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Does Mid-Day Meal Scheme Reduce Incidence of Child Labour?

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Abstract

Provision of mid day meal or food for education subsidy can reduce supply of child labour. However the magnitude depends on educational unemployment rate prevails in the economy. As educational unemployment rate increases then effectiveness of the policy falls.

1. Introduction

In India, the problem of child labour is well recognized. There are varying estimates of the number of working children in the country due to differing concepts and methods of estimation. The 2001 national census estimates the number of working children at 12.6 million (out of a total of 210 million children aged 5-14 years), of whom 5.77 million are classified as 'main' workers and 6.88 million as 'marginal' workers. The share of workers of the country aged 5-14 years to the total workforce is 3.15 per cent.

Children are engaged in various types of work, including those that are classified as 'hazardous', i.e. harmful to the physical, emotional, or moral well-being of children. An estimated 2 million children work in hazardous industries.

However in order to meaningful study of the problem of child labour, it is necessary to understand the basic definition of child labour. A lot of controversies exist as to what constitutes the child labour, who are child labourer and what types of activities are regarded as laboring activities. A lot of controversies exist in all these fields. Broadly speaking, by child labour we mean the workers belonging to certain age group (not exceeding 18 years of age). The definition of workers includes any activities that may bring stress and stain to a child beyond her normal resistance capacity. Such jobs may be household chores, outside activities, helping parents and others.

Sociologists may argue that some types of laboring activities are essential as a socialization procedure. Some of them may be demand as apprentice activities for future earnings. All those logic are fine. But the question is, whether the laboring child is happy with these activities? Or does she strive for a life of schooling, friendship, play and mischief just like the non-labouring kids. It is this perspective that is important in defining child labour.

In spite of the definitional controversies the problem of child labour is well recognized, not only in India but also in all the developing economies. A number of policy initiatives and programs have been undertaken in this country over the last two decades with the basic objective of dealing with the problem of the rapidly increasing number of child workers. The formulation of a National Child Labour Policy, the enactment of the Child Labour (Prohibition and Regulation) Act 1986, The setting up of a Task Force on child labour, the adoption of the Convention on the Rights of the Child and so on have all formed a part of this process. Corresponding initiatives were taken in the related area of education where a New Education policy was formulated which incorporated a separate component for working children.

Recently, strong arguments for more investment in education quality have been made by, among others, the Probe Team (1999) and Dreze and Gandhi-Kingdon (2001). As for the food-for-education policy, it is already being piloted in many parts of the world. In Bangladesh, targeted families receive 15-20 kilograms of wheat per month if their children attend school (see, for example, Ravallion and Woodon 2000 for an analysis of the food-for-education program in Bangladesh). In 1996 over a million families were in the program.

However, in India this (mid day meal/ education subsidy) scheme was started in 1960s. The key objectives of the program are: protecting children from classroom hunger, *increasing school enrolment and attendance or reducing child labour*, improved socialization among children belonging to all castes, addressing malnutrition, and social empowerment through provision of employment to women. The scheme has a long history. It was introduced, first time, in a large scale in 1960s under the Chief Ministership of K. Kamaraj.The first major thrust came in 1982 when Chief Minister of Tamil Nadu, Dr. M. G. Ramachandran, decided to universalize the scheme for all children up to class 10. On November 28, 2001 the Supreme Court of India gave a landmark direction to government to provide cooked meals to all children (up to 14 years age) in all government and government assisted primary schools. The direction was resisted vigorously by State governments initially, but the program has become almost universal by 2005.

Among all the objectives of the policy the main objective is in italics above. In order to assess the impact of the policy on child labour, it is important to systematically understand the factors causing the problem. In this regard, there has been a recent surge of interest, at both the empirical and theoretical levels, in explaining the existence of child labour. A number of culprits have been identified, with abject poverty being one of the main ones (see, for example, Bhalotra 2003 and Ray 2000 for empirical evidence). Poverty affects the incidence of child labour via a number of channels. First, for the extremely poor, a child's contribution to family income can be an essential means for the survival of the entire family. Second, poverty makes the marginal utility of income very high and induces substitution away from non-labour activities such as leisure and education[13]. Third, because poverty is associated with a lack of collateral, poor households cannot borrow from the organized sector at reasonable interest rates. The lack of credit facilities makes it more costly for poor families to forgo present income by sending their children to school (see Ranjan 2001 and Jafarey and Lahiri 2002). Thus, poverty and lack of credit possibilities increase the incidence of child labour and reduce the demand for education. In such a situation child labour can be reduced only by reducing schooling cost. However education has two types of costs-direct cost and opportunity cost. Direct cost of education can be reduced by providing free education[14] to all. The opportunity cost is the foregone income from the child[15]. That can be reduced only if there is provision of a mid day meal/education subsidy. Therefore mid day meal scheme should have a positive impact on reducing child labour through reducing opportunity cost of education[16].

Empirical studies have also stressed deficiencies on the supply side of the educational system. It has been found that the quality of primary education is extremely poor in many parts of the world where the incidence of child labour is high (see The Probe Team 1999 and Ray 2002)[17]. This supply-side problem not only makes the educational experience rather dull and uninteresting, but

[13] In Basu and Van (1998), low adult wages have a negative impact on children's leisure. In Jafarey and Lahiri (2002), low parental incomes lead to substitution away from child education.
[14] It includes education fee, school dress, book, pen etc.
[15] This part of income is a major share of total family income of poor households
[16] See Chaudhuri S.(2007), Jafarey and Lahiri (2005).
[17] In general, the role of elementary education in economic development has been emphasized by many; see, for example, Dreze and Sen (1995).

also leads to low returns from education (see Cohen and House 1994 and Saha and Sarkar 1999). This makes poor families less willing to invest in the education of their children.
With these, in most of the developing and under developed economies educated unemployment is a serious problem. Due to low level of development, shortage of capital, technological backwardness, scarcity of entrepreneurships, low level of infrastructures etc. manufacturing and service sector of the developing and underdeveloped economies are not well-developed; demand for skilled worker relative to supply is low. In such a situation I want to examine whether my policy variable i.e. provision of mid day meal can reduces child labour or not and how educated unemployment problem affect impact of this policy on child labour.

This paper is divided as follows: In section 2, I have derived the family supply function of child labour and section 3 contains the conclusion of the paper.

2. Derivation of family supply functions of child labour:

2.1: No Uncertainty in the Human Capital Market

I consider an economy with a two period-horizon, indexed by t = 1, 2 respectively. The economy produces a single good per period. Goods are labeled as 1 and 2 respectively, depending on period of production. The supply function of child labour by each working family is determined from its intertemporal utility maximizing behaviour. Let us consider a two period optimizing problem of the representative working family consisting of one adult member (the guardian) and a child. The guardian in the first period works in the adult labour market and earns a wage W_0.[18] In this period, he takes decision about his child's work effort and schooling. Work effort of the child is e where $e \in (0,1)$. Child sent out to work at the wage rate Wc. Non-existence of a market for loans against future earnings compels the parent to use income from child work to smooth out the family consumption[19]. Time not spent on working is spent in school[20]. Hence $(1-e)$ is the child's schooling[21]. The supply function of child labour by each working family is determined from its intertemporal utility maximizing behaviour.
Let us assume that government provides free education to all. Therefore direct cost of education is zero. I also assume that there are provisions for midday meals[22] and cash stipend for children attending school, the value of which is *b* per unit of child's time spent in school. So, e part of the child labour time earns the child wage, (Wc), in the first period and the unskilled adult wage (W_0) in the second period while (1-e) fraction earns *b* in the first period and the skilled wage (W_s) in

[18] W_0 can take two values W_s (skilled wage) and W (unskilled wage).
[19] There are informal credit markets in developing countries as a substitute to missing formal credit market, but they mainly deal with short-term loans. Poor households need long-term credit to be able to substitute for the foregone earnings of their children, which is missing in the developing countries. See for example, Baland and Robinson (2000), Jafery and Lahiri (2002), Ranjan (1999, 2001) in this context.
[20] This is a simplifying assumption that ignores the existence of missing child (non –labour and non-school goers).
[21] I do not model leisure explicitly. A child who does not go to school may not necessarily work but may spend the time on leisure activities. The empirical evidence seems to be inconclusive on this regard. Ravallion and Woodon (2000) find the food-for-education program in Bangladesh had a significant impact on school enrolment but no significant effect on child labour. Dreze and Gandhi-Kingdon (2001), on the other hand, find that in India there is a significant negative correlation between child labour and school enrolment. In any case, if I assume that the family takes the opportunity cost of leisure as the wages for the uneducated, I could combine child labour and leisure into one variable. However, for expositional convenience, I ignore the presence of leisure in my discussion.
[22] I ignore the impact of financing mid day meal or I may assume that it is financed by some international agency.

the second period[23]. I also assume that Wc>b, otherwise no children will be sent out to work. In the presence of positive return on education, Ws is greater than W. In the second period, the guardian earns nothing and lives on the income he receives from his child who has become an adult worker by this time.

It is assumed that parent cares only about the lifetime family consumption and does not attach any value to the child's leisure. The utility is therefore a function of real consumption levels in the two periods (1and 2). For algebraic simplicity I assume a logarithmic utility function with unitary intertemporal elasticity of substitution and I also assume that all the wages and value of mid day meal/educational subsidy are measured on real terms[24].

$$V = \log C_1 + \beta \log C_2 \qquad (1)$$

Where β is time discount factor.

The first period's consumption (C1*)* consists of wage income of the parent and wage income of the working children and a value of mid day meal (b). So I have

$$C1 = W_O + eWc + (1-e)b \qquad (2)$$

The second period's consumption (C2) can be thought of as the sum of skilled wage income of educated adult (schooled in the first period) workers and unskilled wage income of uneducated adult labourers (worked in the first period). Therefore, C_2 is given as follows:

$$C2 = eW + (1-e)Ws \qquad (3)$$

As I assume that government provides free education to all therefore cost of education is the opportunity cost in terms of forgone earnings of children.

The guardian maximizes the lifetime utility (Equation (1)) with respect to *e* and subject to (2) and (3). Maximization gives the following first-order condition.

$$\frac{(W_c - b)}{\{W_0 + eW_c + (1-e)b\}} = \frac{\beta(W_s - W)}{eW + (1-e)W_s} \qquad (4)$$

Solving e from (4) we have,

$$e = \frac{W_s}{(1+\beta)(W_s - W)} - \frac{\beta(W_0 + b)}{(1+\beta)(W_c - b)} \qquad (5)$$

The properties of the child labour supply function, given by (5) are as follows. An increase in current income W_0, (income from non-child labour source) raises both*C*1 and C2 and hence lowers e through a positive income effect. An increase in the child wage rate implies an increase in the opportunity cost of education and hence leads to more child labour supply (i.e. less schooling). Any changes in skilled and/or unskilled wage affect the return to education and therefore influence the guardian's decision regarding allocation of his children between education and work. For example, an increase in skilled wage (Ws*)* or a decrease in unskilled wage (W) will make education more attractive and raises the number of school-going children from each family thereby lowering the supply of child labour by the household. Last but not least, provision of mid

[23] Assuming that job market is certain, that is securing a skilled wage by the skilled worker is certain in the second period.
[24] This assumption is made only to avoid impact of price change.

day meal b (real value) decreases the child's work effort by decreasing opportunity cost of child's schooling.

In the above analysis I assume that securing a skilled wage by the skilled worker is certain, i.e. probability to get a skilled wage by the skilled worker is equal to one[25]. However in the developing and under developed economies this condition is most often not hold due to different reasons such as unbalanced development, shortage of capital, technological backwardness, scarcity of entrepreneurships, low level of infrastructures etc. As manufacturing and service sector of the developing and underdeveloped economies are not well-developed, demand for skilled worker relative to supply is low. That results educated unemployment. This is a great problem in all the economies, at least in all the developing and underdeveloped economies. In such a situation I want to examine whether my policy variable i.e. provision of mid day meal can reduces child labour or not.

2.2 Uncertainty in Human Capital (HC) Market

If HC market is not certain then results of the model slightly change. Equation (1) and (2) remains same. As equation (1) is the utility function and equation (2) is the consumption in the first period. However all the remaining equations will change. Now I write all the equations in the changing scenario. The utility function remains same, shown in equation (1*)

$$V = \log C_1 + \beta \log C_2 \qquad (1^*)$$

$$C1 = W_O + eWc + (1-e)b \qquad (2^*)$$

Equation (2*) indicates consumption of the first period, which is independent of human capital market.

If HC market is uncertain then some of the skilled worker not get skilled wage. Those skilled worker who can not secure a skilled wage come to the unskilled/informal sector and receive an unskilled, lower than skilled wage, wage. Therefore if p is the probability/proportion of securing a skilled wage by the skilled worker then equation (3) will change to equation (3*), given below.

$$C2 = eW + p(1-e)Ws + (1-p)(1-e)W \qquad (3^*)$$

As earlier, parent maximizes (1*) subject to (2*) and (3*). Maximization gives the following first order condition.

$$\frac{(W_c - b)}{\{W_0 + eW_c + (1-e)b\}} = \frac{\beta p(W_s - W)}{eW + (1-e)\{pW_s + (1-p)W\}} \qquad (4^*)$$

Solving e from equation (4*) I have the child's work effort/labour supply function of the family, shown in equation (5*).

$$e = \frac{1}{1+\beta}\left\{1 + \frac{W}{p(W_s - W)}\right\} - \frac{\beta}{1+\beta}\frac{(W_0 + b)}{(W_c - b)} \qquad (5^*)$$

Equation (5*) is the general form of the child's work effort supply function of the family. It is noted that if p=1 then equation (5*) becomes equation (5).

[25] If probability of getting a skilled wage by the skilled worker is one then we may call this as certain/perfect human capital market.

The properties of the child labour supply function, given by (5*) are same as equation (5). An increase in current income W_0, (income from non-child source) raises both*C*1 and C2 and hence lowers e through a positive income effect. An increase in the child wage rate implies an increase in the opportunity cost of education and hence leads to more child labour supply (i.e. less schooling). Any changes in skilled and/or unskilled wage affect the return to education and therefore influence the guardian's decision regarding allocation of his children between education and work. For example, an increase in skilled wage (Ws*)* or a decrease in unskilled wage (W) will make education more attractive and raises the number of school-going children from each family thereby lowering the supply of child labour by the household. Provision of mid day meal b (real value) decreases the child's work effort by decreasing opportunity cost of child's schooling. Lastly, most important variable here is p, i.e. probability of getting a skilled wage by the skilled workers. From equation (5*) it is seen that as this probability decreases child's labour supply increases. This may be due to a demonstration effect. Parents take decision about his/her child whether to send school or to labour market by observing/ collecting information, from his neighbouring areas, about the success rate of securing a skilled wage by the skilled worker. If this success rate is low enough then they think that sending a child to the labour market is better than sending a child to the school. That is positive income effect of mid day meal (that lowers child labour supply) is out way by the demonstration effect of uncertain HC market (that increases supply of child labour).

3. Conclusion:

From the above analysis it can be concluded that provision of mid day meal or food for education subsidy can reduce supply of child labour. However the extent by which child labour reduces is depends on educational unemployment rate prevails in the economy. As educational unemployment rate increases then effectiveness of the policy falls.

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