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Son Preferences and Contraceptive Behaviour in Some Selected States of India

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Abstract

Use of contraception is an effective way to control unintended pregnancy. It plays an important role in reducing fertility by spacing in the birth interval and also use in limiting the fertility. This study examines which contraceptive method is widely used in different age groups, religions, castes, for 0, 1, 2 and ≥ 3 births, as well as for different sex composition of two and three children. Data from 4th round of National Family Health Survey (2015-16) has been used to analyze the impact of sex composition of children on contraceptive use by couples in major states of India such as Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal. In Maharashtra, Tamil Nadu, and West Bengal, couples who had two or three children were found to use more female sterilization, whereas in Uttar Pradesh, female sterilization use was lower and the use of condoms was higher than other modern contraceptive methods. Findings revealed that the couple having 2 and 3 female births, the percentage of female sterilization in Maharashtra was 80.0 and 86.2 percent, in Tamil Nadu 96.6 and 98.1 percent, in Uttar Pradesh 10.8 and 26.7 percent, in West Bengal 59.2 and 60.6 percent respectively compared to all other modern contraceptive methods. Maharashtra and Tamil Nadu had nearly the same percentage of female sterilization among all 2 and 3 child sex combinations, whereas West Bengal had a slight difference. In Uttar Pradesh, however, the percentage of female sterilization was vastly different for all 2 and 3 child sex combinations, suggesting that the state has a son preference. Also, the percentage of female sterilization in Uttar

Pradesh was different in comparison to the other states considered in the study.

Key words: preferences; contraception; sterilization; child combination

Introduction

Son preference is prevailing in all over India but their effect somewhere is high and somewhere is respectively low. Son preference is considerably higher in northern part than southern part of India. A number of studies have documented a preference for son in Indian society, and the degree of this preference is very strong in the northern, north central and western region of India (Das, 1987; Mutharayappa et al.; 1997; Arnold et al., 1998). According to 2011 census, instead of continuously declining fertility and increase of literacy rate, there is a declining trend of child sex ratio which gives indication of presence of son preference. Much less attention was given until recently to research on the potential impact of son preference on contraception and fertility, based on the notion that son preference has less effect on fertility than the socio-economic status of women would have (Repetto, 1972). No doubt reduction of gender biases play an important role in reducing fertility and it is an important step for achieving low level of fertility. Thus, low levels of son preference contribute to low fertility (Dreze and Murthi, 2001).

Contraception plays a major role in reducing fertility. It is used for limiting purpose as well as spacing purpose. In recent analyses (see Muthurayappa et al., 1997; Arnold et al., 1998) the actual influence of son preference on contraception and fertility has been found to vary significantly with the levels of fertility across the states of India. There are various types of modern and traditional contraception method like condom, emergency pills, IUD, female sterilisation, male sterilisation, periodic abstinence, withdrawal method etc. In different states of India different contraception method are popular. See the use of different contraception method we can see the effect of son preference because in those states where son preference is negligible percentage of female sterilisation is probably high than other method of contraception but where there is high son preference other method are popular. The evolution of greater gender inequalities in the northern states of India can be traced to the patriarchal social system, whereas greater gender equalities in the southern Indian states are traced to the

favourable kinship structure, and the mode of production and distribution in which women's labour is important for the family (Karve, 1953; Dyson and Moore, 1983; Bardhan, 1988; Kishor, 1993; Dharmalingam and Morgan, 1996). Women's status has been linked to their use of contraceptives and thus their fertility (Dyson and Moore, 1983; Fort, 1989; Jejeebhoy, 1991).

Female education in particular is known to affect a host of social, economic and demographic variables such as age at marriage, employment status, and fertility (Cochrane and Bean, 1976; Martin, 1995) and is positively related to the use of contraceptives. Even small improvements in educational attainment could result in substantially greater contraceptive use (Shapiro and Tambashe, 1994). In religion, India is one of the ethnically diverse nations in the world with some of the most deeply religious societies and cultures. Although India is a secular Hindu-majority country, it has a large Muslim population and all other religion plays a definite role in it. So there is religion wise difference in contraceptive use. However, the relationship between religion and contraception use is much more complex than expected (E Chacko, 2001). In one study conducted in India, it was discovered that even though the average number of children born to a Hindu couple, the acceptance of sterilization to limit family size was greater among Muslims and Christian than Hindus. On the other hand, a study of contraceptive use in Bangladesh found that Muslim women here were less likely to use contraception than Hindu women.

The use of birth control and the kinds of contraceptives employed vary with parity (Bledsoe et al., 1994; Shah et al., 1998). The count of the number of previous pregnancies which ended in a live birth or a still birth at 28 weeks of gestation or later is known as parity (E Chacko, 2001). Son-preference is integral to the culture of most societies in Asia and evident in the findings of ethnographic and demographic analyses (Clark, 2000; Khanna, 1997; Rajaretnam and Deshpande, 1994; Stash, 1996). Thus, the number of sons among the offspring influences couples decisions to use contraception as well as their method of choice (Dang, 1995).

Attempts have been made to study contraceptive use in major states of India such as Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal for different age groups, religions, castes, number of births and different combinations of two and three children of the couple. Despite the wide range of effective contraceptive options available to women, unintended pregnancies continue to occur in large numbers, and rates of sexually transmitted infections remain high. A number of factors can affect a

woman's access to, or effective use of, contraception. There are various types of barriers to effective use of contraception have been well documented. Among these barriers are personal beliefs and values that can be shaped by culture, religion, caste etc.

Data and Methodology

For the present study, data on current contraceptive behavior of married couples from Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal is taken from the National Family and Health Survey-IV (NFHS-IV). A brief description of these sources of data has given below:

A large scale demographic survey based on the success of its family planning, reproductive health and child health program, both at national and individual states, has been conducted by Ministry of Health and Family Welfare, Government of India after 1990. The name of this survey is National Family Health Survey. The grand success of these survey and modification according to need comes up to the fourth round of NFHS. This fourth round of NFHS has been published in 20015-16 and the data has been taken from this 4^{rd} round of NFHS.

In this dataset, bivariate analysis has been used to determine exiting son preferences and current contraceptive behaviour for a variety of age groups, castes, religions, and residences, as well as the number of births and different combinations of two and three children in Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal.

Results

In Tables 1.1, 1.2, 1.3, and 1.4, different reproductive age groups are considered and their relationships with non-users, modern and traditional contraceptive methods in major Indian states such as Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal respectively are explored. The Chi-Square test found that the reproductive age group and the current contraceptive method are interdependent. Here we have considered five major age groups namely under 25, 25-29, 29-34, 34-40 and over 40.

Table1.1. Non-user, Modern contraceptive user and Traditional contraceptive user for particular age groups for Maharashtra

Age Group	Non User	Modern contraception						Total	Traditional contraceptive		Total
		Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization		Rhythm/Periodic abstinence	Withdrawal	
<25	8625 (88.1)	105 (9.8)	61 (5.7)	8 (0.8)	411 (38.6)	477 (44.7)	4 (0.4)	1066 (100.0)	41 (43.6)	53 (56.4)	94 (100.0)
25-29	2311 (47.1)	118 (4.7)	105 (4.2)	17 (0.7)	495 (19.8)	1732 (69.4)	30 (1.2)	2497 (100.0)	47 (49.5)	48 (50.5)	95 (100.0)
30-34	1147 (28.0)	77 (2.7)	71 (2.5)	5 (0.2)	281 (9.8)	2371 (82.6)	66 (2.3)	2871 (100.0)	35 (45.5)	42 (54.5)	77 (100.0)
35-39	864 (21.5)	64 (2.1)	54 (1.7)	4 (0.1)	166 (5.4)	2770 (89.4)	42 (1.4)	3100 (100.0)	31 (49.2)	32 (50.8)	63 (100.0)
≥40	1507 (22.7)	32 (0.6)	33 (0.7)	1 (0.0)	94 (1.9)	4835 (95.5)	67 (1.3)	5062 (100.0)	31 (47.7)	34 (52.3)	65 (100.0)
Total	14454 (49.1)	396 (2.7)	324 (2.2)	35 (0.2)	1447 (9.9)	12185 (83.5)	209 (1.4)	14596 (100.0)	185 (47.0)	209 (53.0)	394 (100.0)

Table1.2. Non-user, Modern contraceptive user and Traditional contraceptive user for particular age groups for Tamil Nadu

Age Group	Non User	Modern Contraception Method						Total	Traditional Contraceptive Method		Total
		Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization		Rhythm/Periodic abstinence	Withdrawal	
<25	7767 (92.7)	7 (1.2)	115 (19.9)	6 (1.0)	41 (7.1)	410 (70.8)	0 (0.0)	579 (100.0)	18 (50.0)	18 (50.0)	36 (100.0)
25-29	2906 (61.9)	11 (0.6)	119 (6.8)	4 (0.2)	50 (2.8)	1576 (89.5)	0 (0.0)	1760 (100.0)	7 (21.9)	25 (78.1)	32 (100.0)
30-34	1863 (45.2)	10 (0.4)	86 (3.9)	6 (0.3)	48 (2.2)	2082 (93.3)	0 (0.0)	2232 (100.0)	10 (34.5)	19 (65.5)	29 (100.0)
35-39	1738 (41.0)	7 (0.3)	38 (1.5)	3 (0.1)	25 (1.0)	2405 (97.0)	2 (0.1)	2480 (100.0)	5 (26.3)	14 (73.7)	19 (100.0)
≥40	3085 (42.0)	8 (0.2)	37 (0.9)	5 (0.1)	17 (0.4)	4181 (98.4)	1 (0.0)	4249 (100.0)	6 (33.3)	12 (66.7)	18 (100.0)
Total	17359 (60.3)	43 (0.4)	395 (3.5)	24 (0.2)	181 (1.6)	10654 (94.3)	3 (0.0)	11300 (100.0)	46 (34.3)	88 (65.7)	134 (100.0)

Among the age groups under 25, Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal accounted for 88.1 percent, 92.7 percent, 92.0 percent, and 70.8 percent, respectively, as non-users of contraception, representing the highest percentage compared to all other age groups. Among all age groups, among those using modern contraception, it was found that female sterilization was mostly used in all four states. There was an increasing trend in female sterilizations as people aged and a decreasing trend in condom use. In Maharashtra, it was found that in the age group of 25, 25-29, 30-34, 35-39 and below 40 years, 38.6%, 19.8%, 9.8%, 5.4% and 1.9% were condom users and 44.7%, 69.4%, 82.6%, 89.4% and 95.5% of women were using a female sterilization method as compared to other modern contraceptive method. As compared to all other modern contraceptive methods, 7.1%, 2.8%, 2.2%, 1.0% and 0.4% of women in Tamil Nadu used condoms in the age groups under 25, 25-29, 30-34, 35-39 and ≥ 40. Comparatively, 70.8%, 89.5%, 93.3%, 97.0% and 98.4% of women used female sterilization methods, respectively. The percentage of condom users in Uttar Pradesh was 74.2%, 50.2%, 36.8%, 26.5%, and 15.9%, and the percentage of women who used female sterilization was 10.9%, 32.7%, 49.7%, 63.5%, and 78.7% compared to all other modern contraceptive methods in the age groups 25, 25-29, 30-34, 35-39 and ≥ 40 respectively.

Table1.3. Non-user, Modern contraceptive user and Traditional contraceptive user for particular age group for Uttar Pradesh

Age Group	Non User	Modern Contraceptive Method						Total	Traditional Contraceptive Method		Total
		Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization		Rhythm/Periodic abstinence	Withdrawal	
<25	37476 (92.0)	133 (7.1)	117 (6.2)	32 (1.7)	1399 (74.2)	205 (10.9)	0 (0.0)	1886 (100.0)	1153 (84.0)	220 (16.0)	1373 (100.0)

25-29	9118 (61.1)	355 (9.3)	222 (5.8)	73 (1.9)	1920 (50.2)	1253 (32.7)	4 (0.1)	3827 (100.0)	1650 (83.3)	331 (16.7)	1981 (100.0)
30-34	5444 (44.6)	362 (7.6)	202 (4.2)	74 (1.5)	1756 (36.8)	2372 (49.7)	9 (0.2)	4775 (100.0)	1633 (82.6)	343 (17.4)	1976 (100.0)
35-39	4402 (39.2)	273 (5.7)	160 (3.3)	40 (0.8)	1275 (26.5)	3058 (63.5)	6 (0.1)	4812 (100.0)	1661 (82.8)	345 (17.2)	2006 (100.0)
≥40	9152 (49.4)	193 (2.8)	126 (1.8)	31 (0.5)	1086 (15.9)	5387 (78.7)	24 (0.4)	6847 (100.0)	2170 (86.0)	354 (14.0)	2524 (100.0)
Total	65592 (67.2)	1316 (5.9)	827 (3.7)	250 (1.1)	7436 (33.6)	12275 (55.4)	43 (0.2)	22147 (100.0)	8267 (83.8)	1593 (16.2)	9860 (100.0)

Table1.4. Non-user, Modern contraceptive user and Traditional contraceptive user for particular age group for West Bengal

Age Group	**Non User**	**Modern Contraceptive Method**						**Total**	**Traditional Contraceptive Method**		**Total**
		Pill	**IUD**	**Injections**	**Condom**	**Female Sterilization**	**Male Sterilization**		**Rhythm/Periodic abstinence**	**Withdrawal**	
<25	4354 (70.8)	857 (62.8)	39 (2.9)	2 (0.1)	264 (19.3)	203 (14.9)	0 (0.0)	1365 (100.0	208 (47.9)	226 (52.1)	434 (100.0

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25-29	925 (33.4)	678 (45.2)	32 (2.1)	8 (0.5)	191 (12.7)	586 (39.1)	4 (0.3)	1499 (100.0)	173 (49.9)	174 (50.1)	347 (100.0)
30-34	556 (22.9)	523 (33.5)	34 (2.2)	11 (0.7)	141 (9.0)	848 (54.3)	4 (0.3)	1561 (100.0)	176 (55.9)	139 (44.1)	315 (100.0)
35-39	578 (25.6)	360 (26.2)	22 (1.6)	5 (0.4)	95 (6.9)	887 (64.6)	4 (0.3)	1373 (100.0)	182 (59.9)	122 (40.1)	304 (100.0)
≥40	1475 (36.7)	294 (13.4)	23 (1.0)	7 (0.3)	59 (2.7)	1807 (82.2)	7 (0.3)	2197 (100.0)	231 (66.4)	117 (33.6)	348 (100.0)
Total	7888 (44.7)	2712 (33.9)	150 (1.9)	33 (0.4)	750 (9.4)	4331 (54.2)	19 (0.2)	7995 (100.0)	970 (55.5)	778 (44.5)	1748 (100.0)

Condom users in West Bengal were 19.3%, 12.7%, 9.0%, 6.9% and 2.7%, pill users were 62.8%, 45.2%, 33.5%, 26.2% and 13.4% and female sterilization was used by 14.9%, 39.1%, 54.3%, 64.6% and 82.2% of women under 25, 25-29, 30-34, 35-39 and ≥40 respectively when compared to other modern contraceptive methods. Based on the above results, it was found that among all four states, Uttar Pradesh had the highest proportion of condom users across all age groups, Tamil Nadu had the highest percentage of female sterilization users across all age groups, and West Bengal had the highest percentage of pill users across all age groups.

In the traditional method, rhythmic/periodic abstinence and withdrawal are considered. For the traditional contraceptive method, 43.6% and 56.4% were found in the age group under 25, 49.5% and 50.5% were found in the 25-29 age group, 45.5% and 54.5% were found in the 30-34 age group, 49.2% and 50.8% in the 35-39 age group, 47.7% and 52.3% for the ≥40 age group in Maharashtra using

rhythm/periodic abstinence and withdrawal methods, respectively. Tamil Nadu had 50.0% and 50.0% in the age groups under 25, 21.9% and 78.1% in the age groups 25-29, 34.5% and 65.5% in the age groups 30-34, 26.3% and 73.7% in the age group 35-39, 33.3% and 66.7% in the age group ≥ 40 using the rhythm/periodic abstinence method and withdrawal method. In Uttar Pradesh, there were 84.0% and 16.0% under 25, 83.3% and 16.7% in the age groups 25-29, 82.6% and 17.4% in the age groups 30-34, 82.8% and 17.2% in the age groups 35-39, and 86.0% and 14.0% in age groups ≥ 40 using the rhythm/periodic abstinence method and withdrawal method respectively. There were 47.9% and 52.1% in Tamil Nadu under 25, 49.9% and 50.1% in the 25-29 age groups, 55.9% and 44.1% in the 30-34 age groups, 59.9% and 40.1% in the 35-39 age groups, and 66.4% and 33.6% in the ≥ 40 age groups using the Withdrawal method and rhythm/periodic abstinence methods, respectively. As among the four states, Uttar Pradesh had the highest percentage of Rhythm/Periodic abstinence method users, indicating a strong male dominance.

In Table 2, variation by religion was observed, indicating a significant association with current contraceptive method. There were 48.0 and 56.8 percent, 59.9 and 65.3 percent, 65.3 and 75.0 percent, 41.6 and 53.1 percent, respectively, of Hindu and Muslim non-users from Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal. Among all modern contraception method condom and female sterilization is popular and the percentage of rest modern contraception method is very low comparatively.

Table2. For religion wise Non user, Modern contraceptive user and Traditional contraceptive user

State	Religion		Modern contraceptive method						Total	Traditional contraceptive method		Total
		Non user	Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization		Rhythm/Periodic abstinence	Withdrawal	

Maharashtra	**Hindu**	11000 (48.0)	254 (2.2)	250 (2.2)	21 (0.2)	1100 (9.5)	9792 (84.4)	182 (1.6)	11599 (100.0)	143 (46.1)	167 (53.9)	310 (100.0)
	Muslim	1970 (56.8)	117 (8.1)	40 (2.8)	12 (0.8)	191 (13.2)	1080 (74.7)	5 (0.3)	1445 (100.0)	26 (50.0)	26 (50.0)	52 (100.0)
Tamil Nadu	**Hindu**	15613 (59.9)	35 (0.3)	353 (3.4)	19 (0.2)	148 (1.4)	9783 (94.6)	3 (0.0)	10341 (100.0)	39 (36.1)	69 (63.9)	108 (100.0)
	Muslim	885 (65.3)	4 (0.9)	22 (4.8)	1 (0.2)	20 (4.3)	414 (89.8)	0 (0.0)	461 (100.0)	3 (30.0)	7 (70.0)	10 (100.0)
Uttar Pradesh	**Hindu**	50567 (65.3)	1048 (5.5)	710 (3.7)	206 (1.1)	5416 (28.6)	11546 (60.9)	41 (0.2)	18967 (100.0)	6704 (84.6)	1221 (15.4)	7925 (100.0)
	Muslim	14811 (75.0)	256 (8.4)	109 (3.6)	42 (1.4)	1959 (64.1)	690 (22.6)	1 (0.0)	3057 (100.0)	1524 (80.7)	365 (19.3)	1889 (100.0)
West Bengal	**Hindu**	5257 (41.6)	1757 (29.1)	101 (1.7)	18 (0.3)	538 (8.9)	3611 (59.8)	15 (0.2)	6040 (100.0)	740 (55.6)	592 (44.4)	1332 (100.0)
	Muslim	2311 (53.1)	824 (49.7)	44 (2.7)	14 (0.8)	190 (11.5)	583 (35.1)	4 (0.2)	1659 (100.0)	202 (53.2)	178 (46.8)	380 (100.0)

In the Hindu religion, there were 9.5 percent, 1.4 percent, 28.6 percent, and 8.9 percent condom users, and 84.4 percent, 94.6 percent, 60.9 percent, and 59.8 percent using female sterilization in all four states respectively. Whether in Muslims there were 13.2 percent, 4.3 percent, 64.1 percent and 11.5 percent condom users and 74.7 percent, 89.8 percent, 22.6 percent and 35.1 percent using female sterilization in all four states respectively. From the above findings, we say that condom use among Muslims is comparatively higher than that of Hindus in all the four states and especially in Uttar Pradesh, Muslims use condoms more often than Hindus. Female sterilization is well known among the limited methods of contraception and it has been found that female sterilization is comparatively less among Muslims as compared to Hindus and particularly in Uttar Pradesh, female sterilization among Muslims was only 22.6 percent, much lower than that of Hindus (60.9 percent). In the traditional method of contraception, 46.1 and 50.0 percent, 36.1 and 30.0 percent, 84.6 and 80.7 percent, and 55.6 and 53.2 percent, respectively, of Hindus and Muslims use the rhythm/periodic abstinence method in all four states, respectively which showed in Maharashtra and West Bengal, both methods are equally preferred, in Tamil Nadu, withdrawal method is slightly preferred over withdrawal method, but in Uttar Pradesh, there is great variation between the two. In Uttar Pradesh users of the rhythm/periodic abstinence method is much higher than the withdrawal method, which shows male dominance.

Table3. Caste wise Non user, Modern contraceptive user and Traditional contraceptive use

State	Caste		Modern contraception method						Total	Traditional contraceptive method		Total
		Non user	Pill	IUD	Injections	Condom	Female sterilization	Male sterilization		Rhythm Periodic abstinence	Withdrawal	
Maharashtra	SC/ST	4478 (49.7)	84 (1.9)	61 (1.4)	9 (0.2)	309 (7.0)	3880 (87.3)	99 (2.2)	4442 (100.0)	41 (42.7)	55 (57.3)	96 (100.0)
	OBC	4131	100	105	6	498	3771	76	4556	60	82	142

		(46.8)	(2.2)	(2.3)	(0.1)	(10.9)	(82.8)	(1.7)	(100.0)	(42.3)	(57.7)	(100.0)
	General	5421 (49.8)	203 (3.8)	151 (2.8)	19 (0.4)	616 (11.6)	4306 (80.8)	34 (0.6)	5329 (100.0)	76 (53.9)	65 (46.1)	141 (100.0)
Tamil Nadu	**SC/ST**	5445 (60.3)	6 (.2)	101 (2.9)	4 (0.1)	31 (0.9)	3396 (96.0)	1 (0.0)	3539 (100.0)	12 (27.3)	32 (72.7)	44 (100.0)
	OBC	11613 (60.3)	36 (.5)	286 (3.8)	17 (0.2)	145 (1.9)	7060 (93.6)	2 (0.0)	7546 (100.0)	32 (36.8)	55 (63.2)	87 (100.0)
	General	245 (57.5)	1 (.6)	6 (3.4)	1 (0.6)	4 (2.2)	166 (93.3)	0 (0.0)	178 (100.0)	2 (66.7)	1 (33.3)	3 (100.0)
Uttar Pradesh	**SC/ST**	15454 (68.2)	237 (4.7)	141 (2.8)	47 (0.9)	1295 (25.8)	3293 (65.5)	16 (0.3)	5029 (100.0)	1860 (85.6)	313 (14.4)	2173 (100.0)
	OBC	36199 (67.5)	717 (6.1)	449 (3.8)	132 (1.1)	4017 (34.0)	6467 (54.8)	20 (0.2)	11802 (100.0)	4720 (84.0)	899 (16.0)	5619 (100.0)
	General	13639 (65.1)	358 (6.8)	234 (4.4)	69 (1.3)	2107 (40.0)	2490 (47.3)	7 (0.1)	5265 (100.0)	1675 (81.5)	380 (18.5)	2055 (100.0)
West Bengal	**SC/ST**	2815 (42.9	867 (27.1	46 (1.4	8 (0.3)	210 (6.6)	2055 (64.3)	9 (0.3)	3195 (100.	321 (58.6)	227 (41.4)	548 (100.0

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	OBC	991 (44.9)	357 (35.5)	24 (2.4)	2 (0.2)	104 (10.3)	519 (51.6)	0 (0.0)	1006 (100. 0)	111 (53.1)	98 (46.9)	209 (100.0)
	Gene ral	2364 (42.2)	957 (37.4)	50 (2.0)	14 (0.5)	281 (11.0)	1253 (48.9)	7 (0.3)	2562 (100. 0)	358 (52.6)	322 (47.4)	680 (100.0)

In Table 3, a caste-wise study of contraceptive use shows its association with the current contraceptive method. In the study, non-contraception users were almost equally prevalent across all castes in each state examined. Uttar Pradesh had the highest percentage of condom users among all castes as compared to all other states (i.e. 25.8 percent, 34.0 percent and 40.0 percent in SC/ST, OBC and general respectively). However, in West Bengal, the percentage of pill takers among all castes (27.1 percent, 35.5% and 37.4 per cent for SC/ST, OBC and general, respectively) was higher than in all other states. In Tamil Nadu, the percentage of female sterilizations among all castes was higher (96.0 percent, 93.6 percent and 93.3 percent for SC/ST, OBC and general, respectively) compared to all other states.

Table4. Number of children wise Non user, Modern contraceptive user and Traditional contraceptive user

State	**No of Children**	**Non User**	**Modern contraception method**							**Traditional contraceptive method**		**Total**
			Pill	**IUD**	**Injections**	**Condom**	**Female Sterilization**	**Male Sterilizatio**	**Total**	**Rhythm/Periodic**	**Withdrawal**	

								n		**abstinence**		
Maharashtra	**0**	8272 (98.3)	9 (7.8)	1 (0.9)	0 (0.0)	91 (79.1)	14 (12.2)	0 (0.0)	115 (100.0)	11 (36.7)	19 (63.3)	30 (100.0)
	1	2600 (65.6)	111 (9.1)	103 (8.4)	6 (0.5)	557 (45.5)	433 (35.3)	15 (1.2)	1225 (100.0)	63 (45.0)	77 (55.0)	140 (100.0)
	2	2162 (24.9)	148 (2.3)	161 (2.5)	18 (0.3)	606 (9.5)	5339 (83.7)	110 (1.7)	6382 (100.0)	68 (45.6)	81 (54.4)	149 (100.0)
	≥3	1420 (17.0)	128 (1.9)	59 (0.9)	11 (0.2)	193 (2.8)	6399 (93.1)	84 (1.2)	6874 (100.0)	43 (57.3)	32 (42.7)	75 (100.0)
Tamil Nadu	**0**	8187 (99.4)	1 (2.1)	4 (8.3)	1 (2.1)	6 (12.5)	36 (75.0)	0 (0.0)	48 (100.0)	1 (33.3)	2 (66.7)	3 (100.0)
	1	3884 (78.9)	20 (2.1)	225 (23.0)	10 (1.0)	84 (8.6)	638 (65.3)	0 (0.0)	977 (100.0)	20 (33.9)	39 (66.1)	59 (100.0)
	2	3519 (34.1)	14 (0.2)	132 (2.0)	8 (0.1)	76 (1.1)	6506 (96.6)	2 (0.0)	6738 (100.0)	19 (38.8)	30 (61.2)	49 (100.0)
	≥3	1769 (33.2)	8 (0.2)	34 (1.0)	5 (0.1)	15 (.4)	3474 (98.2)	1 (0.0)	3537 (100.0)	6 (26.1)	17 (73.9)	23 (100.0)
Uttar Pradesh	**0**	35128 (98.2)	15 (3.7)	1 (0.2)	1 (0.2)	370 (92.0)	14 (3.5)	1 (0.2)	402 (100.0)	195 (84.1)	37 (15.9)	232 (100.0)

	1	6619 (69.8)	133 (8.1)	108 (6.6)	31 (1.9)	1278 (77.8)	92 (5.6)	1 (0.1)	1643 (100.0)	1001 (82.3)	216 (17.7)	1217 (100.0)
	2	6789 (48.4)	397 (7.9)	305 (6.1)	76 (1.5)	2345 (46.9)	1868 (37.4)	6 (0.1)	4997 (100.0)	1849 (82.0)	405 (18.0)	2254 (100.0)
	≥3	17056 (44.5)	771 (5.1)	413 (2.7)	142 (0.9)	3443 (22.8)	10301 (68.2)	35 (0.2)	15105 (100.0)	5222 (84.8)	935 (15.2)	6157 (100.0)
West Bengal	**0**	4181 (92.5)	77 (39.9)	0 (0.0)	1 (0.5)	112 (58.0)	1 (.5)	2 (1.0)	193 (100.0)	56 (37.8)	92 (62.2)	148 (100.0)
	1	1440 (37.9)	1066 (64.0)	61 (3.7)	10 (0.6)	383 (23.0)	143 (8.6)	3 (0.2)	1666 (100.0)	363 (52.4)	330 (47.6)	693 (100.0)
	2	1114 (22.7)	895 (27.7)	51 (1.6)	8 (0.2)	176 (5.4)	2097 (64.8)	7 (0.2)	3234 (100.0)	324 (58.1)	234 (41.9)	558 (100.0)
	≥3	1153 (26.2)	674 (23.2)	38 (1.3)	14 (0.5)	79 (2.7)	2090 (72.0)	7 (0.2)	2902 (100.0)	227 (65.0)	122 (35.0)	349 (100.0)

In the study of traditional contraceptive methods, we found that in Maharashtra and West Bengal, all castes have almost the same percentage of both traditional methods. In Tamil Nadu, the percentage of rhythm/periodic abstinence was found to be less than the percentage of withdrawal method in both SC/ST and OBC. But the situation was opposite in the general category i.e. the percentage of periodic abstinence (66.7 per cent) was higher than the withdrawal method (33.3 per cent). In Uttar Pradesh, the

percentage of periodic abstinence was very high (i.e. above 80 percent) in comparison to withdrawal method in all the caste.

Table5. Non user, Modern contraceptive user and Traditional contraceptive user for two combination of birth

State	Two Child Combination	Non user	Modern contraceptive method						Total	Traditional contraceptive method		Total
			Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization		Rhythm /Periodic abstinence	Withdrawal	
Maharashtra	MM	821 (16.6)	56 (1.4)	47 (1.2)	1 (0.0)	157 (3.9)	3770 (92.6)	39 (1.0)	4070 (100.0)	23 (50.0)	23 (50.0)	46 (100.0)
	MF	766 (18.6)	55 (1.7)	46 (1.4)	5 (0.2)	167 (5.1)	2972 (90.0)	57 (1.7)	3302 (100.0)	24 (44.4)	30 (55.6)	54 (100.0)
	FM	1110 (20.2)	102 (2.4)	85 (2.0)	14 (0.3)	308 (7.1)	3736 (86.7)	64 (1.5)	4309 (100.0)	33 (50.8)	32 (49.2)	65 (100.0)
	FF	885 (35.1)	63 (4.0)	42 (2.7)	9 (0.6)	167 (10.6)	1260 (80.0)	34 (2.2)	1575 (100.0)	31 (52.5)	28 (47.5)	59 (100.0)
Tamil Nadu	MM	1379 (33.5)	9 (.3)	43 (1.6)	1 (0.0)	23 (0.8)	2651 (97.2)	0 (0.0)	2727 (100.0)	6 (37.5)	10 (62.5)	16 (100.0)
	MF	1312	2	36	8	24	2744	1	2815	6	14	20

		(31.6)	(.1)	(1.3)	(0.3)	(0.9)	(97.5)	(0.0)	(100.0)	(30.0)	(70.0)	(100.0)
	FM	1421 (32.8)	6 (.2)	5 (1.7)	3 (0.1)	24 (0.8)	2801 (97.1)	2 (0.1)	2886 (100.0)	9 (37.5)	15 (62.5)	24 (100.0)
	FF	1176 (38.7)	5 (.3)	37 (2.0)	1 (0.1)	20 (1.1)	1784 (96.6)	0 (0.0)	1847 (100.0)	4 (33.3)	8 (66.7)	12 (100.0)
Uttar Pradesh	**MM**	1913 (41.7)	118 (6.1)	98 (5.1)	24 (1.2)	691 (35.9)	992 (51.5)	4 (0.2)	1927 (100.0)	613 (81.8)	136 (18.2)	749 (100.0)
	MF	1620 (47.5)	94 (7.5)	89 (7.1)	20 (1.6)	607 (48.3)	448 (35.6)	0 (0.0)	1258 (100.0)	447 (83.7)	87 (16.3)	534 (100.0)
	FM	1919 (48.0)	146 (10.5)	95 (6.8)	29 (2.1)	734 (52.9)	382 (27.5)	2 (0.1)	1388 (100.0)	563 (82.0)	124 (18.0)	687 (100.0)
	FF	1337 (65.4)	39 (9.2)	23 (5.4)	3 (0.7)	313 (73.8)	46 (10.8)	0 (0.0)	424 (100.0)	226 (79.6)	58 (20.4)	284 (100.0)
West Bengal	**MM**	564 (22.4)	407 (23.3)	24 (1.4)	8 (0.5)	68 (3.9)	1236 (70.6)	7 (0.4)	1750 (100.0)	128 (62.7)	76 (37.3)	204 (100.0)
	MF	537 (23.6)	358 (23.6)	21 (1.4)	4 (0.3)	63 (4.1)	1071 (70.5)	3 (0.2)	1520 (100.0)	125 (58.1)	90 (41.9)	215 (100.0)
	FM	656 (23.5)	464 (25.1)	28 (1.5)	4 (0.2)	73 (4.0)	1277 (69.1)	1 (0.1)	1847 (100.0)	178 (61.0)	114 (39.0)	292 (100.0)

	FF	510 (29.6)	340 (33.4)	16 (1.6)	6 (0.6)	51 (5.0)	603 (59.2)	3 (0.3)	1019 (100.0)	120 (61.2)	76 (38.8)	196 (100.0)

Table6.1. Non user, Modern contraceptive user and Traditional contraceptive user for three combination of birth for Maharashtra

Three Child Comb-nation	**Non user**	**Modern contraceptive method**						**Total**	**Traditional contraceptive method**		**Total**
		Pill	**IUD**	**Injections**	**Condom**	**Female sterilization**	**Male sterilization**		**Rhythm/Periodic abstinence**	**Withdrawal**	
MMM	144 (16.3)	14 (1.9)	5 (0.7)	0 (0.0)	17 (2.3)	685 (93.7)	10 (1.4)	731 (100.0)	5 (83.3)	1 (16.7)	6 (100.0)
MMF	111 (13.4)	10 (1.4)	4 (0.6)	0 (0.0)	12 (1.7)	672 (94.6)	12 (1.7)	710 (100.0)	4 (57.1)	3 (42.9)	7 (100.0)
MFF	125 (16.3)	18 (2.8)	5 (0.8)	3 (0.5)	13 (2.1)	585 (92.6)	8 (1.3)	632 (100.0)	4 (50.0)	4 (50.0)	8 (100.0)
FFF	246 (35.9)	10 (2.4)	6 (1.4)	2 (0.5)	29 (6.9)	361 (86.2)	11 (2.6)	419 (100.0)	13 (61.9)	8 (38.1)	21 (100.0)
FFM	331	37	18	4	65	1343	18	1485	7	8	15

	(18.1)	(2.5)	(1.2)	(0.3)	(4.4)	(90.4)	(1.2)	(100.0)	(46.7)	(53.3)	(100.0)
FMM	171 (12.7)	10 (0.9)	8 (0.7)	0 (0.0)	26 (2.2)	1120 (95.4)	10 (0.9)	1174 (100.0)	4 (80.0)	1 (20.0)	5 (100.0)
FMF	142 (16.2)	15 (2.1)	6 (0.8)	1 (0.1)	16 (2.2)	680 (93.8)	7 (1.0)	725 (100.0)	3 (42.9)	4 (57.1)	7 (100.0)
MFM	150 (13.0)	14 (1.4)	7 (0.7)	1 (0.1)	15 (1.5)	953 (95.5)	8 (0.8)	998 (100.0)	3 (50.0)	3 (50.0)	6 (100.0)

Table6.2. Non user, Modern contraceptive user and Traditional contraceptive user for three combination of birth for Tamil Nadu

Three Child Comb-nation	**Non user**	**Modern contraceptive method**							**Traditional contraceptive method**		
		Pill	**IUD**	**Injections**	**Condom**	**Female sterilization**	**Male sterilization**	**Total**	**Rhythm/Periodic abstinence**	**Withdrawal**	**Total**
MMM	203 - 33	2 -1	5 -1	0 0	5 -1	402 -97.1	0 0	414 - 100	2 -66.7	1 -33	3 - 100
MMF	212 - 31	0 0	5 -1	2 -0.4	4 -1	467 -97.7	0 0	478 - 100	0 0	1 -100	1 - 100
MFF	171 -	1 -0	4 -1	0 0	1 -0	377 -98.4	0 0	383 -	1 -50	1 -50	2 -

	31							100			100
FFF	244-39	1-0	5-1	0-0	1-0	365-98.1	0-0	372-100	0-0	3-100	3-100
FFM	350-34	1-0	5-1	0-0	3-0	680-98.6	1-0.1	690-100	1-16.7	5-83	6-100
FMM	197-30	2-0	4-1	1-0.2	1-0	460-98.3	0-0	468-100	0-0	3-100	3-100
FMF	184-33	0-0	3-1	1-0.3	0-0	366-98.9	0-0	370-100	1-33.3	2-67	3-100
MFM	208-36	1-0	3-1	1-0.3	0-0	357-98.6	0-0	362-100	1-50	1-50	2-100

Table6.3.Non user, Modern contraceptive user and Traditional contraceptive user for three combination of birth for Uttar Pradesh

Three Child Comb-nation	**Non user**	**Modern contraceptive method**							**Traditional contraceptive method**		
		Pill	**IUD**	**Injections**	**Condom**	**Female sterilization**	**Male sterilization**	**Total**	**Rhythm/Periodic abstinence**	**Withdrawal**	**Total**
MMM	673-37	44-5	19-2	6-0.7	159-18	666-73.9	7-0.8	901-100	190-79.5	49-21	239-100
MMF	699	37	26	5	200	648	2	918	224	36	260

	-37	-4	-3	-0.5	-22	-70.6	-0.2	-100	-86.2	-14	-100
MFF	628-48	26-6	16-4	4-0.9	147-32	265-57.7	1-0.2	459-100	192-85	34-85	226-100
FFF	552-69	13-10	10-7	3-2.2	73-54	36-26.7	0-0	135-100	92-84.4	17-16	109-100
FFM	859-46	57-8	35-5	11-1.6	278-40	315-45.2	1-0.1	697-100	275-83.3	55-17	330-100
FMM	816-35	44-4	37-3	9-0.8	241-21	843-71.7	1-0.1	1175-100	298-82.8	62-17	360-100
FMF	608-51	28-7	20-5	9-2.3	108-28	224-57.4	1-0.3	390-100	170-84.6	31-15	201-100
MFM	803-36	61-6	27-2	10-0.9	235-21	770-69.7	1-0.1	1104-100	282-88.1	38-12	320-100

Table6.4 Non user, Modern contraceptive user and Traditional contraceptive user for three combination of birth for West Bengal

Three Child Comb-nation	**Non user**	**Modern contraceptive method**						**Total**	**Traditional contraceptive method**		**Total**
		Pill	**IUD**	**Injections**	**Condom**	**Female sterilization**	**Male sterilization**		**Rhythm/Periodic abstinence**	**Withdrawal**	
MM	12	72	5	3	15	247	0	342	20	13	33

M	2-25	-21	-2	-0.9	-4	-72.2	0	-100	-60.6	-39	-100
MMF	146-26	84-23	8-2	2-0.5	6-2	267-72.6	1-0.3	368-100	31-64.6	17-35	48-100
MFF	111-27	70-26	1-0	1-0.4	6-2	185-69.8	2-0.8	265-100	22-73.3	8-27	30-100
FFF	156-32	99-33	6-2	1-0.3	10-3	180-60.6	1-0.3	297-100	30-73.2	11-27	41-100
FFM	210-25	138-25	6-1	2-0.4	11-2	391-71.4	0-0	548-100	56-61.5	35-39	91-100
FMM	159-26	86-21	3-1	3-0.7	10-2	313-75.1	2-0.5	417-100	31-70.5	13-30	44-100
FMF	109-26	58-20	5-2	2-0.7	14-5	211-72.5	1-0.3	291-100	12-44.4	15-56	27-100
MFM	140-26	67-18	4-1	0-0	7-2	296-79.1	0-0	374-100	25-71.4	10-29	35-100

In Table 4, the effect of contraception by number of children was observed and found to have a significant relationship, that is, the number of children and current contraceptives was interdependent. Huge differences were found in contraceptive options in all the four selected states. In Maharashtra, it was found that as the number of children increased, the percentage of female sterilization increased and the percentage of condom users decreased. In Tamil Nadu, it was found that as the number of children increased, the percentage of female sterilizations increased, but there was no significant effect on

condom users as the percentage of condom users was very low. As the number of children in Uttar Pradesh increased, so did the percentage of female sterilizations increased, and the percentage of those using condoms decreased. Compared to Maharashtra, Uttar Pradesh had a higher percentage of condom users and a lower percentage of female sterilization users among all children. In West Bengal, as the number of children increased, the percentage of female sterilizations increased, and the percentage of condom users and pill users decreased. In West Bengal, the percentage of pill takers was higher than in all the selected states. Like the caste-wise study, the use of conventional contraceptive methods was almost the same.

In tables 5, 6.1, 6.2, 6.3, and 6.4, the effect of contraception after two and three births was observed and it was found that the use of female sterilization by couples with two and three girl children was 80.0 and 86.2 percent in Maharashtra, 96.6 and 98.1 percent in Tamil Nadu, 10.8 and 26.7 percent in Uttar Pradesh and 59.2 and 60.6 percent in West Bengal. In Maharashtra and Tamil Nadu, the percentage of female sterilization was found to be almost the same for all combinations of 2 and 3 children, and in West Bengal, there was little difference in the percentage of sterilization between all combinations of 2 and 3 children. In Uttar Pradesh, the percentage of female sterilizations after the birth of two males and two females was 51.5 percent and 10.8 percent, respectively. In Uttar Pradesh, a large difference was found in female sterilization percentages between all two combinations of children, indicating the presence of son preference in Uttar Pradesh.

Similarly, between the three combinations of children, the percentage of female sterilization for MMM, FMM, MMF, and MFM child combinations in Uttar Pradesh was found to be 73.9 percent, 71.7 percent, 70.6 percent, and 69.7 percent respectively. But the sterilization percentage for the FFF-combination of children was found to be 26.7 percent, indicating a greater desire for a son. In conclusion, it was found that the preference for sons is present in most parts of India. Mostly in the northern part of India, son preference is more prominent than in the southern part.

Conclusions

There is a tendency for parents to favor sons in a wide range of countries, ranging from East Asia through South Asia to the Middle East and North Africa. The study examined the factors influencing contraceptive use in major states of India and also examined region-by-region son preference. In the

study, it was evident that age, caste, religion, number of children, and the different combinations of two and three children have a significant impact on the use of contraception. Studies reveal that sons are preferred over daughters, especially in northern states. It is preferred to have sons because it is believed that they have the ability to earn higher wages, walk the family line, and care for their parents when they are sick or old. Additionally, in India, the cost of dowry is a specific reason to give preference to a son. Therefore, it is necessary to spread awareness through various programs and remove the dowry system internally because as we know the payment of dowry has long been prohibited under specific Indian laws including the Dowry Prohibition Act 1961 approved by the Parliament of India and later sections 304B and 498A of the Indian Penal Code, nevertheless, the dowry system has continued to grow day to day. Hence, policymakers, researchers, users, and service providers will have a crucial role in making Indian family planning successful. The existing family planning programmes must therefore be strengthened and ensured.

Authors' Contribution

All authors have contributed significantly and that all authors agree with the content of the manuscript.

Conflict of interests

The authors declare no conflict of interest.

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