Family Planning Policies and Sex Selective Abortions in India: Does the former elevate the latter?

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Abstract

The implementation of the Pre-conception and Prenatal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 in a patriarchal country like India hasn't eliminated sex-selective abortions in the country. Studies have shown that there still exists a higher preference for sons in India even after India has achieved its 75 years of independence. Over the years there has been a drastic fall in the Total Fertility Rates of India both at the rural and urban levels too. This was accompanied by various inventions of sex determination techniques. All this resulted in a decline in the child sex ratio across India. China is a great example of a nation with alarming gender imbalances, which emerged due to similar changes in Total Fertility Rate, level of son preference and diagnostic techniques along with the implementation of the erstwhile One-Child Policy, which made the gender imbalance even worse. The population explosion in India has forced several state governments to even consider the implementation of a Two-Child Policy. Literature shows that the relationship between Sex-Selective Abortions (SSA) and Family Planning Policies is weak in India. Our objective in this paper is to check whether the stringent

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implementation of nationwide Family Planning Policies can lead to a rise in sex-selective abortions in India. Further, we would also analyse how in India by imposing a Family Planning Policy like a one or a two-child policy will the Child Sex Ratio (age 0-6) get affected? To achieve these objectives, we have used the NFHS-4 (2015-16) reports as our data sources.

Keywords: Pre-natal diagnostic techniques, Sex- Selective Abortion, Family Planning Policy, Total Fertility Rate, Child Sex Ratio, Son Preference

1. Introduction

Since Independence, in India, due importance has been given to family planning (Muttreja and Singh, 2018). This importance can be traced back to the Five-Year Plans. The First Five-Year Plan (1951-56) emphasized the importance of natural devices for family planning which was followed by a further focus on education, research and clinical approach in population control in the Second Five Year Plan (1956-61). Sterilization techniques for both men and women were adopted under the Third Plan (1961-66). The Fourth Five Year Plan (1969-74) encouraged both conventional and modern birth control methods. Under the Fifth Five Year Plan (1974-78), the National Population Policy (16th April 1976) was announced which increased the minimum age for marriage. Efforts were made to control the population by creating demographic targets under the Sixth, Seventh and Eighth Plans (Maharatna, 2002).

In the Ninth Plan (1997-2002), a draft of the National Population Policy was prepared under the chairmanship of M. S. Swaminathan in 1994 which was later reviewed by the Family Welfare Department and was passed by the Parliament in 2000. It was called the 'New National Population Policy'. The three main objectives of the policy were an easy supply of birth control devices with proper development of a health protection framework and recruitment of health workers, reducing India's TFR (Total Fertility Rate) to the replacement level of 2.1 by 2010 and to achieve population stabilization by 2045 (Santhya, 2003). Hence, population

control has always been a major issue for Indian policymakers as we consider it to be a major source of resource scarcity.

The Solow growth model (Ray, 1998) predicts that countries with higher population growth will have lower levels of GDP per person.

$$\Delta k = I - (\delta + n)k$$

$$\Delta k = sf(k) - (\delta + n)k$$

Where 'n' is the rate of population growth, δ is the depreciation rate, I=Investment spending, sf(k)=saving per capita. In the above equations, investment spending (I) increases capital stock (k), whereas depreciation (δ) and population growth (the growth in the number of workers causes capital per worker to fall) leads to a decline in capital accumulation (k). Depreciation reduces k by wearing out the capital stock, whereas population growth spreads the capital stock more thinly among a large population of workers.

More than 36 bills have been introduced so far in the parliament on population control (Kumar, 2019). The Assam government is the 12th state to bring into effect a two-child policy for state government employees after passing its State Population Policy in 2017. The reason for the implementation of this policy was the rise in the population of Assam to 3.2 crores from 2.33 crore in 2001 at a decadal growth of 17.07 percentage (census 2011). Before Assam, a similar two-child policy was implemented by the state governments of Andhra Pradesh, Telangana, Maharashtra, Bihar, Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Himachal Pradesh, Haryana, Odisha and Uttarakhand. Out of these states Madhya Pradesh, Chhattisgarh, Himachal Pradesh and Haryana revoked this norm. Sex-selective abortions have been increasing in India. Hence, in this paper, our research problem is to analyse the impact of the potential introduction of a family planning measure like a two-child policy and its impact on sex-selection abortions in India. For this, we've used a systematic review of the literature and other data sources and have analysed the compiled summary statistics derived through this process.

1.1. Methodology

Summary tables have been constructed using secondary data, especially the NFHS-4 Report (of Population Sciences, 2017). The dataset used in the paper is taken from the NFHS-4 report, conducted in India, for the year 2015-16. NFHS-4 is a nationally represented household survey of India. Under this survey, a total of 6,99,686 married women aged between 15 to 49 years were interviewed. In this paper, we took data for 24 states.

2. Analysis of the Research Problem

2.1. Family planning and population control in India

India was the first country in the world to launch a national programme for family planning in 1952. In 2016, the Ministry of Health and Family Welfare introduced the Mission Parivar Vikas to reduce the overall fertility rate in India to 2.1 (the replacement rate) by the year 2025 (Fertility Rate in 2016 was 2.33). According to Dr Singh from the Population Foundation of India, India spent 85 percentage of its total expenditure on family planning on female sterilization with 95.7 percentage of this money going towards compensation, 1.45 percentage on spacing methods and 13 percentage on family planning-related activities such as procurement of equipment, transportation, Information Education and Communication (IEC) and staff expenses in 2016-17 (Muttreja and Singh, 2018). According to the National Health Mission's (NHM) Financial Management Report, out of the total money allocated for family planning in India during 2016-17, 64 percentage was directed towards providing terminal or limiting methods, 9 percentage towards ASHA incentives for Family Planning activities, 5.3 percentage for training, 5.5 percentage for procurement of equipment, 3.7 percentage for spacing methods and 3.6 percentage towards BCC (Behaviour Change Communication)/IEC (Information Education Communication) activities for family planning. India's investment in family planning is increasing each year (Muttreja and Singh, 2018).

India's urge for population control can be seen a long way back since 1975 during the Emergency period. Mass sterilization was undertaken in camps affecting the lives of more than 8 million

people. Technological advancements and enhanced quality of services have also resulted in a rapid fall in the Crude Birth Rate (CBR), Total Fertility Rate (TFR) and growth rate. The Census Report of 2011, showed the steepest decline in the decadal growth rate of population (Chapter 6, Family Planning Annual Report, 2017- 2018).

2.3. Sex-selective Abortions and Causes

In sex-selective abortions, the pregnancy is terminated because the foetus is of unwanted sex. In the early 1980s countries like Korea, China, India and Taiwan had a steady rise in Sex ratio(!) at birth (Park and Cho, 1995). This was due to the introduction of Ultrasonic technology combined with a strong son preference in these Countries. Ultrasonography was reliable and inexpensive compared to other methods available before the 1980s(@) (Patel, 1989). When Gender detention becomes affordable women resort to selective abortion rather than unselective abortion. Jinyoung Kim in his paper found that as the cost of gender detention technology falls, the Sex ratio also rises due to Sex-selective abortions but fertility may rise or fall. He also argues that the Sex ratio may rise or fall with a fall in fertility with the increasing cost of children (Kim, 2005).

Besides Poverty and birth quotas, other factors that lead to Sex-Selective Abortions (SSA) are pressure to have sons rather than daughters and the associated prestige that comes from having sons even though there is no economic hardship associated with the birth of a girl child (Weiss, 1995). In most cases, sex-selective abortion may not be according to the free will of women. It is often coerced. Discrimination against women with unmet need for sons are less debated and documented. Patrilineal Inheritance and patrilocality make boys more valuable to the family in Asian countries (Ganatra, 2008). Other reasons for son preference include reliance on children during old age and the requirement of men as labourers in the family farms. Most Asian parents consider sons as insurance in their old age (Ray, 1998). Thus, Son-preference is directly correlated to the economic dimension (Warren, 1985). Religious beliefs have also contributed to the problem. Traditions such as sons performing death rites in the Hindu religion add up to

son preference. Islam permits fewer rights for women. Likewise, women are shown as submissive in Manusmrithi and Ramayana (Sharma et al., 2007).

The majority of those who choose SSA indeed plan to have more children, but what they want are sons. The attitude of millions of Indian and Chinese families for whom a daughter is seen as "an investment with little return" (Bumiller, 1991) is still a major cause of SSA. Commercialisation and commodification of gender detention techniques have fueled its demand. One such advertisement was 'Pay 500 now rather than 500000 later' which appeared on billboards throughout India at a point in time. Families who feared the dowry system underwent selective tests (Sharma et al., 2007).

2.4. Tracing the problem in India

Abortion was legalised in India with the introduction of the Medical Termination of Pregnancy Act in 1971. Pregnancy can be terminated if it is a threat to women's life, a result of rape, contraceptive failure or the child suffers physical or mental abnormalities (Jesani and Iyer, 1995). Even though the stated purpose of this Act was women safety, the hidden motive was population control (Phadke, 1998). Abortions are often carried out for health and economic reasons. The introduction of amniocentesis in 1978 lead to the increased use of pre-natal sex determination even though it was introduced to detect genetic abnormalities. These tests were not banned by the Government but they made it illegal to reveal the sex of a child. Supporters of sex-selective abortions considered it for the betterment of women as they can avoid unwanted pregnancies to obtain a child of their desirability. Some researchers fear this to be a reason for the disappearance of girl children causing a skewed sex ratio (Bardhan, 1974). Many feminist movements in the 1980s pressurized the government of India. Forum Against Sex Determination and Sex Preselection linked sex selection as female oppression. It made the Maharashtra Government pass the Maharashtra Bill of 1988 which ultimately led to the Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act in 1994. It came into action on 1st January 1996 which was amended twice (Arnold, Kishor and Roy, 2002).

Despite this, the 2001 Census registered a significant decline in the child sex ratio at birth across India which led to campaigning for proper enforcement of the law. Medical practitioners were asked to cease providing gender detection services. Even then the national child sex ratio at birth declined from 927 in 2001 to 914 in 2011 (Perwez et al., 2012). Daughter disadvantage persists in most parts of the Indian society and is expressed through sex-selective abortions, neglect of female children, and female infanticide (Sudha and Rajan, 2003). A study conducted by Ganatra, Hirve and Rao showed that women who undergo abortions for the purpose of sex selection have lower autonomy in decision making than women practising abortions for other reasons (Hirve, 2004). India still has several incentive schemes for protecting the girl child. But there are a few controversial schemes that may reinforce the concept of girls as an economic burden. One such scheme was the "cradle baby" scheme where parents can abandon unwanted girls to the State-run orphanages to avoid a sex-selective abortion.

In 1992 Tamil Nadu government introduced this scheme to deal with the female infanticide issue. Studies revealed that higher birth order, increased the number of female infants abandoned in Dharmapuri where the cradle baby scheme was implemented (Kumaravel K S, Rameshbabu B, Pugalendhiraja K V, Karthick N R, Santhoshkumar S., 2016). This study also highlighted that two of the most common reasons female babies are abandoned are poverty (33 percent) and the female sex of the baby (62 percent). This clinico-social angle of the study points out that even though there was a rise in Child Sex Ratio (from 826 in 2001 to 911 in 2011) in districts where the scheme was introduced, the rise was brought about by the 1363 girl babies who were given up for adoption through then scheme. On the one hand, this helps in improving the Child Sex Ratio of a state but on the other, it shows that the government also agrees those female babies are a burden. The study was done by Shahid Perwez also adds the negative effects of the Girl Child Protection Scheme. This scheme provides the families with one or two girl children with money for education or marriage when they are 20 years old only if certain criteria are fulfilled by the families. These hard to fulfil criteria led to the belief that girl children are a burden and the money given through the scheme gave the impression that the government will help the

families bear this burden and relieve the families of their responsibility towards their daughters.

3. Analysis of the One-Child Policy of China

3.1. Introduction to China's One-Child Policy

One of the strongest Chinese leaders of all times, Mao Zedong (1949-1976) had emphasized the principle, "more people more power" but the hardships of overpopulation often led to discussions on setting up a National Family Planning Policy during the 1950 and 1960s. Chinese economist Ma Yinchu was the first to recommend the national family planning commission. Mao was supportive of this idea initially but due to nationwide criticisms during the Great Leap Forward Movement in 1958, he dropped the idea. During Mao's era, China's population grew from around 550 million to over 900 million which led to the family planning campaign in China. It was successful as it reduced China's overall fertility rate by half from 1971 to 1978. Mao died in 1976 but the actual success was witnessed when Deng Xiaoping came to power thereafter. He emphasized that population control is the best way to achieve higher per capita income and GDP growth.

At that time, China was home to a quarter of the world's people, who were occupying just 7 percent of the world's arable land. Two-third of the population was under the age of 30 years and the baby boomers of the 1950s and 1960s were entering their reproductive years. The government saw strict population containment as essential to economic reforms and to an improvement in living standards. Thus, the Chinese Government implemented the One-Child policy in 1979. It applied mainly to urban residents and government employees; in rural areas where around 70 percent of the population lives a second child was generally allowed after five years, especially if the first was a girl.

3.2. What went wrong?

To determine the population trends in China post the introduction of the one-child norm, we analysed five-year aggregates of sex ratios (no. of boys per 100 girls) in China from Table 2 of the paper by Jiang et al., 2017. These showed that from 1980 to 1989 the sex

ratio was maintained at a mean of 1.11, but it sharply rose to 1.21 in 1990-95 and was 1.23 in 1996-2001. It's observed that during this phase in the urban areas, where only one child was allowed, some people selected the sex of their child at first birth. In rural areas, most people were permitted a second child, especially if the first was a girl child, so sex selection started with the second pregnancy. Another study showed that the highest sex ratios (no. of boys per 100 girls) were seen in countries with a combination of preference for sons, easy access to sex-selective technology, and a low fertility rate (Ding and Hesketh, 2006). Also, it is no surprise that China faced the problem of excess men as compared to any other country during the era of the one-child policy.

This led to China revoking the one-child policy and in 2015 it implemented the two-child policy. Today several Asian countries that have declining birth rates and traditional preferences for male babies are seeing serious sex imbalances: 1.19 for Taiwan, 1.18 for Singapore, 1.12 for South Korea, and 1.20 for parts of northern India. There are several well-documented problems with China's one-child policy. Worst of all, there is a gender imbalance resulting from a strong preference for boys. Millions of undocumented children were also born to parents who already had one child. Other problems like accelerated population ageing and the decline in the working-age population threaten China's economic growth. These problems could also adversely affect India, if a two-child policy is implemented in this country.

3.3. The Introduction of the Two-Child Policy

By early 2015, in China, only 13.2 percent of eligible couples applied for a second child. The reason for such a low percentage of application was the high cost of child-rearing and the sex of the first child (Zeng and Hesketh, 2016). The implementation of the Two-Child Policy in 2015 in China was aimed at improving the persisting gender imbalance, restoring a balanced age-wise distribution of the population, increasing the working-age population and eliminating the negative effects on the economic development of the county that emerged because of the One-Child Policy (Fan et al., 2020). But studies show that this new policy might not necessarily improve the gender ratio. Also, the tendency

to manipulate the sex of the child might increase with the opportunity to have one more child because now people who already have one daughter will try not to end up with two daughters (Attane, I., 2016).

4. Analysis on whether Family Planning Policies have led to Sex-Selective Abortions in India

4.1. Introduction

The Economic Survey of 2017-2018 (chapter 7 of volume 1) addresses the existence of meta-preference in favour of sons in Indian society. The concept of son "meta" preference is not the same as 'Son-Preference'. Son "meta" preference means parents adopting a "stopping rule" based on the number of sons they desire. This does not necessarily lead to sex-selective abortions of female foetuses but may be harmful to female children because it may lead to less care and resources devoted to them. This gave rise to 21 million "unwanted" girls in India. On the other hand, the presence of preference for sons created around 63 million "missing" women in the country (Shaankar, 2017). India is well above the benchmark for Sex Ratio at Birth (SRB), suggesting that there are many more males than females. The biologically determined natural sex ratio at birth is 1.05 males for every female. Any significant deviation from this is on account of human intervention specifically, sex-selective abortion. India's sex ratio during 1970-2014 increased substantially from 1060 males per 1000 females to 1108 males per 1000 females. If development acted as an antidote, it should have led to improvements in the sex ratio. If we look at the Indian states individually, we observe a striking performance of Punjab and Haryana where the sex ratio (0-6 years) is approaching 1200 males per 1000 females, even though they are amongst the richest states (Census Reports of India).

Table 4.1: A decadal change in India's sex ratio

Census Year	Sex Ratio (Females per 1000 Males)
1951	946
1961	941

1971	930
1981	934
1991	927
2001	933
2011	940
2020	924

**Source:** Data extracted from the Census Reports of India

As we can observe from the above 3.1 table, a decadal change in India's sex ratio from 1951 to 2020, that there has been a fall in the number of women per 1000 men (from 946 women per 1000 men in 1951 to 924 women per 1000 men in 2020). This fall in the sex ratio was not consistent over the years. There was a slight increase in sex ratio between 1971-1981(930-934), 1991-2001(927-933) and 2001-2011(933-940). Scientific improvements like ultrasonic technologies were introduced in the early 1980s. This technology is used to determine the sex of the unborn child. It can be observed from the table that there is an overall reduction in the number of women per 1000 men in India after the 1980s till the present day. This indicates that the introduction of easily accessible pre-natal sex determination techniques might have induced this reduction in the sex ratio.

4.2. State Wise Analysis

In figure 3.1, we can observe that there is a mixed relationship between the percentage of abortions, the percentage of women who want more sons than daughters and the percentage of sex ratio (number of women per 1000 men) across different states. States like Chandigarh, Goa and Kerala show a relation where a low level of abortions is combined with a considerably low son preference and a high sex ratio. This indicates that these states might not be witnessing sex-selective abortions extensively. Other states like Bihar, Haryana, Madhya Pradesh, Rajasthan and Punjab depict a mixed relation indicating either an error in the data collection or a presence of some state policies which might have an influence on their values. For example, Bihar has a very low percentage of

abortions (1.3 percent), an exceptionally high level of son preference (37.1 percent) and a sex ratio of 934 for every 1000 men which might indicate an under-reporting of the number of abortions. Haryana has a 1.9 percent of abortion rate, 15.4 percent son preference along a very low sex ratio (836). This indicates an under-reporting of selective abortions of the female foetuses. Punjab and Rajasthan also show a similar trend.

Figure 4.2: Percentage Distribution of Abortions and Women (15-49) who want more Sons than Daughters along with the Sex Ratios in different States in India (NFHS 4 Report, 2010-2015);
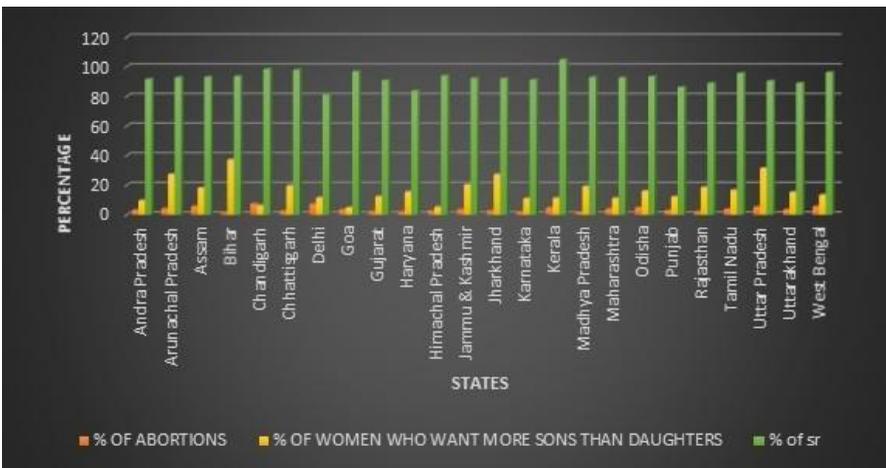
(Constructed from table 1 in Appendix)

5. State-wise Population Policy Analysis and skewed sex ratio in India

The Draft prepared for the National Population Policy, 2000 under the chairmanship of M. S. Swaminathan in 1994 recommended that states should develop their own policies in matters of population. It was widely circulated and had been adopted by different states to stabilize population in the form of state-level population policies. It involved the state population policy of Andhra Pradesh (1997), Rajasthan (July 1999) followed by the Madhya Pradesh Population Policy (2000). These state-level population policies were either in the form of incentives or disincentives. Disincentives involve measures like penalising couples with large families or penalising regions with higher fertility rates. These measures were considered to be the best ways to show the importance of family planning. In

the next subsections, we will explore a few of these population policies in detail.

5.1. Madhya Pradesh Population Policy

There was pressure from the central government on the state to implement Population Policies due to the state's poor demographic performance towards the end of the twentieth century. Evidence can be drawn from the workshop held for BIMARU states in January 1999 by the Department of Family Welfare at the Centre (Vasaria, 2002). There were also other factors that lead to the speedy formulation of such policies. One such policy was officially launched on 11th May 2000. "An agreement has been signed with Indian Institute of Health Management Research, Jaipur to provide technical assistance to develop population/RCH (Reproductive and Child Health) policy for Madhya Pradesh. The policy development process will involve a series of consultative meetings with stakeholders and particularly with senior administrators of the Government of Madhya Pradesh" (Government of Madhya Pradesh, May 11, 1999). Incentives involved increments in the salary for Health workers if they underwent sterilization. Earlier the Government of Madhya Pradesh had an Act of 1976 under which its employees get a salary increment, 7 days' vacation and a green card (easy credit facilities for poor farmers) if they underwent sterilization. This Act stipulated that employees would get 2 increments if they have 3 children, and 3 for 2 children (personal interview, health official, Khargone, 2004). As per the Population policy of Madhya Pradesh 'Persons having more than two children after 26 January, 2001 would not be eligible for contesting elections for panchayats, local bodies, mandis or co-operatives in the state. In case they get elected, and in the meantime, they have the third child, they would be disqualified for post' (Madhya Pradesh Population Policy 2000).

From table 3 from NFHS 4 (2015-16) (Appendix), it is clear that almost 52 percent of the women use contraceptives among which female sterilization is being widely used as a family planning measure. It is a clear indicator that family planning measures are quite strict in the state. By referring to tables 2 and 3 (Appendix) we get a clear picture of the skewed sex ratio in the state. Being a state

with strict family planning measures and increased son preference we could see that there is a prevalence of sex-selective abortions by just looking at the number of crimes against female foetuses and the percentage of abortions.

5.2. Rajasthan Population Policy

In Rajasthan, Population Policies often involve disincentive strategies. The population policy document of Rajasthan proposes to consider an extension of the law, making candidates with two or more children ineligible to contest elections to 'other elected bodies like cooperative institutions.' It may also be made a 'service condition' for state government employees. The policy for Rajasthan proposes 'legal registration of marriage,' compulsory observance of the minimum age at marriage for availing of government facilities and services and 'stiffer penal provisions for violation of the legal age at marriage' (Government of Rajasthan, op cit., p. 20, para 6.6.3.).

Rajasthan having strict family planning measures (indicated by 59.7 percent contraceptive use, Table 3 in the Appendix) along with increased son preference has a high impact on sex-selective abortions. 2 percent abortion rate with an increased number of crimes against foeticides being reported provides a clear example how family planning policies lead to sex-selective abortions in this state. The sex ratio is at an alarming rate of 887 females per 1000 males in Rajasthan.

5.3. Andhra Pradesh Population Policy

The Population Policy document of this state states that its objective is to "bring about a change in the size, structure and distribution of the population", to improve "the standard of living and quality of life of the people in general" and to extend the benefits of such change and development to the most vulnerable and disadvantaged. Fertility reduction is said to be at the heart of the development of the state. Table 5 (Appendix) also shows clearly, how family planning measures combined with an increased son preference leads to a skewed sex ratio in the state.

5.4. Maharashtra Family Bill

A Compulsory Sterilisation Bill was passed in the Parliament in 1976 with support from both the Houses of the State Legislature of Maharashtra. Couples with three or more children would be eligible for compulsory sterilisation except for those having 3 children of the same sex (Visaria, 1976). Table 6 (Appendix) also confirms our findings related to family planning and sex-selective abortions in Maharashtra.

Thus, we can conclude that states having a higher son preference combined with a family planning policy has a highly skewed sex ratio compared to other states (Fig. 3.2). The existence of strict family planning policies increases sex-selective abortions as long as son preference exists in the society.
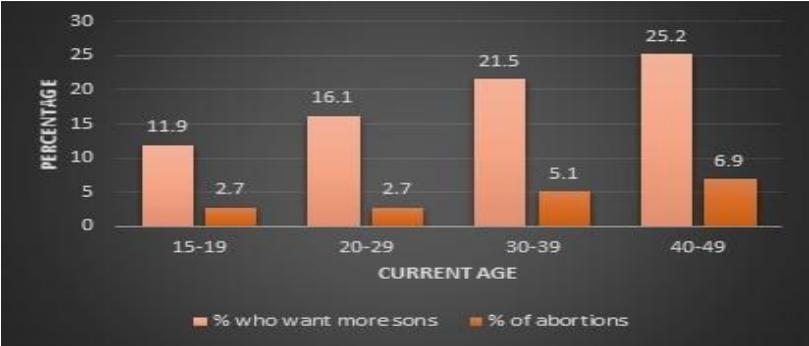

Fig. 3.2. Percentage distribution of abortions by women (15-49) who want more sons than daughters *(Constructed from table 7 in Appendix)*

Figure 3.3: Percentage Distribution of Abortions among Women (15-49) during the 5 years preceding the Survey *(Constructed from table 8 in Appendix)*

The Total Fertility Rate (TFR), is defined as the average number of children a woman would have by the end of her childbearing years. Age-specific fertility rates are calculated for the three years before the survey (2012-2014), based on detailed birth histories provided by women. The Total Fertility Rate (TFR) in India is 2.2 children per woman, slightly higher than the replacement level of fertility of 2.1 children per woman (World Bank, 2018). Women in rural areas have higher fertility, on average than women in urban areas (TFR of 2.4 versus 1.8 children).
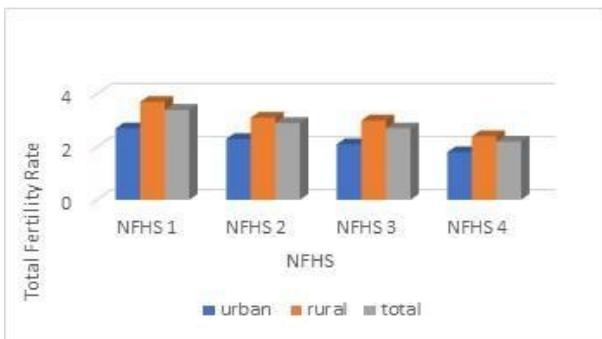
Figure 3.4: Trends in Fertility by Residence *(Constructed from table 9 in Appendix)*

There has been a drastic decline in TFR from 1992-93 to 2015-16, by 1.2 children from a TFR of 3.4 children in 1992-93 to 2.2 in 2015-16. TFR among women in urban areas has declined from 2.7 children in 1992-93 to 1.8 children in 2015-16. On the other hand in rural areas, we saw a decline in TFR in women from 3.7 children to 2.4 children. In the urban areas women between the age group of 20-24 years showed a higher fertility rate compared to women of other age groups irrespective of place of residence.

Figure 3.5: Factors Affecting Total Fertility Rate in India *(Constructed from table 10 in appendix)*

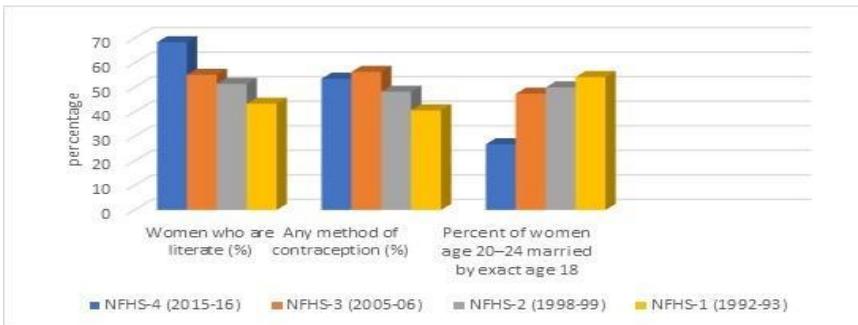Some factors that affect the TFR are the percentage of literate women, usage of any method of contraception (indicating the presence of family planning) and the age women get married. Women's level of literacy is inversely related to the TFR because as women become more and more educated, they prefer a small family. This is evident from table 9 in the appendix which shows that TFR is always less in urban areas as compared to rural areas. An increase in the usage of any kind of contraception indicates wanting to limit the number of pregnancies. This leads to a lower TFR. The age of the woman when she gets married gives us the number of reproductive years she has. Thus, late marriages will lead to a reduction in TFR. We can see from the graph (Fig. 3.5) that the percentage of literate women increases, the percentage of contraception usage increases and the percentage of women aged 20-24 married by the exact age of 18 falls as we move from 1992-2016.

Currently, married women of age 15-49 with two living daughters and no sons don't prefer to have any more children. Contrary to this women having two sons and no daughters have a higher preference for a third child (89 percent). This pattern is similar for men. This shows that sons were clearly the determinant of "reproductive success." The introduction of ultrasound technology in the 1980s for diagnostic purposes in many Asian countries was
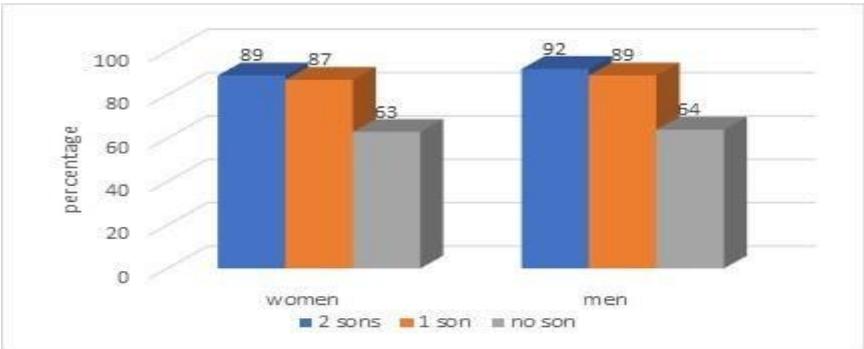

Figure 3.6: Currently Married Women and Men Age 15-49 with Two Children who want no   more Children by Number of Living Sons *(Refer to table 11 in Appendix)*

exploited to determine the sex of the baby. For years before this technology was known, son preference has led to postnatal discrimination against girls. Premature mortality of girls was a result of this. Countries where there is a son preference, nuclear family culture. cheap and easy access to sex-determination technologies indicated serious sex imbalance. These imbalances distort the reproductive age groups. 61 percent of pregnant women had an ultrasound test in the preceding five years of the survey. From 2005-06 to 2015-16, the percentage of pregnant women who underwent an ultrasound test rose from 24 percent to 61 percent. A country with son preference, a high percentage of abortions and low sex ratios (number of females per 1000 males) can be said to have sex-selective abortions. Family planning policies like the one-child policy or two-child policy might bring about a threatening gap in the number of females and males.

6. Discussion

The rise in sex ratio that India witnessed between 1991-2011 (927-940 females for 1000 males) was at the same time as the Cradle Baby Scheme was introduced (1992) and later modified (2002). In a single decade from 2001 – 2011, 1363 baby girls were abandoned to the cradle baby centres and these babies were the reason the sex ratio increased. The well-being of these girls was not recorded after adoption or even before. After 2011 the sex ratio gradually fell to 924, which was the lowest since 1951. 1363 babies born and abandoned in one decade indicates that a close enough number of female infants were born in decades before and after that but were eliminated either by abortion or female infanticide and in some cases female negligence. The average number of males for every female is 1.05, a sex ratio of 924 gives a value of 1.08 males for every female. The survival rate of females, in the womb and even after birth is higher than males (Prabhat Jha, Rajesh Kumar, Priya Vasa, Neeraj Dhingra, Deva Thiruchelvam, Rahim Moineddin). Considering these facts, the low Sex Ratio does imply human interventions of some sort.

Getting an accurate value of pre-natal sex determinations followed by abortion is difficult as it is a punishable crime (Tulsi Patel, 2007). Medical practitioners availing these practices as well as the

households involved would not comply and reveal the information. The study by Tulsi Patel was focusing on a few districts of Rajasthan, Uttar Pradesh and Madhya Pradesh. It revealed that a lot of abortions were carried out through local connections, friends, relatives, etc calling them informal networks. A medical practitioner even reaches the house of the woman asking for sonography for sex detection. The ultrasound machines present for detecting foetal abnormalities are misused. According to what people reported, Jhansi was known for sex determination tests and abortions with Gwalior following its footstep closely. This points to the possibility of such towns or districts all over the country which still provide sex determination tests illegally at affordable costs.

According to the study by S. V. Subramanian and S. Selvaraj, there was no change in the sex ratio in the pre and post-Pre-Natal Diagnostic Techniques (PNDT) Act (1994) period. In the pre-PNDT period, an association between high Socio-Economic Status (SES) groups and the proportion of male infants is found in previous studies. This is assumed to be due to the advanced technologies of sex determination available to high-income households. The post PNDT period shows no such association which is assumed to be because of the improved economical state of India, simultaneous to the availability of much affordable scanning techniques. Implementing PNDT Act does not ensure a reduction in Sex-Selective Abortions as it goes against the interests of people. Parents have the incentive of knowing the sex of their foetus and taking appropriate actions and for the physician conducting the sex, the determination procedure has an economical incentive especially when it is followed by an abortion. The approximate value of abortion of female foetuses estimated by the statisticians for the last 20 years is 10 million, indicating a huge number of illegal sex determination processes being carried out.

Another thing the paper by Tulsi Patel focused on was the order of the birth of female infants. The firstborn turning out to be a girl was accepted though not welcome, but having a second daughter was unacceptable to the families. In such cases, the infant becomes the victim of negligence and eventually adds to the number of child mortalities. In extreme cases, even the husband blames the woman for giving birth to a girl and abuses her. In order to avoid such

abuse and unacceptance from family members, women choose to get the ultrasound test and abort the foetus if it is a girl. Here if we look at the concept of son meta-preference present in the Indian society as discussed in the economic survey of 2017-18 points at how the number of sons determines when to stop having children. This shows that people consider sons as reproductive success.

The state-wise study brings out some anomalies. For example, in Haryana and Bihar, there is a low rate of abortions, a high rate of son preference and a low sex ratio (Haryana showing exceptionally low levels, 836). The NCRB reports show a decrease in crimes against female infants in both these states then the contribution to such low levels of sex ratios might be by abortions or neglect of female infants. Looking at some of the states which implemented Family Planning Policies can help us get an overall view as to how a countrywide Policy might affect India. Madhya Pradesh implemented a strict Family Planning Policy providing financial incentives to parents who have just one or two children and restricting others to be eligible for increments in salaries and contesting elections. This was an attempt to motivate people to have a smaller number of children, but it gives critics something to think about on the lines of whether the strongly prevailing son preference in the state influences the parents to take a harsh road. The NCRB report shows one of the highest rates of crime against female foetuses in Madhya Pradesh (Table 2, Appendix). Considering the fact that a lot of such crimes go unreported, the high level of violence against female foetuses can be assumed to be due to a strict Family Planning Policy and son preference prevailing side by side.

7. Conclusion

The high population has always been considered as a constraint to the country's development. Hence, the policymakers consider the implementation of a National Two-Child Policy as a solution to this problem. Since India's Total Fertility Rate has reached close to the replacement level (2.1), it would be good to ponder whether such a policy is necessary at this stage. Over the past years, Family Planning Policies in different states have led to a large decline in sex ratios and an increase in crimes against female foetuses. India

being a patriarchal country, cannot give up its cultural and traditional importance of son preference easily. Keeping the societal norms in mind any attempt to implement strict family planning measures might lead to female genocide. Higher son preferences combined with a stringent family planning policy could give rise to Sex-Selective Abortions. This can be seen from the adverse decline in sex ratios in places where such policies were implemented. Micheal Kremer stated that more people have more ideas that accelerate technological growth. In order to maintain a sustainable level of population balanced sex ratio is a necessary condition (Kremer, 1993). As shown by Hudson and Den Boer, shortage of women increases violence and aggression which can even trigger large scale international violence and global security (Hudson and Den Boer, 2004).

The result we obtained from analysing some states in India where a Two-Child Policy was implemented is that they have a low sex ratio, high level of abortions and a high preference for sons. We studied the change in Total Fertility Rate from NFHS-1 (1992-93) to NFHS-4 (2015-16). We saw that there is a constant fall in the TFR both in urban and rural areas. This shows that along with the development in all phases of life over the years, the desired family size has reduced. Some factors that attribute to such a fall in the TFR is the increase in literate women, a rise in the usage of some contraception methods and the fall in the number of women getting married at an early age (18 years). We also found that both men and women choose to have no more children based on the number of living sons they have. The higher the number of living sons, the higher is the percentage of people (both men and women) who prefer to have no more children. This clearly shows that having a son is the superior choice.

The introduction of ultrasound technology has helped in sex selection in the years after the 1980s. People who have no sons would go for an ultrasound test to determine the sex of the unborn child as compared to the people who have one or more sons. Even though prenatal sex determination is illegal in India, the slight abnormalities in the data of son preference, abortions and sex ratios indicate illegal sex determination. An overall analysis tells us that the implementation of a nation-wide Two-Child Policy in a country

with a package of a high level of son preference, easy access to pre-natal sex determination, low TFR, the low sex ratio in the majority of the states will lead to a further fall in TFR as well as the sex ratio because now people can have only two children and what they prefer is a son. This would certainly put upward pressure on the level of sex-selective abortions. Thus, implementing a Two-Child Policy in India might end up as a disaster leaving the country with a drastic gender imbalance.

Changing the mindset of people who consider female children as a burden and economic hardship is not an easy task. Policymakers should devise policies that are directed towards changing this mindset. Policies to strictly eliminate the dowry system should be imposed as dowry is one of the major burdens associated with a girl child. Policies that provide subsidies to parents who only have daughters can be implemented to secure their life in old age. Proper implementation of girl child schemes like Sukanya Samridhi Yojana, Dowry Prohibition Act, 1961 etc. can more or less reduce people's perspective on the girl child. More research and development should be done in a way that can reduce the existence of a higher preference for sons in Indian society.

End Notes

(!) - Sex ratio at birth in India is calculated as the number of females per 1000 males but the international standard is the number of males per 100 females.

(@) - 1986 article in Times of India reported that almost 100% of 15914 abortions at a well-known abortion centre in Bombay during 1984-85 were proceeded by gender detention tests

(#) - https://statisticstimes.com/demographics/country/india-sex-ratio.php

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Appendix

Table 1: Percentage Distribution of Abortions and Women (15-49) who want more Sons than Daughters along with the Sex Ratios in the Different States in India (Data from preceding 5 years Of the Survey) (2010-2015)

States	% of Abortions	% of Women who want more sons than Daughters	Total Sex Ration for Children Born in Last 5 Years	Urban	Rural	% of SR
Andhra Pradesh	2.9	9.5	914	1010	880	91.4
Arunachal Pradesh	4	27.2	926	851	948	92.6
Assam	5.5	18	929	794	945	92.9
Bihar	1.3	37.1	934	942	933	93.4
Chandigarh	7.3	6.2	981	981	-	98.1
Chhattisgarh	2.4	19.5	977	923	992	97.7
Delhi	7.1	11.5	812	8.6	-	81.2
Goa	3.3	4.7	966	894	1109	96.6
Gujarat	2.2	12.2	906	836	959	90.6
Haryana	1.9	15.4	836	785	867	83.6
Himachal Pradesh	2.5	5.1	937	1151	820	93.7
J & K	3.5	20.2	921	902	927	92.1
Jharkhand	2.6	27.1	919	89.	926	91.9
Karnataka	1.8	10.9	910	874	934	91
Kerala	406	11.2	1047	1052	1032	104.7
Madhya Pradesh	1.6	19	927	899	937	92.7
Maharashtra	3.8	11.1	924	920	926	92.4
Odisha	4.7	15.9	932	966	926	93.2
Punjab	2.7	12.1	860	792	909	86
Rajasthan	2	18.5	887	845	899	88.7
Tamil Nadu	3.6	16.4	954	972	939	95.4
Uttar Pradesh	5.1	31.3	903	896	904	90.3
Uttrakhand	3.3	15.2	888	817	924	88.8
West Bengal	5.4	13.3	960	902	984	96

Source: NFHS – 4 – (2015 – 16) Report

Table 2:

States	% of Abortions	% of Women who want more sons than Daughters	Total Sex Ration for Children Born in Last 5 years	Crimes against Female Foeticides	
				2015	2016
Andhra Pradesh	2.9	9.5	914	0	1
Arunachal Pradesh	4	27.2	926	0	0
Assam	5.5	18	929	0	1
Bihar	1.3	37.1	934	0	0
Chandigarh	7.3	6.2	981	0	1
Chhattisgarh	2.4	19.5	977	11	18
Delhi	7.1	11.5	812	3	8
Goa	3.3	407	966	0	0
Gujarat	2.2	12.2	906	1	0
Haryana	1.9	15.4	836	14	4
Himachal Pradesh	2.5	5.1	9.7	1	0
J & K	3.5	20.2	921	0	2
Jharkhand	2.6	27.1	919	1	0
Karnataka	1.8	10.9	910	1	2
Kerala	406	1.2	1047	0	0
Madhya Pradesh	1.6	19	927	17	19
Maharashtra	3.8	11.1	924	11	7
Odisha	4.7	15.9	932	0	0
Punjab	2.7	12.1	860	10	4

Rajasthan	2	18.5	887	13	21
Tamil Nadu	3.6	16.4	954	0	0
Uttar Pradesh	5.1	31.3	903	12	52
Uttarkhand	3.3	15.2	888	0	4
West Bengal	5.4	13.3	960	0	0

Source: NFHS 4 (2015-16) combined with NCRB Report on crime against Foeticides

Table 3: Current Use of Family Planning Methods (currently married women age 15–49 years)

	Urban	Rural	NFHS-4 total	NFHS-3 Total
Any Method	51.6	51.3	51.4	55.9
Any Modern Method	49	49.8	49.6	52.8
Female Sterilization	35	45.2	52.2	44.3
Male Sterilization	0.4	0.5	0.5	1.3
IUD/PPIUD	0.9	0.4	0.5	0.7
Pill	2.2	0.9	1.3	1.7
Condom	10.3	2.7	4.9	4.8

Source: Madhya Pradesh Fact Sheet NFHS-4 report, 2015-16

Table 4: Current Use of Family Planning Methods (currently married women age 15–49 years)

	Urban	Rural	NFHS-4 total	NFHS-3 Total
Any Method	64.1	58.3	59.7	47.3
Any Modern Method	57.9	52.1	53.5	44.4
Female Sterilization	35.3	42.5	40.7	34.2
Male Sterilization	0.2	0.2	0.2	0.8
IUD/PPIUD	2.1	1	1.2	1.6
Pill	3.5	2.1	2.4	2
Condom	16.5	6.1	8.7	5.7

Source: Rajasthan Fact Sheet NFHS-4 (2015-16) report

Table 5: Current Use of Family Planning Methods (currently married women age 15–49 years)

	Urban	Rural	NFHS-4 total
Any Method	68.4	70	69.5
Any Modern Method	68.1	70	69.4
Female Sterilization	65.6	69.5	68.3
Male Sterilization	1.2	0.3	0.6
IUD/PPIUD	0.5	0.1	0.2
Pill	0.4	0.1	0.2
Condom	0.5	0	0.2

Source: Andhra Pradesh Fact Sheet NFHS-4 (2015-16) report

Table 6: Current Use of Family Planning Methods (currently married women age 15–49 years)

	Urban	Rural	NFHS-4 total	NFHS-3 Total
Any Method	63.9	65.5	64.8	66.9
Any Modern Method	60.7	64.2	62.6	64.9
Female Sterilization	44.8	55.9	50.7	51.1
Male Sterilization	0.2	0.7	0.4	2.1
IUD/PPIUD	2.3	1.1	1.6	3
Pill	3.1	1.7	2.4	2.4
Condom	9.9	4.6	7.1	6.2

Source: Maharashtra Fact Sheet NFHS – 4 (2015 – 16) report

Table 7: Percentage distribution of abortions and women (15-49) who want more sons than daughters

Current Age	% of who want more sons than daughters	Abortions %	No. of Pregnancies
15 – 19	11.9	2.7	7,124
20 – 29	16.1	2.7	1,32,660
30 - 39	21.5	5.1	50,500
40 – 49	25.2	6.9	5,187

Source: NFHS – 4 (2015 – 16) report

Table 8: Percentage Distribution Of Abortions among Women (15-49) During the 5 years preceding the Survey

Current Age	Abortions %	No of Pregnancies	No. of abortions
15 – 19	2.7	7,124	192.348
20 – 29	2.7	1,32,660	3581.82
30-39	5.1	50,500	2575.5
40-49	6.9	5,187	357.903

Source: NFHS 4 (2015-16) report

Table 9: Trends in Fertility by Residence

	Urban	Rural	Total
NFHS 1	2.7	3.7	3.4
NFHS 2	2.3	3.1	2.9
NFHS 3	2.1	3	2.7
NFHS 4	1.8	2.4	2.2

Source: NFHS - 4 (2015 – 16) report

Table 10:

	NFHS-4(2015-16)	NFHS-3(2005-06)	NFHS-2(1998-99)	NFHS-1(1992-93)
Women who are literate(%)	68.4	55.1	51.4	43.3
Any method of Contraception(%)	53.5	56.3	48.2	40.6
Percent of Women Age 20-24 married by exact age 18 (%)	26.8	47.4	50	54.2

Source: NFHS – 4 (2015 – 16) report

Table 11: Currently Married Women and Men Age 15-49 with Two Children who want no more   children by Number of Living Sons

	Women	Men
2 Sons	89	92
1 Son	87	89
No Son	63	64

Source: NFHS – 4 (2015 – 16) report