Chapter VI

THE EFFECTS OF SEX PREFERENCES ON CURRENT FERTILITY

6.1 THE PROBLEM

14

The analysis of empirical data has already shown that sex or gender preferences may sustain higher levels of childbearing than would be case in the absence of such preferences. This is so because couples may continue childbearing beyond their overall desired family size in order to achieve some favourable number or distribution of sons and daughters. The evidence gathered from the recent rural as well as urban data leaves no doubt that the sex of a child is important to parents in India. In certain societies, sex preference is now having a greater effect on fertility because family size norms have gone down and contraceptive use has gone up. If the sex of their children matters to parents, it is interesting to understand, from the policy point of view, the implications that arise if couples continue reproduction in order to achieve their desired sex composition, on the level of national birth rate and other current fertility indices. In this regard, a fertility decision making model has been conceived and presented in Chapter IV. To measure precisely the effect of sex preference on current fertility under this model, some hypothetical cases under the experimental set, have been considered and in each case the expected level of

future fertility, as against that of the control set where no such stopping rules are assumed, have been computed. These hypothetical cases are however essentially framed based on empirical data regarding sex preference for India, presented earlier (Chapter III, Section 3.1), to make them more realistic. The final twelve hypothetical cases (giving rules for stopping) selected for presentation are described below.

Couples stop reproduction as soon as they give birth to :

Rule 1 : two children (s=2) Rule 2 : three children (s=3) Rule 3 : four children (s=4) Rule 4 : one son and one daughter (b=1, g=1) Rule 5 : two sons (b=2) Rule 6 : one son and two daughters (b=1, g=2) Rule 7 : two sons and one daughter (b=2, g=1) Rule 8 : two sons and two daughters (b=2, g=2) Rule 9 : three sons and one daughter (b=3, g=1) Rule 10: one son and one daughter or three children (b=1 and g=1, or s=3) Rule 11: two sons and one daughter or four children (b=2 and g=1 or s=4)

It is seen that Rules 1 to 3 are framed without any allowance for sex preference and Rules 4 to 9 are meant for those couples who wish to continue reproduction until the desired number of children by sex is achieved. As mentioned earlier, the commonly preferred combinations of children by Indian couples are considered in framing these hypothetical cases (Rules 4 to 9). The remaining three stopping rules (Rules 10 to 12), regarding sex preference, are framed considering that it may be unrealistic to assume that couples will continue reproduction indefinitely until they achieve the desired minimum number of children of each sex.

6.2 APPLICATION OF THE MODEL

Using the results given in Chapter IV (Section 4.3.1), the expected current fertility for fulfilling the desire of couples in the above twelve hypothetical cases under the experimental set, as well as for the control set have been computed corresponding to various combinations of fecundability ($\pi = 0.384$, 0.612) and rest period (h = 1.50, 1.75 years). These values of the parameters have been chosen arbitrarily but are consistent with the empirical estimates for Indian women (see Chapter V). The levels of fecundability (π) are assumed on the basis of the estimates derived from All India age specific fertility rates. The values of h are based on nine months of gestation (G = 0.75 year) plus nine to twelve months of postpartum amenorrhea

(M = 0.75, 1.00 year). Since mortality among children is ignored in the present set of stopping rules regarding sex preference, the values of α , δ_{α} and ε_{α} are taken to be zero in the model. The value of p is assumed to be 0.512. The value of $(1-\beta_x)$ as well as that of the other parameters used in the model to derive fertility rates, are given in Chapter V.

6.3 RESULTS

The results obtained in relation to the twelve hypothetical cases described above, are summarised in Tables 6.2 to 6.8.

6.3.1 <u>Probability of Not Satisfying Sex Preference</u> at the Attained Parity

Table 6.1 shows the probability (Q_m^*) of not achieving the desired number of children of each sex (b boys and g girls) by the time the attained parity is m (m = 1, 2,8). This is shown for all possible combinations of b and g upto and including a total of four children. The probabilities Q_m^* for m ≥ 9 have not been presented for want of space, although they are used in the calculations for Tables 6.2 to 6.8.

As might be expected, for any given combination of b and g, the values of Q_m^i decrease with the increase in parity. In other words, the probability of achieving the desired family size composition $(1 - Q_m^i)$ increases with

Table 6.1 : Probability $(Q_m^{\,\prime})$ of Not Achieving the Desired Number of Children of Each Sex (b Boys & g Girls) by Parity m. $(p = .512, \delta_{\alpha} = 0, \epsilon_{\alpha} = 0, \alpha = 0)$

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	red Num nildre					Parity	(m)			
Boys (b)	Girls (g)	Total (b+g)	1	2	3	4	5	6	7	8
1	0	1	. 488	•238	. 116	. 057	.028	.014	. 077	,003
0	1	1	•512	.262	•134	.069	•035	.018	•009	.005
2	0	2	ş	•738	. 482	•295	.173	•099	• 055	.030
0	2	2		.762	.518	•331	. 203	.121	•071	.041
1	1	2		. 500	.250	.125	.063	.032	.012	.008
3	0	3	,		.866	. 669	. 478	•322 [°]	.207	.129
0	3	3			.884	.705	. 523	. 367	. 247	.161
2	1	3			.616	•363	. 208	.117	•064	.035
1	2	3			.634	.387	.231	. 135	.077	•044
4	0	- 4		-		.931	. 797	.634	•474	•337
0	4	4				. 943	.827	.679	.526	.390
3	1	4				.738	•513 _.	•340	.217	.134
1	3	4				.762	•550	。 380	. 253	.164
2	2	4				.625	•376	. 220	.1 26	.071

Note : These probabilities and the results presented in the subsequent tables are derived by the model presented in Chapter IV. The values of $Q_{\rm m}^{\rm t}$ for m ≥ 9 have not been presented, although they are used in the calculations for Tables 6.2 to 6.8.

the increase in parity. For any given value of b+g, the chances of not achieving the desired family size composition (Q_m^{\prime}) would be least if there was no sex preference. This holds true considering the variation in Q_m^* under a given parity. The value of ${\tt Q}_m^{\,\prime}$ increases with increasing preference for one sex over the other, the maximum being reached for a family size where the desired minimum consists of one sex only. These probabilities however decrease as the minimum desired number of two sexes becomes equal or nearly equal. Even in those cases where the values of b and g are equal or nearly equal, the probability is at the most 0.50 that the desired number of children of each sex will be achieved when the attained parity is equal to b+g (except when b+g = 1). Thus, the expected family size will be much larger than b+g if the couples continue to strive for the minimum desired number of children of each sex.

It may be recalled that a number of current fertility indices have been considered to examine the likely impact of various stopping rules regarding sex preference on fertility. Each of them is taken up for discussion in the following sections.

6.3.2 Impact on Total Fertility

Table 6.2 shows the Total Marital Fertility Rate (TMFR) for the control set and for the experimental set

Table 6.2 : Total Marital Fertility Rate for the Control Set and for the Different Stopping Rules Under the Experimental Set, 1986

	Tota	al Marital I	Fertility R	<u>ate</u>
Fecundability Level (π)	π, =	• 384	$\pi = $	612
Rest Period (h)	h=1.50 years	h=1.75 years	h=1.50 years	h=1.75 year:
Control Set	5.31	5.02	6.97	6.49
Experimental Set		۰,		
Rule 1	1.87	1.87	1.87	1.87
Rule 2	2.77	2.76	2.81	2.81
Rule 3	3.57	3.55	3.73	3.72
Rule 4	2.65	2.63	2.75	2.74
Rule 5	3.24	3.20	3.48	3.45
Rule 6	3.71	3.65	4.03	3.98
Rule 7	3.66	3.60	3.96	3.91
Rule 8	4.27	4.17	4.76	4.68
Rule 9	4.47	4.35	5.11	4.98
Rule 10	2.32	2.32	2.34	2,34
Rule 11	3.27	3.24	3.38	3.37
Rule 12	2.53	2.52	2.56	2.56

+ Computed from single year ASMFR.

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(under different stopping rules) during the period 1981-96. It is in fact shown for a year (1986) as the fertility rates for the period 1981-96 remain stable under the control set and under each stopping rule (for details, refer Chapter IV, Section 4.2.2). Table 6.2 shows that the proposed model is sensitive enough to indicate the variation in the level of fertility between the sets of values of the parameters π and h under each stopping rule.

170

The likely impact of sex preference on current fertility is clearly evident when TMFRs under different stopping rules are compared (see Table 6.2). For a given set of values of the parameters π and h, the lowest total fertility would be achieved if there was no sex preference. This holds true considering the variation in fertility under a given size of family (number of total children desired). The next lowest TMFR appears when the preference is for equal numbers of each sex. When the number of sons desired is greater than the number of daughters under a given size, TMFR is greater than that in the case where the preference is for equal numbers of each sex. The maximum is obviously reached when the desired minimum consists of one sex only (all combinations are not shown in Table 6.2). In other words, it may be said that total fertility increases with increasing preference for one sex over the other. The findings are . basically consistent with those of other related studies

where the variation in family size under different rules adopted by the parents regarding the sex composition of their children is examined through probability models (Pathak, 1973; Sheps, 1963).

In order to understand the implications of allowing couples to attain the desired family size and/or its sex composition on their total fertility, TMFRs obtained under different stopping rules are compared with those of the · control set. It is evident from Table 6.2 that the current level of fertility can be substantially reduced even if all couples are allowed to have one son and one daughter (Rule 4) or two sons and one daughter (Rule 7). For example, the expected total fertility rate for attaining the desired sex composition under Rules 4 and 7 is found to be in the range of 2.63-2.75 and 3.60-3.96 respectively, while it is in the range of 5.02-6.97 (depending on the values of π and h), under the control set. It can, however, be seen from Table 6.2 that the TMFR for attaining the desired sex composition is more under Rule 9 when compared with the same in the rest of the eleven hypothetical cases illustrated here. In this case, greater preference for size and sex (boys) is shown. For Rules 4 and 8; where a couple gives equal sex preference in case of two and four children, the TMFR is still less than that obtained under Rules 5 and 9 respectively. Under Rules 10-12, indefinite reproduction in order to fulfill

sex preferences, is curbed by imposing an upper limit on total children. For example, under Rule 11 a couple will, at the most, have four children to satisfy its desired sex composition of two sons and one daughter in the family and hence the TMFR in case of this rule is less than the same for getting two sons and one daughter under Rule 7. It is only for Rule 5, that the desire for a girl is not shown and a couple does not stop reproduction until two sons are born. It is interesting to note that the value of TMFR under Rule 5 is in the range of 3.20 - 3.84, depending on the values of the parameters (π, h) as against 1.87 under Rule 1 where couple's can have two children irrespective of the sex. Further, the values of TMFR under Rule 2 (where a couple can have three children) and Rule 3 (four children) are in the range of 2.76 - 2.81 and 3.55 - 3.73, respectively. The total fertility rate under Rule 5 is therefore almost equal to that of getting between three and four children, indicating that an extremely strong preference for sex of children leads to a very high total fertility rate.

6.3.3 Age Specific Marital Fertility Rate

Tables 6.3 to 6.6 show the Age Specific Marital Fertility Rate (ASMFR) for the control set and experimental set, corresponding to various combinations of π and h. This is shown for the year 1986. The pattern of ASMFR for any other year within 1981-96 is close to that of 1986 for

,	ASMFR (Age Gro		er 1000	Married	Women) U	nder
	15-19	20-24	25-29	30-34	35-39	40 - 44
ontrol Set	142.47	223.41	230.83	209.88	167.86	106.61
Experimental Set		,	, 1			
Rule 1	140.68	157.40	68.04	18.34	3.69	0.54
Rule 2	142.47	210.25	143.32	`57 .1 6	15.31	2.82
Rule 3	142.47	222 .51	201.51	115.21	42.00	9.89
Rule 4	141.59	187.02	123.60	61.15	24.91	7.94
Rule 5	142.01	202 <u>,</u> 58	159.59	96.77	47.59	17.86
Rule 6	142.47	218.37	190.70	122.79	62.13	23.72
Rule 7	142.47	218.12	188.96	119.62	59.06	21.90
Rule 8	142.47	223.07	218.43	161.87	-90.46	36.54
Rule 9	142.47	223.16	221.85	173.27	105.32	46.86
Rule 10	141.59	183.85	105.69	37.75	9.52	1.68
Rule 11	142.47	217.80	179.18	92.93	31.75	7.20
Rule 12	142.01	196.40	123.57	46.98	12.27	2.22

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``	ASMFR (Age Gro	Births p up :	er 1000	Married	Women) U	nder
`	15-19	20-24 ,	25-29	30-34 .	35-39	40-44
Control Set	136.45	211.19	217.63	197.84	158.19	100.50
Experimental Set		,		·		۰.
Rule 1	136.00	157.68	70.54	19.32	3.93	0.57
Rule 2	136.45	203.63	147.09	61.45	16.91.	3.17
Rule 3	136.45	211.00	199.31	121.73	46.72	11.39
Rule 4	136.22	182.53	124.08	63.16	26.47	8.68
Rule 5	136.33	195.19	157.34	98.11	49.68	19.19
Rule 6	136.45	208.37	186.98	124.30	64.76	25.45
Rule.7	136.45	208.23	185.58	121.44	61.84	23.62
Rule 8	136.45	211.12	210.24	161.56	93.65	39.08
Rule 9	136.45	211.14	212.36	170.67	107.05	49.11
Rule 10	136.22	180.67	108.83	40.41	10.43	1.88
Rule 11	136.45	208.16	179.26	98.61	35.28	8.24
Rule 12	136.33	191.59	127.02	50.41	13.51	2.50

Table 6.4 : Age Specific Marital Fertility Rate (ASMFR) for the Control Set and for the Different Stopping Rules Under the Experimental Set, 1986 $(\pi = .384, h = 1.75 \text{ years})$

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he Contr ules Und	fic Mari ol Set a er the E 2, h = 1.	nd for t xperimen	he Diffe	rent Sto	
ASMFR (Age Gro	Births p up :	er 1000	Married	Women) U	nder
15-19	20-24	25-29	30-34	35-39	40-44
189.65	293.37	302.34	274 . 85	219.78	137.35
			,		
183.74	156.94	41.73	6.71	0.91	0.07
189.65	250.84	113.93	25.23	3.81	0.40
189.65	288.16	205.85	69.95	13.33	1.67
186.70	213.93	110.99	42.10	13.19	3.22
188.11	245.74	163.81	80.19	31.12	9.10

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	Age Gro	up:				
	15-19	20-24	25-29	30-34	35-39	40-44
Control Set	189.65	293.37	302.34	274.85	219.78	137.35
<u>Experimental</u> <u>Set</u>						
Rule 1	183.74	156.94	41.73	6.71	0.91	0.07
Rule 2	189.65	250.84	113.93	25.23	3.81	0.40
Rule 3	189.65	288.16	205.85	69.95	13.33	1.67
Rule 4	186.70	213.93	110.99	42.10	13.19	3.22
Rule 5	188.11	245.74	163.81	80.19	31.12	9.10
Rule 6	189.65	276.52	204.53	104.43	41.47	12.49
Rule 7	189.65	275.71	200.62	99.31	37.86	10.88
Rule 8	189.65	291.39	258.09	152.38	64.72	19.99
Rule 9	189.65	291.99	269.58	176.98	86.23	30.45
Rule 10	186.70	203.92	77.85	15.99	2.37	0.23
Rule 11	189.65	273.83	170.58	52.79	9.67	1 .1 9
Rule 12	188.11	226.23	95.01	20.39.	3.04	0.31

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Table 6.5 : Ag th Ru (1

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Table 6.6 : Age Specific Marital Fertility Rate (ASMFR) for the Control Set and for the Different Stopping Rules Under the Experimental Set, 1986 $(\pi = .612, h = 1.75 \text{ years})$

	ASMFR (<u>Age Gro</u>		per 1000	Married	Women) U	nder
•	15-19	20-24	25-29	30 - 34	35-39	40 - 44
Control Set	179.00	272.59	280.11	254.55	203.54	129.30
Experimental Set					١	
Rule 1	177.40	159.98	44.51	7.20	0.98	0.08
Rule 2	179.00	246.50	122.79	28.83	4.40	0.48
Rule 3	179.00	271.32	214.45	80.90	16.33	2.11
Rule 4	178.21	209.65	114.01	45.48	15.02	3.90
Rule 5	178.58	236.16	164.13	84.55	34.62	10.73
Rule 6	179.00	262.74	204.21	109.95	46.00	14.59
Rule 7	179.00	262.27	201.01	105.16	42.34	12.87
Rule 8	179.00	272.11	252.10	158.85	71.61	23.38
Rule 9	179.00	272.26	259.79	179.98	92.66	34.55
Rule 10	178.21	203.27	83.67	18.02	2.71	0.27
Rule 11	179.00	261.79	179.27	60.91	11.75	1.48
Rule 12.	178.58	223.83	102.28	23.15	3.51	0.37

the control set and for each of the stopping rules under the experimental set, for a given set of values of the parameters π and h. The impact of adopting stopping rules on ASMFR is clearly evident, especially in the later age groups. It can be noticed that for a given set of values of the parameters π and h, all the ASMFRs under the experimental set are smaller than or equal to those of the control set for any age group. The ASMFRs for the later age groups, under the experimental set, are much smaller than the corresponding ASMFRs of the control set, the probability of achieving the desired sex composition being relatively much higher by the time couples reach the higher ages. Thus the greater reductions in annual fertility is obtained because of reduction in fertility in the middle and older age groups.

6.3.4 General Marital Fertility Rate and Birth Rate

Table 6.7 shows the General Marital Fertility Rate (GMFR) while Table 6.8 shows the Crude Birth Rate (CBR) for the control set and for the stopping Rules 1 to 12 during the period 1981-96. The interpretation of the results in Tables 6.7 and 6.8 is more or less similar to that of Table 6.2. The differences between the birth rates for any of the twelve stopping rules and the corresponding birth rates for the control set, indicate the implications of unrestricted childbearing by couples in order to attain the desired family size and/or composition, on the national birth rate.

Year	Fecundar	Rest			Ger	General Marital		Fertility Rate	e (Births	per 1000	married	women) under	ler :		
	D111ty	period h (in minut)						Expe	Experimental	Set					
		(stpak ut)	Set	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8	Rule 9	Rule 10	Rule 11	Rule 11
1961	. 364	1.50	189.54	68.15	104.39	134.60	90 ° 86	120.09	137.66	135.98	157.46	163,83	86.26	123.01	94.89
		1.75	179.05	68.40	104.13	133.07	97.27	118,11	134.94	133.43	153.25	158.67	86.28	121,96	64.77
	.612	1.50	248.46	65.04	104.59	141.44	100.63	128.95	150.56	147.89	178.07	189.65	84.83	127.30	94.22
		1.75	230.98	65.61	105.02	140.90	100.33	127.38	148.27	145.86	174.12	184.20	ِ 85 . 33	127.12	94.70
1986	.384	1.50	183.98	67.18	100.37	129.36	95.23	116.20	132.75	131.10	152.04	158.38	83.19	118.24	91.67
		1.75	173.93	61.19	100.11	128.11	94.41	114.34	130.28	128.78	148.21	153.60	33.66	117.37	91.48
	.612	1.50	241.36	66.51	101.47	135.63	96°86	125.39	145.27	142.68	171.51	182.94	84.00	122.51	92.30
		1.75	224.58	66.58	101.55	125.22	98.44	123.81	143.13	140.78	168.01	178.02	84.03	122.30	92,39
1991	.384	1.50	183.74	72.04	104.35	131.05	98 ° 86	118.80	134.62	133.05	152.66	158.76	88,21	120.90	95.26
		1.75	173.73	71.95	103.57	129.27	97.78	116.66	131.79	130.37	148.58	153,82	87.77	119,41	95.28
	.612	1.50	241.09	72.58	108.98	140.73	104.66	130.10	149.60	147.15	173.94	184.72	62.06	128.54	og. 14
		1.75	224.37	72.68	108.42	139.07	103.75	126.01	146.74	144.54	169,69	179.20	90.57	127.31	39°°C6
9651	. 364	1.50	164.81	74.14	108.18	135.10	101.65	121.69	137.80	136,30	155.44	161.18	91.17	124.77	SC.92
		1.75	174.74	74.13	107.39	132,98	100.52	01.911	134.75	133,39	151.01	155.92	90.77	123.16	90 . 89
	.612	1.50	242.48	73.97	112.74	146.72	107.64	133.84	154.13	151.75	173.68	189.12	93.37	133.67	102.58
		1.75	225.67	74.18	112。43	145.03	106.73	131.59	151.04	148.90	174.11	183.05	93.32	132.52	102.41

Mitty	Year	Fecunda-	Rest					Crude B1	Birth Rate	(Births	per 1000 j	population)	n) under			
(In years) Same Rule		biltry π	period							Experim						
			(in years)	Set	a	l e l		1 1	1 1			1 1				Rule 12
	1981	.384	50	32.04	11.76	17.90	22.97	16.84	20.54	23.48	23.20	26.76	27.82	14.85	21.03	16.30
617 11.50 41.59 11.23 17.94 24.11 17.77 22.02 25.46 25.16 31.17 14.60 11.75 1.175 30.79 11.13 10.01 24.02 17.21 21.76 25.24 24.64 21.77 14.60 21.75 1314 1.50 31.10 11.29 17.21 22.07 15.36 21.97 25.64 25.64 25.69 14.41 21.75 1475 29.45 11.17 21.02 15.36 14.42 21.49 21.47 21.97 20.97 21.99 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.97 21.99 21.97		,		30.32	11.80	17.86	22.71	16.70	20.21	23.02	22.77	26.07	26.96	14.34	20.96	16.28
1.15 30.76 11.31 16.01 24.02 17.32 21.76 25.36 21.17 14.66 21.72 1.36 11.50 11.16 11.26 11.21 21.01 21.02 21.01 21.0		.612	1.50	41.59	11.23	17.94	24.11	17.27	22.02	25.62	25.18	30.16	32.06	14.60	21.75	16.19
1304 1.30 31.10 11.54 17.21 22.07 16.36 19.97 22.64 25.51 26.49 14.41 20.31 1.75 29.45 11.50 11.51 29.45 11.53 29.45 11.59 20.43 21.56 19.56 22.22 21.97 25.21 26.40 14.41 20.33 .612 1.50 40.41 11.47 17.39 23.12 16.96 71.11 24.72 24.36 29.05 30.31 14.44 20.33 .151 37.71 11.49 17.41 23.05 16.98 71.11 24.72 24.36 29.45 24.36 27.31 24.36 27.31 26.49 21.44 20.33 .151 17.50 17.11 17.41 27.05 16.49 77.06 15.16 21.97 .152 14.51 17.76 27.23 17.51 27.23 25.49 27.40 15.46 21.47 .175 27.41 17.46 27.49 <td></td> <td></td> <td>.1.75</td> <td>38.78</td> <td>11-33</td> <td>16.01</td> <td>24.02</td> <td>17.22</td> <td>21.76</td> <td>25.24</td> <td>24.84</td> <td>29.51</td> <td>31.17</td> <td>14.68</td> <td>21.72</td> <td>16,27</td>			.1.75	38.78	11-33	16.01	24.02	17.22	21.76	25.24	24.84	29.51	31.17	14.68	21.72	16,27
	1966	.384	1.50	31.10	11.58	17.21	22.07	16.34	19.37	22.64	22.36	25.84	26.89	14.41		15.74
(1.2) (1.5) (0.4) $(1.4.7)$ $(1.7.3)$ $(1.6.9)$ $(1.4.1)$ $(1.7.3)$ $(1.4.3)$ $(1.7.3)$ $(1.4.3)$ $(1.7.4)$ $(1.7.3)$ $(1.7.3)$ $(1.7.3)$ $(1.7.4)$ $(1$			1.75	29.45			21.36	16.20	19.56	22.22	21.97	25.21	26.10	14.39	20.07	15.71
1.75 37.71 11.46 17.41 23.05 16.68 21.16 24.36 23.97 28.48 30.12 14.46 20.68 .384 1.50 31.11 12.43 17.91 22.54 16.99 22.72 25.98 27.00 15.18 20.68 .175 29.47 12.42 17.78 22.09 16.30 15.59 25.31 25.31 25.19 25.10 15.18 20.48 .175 29.47 12.42 17.78 22.09 16.30 17.59 22.73 25.49 27.00 15.18 20.44 .175 37.73 12.54 19.60 27.13 17.51 22.50 24.64 29.30 15.17 15.65 21.47 .175 37.73 12.55 19.60 27.73 17.51 27.52 25.31 15.55 21.47 .175 15.40 12.35 19.40 25.41 17.56 27.45 25.43 25.43 21.45 21.47 .175 29.44 12.35 12.45 27.41 25.55 27.43 2		. 612	1.50	40.41	11.47	17.39	23.12	16.98	16-10	24.72	24.29	29.05	30.93	14.44	20.93	15.85
		~	1.75	37.71	11,48	17.41	23.05	16.38	21.14	24.36	23.97	28.48	30.12	14.46	20.89	15.86
1.75 29.47 12.42 17.78 22.09 16.30 19.48 22.51 26.18 25.08 25.30 31.27 15.62 21.97 1.75 37.73 12.52 18.69 24.00 17.96 22.23 25.48 25.08 29.50 31.27 15.62 21.79 1.75 37.73 12.54 18.60 23.73 17.61 21.28 25.08 29.50 30.37 15.58 21.76 1.75 37.73 12.54 17.61 21.28 25.10 29.37 15.52 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.44 28.60 30.37 15.76 21.46 28.60 29.27 21.43 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.76 21.46 21.66 21.46 21.66	1661	. 354	1.50	31.11	12.43	10.71	22.54	16.98	20.34	22.98	22.72	25.98	27.00	15.18	20.68	16.48
.6121.5040.4312.5218.6924.0017.9622.2325.4825.0829.5031.2715.6221.97 1.75 37.7312.5418.6023.7317.6121.2825.0024.6428.8030.3715.5821.76 1.75 31.4712.3518.6323.1717.6121.2825.0024.6428.8030.3715.5821.76 1.75 31.4212.3518.6323.1717.5325.2127.6223.3726.5627.5115.75 1.75 29.7612.3418.5022.3117.2420.5323.1127.9326.5621.1621.16 1.75 29.1612.3519.4025.1119.5925.3526.5430.4432.1316.1322.93 1.75 39.1012.9519.3524.6318.5925.6325.6531.1316.1222.73 1.75 39.1012.9519.3524.6318.3925.6325.6531.1316.1222.73 1.75 39.1012.9519.3524.6318.3925.6325.4729.6631.1316.1222.73 1.75 39.1012.9519.3524.6318.3925.6325.6531.1316.1222.73 1.75 39.1012.9519.3524.6318.3925.6325.4729.6631.1316.1222.73			. 1.75	29.47	12.42	17.78	22.09	16.30	85°5T	22.51	22.28	25.31	26.18	15,11	20.44	16.38
1.75 37.73 12.54 18.60 23.73 17.61 21.38 25.00 24.64 28.80 30.37 15.58 21.76 234 1.50 31.42 12.35 18.63 23.17 17.53 27.31 29.56 27.51 15.75 21.43 1.75 29.76 12.34 19.50 22.31 17.53 23.11 27.98 25.82 26.64 15.66 21.16 .612 1.50 40.83 12.52 19.40 25.11 17.54 20.53 25.31 25.95 30.44 32.13 16.13 22.93 .612 1.50 40.83 12.52 19.40 25.11 17.54 20.55 30.44 32.13 16.13 22.93 .612 30.10 12.95 19.19 21.54 25.93 25.47 29.66 31.13 16.13 22.93 . 1.75 39.10 12.95 19.35 24.63 25.63 25.47 29.66 31.13 16.13 22.73 . 1.75 29.15 19.35 24.63		.612	1.50	40,43	12-52	18.69	24.00	17.96	22.23	25.48	25.08	29.50	31.27	15.62	21.97	17.08
			1.75	37.73	12.54	18.60	23.73	17.81	51 10 10 10 10 10 10 10 10 10 10 10 10 10	25,00	24.64	28.80	30.37	15.58	21.76	17.02
1.75 29.76 12.34 18.50 22.51 17.24 20.53 23.11 22.38 25.36 15.66 15.68 15.68 21.16 2 1.50 40.83 12.52 19.40 25.11 10.54 22.75 30.44 32.13 16.13 22.93 1.75 38.10 12.85 19.35 24.63 18.39 22.53 25.47 29.66 31.13 16.12 22.73 1.75 38.10 12.85 19.35 24.63 18.39 22.533 25.47 29.66 31.13 16.12 22.73	966	¥:: " •	1.50	31.42	12.35	16.63	23.17	17.53	16-02	23.62	23.37	26.56	27.51	15.75	07 ° 10	17.12
2 1.50 40.83 12.52 19.40 25.11 13.54 22.25 36.34 25.95 30.44 32.13 16.13 22.93 1.75 38.10 12.85 19.35 24.83 18.39 22.58 25.83 25.47 29.66 31.13 16.12 22.73			1.75	25.76	12,34	19.50	22.31	17.24	20-53	23.11	22.38	25.32	26.64	15.ċ8	21-16	11.03
1.75 30.10 12.05 19.35 24.63 10.39 22.53 25.63 25.47 29.66 31.13 16.12 22.73		.é12	1.50	40,83	12.52	19.40	25.11	12.54	\$C*20	26.34	35-95	30.44	32.13	16-13	22.93	17.69
		Ň	1.75	38.10	12,35	с. б	24.83	18.39	22.58	25.83	25.47	29.66	31.13	10 11 11	22-73	17.66
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A similar comparison can be made with the index GMFR to assess the effects of sex preference. From Tables 6.7 and 6.8, it can be seen that the CBR/GMFR based on a given set of values of the parameters π and h, for the period 1981-96 are more or less steady, except for a tendency to decrease slightly in the initial years and then to increase slightly in the later years (not shown for all the years in Tables 6.7 and 6.8). This may be due to the interaction between the changing age structure of the population and fertility rates.

The impact of sex preferences on current fertility is also clearly evident from Tables 6.7 and 6.8. For a given family size, the lowest fertility (CBR/GMFR) would be achieved if there were no sex preferences. It is also evident from these Tables that the current level of fertility in India could be greatly reduced by an effective campaign of limiting family size to three or less. For example, in 1986, the birth rate of 31.10 per 1000 population observed under the control set (corresponding to $\pi = 0.384$ & h = 1.50) which is a close approximation to the present level of birth rate in India, reduces by 62.8 percent under Rule 1 (2 children) and 44.7 percent under Rule 2 (3 children). The corresponding reduction in the index of GMFR is found to be almost the same. Even if couples are allowed to have one son and one daughter (Rule 4) the birth rate of 31.10 declines by 47.5 percent, while the corresponding reduction is 28.1 percent under

Rule 7 (2 sons and 1 daughter). Under Rule 7, there is no upper limit on family size, which is an unrealistic condition since it assumes that couples will indefinitely go on having children until they achieve the desired minimum number of each sex. Therefore, if each couple proceeds to have two sons and one daughter subject to a maximum of four children (Rule 11), the expected reduction in the birth rate is still more (35.0 percent) than that obtained under Rule 7.

6.4 CONCLUSIONS

This chapter makes use of the decision making model developed in the preceding chapter and presents numerical estimates of the likely effects of sex preferences on current fertility. If the desire for a particular sex composition is constant, sex preference does affect current fertility. The expected total fertility rate or the birth rate of a population will increase with increasing preference for one sex over the other for any given size of family. Even if couples wish to have one son and one daughter and continue to have children until they achieve their desired composition, the total fertility rate or the birth rate of the population would always be higher than it would be if they stop at two children, irrespective of the sex. Nevertheless, the results reveal that the present birth rate in India could be reduced by more than two-fifth if all couples have one son and one daughter but stop reproduction as soon as they attain this desired composition. Even if all couples wish to have two sons and one daughter and are allowed to attain this desired minimum, the present birth rate could still be reduced by one-fourth. It may, however, be noted that while estimating the effects of sex preference on fertility, mortality among children born was not considered. In practice, sex composition is not the only consideration. Apart from other factors, infant and child mortality may also affect the desire of the parents for more children, the effects of which in conjunction with sex preferences are considered in the next chapter.