



RESEARCH ARTICLE

LABOUR MARKET IMPERFECTION AND THE INCIDENCE OF CHILD LABOUR IN INDIA AND WEST BENGAL: AN ANALYSIS OF NSSO 64TH ROUND DATA

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ABSTRACT

The incidence of child labour is one of the causes of social degradation particularly on the fair face of the globalized world. According to recent publication of ILO one in every six children aged between 5 and 17 (i.e., 246 million children) is involved in child labour. In India as revealed by the NSSO data 2007-08, the informal sector alone account for over two thirds of the child employment. The manufacturing sector and the trade, hotels and restaurant together accounts 6 per cent of the total child labour force in rural India. Moreover; there are substantial inter-state variations in the incidence of child labour. More surprisingly, the magnitude of child labours in the prosperous states like Andhra Pradesh, Gujarat, and West Bengal is found to be much higher. Among 15 major states of India, West Bengal ranks 6th in the incidence of child labour using NSSO 64th round unit level data. This paper attempts to examine the nature and extent of the incidence of child labour in India in general and West Bengal in particular. Moreover, using the Tobit regression model attempts have been made to examine the socio- economic and demographic determinants of the incidence of child labour. The incidence of child labour is observed to be causality related to labour market imperfection and the level of human capital at the household level.

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INTRODUCTION

Child labour is persistent mostly in the developing countries where multi-class social structure exists and traditional production relations are active coupled with the existence of capitalist mode of production and exploitation. Working of children in these countries is subjected to a process of exploitation characterized by low wages, long hours of work, unclean, unhygienic and unsafe working and living conditions and more importantly deprivation from education which hamper their physical and mental development (Chaudhuri, Gupta-2009). One in every six children aged between 5 and 17 (i.e., 246 million children) is involved in child labour (ILO-2002). Out of 246 million about 170 million child workers were found in different hazardous works. According to estimation of the Census 2001, in India 8.57 lakh children are presently engaged in child labour. In West Bengal, nine per cent of them are employed in the extremely hazardous occupations of the manufacturing, mining and construction industries. Addressing a press conference on the eve of the

World Day Against Child Labour Principal Secretary, Department of Labour, Government of West Bengal, S N Haque said, "According to the 2001 Census, 69 per cent of the children are engaged in the agriculture and allied sectors, while 22 per cent are employed in the service sectors, not considered hazardous occupations under the Child Labour Prevention Act, 1986." However, nine per cent of the children are compelled to work in the manufacturing, mining and construction industries, which are included in the extremely hazardous occupations and processes according to the Act. The prosperity of any country depends critically on the quality of its human resources. Therefore, it is crucial to provide with a decent childhood to prepare them for decent work during their later part of lives, which will be both productive to society and rewarding. The employment of children in such conditions which are harmful to their dignity, morality, health, and education seriously undermines the economic viability and cohesion of society and compromises its long term development prospects (ILO-2008). Child labour came under the international spotlight in the 1990s. For the first time, the industrialized society campaigned on the issue a century earlier; later diplomats and economists started exploring why vast numbers of children were working rather than being educated and what should be done about it.

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Presently the focus is on developing countries (UNICEF-2005). A large number of studies have been conducted both empirically and theoretically to explore the causes of child labour across various countries of the world.

Poverty is an important supply side factor in explaining child labour. At the macro level study Edmonds (2005) examines the relationship between the per capita expenditure and child labour in Vietnam between the year 1993 and 1997. By using the non-parametric decomposition, he has found that there is a non-linear relationship between child labour and economic status. The article by Basu and Van (1998) is the first article in which the luxury axiom is expressed: they assume that child labour is due to parents' poverty. This is in fact an assumption on parents' preferences: they value child leisure but, if they are poor, they may not be able to afford it. However this article is based on the assumption of the well developed labour market. Of late, there is a large body of literature which argues that the primary cause of child labor is the imperfection of labour market. Bhalotra and Heady (2003) shown that there could be a "wealth paradox" for child farm labour, in which children from land-rich households have higher tendency to work as compared to children from land-poor families. In their paper, they attribute this paradox to failures of the markets for labour and land. World Bank Report (1998) notes that the higher the share of agriculture in the GDP, the higher the incidence of child labours. Dumas (2007) in areas of Burkina Faso have examined the relationship between the poverty and child labour by considering two hypotheses: *Subsistence hypothesis* and the *luxury hypothesis*. He has found that if households are constrained by subsistence then household labour supply must decrease with land, and if the households are not constrained by subsistence and also the child leisure is a luxury good then an increase in the land will leads to an increase in the child labour. The main reason of this result is the imperfection of the labour market. Contrary to the Basu (2003), Dumas found the U shaped relationship between child labour and land wealth.

Under this scenario, this study actually intends to analyze the trends and patterns of child labour in India in general and West Bengal in particular. Moreover, this study aims to identify the relevant factor for determining the child labour in rural area in West Bengal and 15 major states in India. For convenience, this paper is divided into IV sections. After introduction, section I deals with the data sources and methodology of the study. Section II attempts to examine the trends and pattern of child labour across the States of India and also the different districts in West Bengal. The determinants of the child labour are presented in Section III. The conclusion of the Study appears in Section IV.

SECTION- I

Data Sources and Methodology:

This paper is based exclusively on secondary data. 64th round unit level data of National sample survey organization have been used to examine the trends pattern and the determinants of child labour. The study covers 15 major states of India. Altogether 2909 households have been chosen to analysis the incidence of child labour in West Bengal .To explain the

pattern of child labour in India as well as West Bengal the analytical approach has been followed through data tabulation and statistical data analysis using computer software. As the incidence of child labour is probabilistic and there are many households without any child so ordinary least square estimation is inapplicable here. The tobit model analysis is used to identify the major determinants of the child labour in West Bengal. The specification of the tobit model is given as follows:

$$Y_i^* = \beta X_i + U_i \text{ if } Y_i^* > 0 = 0 \text{ if } Y_i^* \leq 0$$

Where Y_i^* is the incidence of child labour.

X_i is the other explanatory variables as per capita consumption, consumption square, per capita land holdings, per capita land holdings square, female headed household, female literacy rate, proportion of tobacco expenditure on total expenditure and the caste.

Hypothesis: Empirical specification of regression model and proposed hypothesis are presented

SECTION II

Incidence of child Labour in India

Child labour is one of the worst forms of violation of child rights. The International Labor Organization (ILO, 2005) has estimated that 250 million children between the age of five and fourteen work in developing countries-at least 120 million on a full time basis. Sixty-one percent of these are in Asia, 32 percent in Africa, and 7 percent in Latin America. Most working children in rural areas are found in agriculture; many children work as domestics; urban children work in trade and services, with fewer in manufacturing and construction. According to the 64th Round of the National sample Survey WPR for children of age 5-14 years had shown a declining trend during the period from 1993-94 and 2007-08. The reduction in WPR for both male and female children in rural areas was from 6 per cent in 1993-94 to 2 per cent in 2007-08. In the urban areas, the reduction in WPR for male children was from 4 per cent in 1993-94 to 2 per cent in 2007-08 and for female children from 3 per cent to 1 per cent (see table -1). Evidently, table-2 reveals that the incidence of child labour is declining over time. However the rates of decline of the incidence of child labour vary in different rounds of NSSO data. According to the NSSO report (2007-08), 287,800 boys of 5 to 9 years of age in rural areas were reported as principal 'usual' status workers in 1987-88, this number increased to 358,100 in 1993-94 and declined to 289,200 in 1999-2000 which is higher than the 1987-88 figures. Similarly, 219,700 girls of 5 to 9 years of age were reported as principal workers in 1987-88, which increased to 428,500 in 1993-94 and declined to 303,800 in 1999-2000. The number of rural boys and girls of 5 to 9 years of age who were categorized as principal status workers in rural areas is higher in 1999-2000 as compared with 1987- 88. The magnitude of child labour force participation increases with the inclusion of secondary workers.

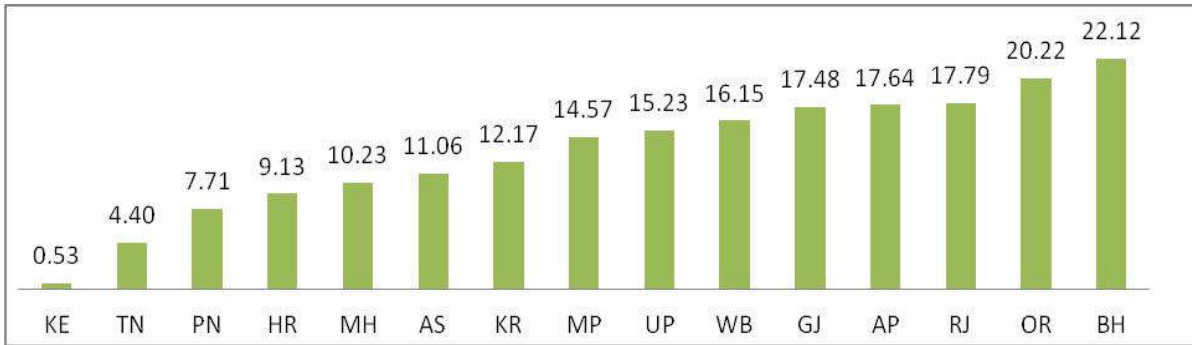
Table 1. Specification of Variables in Regression Model: For India and West Bengal

Dependent variable: Incidence of child labour: it is defined as the number of child labour in a household divided by the total number of household members.			
Independent variables	Description		Expected Sign
	India	West Bengal	
Per capita consumption	We take average per capita consumption expenditure for different states.	Household monthly consumption divided by the total household members.	-
Per capita consumption square	Square of the per capita consumption expenditure	Square of the per capita consumption expenditure	+
Female education	No. of females who are illiterate in total female population.	No. of females who are illiterate in total female population of a household	+
Household head	The percentage of female headed household in total household.	Dummy variable use for the household level D ₁ =1, if female headed household D ₁ =0, Otherwise	-
Land	We take Average per capita land holding for different states.	We take the per capita land holding in household level.	-
Land square	Per capita land holding square for a state.	Per capita land holding square for each household.	+
Tobacco expenditure	Proportion of tobacco expenditure in total expenditure in each state.	Proportion of tobacco expenditure in total expenditure for each household.	+
Caste	Percentage of backward population in total population in different states.	Dummy variable use for the household level D ₁ =1, if backward classes D ₁ =0, Otherwise	+

Table 2. WPR among children of age 5-14 years as per current weekly status during 1993-94, 1999-2000, 2004-05 and 2007-08 all-India

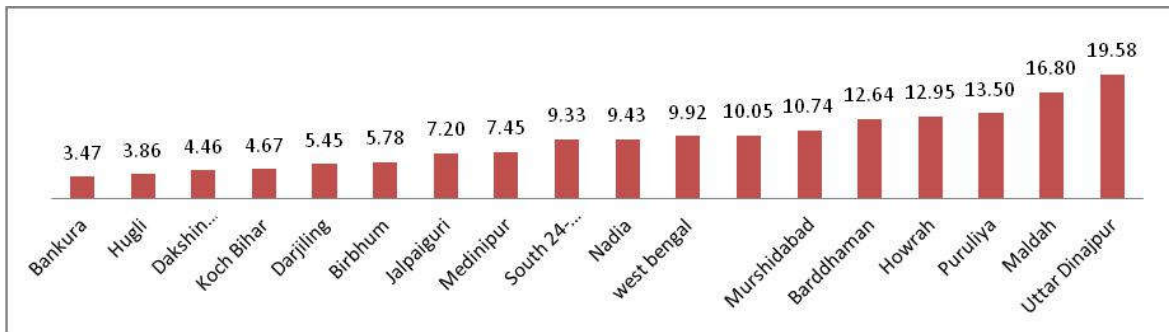
Category of children (age: 5-14 years)	50th round (1993-94)	55th round (1999-2000)	61st round (2004-05)	64th round (2007-08)
Rural Male	64	47	31	23
Rural Female	62	44	30	16
Rural Person	63	45	30	20
Urban Male	36	30	24	15
Urban Female	25	20	17	10
Urban Person	31	26	23	13

NSSO -64th Round (2007-08)



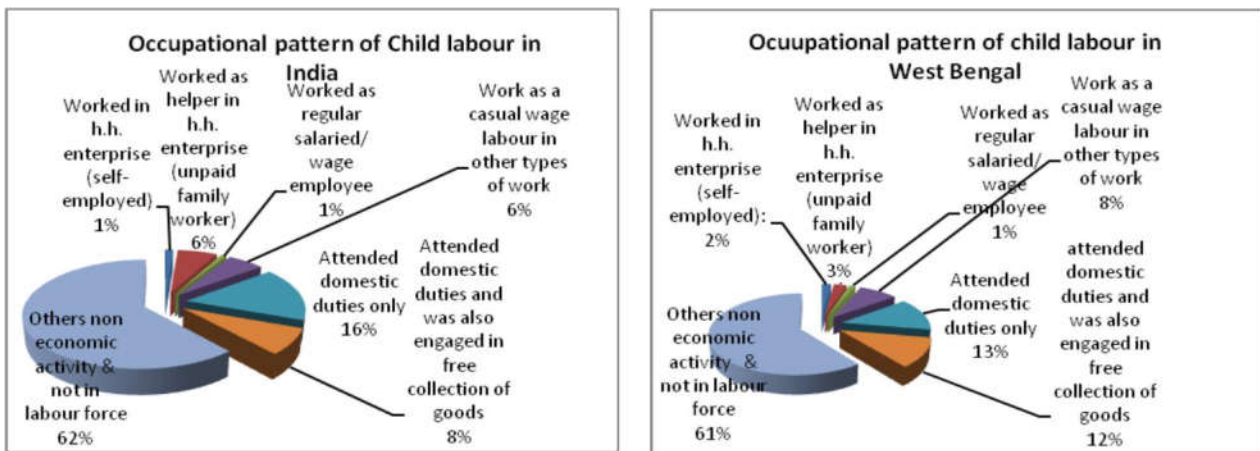
Source: NSSO -64th Round

Figure 1. The Percentage Share of Child Labour in the 15 Major States in India



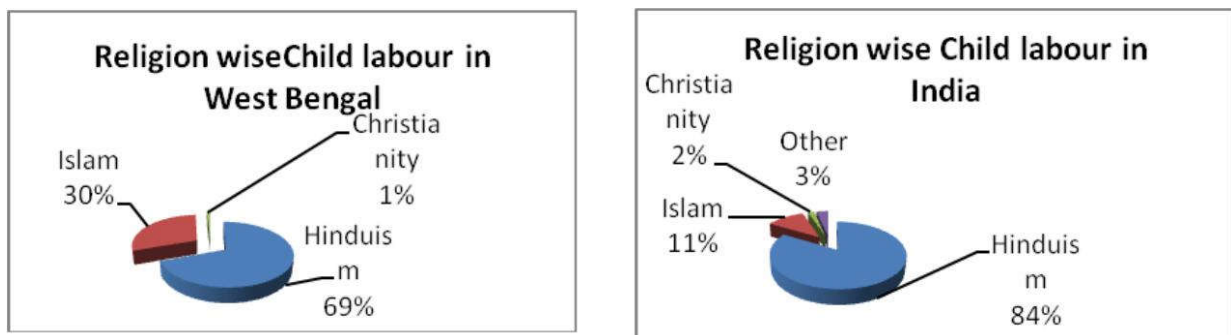
Source: NSSO-64th Round

Figure 2. The Percentage Share of Child Labour in the different Districts in West Bengal



Source: NSSO-64th Round

Figure 3.



Source: NSSO-64th Round

Figure 4.

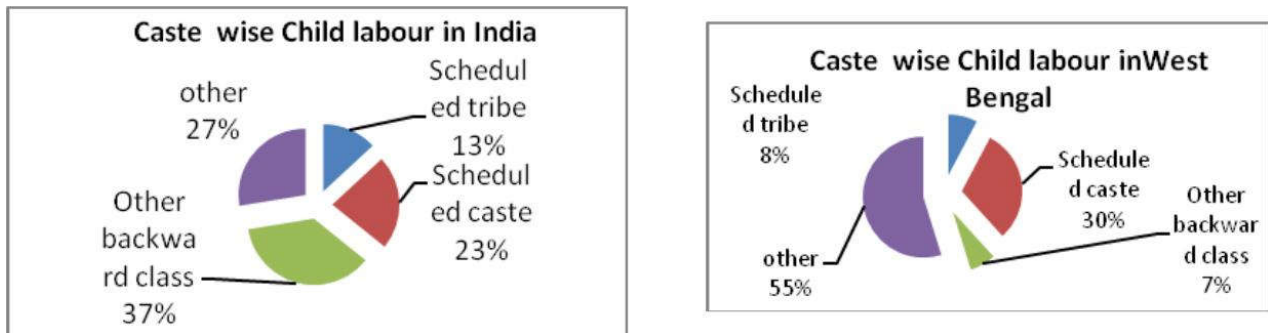


Figure 5.

Table 3. Correlation matrix

	Probability Of child labour	Female illiterate	Female headed household	Per capita consumption expenditure	Per capita consumption Expenditure square	Backward population	Tobacco expenditure	Land	Land square
Probability Of child labour	1.00								
Female illiterate	0.56	1.00							
Female headed household	-0.08	-0.48	1.00						
Per capita consumption expenditure	-0.44	-0.48	-0.08	1.00					
Per capita consumption Expenditure square	-0.39	-0.47	-0.07	0.99	1.00				
Backward population	0.33	0.34	0.03	-0.65	-0.67	1.00			
Tobacco expenditure	-0.01	-0.31	0.55	-0.41	-0.39	0.53	1.00		
Land	-0.50	0.09	-0.02	0.05	0.03	0.02	0.06	1.00	
Land square	-0.45	0.12	-0.04	0.05	0.03	0.05	0.06	0.99	1.00

Table 4. Tobit Analysis

Dependent variable: Incidence of child labour: It is defined as the number of child labour in a household divided by the total number of household members.				
Independent variables	India		West Bengal	
	Coefficient	t ratio	Coefficient	t ratio
Constant	0.35	1.99	-0.01	-0.19
Female illiteracy	0.003	2.81	0.27	1.78
Female headed household	0.001	1.28	0.12	0.44
Per capita expenditure	-0.0003	-1.43	-0.00038	-7.81
Per capita expenditure square	0.0000002	1.47	0.00000002	5.02
Backward population	0.0001	0.08	-0.02	-1.34
Per capita Tobacco expenditure	0.003	0.28	-0.58	-1.17
Land	-2.45	-2.42	-0.24	-4.67
Land square	5.04	1.84	0.09	3.56

Source: NSSO-64th Round

Note: Stata Computer Package Used For Analysis

In 1999-2000, another 1.45 million child workers are added to the total figure of 8,401,000 of principal 'usual' status workers when subsidiary workers are taken into consideration. The total number of principal and subsidiary child workers adds up to 9,858,400 persons of whom 4,516,700 are rural boys and 4,067,400 are rural girls. In percentage terms, there were 0.7 percent principal and subsidiary 'usual' status child workers in the age group of 5-9 years rural boys and 9.2 percent in 10-14 age cohorts and for rural girls the percentages were 0.7 and 9.6 for the same age groups. For urban boys of 5-9 age cohorts, labour force participation rate was 0.3 percent and for 10-14 age cohort, it was 5.2 percent. For urban girls, it was 0.2 percent and 3.7 percent for the respective age groups.

Magnitude of child labour in the major states in India:

The prevalence of child labour is found to be considerably high in the low-income states like, Bihar, Orissa, and Rajasthan (Figure-1). Most surprisingly, in the prosperous states like Andhra Pradesh, Gujarat, and West Bengal the magnitude of child labour is much higher. Among 15 major states of India West Bengal ranks 6th position in terms of the incidence of child labour. But there are widespread variations in the incidence of child labour across various districts in West Bengal.

The incidence of child labour is observed to be highest in Uttar Dinajpur (19.58%), followed by Maldah (16.80%), Purulia (13.50%). The lowest incidence of child labour is observed in Bankura (3.47%), Hugli (3.86%), and Dakshin Dinajpur (4.46%) district in West Bengal.

The following figures show the occupational pattern of child labour of India as well as West Bengal in rural area. NSSO divides total child labour into eight categories. These eight classes are grouped into two broad category. 1) labour in economic activity 2) labour in non-economic activity. According to NSSO 64th round in rural India most of the child was engaged in non economic work (86%). Among these 16% of the total child labour, performs domestic duties, 8% engages in themselves both in domestic duties and in free collection of goods, 62% of total child labour either engaged in activities like begging and prostitute etc including those who do not seek any job. Among various economic activities, household enterprise constitutes almost the 7 % of the total child labour and 6 % of total child labour force work as a casual wage labour. Only 1% of total child labour engaged in regular or salaried wage labour.

In rural west Bengal also most of the children are engaged in non economic work (86%). Among these attend 13% of the total child labour, perform domestic duties. 12% engages themselves both in domestic duties and in free collection of goods. 61% of total child labour either engaged in activities like begging and prostitute etc including those who do not seek any job or not available for the labour market. Among various economic activities, household enterprise constitutes almost the 5 % of the total child labour and 8 % of total child labour force work as a casual wage labour. Only 1% of total child labour engaged in regular or salaried wage labour. Broadly West Bengal follows the same pattern as in India in respect of

the incidence of child labour. However, there are vast regional variations in the incidence of child labour based on religion, caste. In India the incidence of child labour is much higher among the Hindu community (84%) compare to the Muslim community (11%). In West Bengal 69% of the child labour belonging to the Hindu community which is 30% for Muslim community. The caste wise classification of child labour in India reveals that its incidence is highest among other backward class households (37%) followed by general caste (27%), SC (23%) and ST (13%). On the other hand in west Bengal the incidence of child labour is highest in for the general cast (55%) followed by SC (30%), ST (8%), and OBC (7%) of the total child labor.

The determinants of child labour:

Attempts have been made in this section to identify the socio-economic determinants of the incidence of child labour. In fact, the incidence of child labour depends on several socio-economic, demographic, and cultural factors. Capturing the impact of all these factors on the incidence of child labour is beyond the scope of this paper. We tried to find out the major determinants of the child labour in India as well as in West Bengal. The tobit regression results has been derived using the Stata computer package.

The determinants of child labour: Tobit Regression Model

We first see the simple bivariate association between the incidence of child labour and the entire potential explanatory variables in India. The correlation matrix is shown in the following table (table-3). The variables, which are highly correlated with the probability of child labour, are female education, per capita consumption expenditure, and per capita land holding of the household. In The same result is also found for west Bengal (see the appendix table -1(A)) Therefore, the correlation reinforces the links between the female education, per capita consumption expenditure, and per capita land holding of the household importance of determine the probability of child labour. The correlation also reveals the merit to include these variables to determine the probability of child labour. The determinants of the incidence of child labour have been explained by tobit models. The dependent variable is the incidence of child labour which is constructed as number of child labour divided by the total number of household member. The regression result is shown in table-4. From this table we can see that in India the probability of child labour depend on female illiteracy and the per capita land holding and also the per capita consumption expenditure. The probability of child labour is found to be negatively associated with the per capita land holdings. That means when per capita land holding increases the incidence child labour decreases. This is true for both for India and West Bengal. Consumption expenditure and the per capita land holding which are proxy variables for household economic status play an important role for determining the incidence of child labour. It is interesting to note that the coefficient of land is negative but the coefficient of squared land is positive. This implies as child labour decreases with the increases in land but the rate of decreases is lower as the per capita land holding increases. Literature claims the inverted U shaped relationship between

child labour and the availability of per capita land holding (Basu et al., q2007). However the empirical relationship as we derived in our statistical estimation contradicts with the inverted U shaped hypothesis, instead justified the U shaped relationship between the incidence of child labour and the per capita land holdings. In fact, the relationship between the land holdings and the incidence of child labour can be explained with the help of two opposite effects namely income and substitution effect. An increase of quantity of land leads to increase the productivity of land due to scale effect. This increase in production has the implication to the incidence of child labour through income effect and substitution effect. The income effect leads to decrease the child labour time due to increase in the wealth. Contrary, in the absence of labour market, the higher marginal productivity creates strong incentive to work. Thus substitution effect leads to increase the incidence of child labour. In the case of land poor household substitution effect appears to be less than the income effect. This leads to decline the incidence of child labour with the increase of land holding. In the Contrary, for land rich household the income effect is smaller than substitution effect, and this leads to decrease the incidence of child labour with the increase of land holding.

SECTION-IV

Conclusion

The child labour exists in India not only in alarming magnitude, but also in great complexity. In Bihar, Orissa, a large amount of children worked. The district wise picture of West Bengal reveals the fact that there is a wide inter district variation among the prevalence of child labour. The percentage of child labour is highest in Uttar Dinajpur and lowest in the Bankura. The incidence of child labour depends on a number of the socio economic and demographic variables. In India and also in West Bengal, the prevalence of child labour is mainly dependent on the economic status of the household which is measured by the per capita land holding. When per capita land holding increases child labour decreases, but the rate of reduction is lower with the increase in per capita land holding. So our result establishes the argument that the extent of poverty does not necessarily explain the incidence of child labour.

The labour market imperfection might have a greater role to play in explaining the incidence of child labour. The Lack of human capital acts as a promotional agent on the incidence of child labour in India and also for West Bengal.

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Appendix Table 1(A). Correlation matrix

	Probability Of child labour	Female illiterate	Female headed household	Per capita consumption expenditure	Per capita consumption Expenditure square	Backward population	Tobacco expenditure	Land	Land square
Probability Of child labour	1.00								
Female illiterate	0.06	1.00							
Female headed household	0.01	0.00	1.00						
Per capita consumption expenditure	-0.07	-0.01	-0.02	1.00					
Per capita consumption Expenditure square	-0.02	0.00	-0.01	0.87	1.00				
Backward population	-0.02	-0.03	0.02	-0.03	-0.02	1.00			
Tobacco expenditure	0.03	0.02	0.02	-0.11	-0.03	0.02	1.00		
Land	-0.10	-0.06	-0.02	0.18	0.12	-0.02	-0.09	1.00	
Land square	-0.04	-0.03	-0.01	0.18	0.15	-0.03	-0.06	0.87	1.00

Source: NSSO-64th Round