; Choe et al. 1997; Das Gupta and Bhat 1997). The pattern is accompanied by little evidence of an intensification of discrimination at parity one. For instance, women married after 1980 have a non-skewed sex ratio of 1.05 for first births, while for women married before 1980 the ratio is 1.14 (see also Park and Cho 1995). Furthermore, the relative risk of a second conception, if the first child was a girl compared to a boy, is 29 per cent higher for women married after 1985, and 24 per cent higher for all women, in the respective multivariate models. Finally, there is no evidence suggesting that Korean couples have a preference for both a son and a daughter, as has been found in, for example, Bangladesh (Rahman and DaVanzo 1993). For instance, at parity two and at parity three there is no significant difference between women with only sons and women with both a son and daughter in the waiting time to next conception or in the progression ratio.

We found in the multivariate analysis that, in the early stages of the fertility decline, both son preference and patriarchal relations had significant positive effects on fertility, while variables associated with modernization had significant negative effects. However, only son preference and patriarchy had a significant effect on childbearing for women married after 1985, controlling for women's occupation. Furthermore, below-replacement fertility in Korea has not been achieved by widespread childlessness; instead the vast majority of married women have continued to have at least one child. Less than six per cent of the women married after 1985 were childless after five years of marriage.

As expected, modernization did contribute to the fertility decline. Women in the primary sector (agriculture and housework) were significantly more likely to conceive their second child both in the sample of all women and women married after 1985. This finding reflects the conflict for other
women between the demands of being in the work force and those of childbearing and childrearing, as discussed in detail in the context of low fertility in the United States (Gerstel and Gross 1987; Davis 1988). It should be noted that the estimated effects of women's occupation are particularly strong in the sample of women married after 1985. Furthermore, in the latter sample the remaining variation in the risks of second conception fall among the measures of son preference. Given that period fertility fell below replacement after 1983, we expected little variation in the fertility of women married after 1985, and it is striking that all the son-preference variables remained significant.
The multivariate analysis confirmed that religious affiliation does not affect fertility in Korea. The majority of Koreans are Christians or Buddhists, but Confucian ideas - such as those about the conduct of ancestor worship, carrying on the family line, and supporting elderly parents - also survive, and Koreans have upheld a pervasive son preference. It is interesting that the Confucian dogma is followed so closely in the Korean society, despite extensive trade with the West since the mid1950s, and a general exposure to western ideas.
The Korean government has heavily promoted fertility reduction. Korea has had a family planning programme since 1962, and government interventions have probably contributed to the rapid fertility decline (Cho et al. 1984). Recently the government has instigated initiatives to combat sex-selective behaviours, such as sex-selective abortions. For women married after 1980, the sex ratios were $1.05,1.05$, and 1.46 for respectively first, second, and third births of women surveyed in the 1991 KNFFHS. Government campaigns against sex-selective abortions might be more effective if they paid particular attention to women with two female children.
Sheps (1964) demonstrated that the expected number of children per family would be 1.83 , if everybody desired at least one boy, if the desired number of children per family was one, and if nobody had more than four children. This scenario depicts quite well the current fertility regime in Korea: total fertility was 1.6 in 1990 and few women had more than four children. (Total fertility is a period measure, and might not correspond with a cohort measure of achieved number of children per family.) On the other hand, women married after 1985 reported an average desired number of children of 1.9. According to Sheps (1964), the expected number of children per family would be 2.75 , if everybody desired at least one boy, the desired number of children per family was two, and
if nobody had more than four children. Clearly there is a marked discrepancy between the theoretical 2.75 children per family, and the observed total fertility of 1.6: either Koreans are having fewer children than they would like to have, or they are practising sex-selective behaviour.

Finally, we found support for the explanation of current low fertility that 'often a first girl becomes a sibling and a first boy completes the family', and we expect this explanation to become more applicable as the low fertility regime matures. That this may be the case also in China is indicated by Choe et al.'s (1992) analysis. The fertility decline in Korea, China, and India suggests that strong son preference does not prevent fertility decline, but simply slows it down a little while increasing discrimination against girls of higher birth orders.

## NOTES

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[^0]:    -, Variable not in model; * 0.05 level of significance using the Wald test statistic; ${ }^{* *} 0.01$ level of significance using the Wald test statistic; ${ }^{* * *} 0.001$ level of significance using the Wald test statistic.

