

Consequence of family planning practice on school attendance and school progression rate among children in India, 1992-2006

In a developing country scenario, like India high fertility is not only the concern but also progress in terms of educational development is also a high priority. It is well established fact that education and fertility are interlinked through quantity-quality tradeoff theory. Question arises, how utilization of family planning method is influencing the children's schooling attainment and especially what is the effect of the use of contraception on school progression of the children in India. The results analyzing three rounds of Indian version of DHS, National family Health Survey show that the family size and contraceptive use has more impact at the enrollment in primary level and though there is significant impact of these two variables controlling for other covariates in the secondary level, but for the secondary level enrollment the extent of the effect is lessened. The findings also reveal gender discrimination in educational attainment, indicates further detail research.

Puspita Datta

It is generally considered to be an important question why so many parents in developing countries do not send their children to school even though of having too many children. Discussions in various previous literatures and in the quantity-quality trade-off theory suggests that when resources are scarce and families are large, just taking care of basic necessities depletes most of the family resources and very little is left to invest on the education of the children This signifies the existence of an inverse relationship between family size and child schooling. This inverse relationship between family size and schooling has been described as "one of the most consistent findings in the status attainment literature" (Downey 1995), but this consistency has also been questioned based on the evidence from some developing nations and it is found that the relationship may vary according to different samples of population (Diamond *et. al.*, 1999; Knodel 1992; Knodel and Wongsith 1991).

Previous studies by Gomes (1984) in urban Kenya and by Chernikovsky (1985) in rural Botswana found a positive, rather than negative, relationship between family size and child's schooling. Montgomery and Kouame (1993) found the expected negative association between family size and child's educational attainment in urban areas of Côte d'Ivoire but a positive association in the rural areas. Lloyd and Gage-Brandon (1994) similarly found the number of younger siblings in Ghana to compromise

schooling but only among girls. In a review of past studies on seven sub-Saharan countries, Lloyd and Blanc (1996) found significant negative relationships in only two nations, Kenya and Namibia. Evidences from other developing regions and literatures also raised the possibility of variation in the relationship across societies (Knodel and Wongsith 1991; Ahn et al. 1998; Sudha 1997). Background factors that can influence the levels of fertility includes education, the costs of schooling, and the mechanisms of social support (Lloyd 1994; Desai 1995).

When parents are having option to regulate their fertility through contraceptive use, actual family size started decreasing, with the initiation of fertility decline. However, not much research has been performed to test this empirical relationship between family size, contraceptive use with child schooling, especially among the illiterate and rural section of the society. On this above backdrop, the questions arise, what is the relationship of family size and child schooling among the children of rural and illiterate parents? When family size decreases, is it beneficial for the educational attainment of those children and up to what extent? Does contraceptive usage individually has any impact on child schooling, apart from its impact through family size? And above all over the years from 1992-93 to 2005-06 for which data are available), is there any change in the impact of influence of family size and contraceptive use on child schooling? This chapter is an attempt to observe to what extent family size influence schooling of children such empirical relationship in Indian situation and also it explains whether the relationship changes over time with the fertility decline or not.

Given this above background the main objective of this chapter is to understand the effect of fertility decline on child schooling. This chapter is classified into four sections. In the first section of this chapter, how fertility level is linked with child schooling in macro level or state level and whether the relationship changes over time has been explained. The next section explains the relationship of family size and contraceptive use with child schooling at family level. In order to do so, child schooling differentials according to different household level characteristics, especially family size and contraceptive practice by parents using three rounds of NFHS datasets has been given. In the third section, the explanations has been given about the relationship of family size and contraceptive use with child schooling and controlling for other correlates of child schooling how these two factor influence child schooling. Efforts have also been made to see whether there is any change in the relationship or the extent the family size is influencing child schooling over the last 15-16 years from NFHS-I (1992-93) to NFHS-III (2005-06).

Child schooling has been expressed in terms of children's school enrolment and school attendance. School enrolment has been considered from the information

obtained from NFHS datasets regarding 'whether the children ever been to school or not'. Regarding school attendance the information has been provided that whether the member is still attending school or not. As it is explained in the earlier chapter, that school enrolment and school attendance in many cases do not reveal the true attainment of schooling and also there exists school dropout. Thus, in order to understand the child's educational attainment school progression ratio has been calculated and explained in the fourth section of this chapter. Three school progression rates in terms of (a) enrollment in the school, (b) completion of primary schooling among those enrolled in primary level and whether a child enrolled to the secondary level, and (c) completion of the secondary standard among those enrolled in secondary level will be calculated as the proportion of children having a particular educational status to the children of previous educational status. The sample size will comprise of children aged 6- 14 years. First 6-10 years will be taken for the primary level education and children of 11-14 years of age will be considered for secondary level. Progression from the primary to the secondary level is conditional on the successful completion of the final year of the primary school. To find out the leading factors that may influence the different stages of school progression, appropriate multivariate techniques will be adopted.

Relationship of child schooling with contraceptive use and family size

This section will now explain the impact of fertility decline on child schooling at the micro level or family level. Fertility decline in the family level has been expressed in terms of family size or number of living children in the family and contraceptive use. Before, explaining the relationship between family size, contraceptive use with child schooling, at first a brief description of the children considered for the analysis has been given.

The profile of the children (6-14 years) of illiterate parents in rural India according to socio-economic and demographic characteristics is described through Table 3.1. The percentage of children in the age 6-14 varied between 8 to 14 percent in various ages in all three rounds of NFHS. More than 12 percent of children are reported as of the age 6, 8, 10 and 12 years, indicating possible digit preference for even ages.

The sex ratio (F/M) of the child population in the above mentioned age group was around 919, 916 and 946 for NFHS-I, NFHS-II and NFHS-III respectively. In both NFHS-I and NFHS-II around 22 percent of those children were of the first order birth, while in NFHS-III around 19 percent of them belonged to first order birth. Birth order of four or more in NFHS-I and NFHS-III were 41 percent, while the percentage belonging to the same group in NFHS-II is almost 38 percent. Around 5 percent of the total children belonged to the younger mothers aged 25 years or less in NFHS-I and NFHS-II, while only

3.4 percent of the children aged 6-14 years belong to the younger mothers of the same age in NFHS-III. This result point towards the issue that over the years the age at marriage has increased and thus the proportion of women below age 25 years with children aged 6 and above are less. It is found that the proportion of working mother and non-working mothers are almost same in NFHS-I, while almost 60 percent and 54 percent mothers are working in NFHS-II and NFHS-III respectively.

Almost three out of five children are from those illiterate rural mothers who are using any contraceptives in NFHS-III, while the share of children aged 6-14 years were almost half or less of those mothers who used any contraception in previous two NFHS survey datasets. In NFHS-I, the proportion of mothers using contraceptive is less than the non-users but, for the latter two NFHS surveys the proportion of users are more than the non-users. This result indicates that though literate women from urban areas were the first to start contraceptive use, but with the fertility transition through the diffusion process the rural illiterate women became aware of the benefits of contraception and thus the use of contraception increases among them.

In NFHS-I and NFHS-III 67 percent children belonged to the parents having four or more surviving children. On the other hand according to NFHS-II, around 75 percent of children aged 6-14 years belonged to the parents with four or more living children which was more compared to NFHS-I and NFHS-III. There is an increase in the proportion of women having larger number of children from NFHS-I to NFHS-II, but it again decreased in NFHS-III. This result may be supported from the proportions of women according to demand for desired family size. It is observed from further analysis that the demand for desired family size also increased in NFHS-II and then again it decreases at the time of NFHS-III.

Table 3.1: Percentage distribution of children aged 6-14 years of illiterate parents by selected background characteristics in rural India

Background Characteristics		Percentage of children		
Characteristics of the Child		NFHS-I (1992-93)	NFHS-II (1998-99)	NFHS-III (2005-06)
<i>Age of the child</i>				
	6	13.0	12.7	12.5
	7	12.4	11.2	11.2
	8	13.6	13.6	13.3
	9	10.0	9.7	9.3
	10	13.8	13.7	13.7
	11	8.2	8.8	8.6
	12	12.3	12.7	12.9
	13	8.4	8.3	10.7
	14	8.4	9.3	7.8

Sex of the child				
	Male	52.1	52.2	51.4
	Female	47.9	47.8	48.6
Order of birth				
	1	21.5	22.4	19.3
	2	19.7	21.2	20.7
	3	17.4	18.5	19.2
	4+	41.3	37.9	40.8
Characteristics of the parents				
Age of the mother				
	<25 Years	5.1	5.0	3.4
	25-34	50.0	54.9	49.6
	35 and above	45.0	40.1	47.1
Mother's working status				
	Not Working	49.5	40.1	46.2
	Working	50.5	59.9	53.8
Contraceptive use				
	No	53.9	46.8	36.6
	Yes	46.1	53.2	63.4
Number of surviving children				
	1	1.9	1.3	1.6
	2	8.9	7.3	10.1
	3	22.2	16.2	21.2
	4+	67.0	75.2	67.1
Socio-economic Characteristics				
Religion				
	Hindu	81.2	80.9	77.4
	Muslim	14.4	15.6	18.9
	Other religions	4.4	3.6	3.7
Caste				
	Scheduled caste	17.1	26.2	25.5
	Scheduled Tribe	15.5	15.7	17.1
	Other Backward Castes and general	67.4	58.1	57.5
Standard of living				
	Low	47.5	64.3	59.2
	Medium	47.8	34.1	34.0
	High	4.7	1.7	5.8
Total number of children		25726	23917	16571

These children are mostly from the general caste or other backward castes and from Hindu families. It is also seen that most of these children of both illiterate parents are and from rural areas and belonging to families with medium or low standard of living.

Children's schooling that is school enrollment and school attendance by some selected background characteristics has been presented in Table 3.2, to know how child

schooling varies according to those variables. From bi-variate analysis in Table 3.2, it was evident that proportion of children ever enrolled in school has increased from 44 percent in NFHS-I to 70 percent in NFHS-III, but the proportion of continuing schooling or school attending increased from 43 percent in NFHS-I to around 63 percent in NFHS-III.

At age 6 years the proportion of children enrolled in school is less compared to the children of higher ages. This may be happening because of the fact that at age 6 many children may not take admission, though it is the official age of entry in school. As age of the children increases from 6 years the proportion of children enrolled in school increases. In NFHS-I and NFHS-III the proportion of children enrolled in school increases up to age 11 years while for NFHS-II it is 9 years, after that there is slight decline in the school enrollment. The proportion of children still attending school increased as up to age 9 years from age 6 years and after that there is a slight decline for all the three rounds of NFHS. It is evident from the results that for all the three rounds of NFHS the male children are in advantageous position in terms of both school enrollment as well as school continuation compared to their female counterpart.

There is an increase in the proportion of children enrolled in school and still attending school from NFHS-I to NFHS-III irrespective of the sex of the child. But while the proportion of female children enrolled in school increases by more than 30 percent from NFHS-I to NFHS-II and NFHS-III, for male the increment is only 17 percent to 19 percent. Similarly for proportion of female children still attending school there is a percentage increase of 22 percent and around 28 percent from NFHS-I to NFHS-II and NFHS-III respectively, for male children it is only 12 percent. As a result of this the gender gap of school enrollment declines from 27 percent in NFHS-I to 10 percent in NFHS-III and for school attendance 26 percent in NFHS-I to around 11 percent in NFHS-III.

There is not much variation in the proportion enrolled in school and proportion continuing schooling by the order of birth in NFHS-I. The other two NFHS surveys show the inverse relationship that is as the order of birth increases the proportion enrolled and attending school decreases. In NFHS-II and NFHS-III the proportion enrolled in school decreased from around 73 percent for the first order born children to around 63 percent for the fourth order born or later born. For the proportion of children still attending school it is seen that among the first order born children 63 to 64 percent children are attending school whereas for the higher order born that is fourth order or later born children the proportion is around 57 percent and 59 percent in NFHS-II and NFHS-III respectively.

There is no consistent relationship found between the mother's age and child schooling. Though more children of the working mothers are found to be enrolled and continuing school in NFHS-I and NFHS-III, but it is the other way in case of NFHS-II. Child schooling is less among the children of Muslim religion compared to other religions. Child schooling i.e., both school enrollment and school attendance is more among the children belonging to the general category and other backward castes in NFHS-II but for other two NFHS datasets children belonging to the scheduled castes are going to school more. Parents standard of living is an important determinant of child schooling as it is found that higher the standard of living more children are enrolled and continuing school.

Table 3.2: Percentage of children (6-14 years) of illiterate parents in rural India according to ever been to school and school attendance

Background Characteristics		% Still in school		
		NFHS-I (1992-93)	NFHS-II (1998-99)	NFHS-III (2005-06)
Characteristics of the Child				
Age of the child	6	32.3	54.3	37.2
	7	43.9	67.1	59.3
	8	47.3	67.7	64.2
	9	49.4	71.3	73.6
	10	47.4	64.0	73.4
	11	48.6	63.8	75.3
	12	44.0	53.4	67.8
	13	39.0	51.5	60.6
	14	32.1	41.8	53.9
Sex of the child	Male	55.5	67.6	67.9
	Female	29.2	51.5	57.1
Order of birth	1	44.2	63.4	64.4
	2	43.5	61.6	65.8
	3	42.3	59.8	64.5
	4+	42.1	56.9	59.4
Characteristics of the parents				
Age of the mother	<25 Years	41.0	62.5	48.1
	25-34	42.5	62.3	64.1
	35 and above	43.6	56.2	62.1
Mother's working status				
	Not Working	43.2	62.7	61.4
	Working	42.7	58.0	63.7
Contraceptive use	No	35.0	51.8	53.0
	Yes	52.1	67.0	68.2
Number of surviving children	1	50.4	71.0	65.9
	2	50.2	75.4	72.3
	3	50.0	71.6	69.0
	4+	39.4	55.6	59.1
IDEAL family size	1	59.2	73.7	82.7

2		56.9	72.3	71.0
3		48.9	64.6	61.6
4+		36.1	50.5	55.7
Socio-economic Characteristics				
Religion	Hindu	43.4	60.7	65.1
	Muslim	35.7	53.4	52.2
	Other religions	55.9	70.3	65.3
Caste	Scheduled caste	46.5	60.0	65.5
	Scheduled Tribe	35.9	51.9	56.9
	Other Backward Castes and general	43.6	61.8	62.7
Mass media exposure	No exposure	39.1	56.0	58.4
	Any exposure	55.9	70.8	69.3
Standard of living	Low	39.7	55.1	55.9
	Medium	48.4	68.2	71.0
	High	68.9	80.3	81.7
Total		42.9	59.9	62.6

Coming to one of the main focus of this chapter that is how contraceptive usage of parents is related with child schooling, it is found that the children enrolled in school and children continuing school are more among the users of any contraceptives compared to non-user of any contraceptives in all the three datasets of NFHS. There is a steady decline in the differences between the proportions of children enrolled in school of the users of contraceptives and non-users of contraceptives from 21 percent in NFHS-I to 17 percent in NFHS-III and for the proportion of children continuing school the difference decreases from 17 percent to 15 percent during the same time.

Though it came out that the parents using any contraceptives are more inclined to send their children to school, the parents those who are deliberately trying to control their family size by using contraception have a higher tendency to send their children to school, which is clear from the Table 3.3 which shows the percentage of children ever been to school and still attending school by mother's contraceptive use and family size in rural India.

Table 3.3: Percentage of children (aged 6-14 years of illiterate parents) ever been to school and still attending school by mother's contraceptive use and family size in Rural India

<i>Use of contraceptives</i>	<i>Number of surviving children</i>	<i>% of children attending school</i>		
		NFHS-I (1992-93)	NFHS-II (1998-99)	NFHS-III (2005-06)
Never used	1	46.0	70.7	64.2
	2	41.2	63.4	59.7

	3	37.9	60.2	54.6
	4+	33.0	46.0	51.4
Ever used	1	67.9	82.1	72.1
	2	61.1	79.1	77.8
	3	60.4	73.8	74.1
	4+	47.4	59.0	64.3

It is found that though percentage of children enrolled or attending school declines with the increase in the number of surviving children, there is a considerable difference in percentage of children attending school among never user and ever user of contraception for all three rounds of NFHS. For those families where there is only one living child, 47 percent, 78 percent and 68 percent children of never users of contraceptives ever enrolled in school in NFHS-I, NFHS-II and NFHS-III respectively. Where as for the same one child family for the users of contraceptives the proportions of children ever been to school are 77 percent, 86 percent and 78 percent in NFHS-I, NFHS-II and NFHS-III respectively. Similar circumstances can be observed for the two child family, three child family and families where there are four or more living children are present and for proportion of children attending school. It can also be observed that the differences between the percentages of children attending or enrolled in school among the never users and ever users of contraceptive decreased from NFHS-I to NFHS-III.

The results of the binary logistic regressions for school attendance for the children of illiterate parents of age 6-14 years in rural India have been given in Table 3.5. The impact of family size and contraceptive use on school attendance, controlling for other covariates are similar which is found for school enrollment. The family size has a negative impact on children's school attendance, i.e, with the increase in the family size the probability of continuing schooling reduced and for contraceptive use the effect is statistically significant and positive. If there is an increase in family size by one child, then there was 0.90 times less probability to continue schooling in NFHS-I, while for NFHS-II and NFHS-III there were 0.86 times and 0.83 times lesser chance of continue schooling. Though the effect is statistically significant for all three rounds of NFHS but the extent of the effect seems to increase over the period. For contraceptive users the chance of still attending school increases by 1.73 times from the children of never users of contraceptives in NFHS-I and it is 1.58 times higher in NFHS-II and 1.55 times higher in NFHS-III.

Another important independent variable which is considered for the analysis and from which the impact of fertility decline on child's school enrollment as well as attendance is 'States', classified in to three category high fertility states, moderate

fertility states and low fertility states. The results of the regression reveal that compared to higher fertility states the school enrollment and attendance is more in the moderate and low fertility states and it is also statistically significant. Except for the low fertility states in NFHS-III, where it shows less schooling i.e., negative effect though the effect is not statistically significant. This means that as a state going through the fertility transition, controlling for other important variables the level of schooling increases only due to changes in the fertility level.

All other independent variables used for the regression analysis for school enrollment and attendance are behaving in the similar way. Age of the child is positively related with school enrollment and attendance but at a diminishing rate for all three rounds of NFHS. This means that as age of the child increases the probability of being enrolled in school increases and also the school attendance but the rate of increase is showing a declining trend. The age of the mother is also positively related with child schooling that is older mother's having higher chance to send their children to school.

The higher order children are less likely to be in school compared to the first born children in NFHS-I and NFHS-II and the effect is statistically significant, but NFHS-III shows the opposite picture though it is not found as significant. May be at the time of NFHS-I and NFHS-II the higher order born children are send to school at the expense of the school dropout of the earlier born children and their earnings, but now in the recent years at NFHS-III (2005-06) as family size reduces the earlier born children are now free from doing so.

Both for school enrollment and school attendance female children are less likely to be benefited compared to their male counterpart. But the chance of getting enrolled in school and continuing schooling increases over the three NFHS periods which indicates that gender biasness in schooling has reduced over the years.

The working mothers are found to be less likely to send their children to school compared to the non-working mothers. This may happen as working mothers are required to take help from their children for the household work or taking care of their younger born by the older children. Mother's having any exposure of mass media increases the level of schooling compared to the mothers who have no exposure in all three rounds of NFHS. If the household is having agricultural land then the level of schooling found to in more. Muslim children are less likely to get education compared to the Hindu children and the results are same for all three rounds of NFHS. Compared to the general and other backward castes category children, children of schedule tribes are getting more schooling in all the periods. Though the children of the scheduled castes are getting more education in NFHS-I, in NFHS-II and NFHS-III their chance of schooling is reduced compared to the general and other backward classes children.

Impact of contraceptive use and family size on child schooling

In the bi-variate analysis the influences of different socio-economic and demographic factors were analyzed, where separately relationship of each factor were explained. It is necessary to control the effect of other factors through multivariate analysis to know the significance of each factor, specially the effect of family size and contraceptive use on child schooling, which is one of the main objective of this chapter. Binary multivariate logistic analyses have been carried out for this purpose separately with school enrolment and attendance as the dependent variable.

Table 3.4 shows the results of logistic regressions for school enrollment of all children (6-14 years) of illiterate parents in rural India, for all three rounds of NFHS. It is found that, controlling for other socio-economic factors family size has a significant negative impact on child's school enrollment and it is unchanged over the three NFHS periods. But the likelihood of being enrolled in school due to increase in family size decreased from 1992-93 to 1998-99 and 2005-06. The odds ratios for family size show that if there was an increase in the family size by one unit i.e., by one child then the chance of getting enrolled in school decrease by 12 percent in 1992-93 (NFHS-I), whereas the chance decreases by 15 percent in 1998-99 (NFHS-II) and by 19 percent by in 2005-06 (NFHS-III). This revealed that though the relationship is negative, but the extent of the impact of family size controlling for other variables increases over the period. This finding is also supported by the findings from the state level relationship of fertility and child's school enrollment.

Family size is directly affected by the contraceptive use and thus there is an indirect effect of contraceptive use on school enrollment through the family size. But from the results of logistic regression it is found that irrespective of its effect on child's enrollment in school, through family size, contraceptive use is also a significant factor controlling for all other independent variables including family size. The impact of contraceptive use on child's school enrollment is significantly positive for all three rounds of NFHS. If the parents uses any contraceptives, the probability of getting enrolled in school increased by 86 percent in NFHS-I, 76 percent in NFHS-II and 67 percent at the time of NFHS-III. But the extent of the impact of contraceptive use seems to diminish over the periods, which may be due to the reason that over the years more and more women are using contraceptives and it is becoming universal gradually.

The results of the binary logistic regressions for school attendance for the children of illiterate parents of age 6-14 years in rural India have been given in Table 3.5. The impact of family size and contraceptive use on school attendance, controlling for other covariates are similar which is found for school enrollment. The family size has a negative impact on children's school attendance, i.e, with the increase in the family size

the probability of continuing schooling reduced and for contraceptive use the effect is statistically significant and positive. If there is an increase in family size by one child, then there was 0.90 times less probability to continue schooling in NFHS-I, while for NFHS-II and NFHS-III there were 0.86 times and 0.83 times lesser chance of continue schooling. Though the effect is statistically significant for all three rounds of NFHS but the extent of the effect seems to increase over the period. For contraceptive users the chance of still attending school increases by 1.73 times from the children of never users of contraceptives in NFHS-I and it is 1.58 times higher in NFHS-II and 1.55 times higher in NFHS-III.

Table 3.5: Results of logistic regressions for school attendance of children (6-14) years of illiterate parents in rural India, for NFHS-I, NFHS-II & NFHS-III

Background Characteristics	Exp(B)		
	NFHS-I (1992-93)	NFHS-II (1998-99)	NFHS-III (2005-06)
Characteristics of the Child			
Age of the child	2.558**	2.623**	5.516**
Age of child square	0.952**	0.948**	0.922*
Birth order of child (reference=first order)			
Higher birth order	0.839**	0.865**	1.028
Sex of the child (reference=male)			
Female	0.311*	0.469**	0.565**
Characteristics of the parents			
Age of the mother	1.028**	1.023**	1.020**
Mother's working status(Reference=not working)			
Working	0.775**	0.672**	0.893
<u>Contraceptive use (Reference=not using/never used)</u>			
<u>Ever used</u>	<u>1.733**</u>	<u>1.588**</u>	<u>1.553**</u>
<u>Number of surviving children</u>	<u>0.904**</u>	<u>0.868**</u>	<u>0.830**</u>
Mass media (Reference=no exposure)			
Exposure	1.675**	1.618**	1.409**
Socio-economic Characteristics of the household & community			
Landholding (Reference=own no land)			
Has agricultural land	1.576**	1.465**	1.481**
Religion (Reference=Hindu)			
Muslim	0.863*	0.675**	0.524**
Others	1.589	1.820**	1.041
Caste (Reference=General & OBC)			

Scheduled Caste	1.181*	0.888*	0.869
Scheduled Tribe	0.713*	0.636**	0.675
States (reference=high fertility states)			
Moderate fertility states	1.553**	1.468**	1.402*
Low fertility states	1.513**	1.665**	0.934
Constant	0.023**	0.029**	0.000**
-2 Log likelihood	17202.630	27803.3	10902.1
Cox & Snell R Square	0.148	0.133	0.138
Nagelkerke R Square	0.198	0.180	0.185
Total number of cases	25726	23917	16571
<i>**p<.001, *p<.01</i>			

Another important independent variable which is considered for the analysis and from which the impact of fertility decline on child's school enrollment as well as attendance is 'States', classified in to three category high fertility states, moderate fertility states and low fertility states. The results of the regression reveal that compared to higher fertility states the school enrollment and attendance is more in the moderate and low fertility states and it is also statistically significant. Except for the low fertility states in NFHS-III, where it shows less schooling i.e., negative effect though the effect is not statistically significant. This means that as a state going through the fertility transition, controlling for other important variables the level of schooling increases only due to changes in the fertility level.

All other independent variables used for the regression analysis for school enrollment and attendance are behaving in the similar way. Age of the child is positively related with school enrollment and attendance but at a diminishing rate for all three rounds of NFHS. This means that as age of the child increases the probability of being enrolled in school increases and also the school attendance but the rate of increase is showing a declining trend. The age of the mother is also positively related with child schooling that is older mother's having higher chance to send their children to school.

The higher order children are less likely to be in school compared to the first born children in NFHS-I and NFHS-II and the effect is statistically significant, but NFHS-III shows the opposite picture though it is not found as significant. May be at the time of NFHS-I and NFHS-II the higher order born children are send to school at the expense of the school dropout of the earlier born children and their earnings, but now in the recent years at NFHS-III (2005-06) as family size reduces the earlier born children are now free from doing so.

Both for school enrollment and school attendance female children are less likely to be benefited compared to their male counterpart. But the chance of getting enrolled

in school and continuing schooling increases over the three NFHS periods which indicates that gender biasness in schooling has reduced over the years.

The working mothers are found to be less likely to send their children to school compared to the non-working mothers. This may happen as working mothers are required to take help from their children for the household work or taking care of their younger born by the older children. Mother's having any exposure of mass media increases the level of schooling compared to the mothers who have no exposure in all three rounds of NFHS. If the household is having agricultural land then the level of schooling found to be more. Muslim children are less likely to get education compared to the Hindu children and the results are same for all three rounds of NFHS. Compared to the general and other backward castes category children, children of schedule tribes are getting more schooling in all the periods. Though the children of the scheduled castes are getting more education in NFHS-I, in NFHS-II and NFHS-III their chance of schooling is reduced compared to the general and other backward classes children.

3.5. Impact of contraceptive use and family size on different level of schooling

A large number of empirical studies are there for examining the determinants of child schooling in developing countries like India. The indicators used in these literatures to express schooling have been different, including completed years of schooling (Birdsall, 1985), current enrolment in school (Singh, 1992), ever attended school or ever enrolled in school (Cochrane, Mehra and Osheba, 1986), grades attained or grades failed (Drèze and Kingdon, 2001) and also delayed enrolment in school (Glewwe and Jacoby, 1994).

Though there is a considerable improvement in the level of education in almost all the developing countries, but still there exists non-enrolments and school drop outs. The school drop out and schooling is studied focusing the issue of child labour as a complementary reason for school dropout (Ray 2000b). Patrinos and Psacharopoulos (1997) made a more direct attempt to capture late entry and high failure rates assuming if the child under consideration had a normal progress (in terms of schooling years) relative to his/her current age. But these indicators do not distinguish between enrolment/attainment at primary, secondary and post secondary levels (Pal, 2005).

In this thesis child schooling has been expressed in terms of whether child is ever been to school or ever enrolled in school for school enrolment and for school attendance, whether the child is still attending school or not is considered in the analysis. It is found that all children are not enrolled in school and the proportion still attending school is less than the proportion enrolled which indicates a considerable school dropout. It is also found that with the age the proportion attending school

gradually decreases. Therefore, it is crucial to know at which level the children are being dropped out and whether family size and contraceptive use is affecting the schooling at the same extent for each level of education.

Table 3.7 is presented to show the school progression of the children aged 6-17 years for all three rounds of NFHS. Students currently enrolled in secondary and post secondary schools have some level of secondary schooling while only those enrolled in post-secondary schools have completed secondary schooling. Considering the highest level of educational achievement, here three sequentially related transition decisions were considered. First, whether a child has some level of primary education among the total children or have no schooling. The second decision is whether a child has moved from a primary to a secondary school and the children who either has not been able to complete the primary level or have not gone to a secondary school even after successful completion of the primary level. Finally the third decision is whether to move on to a post-secondary school. It is evident from the results that around 85 percent in NFHS-I, 82 percent in NFHS-II and 79 percent in NFHS-III of the total children of age 6-17 years have completed primary level education and rest of the proportions could not complete.

Table 3.6: School progression of children aged 6-17 years of illiterate parents in rural India

School progression Ratio	NFHS-I (1992- 93)	NFHS-II (1998- 99)	NFHS-III (2005- 06)
Primary completion	84.9	82.3	78.6
Secondary completion	11.8	17.3	21.4
Post- secondary enrolled	3.34	0.42	0.06
Dropout rate from primary to secondary	86.1	79.0	72.8
Dropout rate from secondary to post-secondary	71.7	97.6	99.7

The proportions of total children completing secondary level of education among those who have completed primary for NFHS-I, NFHS-II and NFHS-III are around 12 percent, 17 percent and 21 percent respectively. It is also seen that the proportions enrolled in the post-secondary level is decreasing over the periods. These results indicate that over the period more and more children are going for higher level of education or they are more continuing school. This is clear from the dropout rates given in the table. It is found that the dropout rates from primary level to secondary level is decreasing from 86 percent in NFHS-I to 79 percent in NFHS-II and 73 percent in NFHS-

III. That is more children are completing primary level and also enrolled in secondary level. But the dropout rates from secondary level to post-secondary level shows that over the years the dropouts are occurring more in the post-secondary level, i.e., even if child are completing secondary level they are not enrolled in post-secondary level.

To understand how family size and contraceptive use affects schooling at each level after controlling for other influential factors, has been shown in Table 3.7 for NFHS-III (2005-06).

As the number of cases do not provide any scope to further investigate the issue in post secondary level in NFHS-III, another set of logistic regressions were carried out on NFHS data set and presented in Table 3.8.

Table 3.8: Logistic regressions of school progression at three levels primary, secondary and post-secondary of children aged 6-17 years of illiterate parents in Rural India, NFHS-II (1998-99)

Background Characteristics	Exp(B)		
	Primary Vs. no education	Secondary Vs. primary	Post- secondary vs. secondary
Characteristics of the Child			
Age of the child	15.948**	20.991**	0.111*
Age of child square	0.911**	0.910**	1.100**
Sex of the child (reference=male)			
Female	0.258**	0.653**	0.781
Birth order of child (reference=first order)			
Higher birth order	0.765**	0.924	1.165
Characteristics of the parents			
Age of the mother	1.047**	1.023**	1.002
Mother's working status(Reference=not working)			
Working, but not for wage	0.790**	1.027	0.823
Working for wage	0.536**	0.9	0.698
<u>Contraceptive use (Reference=not using/never used)</u>	<u>1.774**</u>	<u>1.224**</u>	<u>1.141</u>
<u>Number of surviving children</u>	<u>0.785**</u>	<u>0.907**</u>	<u>0.974</u>
Mass media (Reference=no exposure)	2.097**	1.320**	0.863

Socio-economic Characteristics of the household & community			
Landholding (Reference=own no land)	1.610**	1.387**	1.022
Religion (Reference=Hindu)			
Muslim and others	0.691**	0.763**	0.585
Caste (Reference=General)			
Scheduled Caste	0.917	0.982	0.797
Scheduled Tribe	0.610**	0.759**	0.564
OBC	1.093	1.206*	0.511
Distance to available Transport	0.998	0.999	1.002
Distance to primary/Middle school	1.003**	1.001*	1.003
Village size	0.99	1.037	0.949
States (reference=High fertility states)			
Moderate fertility states	1.085*	1.839*	1.776
Low fertility states	1.420**	1.460**	1.503
Constant	0.000**	0.000**	3022.717
-2 Log likelihood	10050.365	11922.460	786.977
Cox & Snell R Square	0.378	0.334	0.028
Nagelkerke R Square	0.536	0.518	0.138
Total number of cases	30067	20149	4237

* $p < 0.01$, ** $p < 0.001$

It is seen from the above two tables that the contraceptive use is affecting schooling at primary level and also in secondary level positively and significantly, though the magnitude of the effect seems to decrease from primary to secondary level. In primary level the probability of enrollment increased by 1.8 times if the parents are using contraception than the non-users of contraceptives and for the enrollment on secondary level it is 1.2 times higher for the children of users in both the NFHS-II and NFHS-III.

The family size is affecting schooling at each primary and secondary level negatively but the extent of that impact is higher for primary than in secondary. In NFHS-III, if family size increases by one child, then at primary level out of 100 children 24 children are less likely to be enrolled in school, while in secondary level out of 100 children 12 children are less likely to be enrolled in secondary level. In NFHS-II, 21 percent children in primary level, 9 percent children in secondary level and 3 percent children in post secondary level are less likely to be enrolled due to the increase in family size by one unit. Though the results are significant for primary and secondary level it is not found statistically significant at the post secondary level.

These results show that the family size and contraceptive use has more impact at the enrollment in primary level and though there is significant impact of these two variables controlling for other covariates in the secondary level, but for the secondary level enrollment the extent of the effect is lessened and the effect in post secondary also points towards this narrowing of the impact. Thus it can be concluded that due to fertility decline or during fertility decline the children will be benefited by getting higher enrollement in school. The completion of primary levels as well as enrollment in secondary level also increase during fertility decline. It is also supported by the results that compared to the high fertility states the states with moderate level of fertility and lower fertility are having more chance to enrolled the children in primary schools and also continue to the secondary level education.

Among the other important variables child's own age is found as a significant factor to affect the schooling at all the three levels- primary, secondary and post-secondary. Female children and children of higher birth order are less likely to benefit compared to male children and earlier born children (except for post secondary). Mother's age is having a positive impact on schooling at all three levels, while working mothers are less likely to send their children to school at all levels. Household's having agricultural land positively affect childs schooling and so do mother's mass media exposure. Muslim children and children belonging to scheduled castes, tribes and other back ward castes are less likely to be in school at all levels compared to the reference group Hindu and general category children.

From this paper it is revealed that there is gender discrimination favourable towards male children for schooling and also later born children are at disadvantageous position though not in all the NFHS surveys. This opened up further scope of study to understand the impact of fertility i.e., family size and contraceptive use by sex of the child and by order of birth.