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Fertility Impact of Sex Composition and Sequence Among Korean Women: An Exploratory Study*

1. INTRODUCTION

Heated debates are a-continuing among demographers over the influence on fertility of the parental sex preference. Some hold that the sex preference has but negligible impact on the parental fertility level, while those in the opposing camp maintain that sex bias has substantial influence on the fertility decision-making among parents, in particular among the woman falling in the category of the Neo-Confucian socio-cultural tradition. Undoubtedly there are the more cautious middle-of-the-roaders[1] who support the idea that the parental sex preference does influence the fertility level but it will not be an insurmountable obstacle to further fertility declines in the developing regions such as Korea.

Among those who hold to the idea that the parental sex preference on fertility is negligible are the mathematics-oriented demographers who believe in the heterogeneity within population. That is, if the parental sex preferences are heterogeneous among the population under study, it is likely that the individual sex preference effects cancel each

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1) Fred Arnold, "Measuring the Effect of Sex Preference on Fertility: The Case of Korea," University of California (Berkeley) Graduate Group in Demography, Program in Population Research Working Paper No. 12 (July, 1983), p. 22.

other with the result that there remains no net effect in the aggregate. Therefore, if one follows this reasoning, the effects of sex preference on individual couples do not and should not necessarily imply a net aggregate effect, though one should admit that the lack of an aggregate effect should not mislead one to think that there are no individual effects as such.

Conversely, what they maintain is that the parental sex preference would have impacts on the fertility if and only if the sex preferences are homogeneous, that is, no parents are risk-averse and thus do not stop childbearing after having four to five daughters in a row. Or all parents are risk-averse and stop having children after having only one daughter born to them(assuming that the parents are boy-preferential).

Homogeneity and heterogeneity aside, when the fertility levels were high the parental sex preference did not have much impact, since the parents expecting to have seven to eight children did not care whether their first two children were girls, though there survive a number of documents testifying to the boy preference attitude among the high fertility couples. To have a son born to them, we are told, a man wore boots or a woman wore a man's clothing during intercourse, and a man also hung his pants on the right or left side of the bed depending on whether he desired a son or a daughter.[2)]

The boy preference so far considered to be the most prevalent in the regions of Asia under the domination of Confucianism has been found surviving intact in parts of Africa as well:[3)]

> "..... if I have five daughters I would be pressed to have the sixth and the seventh child until I had a boy, and however educated you are this still happens.....men were needed for tribal wars—now we don't have those wars, but the concept of a head, the male head of the household, persists."

Demographers are also divided over the impact of the decline in family size on the strength in the parental son preference. There are those who argue that the parental desire for smaller family size would ultimately outweigh their son preference strength. For

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2) Neil G. Bennett, "Sex Selection of Children: An Overview," in Neil G. Bennett ed., *Sex Selection of Children,* Academic Press, 1983, pp. 1-2.
3) Terry Kantai, "Working with Women," *People,* Vol. 8, No. 1 1981, p. 19.

instance, McClelland[4] in his study of a Taiwanese data on the sex-composition desires has found that the parents' desire for large family sizes in the early surveys artificially depressed the strong parental male preference. He found that in the 1965 survey regardless of the current sex composition of the children already born, virtually all parents with two and three children wanted more children, forcing the son daughter ratio toward one. However, McClelland points out that the parental desire for sons in Taiwan as measured by the sex preference (IS) index decreased somewhat by the changing family size desires among parents between 1965 and 1980, indicating that the parents' number preference would prevail over their sex preference as the family size dwindles down.

On the other hand, another group of demographers takes the position that as the average family size begins to fall, the strength of sex preference will become a more salient factor in the individual couples' fertility decision-making.

In the current researcher's survey of Kyongbuk Province in Korea[5] it has been observed that as family size decreases over the 1974-1981 period, the parental son preference strength gets greater among women in the younger 20-29 age bracket than women in the older age category of 30 years and over, regardless of the general tendency toward the intra-cohort decline in sex preference over the corresponding period. The greater strength of the parental sex preference among the younger age category vis-a-vis the dwindling family size indicates that at least in Korea the recent decline in the parental number preference is working as an inadvertent stimulant strengthening the parental sex preference.

One may raise an objection to the above argument on the ground that the strength of the parental sex preference as measured by the IS indexes relects the parental attitude that does not necessarily translate into the individual couples' fertility behavior. That is, one may question whether introducing a sex constraint does in fact raise the number of pregnancies needed to achieve a child of a desired sex substantially.

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4) Gary H. McClelland, "Family Size Desires as Measures of Demand," in R. A. Bulatao, Ronald D. Lee (ed.), *Determinants of Fertility in Developing Countries; A Summary of Knowledge, Part A,* National Academy Press, Washington D.C., 1983 .

5) Hung-Tak Lee, *Causes of Son Preference in Korea: A Sociodemographic Analysis,* A Research Report to WHO, 1982 , p. 349.

But one should take into account the fact that those parents who want a two-child family but are indifferent to the sex sequence and composition of the children can anticipate 1.2 fewer pregnancies than those with sex preference and regulate their birth trials for a particular sequence and composition of the children desired.[6] Inasmuch as the parental sex preference influences their number preference to the same extent as the latter the former, it behooves the demographers to further delve into this sex preference matter.

Provided the parental sex preference is to be given little attention in the future, unexpected demographic as well as socio-political problems would have to be encountered. The extreme sex imbalance is likely to be engendered if parents resort to sex preselection or to post-fertilization techniques such as the selective abortion after the identification of the fetus' sex.[7]

II. SEX PREFERENCE IN KOREA

We have been told that Korea is one of those countries where the parental son preference still remains strong, along with Pakistan, India, and Bangladesh. Table 1 illustrates the strength of the parental son preference among Korean women, as compared to the son preference strength of the parents in 14 other countries that participated in the World Fertility Survey (WFS). The data are the ones released by the United Nations Population Division in 1981.[8]

Korea is shown, in Table 1, to be the strongest in the parental son preference followed by Pakistan, Nepal and Bangladesh. Panama has balanced sex preference, with the Dominican Republic, Peru, Costa Rica and Indonesia registering girl preference. Though for Korean women the desire for balance is greater (15) than that among Pakistani or Bangladesh women (which is an indication that in Korea the small family-size norm had

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6) John Bongaarts, Robert G. Potter, *Fertility, Biology and Behavior: An Analysis of the Proximate Determinants,* Academic Press, 1983, p. 219.

7) For references on the secondary sex ratio imbalance, readers are referred to William H. James, "Timing of Fertilization and the Sex Ratio of Offspring," in Neil G. Bennett (ed.), *Sex Selection of Children,* Academic Press, 1983, p. 73.

8) Quoted in Thomas W. Pullum, "Correlates of Family Size Desires," in R. A. Bulatao, Ronald D. Lee (ed.), *Determinants of Fertility in Developing Countries: A Summary of Knowledge,* Part A, National Academy Press, Washington D.C., 1983, p. 282.

been already inculcated by the time of the 1974 WFS/Korea), the data clearly show that Korea stands in the very forefront of the son preference scale. The case of Bangladesh is rather anomalous, the anomaly perhaps originating from the limited number of the women respondents with only two children regardless of sex.

Another direct indication to the strength of the parental son preference among Korean parents is provided by the unusually high sex ratio, compared to that of other countries, of the last wanted births as shown in Table 2.[9]

Table 1. Percentage of Women With Two Children Who Do Not Want Another Child by Sex Composition of the Children

	Current Sex Composition			Summary Scores	
Country	Two Daughters (x)	One Son, One Daughter (y)	Two Sons (z)	Son Preference (z-x)	Desire for Balance (y-[x+z]/2)
Korea, Republic of	36	71	77	41	15
Pakistan	12	35	44	32	7
Nepal	10	27	33	23	6
Bangladesh	67	69	19	19	8
Thailand	33	51	42	9	14
Fiji	23	36	30	7	10
Mexico	32	41	37	5	6
Colombia	45	53	49	4	6
Sri Lanka	39	60	41	2	20
Malaysia	15	25	17	2	9
Panama	34	49	34	0	15
Dominican Republic	30	22	28	−2	−7
Peru	46	50	42	−4	6
Costa Rica	38	35	32	−6	0
Indonesia	32	35	18	−14	10

Note: Table applies to currently married fecund nonpregnant women only.

9) John Cleland, Jane Verrall, Martin Vaessen, "Preferences for the Sex of Children and their Influence on Reproductive Behavior," *WFS Comparative Studies*, No. 27 Oct. 1983, p. 14.

Table 2. Sex Ratios of Last Wanted Births as Compared to Sex Ratios of all Preceding Birth: A Cross-Country Summary

Country	Sex Ratios	
	Last Wanted Births	All Preceding Births
Korea, Republic of	151.6	88.6
Pakistan	131.6	107.8
Nepal	130.7	99.9
Bangladesh	119.8	100.2
Thailand	107.6	106.5
Fiji	116.7	104.8
Mexico	101.9	103.3
Colombia	104.9	104.3
Sri Lanka	99.7	103.4
Malaysia	111.2	102.9
Panama	104.2	104.6
Dominican Republic	108.7	104.4
Peru	96.4	103.0
Costa Rica	94.4	104.3
Venezuela	104.4	98.1
Philippines	96.1	106.5
Jordan	134.3	103.5
Syria	122.0	104.3

Note: Table applies to currently married fecund and nonpregnant women only.

In the table the last wanted births refer to the following: for those who want no more children the most recently born child is defined as the last wanted birth, and for those women who want no more children and in fact did not want the last child, the last-but-one birth is assumed to be the last wanted birth. The women wanting additional number of child(ren) or undecided are considered to have not yet reached the last wanted birth and were thus excluded from the data.

Korea exhibits the most extreme case with the sex ratio of the last wanted births of 151.6 in stark contrast to that of the all preceding births of 88.6. Mexico, Peru, Panama,

Costa Rica, and the Philippines exhibit either balanced sex preference or girl preference.

Table 2 indicates that the parents' strong preference for boys over girls does influence their fertility decision-making and that in the presence of boy preference the disproportionately large number of the last child would be accounted for by boys which is what Korea finds herself in the above table.

India whose data on son preference are not included in the table is also noted for the parental son preference. For purposes of comparison in the strength of the parental son preference between Korea and India, the mean ideal number of children, the mean ideal number of sons, and the ideal sex ratio at birth are presented in Table 3.[10]

Table 3. Ideal Sex Ratios At Birth, Mean Ideal Number of Sons, and Mean Ideal Number of Children for Four Selected Countries

Country	Mean Ideal Number of Children (a)	Mean Ideal Number of Sons (b)	Ideal Sex Ratio (c)	(b)/(a) *
Korea (1971)	3.65	2.20	1.52	0.603
India (1970)	3.58	2.15	1.50	0.601
U.S. (1970)	2.86	1.46	1.04	0.510
Belgium (1966)	2.82	1.16	0.70	0.411

* These figures are calculated from the original table.

In Korea, according to Table 3, women would have to bear at least 152 sons for every 100 daughters if they are to achieve the ideal number of children, whereas in India the ratio would be 150 to 100, and in Belgium where girl preference prevails the ratio falls down to 70 to 100. Though the figures in Table 3 refer to the early 1970's, it appears that the strength of the parental son preference in Korea still remains stronger than in India. The one country yet to be compared with in the parental son preference is mainland China. In fact, it is of interest to note what the population structure of mainland China would look like in the twenty-first century if the Chinese people should succeed in reducing their fertility level to one child per couple in the presence of their son preference.

10) Andrew Mason, Neil G. Bennett, "Sex Selection with Biased Technologies and its Effect on the Population Sex Ratio," *Demography,* Aug. 1977 , p. 293.

III. DATA AND METHODOLOGY

The data for the current research come from the 1981 Son Preference Survey covering 832 women in Kyongbuk Province currently married and residing with their spouses. The sampled women in the son preference survey amounted to 880, but of them 832 women in the age category of 15—49 years were interviewed, along with a much smaller number (389) of their husbands. In the present study, the data from the 389 husbands were excluded from the analysis. The survey was primarily designed to gauge the amount of change in the extent of son preference prevalence and strength over the 1974—1981 period, the year 1974 being the year the WFS/Korea was conducted.

The survey data contain pregnancy histories of the individual women surveyed, with which the composition and the sequence of the sex of the individual children can be captured, and the way the parents realize their sequential goal by preferring one sex of child over the other in a particular order can be brought to light. Again, the parents' preferred order of sons and daughters is closely related to their ultimate family size, since in Korea the parents' sex preference is likely to result in one or two extra births before their sex preference strength gets forfeited due to a ceiling on the total number of childbearing the parents opt for.

The data from the son preference were subject to the loglinear analysis made available through the latest version of the SPSS package program,[11] since sex variables are essentially dichotomous in nature and the discrete data when subject to the linear probability models for the continuous variables would yield unsatisfactory results.[12] The same holds true for the probabilities of going from the Nth parity to the N+1th parity since the variables of this nature are much like the outcomes of binomial trials (p/p-1). The analysis of cross-classified data in particular in the multidimensional situation is appropriate for the loglinear analysis, and of recent years, the loglinear analysis is frequently used by social scientists, because this technique provides a powerful way of investigating the great

10) *SPSS-Xtm User's Guide*, McGraw-Hill, New York, 1983, pp. 541—570.

12) For differences and similarities between the discrete and continuous variables, the readers are referred to Christopher Winship, Robert D. Mare, "Structural Equations and Path Analysis for Discrete Data," *American Journal of Sociology*, July, 1983, pp. 54—109.

number of marginal and partial tables from multidimensional cross-tabulations.[13]

IV. DISCUSSIONS AND SUMMARY

In an effort to check whether a particular sex of the Kth child and the previous child born does have impact on the probabilities of progressing from the Kth parity to the K+1th parity, a series of loglinear analyses have been carried out, and the partial list of the results is given in Table 4. In the table, the sex of the children is coded 0 for boys and 1 for girls,

Table 4. Observed and Expected Number of Women Who do and do not Progress to K+1th Parity Depending on the Sex of the Kth Child and the Previous Child(ren) Born

Factor	Code	Observed Frequencies (%)	Expected Frequencies (%)
A) from first parity to second parity (logit model—BIRS by SEXF only)			
BIRS	0		
SEXF	0	45.00 (30.00)	45.00 (30.00)
SEXF	1	39.00 (30.47)	39.00 (30.47)
BIRS	1		
SEXF	0	105.00 (70.00)	105.00 (70.00)
SEXF	1	89.00 (69.53)	89.00 (69.53)
B) from second parity to third parity (logit model—BIRT by SEXF, and BIRT by SEXS together)			
BIRT	0		
SEXF	0		
SEXS	0	61.00 (48.41)	63.50 (50.40)
SEXS	1	44.00 (40.74)	41.50 (38.43)
SEXF	1		
SEXS	0	61.00 (51.69)	58.50 (49.58)
SEXS	1	28.00 (34.57)	30.50 (37.65)
BIRT	1		
SEXF	0		
SEXS	0	65.00 (51.59)	62.50 (49.60)
SEXS	1	64.00 (59.26)	66.50 (61.57)
SEXF	1		
SEXS	0	57.00 (48.31)	59.50 (50.42)
SEXS	1	53.00 (65.43)	50.50 (62.35)

13) For introductory texts on the loglinear analysis for social researchers, see G. Nigel Gilbert, *Modelling Society; An Introduction to Loglinear Analysis for Social Researchers,* George Allen & Unwin, 1981 and Stephen E. Fienberg, *The Analysis of Cross-classified Categorical Data,* MIT Press, 1980.

Table 4. Continued

Factor	Code	Observed Frequencies (%)	Expected Frequencies (%)
C) from fourth parity to fifth parity (logit model—BIRFH by SEXF by SEXT, and BIRFH by SEXFR together)			
BIRFH	0		
SEXF	0		
SEXS	0		
SEXT	0		
SEXFR	0	6.00 (54.55)	7.80 (70.91)
SEXFR	1	9.00 (90.00)	4.98 (49.77)
SEXT	1		
SEXFR	0	8.00 (80.00)	8.40 (83.99)
SEXFR	1	3.00 (50.00)	4.08 (68.08)
SEXS	1		
SEXT	0		
SEXFR	0	9.00 (81.82)	7.80 (70.91)
SEXFR	1	7.00 (77.78)	4.48 (49.77)
SEXT	1		
SEXFR	0	17.00 (89.47)	15.96 (83.99)
SEXFR	1	13.00 (65.00)	13.62 (68.08)
SEXF	1		
SEXS	0		
SEXT	0		
SEXFR	0	12.00 (92.31)	10.92 (83.99)
SEXFR	1	6.00 (66.67)	6.13 (68.08)
SEXT	1		
SEXFR	0	12.00 (70.59)	12.05 (70.91)
SEXFR	1	10.00 (52.63)	9.46 (49.77)
SEXS	1		
SEXT	0		
SEXFR	0	14.00 (93.33)	12.60 (83.99)
SEXFR	1	13.00 (61.90)	14.30 (68.08)
SEXT	1		
SEXFR	0	11.00 (57.89)	13.47 (70.91)
SEXFR	1	5.00 (27.78)	8.96 (49.77)
BIRFH	1		
SEXF	0		
SEXS	0		
SEXT	0		
SEXFR	0	5.00 (45.45)	3.20 (29.09)
SEXFR	1	1.00 (10.00)	5.02 (50.23)
SEXT	1		
SEXFR	0	2.00 (20.00)	1.60 (16.01)
SEXFR	1	3.00 (50.00)	1.92 (31.92)
SEXS	1		
SEXT	0		

Table 4. Continued

Factor	Code	Observed Frequencies (%)	Expected Frequencies (%)
SEXFR	0	2.00 (18.18)	3.20 (29.09)
SEXFR	1	2.00 (22.22)	4.52 (50.23)
SEXT	1		
SEXFR	0	2.00 (10.53)	3.04 (16.01)
SEXFR	1	7.00 (35.00)	6.38 (31.92)
SEXF	1		
SEXS	0		
SEXT	0		
SEXFR	0	1.00 (7.69)	2.08 (16.01)
SEXFR	1	3.00 (33.33)	2.87 (31.92)
SEXT	1		
SEXFR	0	5.00 (29.41)	4.95 (29.09)
SEXFR	1	9.00 (47.37)	9.54 (50.23)
SEXS	1		
SEXT	0		
SEXFR	0	1.00 (6.67)	2.40 (16.01)
SEXFR	1	8.00 (38.10)	6.70 (31.92)
SEXT	1		
SEXFR	0	8.00 (42.11)	5.53 (29.09)
SEXFR	1	13.00 (72.22)	9.04 (50.23)

Note: BIRS: second parity
SEXF: sex of first child
BIRT: third parity
SEXS: sex of second child
BIRFH: fifth parity
SEXT: sex of third child
SEXFR: sex of fourth child

while, the progression from the Kth parity to the K+1th parity is coded 1 whereas the absence of the progression from the Kth parity to the K+1th parity is coded 0.

In the particular logit model employed (BIRS by SEXF model), the odds of not progressing from the first parity to the second parity when the first child is a boy is 0.429 to 1,[14] while the odds of progressing from the first parity to the second parity when the first child is a girl is 2.331 to 1 or the reciprocal of 0.429.

Disregarding the sex of the first child, the odds of not progressing from the first to the second parity for the same logit model considered is 0.433.

14) Calculated as the proportion of those with a boy for the first child who do not proceed to the second parity (39%) divided by the proportion of those who proceed to the second parity (70%).

A similar reasoning applies to all other parity progression probabilities up to the fifth parity, though the data for the progression from the fourth to the fifth parity (for the particular logit model considered in Table 4) do not seem to provide any substantial evidence on the impact the sex composition and sequence on the ultimate family size due to the extremely limited number of cases falling into each category.

Nonetheless, evidences have been found in Table 4 that the sex sequence and composition of the child(ren) already born influence the individual couples' fertility decision whether to proceed to the next higher parity or parities.

Table 5. Logit Analysis of Sex-Composition and Sequence Effects on Family Size among Korean Women

Progress to K+1th Parity	Birth Orders Entered in Logit Models	Logit Parameter Estimates (Model Coefficients)	Additive Parameter Estimates (Log-Odds)	Multiplicative Parameter Estimates (Odds)	G^2	df	p
1→2	[1]	w^2 −0.418 (−0.384)****	−0.836	0.433	0	0	1.000
		w^2_1 −0.006 (−0.085)	−0.012	0.988			
2→3	[1][2]	w^3 −0.122 (−2.469)**	−0.244	0.783	0.985	1	0.321
		w^3_1 0.008 (0.168)	0.016	1.017			
		w^3_2 0.122 (2.469)**	0.244	1.276			
3→4	(A) [1][2][3]	w^4 0.200 (3.781)***	0.400	1.492	7.403	4	0.116
		w^4_1 0.096 (1.807)	0.192	1.212			
		w^4_2 0.104 (1.964)*	0.208	1.231			
		w^4_3 0.170 (3.189)**	0.340	1.405			
	(B) [12][3]	w^4 0.199 (3.779)***	0.398	1.489	13.624	5	(0.018)#
		w^4_{12} 0.038 (0.731)	0.076	1.079			
		w^4_3 0.151 (2.872)**	0.302	1.353			
	(C) [1][23]	0.225 (3.005)**	0.424	1.528	18.260	5	(0.003)#
		w^4_1 0.081 (1.563)	0.162	1.176			
		w^4_{23} −0.081 (−1.553)	−0.162	0.850			
4→5	(A) [1][2][3][4]	w^5 0.469 (5.710)****	0.938	2.555	18.438	11	0.072
		w^5_1 0.143 (1.848)	0.286	1.333			
		w^5_2 0.021 (0.275)	0.042	1.043			
		w^5_3 0.193 (2.496)**	0.386	1.471			
		w^5_4 0.221 (2.931)**	0.442	1.556			
	(B) [12][23][34]	w^5 0.392 (5.381)****	0.784	2.190	31.169	12	(0.002)#
		w^5_{12} −0.136 (−1.868)	−0.272	0.762			
		w^5_{23} −0.040 (−0.554)	−0.080	0.923			
		w^5_{34} −0.117 (−1.599)	−0.234	0.791			
	(C) [13][4]	w^5 0.412 (5.464)****	0.824	2.280	21.438	13	0.065
		w^5_{13} 0.225 (3.005)**	0.450	1.568			
		w^5_4 −0.192 (−2.563)**	−0.384	0.681			
	(D) [1][34]	w^5 0.146 (5.548)****	0.832	2.298	31.461	13	(0.003)#
		w^5_1 0.140 (1.867)	0.280	1.323			
		w^5_{34} −0.108 (−1.486)	−0.216	0.806			

( ) refers to Z values
* $p<0.05$, ** $p<0.02$, *** $p<0.001$, **** $p<0.00001$.
# these models fail to fit the observed data at the usual 5 percent level or better as indicated by their p values.

A much clearer picture on the fertility impact would emerge if the individual odds of progressing or not progressing to the next higher parities are decomposed by the factors that enter into the fertility decision-making of the women under study.

Table 5 provides various logit models employed to decompose the odds into components. For instance, in Table 4 we saw that in the BIRS by SEXF model the odds of not progressing from the first to the second parity when the first child is a boy is 0.429 to 1, and this figure 0.429 is derived by multiplying the first two odds (0.433 and 0.988) in the fifth column of Table 5. This indicates that having a boy for the first child slightly lowers the probability of not progressing to the second parity for the parents in Korea, an indirect evidence that, as far as the 1981 Son Preference Survey is concerned, virtually no couples with only one child (boy) would have liked to stop childbearing entirely.

Reading down the odds column (fifth column) in Table 5, one notices that the odds of not progressing to the next higher parity, independent of the sex composition and sequence of the child or children already born, gradually increases, from 0.433 to 1 for the first parity women to 0.783 to 1 for the second parity, up to 2.555 to 1 for the fourth parity, as one might have expected.

The fact that the odds of not progressing to the third parity for the second parity women still hovers below unity (0.783) bespeaks that the average number of children for the Korean women exceeds two. In point of fact, the total fertility rate for both the 1979 contraceptive prevalence survey (CPS) and for the 1982 national family health survey (NFHS) remained unchanged at the 2.7 level.

Worthy of note among the data in Table 5 are those explainng that the progression to the third parity is strongly influenced by the sex of the second child. For instance, other things being equal, the odds of not progressing to the third parity for the women with a boy as their second child is shown to be 1.276 to 1. That is, if the second child is a boy, the parents are more likely to stop childbearing.

Conversely, if the second child happens to be a girl, the odds for the parents not to proceed to the next higher parity is 0.724 to 1.

In the progression from the third to the fourth parity, sex of the second and the third child is found to have influence, though the influence of the third child's sex is greater in strength than that of the second child. If the third child is a boy, the parents are likely to

terminate childbearing. However, the combined effects of the sex composition of the second and the third on the probabilities of progressing to the fourth parity proved to be insignificant. (Moreover, the p value for the model fitted to the observed data to test this combined sex composition effects is 0.003, far below the customary 5 percent significance level).

As for the progression to the fifth parity, sex of the third and the fourth child appears to have substantial impact, though the logit models fitted for this category of women barely meet the 5 percent level, with p values of 0.072 and 0.065 respectively. Another noteworthy feature in the table is that the combined sex composition effects of the first and the third child do exert influence on the parental desire to have additional number of child.

Table 5 also shows that having a boy for the fourth child appears to encourage (odds of 0.681 to 1) the parents to proceed to the next higher parity, perhaps due to the sex combination of the preceding children. A caveat should enter here, however, since the number of cases falling into each cell in the case of the progression from the fourth to the fifth parity is severely limited. The data in the lower panel of Table 5 should be digested with caution.

In all, the picture that emerges from Table 5 provides a clue to the parental sex-composition desire and to the order in which the parents desire to achieve a particular sex combination of their children. The data thus shed light on the way the parents' sex-compositional goal and their sex-sequential goal interact with each other to influence the ultimate family size.

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子女의 性構成과 家族크기

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出生한 子女의 性構成이 家族의 크기(즉 여기서는 夫婦가 出産하는 子女數를 말함)에 어떤 영향을 미치는 가를 log-linear 分析方法을 사용하여 調査하였다.

이제까지 子女의 性이 夫婦의 出産行爲에 미치는 영향에 관한 硏究에 사용된 方法들은 性質上 discrete variable일 수밖에 없는 sex variable을 discrete variable 과는 다른 continuous variable로 간주하여 分析을 시도하여 왔기 때문에 方法論上의 어려움을 극복할 수가 없었는데 이같은 分析上의 어려움을 제거하여 준 것이 log-linear分析方法을 응용한 logit model이다.

이러한 logit model을 적용한 결과 두번째 子女에서 세번째 子女로의 進行여부는 두번째 子女의 性에 의해서 영향을 받는 것으로 나타나고 있다.

그러나 첫째 子女에서 둘째 子女로의 進行여부는 첫째 子女의 性과 無關한 것으로 나타나고 있는데 이와 같은 현상은 아직도 韓國의 경우 性에 상관없이 최소한 두명 이상의 子女들을 모든 부모들이 가지려 하고 있기 때문인 것으로 풀이되고 있다.

세번째 子女에서 네번째 子女로의 進行여부 역시 세번째 子女의 性에 의해 영향을 받는 것으로 나타나고 있으며 네번째에서 다섯번째 子女로의 進行역시 네번째 子女의 性에 의해 영향을 받고 있고, 더욱이나 다섯번째 子女로의 進行은 네번째 子女의 性뿐만 아니라 첫째와 세째 그리고 세째와 네째 子女의 性配合이 네째 子女의 性과 함께 영향을 미치는 것으로 나타나고 있어 子女의 性構成(sex composition)뿐만 아니라 이들 性構成이 어떤 順序(sex sequence)로 이루어 지느냐에 의해서 家族의 크기가 다르게 나타날 수 있음을 말해주고 있다.

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