**RESEARCH NOTES**

# Sex Preferences and Fertility Trends in South Korea

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## Introduction

In many of the world's developing economies, a preference for sons has been widely documented and is attributable to a variety of social, economic, and cultural factors (Pong, 1994). South Korea is a country with an extremely strong, pervasive, and persistent preference for sons. Despite the strength of this attitude, fertility in Korea has rapidly declined by more than 50 percent, from a total fertility rate of 6.0 in 1960 to 2.7 in 1980 (Arnold, 1985).

However, according to some studies, the preference for sons is more than an attitude – it has demographic consequences. Eventually, some researchers have argued that the existence of such sex preference increases fertility rates and adds to population growth. (This may be true to some extent, but researches conducted in South Korea have shown otherwise.) The study of DaVanzo and Starbird (1991), according to Suet-Ling Pong, states that when parents already have one or more sons among their offspring, they are more likely to use contraceptives in order to delay or stop childbearing. Also, a study of the value of children in Asian and Pacific countries concludes that indeed, family size is influenced by parents' preference for sons. Having sons who survive induces parents to adopt more effective or permanent methods of birth control, such as sterilization, or to have abortions (Pong, 1994).

Consequently, the US Census Bureau reported its observations in 1992 with regard to son preference in Asia. It had the following key findings: First, some countries in Asia exhibit a very strong son preference, while in other countries,

there is barely any detectable preference for boys over girls. Second, in the past, the generalization has been made that strong son preference would slow fertility decline or prevent fertility from falling as low as it might otherwise go. But studies have confirmed that some areas (South Korea, Taiwan, and Mainland China), in spite of very strong son preference, have achieved fertility at or below replacement level, and that other areas now experience rapid fertility decline in spite of strong son preference. Third, greater economic development, affluence, education, and knowledge do not necessarily discourage son preference or reduce the use of sex-selective abortion.

Based on the abovementioned existing studies, the following objectives of this present research were formulated: (1) to describe the relationship between sex preferences and fertility trends in the context of South Korea and its traditions, and (2) to determine the implications of sex preferences and fertility decline to sex-selective abortion in South Korea in relation to some noted countries in Asia.

This paper focuses on South Korea, representing East Asia, the countries of which have populations known to demographers to have virtually completed a demographic transition – having achieved fertility at or below replacement level. Recently, South Korea has, along with Taiwan, Japan and China, amazingly achieved a total fertility rate (TFR) of 1.1.

## Sex preferences and the fertility trend in South Korea

The case of South Korea is very interesting to note. According to Sung Yong Lee (1995), sex preference has generally been assumed to have a significant effect on fertility behaviors. Many have argued that if parents continue to bear children until they reach their desired sex combination of children or their desired number of sons, sex preference would be a major barrier to fertility reduction. Nevertheless, many empirical studies have found insignificant or no effect of sex preference on such behavior, while evidence has been reported of a relationship between the sex composition of previous children and fertility behaviors (Robey, 1987).

Moreover, in recent periods, the total fertility rates of some strong son-preference countries, such as China and Korea, have dropped below the replacement level without a change in these nations' strong sex preferences, and these low fertility rates have sometimes been regarded as permanent, not temporary, phenomena. These rates can be used as good examples of a weak (or nonexistent) effect of sex preference on fertility behavior (Robey, 1987).

The question is, what has actually happened in South Korea to encourage this attitude? The study of Jungmin Lee and Myungho Paik (2006) shows an interesting broad determinant of sex preferences and its effect on fertility decline in Korea: *zodiacal preference*. The study reveals that since antiquity, in East Asian countries such as China, Japan and South Korea, people have used the lunar calendar in which each year is symbolized by a zodiacal sign according to a rotating cycle of 12 animals: Rat, Ox, Tiger, Rabbit, Dragon, Snake, Horse, Sheep, Monkey, Rooster, Dog, and Pig. The belief is that people are destined to possess specific personality traits or characteristics according to the sign of the zodiac under which they are born. The study further contends that the contents and interpretation of zodiac astrology differ across countries and cultures. South Koreans have traditionally thought that the year of the *Horse* bears inauspicious implications for the destiny of girls. Figure 1 and 2 below will explain this phenomenon.

**Figure 1. Yearly Trend of the Sex Ratio at Birth, 1970-2003**

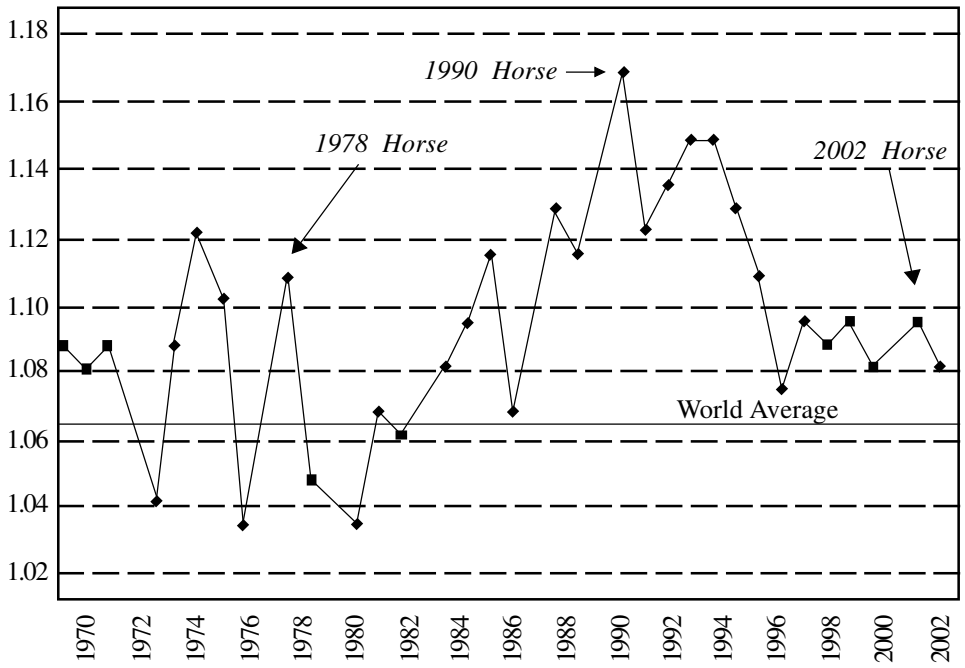


Figure 1 shows that the sex ratio has increased since 1980. *The ratio is highly unbalanced in the mid-1990s, clearly suggesting a strong son preference and widespread fetal sex determination.* It should be noted that the ratio started to decrease in 1994, when the government strengthened the penalty for illegal abortions (Lee and Paik, 20

**Figure 2. Yearly Trend of the General Fertility Rate, 1970-2003**

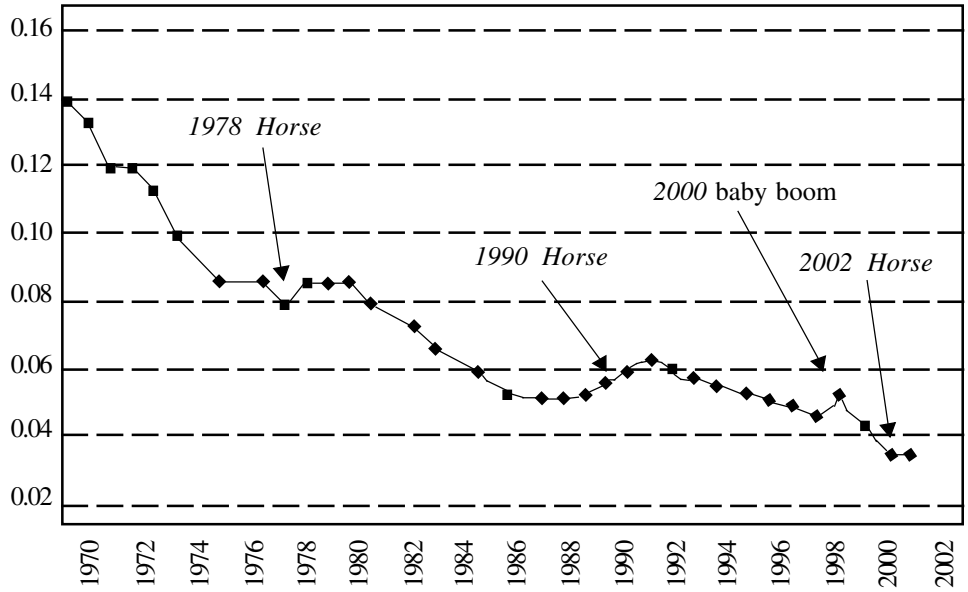


Figure 2 above, moreover, shows that fertility has dropped rapidly over the past three decades. This is due to the culture of zodiac astrology which, according to Lee and Paik (2006), is widespread in South Korea. People read their fortunes in newspapers every day, and they often consult with fortune tellers for advice about their careers or family matters[1]. The antipathy for the Horse is often documented in the press. Women born in the year of the Horse report they are told that they are strong and argumentative and will likely fail in their first marriage or be widowed (Lee and Paik, 2006).

Although the origin of this mythical faith is not exactly known, it is said that it was imported from Japan during the colonial period (1910-1945). Various suggestions have been made concerning the origin of the *Hinoeuma* (Fire Horse) in Japan – a coincidence between the year of the Fire Horse and disastrous famines (1786 and 1846). South Koreans, according to this paper, consider the White (Metal) Horse inauspicious for girls. But such beliefs are not found only in South Korea. Studies have shown that the inauspicious *Hinoeuma* may have lowered fertility in Japan. Kaku and Matsumoto (1975) revealed that the fertility rate of Japanese Americans in California and Hawaii also dropped by 3.3% and 1.8%, respectively, in the same year (Lee and Paik, 2006).

## Sex preferences and fertility decline: Implications

In most populations, women give birth to slightly more boys than girls. The result is an average sex ratio of 104 to 107 males for every 100 females born. Yet infant and child

mortality rates are generally higher for boys than for girls, so that as children grow up, the number of girls and boys gradually becomes more balanced.

In societies that prefer sons, several practices may lead to abnormally high sex ratios for children. Neglect or mistreatment can increase female mortality rates: in some cases, families may even resort to female infanticide, or else the birth of baby girls may simply go unreported, such that girls are not counted in census taking (this also explains the rapid increase in sex ratio in the year of the Horse in South Korea). In China during the 1980s, couples who wanted sons faced harsh penalties if they had too many children, and sometimes gave baby girls away for adoption without registering their births (Westley, 1995).

More recently, in Korea, China, and Taiwan, the introduction of technologies to determine the sex of unborn fetuses, combined with the widespread availability of abortion, has led to a record preponderance of male births – suggesting that couples are selectively aborting females. Evidence is accumulating that sex-selective abortion also occurs in India. This combination of son preference with modern technology poses a social, economic, and ethical dilemma for policymakers (Westley, 1995).

**Abortion**. Traditionally high in East Asia, abortion rates have climbed further in recent years. In South Korea, induced abortion is one of the most common methods of fertility control, condoned by government family planning programs as a backup method in case of contraceptive failure. In 1990, the estimated average number of abortions for married women throughout their lifetime was 1.9 times higher than the estimated lifetime number of live births, which was 1.6 (Westley, 1995).

**Fetal sex determination.** Technologies to determine the sex of unborn fetuses were introduced in several Asian countries during the 1980s. Three technologies are currently available: chorionic villi sampling, amniocentesis, and ultrasound. Ultrasound is the safest, least expensive, and most widely used of these technologies. However, the test is not accurate until the second trimester of pregnancy, resulting in late abortions with increased risk to the mother. Ultrasound equipment was first mass-produced in South Korea in the mid-1980s and is now available in clinics and hospitals throughout the country. China began manufacturing ultrasound machines in 1979 and now has the capacity to produce more than 10,000 a year. Additional machines are imported – 2,175 in 1989 alone, according to Chinese customs records. In India,

ultrasound equipment is available in hundreds of hospitals and private clinics. When fetal-screening technology is available, it tends to be heavily used (Westley, 1995).

In Korea, a conservative estimate suggests that more than 30,000 fetuses were screened in 1990, at a total cost to couples of approximately US$3 million. In discussing amniocentesis with a weekly news magazine, one Korean obstetrician estimated that 90 percent of all requests for fetal screening are for sex determination, rather than for the detection of genetic disorders (Westley, 1995).

**Sex-selective abortion.** The clearest evidence for the practice of fetal screening followed by sex-selective abortion comes from increases in sex ratios at birth. Sex ratios in China, Taiwan, and South Korea began to rise abruptly in the 1980s. In 1992, there were 119 boys for every 100 girls in China, 114 in South Korea, and 110 in Taiwan. In India, national-level estimates were as high as 112. The evidence for sex-selective abortion is particularly striking when sex-ratio imbalances are broken down by birth order (See Table 1).

**Table 1. Reported sex ratios at birth by birth order – South Korea and China**

| Year | Country | 1st | 2nd | 3rd | 4th | 5th + | All births |
|---|---|---|---|---|---|---|---|
| 1982 | S.Korea | 105.5 | 106.1 | 109.3 | 114.2 | — | 109.5 |
| | China | 106.5 | 107.2 | 113.1 | 115.5 | 106.9 | 107.8 |
| 1983 | S.Korea | 106.0 | 106.3 | 112.5 | 122.1 | — | 113.3 |
| | China | 107.7 | 107.5 | 107.2 | 108.2 | 105.4 | 107.7 |
| 1984 | S.Korea | 106.4 | 107.5 | 118.5 | 131.7 | — | 128.3 |
| | China | 108.7 | 102.1 | 113.6 | 112.6 | 116.8 | 108.3 |
| 1985 | S.Korea | 106.3 | 108.2 | 131.7 | 157.2 | — | 110.0 |
| | China | 106.1 | 116.1 | 114.3 | 126.5 | 116.6 | 111.2 |
| 1986 | S.Korea | 107.4 | 111.4 | 139.4 | 154.6 | — | 111.9 |
| | China | 105.2 | 116.8 | 123.2 | 125.0 | 124.3 | 112.1 |
| 1987 | S.Korea | 104.8 | 109.2 | 135.7 | 147.4 | — | 109.0 |
| | China | 106.7 | 112.6 | 118.9 | 118.1 | 125.6 | 110.8 |
| 1988 | S.Korea | 107.4 | 113.4 | 166.9 | 198.9 | — | 113.8 |
| | China | — | — | — | — | — | — |
| 1989 | S.Korea | 104.3 | 112.6 | 185.0 | 208.6 | — | 112.1 |
| | China | 104.9 | 120.4 | 124.6 | 132.7 | 129.7 | — |

*Source: Park and Cho 1995, from vital statistics data on current births (for Korea) andOne per 1,000 and Two per 1,000 Surveys (for China).*

In South Korea and China, sex ratios for third- and later-born children began to rise during the early 1980s. The 1989 sex ratio of 209 for fourth-born children in South Korea means that more than two boys were born for every girl at this birth order. By 1990, sex ratios in Taiwan reached 134 for third births and 159 for fourth births. These high sex ratios for late-order births are convincing indicators of the prevalence of sex-selective abortion. Yet they do not, in themselves, have a major impact on the sex ratios of national populations because few families have this many children (Westley, 1995).

Fertility rates in Korea and China were already falling before fetal sex screening became widely available. For Korea, demographic modeling suggests that after the screening technology was introduced, sex-selective abortion still had only a moderate effect on fertility reduction. In a country with low fertility, sex-selective abortion of early-order births may affect the sex distribution of the national population. According to 1990 census data for South Korea, nearly 80,000 female fetuses were aborted between 1986 and 1990 for purposes of sex selection – a number equivalent to about 5 percent of all female births (Westley, 1995).

Yet the resulting sex imbalance may be temporary. Recent data from South Korea indicate that sex ratios for firstborn children are indeed rising, but ratios for second-born children are going down. Results for completed fertility from the 1991 Fertility and Family Health Survey indicate a sex ratio of 118 for first births, 104 for second births following a daughter, and 94 for second births following a son. As in many countries, South Koreans tend to want a son followed by a daughter, and couples now appear to be using sex-selective abortion to achieve their ideal family composition (Westley, 1995).

The use of fetal-screening technologies for sex identification, however, was outlawed in South Korea in 1987. In 1990, the Ministry of Health and Social Affairs increased the penalties for doctors convicted of performing the tests and suspended the medical licenses of eight physicians – an action that was widely reported in the media. In 1994, the medical code was further strengthened: Physicians who perform such tests may now be imprisoned for up to one year, may be fined up to US$12,000, and may lose their medical licenses (Westley, 1995).

## Summary and Conclusions

As Sidney B. Westley has pointed out in the article, “Evidence Mounts for Sex-Selective Abortion in Asia,” (1995), son preference has deep social and cultural roots in some East and South Asian societies. Male children carry on the family

name, inherit the family property, and play a special role in family traditions. In countries with a strong Confucian influence, family ceremonies must be led by the eldest son of the most recent male ancestor. If no sons are born, the family dies. In such societies, it is important for a woman to produce a male heir.

Furthermore, the most recent study of Lee and Paik (2006) provides readers with a more comprehensive examination of the effects of zodiacal preferences on the sex ratio at birth and fertility. In the year of the Horse, the fertility rate drops significantly, while the sex ratio at birth increases, indicating that parents try to avoid having daughters with the inauspicious zodiacal sign. The finding that a cultural belief significantly affects demographic outcomes is true, suggesting that cultural reform or popular education by government and civil organizations should play an important role for population policymakers (Hammel in Lee and Paik, 2006).

Moreover, I would like to agree with Westley that powerful economic factors also support son preference. In many Asian societies, married sons are expected to live with aging parents and provide financial support. In contrast, when a woman marries, she joins her husband's household and does not normally contribute to the support of her own parents. Her marriage itself may impose a financial burden through expectations of a large celebration, as in Korea and Taiwan.

In describing the situation in South Korea, Yun-Ae Yi remarked at a symposium, "Given the existing gender differences in earnings in the marketplace, parents or parents-in-law may perceive long-run returns from sons to be substantially higher than from daughters." Indeed, studies of ideal family composition in South Korea indicate the persistence of a strong preference for sons (Westley, 1995).

Early observers predicted that son preference would impede efforts to slow down population growth, as couples would keep having children until they obtained the desired number of boys. In fact, several studies have shown a relationship between son preference and contraceptive use. For example, a 1991 survey in Taiwan revealed that 90 percent of couples who had two children including at least one son were using contraceptives; among couples with two daughters, only 76 percent were using contraceptives. In China in the late 1980s, women who already had at least one son were more than twice as likely to abort a subsequent pregnancy as women who had only daughters. Nevertheless, fertility has declined precipitously in several Asian countries where son preference is strong,

not only in China, where government policies have punished couples who have too many children, but also in Taiwan and Korea, where fertility has dropped to below-replacement levels without government penalties. As couples have fewer children, efforts to produce at least one son may intensify (Westley, 1995).

## Notes

[1] In 2003, there were 13,929 establishments engaged in astrological services (compared with 605,614 restaurants and 7,511 banks, for example), according to the Census on Basic Characteristics of Establishments (South Korea).

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