

Does the Gender of the Child Affect Acceptance of the One-child Certificate? The Case of Shaanxi Province, China * (Demographers' Notebook)

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Since the late 1970s, the Chinese Government has promoted the "one couple, one child" population policy to slow the rate of population growth. Couples with one child are encouraged to apply for a one-child certificate that is offered nationwide for those applicants who have signed a contract with a local family planning agency promising to have only one child. In return, they receive a monetary bonus and preferential assignment of housing and employment. Chen (1985:55) found that a total of 42 per cent of women with one child in the 1982 One-per-Thousand Population Fertility Sampling Survey had obtained a certificate; 78 per cent of those were in urban areas and 31 per cent resided in rural areas.

Persistent son preference in China is a manifestation of the strong Confucian influence that exists among Chinese families despite attempts to reduce it. Even before family planning programmes were introduced in China, son preference was evident in the better care and higher education received by sons as compared with daughters. After the introduction of family planning, especially the one-child per family campaign, conflicts between individual and social interests emerged. Most families wanted to have at least one son, but were requested to restrict their family size regardless of its sex composition. Although the Government's population policy has been remarkably successful in overriding the effects of socio-economic factors on fertility, it has been unable to eliminate son preference and persuade the majority to accept the one-child certificate. People continue to achieve their preferred family sex composition despite the "one-child policy". Son preference thus has a negative impact on the population control goal. Ching (1982:209) found that about two-thirds of the one-child certificate holders in 1981 had a boy.

Despite this, the one-child certificate has proved to be an effective method for encouraging the one-child family (Ching, 1982:209). Those who accept the one-child certificate gain specified benefits, while those who have more than one child face financial and social penalties. In addition, the one-child certificate is a psychological disincentive that helps to discourage people from having more children. The policy is carried out by ideological education (persuasion), supplemented by economic and administrative incentives and disincentives.

Previous studies have indicated a strong son preference among Chinese parents (Ching, 1982:210; Arnold and Liu, 1986:221). Wen (1992:38) documented a strong son preference at high birth orders which persisted even during the period when the family planning programme was being strongly implemented in Shaanxi Province. However, few studies have focused on gender preference and the one-child programme. Does the gender of the child affect acceptance of the one-child certificate and contraception? If it does, to what extent? If it does not, why? These are the issues explored in this study.

Data and methods

Data for this study were collected during the 1988 Two-per-Thousand National Fertility Survey in Shaanxi Province. The survey was conducted by the Chinese State Family Planning Committee in collaboration with the National Bureau of Statistics and National Planning Committee. Two types of questionnaire were used: one for households, the other for individuals. The household questionnaire recorded all members of the selected households who were in the house on the day before the interview. Information obtained included household members' religion, migration, marriage status, deaths in the household since 1981, and one-child certificate status. The questionnaire for individuals, which covered all ever-married women aged 15-57, included information on reproduction, contraception and breast-feeding. The survey adopted stratified, systematic, random-cluster sampling procedures, with villager groups, residence groups and institutional households as the sampling units. A total of 13,466 units were sampled nationally, distributed over 95 per cent of China's 2,707 counties. A total of 485,235 households and 2,151,212 persons were surveyed, accounting for about two per thousand of China's total population.

A 10 per cent sample of the data for Shaanxi Province was used in this study, the sample size being 7,495. The target population comprised couples who had one child, where the women were aged 15-49 years. A total of 332 households fell into this category. More than 70 per cent of women had married after 1979, that is, after the one-child family campaign had begun. Nearly 90 per cent of the women below 35 years of age were interviewed during the survey.

Multiple classification analysis (MCA) was used to analyse the association between acceptance of the one-child certificate, as the dependent variable, and the gender of the child, place of residence, age of the child, mother's education and age, as independent variables.

Results

Certificate status by the child's gender and residence

A significant association was found between acceptance of the one-child certificate and rural-urban residence; 11 per cent of rural residents and 62 per cent of urban residents, respectively, accepted the one-child certificate.

Approximately 30 per cent of couples who had a boy were certificate holders, compared with 20 per cent of those who had a girl. The sex ratio of one-child certificate holders was 159 compared with 97 for non-certificate holders. It has been suggested that rural-urban status plays an important role in the acceptance of the one-child certificate (Goodstart, 1982:37). After controlling for rural-urban residence, the sex ratio of the certificate holders was found to be much higher for rural couples than for urban couples, suggesting that couples who had a boy were more likely to accept the certificate than those who had a girl. However, there was no statistically significant difference between the child's gender and certificate-holding in either rural or urban areas.

Table 1: One-child certificate status by gender of child and selected characteristics, Shaanxi Province, 1988 (percentage)

	Holder	Non-holder	Total (N)
Residence			
Rural	11	89	100 (244)
Urban	62	38	100 (88)
<i>Chi-square = 87 *</i>		degrees of freedom = 1	
Gender and residence			
Total			
Boy	29	71	100 (175)
Girl	20	80	100 (157)
<i>Chi-square = 3.8</i>		degrees of freedom = 1	
Rural			
Boy	15	85	100 (123)
Girl	8	92	100 (121)
<i>Chi-square = 2.4</i>		degrees of freedom = 1	
Urban			
Boy	64	36	100 (52)
Girl	61	39	100 (36)
<i>Chi-square = 0.05</i>		degrees of freedom = 1	
Year of child's birth and residence			
Total			
1984-1988	14	86	100 (232)
1970-1983	53	47	100 (95)
<i>Chi-square = 34 *</i>		degrees of freedom = 2	
Rural			
1984-1988	4	96	100 (190)
1970-1983	41	59	100 (49)
<i>Chi-square = 52 *</i>		degrees of freedom = 2	
Urban			
1984-1988	60	40	100 (42)
1970-1983	65	35	100 (46)
<i>Chi-square = 0.3</i>		degrees of freedom = 1	
Mother's education			
Senior school	49	51	100 (83)
Junior school	25	75	100 (134)

Primary school	6	94	100 (70)
Illiterate	9	91	100 (45)
<i>Chi-square = 46 *</i>		degrees of freedom = 3	
Mother's age			
24 and below	4	96	100 (114)
25-29	27	73	100 (112)
30-34	47	53	100 (58)
35+	44	56	100 (48)
<i>Chi-square = 49 *</i>		degrees of freedom = 3	

Source: China 1988 fertility and contraceptive data tape, Shaanxi Province.

Note: * = The association between the independent variable and acceptance of the one-child certificate is statistically significant at the $p < 0.001$ level.

Certificate status by mother's age and education status

Women's age is one of the most important factors among the intermediate variables affecting fertility (Bongaarts, 1983). Women who have had their first birth at younger ages are likely to have a subsequent child more rapidly, resulting in a larger family for these women than for those who start their reproductive career at older ages. Easterlin (1979) and Cochrane (1983) have argued that high educational attainment for women is associated with fertility delay and higher contraceptive prevalence rates. Analysis of the Shaanxi data also indicated that mother's age and education were both positively related to acceptance of the one-child certificate. The relationship was statistically significant at the $p < 0.001$ level.

Certificate status by the gender of child and the year of the child's birth

The one-child family campaign began in late 1979. After four years of enforcement and much controversy, in early 1984, "important but little-noticed changes had occurred" (Greenhalgh, 1986:491). The modified one-child policy allowed couples to have more than one child under certain circumstances (Hull, 1991:27). Since then further provincial regulations on second children have been issued. The reasons for allowing a second child differ among provinces. In Shaanxi Province, there are nine separate regulations about the circumstances in which a second child may be permitted as listed below:

1. The couple's first child suffers from a non-hereditary disease or disability and is unable to become a normal worker.
2. One spouse is a handicapped veteran whose disability is of a specified degree.
3. The couple lives in mountainous areas where population is sparse.
4. Both spouses belong to an ethnic minority group.
5. Both spouses are returned overseas Chinese.
6. The first child of an uxori locally married couple is a girl.
7. Only one of the male children in a family is able to reproduce.
8. Pregnancy occurs after a couple which has remained childless for many years adopts a child and the wife is at least 35 years old.
9. One spouse in a second marriage has never had children and the other has only one child from a previous marriage.

(Greenhalgh, 1986:496-497)

Thus, because the year of a child's birth was likely to be related to acceptance of the one-child certificate, it was necessary to divide children into two groups for this study. One group included all children born between 1984, the year in which the one-child policy was modified, and 1988, the time of the survey. The second group comprised all children born before 1984. Among couples whose children were born after 1984, the percentage of certificate holders was extremely low, while among couples whose children were born before 1984, the level of acceptance of the one-child certificate was higher, over 50 per cent. The chi-square test showed the association to be significant.

The low level of certificate acceptance among families with children born after 1984 indicated that the Government's population policy has strongly affected the implementation of the one-child-per-family programme. Under the more flexible policy, couples with one child seem to have waited instead of accepting the certificate, regardless of whether they had one boy or one girl. By contrast, among couples with a child born before the one-child policy was relaxed, the level of acceptance was much higher. When residence was controlled, a large difference (10 times) was found between the two groups in rural areas. The chi-square test showed a significant association between the year of the child's birth and certificate status among rural couples only, while acceptance of the certificate differed little between the two groups for urban couples. However, the number of acceptors in the group of urban families with children born after 1984 was still over 50 per cent, compared with only 4 per cent for similar families in rural areas.

Child's age at the time of acceptance of the one-child certificate, by residence

About half of the urban couples applied for the one-child certificate within one month of their children's birth, compared with only 11 per cent of rural couples. The majority of rural acceptors applied for the certificate after their children were more than three months old.

Urban couples were more likely to accept the certificate soon after their children were born, suggesting a conscious decision not to have another child and probably reflecting the low infant mortality threat in urban areas. Their more prompt acceptance also reflects the attraction to urban families of the certificate's benefits. By contrast, the largest proportion of rural acceptors applied for the certificate at least three months after their children were born. This may be accounted for by rural couples' fear of a still high infant mortality; they may have waited to ensure that the child survived before accepting the certificate. Traditionally, the survival of a child to 100 days has been a big event in China to be marked by family celebrations. Parents usually hold a ceremony for the child and take a photograph of it that is usually known as the "100-days-photo". This tradition reflects the threat of high infant mortality. Perhaps partly because of this lingering fear of infant deaths, the incentives and disincentives for acceptance of the one-child certificate were apparently not sufficiently attractive to cause farmers to become immediate acceptors.

Table 2: Age of child at time of acceptance of the one-child certificate

Age (months)	Rural (%)	Urban (%)
0	4	22
1	7	24
2	14	9
3-11	46	27
12+	29	18
Total	100 (N = 28)	100 (N = 55)
<i>Chi-square = 10.4 *</i>		
degrees of freedom = 4		

Source: China 1988 fertility and contraceptive data tape, Shaanxi Province.

Note: * = The association between child's age and parents' acceptance of the one-child certificate is statistically significant at the $p < 0.05$ level.

Multiple classification analysis of acceptance of the one-child certificate among couples with one child

The preliminary analysis by cross tabulation showed that residence status, the year of the child's birth, mother's education and mother's age were associated with acceptance of the one-child certificate. To classify the net effects of each of these variables, multiple classification analysis was applied with each of the above variables as an independent variable, and acceptance of the one-child certificate as the dependent variable.

Resident status and mother's education were indicated by previous studies as the important factors affecting fertility (Bongaarts, 1983, Cochrane, 1983) and acceptance of the one-child certificate (Ching, 1982). Therefore, the two variables were selected as background variables in a separate MCA model (see table 3, column 2). To examine whether these two primary variables affected acceptance of the certificate through selected "intervening" variables, the year of the child's birth, mother's age and gender of child were successively introduced into the model in columns 3, 4 and 5.

Table 3: Effects of the gender of the child and selected characteristics of mother on acceptance of the one-child certificate

Variables	Unadj (1) Gross	Adj (2) (ResEd)	Adj (3) (YOCB)	Adj (4) (MA)	Adj (5) (GOC)	No.
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Grand mean = .25						
Residence						
Rural	-.14	-.12	-.10	-.10	-.10	244
Urban	.38	.33	.27	.27	.27	88
Eta/Beta	.52 *	.46 *	.38 *	.37 *	.37 *	
Mother's education						
Senior school	.24	.05	.06	.04	.04	83
Junior school	.00	.03	.04	.04	.04	134
Elementary	-.19	-.09	-.08	-.07	.06	70
Illiterate	-.16	-.05	-.11	-.10	-.11	45
Eta/Beta	.37	.12	.15	.14	.14	
Year of child's birth						
1984-1988	-.11		-.08	-.07	-.07	232
1970-1983	.25		.18	.17	.17	100
Eta/Beta	.38 *		.27 *	.25 *	.25 *	
Mother's age						
Below 24	-.21			-.05	-.05	114
25-29	.02			.04	.04	112
30 and above	.20			.01	.01	106
Eta/Beta	.39			.08	.08	
Gender of child						
Boy	.04				.03	175
Girl	-.05				-.03	157
Eta/Beta	.10				.07	
R2		.283	.347	.353	.357	

Source: China 1988 fertility and contraceptive data tape, Shaanxi Province.

- Notes: (1) = the gross or unadjusted deviations from the grand mean.
(2) = deviation from the grand mean after adjusting for residence and mother's education.
(3) = adjusted deviations from the grand mean with the year of child's birth introduced into the model as a third independent factor.
(4) = adjusted deviations from the grand mean with mother's age introduced into the model as a fourth independent factor.
(5) = adjusted deviations with gender of child and all factors.
* = The association between the independent variable and acceptance of the one-child certificate is statistically significant at the $p < 0.001$ level. The interaction is found in model 2 (column 3) only.
Abbreviations: Unadj = unadjusted; Adj = adjusted; No. = number; ResEd = residence and mother's education; YO CB = year of child's birth; MA = mother's age; and GOC = gender of child.

In column 2, the two primary variables of residence status and the mother's education explained about 28.3 per cent of the total variation in acceptance of the certificate. Residence can be seen to be an important factor in the model here; urban residence was strongly and positively associated with acceptance of the one-child certificate.

With the introduction of the year of the child's birth as an intervening factor (in column 3), the total amount of variation explained by the three variables reached 34.7 per cent. The year of the child's birth alone, therefore, adds 6.4 per cent to the total variation explained. At the same time, the effect of residence was reduced. Entering the mother's age and child's gender into the model increased the variation explained by only 1 per cent. This indicates that the year of the child's birth (as a proxy for the strength of the Government's population policy) was an important intervening factor in acceptance of the one-child certificate. Couples with a child born after 1984 were significantly less likely to accept the certificate. By contrast, the gender of the child has only a small effect on acceptance of the one-child certificate.

In this section, the current use of contraception among couples with one child is examined to investigate the effects of the gender of the child and certificate status on current use of contraception.

Previous studies have argued that mother's age, residence and education are determinants of contraception (Cochrane, 1983:125). Ching (1982) argued that the one-child certificate had an impact on contraceptive prevalence among couples who have one child. Table 4 indicates that certificate status, residence, mother's age and education were significantly associated with the use of contraception.

In table 5, the above MCA procedure is repeated for contraception as the dependent variable. It was observed that in column 1, contraception was strongly associated with certificate status and moderately associated with mother's age and residence. There was some variation in contraception according to mother's education and gender of the child, but no significant relationship was found between those variables and current contraceptive status in the model.

Table 4: Current use of contraception by gender of child and selected characteristics of mother and child (percentage)

	Use	Non-use	Total (N)
Certificate status			
Holder	93	7	100 (83)
Non-holder	45	55	100(249)
<i>Chi-square = 57 *</i>		degrees of freedom = 1	
Residence			
Rural	48	52	100(244)
Urban	84	16	100 (88)
<i>Chi-square = 33 *</i>		degrees of freedom = 1	
Gender and residence			
Boy	62	38	100(175)
Girl	48	52	100(157)
<i>Chi-square = 3.0</i>		degrees of freedom = 1	
Year of child's birth and residence			
1984-1988	47	53	100(232)
1970-1983	86	14	100 (95)
<i>Chi-square = 50 *</i>		degrees of freedom = 2	
Mother's education			
Senior school	76	24	100 (83)
Junior school	56	44	100(134)
Primary school	47	53	100 (70)
Illiterate	42	58	100 (45)
<i>Chi-square = 19 *</i>		degrees of freedom = 3	
Mother's age			
24 below	37	63	100(114)
25-29	59	41	100(112)
30-34	85	15	100 (58)
35+	69	31	100 (48)
<i>Chi-square = 39 *</i>		degrees of freedom = 3	

Source: China 1988 fertility and contraceptive data tape, Shaanxi Province.

Note: * = The association between the independent variable and use of contraception is

Table 5: Effects of selected characteristics on current use of contraception

Variables	Unadj (1) (Gross)	Adj (2) (ResAge)	Adj (3) (MEdu)	Adj (4) (Certs)	Adj (5) (GOC)	N
Grand Mean = .57						
Residence						
Rural	-.10	-.07	-.06	-.02	-.02	244
Urban	.27	.19	.16	.07	.07	88
Eta/Beta	.33 *	.23 *	.19 *	.08 *	.08 *	
Mother's age						
Below 24	-.20	-.15	-.16	-.12	-.12	114
25-29	.02	.01	.00	.00	.00	112
30 and above	.20	.15	.17	.13	.14	106
Eta/Beta	.33 *	.25 *	.27 *	.21 *	.21 *	
Mother's education						
Senior school	.19		.03	.02	.02	83
Junior school	.01		.03	.01	.01	134
Elementary	-.10		.00	.02	.03	70
Illiterate	-.15		.14	.11	-.12	45
Eta/Beta	.24		.12	.09	.10	
Certificate status						
Holder	.36			.24	.23	93
Non-holder	-.12			-.08	-.08	45
Eta/Beta	.41 *			.28 *	.27 *	
Gender of child						
Boy	.04				.03	175
Girl	-.05				-.04	157
Eta/Beta	.10				.07	
R2		.158	.170	.222	.227	

Source: China 1988 fertility and contraceptive data tape, Shaanxi Province

Notes: (1) = the gross or unadjusted deviations from the grand mean.
 (2) = deviation from the grand mean after adjusting for residence and mother's age
 (3) = adjusted deviations from the grand mean with education of mother introduced into the model as a third independent factor.
 (4) = adjusted deviations from the grand mean with certificate introduced into the model as a fourth independent factor.
 (5) = adjusted deviations with gender of child and all factors.
 * = The association between the independent variable and acceptance of the one-child certificated is statistically significant at the $p < 0.001$ level. No interactions are found in models.
 Abbreviations: ResAge = residence and mother's age; MEdu = mother's education; Certs = certificate status; for the others, see abbreviations for table 3.

In column 2, only two primary variables, residence and mother's age, were entered, which together explain 15.8 per cent of the total variation in current contraception. With the introduction of mother's educational status (column 3), a slight increase of 1.2 per cent was observed in the amount of variation in current contraception explained by residence and mother's age. When certificate status was introduced into the model, the total amount of variation explained by all variables reached 22.2 per cent. Holding a certificate has a large positive effect on contraceptive use (column 4), implying that certificate holders were more likely than non-holders to use contraception to prevent further pregnancy. Meanwhile, the net effect of residence status was reduced by almost 50 per cent with the acceptance of the certificate. Again, the gender of the child has only a weak effect on the current use of contraception in the model.

Discussion and conclusion

In contrast with Wen's finding (1992:34) of a strong, pervasive son preference on subsequent fertility among Shaanxi and Hebei couples (based on the 1985 China In-depth Fertility Survey, Phase I), we found a weak association between the gender of the child and acceptance of the one-child certificate by Shaanxi couples in both the cross-classification and multiple classification analyses of the 1988 Two-per-Thousand Survey data. However, it cannot be concluded that son preference among Shaanxi couples has vanished. It remains a clear tendency in rural areas, but the low proportion of the one-child certificate acceptors reflects the existence of stronger preferences for larger family size and specific sex composition. Wen (1992: 38-39) found that attitudes towards male superiority "did not prevent the average number of children per family from decreasing from as high as six children to around three children, partly because the impact of son preference is relatively weak among higher birth orders. It will have a more powerful influence on fertility as the average family size decreases further". However, we found that son preference does not emerge among rural couples with one child, regardless of whether the child is a boy or a girl. Such couples want another child and therefore they did not accept the certificate. The economic and social benefits of holding the certificate were not sufficiently attractive to farmers in comparison with the perceived benefits of additional children. Conversely, the threat of penalties was not sufficiently strong to outweigh those benefits.

By contrast, the high percentage of urban acceptors of the one-child certificate, regardless of the gender of the child, implies that son preference has decreased in urban areas of Shaanxi Province. The traditional Chinese belief in "more sons, more happiness" has apparently begun to fade among urban residents as more young couples have accepted the notion of having only one child with "more intelligence, more health". Another reason for urban couples accepting the "one child per family" policy is that the cost of a child in urban areas is much higher than in rural areas. Child care and education expenses are higher, as is the opportunity cost of childbearing owing to high labour-force participation rates among women. More children, therefore, mean more economic and psychological burdens for urban parents. Furthermore, the one-child campaign has been much more strictly enforced in urban areas than in rural ones, partly due to the greater ease with which economic and social sanctions can be imposed in urban areas. Urban couples who have a second child without an assigned quota face serious punishment. For instance, they could lose their jobs or be demoted. Hence, urban couples with one child are both discouraged by these penalties from having more children and encouraged to apply for the one-child certificate by the benefits it offers.

The significant difference in acceptance of the one-child certificate between parents of children born before and after 1984, the year in which the one-child policy was modified in rural areas, suggests that the influence of population policies is a significant factor influencing acceptance of the one-child certificate among rural couples. By contrast, little difference was found in urban areas, reflecting both the differential enforcement and impact of the one-child policy between urban and rural areas (Tu, 1989:341). Certificate status was a major factor related to contraception, suggesting that it is an effective method of persuading couples with one child to use contraception and presumably to cease bearing children.

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