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Variation in Contraceptive Use by Birth Order and Sex of the Child: Reflections of Son Preference

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Introduction

The aim of this paper is to analyse the variation in the use of contraceptive methods by birth order and by the gender of the previous birth in India and in its selected states. The paper also examines the change in the birth order and gender specific contraceptive prevalence rate during the ten years between 2005-06 and 2015-16. Contraceptive use is one of the most important proximate determinants of fertility and the promotion of the use of contraceptive methods is universally recognised as the most effective intervention to reduce fertility. At the same time, use of contraceptive methods also has a number of health-related implications for women and children as time of and spacing between successive births have implications to survival and health of both women and children. The promotion of contraceptive use is also regarded as an important development strategy as it is argued that high fertility rates and the resulting rapid population growth hinder the efforts to reduce poverty and development of the society, particularly in the face of increasing global environmental and climatic instability (Dasgupta and Dasgupta 2017; Eastwood and Lipton 2011; Turner 2009).

The practice of contraception is perhaps the easiest and the safest method to prevent unwanted pregnancy thereby control fertility. Mauldin and Segal (1988) have shown that there exists a very strong relationship between the extent of contraceptive use and the level of fertility in the developing countries and this relationship is particularly strong when the contraceptive use is limited to modern contraceptive methods only. Bongaarts and Potter (1983) have observed that, although a number of determinants of fertility such as age at marriage, induced abortion, and breastfeeding can and do have an effect on the level of fertility, yet, the major factor in the reduction in fertility has been and is likely to be a large increase in the practice of contraceptive methods. It has also been observed that the increase in the practice of contraception in the developing countries has cut the number of maternal deaths and high risk pregnancies in older ages and has also contributed to improved perinatal outcomes and child survival, mainly by

lengthening the inter-pregnancy interval (Cleland, 2012). There are many other studies which have amply demonstrated the inverse relationship between contraceptive uses and the level of fertility on the basis of cross sectional data from different countries (Bongaarts, 1984; Mauldin and Segal, 1988; Jain et al, 2014; Tsui, 2001; Westoff, 1990; United Nations, 2000).

India was the first country in the world to launch, in 1952, an official family planning programme to reduce fertility through the promotion of the use of contraceptive methods. However, the real push to the promotion of contraception to reduce fertility was given only after the 1971 population census (Chaurasia and Gulati, 2009). Official efforts to promote use of different contraceptive methods resulted in the increase in the proportion of couples effectively protected from 12.4 per cent in 1971-72 to 46.5 per cent in 1995-96 but the increase stagnated during 1995-96 through 2003-04 and then decreased to 40.4 per cent in 2010-11. According to the recent National Family Health Survey 2015-16, the contraceptive prevalence rate in India was 53.5 per cent in 2015 compared to a contraceptive prevalence rate of 56.3 per cent in 2005-06. In India, the primary motive for contraceptive use is birth limitation rather than birth planning (Chaurasia, 2014).

The practice of contraception is essentially a family building strategy. It helps couples in realising their family size and family composition desires in terms of the number of children and their sex composition. In this context, the practice of contraception marks a shift from 'natural family building' to 'family building by design.' The family building strategy of any couple depends upon the number of children of different sex that the couple wants and the number of children of different sex that the couple already has. This implies that the practice of contraception is actually contingent upon the number and the sex composition of children that the couple already has. In other words, variation in contraceptive use, measured in terms of the contraceptive prevalence rate, by birth order and the sex of the previous child is important in understanding the dynamics of contraceptive use. At the same time, the practice of contraception also helps in preventing unintended pregnancies, abortions and deaths related to pregnancy and childbirth.

The present paper is an attempt to analyse how the contraceptive practice, as measured through the contraceptive prevalence rate, varies by the number and sex composition of children that the couple already has to understand the family building strategies adopted by the couples in India. More specifically, the paper analyses the difference in the contraceptive prevalence rate by the sex of the previous child. If the contraceptive prevalence rate by the sex of the previous child is different for different birth orders then this indicates that the preference for a child of a particular sex has an impact on the contraceptive prevalence rate.

Data and Methodology

The present analysis is based on the data available through the third and the fourth rounds of the National Family Health Survey which were carried out during 2005-06 and 2015-16 respectively (IIPS, 2007; 2017). The National Family Health Survey Programme was instituted in India in 1992 on the lines of the Demographic and Health Survey Programme which is responsible for collecting and disseminating accurate, nationally representative data on health and population in the developing

countries. The strategic objective of the National Family Health Survey Programme is to improve and institutionalise the collection and use of population and health related data for programme monitoring and evaluation and for policy development and decision making.

For the present analysis, estimates of all-methods contraceptive prevalence rate and prevalence rates of specific methods of contraception by the order of the birth and by the sex of the previous child have been derived from the data available through the National Family Health Survey 2015-16 and 2005-06 for the country as a whole and for its constituent states and Union Territories. These estimates constitute the basic data set for the present analysis. The paper essentially compares the pattern of contraceptive use by birth order in 2015-16 and in 2005-06 to have an understanding of the dynamics of contraceptive use in the country and in its constituent states and Union Territories. At the same time, the variation in the ratio of the contraceptive prevalence rate when the previous child was male to the contraceptive prevalence rate when the previous child was female reflects the son-preference that prevails in the society. The underlying hypothesis is that if there is no preference for a particular sex, then the contraceptive prevalence rate when the previous birth is a male birth should be the same as the contraceptive prevalence rate when the previous birth is a female birth. On the other hand, if there is preference for a particular sex, then the contraceptive prevalence rate is relatively higher when the sex of the previous child is the preferred one as compared to the contraceptive prevalence rate when the sex of the previous child is not the preferred one. In the second case, people generally go for another child in the hope of getting a child of the preferred sex and this desire lowers the contraceptive use.

Results and Discussion

The contraceptive prevalence rate by birth order in India and selected states is presented in tables 1 and 2 for two time periods 20015-16 and 2005-06. The trend in the birth order specific contraceptive prevalence rate has been different in different states of the country. In India, as a whole, there has been a decrease in the birth order specific contraceptive prevalence rates. Similarly, Madhya Pradesh, Bihar, West Bengal, Gujarat and Kerala, there has been a decrease in the contraceptive prevalence rate in all birth orders. It may also be seen from the table that the decrease in the birth order specific contraceptive prevalence rate has been the most rapid in Gujarat followed by Kerala so that all birth orders contraceptive prevalence rate decreased very rapidly in the two states during the 10-year period between 2005-06 and 2015-16.

By contrast, there are only two states - Punjab and Rajasthan - where all birth order specific contraceptive prevalence rate increased between 2005-06 and 2015-16 according to the data available through the National Family Health Survey. In rest of the states, the trend in the birth order specific contraceptive prevalence rate has been mixed. More specifically, out of the 15 states for which the data are presented in table 1, the contraceptive prevalence rate at zero birth order decreased in 5 states whereas the 1st birth order contraceptive prevalence rate decreased in 11 states, etc. Since the use of contraceptive methods is related to family building strategies, table 1 suggests that family-building strategies in India and in different states have

changed over time. A decrease in the contraceptive prevalence rate indicates that the desire for the child of a particular birth order has increased whereas an increase indicates that the desire for the child of a particular birth order has decreased over time. However, tables 1 and 2 do not show any consistent trend in the birth order specific contraceptive prevalence rate which suggest that there are state specific factors that influence the trend in the birth order specific contraceptive prevalence rate.

There are two dimensions of the family building strategy. The first dimension is the number of children a couple wants while the second dimension is the sex composition of the children that the couple desires. It may be argued that couples are motivated to practice contraception when their family building strategy is fulfilled. In India, the desire for the son is well known and this desire influences the family building strategy to a significant extent. Tables 3 and 4 present the birth order specific contraceptive prevalence rate by sex of the child. It may be seen from the table that, in India and in all states, the birth order specific contraceptive prevalence rates, except for a few exceptions, are higher when the previous child is male as compared to when the previous child is female. This implies that the tendency of the couples to delay the next birth or to stop the next birth is relatively more when the previous birth is male as compared to when the previous birth is female. This sex difference in the birth order specific contraceptive prevalence rates reflect the influence of the preference for son in the family building strategies followed by couples in India and this influence may be seen in all states up to a varying degree. It is also evident from the table that the influence of the preference for son in the family building strategies has persisted over time and has even increased in some states, particularly Kerala.

The use of contraception may be divided into contraceptive use for spacing between successive births and contraceptive use for stopping births, the implications of the two types of contraceptive practice is different for family building strategies, especially in the context of the preference for son. The fact that contraception is practised in India primarily for stopping births may be observed from the fact that more than two-third of the total contraceptive users in India in 2015-16 had opted for female sterilisation irrespective of the birth order and the sex of the previous child and this proportion has increased over time (Tables 4 and 5). The evidence of the preference for son in the family building strategy is very much evident from the table as the prevalence of female sterilisation is more when the previous child is male as compared to when the previous child is female, irrespective of the order of the birth.

The ratio of the contraceptive prevalence rate when the previous child is male to the contraceptive prevalence rate when the previous child is female quantifies the influence of the son-preference in the family building strategy adopted by a couple. The higher this ratio the higher the influence of son preference in the family building strategy of the couple. On the other hand, when this ratio is either one or less than one, there is little indication of any influence of the preference for son on the family building strategy. In India, the odd of using a contraceptive method has been found to be 15 per cent higher when the previous child is male as compared to when the previous child is female and this proportion appears to have increased over time as

may be seen from table 6. The table also shows wide variation in these odds across the states of the country which range from around 43 per cent in Gujarat to only about 2 per cent in Andhra Pradesh. In Bihar, Madhya Pradesh, Rajasthan and Himachal Pradesh also, the odds of using a contraceptive method when the previous child is male as compared to when the previous child is female is found to be very high according to the National Family Health Survey 2015-16. Moreover, the influence of son preference on contraceptive use appears to be very dominating in lower birth orders as compared to higher birth orders in the country as well as in all states.

Table 7 presents the ratio of the prevalence of female sterilisation when the previous child is male to the prevalence of female sterilisation when the previous child is female. It is clear from the table that the influence of son preference on the use of female sterilisation becomes even more dominant not only for the country but also in all states. In India, as a whole, a couple, on average, is around 23 per cent more likely to go for female sterilisation when the previous child is male as compared to when the previous child is female and this proportion has also increased over time. The odds for going for female sterilisation when the previous child is male are particularly high in lower birth orders. For example, for the country as a whole, couples having the first child as male are two times more likely to go for female sterilisation as compared to couple having the first child as female. In Bihar, the odds for going for a female sterilisation are 8.5 times more when the first order birth is male as compared to when the first order birth is female. The strong influence of the preference for son in family building strategy is very much obvious from the table.

Conclusions

The present analysis shows how the variation in contraception use by birth order and by the sex of the previous child reflects the variation in the family building strategy adopted by couples in India. The analysis reveals that the decision to adopt contraception is closely associated with the preference for son as the contraceptive prevalence rate and prevalence of female sterilisation is generally found to be higher when the previous child is male as compared to when the previous child is female, irrespective of the order of birth. This means that when the previous child is male, couples in India intend more to delay or stop the next child compared to when the previous child is female.

A more worrying observation of the present analysis is that the contraceptive prevalence rate in the country has decreased over time and this decrease is not confined to any specific birth order. Since, the practice of contraception is the most important determinant of fertility, it may be concluded that the observed decrease in the contraceptive prevalence rate will have implications for further decrease in fertility in the country. Although, the National Population Policy 2000 had targeted to achieve the replacement fertility in the country by 2010, yet, the total fertility rate in India still remains well above the replacement level. A decrease in the contraceptive prevalence rate, as reflected through the National Family Health Survey implies that the time to achieve the replacement fertility in the country will be extended further.

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Table 1
Contraceptive use in India and states by birth order, 2005-06 and 2015-16.

States	2015-16								2005-06							
	No birth	Birth order						All	No birth	Birth order						All
		1	2	3	4	5	6			1	2	3	4	5	6	
Andhra Pradesh	0.4	15.6	86.3	88.3	87.2	85.1	87.5	69.5	1.0	20.1	79.0	90.7	86.6	84.5	77.4	67.6
Assam	3.8	52.0	58.5	56.9	51.6	47.6	45.6	52.4	3.7	51.0	64.2	65.8	58.6	59.4	59.1	56.5
Bihar	0.3	4.8	24.2	36.6	38.7	38.2	33.2	24.0	1.5	10.6	39.6	53.3	52.3	55.2	50.7	34.1
Gujarat	2.7	22.2	52.6	60.5	61.1	56.9	53.3	46.9	3.2	44.5	73.0	81.3	79.0	77.5	78.8	66.6
Haryana	3.4	50.2	76.7	77.8	74.7	64.4	55.1	63.7	0.7	35.2	69.8	79.0	79.4	70.6	64.3	63.4
Himachal Pradesh	1.5	37.3	65.2	68.6	66.1	71.7	64.3	56.8	1.0	45.9	82.7	85.8	84.9	82.5	78.9	72.6
Karnataka	1.1	19.6	64.4	74.1	78.6	77.1	70.7	51.8	0.3	24.0	76.5	83.2	84.2	83.1	73.5	63.6
Kerala	1.3	23.0	70.1	72.8	63.1	55.0	46.7	53.1	1.9	41.9	85.7	84.1	73.3	67.9	88.2	68.6
Madhya Pradesh	1.7	19.6	55.1	64.3	65.5	65.2	64.3	64.7	1.4	31.8	66.6	77.2	77.3	72.3	70.5	66.9
Maharashtra	1.7	34.5	75.1	83.1	84.9	82.3	76.5	51.3	2.3	35.9	73.0	85.7	86.9	83.9	82.9	55.9
Orissa	1.8	48.2	66.5	70.3	69.0	64.3	64.3	57.3	1.6	30.6	57.7	69.2	67.8	65.2	50.4	50.7
Punjab	2.7	64.2	83.6	85.1	82.5	85.6	82.1	75.8	1.0	42.7	69.2	72.7	76.2	76.2	69.1	63.3
Rajasthan	2.9	33.4	68.9	76.3	75.4	71.7	70.9	59.7	2.1	18.6	52.9	63.0	68.6	60.9	50.5	47.2
Tamil Nadu	0.6	21.2	65.9	67.2	67.3	62.3	65.8	53.2	0.5	25.5	79.4	84.6	78.8	73.2	62.1	61.4
Uttar Pradesh	1.8	30.3	51.7	58.2	58.4	55.9	51.2	45.5	1.7	31.1	51.7	57.0	58.3	54.2	51.9	43.6
West Bengal	7.5	62.3	77.3	78.2	72.4	70.9	59.7	70.9	7.5	66.3	78.0	82.5	78.1	77.6	66.4	71.2
India	1.8	30.8	60.1	63.2	60.4	56.5	51.0	53.5	1.8	35.3	67.2	72.9	70.2	64.9	51.8	56.3

Source: Authors' calculations

Table 2
Contraceptive prevalence rate according to birth order and the sex of the child, 2015-16

States	Birth order												All	
	1		2		3		4		5		6			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Andhra Pradesh	16.1	15.1	87.6	84.6	88.6	87.9	86.4	88.0	83.0	88.2	86.2	89.5	76.2	74.4
Assam	52.6	51.2	59.6	57.3	57.8	55.7	52.7	50.4	46.7	48.5	43.8	47.6	54.8	53.1
Bihar	5.3	4.3	29.3	16.9	40.6	30.6	41.3	35.0	41.8	33.7	33.4	32.9	32.4	24.7
Gujarat	25.8	16.9	56.2	46.4	63.0	56.2	63.5	57.0	58.0	55.3	55.1	50.7	62.5	43.6
Haryana	55.4	40.0	79.6	71.1	80.1	73.4	76.9	70.5	66.6	60.6	59.4	48.9	73.1	63.7
Himachal Pradesh	43.2	27.9	68.3	59.8	69.8	66.4	68.0	62.4	72.6	69.8	72.3	54.1	64.0	55.1
Karnataka	23.1	15.2	67.5	60.4	77.2	70.2	81.8	74.6	76.9	77.3	76.2	65.4	61.4	54.4
Kerala	23.6	22.3	71.2	68.7	74.9	70.5	65.3	61.0	59.1	52.6	60.0	20.0	59.4	55.8
Madhya Pradesh	22.4	15.9	58.5	49.3	67.4	58.9	68.8	60.4	68.4	60.5	64.9	63.5	73.6	66.1
Maharashtra	37.4	30.6	78.2	70.6	84.8	80.0	86.6	82.3	84.2	79.3	77.9	74.5	57.6	48.6
Orissa	50.1	45.6	69.0	62.8	73.1	66.6	70.2	67.2	65.2	63.1	65.9	62.5	65.0	59.6
Punjab	69.4	54.6	85.5	80.1	85.8	84.0	82.2	82.9	88.0	82.2	84.5	78.4	81.6	75.4
Rajasthan	35.7	29.9	74.1	59.9	80.2	69.3	79.3	69.0	75.1	66.5	74.9	65.0	70.1	58.7
Tamil Nadu	23.5	18.4	66.8	64.8	67.6	66.6	67.3	67.4	61.2	63.3	59.5	73.5	56.3	54.4
Uttar Pradesh	33.3	26.4	55.4	45.9	62.0	52.1	61.0	54.6	58.0	53.0	53.4	48.3	54.1	46.1
West Bengal	64.4	59.7	79.0	75.2	78.8	77.4	74.1	70.4	72.4	68.7	63.9	54.0	73.4	69.7
India	33.4	27.3	63.0	55.8	66.1	58.8	63.2	56.6	59.1	53.0	52.5	49.0	57.0	49.7

Source: Authors' calculations

Table 3
Contraceptive prevalence rate by birth order and sex of the child, 2005-06

States	Birth order												All	
	1		2		3		4		5		6			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Andhra Pradesh	19.1	21.3	79.4	78.7	91.2	90.1	87.0	86.3	86.6	82.7	77.6	77.2	73.9	73.2
Assam	54.9	46.8	67.1	60.1	69.8	60.4	62.0	54.9	61.4	57.6	62.3	56.1	62.7	54.3
Bihar	12.1	9.1	46.3	29.9	58.5	45.4	56.2	47.0	58.1	51.7	53.7	47.5	45.9	36.7
Gujarat	50.4	36.7	79.4	62.1	83.9	76.4	81.7	74.7	79.6	74.2	78.7	78.9	76.1	64.2
Haryana	44.2	24.4	74.9	59.0	82.7	71.8	83.1	72.2	72.2	66.7	73.1	50.0	73.3	57.0
Himachal Pradesh	49.5	41.5	88.1	72.0	88.1	81.5	88.0	81.0	89.6	71.9	82.6	73.3	82.8	69.8
Karnataka	26.2	21.6	79.8	72.4	84.6	81.2	87.1	79.8	82.8	83.6	79.6	66.7	72.5	65.5
Kerala	36.5	47.2	84.2	87.1	88.2	79.5	75.3	71.1	57.1	75.0	75.0	100.0	73.3	75.6
Madhya Pradesh	35.1	27.6	72.5	56.7	82.6	68.7	81.9	71.1	79.5	62.4	71.9	68.9	75.0	66.5
Maharashtra	39.4	31.5	77.6	66.4	87.2	83.4	87.6	86.0	87.3	78.7	84.3	81.1	70.6	57.6
Orissa	35.5	24.6	63.5	49.0	73.8	63.4	73.3	58.4	66.2	63.8	56.9	42.1	61.3	49.5
Punjab	52.4	26.4	71.6	64.1	74.9	67.3	75.4	77.6	77.8	73.8	75.0	60.7	70.6	60.4
Rajasthan	20.6	16.3	59.9	43.3	67.9	55.8	74.1	59.9	68.3	50.4	48.8	52.7	57.8	45.5
Tamil Nadu	24.5	26.6	80.2	78.5	84.9	84.1	82.6	74.7	77.6	66.7	59.4	65.4	70.7	68.3
Uttar Pradesh	32.1	30.0	56.1	45.7	61.3	50.8	60.8	54.7	57.9	49.3	52.1	51.6	53.6	45.9
West Bengal	66.5	66.2	80.0	75.4	83.9	81.0	79.8	76.4	75.4	80.2	68.5	64.4	75.6	73.5
India	37.3	33.0	70.5	62.7	76.1	68.2	73.5	65.7	68.0	61.1	58.5	53.8	64.7	56.8

Source: Authors' calculations

Table 4
Prevalence of female sterilisation according to birth order and the sex of the child, 2015-16

States	Birth order												All	
	1		2		3		4		5		6			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Andhra Pradesh	13.2	13.6	86.4	83.5	88.0	87.2	85.7	88.0	83.0	83.8	86.2	84.2	74.9	73.4
Assam	0.8	0.6	11.3	9.4	18.6	14.0	15.2	14.5	13.8	12.5	13.3	13.3	10.5	8.8
Bihar	1.7	0.2	22.8	12.1	37.4	26.9	38.4	32.1	39.0	30.4	31.1	30.6	28.5	21.1
Gujarat	5.4	1.5	44.1	34.2	56.8	49.3	58.5	51.6	55.1	50.2	50.2	47.9	41.6	33.4
Haryana	13.4	2.3	53.2	40.4	61.2	53.4	60.6	52.5	52.7	44.3	45.3	33.0	47.2	36.6
Himachal Pradesh	5.7	1.5	43.7	34.5	49.5	43.8	53.9	42.7	54.8	46.0	51.1	37.8	39.1	30.9
Karnataka	17.9	9.7	65.5	57.9	76.2	69.1	81.4	73.9	75.1	75.9	76.2	65.4	59.1	51.7
Kerala	9.3	7.9	65.7	63.6	71.4	65.1	65.3	52.8	54.5	50.0	60.0	20.0	52.1	48.0
Madhya Pradesh	13.3	7.6	65.3	55.4	78.6	72.6	80.7	75.2	77.8	71.7	74.3	66.7	61.4	52.4
Maharashtra	6.3	2.1	48.3	37.9	61.6	52.1	64.2	55.7	64.7	56.2	60.1	58.6	49.3	39.9
Orissa	4.6	2.4	39.2	28.8	50.3	41.4	49.6	45.0	46.8	44.9	42.7	40.1	34.9	27.8
Punjab	12.5	3.2	47.2	38.1	59.6	54.9	62.5	59.3	68.1	60.7	65.5	45.9	43.7	36.2
Rajasthan	5.4	1.3	49.8	32.8	65.7	53.2	67.3	55.7	64.1	52.7	62.7	50.2	50.5	37.9
Tamil Nadu	15.6	9.7	64.0	62.0	65.8	64.9	65.8	66.4	59.7	61.7	59.5	73.5	52.5	50.5
Uttar Pradesh	1.3	0.5	16.0	9.0	31.3	22.6	32.2	26.7	30.4	24.9	25.4	21.5	22.2	16.4
West Bengal	4.6	2.7	45.2	39.3	54.8	49.3	50.0	44.7	39.2	38.5	33.6	21.8	35.1	30.1
India	6.1	3.0	42.4	34.8	50.7	42.7	48.5	41.4	44.2	37.7	37.2	33.4	37.7	30.6

Source: Authors' calculations

Table 5
Prevalence of female sterilisation by birth order and sex of the child, 2005-06

States	Birth order												All	
	1		2		3		4		5		6			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Andhra Pradesh	7.4	6.7	71.9	70.3	86.0	86.2	83.2	83.9	80.4	74.8	76.1	70.2	67.1	65.8
Assam	0.3	0.4	12.7	12.6	27.7	19.1	25.1	21.0	26.1	22.8	19.7	22.7	15.8	13.2
Bihar	1.0	0.0	25.3	10.8	47.2	34.7	43.8	37.7	46.9	38.4	41.7	37.4	32.4	24.1
Gujarat	3.8	2.2	48.0	26.6	68.6	55.1	70.4	64.0	68.3	65.2	65.6	63.2	52.4	39.5
Haryana	2.6	0.0	41.1	23.5	64.8	46.9	62.9	52.8	61.1	55.6	63.5	37.5	47.1	31.8
Himachal Pradesh	9.1	2.0	57.5	38.1	63.1	61.0	75.9	66.7	72.9	50.0	65.2	66.7	54.9	42.1
Karnataka	8.9	9.0	75.0	64.4	81.9	78.2	85.2	77.4	81.5	82.8	79.6	58.3	66.8	59.0
Kerala	1.5	3.0	65.2	67.3	79.1	69.4	73.0	64.5	57.1	68.8	75.0	99.8	54.6	53.5
Madhya Pradesh	3.6	2.6	57.0	45.3	79.2	73.4	79.6	77.6	80.0	65.2	80.0	75.5	57.8	48.9
Maharashtra	3.4	1.7	43.5	31.3	72.0	56.8	72.4	61.7	70.1	57.7	65.2	63.2	52.8	42.3
Orissa	3.9	3.0	35.6	26.5	60.3	45.6	58.7	44.0	53.6	45.7	44.4	36.8	40.3	30.7
Punjab	1.8	0.0	26.1	16.8	46.5	38.8	58.3	57.6	67.7	60.7	50.0	46.4	36.0	29.6
Rajasthan	3.3	1.1	34.0	21.4	57.1	42.0	65.7	48.8	56.6	42.7	34.7	42.9	42.8	31.8
Tamil Nadu	7.2	5.6	73.8	72.5	82.5	82.2	80.2	71.7	76.3	66.7	59.4	61.5	63.9	60.7
Uttar Pradesh	0.5	0.4	14.0	8.2	31.8	22.2	33.3	31.2	31.9	26.6	27.9	23.0	22.9	17.4
West Bengal	2.3	1.8	38.9	33.2	57.7	55.7	52.4	53.6	50.7	52.6	43.8	38.4	34.7	33.1
India	3.2	2.3	42.2	36.1	57.9	50.3	57.2	50.5	52.8	44.8	42.6	36.9	41.4	34.6

Source: Authors' calculations

Table 6
Ratio of the contraceptive prevalence rate when the previous child is male to contraceptive prevalence rate when the previous child is female by birth order, 2015-16 and 2005-06

Country/ State	2015-16							2005-06						
	Birth order							Birth order						
	1	2	3	4	5	6	All	1	2	3	4	5	6	All
Andhra Pradesh	1.066	1.035	1.008	0.982	0.941	0.963	1.024	0.897	1.009	1.012	1.008	1.047	1.005	1.010
Assam	1.027	1.040	1.038	1.046	0.963	0.920	1.032	1.173	1.116	1.156	1.129	1.066	1.111	1.155
Bihar	1.233	1.734	1.327	1.180	1.240	1.015	1.312	1.330	1.548	1.289	1.196	1.124	1.131	1.251
Gujarat	1.527	1.211	1.121	1.114	1.049	1.087	1.433	1.373	1.279	1.098	1.094	1.073	0.997	1.185
Haryana	1.385	1.120	1.091	1.091	1.099	1.215	1.148	1.811	1.269	1.152	1.151	1.082	1.462	1.286
Himachal Pradesh	1.548	1.142	1.051	1.090	1.040	1.336	1.162	1.193	1.224	1.081	1.086	1.246	1.127	1.186
Karnataka	1.520	1.118	1.100	1.097	0.995	1.165	1.129	1.213	1.102	1.042	1.091	0.990	1.193	1.107
Kerala	1.058	1.036	1.062	1.070	1.124	1.034	1.065	0.773	0.967	1.109	1.059	0.761	0.753	0.970
Madhya Pradesh	1.222	1.108	1.060	1.052	1.062	1.046	1.113	1.251	1.169	1.046	1.019	1.109	1.039	1.128
Maharashtra	1.409	1.187	1.144	1.139	1.131	1.022	1.185	1.272	1.279	1.202	1.152	1.274	1.044	1.226
Orissa	1.099	1.099	1.098	1.045	1.033	1.054	1.091	1.443	1.296	1.164	1.255	1.038	1.352	1.238
Punjab	1.271	1.067	1.021	0.992	1.071	1.078	1.082	1.985	1.117	1.113	0.972	1.054	1.236	1.169
Rajasthan	1.194	1.237	1.157	1.149	1.129	1.152	1.194	1.264	1.383	1.217	1.237	1.355	0.926	1.270
Tamil Nadu	1.277	1.031	1.015	0.999	0.967	0.810	1.035	0.921	1.022	1.010	1.106	1.163	0.908	1.035
Uttar Pradesh	1.261	1.207	1.190	1.117	1.094	1.106	1.174	1.070	1.228	1.207	1.112	1.174	1.010	1.168
West Bengal	1.079	1.051	1.018	1.053	1.054	1.183	1.053	1.005	1.061	1.036	1.045	0.940	1.064	1.029
India	1.223	1.129	1.124	1.117	1.115	1.071	1.147	1.130	1.124	1.116	1.119	1.113	1.087	1.139

Source: Authors' calculations

Table 7
Ratio of the prevalence of female sterilisation when the previous child is male to contraceptive prevalence rate when the previous child is female by birth order, 2015-16 and 2005-06.

Country/ State	2015-16							2005-06						
	Birth order							Birth order						
	1	2	3	4	5	6	All	1	2	3	4	5	6	All
Andhra Pradesh	0.971	1.035	1.009	0.974	0.990	1.024	1.020	1.104	1.023	0.998	0.992	1.075	1.084	1.020
Assam	1.333	1.202	1.329	1.048	1.104	1.000	1.193	0.75	1.008	1.450	1.195	1.145	0.868	1.197
Bihar	8.500	1.884	1.390	1.196	1.283	1.016	1.351	na	2.343	1.360	1.162	1.221	1.115	1.344
Gujarat	3.600	1.289	1.152	1.134	1.098	1.048	1.246	1.727	1.805	1.245	1.100	1.048	1.038	1.327
Haryana	5.826	1.317	1.146	1.154	1.190	1.373	1.290	na	1.749	1.382	1.191	1.099	1.693	1.481
Himachal Pradesh	3.800	1.267	1.130	1.262	1.191	1.352	1.265	4.550	1.509	1.034	1.138	1.458	0.978	1.304
Karnataka	1.845	1.131	1.103	1.101	0.989	1.165	1.143	0.989	1.165	1.047	1.101	0.984	1.365	1.132
Kerala	1.177	1.033	1.097	1.237	1.090	3.000	1.085	0.500	0.969	1.140	1.132	0.830	0.752	1.021
Madhya Pradesh	1.750	1.179	1.083	1.073	1.085	1.114	1.172	1.385	1.258	1.079	1.026	1.227	1.060	1.182
Maharashtra	3.000	1.274	1.182	1.153	1.151	1.026	1.236	2.000	1.390	1.268	1.173	1.215	1.032	1.248
Orissa	1.917	1.361	1.215	1.102	1.042	1.065	1.255	1.300	1.343	1.322	1.334	1.173	1.207	1.313
Punjab	3.906	1.239	1.086	1.054	1.122	1.427	1.207	na	1.554	1.198	1.012	1.115	1.078	1.216
Rajasthan	4.154	1.518	1.235	1.208	1.216	1.249	1.332	3	1.589	1.360	1.346	1.326	0.809	1.346
Tamil Nadu	1.608	1.032	1.014	0.991	0.968	0.810	1.040	1.286	1.018	1.004	1.119	1.144	0.966	1.053
Uttar Pradesh	2.600	1.778	1.385	1.206	1.221	1.181	1.354	1.250	1.707	1.432	1.067	1.199	1.213	1.316
West Bengal	1.704	1.150	1.112	1.119	1.018	1.541	1.166	1.278	1.172	1.036	0.978	0.964	1.141	1.048
India	2.033	1.218	1.187	1.171	1.172	1.114	1.232	1.391	1.169	1.151	1.133	1.179	1.154	1.197

Source: Authors' calculations

Country/State/

Table 2

... with anthropometric measures

India 2019