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Toiling Children in India: The Gender Dimension

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Abstract

Child labour in several low income households is rather pursued for gaining experience and at times for meagre incomes, which are possibly spent on household food expenditure. Though the contribution made by the child labour to the overall wellbeing does not turn out to be substantial, without child labour these households would have been much worse off than the households which can afford not to have child labour. The probability of working is higher for a male child compared to a girl child. This is because the girl children are often engaged in household activities and even when they are engaged in income earning jobs they are shown as helpers. Parents' income as such may not be having a positive impact on child's education

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rather it is the educational level of the parents which matters in determining whether the child would go to school and continue her/his education. To substantiate the gender bias, the probability of falling ill among the girl children is found to be higher compared to the boys. Parents' educational attainments beyond a certain level again tend to reduce the probability of falling ill.

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1. Introduction

Issues relating to child labour are of serious concern both from social and humanitarian point of view. While some of the households find it profitable to send their children to the labour market or engage them in the family enterprises to augment income, from the children's and the nation's point of view there is a tremendous loss in terms of human capital formation. However, sending children to school has been discouraged further by the fact that the quality of education available for the children from low income households is poor. The rate of return on education is low and it does not add to the future prospects of yielding higher incomes. Secondly it involves not only an immediate loss of income to the household but also the experience with which the child at a later stage could experience upward mobility after entering the labour market in a full-fledged manner. Unless it is quality education or higher levels of skill formation which enhances directly the future job market prospect, from the point of view of a typical low income household child education is not profitable. But then issues relating to decent wages, nature of work and behaviour mitigated by the employers to the child labour at the work place are of serious concern. In particular, the girl child is in a more vulnerable position in the labour market as certain types of exploitation causes substantial deterioration to her social standing irrespective of the social strata she may belong to. In this paper we try to assess the incidence of child labour, particularly among the girl children, and the labour market discrimination that a girl child faces relative to her male counterpart. Since explicit reporting of child labour is rather a sensitive issue we need to employ certain indirect criteria to capture the phenomenon carefully.

Gender dimension of child labour problem has been less explored within the child labour research. Moreover, while differential status of girls and boys with respect to health, nutrition and education has been relatively well written, not much is known about the working girl (Burra 1995). A seminal work by Burra (1995, 2005) states that the major reason for this paucity of research is the invisibility of girl workers who work mostly at home unlike boys working in workshops and factories. An argument to rationalise this lack of interests in girl

workers purports that it is male child workers who suffer from blunt exploitation through their work in factories, mines and other hazardous employments. Also because of this invisibility, even gender sensitive researchers who questioned the definition of work and highlighted the earlier overlooked adult women's work tend to miss the contribution by girl child to the work of adult women (Burra 1995, 2005).

A girl child in low income households in general receives less education, food and health facility compared to her male siblings. Besides the gendered discrimination against girl children, there is little noticed relationship between mother's work and girl child workers. If the mother is employed, the consumption inequality may be less pronounced but whether her probability of joining a school would also increase or not depends on the nature of activity the mother is engaged in and the magnitude of her remunerations. For example, if the mother is engaged as domestic maid it is quite likely that the daughter engages herself in pursuing household activities and/or helps her mother in remunerative jobs outside home. Similarly among the home based workers and in the small enterprises when women take an active role, the probability of girl children working as helpers is very high. Since some of these activities do not contribute to skill formation, the income differences across sexes become more pronounced in the future years and thus gender inequality persists - rather gets aggravated.

Other than the possibilities of physical exploitation of the girl child labour in the job market mental harassments and financial cuts are more frequently followed compared to their male peer group though in several jobs the male child labour is equally vulnerable and subjected to inhuman and intense work pressure. From the employers' point of view engaging child labour is profitable as it helps minimise labour cost substantially. Though there may not be perceptible differences in terms of productivity between the adult worker and the child labour, the variations in remunerations are often sizeable. Besides, there are activities which the adults do not find profitable to be engaged in or alternative earning possibilities exist for them. On the other hand, for the child workers the options are limited and compulsions are more propelling. From this point of view segmentation seems to exist in the labour market: the labour market for the adults and that for the children are two clear-cut entities though

possibilities of overlaps cannot be ruled out. Hence, it is not the competition from the adults that reduces the wage rate for the child labour, it is rather completely a buyers (employers) market enforcing the rule of 'take it or remain unemployed'. Similar kind of segmentation exists between male and girl child labour: certain jobs are reserved for male children and so is the case for girl children. Embroidery work, jewellery making, cleaning and dusting are some of the activities which are performed mostly by girl children.

Though much of the literature argued that the accessibility of the mother to economic opportunities tends to improve the girl child's access to education and well-being, one may oppose this view by bringing in the quality of work. Women who are employed in low quality jobs with meagre earnings are most likely to have their daughters employed in similar activities. In such situations with increased household income, in case both the parents are working, the probability of the son being sent to school may improve. Hence, unless women are engaged more extensively in skilled jobs with higher earnings, the daughters end up helping the mothers either explicitly or implicitly, in the household work and/or pursuing remunerative work. We hope to capture some of this in terms of parents' education.

The paper is structured as follows. The following section delineates broad patterns relating to child employment. Section 3 focuses on the determinants of child labour and wellbeing. Section 4 summarises. The study is largely based on the data drawn from the slum survey (2006-07) in four cities in India namely, Jaipur, Ludhiana, Mathura and Ujjain, under the project on urban poverty sponsored by the UNDP-Government of India (GOI).

2. Broad Patterns Relating to Child Employment

Census data is indicative of a decline in the absolute number of main workers in the age group 5-14 (the incidence in that age group declined from 4.3 percent in 1991 to 2.3 percent in 2001). But this could be indicative of increasing marginalisation of child labour and/or aversion towards reporting child labour explicitly as the awareness about the illegality issue in employing child labour has increased visibly. In this paper while using the survey data of the

slum households conducted in four cities in India under the UNDP-GOI project on urban poverty, we bear in mind some of these limitations and try to estimate child labour by employing certain indirect methods. On the other hand, keeping in view certain stylised facts about child labour, we look for their empirical support. On the whole, the study tries to bring out the underlying factors that explain child labour and the discrimination if any of the girl child relative to her male counterpart. In the low income households whether the incidence of child labour is dependent of the social category that a particular household belongs to is an important question and how it impinges on the gender composition of the child labour is even a more critical issue.

Based on the slum survey conducted in four cities in India we noted that among the children in the age group, 5 to 14 only 4 per cent reported to be working either solely or pursuing the activity along with schooling. This proportion of child labour is more or less similar to those derived from NSS data 1999-00 (3.8%) as well as National Family Health Survey 2, 1998-99 (4%), cited in Dev (2004). On the other hand, more than three-quarters of the children are found to be school-going, and not working. While this is quite unbelievable, more surprising is the percentage of children (around 20 per cent) who neither have been going to school nor working or so-called 'nowhere children' coined by Chaudhri (1997). There has been a debate regarding what constitute child labour. Lieten (2002) argued that all out-of-school children should not be categorised as child labour. He calls for the need of differentiation between 'child labour' and 'child work', the latter refers to primarily standard household work. His distinction is based on the idea that as long as such work does not interfere with a sound development of the child, or it may even be beneficial for the child, it is child work or work performed during a standard process of socialisation, not child labour (Lieten 2002). Basically, the international organizations such as the ILO and the World Bank take the similar distinction and it is child labour based on this narrow definition which they are concerned about. To the contrary, others, mostly child rights activists are of the view that there should not be any differentiation between child labour and child work and that all categories of children who are out of school should be considered either child labourers or

potential child labourers (Burra 2005). The broader definition of child labour leads to the figure of 100 million working children, which is ten times more than that based on the narrower definition (Lieten 2002).

Given the rising awareness about laws against child labour and increasing campaign for schooling, households are careful enough not to report child labour explicitly. Particularly these 20 per cent are most likely to be engaged in economic activity and among them the girl children have a higher probability of working as helpers in home-based activities or own account enterprises other than pursuing household jobs.

Besides the inclusion of 'nowhere children' into child labour, we have also added some part of school-goers into the category of child labour. We need to employ certain technique to identify among the school goers those who might have been pursuing some activity or the other. Other than employing such indirect indicators of identifying child labour one has to also develop certain indicators of gender discrimination in this category.

Presuming that the children not attending school and not being identified as workers in the survey are actually engaged in work, we have tried to identify the nature of their activity as per the activity of their parents. The male children's activities are taken to be the same as that of their fathers and the activities of the girls are determined as per their mothers' activities. Besides, we do not believe that nearly 75 per cent of the children are purely school-goers. Biggeri et.al. (2009) which studied child labour in industrial outworker households, particularly those engaged in *bidi*, incense stick and garment manufacturing in Uttar Pradesh, Karnataka, Tamil Nadu and Madhya Pradesh found that 11.5% of children aged 6 to 10 and 23.3% of aged 11 to 14 combined work and school. Some of our qualitative survey suggests that children combine household activity with schooling and more importantly many of them are not regular school-goers. Particularly the boys whose fathers are engaged in trade and sales or personal services are often engaged in similar activities even if they are enrolled in schools. Besides, in petty manufacturing enterprises, boys work as helpers to their fathers. Similar is the case with girl children who work closely with their mothers. Based on this reclassification of children we note that nearly 48 percent of the children are working even if

some of them may be enrolled in schools (Table 1). The occupational classification shows that around 43 per cent of the child workers are in sales/trade oriented activities. On the other hand 19 percent are engaged in manufacturing and repairing while 14 per cent are in personal services.

Table 1: Distribution of Children

	WCHILD	NSNW	SPSTPS	SPMANU	Total	% Distribution
Semi-professional	3	14	0	0	17	1.48
Sales & Trade	28	153	320	0	501	43.57
Personal Services	4	49	105	0	158	13.74
Manufacturing & Repair	35	46	0	134	215	18.70
Commercial & Security	2	5	0	0	7	0.61
Transport	2	77	0	0	79	6.87
Tailoring	4	20	0	0	24	2.09
Construction	0	42	0	0	42	3.65
Labour	10	70	0	0	80	6.96
Others	6	21	0	0	27	2.35
Column Total	94	497	425	134	1,150	100.00
% *	3.90	20.62	17.63	5.56	47.71	

Note: WCHILD=Working Children, NSNW= Neither Going to School Nor working, SPSTPS= Going to School and Parents Engaged in Sales, Trade and Personal Services and SPMANU= Going to School and Parents Engaged in Manufacturing

*The percentage figures have been calculated relative to the total children in the sample.

Source: Slum Survey (2006-07).

While a broad estimate of the magnitude of child labour could be generated indirectly it is quite difficult to determine their income. Only for those who reported explicitly as workers a limited amount of information could be gathered which indicates that most of the child workers are located in the low income class (Table 2). The number of girl children in various income classes is much less than the number of male children primarily because girls are engaged in unpaid work. In fact, this is an indicator of discrimination implying girl children's involvement in augmenting family income with no accessibility to the resources they earn. An explicit reporting of the income for a child is indeed a reflection of the due recognition of the work the child performs which in turn establishes the child's due share in the household

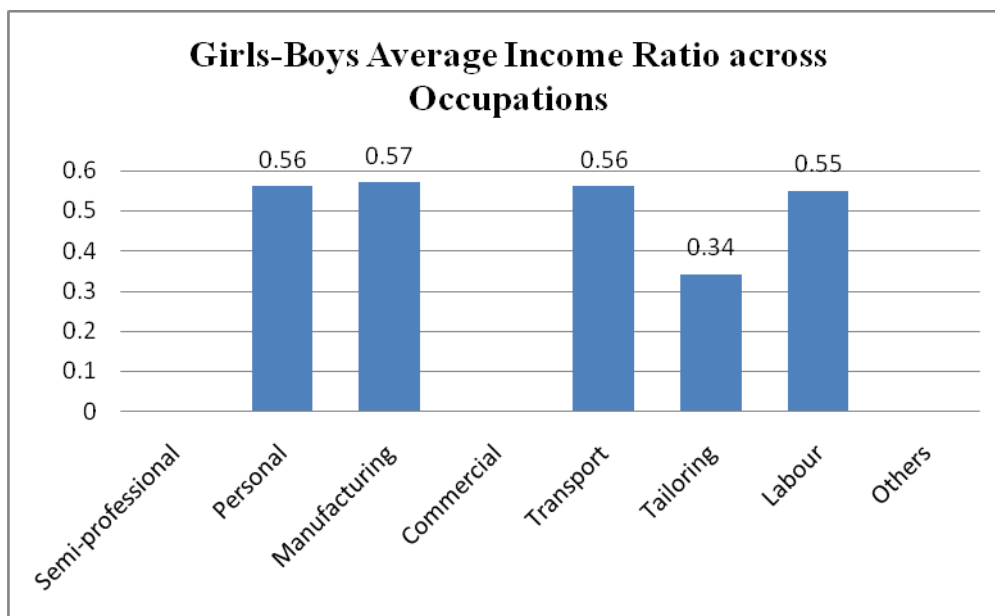
resources. The absence of this can be treated as denial of accessibility. From Figure 1 it may be further verified that the income earned by the girl children is substantially lower than the earnings of the boys. Except in trades and sales, girl children seem to be receiving only half of the earnings of their male counterparts.

Table 2: Gender-wise Distribution (%) of Child Workers in Each Income Class

Monthly Income Class	Boys	Girls	Boys	Girls
	Age Group 5 to 9		Age Group 10 to 14	
1-500	50.0	50.0	60.0	40.0
501-1500	33.3	66.6	61.9	38.1
1501-3000	100.0	0	83.3	16.7
3001-5000	0	0	0	0
5001-10000	0	100.0	0	0
10000<	0	0	0	0

Source: Slum Survey (2006-07).

Figure 1: Girls-Boys Average Income Ratio across Occupations



Note: Figures indicate the proportion of girls' income against that of boys. Transport includes related activities such as storage, communication etc.

Based on a number of variables the wellbeing index has been calculated for each of the sample households, using the factor analysis (see Mitra, 2010). The percentage of girl children in the bottom two size classes of the wellbeing index is larger than that of male children, revealing a higher incidence of vulnerability among the girl children. However, the proportions of working (direct and indirect) children and the non-working children located in the bottom two size classes of the well-being index are almost same for each of the two sexes (Table 3). Child labour in several low income households is rather pursued for gaining experience and at times meagre incomes, which are possibly spent on household food expenditure. Though the contribution made by the child labour to the overall wellbeing does not turn out to be substantial, without child labour these households would have been much worse off than the households which can afford not to have child labour.

Table 3: Wellbeing Index and Gender-wise Distribution of Children

Size Classes Based on Wellbeing Index	Not Working		WORK		WCHILD		NSNW		SPSTPS		SPMANU		Total (1+2)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
	1	1	2	2	3	3	4	4	5	5	6	6	7	7
Up to 200	50	63	63	57	4	0	36	51	18	3	5	3	113	120
201-400	347	451	354	253	27	24	121	150	168	43	38	36	701	704
401-600	177	203	224	121	23	6	70	75	96	34	35	6	401	324
601-1000	99	91	70	39	3	4	16	20	44	12	7	3	169	130
1001-1500	13	17	8	7	1	1	2	4	5	1	0	1	21	24
Above 1500	7	8	2	6	0	1	2	4	0	1	0	0	9	14
Total	693	833	721	483	58	36	247	304	331	94	85	49	1,414	1,316

Note: WORK= Direct and Indirect Estimate of Working Children WCHILD=Working Children, NSNW= Neither Going to School Nor working, SPSTPS= Going to School and Parents Engaged in Sales, Trade and Personal Services and SPMANU= Going to School and Parents Engaged in Manufacturing. Direct and Indirect Estimate of Working Children (Col.2=Col.3+Col.4+Col.5+Col.6)
Source: Slum Survey (2006-07).

The next issue relates to the nature of networks that the girl children use in contrast to the male children to access jobs. Munshi and Rosenzweig (2006) noted that girl children from slums were free from the local networks and hence they could take advantage of the English medium schools. After completing education they could get into jobs like nursing, teaching

etc. which resulted in considerable upward mobility. On the other hand, the male children mostly got into the local networks and landed up in stereotyped jobs, without being able to take advantage of the changes that are taking place around them. However, in our survey what we are able to observe is that girl children who start working at a young age mostly access jobs through their parents and thus the nature of activities which they land up in is not really different from what their parents pursue. On the other hand, the male children seem to be having a more diversified network which helps them access higher incomes. This however does not refute the observation made by Munshi and Rosenzweig (2006). Their findings relate to the children who go to schools and then later join the job market. On the contrary, our observation refers to the children who join the labour market at a tender age.

Mitra (2005) observed that women job seekers are confronted with four major constraints: (a) since they need to combine household work with income yielding jobs they cannot afford to travel long distances, (b) male members first decide the place of residence as per their convenience, (c) women then look for jobs in the vicinity through purely informal contacts and networks, which take the job seekers to activities in which the contact persons are already engaged, and (d) growth of specialized activities in different parts of the city reduces further the possibility of securing diverse activities in the neighbourhood.

Some of these points, particularly the first three indicating women's constrained choice, are indeed related to poor human capital formation and a low level of participation of women in the decision making process. Inadequate human capital in terms of education and skill often restricts productive absorption and thus compels a large number of women workers to pick up marginal activities. Inadequate earnings generate further deleterious effects in terms of health, housing, skill formation and overall well-being, which not only remain confined to the lifetime of the women workers but also become inter-generational. In other words, with poor human capital formation their entry to the labour market accentuates gender-inequality which becomes self-perpetuating due to the vicious circle of deprivation.

The similar argument applies in the case of girl children particularly among those who join the labour market at a young age without being able to acquire formal education. With

poor levels of human capital and networks operating through close relatives they land up in activities which are low paying and which involve limited possibilities of upward mobility. Unfortunately these processes are more damaging because the entire future job trajectory of a girl child gets trapped in a vicious circle.

3. Econometric Analysis

Two exercises have been carried out: one relates to factors which influence the participation of the children in the labour market and the other assesses the possible determinants of falling ill. In particular, we examine if parents' educational attainments reduce the probability of joining the labour market at an early age and also the probability of falling ill and secondly if children's participation in the labour market raises the probability of their suffering from certain common diseases.

The results (presented in Table 4) indicate that larger households have a lower probability of sending children to the labour market. Per capita income also shows a positive relationship with child being sent for work. These two sets of results appear to be counter-intuitive though it may not be so. In large households, the older children participate in the labour market while the younger ones pursue schooling. In relation to per capita income we may note that our sample comprises households from slums which are essentially characterized by low incomes. Unless the per capita income rises above a certain threshold limit it is unlikely to show a favourable impact on children's schooling.

The age of the household head has a negative effect on child work which is understandable. With a rise in the age of the household head – a proxy for experience in the job market - the child's participation in the labour market declines. Age of the child shows a positive association with job market participation implying that children in smaller age cohorts go to schools while the older children are more likely to drop out from schools. The opportunity cost of remaining in school is much higher for the older children and hence they are likely to discontinue education and participate in the labour market. Among those who

continue education the probability of working of course declines. The education specific dummies take negative coefficients, indicating a negative impact of education on probability of joining the labour market.

The probability of working is higher for a male child compared to a girl child. This is because the girl children are often engaged in household activities and even when they are engaged in income earning jobs they are shown as helpers. However, father's education does not seem to be a motivating factor in sending the child to school and not to the job market unless it is above certain minimum level (senior secondary). Since father's education and mother's education in these low income households show a strong correlation some of the education specific dummies for the father have been dropped. The finding related to parents' education is quite important particularly when we analyse it in the backdrop of the view that mother's income improves the children's educational, nutritional and health status. What we note that mother's income as such may not be having a positive impact on child's education. In fact, per capita income, which may be higher in households where both the parents are working, shows a positive effect on child labour, as mentioned above. Rather it is the educational level of the parents which matters in determining whether the child would go to school and continue her/his education. Needless to add that we have tried both the sets of dummies representing father's and mother's education. Since these two sets are highly correlated the set of dummies representing mother's education have got dropped automatically. In the Indian system it is most unlikely that the level of education of a woman will be more than that of her husband though the vice versa is widely prevalent. Hence, in the sample the rise in women's educational attainment is accompanied by a rise in male's educational attainment. Also, positive responses from women to some of the higher educational categories are too few or nil and thus the corresponding dummies have got excluded.

Studies such as Kurosaki et al (2006) in rural Andhra Pradesh found mother's education matters more than father's in reducing child labour and in increasing school enrolment. So is Beggeri et.al 2009. On the other hand, on the basis of NSS data (Round 50), Kambhampati

(2009) drew a finding that mother's education relative to fathers' decreased the probability of schooling of girls in households above the poverty line and boys in households below poverty line. Unfortunately we could not test the impact of father's and mother's education separately.

Table 4: Determinants of Child Participation in Labour Market
(Logit Model, MLE Estimates)

Variables	Coefficient	t-ratio	Marginal Effect	t-ratio
HHSIZE	-0.042	-2.1*	-0.01037	-2.1*
PER CAPITA INCOME	0.0003	2.95*	6.11E-05	2.95*
MIGRATION DUMMY	-0.037	-0.36	-0.00932	-0.36
HEAD'S AGE	-0.017	-3.35*	-0.00429	-3.35*
CHILD'S AGE	0.142	6.97*	0.03531	6.97*
CHILD'S GENDERDUM	0.991	10.27*	0.241437	10.69*
CHILD'S EDUDUM1	-3.469	-19.0*	-0.69062	-32.4*
CHILD'S EDUDUM2	-3.9395	-17.27*	-0.58745	-29.32*
CHILD'S EDUDUM3	-3.821	-7.97*	-0.45384	-27.31*
FATHER'S EDUDUM1	0.937	4.41*	0.229999	4.57*
FATHER'S EDUDUM2	0.941	4.43*	0.230569	4.62*
FATHER'S EDUDUM3	0.6439	2.97*	0.159489	3.03*
FATHER'S EDUDUM4	-0.1973	-0.8	-0.04868	-0.81
FATHER'S EDUDUM6	-0.5434	-2.16*	-0.13084	-2.27*
INTERCEPT	1.1865	3.21*		

Note: * denotes significance at 5 per cent level. The number of observation is 2730 and the chi-square value is 981.56; pseudo R2 =0.262

CHILD'S GENDERDUM takes a value of 0 for girls and 1 for boys; CHILD'S EDUDUM (i=1,2,3) represent dummies for primary, middle and class 10 and above respectively, with illiteracy as the comparison category. FATHER'S EDUDUM (i=1,2,3,4,5,6) represent dummies for illiteracy, primary, middle, secondary, senior secondary, above senior secondary respectively, with 'others' as the comparison category. MIGRATIONDUMMY takes a value of 0 for non-migrants and 1 for the migrants (those who have moved into the place of destination in last 20 years).

Two sets of logit equations have been estimated relating to falling ill in general and suffering from diarrhoea, in particular. As regards the probability of falling ill due to diarrhoea the working children do not show any difference with respect to the non-working children (Table 5). This is understandable because common diseases in slums due to poor sanitation affect

both the working and the non-working children with equal probability. Per capita income does not seem to be reducing the probability of falling ill possibly because those with relatively higher incomes are not able to access better health care or sanitation and other basic amenities within the slums - by definition slums do not have such facilities adequately. On the other hand, incomes are not high enough to help them shift out of the slums and access these facilities.

Table 5: Probability of Suffering from Diarrhea
(Logit Model, MLE Estimates)

Variables	Coefficient	t-ratio	Marginal Effect	t-ratio
CHILDWORKDUM	-0.21	-1.01	-0.01	-1.02
HHSIZE	-0.07	-1.68**	0.001	-1.70**
PER CAPITA INCOME	0.00	0.16	0.001	0.16
MIGRATION DUMMY	-0.04	-0.22	0.001	-0.23
HEAD'S AGE	-0.02	-1.68**	0.001	-1.70**
CHILD'S AGE	-0.02	-0.63	0.001	-0.63
CHILD'S GENDER	-0.22	-1.31*	-0.01	-1.30*
CHILD'S EDUDUM1	-0.28	-1.12	-0.01	-1.08
CHILD'S EDUDUM2	-0.04	-0.11	0.001	-0.11
FATHER'S EDUDUM1	0.17	0.46	0.01	0.45
FATHER'S EDUDUM2	-0.07	-0.18	0.001	-0.18
FATHER'S EDUDUM3	-0.01	-0.04	0.001	-0.04
FATHER'S EDUDUM4	-0.30	-0.70	-0.01	-0.78
FATHER'S EDUDUM6	-0.35	-1.3*	-0.02	-1.3*
INTERCEPT	-1.05	-1.68**		

Note: ** and * represent significance at 10 and 20 per cent levels respectively. The number of observation is 2702 and the chi-square value is 19.01. CHILDWORKDUM takes a value of 0 for non-working children and 1 for those who are working. CHILD'S GENDER takes a value of 0 for girls and 1 for boys; CHILD'S EDUDUM (i=1,2,3) represent dummies for primary, middle and class 10 and above respectively, with illiteracy as the comparison category. FATHER'S EDUDUM (i=1,2,3,4,5,6) represent dummies for illiteracy, primary, middle, secondary, senior secondary, above senior secondary respectively, with 'others' as the comparison category. MIGRATIONDUMMY takes a value of 0 for non-migrants and 1 for the migrants (those who have moved into the place of destination in last 20 years). Some of the dummies have been dropped to avoid singularity of the matrix.

Table 6: Probability of Falling Ill (Logit Model, MLE Estimates)

	Coefficient	t-ratio	dy/dx	t-ratio
CHILDWORKDUM	-0.01	-0.03	0.001	-0.03
HHSIZE	-0.08	-2.61***	-0.01	-2.64***
PERCAPITAINCOME	0.00	-0.16	0.001	-0.16
MIGRATION DUMMY	-0.05	-0.34	0.001	-0.34
HEAD'S AGE	-0.02	-2.34***	0.001	-2.35***
CHILD'S AGE	-0.05	-1.79**	0.001	-1.80**
CHILD'S GENDER	-0.19	-1.48*	-0.02	-1.48*
CHILD'S EDUDUM1	0.02	0.08	0.001	0.08
CHILD'S EDUDUM2	0.12	0.43	0.01	0.42
CHILD'S EDUDUM3	-0.17	-0.22	-0.01	-0.23
FATHER'S EDUDUM1	-0.10	-0.36	-0.01	-0.37
FATHER'S EDUDUM2	-0.37	-1.37*	-0.03	-1.47
FATHER'S EDUDUM3	-0.03	-0.11	0.00	-0.11
FATHER'S EDUDUM4	-0.25	-0.83	-0.02	-0.90
FATHER'S EDUDUM6	-0.50	-1.57*	-0.04	-1.85**
INTERCEPT	-0.14	-0.30		

Note: ***, ** and * represent significance at 5, 10 and 20 per cent levels respectively. The number of observation is 2730 and the chi-square value is 41.01.

For other notes see Table 5.

Though most of the variables are insignificant, the girl children show a higher probability of falling ill compared to the boys. With an increase in household size, the probability of falling ill declines possibly because in the context of low income households, the household size reduces the intensity of work per person. The large households tend to distribute the workload in a more efficient manner compared to the small households. As regards the age of the household head, it shows a negative effect on the probability of falling ill, implying that with increased experience parents are able to manage the health hazards better. Exposure to the labour market for longer duration which also means longer duration of stay at the place of destination makes them aware of health problems and ways-out. Besides, parents' educational attainments beyond a certain level again tend to reduce the probability of falling ill.

4. Conclusion

In this paper we noted that an explicit reporting of child labour is marginal. However, there are a number of reasons to believe that many children participate in the labour market and/or work along with parents as helpers in domestic as well as income earning activities. Our direct and indirect estimate of children who may be working is based on a number of characteristics including the parents' occupation etc.

Looking at the wellbeing index at the household level we note that the percentage of girl children in the bottom two size classes is larger than that of male children, revealing a higher incidence of vulnerability among the former. However, the proportions of working (direct and indirect) children and the non-working children located in the bottom two size classes of the well-being index are almost same for each of the two sexes. Though the contribution made by the child labour to the overall wellbeing does not turn out to be substantial, without child labour these households would have been much worse off than the households which can afford not to have child labour. We may conclude that child labour in several low income households is rather pursued for gaining experience and at times meagre incomes, which are possibly spent on household food expenditure.

As regards the determinants of child labour we note that larger households have a lower probability of sending children to the labour market. In large households, the older children participate in the labour market while the younger ones pursue schooling. Besides, our sample comprises households from slums which are essentially characterized by low incomes and in these households unless the per capita income rises above a certain threshold limit, it is unlikely to show a favourable impact on children's schooling.

With a rise in the age of the household head – a proxy for experience in the job market - the child's participation in the labour market declines. Age of the child shows a positive association with job market participation implying that children in smaller age cohorts go to schools while the older children are more likely to drop out from schools. Among those who continue education, the probability of working of course declines. The probability of working

is higher for a male child compared to a girl child because the girl children are often engaged in household activities and even when they are engaged in income earning jobs they are shown as helpers. However, parents' education does not seem to be a motivating factor in sending the child to school and not to the job market unless it is above certain threshold level (senior secondary).

As regards the probability of falling ill the working children do not show any difference with respect to the non-working children. This is understandable because common diseases in slums due to poor sanitation affect both the working and the non-working children with equal probability. Per capita income does not seem to be reducing the probability of falling ill possibly because those with relatively higher incomes are not able to access better health care or sanitation and other basic amenities within the slums - by definition slums do not have such facilities adequately. The girl children show a higher probability of falling ill compared to the boys. As regards the age of the household head it shows a negative effect on the probability of falling ill. With longer labour market experiences parents are able to take care of the children better. Besides, parents' educational attainments beyond a certain level again tend to reduce the probability of children falling ill.

References:

- Biggeri, Mario, Santosh Mehrotra and Ratna M Sudarshan. 2009. 'Child Labour in Industrial Outworker Households in India.' *Economic and Political Weekly*. Vol. 44. No.12. pp.47-56.
- Burra, Neera 2005. 'Crusading for Children in India's Informal Economy' *Economic and Political Weekly*. Vol. 40. No.49. pp.5199-5208.
- Burra, Neera. 1995. *Born to work: Child Labour in India*. Delhi: Oxford University Press..
- Chaudhri, D.P. 1997. 'Female Child Labour and Gender Bias in School Education in Indian States.' *Indian Journal of Labour Economics*. Vol.40. No.3. pp.493-505.
- Dev, S. Mahendra. 2004. 'Female Work Participation and Child Labour: Occupational Data from NFHS.' *Economic and Political Weekly*. Vol. 39. No.07, pp.736-744.
- Kambhampati, Uma Sarada. 2009. 'Child Schooling and Work Decisions in India : The Role of Household and Regional Gender Equity.' *Feminist Economics*. Vol.15. No.4., pp.77-112.
- Kurosai, Takashi et.al. 2006. 'Child Labor and School Enrollment in Rural India: Whose Education Matters? '. *The Developing Economies*. XLIV-4, pp. 440-64.
- Lieten, G.K. 2002. 'Child Labour in India: Disentangling Essence and Solutions'. *Economic and Political Weekly*. Vol. 37. No.52, pp.5190-5195.
- Mitra, Arup. 2005. 'Women in the Urban Informal Sector: Perpetuation of Meagre Earnings'. *Development and Change*. Vol. 36. No.2. pp.291–316.
- Mitra, Arup. 2010. 'Migration, Livelihood and Well-being: Evidence from Indian City Slums'. *Urban Studies*. Vol.47. No.7. pp.1371-1390.
- Munshi, K. and Rosenzweig, M. 2006. 'Traditional Institutions Meet the Modern World: Caste, Gender, and Schooling Choice in a Globalizing Economy'. *The American Economic Review*. Vol.96. No.4. pp. 1225–1252.

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