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An Analysis of Abortion Laws and Sex Selective Abortion in India: A Case Study of Rajasthan

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***Abstract*—**A son in every Hindu society pays his own father the debt and he owes him for his own life whereas a girl child is treated as a burden mainly in case of first child. Even today in India we have many societies which does not welcome girl child. Although there is an increase in overall sex ratio, there is a continuous decline in child sex ratio. This paper focuses on issues of sex selective abortion in Rajasthan based on secondary data. It is found that 90.0 percentages of women in Rajasthan wants at least one son. Around 34.3 percentages of women wants more sons than daughters and only 1.5 percentages of women wants more daughters than sons. It is very common among the rich and educated people.

***Keywords*—**Rajasthan, Family Planning Program (FPP), Sex Selective Abortion (SSA), Sex Ratio at Birth (SRB).

I. Introduction

SEX-SELECTIVE abortion is a two way process initiating with the determination of the sex of the fetus followed by abortion if the fetus is not of the desired sex. Sex determination of the fetus first became possible in India in the 1970s. Three methods are commonly used 1.Amniocentesis, 2.Chronic Villus Sampling and 3.Ultrasound test [1]. Technologies introduced to detect genetic abnormalities, began to be used as a way of determining the sex of a fetus. Sex-selective abortion preceded by a sex-determination test, are used as a strategy to ensure a desired family size and sex composition. As early as 1976, government banned the use of these test for sex determination. This law does not ban tests that can reveal the sex of the fetus but they made it illegal to reveal the sex of the fetus to the client. However, the use of this test flourished unregulated for at least the next 20 years in private medical sector. Ultrasound machines have become ubiquitous in clinics of various parts of the country openly advertising their availability for sex determination test. In many parts of India, ultrasound is offered by travelling vans. Ultrasound is used much more often than either amniocentesis or chronic villus sampling [2]. A study by Kusum reports hoardings saying "Invest rs.500 now, save 50,000 later" designed to encourage parents to abort female fetuses in order to avoid future dowry expenses. In India, posters in train stations are also seen advertising sex determination test together with an abortion for as little as rs70. Notably, a recent study in rural Pune found that one in six abortions was preceded by a sex-determination test [3]. In some parts of the country sex-selective abortion has become a socially accepted practice.

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According to the Ministry of Health and Family Welfare, in 1996-97 about 4.6 lakh MTPs were performed in the country [4]. Against that, an estimated .6.7 million abortions per year are performed in other than registered and government recognised institutions, often by untrained persons in unhygienic conditions [5]. Sex-selective abortion manifests itself in an altered sex-ratio at birth (SRB) which in the absence of sex selection is about 1.05. Larger interview-based study involving over 1,000 study families in villages in the state of Haryana, found a reported SRB of 127 males per 100 females among upper caste women, compared with 102 among the lowest caste women [6]. Upper caste women openly discussed the widespread practice of Female Selective Abortion with the interviewers, whereas women of the lowest caste category denied its practice [7].

II. Back Ground Study on Laws and Policy of Sex-Selective Abortion in India

Prior to 1971, abortion was illegal in India. However, the central Family Planning Board recommended legalization of abortion in as early as 1964. It was done in 1971, when the Medical Termination of Pregnancy (MTP) Act was enacted as a health measure to protect women. The stated purpose of the Act is to provide women with safe, legal, medical services for the termination of pregnancy, although research suggests that the motivations for the act may have had more to do with population control than with concern for maternal health or women's right to choose [8], [9]. It was revised in 1975, which allows medical termination of pregnancy for any of the following reasons: (1) the pregnant woman has a serious medical disease or condition that would endanger her life if the pregnancy were to continue; (2) continuation of the pregnancy would entail a substantial risk of physical or mental handicap to the newborn child; (3) the pregnancy resulted from rape; (4) the socioeconomic circumstances of the mother would endanger the health of the newborn child; or (5) the pregnancy occurred because of a failure of a contraceptive method. Contraceptive failure is not grounds for abortion for unmarried women, however – only for married women. In 1976 government banned sex-determination test in government facilities but not in private facilities. In 1984, The Forum against Sex Determination and Sex Pre-selection was formed, headquartered in Mumbai. As a result Maharashtra state government passed the Regulation of the Use of the Prenatal Diagnostic Techniques Act in 1988. It was passed in 1994, covering all India. The law contains loopholes. Despite the restrictions and bans imposed by the PNDT act, many doctors continue to communicate the sex of the fetus to the

parents who want to know. Although some clinics offered sex selection from the late 1970s onward, it was only in the 1980s that these services received widespread publicity and formed the subject of a parliamentary debate, after a senior official's wife underwent an abortion of a male fetus that was mistakenly diagnosed as female [10].

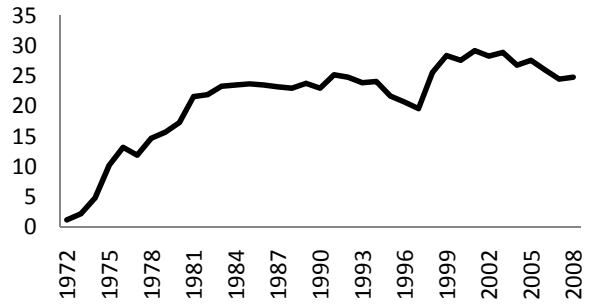

Fig. 1 Abortion Ratio in India [11]

III. Review of Literatures

The Medical Termination of Pregnancy Act of 1971 greatly liberalized the indications for which abortion is legal in India. Female-selective abortion (FSA) is practiced predominantly but not exclusively in parts of Asia, especially China, Taiwan, the Republic of Korea, Pakistan, and India, and among some Asian immigrant populations in Canada, the United States, and probably elsewhere. In countries such as China and Korea, sex-selective abortion has been available since the early 1980s and has had a large impact on SRB [12]. ***Amartya Sen***, writing over a century later, drew similar conclusions from world population figures of the 1980s. Taking the gender balance in industrialized countries as his point of reference, he estimated that parts of Asia and Africa evidenced a deficit in female numbers of about 11 percent. He concluded that in these regions "a great many more than 100 million women are 'missing" [13]. ***Satish Agnihotri***, taking complete equality as a base, has calculated that there were 31.85 million missing Indian females in 1991 [14]. Not only has the proportion of females in India remained low over the past 12 decades, but to the mystification of Indian demographers the sex ratio in India has fallen, almost without exception, by roughly 1 percent at each decennial enumeration in the twentieth century [15]. When, for instance, the 1991 census reported the lowest sex ratio in this century (929) it revived a brisk scholarly debate about the reasons for the decline that had occurred in the 1980s. Outmigration from backward areas and the selective abortion of female fetuses whose gender had been determined by amniocentesis were suggested as possible causes. [16], [17]. Other scholars suggested that double counting of migrating males had occurred that is, counting at both their points of departure and destination [18].

The term son preference refers to the attitude that sons are more important and more valuable than daughters. In many eastern and southern Asian societies, parents prize their sons for economic, religious, or social reasons. In India, for example, adult sons are expected to provide economic support for their parents [19]-[22]. In contrast, daughters may represent a substantial economic burden in places where their parents provide a dowry. The more valuable sons are to their parents in relation to daughters, presumably the greater the parents' desire for a high ratio of sons to daughters [23]. Estimates of India's national SRB in the early 1990s placed it "as high as 112" [24]. Beneath this national average, substantial regional and class variations are likely to exist, following patterns in the degree of son preference [25], [26] and differential treatment of children on the basis of gender [27]. The general regional pattern of unbalanced juvenile sex ratios in India during the 1970s and 1980s was greater scarcity of girls in the northwestern plains compared with the eastern and southern regions. Insight about change over time comes from a longitudinal study of SRBs conducted from 1983 to 1988 in several hospitals in the city of Ludhiana, Punjab, located in the part of northern India long characterized by high juvenile sex ratios [28]. The mothers' reported use of fetal sex determination was high: 14 percent of the mothers of boys had used fetal testing to learn the sex of the fetuses they were carrying. In contrast, only 2 percent (five cases) of the mothers of girls reported using fetal sex determination. The mothers who had used fetal testing but had given birth to girls were distinguished by two factors: either their pregnancies involved a set of twins of which one was male or the fetuses had been misdiagnosed as male. By the 1990s, ultrasound had replaced amniocentesis as the predominant means for determining the sex of the fetus in India. The profits from manufacturing and distributing ultrasound machines are huge, and the market is expanding. In India, ultrasound equipment constituted 20 percent of the total market in medical technology in 1993, and that market grew by 20 percent every year, with stiff competition among several international businesses including Siemens, General Electric (in a joint venture with Wipro Ltd.), Toshiba, and Philips [29].

Most empirical research has focused on the biological effects of mother's age, father's age, birth order, race, and other socioeconomic characteristics on the likelihood of having a male child. According to *Teitelbaum* (1972) [30], these studies have found weak evidence of effects of race and birth order on the child's sex. Couples, however, cannot deliberately control or alter these factors. Because couples cannot biologically control the sex of a particular child, sex-selective abortion is currently the only assured way of producing a son. Because of the barriers preventing women from accessing MTP, women access abortion from unregistered, uncertified providers. Abortion services from unregistered providers range from completely safe – provided by trained medical doctors in appropriate facilities – to life threatening – provided by a range of providers in various settings [31]-[33]. An extensive literature documents the existence of Differential Stopping Behavior in countries with son preference. Some of the literature focuses on the parity progression ratios of couples by the sex composition of children already born [34], [19]. On the basis of a cross-cultural analysis of many "tribal" (nonagricultural) societies of

the mid-twentieth century Divale and Harris (1976) [39] shows that male-biased sex ratios are correlated with high levels of inter societal warfare. More recently, a comparison of district-level sex ratios and violence in one state in northern India by Oldenburg (1992) [40]; Dreze and Khera (2000) [41] has revealed the same correlation: where sex ratios are high, violence is more frequent. The Lancet comments: "If the use of sex selection were to increase the proportion of boys significantly, women would benefit from the wider choice of marriage partners and would acquire greater social value. The long-term outcome would be an increase in the birth of girls and restoration of balance". During the eighteenth century in some villages of northern India, people raised very few or no daughters [27].

IV. Objectives

- To study trends and differential in prevalence of sex-selective abortion indirectly through an analysis of trends and differentials in the sex ratio at birth in India and Rajasthan.
- To analyze the practice of termination of pregnancy based on various social and economic characteristics.
- To show the net effect on termination of pregnancy based on different birth orders and number of living sons.

V. Data and Methods

A. Source of Data

The study is based on NFHS-3 (2005-06). It is the third in the series of this national survey. It covered all 29 states in India and 99 percents of India's population. NFHS-3 collected information from a nationally representative sample of 109,041 households, 124,385 women age 15-49. In Rajasthan, the survey is based on a sample of 3,282 households that is representative at the state level and for urban and rural areas in the state. NFHS-3 interviewed 3,892 women age 15-49 from all the selected households. For the purpose of district level analysis DLHS 3 (2007-08) has been used. The data is based on 7.20, 320 households from 28 States and 6 Union Territories of India during 2007-08. From these households, 6.43, 944 ever-married women aged 15-49 years were interviewed. In Rajasthan 40052 households were interviewed during 2007-08. From these households, 41447 ever-married women aged 15-49 years are interviewed. The response rates are 97.1 and 95.1 percent for households, and ever-married women respectively. The lowest response rates for household and ever-married women are found in Sawai Madhopur (94.8 percent) and (88.2 percent) respectively. The total sample size for Rajasthan (DLHS 3) is 41447.

B. Selection of Variables

Identification of the casual relationships among the different variables of any study is an essential concern of an investigation. A casual relationship between the two variables exists only when one of them may be logically considered as the cause of the other. Thus, for analyzing, two set of variables are chosen. They are dependant and independent variable. Dependant variable is Ever had terminated pregnancy for those who currently wanted pregnancy. The independent variables includes sex of the child, place of residence, religion, caste, wealth index, age at first child birth, educational status, birth order and media exposure.

C. Statistical Analysis

Practice of termination of pregnancy was calculated for total sample of women who wanted the current pregnancy. Differences in practice of sex-selective abortion were assessed on the basis of demographic and socio-economic characteristics. A series of logistic regression models were constructed to estimate the odd ratios (ORs) for association between sex-selective abortion and both birth order and sex of the child. The underlying response variable in the Bivariate analysis of 'ever had terminated a pregnancy' is binary, coded 1 if it is yes and 0 if it is no. It is done only for those women who currently wanted pregnancy. Crude models were also created for major demographic and socio-economic variables. Cartographic techniques and Choropleth mapping (with the help of ARC-GIS) has been done to show spatial and temporal variation.

VI. Results

India has the longest history of activism and policy attention to Female Selective Abortion (FSA). In 1988 Maharashtra became the first state to ban amniocentesis for sex selection. For strict implementation of law fines and prison terms were made mandatory for both those who administer the tests and the women who undergo them. Serious doubts were raised about how effective the ban would be. The Maharashtra state policy provided the model for the Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Bill that was enacted as of January 1, 1996. One difference is that the national bill requires that all institutions providing prenatal testing be registered. The intent is that such registration will allow for oversight & monitoring. Although this provision might have some effect on large institutions, it is completely useless for preventing FSA provided on the basis of tests obtained from the new portable ultrasound machine. A spatial-temporal variation of the Sex Ratio at Birth (SRB) through NFHS data clearly shows strong preference for sons evident from the responses of women with different numbers of sons and daughters.

A general distribution of SRB among the states in India based on NFHS 3 data can be categorized in three groups:

High: Tamil Nadu, Kerala, Delhi, Nagaland, Manipur, Himachal Pradesh

Medium: Andhra Pradesh, West Bengal, Karnataka, Sikkim, Maharashtra

Low: Punjab, Rajasthan, Haryana, Bihar, U.P., Chhattisgarh

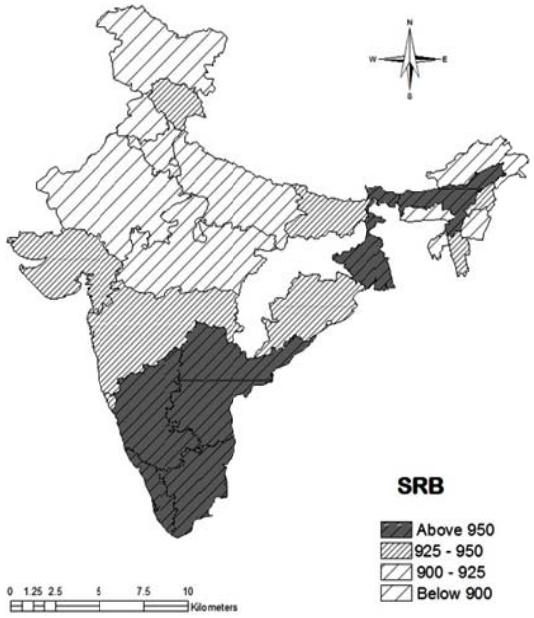

Fig. 2 State level analysis of Sex Ratio at Birth in India, NFHS 1 [35]

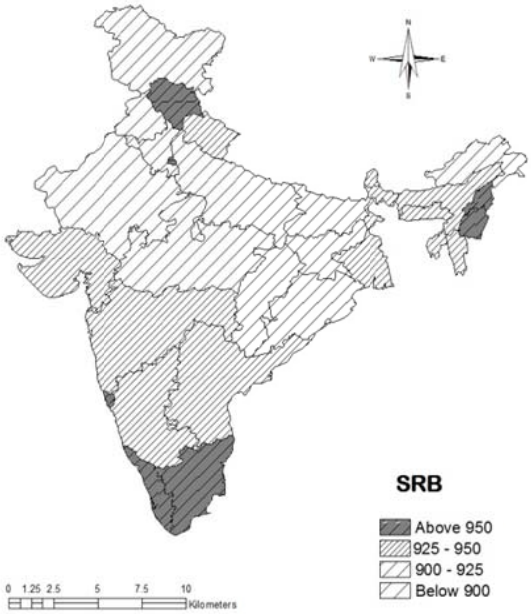

Fig. 4 State level analysis of Sex Ratio at Birth in India, NFHS 3 [37]

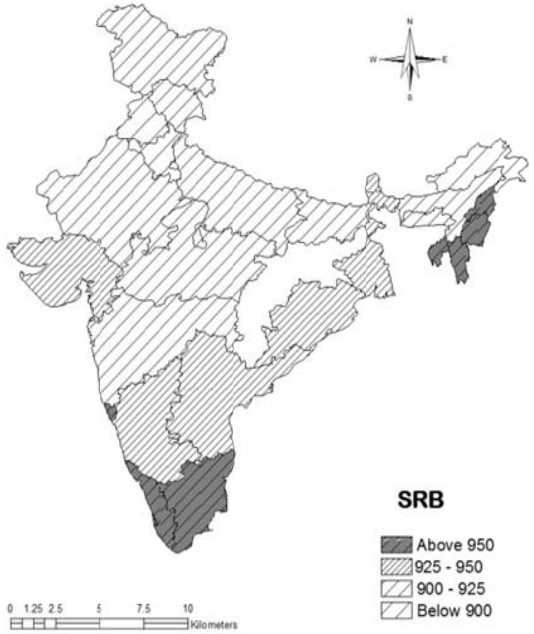

Fig. 3 State level analysis of Sex Ratio at Birth in India, NFHS 2 [36]

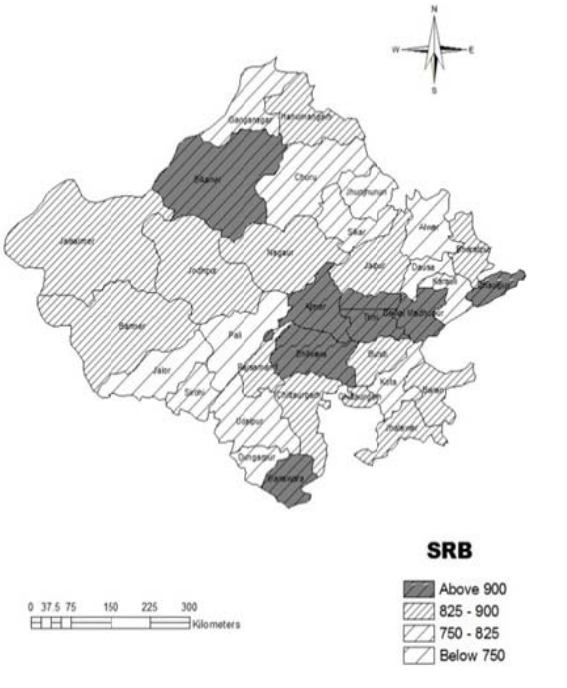

Fig. 5 District level analysis of Sex Ratio at Birth in Rajasthan, DLHS 3 [38]

A. Dependent Variable & Independent Variable

Based on the NFHS 3 (2005-06) data [36], it is found that 13.8 percent of the women of age group 15-49 had gone for termination of pregnancy. Seventy percent of the population in Rajasthan lives in rural areas. Almost 88 percent of the population is Hindu. OBC is the dominant caste in Rajasthan contributing about 46 percent of the population. Forty percent comes from rich class, 22 percent from middle class and 37 percent belongs to poor class. The rich class people are mainly settled in urban areas. In Rajasthan mainly district like Bharatpur, Karauli, Jaisalmer, Bhilwara, women of 11 years old also gives birth. Ninety percent of the first birth takes place at an age of 15-24. Illiteracy is highly prevalent among women in Rajasthan. Sixty-one percent of the women are illiterate, 20 percent are educated till secondary and only 5 percent are highly educated. Due to mass illiteracy, most of the people are unaware of the FPP. Twenty percent women are in third birth order and 16 percent are in fourth birth order. Media exposure is not very high. Only 55 percent of the women are exposed to any form of media. The most prevalent one is watching T.V.

TABLE I
PERCENTAGE DISTRIBUTION OF WOMEN WHO EVER HAD TERMINATED PREGNANCY IN RAJASTHAN (NFHS 3) [37]

Dependant variable	*Category*	*Percent*	*Numbers*
Ever had terminated pregnancy	No	86.2	5692
	Yes	13.8	909

B. Bivariate Analysis

Son preference is highly prevalent in Rajasthan. With high fertility level, sex-selective abortion is highly practiced in urban areas, for those who plan for small family with two children, one of each sex. Based on NFHS 3 data, it is found that 24 percent of the urban women go for sex selective abortion. It is mainly because women in urban areas mainly want to stop child bearing provided they have at least one or two living sons. The practice of sex-selective abortion is highly prevalent among the Hindus. It is also high among the OBC (22 percent) and general (22 percent) population. Female Selective Abortion (FSA) is very common among the rich and the educated people. They are more likely to be aware of and have access to sex determination and abortion services and are also more likely to be in a habit of planning births, consistent with their greater use of contraception and lower fertility compared to women with less education, and women with a lower standard of living. Thirty-three percent of the women with high educational status go for sex-selective abortion. The ideal family size considered is having two children with one male and one female child. Families without any son go for abortion after ultrasound test with the purpose to have small family and at least one male child. FSA is high among the women having their first birth at the age 25 to 34. For every number of children, the percentage of women who want to stop childbearing is lowest if the woman does not have any sons their living children are sons and 75 percent want to stop childbearing if they have one son and one daughter. Thirty-eight percent of women with two daughters and no sons go for sex selective abortion. Media has a positive impact on the percentage increase in FSA. The desire for more children is based on the women having number of living sons. It is high in case of rural areas and illiterate women. In urban areas it is high among women without a male child.

TABLE II
PERCENTAGE DISTRIBUTION OF WOMEN WHO EVER HAD TERMINATED PREGNANCY BASED ON BACKGROUND VARIABLES IN RAJASTHAN (NFHS 3) [37]

INDEPENDENT VARIABLE	*CATEGORY*		*PERCENT*
Residence	Rural		19.9
	Urban		23.9
Religion	Hindu		20.9
	Muslim		12.7
	Others		10.1
Caste	SC		20.7
	ST		17.0
	OBC		22.0
	General		22.0
Wealth Index	Poor		16.4
	Middle		20.3
	Rich		26.7
Age at first childbirth	11-14		4.2
	15-24		23.2
	25-34		50
Educational Status	No education		20.6
	Primary		21.7
	Secondary		17.9
	Higher		33.3
Birth order	First		18.1
	Second	0 son	21.6
		1 son	20.0
	Third	0 son	38.6
		1 son	25.0
		2 son	9.5
	Fourth	0 son	40.2
		1 son	31.7
		2 son	12.1
		3 son	8.2
Media Exposure	No		16.5
	Yes		26.2

C. Net Effect

There is a strong preference for sons in Rajasthan. About one-third of women and one-quarter of men in Rajasthan want more sons than daughters, but only 2 percent want more daughters than sons. However, most men and women would like to have at least one son and at least one daughter. Keeping all the variables constant, it is found that women residing in urban areas are more likely to go for sex-selective abortion. Hindus are more likely to have small families compared to Muslims and go for female selective abortion to have at least one son, who will carry their name and generation in future. Caste has shown a very strong relationship with the sex-selective abortion. It is high among the Generals and OBCs. It is mainly the rich class people who go for sex selective abortion, as poor considers more children means more hands to work and more income. Sex-selective Abortion is more at

higher age group of women, when she gives her first birth. Women having education till the secondary are more likely to go for sex-selective abortion compared to that of women with primary or higher educational status.

TABLE III
LOGISTIC REGRESSION ANALYSIS OF THE LIKELIHOOD OF TERMINATION OF PREGNANCY BASED ON THE BACKGROUND VARIABLES (NFHS 3) [37]

INDEPENDANT VARIABLE	CATEGORY		Termination of Pregnancy	
			Odd ratios	Significance
Residence	Urban®			
	Rural		0.945*	0.067
Religion	Hindu®			
	Muslim		0.766*	0.075
	Others		0.987	0.627
Caste	SC®			
	ST		0.547	0.046
	OBC		1.547***	0.002
	General		1.579***	0.005
Wealth Index	Poor®			
	Middle		0.714	0.987
	Rich		1.018	0.675
Age at first childbirth	11-14®			
	15-24		1.001	0.438
	25-34		1.693	0.347
Educational Status	No education®			
	Primary		0.732*	0.048
	Secondary		1.988*	0.086
	Higher		0.998	0.357
Birth Order	Second	0 son®		
		1 son	0.571	0.184
	Third	0 son®		
		1 son	0.701*	0.032
		2 son	0.062***	0.000
	Fourth	0 son®		
		1 son	0.754	0.654
		2 son	1.961**	0.014
		3 son	1.014*	0.052
Media Exposure	No®			
	Yes		1.685***	0.001

Note: 1. ® is the reference category in the logistic regression
2. *** is the coefficient which is significant at one percent level of significance
3. ** is the coefficient which is significant at five percent level of significance
4. * is the coefficient which is significant at ten percent level of significance

If sex-selective abortion is occurring, one would expect it to be less common for first order births than for births of higher orders, because the sex of the child becomes more critical if one is planning to stop having children soon. Termination of pregnancy by birth order does not explain the whole story. To capture more completely, it is necessary to explain it by both birth order and the sex-composition of the previous child. In many case women may want to have two children, one of each sex. She may go for abortion of a boy, if the previous child is a boy or she may go for abortion of a girl child, if the previous one was a girl child. Thus keeping all the variables constant, it is found that women without any son are more likely to go for sex-selective abortion. It is also found that women in fourth order, having two or more sons often go for sex-selective abortion, reason being that they may want to have a girl child after having 2 or more sons. Media is a very important source of knowledge. It is found that women who are more exposed to any source of media are more aware of family planning along with the process of terminating pregnancy in case the child is not of desired sex. They are more likely to go for sex-selective abortion compared to women who are not exposed to media.

VII. CONCLUSION

With lowering fertility levels sex-selective abortion has risen up. This case is similar for women residing in urban areas in Rajasthan. From the overall study it can be concluded that Rajasthan has high preference for male child but sex-selective abortion is not very high. The main reason behind this is fertility level is still high in Rajasthan, thus in many cases people don't go for abortion, even if it is a female child. Moreover 71 percent of the population stay in rural areas. It is high in higher birth orders among women without any male child. Evidence of SSA is stronger when analysis is confined to groups like urban women with secondary level of education. In urban areas, people are more educated and are aware of the benefits of having small family, thus sex-selective abortion is high in urban areas, for both male and female child. The ideal family size is considered with two children, one of each sex. A woman having a male child or a female child goes for abortion, if the current pregnancy does not detect child of the opposite sex, which she have in her first order. The influence of son preference is weak among the Muslims compared to other religious group. Media has a greater influence on sex-selective abortion. Different advertisement regarding FPP and ultrasound test makes people aware of the benefits of small family and to have a family with preferred sex of the children. All this have an immediate effect on the sex-ratio at Birth. As a solution, social development among women can bring down the prevalence of female selective abortion. Many authors have suggested that cultural and economic factors underlying attitudes about son preference must be changed. SRB would increase further in most part of India if legislative and other efforts against sex-determination tests are successful implemented.

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