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Socio-Economic and Demographic Impact on Child Labour in India

Subhash Barman, Indian Statistical Institute (West Bengal, India)

Abstract: *The government of India aims at abolishing child labour along with several measures to prevent its existence. There is still around 10 per cent child labour among the total workforce at the national level. This study explores the impact socio-economic and demographic predictor variables on likelihood of work participation of the children aged 10-14 years in India and four groups of states. The analysis of the study is based on work participation rate of the children by different characteristics to National Family Health Survey (NFHS) 3 data and Census of India 2001 data. The study also applies logistic regression model to NFHS 3 data. Proportion of child labour is higher in rural areas and it is higher among females. As expected the proportion of child labour is high among the poor households and among socio-economically backward communities.*

Keywords: Child labour, Participation rate, Parental education, Parental death, Wealth status, Logit.

1. Introduction

Child labour is a most focused area of concern worth investigating. Keeping in view the seriousness of the issue, the study examines the current status of the child labour in India and its states. Even after more than 60 years of independence, developing country like India, a significant proportion of the child population is deprived of their fundamental rights of education and is forced to live in difficult circumstances. The children of poor socio-economic background, who never attended school or could not

complete their primary or middle school education, are forced to work in a divisive labour market.

Practice of child labour is very old in Indian society. Parents would always prefer to take help of their children in their traditional family occupation. It would also provide an opportunity to the children for learning a trade. Moreover, the substantiated income helped the parents to provide better meals to their children and to meet other family needs. Due to lack of schools and training institutions in most of the neighbouring areas, specifically in rural India, family was the only institution where the children could learn how to work (Singh, 1990).

The altruistic parents who take care of the welfare of their children can thus be forced to send their children in the labour market as a source of income (Basu and Van, 1998). Ahmed (1999) studied that there is by now a virtually unanimous view that poverty is the main, although not the only cause of child labour.

Despite extreme poverty, parents might not want to send their children for full time job. However, if the parents are hit by temporary economic crisis, then the additional income from child employment could be essential for survival. But in the long- run, credit constraints faced by the parents compel themselves to decide about permanent employment of their children. Poor parents often face binding credit constraints, and whilst they are unable to borrow money they are able to send their children to work (Baland and Robinson, 2000). Participation of children in workforce thus functions as a mechanism for survival of the household members. However, what might have stated as temporary employment may be translated into permanent employment if the children lose interest in school, or lose even their capability to pursue education (Neumayer and Soysa, 2005).

Supply of child labour is mainly determined by the impoverishment of parents, schooling facilities and investment on education. In India, nearly 37 per cent of its population live below poverty line (BPL), expensive investment on education is not bearable by this segment of BPL population, and the cost of which may be recoverable in the future. And hence most of these poor people do not take the risk of borrowing money to meet the education expenses

of their children. Schooling costs, conditions, quality and availability are of the important reasons for increasing supply of child labour in India.

As concerns the demand side, employers always prefer to employ child labour because they are cheaper than the adult labour and non-wage benefits such as medical insurance, provident fund or pensions are not accountable to the child labour. It is often presumed that where excellent eyesight, 'nimble fingers', and small stature is an advantage in such economic activities such as carpet weaving and mining and some other handicraft and household industries children are more productive than adults. Hence, the employers prefer to employ child labour to minimize the cost of production in order to get a higher margin of profit.

According to the definition of the International Labour Organisation, child labour can be conceived to children below 15 years of age either in work or in employment with the aim of earning a livelihood for themselves or for their families (ILO, 1986). Child work is declining, and the more harmful the work and the more vulnerable the children involved, the faster the decline (ILO, 2006).

A child worker is defined by UNICEF as - any child aged 5-11 who, in the seven days preceding the reference period, worked for someone who was not a member of the household, with or without pay, or did household chores for 28 or more hours, or engaged in any family business and any child aged 12-14 years who, in the seven days preceding the reference period, worked for someone who was not a member of the household, with or without pay, for 14 or more hours, did household chores for 28 or more hours, or engaged in any other family work for 14 or more hours.

According to ILO's latest estimates (ILO, 2006) there are 218 million child labour worldwide. But child labour are mostly concentrated in Asia and Africa, which together totals more than 90 per cent of world's child employment.

The objective of development should be to create an enabling environment for people to enjoy long, healthy and creative lives. In recent years research on child labour sought to identify factors involved in causing child deprivation. There is a link between aspects of child deprivation – in fact deprivation of basic child rights – and child labour. Numerous studies have identified a triangular

relationship between poverty, deprivation of education, and various forms of child vulnerability including child labour – which may be defined as the basic indicators of underdevelopment of a nation. To develop a nation socio-economically - poverty, illiteracy and various forms of child vulnerability should be eliminated from the grass root level. Keeping in view the socio-economic scenario of the country and importance and depth of the issues involved in child labour in India, the author has been interested to undertake this study.

2. Research Questions

1. Whether poverty is the root cause for prevalence of child labour?
2. Whether illiteracy of the household as well as parents being an important factor for prevalence of child labour?
3. Whether the risk of participation in child labour force is higher for the orphans?
4. Whether the risk of participation in child labour force is higher for the backward communities?

3. Data and Objectives of the Study

Large scale data on child labour are available from Census of India and National Sample Survey Organisation (NSSO). National Family Health Survey (NFHS 3, 2005-06), collected information on child labour (5-14 years) in India and its states. In this survey, information was collected on the participation in different types of work for each child aged 5-14 years in the household. The types of work asked about, including the work for persons other than members of the household, were -work in a household business, farm, or selling goods in the street, and work for household chores. The number of hours of work done in the seven days preceding the date of survey was recorded for all children engaged in any type of work, and also for work that was done for any person who is not a member of the household.

A data file having information on work participation of children (5-14 years) was created extracting information from household as well as individual data file of NFHS 3 data. Thus the created data file focuses on 114216 children having information on work participation of children along with different socio- economic and demographic characteristics.

The study aims to estimate the labour force participation rate for the children aged 5-14 years using mainly National Family Health Survey (NFHS 3) data. The prevalence of child labour is estimated according to some socio-economic and demographic characteristics such as place of residence, caste of the head of the household, wealth index of the household, survival status of parents, education grade of the head of the household as well as child, relationship of the children to head of the household etc. Further, attempt is also made to explore the causes of prevalence of child labour under different circumstances.

The present study discusses the nature of themes relating to subjective meaning – socio-economic and demographic impact on child labour in India. They were also seen highlighting the dynamic issues involved in how the socio-economic and demographic impact on child labour were organised in a developing like India.

4. Literature Review

After reviewing several studies of children at work, Singh (1990) concluded that most of the child workers are found in the age group 10-14 years as compared to the age group 5-9 years. Goulart and Bedi (2008) studied the pattern of child labour in Portugal and assess the consequences of working on the educational success of Portuguese children. After controlling for a host of socio-economic variables, we find a significant effect of child's interest in school and educational ambitions in boosting educational success and reducing economic work. Diamond and Fayed (1998) studied that child labour displaces adult labour, giving rise to unemployment, and is a substitutability in production. The study notes that adult males appear to be complementarity with, and adult females act as substitutes for child labour, although the employment effects of banning child labour are

inconclusive. Chesnokova and Vaithianathan (2008), constructed a theoretical model which explains empirical evidence that in developing countries, first- born children are more likely to be child labourer than the later –born. In their model, the credit constrained parents use the labour income from their first child to fund the schooling of later born children. In presence of such intra – sibling effects, child labour laws which decrease work opportunities for children may backfire, increasing child labour and reducing human capital in the long run. Okokon and Charles (2004) discussed hawking as a variant of child labour and examined the relationship between hawking and economic background of families in Calabar metropolis. The authors observed that hawking begins at school age and there is a higher concentration of child hawkers in late primary and early secondary classes. Dimeji Togunde (2006) studied the causes of child labour and how these measures vary by parental socio-economic status. The study shows that children of parents with higher socio-economic status are more likely to own business rather than to assist parents, and these children work fewer hours as compared to the children belonging to lower socio-economic status.

5. Methods

The objectives of this study are : (1) to estimate the prevalence of child labour in India and its states, mainly based on the child labour force participation rate; and (2) to explore the impact of socio-economic and demographic predictor variables on likelihood of work participation of the children aged 10-14 years using logistic regression technique.

Using 2001 Census' figures on literacy rates of the rural children aged 10-14 years, the states in the country are grouped into four categories on the basis of level of literacy and difference between male and female literacy rates.

Category A : Difference between male and female literacy rate was 10 per cent or below and literacy level in both sexes ≥ 80 per cent . The states in this category are **:** Kerala,

Sikkim, Goa, Delhi, Himachal Pradesh, Tamil Nadu, Manipur, Punjab, and Maharashtra.

Category B : Difference between male and female literacy rate was 10 per cent or less, and literacy level in both sexes below 80 per cent .The states in this category are **:** Meghalaya, Nagaland, Mijoram, Assam, West Bengal and Tripura.

Category C : Difference between male and female literacy rate was between 10 per cent and 20 per cent. The states in this category are **:** Haryana, Karnataka, Arunachal Pradesh, Andhra Pradesh, Gujrat and Jammu & Kashmir.

Category D (EAG) [1] : Differences between male and female literacy rate is more than 20 per cent. The states belonging to this category are **:** Madhya Pradesh, Uttar Pradesh, Uttaranchal, Jharkhand, Bihar, Rajasthan Orissa and Chhattisgarh. This category of states is designated as Empowered Action Group (EAG) states.

Since the proportion of children participated in the labour force in the age group 5-9 years is small and, therefore, the study mainly focuses on the labour force participation in the age group 10-14 years.

6. Findings

Table 1 gives a short description of the variables considered in the study. The prevalence of child labour in both the age groups 5-9 and 10-14 are higher in rural than in urban areas and also it is higher among females than among males. On average, proportion of child labour by all the characteristics is higher in the rural areas. Proportion of child labour by wealth index of the household is higher for the poorest & poorer and middle & richer categories but it is higher in the urban areas for richest category.

Table 1 : Percent distribution of child labour by sex and place of residence according to selected characteristics : NFHS 3

Selected Variables	Categories	Rural		Urban		Total
		Male	Female	Male	Female	
Child labour	5-9 years	39.8	42.9	9.9	7.4	100.0

		10-14 years	34.8	47.2	10.4	7.6	100.0
Caste of the head of household (10-14) years		SC	33.5	47.9	8.8	9.8	100.0
		ST	39.8	54.9	3.1	2.2	100.0
		OBC	32.0	51.0	10.0	7.0	100.0
		Others	37.1	31.9	19.1	12.0	100.0
Survival status of parents (10-14) years	Father	Not alive	45.3	37.4	9.4	7.9	100.0
		Alive	33.8	48.2	10.5	7.6	100.0
	Mother	Not Alive	38.4	50.0	6.0	5.5	100.0
		Alive	34.5	47.1	10.7	7.7	100.0
Education level of parents (10-14) years	Father	No Education	36.8	49.3	8.1	5.8	100.0
		Primary	34.1	45.2	11.7	9.0	100.0
		Secondary to Higher	25.5	48.4	15.0	11.0	100.0
	Mother	No Education	34.8	49.4	9.1	6.7	100.0
		Primary	39.6	29.0	19.9	11.5	100.0
		Secondary to Higher	22.7	28.2	30.8	18.2	100.0
Wealth Index (10-14) years	Poorest & Poorer		39.0	52.8	4.5	3.7	100.0
	Middle & Richer		23.8	34.8	24.7	16.8	100.0
	Richest		21.6	10.5	38.4	29.5	100.0

Table 2 presents the percent of workers by category of states, place of residence and sex. According to both sources of data and in each group of states, the proportion of child labour is higher in rural areas, and among females. Both male and female child labour in rural areas is the lowest in group A states. In the remaining three groups of states, rural child labour (both sexes) is high in C group of states followed by EAG (Empowered Action Group) states. In urban areas also the proportion of child labour of both sexes is relatively high in B, C and EAG group of states compared to group A states. The regional disparity of child labour force participation rate is observed mainly due to regional development or underdevelopment in the matter of literacy and other socio-economic factors. It is stated earlier that the states belonging to category A having literacy rate above 80 per cent and difference between male and female literacy rate is lower than the other category of states.

Table 2: Percentage distribution of worker aged 10-14 years by category of states, residence and sex : NFHS 3 and Census 2001

Category of States	NFHS 3				Census 2001			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
India	7.2	10.3	5.4	4.6	9.6	9.9	4.1	2.2
Group A	3.7	4.7	3.4	1.7	6.3	6.7	3.4	1.7
Group B	8.0	7.2	6.4	7.6	9.2	6.9	4.8	4.0
Group C	8.6	13.1	5.9	6.4	11.9	14.3	5.0	2.7
EAG	7.5	11.6	6.4	5.0	9.9	10.0	3.9	1.9

In rural India, occupation of a household was predominantly determined by one's caste. The caste group 'Others' are the developed caste group consisting of socio-economically advanced communities followed by Other Backward Classes (OBCs), Scheduled Castes (SCs) and Scheduled Tribes (STs). Based on NFHS 3 data, Table 3 presents the percent distribution of child labour by caste-affiliations of the head of the household and by category of states. The all India data show that the proportion of child labour is higher for STs followed by SCs, OBCs and others. In three groups of states, namely A, C and EAG, the proportion of rural child labour in both sexes is higher in ST communities followed by SC. Among the group of states, child labour in all castes, sexes and residences are higher in C group of states. In urban areas also, proportion of child labour is higher for the ST communities. While analysing the caste composition of child labour, Nangia (1987) observes that ' if these figures are compared with caste structure of the country, it would be realized that a comparatively higher proportion of Scheduled Castes and Scheduled Tribes children work at a younger age for their own and their families' economic support'. Scheduled Castes and Scheduled Tribes children tend to be pushed into labour force because of their poverty. It is believed that the relative advancement among different caste groups of the Indian society is reflected broadly in the proportionate share in the child labour force participation rate.

Table 3 : Percentage of workers aged 10-14 years by caste [2] groups and by category of states, residence and sex : NFHS 3

Category of States	Caste	Rural		Urban	
		Male	Female	Male	Female
India	SC	7.2	11.0	5.5	6.6
	ST	11.6	16.9	9.5	7.4
	OBC	6.7	11.2	5.5	4.6
	Others	5.9	5.5	4.7	3.4
Group A	SC	4.1	5.3	2.8	2.2
	ST	8.4	8.9	0.5	0.3
	OBC	2.6	2.7	2.8	1.6
	Others	3.2	4.4	4.1	1.6
Group B	SC	6.0	7.7	5.0	10.2
	ST	5.9	10.2	0.9	2.3
	OBC	3.5	3.1	9.8	8.1
	Others	9.8	6.5	4.8	7.7
Group C	SC	8.1	14.4	5.7	6.5
	ST	16.1	18.7	11.1	16.5
	OBC	9.7	15.1	7.0	7.5
	Others	3.8	6.2	4.1	4.3
EAG	SC	8.0	12.5	7.5	8.8
	ST	12.5	19.9	16.7	7.2
	OBC	6.7	11.7	6.1	4.4
	Others	6.2	5.1	5.6	3.3

Table 4 describes the percent distribution of child labour at the national level by survival status of their parents, place of residence and sex. The data shows that proportion of child labour is relatively higher in rural areas than urban areas in each case of survival status of parents. Risk of participation in child labour is higher for male children than females when father is not alive; on the other hand proportion of child labour is higher for female children than males when mother is not alive. Risk of participation in child labour is very high when both of the parents are not alive than when both are alive.

Table 4: Percentage of worker aged 10-14 years at the national level by survival status of parents, residence and sex: NFHS 3

Father not alive: 3.8 per cent, Mother not alive: 2 per cent

Survival status of parents	Rural		Urban	
	Male	Female	Male	Female
Father is not Alive	16.5	14.3	10.4	9.2
Mother is not alive	17.4	25.2	9.5	9.6
Both are not alive	21.3	16.8	19.1	4.8
Both are alive	6.5	9.7	5.1	4.2

Table 5 presents the percent distribution of child labour by survival status of their parents, place of residence, sex and category of states. It is expected that the proportion of child labour is high when both the parents are dead. Percent of male child labour is higher than that of female child labour when only father is dead. On the other hand, proportion of female child labour, on the average, is higher than male child labour when only mother is dead. Proportion of child labour in each sex, residence and survival status of parents is lower in A category of states and it is higher in C category of states.

Table 5: Percentage of worker aged 10-14 years by category of states, survival status of parents, residence and sex: NFHS 3

Category of States	Survival Status of Parents	Father				Mother			
		Rural		Urban		Rural		Urban	
		Male	Female	Male	Female	Male	Female	Male	Female
Group A	Not alive	7.4	5.2	6.3	5.6	5.4	7.6	1.8	14.8
	Alive	3.5	4.7	3.2	1.5	3.7	4.7	3.3	1.5
Group B	Not alive	14.4	13.0	5.4	12.6	26.4	22.4	10.0	25.2
	Alive	7.7	6.9	6.5	7.2	7.6	6.8	6.4	7.2
Group C	Not alive	23.4	18.2	11.4	12.2	24.7	29.7	11.7	11.5
	Alive	7.9	12.8	5.6	6.1	8.3	12.7	5.8	6.4
EAG	Not alive	17.4	15.9	14.4	9.5	16.4	26.9	10.8	5.5

	Alive	7.0	11.4	6.1	4.8	7.2	11.2	6.3	5.0

Table 6 presents the per cent of worker, aged 10-14 years by selected characteristics and category of states. Participation of the children in labour force is negatively associated with the education level of the parents, that is, lower the education level of parents higher is the participation in labour force. In other words, the proportion of child labour increases with decrease in education level of parents. Per cent of child labour is negligible or zero when parents' educational level is higher. Broadly speaking, mothers' education seems to be more important than fathers' in determining the participation in workforce of their wards, because participation in the child labour force becomes lower with increase in each level of education of mother as compared to education level of father.

Many studies show that parents who have achieved higher level of education are also more likely to ensure that their children similarly receive a good education (Basu and Tzannatos, 2003). This ensures the possibility for a virtuous circle in which the achievement of higher standards by one generation is passed on to following generations, thereby escaping a 'dynastic trap' of child labour. Per cent of child labour is higher in C category of states in each education level of the parents, residence and sex as compared to other category of states because of the fact of low literacy rate in some of the states of this category of states.

Table 6: Percentage of worker aged 10-14 years by category of states and selected characteristics : NFHS 3

India & category of states	Education level of parents	Father				Mother			
		Rural		Urban		Rural		Urban	
		Male	Female	Male	Female	Male	Female	Male	Female
India	No Education	11.1	16.3	11.7	10.5	8.7	13.1	9.9	8.7
	Primary	6.7	9.6	7.4	6.1	3.3	2.7	3.9	2.5
	Secondary to Higher	2.0	4.0	1.7	1.4	0.5	0.7	0.6	0.4
Group A	No Education	6.7	10.7	8.8	4.7	5.9	8.4	7.5	4.2
	Primary	4.6	4.3	6.2	2.6	1.8	2.3	2.5	0.5

	Secondary to Higher	1.1	1.9	0.6	0.5	0.6	0.4	0.6	0.3
Group B	No Education	10.6	10.6	9.6	9.1	9.3	10.2	14.0	12.4
	Primary	8.2	6.5	8.3	6.2	7.7	1.9	3.2	2.1
	Secondary to Higher	2.5	1.1	2.7	2.2	0.6	0.7	0.1	0.0
Group C	No Education	12.5	19.5	12.3	12.3	11.1	16.6	10.6	12.1
	Primary	7.6	12.1	5.9	11.1	4.1	3.0	5.2	3.4
	Secondary to Higher	2.3	3.7	2.3	1.8	0.7	1.4	1.0	0.8
EAG	No Education	11.5	17.2	13.1	12.3	8.2	13.1	10.1	8.2
	Primary	6.7	11.8	9.5	4.9	1.2	3.2	4.4	4.3
	Secondary to Higher	2.2	5.6	2.2	1.9	0.2	0.4	0.4	0.3

Table 7 describes the per cent of child workers by wealth status of the households, place of residence, sex and category of states. Both at the national and state levels, the prevalence of child labour is inversely proportional to wealth status of the households, that is, the percent of child labour is the highest among the households belonging to poorest and poorer wealth status category and the lowest for the richest households. Poverty is the main root of incidence of child labour. It is often impoverished parents who are forced to send their children to work in order to survive as a family (Grootaert and Kanbur, 1995). When the proportion of child labour is distributed by wealth status, no regular trend in the rural-urban and gender differentials emerge.

Table 7: Percent of child workers, aged 10-14 years by wealth status [3] of the households, place of residence, sex and category of states : NFHS 3

Category of states	Wealth Status	Rural Male	Rural Female	Urban Male	Urban Female
India	Poorest & Poorer	10.0	14.3	13.8	13.3
	Middle & Richer	3.4	5.3	6.9	5.4
	Richest	2.0	1.1	1.2	1.1
Group A	Poorest & Poorer	6.1	9.7	14.2	6.0
	Middle & Richer	2.8	2.3	4.5	2.4
	Richest	0.9	0.2	0.7	0.4
Group B	Poorest & Poorer	10.8	9.8	8.9	15.4
	Middle & Richer	2.7	2.2	8.1	5.4
	Richest	3.6	4.2	2.4	8.5
Group C	Poorest & Poorer	15.2	19.8	21.7	18.6
	Middle & Richer	4.6	9.3	6.7	8.1
	Richest	1.1	0.9	1.2	0.8
EAG	Poorest & Poorer	9.5	14.8	12.2	13.5
	Middle & Richer	3.2	5.1	8.5	5.9
	Richest	3.9	1.6	1.5	0.4

7. Effects of Socio-economic and Demographic Factors on Child Labour

The *multivariate binary* logit model is defined as :

$$P = F(Z) = \frac{1}{1+e^{-z}} \quad \text{.....} \quad \text{.....(1)}$$

Where $Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k$. Here e represents the base of natural logarithms, which is approximately equal to 2.718 and P is the estimated probability of participation in labour force of children aged 10-14 years given X_i's. It is noteworthy that Z is not the response variable but a linear function of a set of predictor variables.

The quantity $\frac{P}{1-P}$ is called the *odds* which is denoted as :

$$\frac{P}{1-P} = e^z = \Omega = Odds$$

and,

logit

$$P = \log\frac{P}{1-P} = z = \log\Omega = Log\ Odds \quad \text{.....(2)}$$

Hence,

$$\log\Omega = \alpha + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k \quad \text{.....(3)}$$

Thus log Ω is calculated first, then $\Omega = e^{\log\Omega}$ and then $P\frac{\Omega}{1+\Omega}$, P is presented in percentage form (multiplying P by 100) (Retherford & Choe, 1993).

Children aged 10-14 years are considered in this study, a child as a labour is the dependent variable. Following socio-economic variables, namely, (1) relationship of the child with the head of the household, (2) education level of the child, (3) education level of the parents, (4) survival status of parents, (5) caste of the head of the household, and (6) wealth status of household are used as independent variables.

Relationship of the child to head of the household: if the child is son or son in law or grand child, 1 is assigned; 0, otherwise.

Education level of the child: if the education level of the child is above primary, 1 is assigned; 0, otherwise.
Survival status of father: if the father of the child is dead, 1 is assigned; 0, otherwise.
Survival status of mother: if the mother of the child is dead, 1 is assigned; 0, otherwise.
Education level of father: if the education level of the father is secondary or higher, 1 is assigned; 0, otherwise.
Education level of mother: if the education level of the mother is secondary or higher, 1 is assigned; 0, otherwise.
Caste group: if the child belongs to SC or ST or OBC, 1 is assigned; 0, otherwise.
Wealth status: if the child belongs to middle or richer, or richest status, 1 is assigned; 0, otherwise.
Category of states: if the category of states are C or D, 1 is assigned; 0, otherwise.
Table 8 presents the results of application of the logit model for rural India separately for males and females. Participation in labour force is less for male child who is a son or son- in-law or grand son compared to a child who does not belong to these categories. As expected, head of the household prefers to send other relatives to participate in the workforce as compared to son/ daughter, son-in-law/ daughter-in-law and grand children. Usually a child is expected to complete his/her 5 standard of education at the age around ten. The children (both sexes) who completed primary level of education is less likely to work as a labour than children who is illiterate or could not complete primary education. Being positively related, the odds of participation in labour is higher for children who lost their father. Similarly, being also positively related, the odds of participation in labour force is higher for the children who lost their mother. Children (both sexes) of educated parents have lower risk in participation in labour force than those whose parents have low level of education. Thus with increase in level of adult literacy, participation in labour force of their children would fall (for example, the states namely, Kerala, Goa, Delhi, Maharashtra, Tamil Nadu etc. where participation in child labour force is low because of the fact of high adult literacy rate). Interaction of category of states and caste show that the children belonging to scheduled castes, scheduled tribes and OBC in both the

category 1 (C & EAG) and Category 2 (A & B) are more likely to be involved in child labour compared to the children of 'other castes' when other variables are constant. Also the children of each caste groups in the state category 1 (C & EAG) are more likely to be in labour force compared to the children belonging to state category 2 (A & B). Higher the wealth status of households, lower the risk of the participation of children in the workforce. This implies that participation in labour force decreases as the socio-economic status of the households improve.

With an interaction effect, a significant P-value is returned when multiple factors are considered. Here the significance effect of the interaction is less than the main effect. Coincidence of the main variable and the interaction variable meet the acceptable significance levels and the interaction effects take precedence over the main effects. The odds ratios of main variables SC and OBC are less than 1 in both sexes, ST is less than 1 for rural male but positive for rural female. After the interaction effect is considered, the odds ratios for all the caste groups are positive and significant. In the states of category A, child as well as adult literacy are higher as compared to other Indian states and there is little difference among different caste groups. And in category B, most of the states are from north-eastern region where the concentration of Scheduled Castes and OBC population is very less and concentration of Scheduled Tribes population is high and hence in Category 1, the SC and OBC children mainly belong to group A states.

Table 8 - Model 1: Odds ratios for child labour force participation with the effects of changes in the socio-economic and demographic variables in rural India [4] and by sex aged 10-14 years: NFHS- 3

Variable Name	**Reference Category**	**Categories**	**Odds ratio**	
			Male	**Female**
Relationship of the child to Head of the Household	Other relatives	Son/Son in Law and Grand Child	0.560*** [5]	0.776*
Education level of the child	Illiterate or < 5 standard	Above Primary	0.435***	0.468***
Survival status of father	Father alive	Father dead	1.789***	1.096
Survival status of mother	Mother alive	Mother dead	1.626***	2.047***
Education level of father	Illiterate or < 5 standard	Secondary to Higher	0.363***	0.510***
Education level of mother	Illiterate or < 5 standard	Secondary to Higher	0.092***	0.103***
Caste Group	Others	SC	0.629**	0.948
		ST	0.770	1.143
		OBC	0.582**	0.652*
Wealth Index of household	Poorest and poorer	Middle and richer	0.501***	0.595***
		Richest	0.594*	0.260***
Category of state	A and B category states	C and D category states	0.877	0.978
Interaction Caste Group in C and EAG category states	Caste Group in A and B category states	SC	1.580*	1.727**
		ST	1.795**	1.948***
		OBC	1.762**	2.735***
Wald Chi2			437.91	518.33
Log pseudo likelihood			-4056.23	-4929.05
Pseudo R-squared			0.107	0.107
No. of observation			17592	16641

[5] * significant at 1 per cent level, ** significant at 5 per cent level and * significant at 10 per cent level.**

Table 9 presents the result of application of the logit model in the interaction variables of caste groups. In this

table only the caste groups as main factors as well as caste groups as interaction variables are used in the regression function and the effects of interaction is preceded over the main effects. Not only that but also the significance level is more pronounced than when other socio-economic factors are associated along with it.

Table 9 - Model 2: Odds ratios for child labour force participation with the effects of changes in the interaction variables by caste in India – rural male and rural female aged 10-14 years : NFHS- 3

Variable Name	**Ref. Category**	**Categories**	**Rural Male**	**Rural Female**
Relationship of the child to Head of the Household	Other relatives	Son/Son-in-Law and Grand Child	- [6]	-
Education level of the child	Illiterate or <5 standard	Above Primary	-	-
Survival status of father	Father alive	Father dead	-	-
Survival status of mother	Mother alive	Mother dead	-	-
Education level of father	Illiterate or <5 standard	Secondary to Higher	-	-
Education level of mother	Illiterate or <5 standard	Secondary to Higher	-	-
Caste Group	Others	SC	0.688	1.010
		ST	1.070	1.666***
		OBC	0.380***	0.453***
Wealth Index of the household	Poorest and poorer	Middle and richer	-	-
		Richest	-	-
Category of state	A and B category states	C and d category states	0.800	0.882
Interaction variables-	Caste Group in A	SC	2.143*	2.387***
Caste Group in C and	and B category	ST	2.413**	2.604***
EAG category states	states	OBC	3.518***	5.597***
Wald Chi2			91.22	232.94
Log pseudo likelihood			-4477.40	-5335.66
Pseudo R-squared			0.014	0.033
No. of observation			17592	16641

***** significant at 1 per cent level, ** significant at 5 per cent level and * significant at 10 per cent level .**

- Indicates analysis not necessary in the table.

Table 10 presents the odds ratio for prevalence of child labour, aged 10-14 years, rural male of NFHS 3 data by category of states. The odds ratios for relationship of children to head give negative relationship for son/ son in law and grand child in respect of the reference category- other relatives, and it can be interpreted that the household head prefer to send other relatives to participate in the labour force than the persons in the category concerned. Education level of the child and parents, has a negative association with the participation of the children in the workforce and the ratios are highly significant in most cases and it may be interpreted that as the education level of children and also their parents improves, participation in workforce falls. However, mothers' education has been more crucial than fathers in determining the status of their children. Death of father should always have a positive effect with the participation in the labour force of their children. The odds for death of father bear a mixed response in different group of states. Participation in the child labour force from the SC, ST and OBC caste categories is supposed to be higher than the reference category, viz., other higher caste, but here the odds for prevalence of child labour from the caste groups SC, ST and OBC give the mixed response among the group of states. Odds ratios for wealth status- middle and richer have the negative association in respect of the reference category, viz., poorer and poorest, and the wealth status of richest category gives the mixed response among the group of states.

Table 10: Odds ratios for child labour force participation with the effects of changes in the socio-economic and demographic variables in four group of states– rural male, aged 10-14 years: NFHS 3

Variable Name	**Ref. Category**	**Categories**	**Odds ratio**			
			States A	**States B**	**States C**	**EAG**
Relationship of the child to head of the household	Other relatives	Son/son-in-law and grand child	0.498*	0.611	0.571**	0.533***
Education level of the child	Illiterate or < 5 standard	Above Primary	0.468***	0.353***	0.318***	0.439***
Survival status of father	Father alive	Father dead	1.509	1.467	2.078***	1.818***
Survival status of mother	Mother alive	Mother dead	0.844	4.338***	1.699	1.492**
Education level of father	Illiterate or < 5 standard	Secondary to higher	0.399**	0.637	0.387***	0.351***
Education level of mother	Illiterate or < 5 standard	Secondary to higher	0.152***	0.110***	0.108***	0.053***
Caste group	Others	SC	0.861	0.568*	1.430	0.912
		ST	1.401	0.474***	1.929**	1.227
		OBC	0.744	0.533	1.706**	0.888
Wealth Index of the household	Poorest and poorer	Middle and richer	0.691	0.325***	0.419***	0.462***
		Richest	0.410	1.202	0.233**	0.891
Wald Chi2			70.44	75.94	133.88	224.58
Log pseudo likelihood			-559.67	-697.72	-697.72	-1790.39
Pseudo R-squared			0.102	0.126	0.162	0.093
No. of observation			3925	2855	3417	7395

***** significant at 1 per cent level, ** significant at 5 per cent level and * significant at 10 per cent level.**

Table 11 presents the odds ratios for prevalence of rural female child labour with the effects of changes of the socio-economic characteristics (as in Table 10) using NFHS 3 data. It is obvious from table that relationship of daughter/ daughter-in-law and grand child has the negative association in respect of the reference category, namely other relatives. The odds ratios for education of the child and also their parents are highly significant in most of the group of states and it is negatively related with the participation of child

labour in respect of its reference category. Death of father has positive relationship for the prevalence of child labour excepting A group of states. Participation of the SC, ST and OBC children in the workforce is expected to be higher than other higher caste group. The ratios give mixed response to A and B category states whereas the ratios are positive and highly significant in C and EAG group of states. Group A and group B states are comparatively better states than the C and D group of states in terms of literacy, and participation in the child labour force is less in these two group of states (A and B). Hence participation in the labour force of the SC, ST and OBC caste groups may be lower than the other higher caste group in A and B group of states. Odds ratios of wealth status of both the categories have the negative association with its reference category, poorest and poorer, which implies that the participation in the work force for the female children decreases as their standard of living becomes higher.

Table 11: Odds ratios for child labour force participation with the effects of changes in the socio-economic and demographic variables in four group of states– rural female, aged 10-14 years: NFHS 3

Variable Name	**Ref. Category**	**Categories**	**Odds ratio**			
			States A	**States B**	**States C**	**EAG**
Relationship of the child to head of the household	Other relatives	Daughter/daughter-in -law and grand child	0.903	0.399**	0.911	0.798
Education level of the child	Illiterate or < 5 standard	Above Primary	0.578**	0.321***	0.283***	0.482***
Survival status of father	Father alive	Father dead	0.838	1.143	1.035	1.106
Survival status of mother	Mother alive	Mother dead	1.453	1.934*	1.865	2.196***
Education level of father	Illiterate or < 5 standard	Secondary to higher	0.583	0.281**	0.436***	0.576***
Education level of mother	Illiterate or < 5 standard	Secondary to higher	0.128***	0.161**	0.125***	0.066***
Caste Group	Others	SC	0.674	0.871	1.905***	1.676***
		ST	0.672	1.273	1.791**	2.481***
		OBC	0.444***	0.688	2.114***	1.817***
Wealth Index of household	Poorest and poorer	Middle and richer	0.329***	0.347***	0.701**	0.516***
		Richest	0.057***	0.638	0.132***	0.330
Wald Chi2			54.88	82.13	185.94	224.43
Log pseudo likelihood			-613.08	-645.56	-1067.24	-2243.58
Pseudo R-squared			0.140	0.126	0.145	0.086
No. of observation			3749	2840	3225	6827

***** significant at 1 per cent level, ** significant at 5 per cent level and * significant at 10 per cent level.**

8. Conclusions

According to Census 2001 data, child labour force participation rate is very high in the states namely, Andhra Pradesh, Karnataka, Madhya Pradesh, Jammu & Kashmir and Rajasthan. In these states, both sexes child labour force participation rate is above 10 per cent. The results of the logistic regression show that the education level of the child as well as the parents provide more significant results as compared to other socio-economic and demographic factors. The study shows that the child labour force participation rate is negatively associated with the higher level of education of the parents as well as the children. And hence promotion of literacy at the household level by states may be an important step for reducing child labour in the country. Level of literacy of a country can not be improved unless its socio-economic standard is uplifted. So, to improve the literacy level of a country, the first step would be to uplift the socio-economic status of its people. Some states of the country specifically the states in C and EAG categories which constitute more than 50 per cent of the Indian sub-continent need special measures in this regard.

Wealth status of the household represents as the proxy for socio-economic status of a household. Moreover, education level of the parents and wealth status has a positive correlation and both of the factors are negatively associated with child labour force participation rate. Risk of participation in the child labour force also high among the orphans and double orphans are more disadvantageous in this context.

Child labour force participation rate is found to be high among the Scheduled Castes and Scheduled Tribes, as revealed from the study. Their high participation in the labour force is closely associated with the poor educational level along with poor socio-economic status of these households. So long as these backward people are developed socio-economically, it is difficult to eliminate the root cause of the child labour from the Indian society.

In a nut shell, abject poverty, illiteracy and other social evils are the underlying factors for existence of child

labour. To abolish child labour, its causes are to be addressed for rectification.

Notes

1. **Empowered Action Group (EAG):** The National Population Policy (NPP) has listed short and long term goals to be achieved for population stabilisation and achievement of Key Socio-Demographic Indicators by the year 2010 and 2045. One of the key objectives is attainment of TFR (Total fertility rate) of 2.1 by 2010 for the country. It is felt that although progress in some states is satisfactory, poor performance in Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, Orissa and the three newly created states namely Uttaranchal, Jharkhand and Chattisgarh following the division of Uttar Predesh, Bihar and Madhya Pradesh in the year 2000 is proving to be a constraint to national progress. Therefore, more focused interventions are needed on the issues of reproductive and child health care in these states for attainment of the demographic goal set in the NPP, 2000.
   In Uttaranchal, differences between male and female literacy rate is less 10% and should actually fall under group A. Orissa and Chattisgarh fall in the C category of states on the basis of the same criterion. However, on account of the unsatisfactory socio-demographic indicators, all these states are included in the EAG group. The three new states such as Uttaranchal, Jharkhand and Chhattisgarh have thus been included in the EAG on this account. It is necessary to provide an impetus for strengthening the primary health care infrastructure, a prerequisite for efficient delivery of family welfare services.

2. Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs) are the weaker sections or backward communities, whereas the other higher castes are the advanced group of population of the Indian society. Backwardness of these communities are ranked in ascending order as : Scheduled Tribes < Scheduled Castes < Other Backward Classes. Some special facilities in the matter of education and employment in the government department are provided to these weaker sections as mentioned in the Constitution of the country.

3. The wealth status or economic status was constructed using household asset data and housing characteristics. The NFHS 3

wealth status is based on 33 assets and housing characteristics such as household electrification, sources of drinking water, type of toilet facility, television, refrigerator, bicycle, motorcycle, car etc. Each household was assigned a score for each asset, and the scores were summed for each household; individuals are ranked according to the score of the household in which they reside. The sample is then divided in quintiles, that is, five groups such as poorest, poorer, middle, richer and richest wealth status categories.

4. Since the proportion of child labour in the urban areas is less as compared to rural areas, the logistic regression analysis is focused on rural child labour only.

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