

The Role of Stigma Cost in Child Labor

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Abstract: *The nuisance of child labor in underdeveloped and developing countries is a matter of grave concern. Exposing children into a vast world of the labor market at a susceptible phase of life leads to cutting down on their education, loss of creation of human capital and never-ending bad days for the country as a whole. These unfortunate children grow up and enter into the formal labor markets as unskilled laborers, destined to earn abysmally low wages throughout their adulthood. This vicious cycle of illegal, yet forced child labor continues for generations. Hence, the study and an effective course of action in this regard are peremptory. This paper tries to establish a model-theoretic framework of child labor from the supply sided point of view. It tries to investigate the determinants of supply of child labor through the parent's problem of household time allocation for a child in the face of a trichotomy of working in the market, working at home, and study time. Assuming an altruistic attitude of parents, the paper solves a simple household utilization problem of family welfare, taking child labor in the household and markets as a constraint. It is established that the time allotted for child labor in both household and markets reduce significantly with the increase in adult income. The study further tries to analyze the effects of imposition of a socio-psychological stigma cost on the incidence of child labor. Finally, the paper discusses the various probable policy implementations which can be considered by the government either through direct abolition of child labor or by indirectly raising the stigma cost among masses.*

Keywords: Child Labor, Stigma Cost, Altruism, Leisure

JEL Classification: J13, J22, D64

1. Introduction

"It is the exploitation of childhood which constitutes the evil... most unbearable to the human heart. Serious work in social legislation begins always with the protection of children." (Albert Thomas, the first ILO Director)

The International Labor Organization (ILO) defines child labor as "as work that deprives children of their childhood, their potential, and their dignity, and that is harmful to physical and mental development." Child labor can take various forms, the most disturbing of which are: enslavement, separation from families, working in hazardous environments, etc. The ILO, in 2019 estimated a total number of 152 million child laborers even today. Child labor is prevalent in all possible sectors. However, the agricultural sector accounts for around 70% of child labor.

If the prevalence of child labor is seen as the only objective on the parent's behalf to maintain a subsistence level of family consumption, the definition of child labor becomes weak. Relaxing the case of parental greed to make their child work leads us to a crossroad where a direct solution is hard to find.

With society becoming more and more conscious of social issues and its vices, the most notable reaction among the masses is to ban child labor right away. Boycotting goods manufactured or assembled by children has been much talked about. Taking such bold steps may bring about a significant decline in the incidence of child labor. However, families with dire need of minimum wage to sustain shall be placed on their back foot as the number of wage earners would decline.

What people fail to realize is that certain forceful interventions may be counterproductive leading to newer problems in the short run. The paper thus takes a newer

look into the policy prescriptions that can be introduced to tackle this issue.

2. Literature Review

The literature related to this study has been quite extensive.

Basu & Van (1998) carried out a pioneering work based on the assumption of parental altruism towards the child's education. The general equilibrium model arising out of this assumption leads to a multiple equilibrium model: one where the child works and the other with high adult wage, with no compulsion for child labor. The model pointed at an analysis of fertility and population policy. It recommended a shift from large families to small families which shall not only make the smaller families better off but shall also influence the other families to take such steps.

In 1999, **Basu & Van** further extended their model in reply to Swinnerton and Roger's policy of redistribution as an effective tool to tackle child labor. It was concluded that in reality, there exists a general model of which the two pieces of literature are a polar extreme.

Basu (1999) in his paper: "Child labor: Cause, Consequence and Cure, with Remarks on International Labor Standards" brings to attention that the precise policy to be prescribed to fight child labor depends on the economic framework that we are dealing with. The paper is a great contribution to the idea of a policy mix through legal intervention and collaborative interventions.

Lopez-Calva (2002), were probably the first ones to incorporate the idea of stigma cost as a policy measure to fight child labor. Their model was based on the internalization of social norms- the violation of which was considered to be utility reducing.

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This paper tries to approach the problem by using social stigma as an effective instrument. We firstly make a simple model-theoretic framework to understand the incidence of child labor, their tendencies to sustain, increase or perish. We then move on to incorporate the element of stigma in the utility function which brings down the level of family's welfare. Lastly, policy recommendations are discussed based on the tool that has been developed.

3. A Simple Model on Child Labor

This basic model on child labor is based on understanding the household behavior towards children in respect to working at an adolescent age or below. Child labor can range from basic household work to intense industrial labor aimed at contributing to the family's income.

The results derived from the model lay on the foundation of very simple and obvious assumptions pertaining to human psychology under ordinary circumstances. These assumptions are essential in the sense that they form expository devices of this model and help to make the analysis tractable.

We start by considering an altruistic behavior of the parents towards their child's study time. In simple terms, parents are assumed to be non-greedy for the child's income. They prefer their child's education over labor, as an attempt towards the creation of human capital. A parent shall send their child to work only under trying budget constraints to maintain a basic subsistence level of family consumption.

We assume that there are N identical families with one child and one utility-maximizing adult (two parents). Parents are solely responsible for taking decisions on behalf of their children. We also do away with the possibility of any intra-household bargain.

Consumption of each member of the household is considered as:

$$\{(C, e) | C \geq 0, e \in [0, 1]\}, \text{--- (1)}$$

where variable c captures the consumption of each member. Variable e denotes the fraction of a day spent by a child is working. Thus, e is indicative of the intensity of child labor. It shall be noted that e is a fractional value and can lie anywhere from 0 to 1. 0 and 1 are extreme cases which are:

$e=0$ refers to the most likely event that the child does not work at all

$e=1$ is the most unlikely event at which the child spends all her day working as child labor. Although such an instance is impractical even for adult laborers in a real world, we assume the possibility of working the whole day to keep the model simple. It is also assumed that the adults always work, no matter what the market wage rate

is. Lastly, we presume that the child and adult consumption is the same.

The child's time constraint is formally established to set up a well-defined optimization problem in the upcoming part of the paper. A child divides her time between market work (M), work in household production (H) and education (L). Education is considered to be a luxurious good, though unethical if we abide by its definition. Further, the variable L is expected to capture the child's leisure (non-child labor work) as well as the time devoted to her education. Leisure has been clubbed with study time as both the elements react similarly to changes in the socioeconomic environment of poor households and can be thought of as a composite good.

The child's time constraint is given as:

$$(1 - e)L + e[H + M] = 24 \text{ --- (2)}$$

A child's typical day is divided between leisure and child labor which sums up to 24 (total hours of a day). The equation calculates total child labor as a summation of work done in household, non-revenue generating activities and market work. , as mentioned earlier, is the fraction of work spent in child labor. So in the constraint, if, indicates that a child devotes her whole day to education and labor. On the other extreme, shall mean and (the child spends all her day working).

The household consumption is now framed, which basically represents the objective function in this maximization problem.

The consumption function is:

$$C = Y + e[wM + f(H)]; \text{--- (3)}$$

$$f'(H) > 0, f''(H) < 0$$

The wage earned by the child from her market labor is w .

$f(H)$ is the extra-household consumption that results from a child spending a fraction of her time in household production. It is a non-marketable part of the household work. It is a small portion of the work that the child is made to do in rural/semi-urban areas of developing or under-developed countries, as a mandatory routine. This may include works like walking for miles to fetch water in arid regions, completing household chores, working at her parental farm etc. The final outcome of such work, in form of either goods or unaccountable services, is enjoyed by the whole family. Hence, forms a very important part of our model.

We now finally move on to the utility function of the family. The welfare of the child is considered to be. This depends on the time she spends in education or leisure activities. The child's well-being is assumed to be increasing in education, but at a diminishing rate.

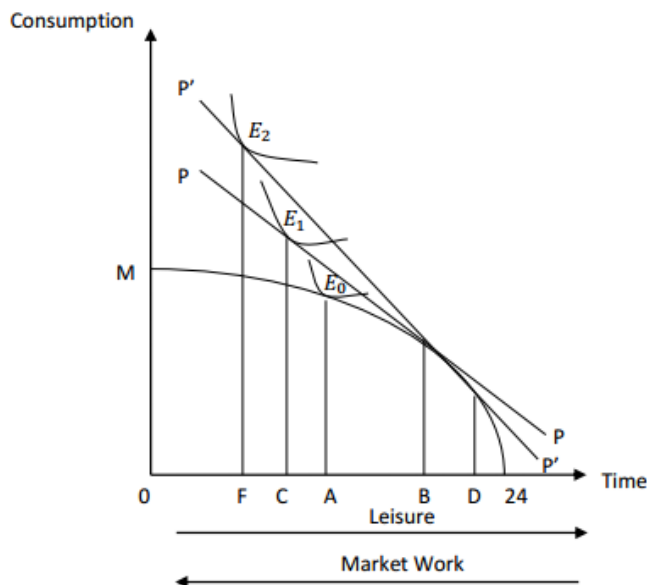
$$V'(L) > 0; V''(L) < 0$$

We assume that the household is rational towards income and a rise in wage of the child leads to an increase in child labor in the market, assuming the adult income is still low in order to meet the subsistence level of consumption of the economy. Analytically,

$$\frac{\partial M}{\partial w} > 0;$$

$$\frac{\partial H}{\partial w} < 0$$

The parents shall ask the child to work more in the market and reduce household work in case of a rise in her wage.



The parent's preferences are given by the twice differentiable utility function:

$$W(U(C), V(L)); W' > 0, W'' < 0$$

$$C = C(Y, M, H); V = V\left(\frac{24 - e[H + M]}{1 - e}\right)$$

Since in the given time set, consumption can be taken to be a complement of leisure, for simplicity we consider that the two components of the main determinant (time), i.e., leisure and consumption are additively separable. In simple words, marginal utility derived from the leisure is not dependent on the level of consumption, and vice versa.

The maximization problem shall be posited as follows:

$$\max_{H, M} W = U(C(Y, M, H)) + V\left(\frac{24 - e[H + M]}{1 - e}\right) \text{ ---- (4)}$$

From the first order conditions (Appendix 9.1), we get,

$$U' C_M = U' C_H, \text{ ---- (5)}$$

Where C_M denotes the change in consumption as a result of change in market work done by the child, C_H denotes

the change in consumption as a result of change in household work done by the child.

In order to preserve the order of the original set, we take a monotonic transformation of the utility functions in the following way:

$$U(C) = \ln C \text{ ---- (6)}$$

$$V(L) = \delta L; \text{ ---- (7)}$$

$$\delta > 0$$

We allow the preferences to be Quasi-Linear and take suitable forms. In the above equation, δ signifies the degree of altruism of the parent. Higher values of δ signify high altruism of the parent and subsequently higher levels of leisure time of the child.

Comparative Statics

We take into account 4 possible cases that may emerge from a child allocating her time between leisure and labor.

Case 1: The child works only in the market. We get:

$$\frac{dM}{dY} = -\frac{1}{ew} < 0 \text{ (Appendix 9.4)}$$

So as income of the parent rises, the time devoted by the child in market work falls.

Case 2: The child works only in her home, i.e., non revenue generating household work

$$\frac{dH}{dY} = -\frac{f'(H)}{cf''(H) - \{f'(H)\}^2} < 0 \text{ (Appendix 9.5)}$$

Again we note a fall in the time devoted to child labor with the rise in adult income.

Case 3: Considering the amount of leisure enjoyed by the child by ignoring the work done,

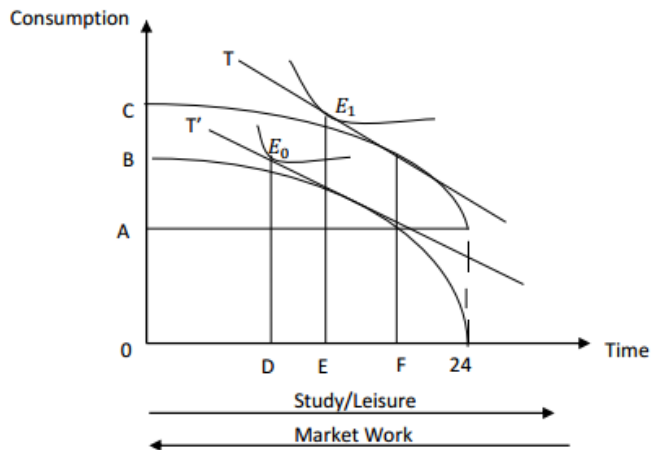
$$\frac{dL}{dY} = \frac{1}{w(1-e)} > 0 \text{ (Appendix 9.6)}$$

Leisure hours enjoyed by the child rise with an increase in adult income.

Case 4 (The realistic case): The child works both in household and market and also enjoys few hours of leisure:

$$\frac{dM}{dY} = -\frac{ef'(H) + e\{cf''(H) - f'(H)^2\}}{C^2} < 0$$

$$\frac{dH}{dY} = 0 \text{ (Appendix 9.7)}$$



An interesting result is noted. As was expected, labor hours spent by the child in market decreases with rise in adult income. Evidently, as the adult member of the household is able to meet the financial requirements of the family, the child does not have to work as before to raise her family income. What is interesting to note is the fact that a rise in adult income has no effect on the work hours of a child in household activities. A possible explanation might be that the mindset of the parents do not change much even after a rise in their wage. They shall stop sending the child to the market as their financial constraints are met; however they shall continue to take their help in household chores.

The Role of Stigma Cost:

Finally, we move to the main section of our paper after getting an idea about how parents react with respect to their child's labor-leisure allocation. We now impose a social stigma cost on the utility function. The imposition of a social stigma may be justified on two basic grounds:

- Based upon a general consensus reflecting a social and parental morality.
- Adults may realize that child labor as a custom would work as a depressant of adult wages in the economy and thus would affect the labor market conditions badly.

The utility function hence formed shall be:

$$W = U(C(Y, M, H)) + V\left(\frac{24 - e[H + M]}{1 - e}\right) - S(M)$$

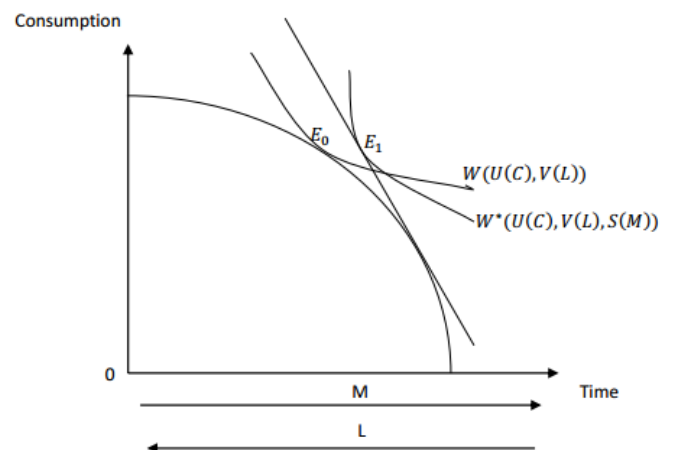
$S(M)$ is the cost associated with social stigma of the parents. Quite evidently, it has a negative impact on the utility function. From the first order conditions, we get:

$$U'(C_M - C_H) = S'(M)$$

$$\frac{\partial C}{\partial S} = 0; \frac{\partial V}{\partial S} > 0$$

The above equations imply that consumption of household does not change due to imposition of stigma cost. However, the leisure enjoyed by children rises since

parents become apprehensive to sending their children for work.



Policy Implications:

Reducing the incidence of child labor rests completely in the hands of the government. The government can play a very instrumental part in a non-paternalistic way. As has been cited out in this paper, stigma cost arising from child labor has a detrimental effect on its existence. The government can use this socio-psychological cost in a favorable way to arrest the growth of incidence of child labor.

To make people aware of their surroundings and conscious of their social well-being is a daunting task. This can be achieved through upliftment of the society into a well-educated and sophisticated one. Educated masses are more likely to suffer from a negative stigma cost and be embarrassed to send their children out for work.

Schemes like 'The Food for Education Program' (FFE) which handed over free monthly ration of food to poor families sending their child to education, would serve the purpose. The FFE program in Bangladesh was a huge success in terms of promoting high enrollment to primary schools, lesser dropout rates and improvement of the quality of education.

Social education classes must be made compulsory in schools which shall address the need for education to all. Such lessons would be vital for generations to come and incidence of moral hazards is definitely going to reduce in the long run.

A society with higher access to a better standard of life would chose to educate their kids in a pursuit of human capital formation. In the above context, government expenditure and subsidies are of utmost importance. Possible measures may include the provisions of:

- LPG Connections in households shall reduce the hardships faced during cooking. Children would not be relied upon for collecting woods, charcoal, etc and thus variable $\square$ in her time constraint reduces significantly.
- Electrification

- Building toilets
- Zero balance saving accounts
- Doling out free education and necessities to girl students under schemes like 'Kanyashree'

Further the government should intensify its continual mission to build up a general consensus among the less privileged portion of the population about the future adverse effects of sending children to work in the market, and ultimately help in building up a social stigma against the same.

Literacy campaigns often incorporate in them a conceptual idea of a long run trade-off between child labor and child education and the same feature may be vigorously emphasized. This in effect would raise the stigma cost borne by the parent.

4. Conclusion

The incidence of child labor is one of the most important focus areas of development economics. In an attempt to strive towards a better socio-economic future in developing countries, we should try to tackle this issue with specialized policies. This paper has been an attempt to understand the basis of this problem at the grass root level. Based on the nature of the problem, necessary policies have been discussed to combat the issue.

Appendix

9.1

$$\frac{\partial W}{\partial M} = U'c_M - \frac{e}{1-e} V'(L) = 0$$

$$\frac{\partial W}{\partial H} = U'c_H - \frac{e}{1-e} V'(L) = 0$$

9.2

$$\frac{\partial W}{\partial M} = \frac{1}{C} \left(\frac{\partial C}{\partial M} \right) - \delta \left(\frac{\partial L}{\partial M} \right)$$

$$\Rightarrow \frac{eW}{C} - \delta \left(\frac{e}{1-e} \right) = 0$$

$$\Rightarrow \frac{w}{C} - \frac{\delta}{1-e} = 0 \text{ ---- (8)}$$

$$\frac{\partial W}{\partial H} = \frac{1}{C} e f'(H) - \delta \left(\frac{e}{1-e} \right) = 0$$

$$\Rightarrow \frac{f'(H)}{C} - \frac{\delta}{1-e} = 0 \text{ ---- (9)}$$

From equations (8) and (9), we get, $w=f'(H)$

9.3

Totally differentiating:

The government of the developing countries should put hands together and bring about a change through careful inspection of their economy and take subsequent steps. Rather, than banning child labor outright or taking any kind of forceful measure which shall turn out to be counter-productive, an attempt should be made to encourage the masses leading them to boycott the issue.

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$$dW_M = \frac{\partial W_M}{\partial C} \frac{\partial C}{\partial L} dL + \frac{\partial W_M}{\partial C} \frac{\partial C}{\partial Y} dY + \frac{\partial W_M}{\partial C} \frac{\partial C}{\partial M} dM + \frac{\partial W_M}{\partial C} \frac{\partial C}{\partial H} dH \text{ ---- (10)}$$

$$dW_H = \frac{\partial W_H}{\partial C} \frac{\partial C}{\partial L} dL + \frac{\partial W_H}{\partial C} \frac{\partial C}{\partial Y} dY + \frac{\partial W_H}{\partial C} \frac{\partial C}{\partial M} dM + \frac{\partial W_H}{\partial C} \frac{\partial C}{\partial H} dH \text{ ---- (11)}$$

Plugging in the values of the partial derivatives in equations (10) and (11), we get,

$$0 = -\frac{w}{c^2} (-w(1-e)) dL + \left(-\frac{w}{c^2}\right) dY + \left(-\frac{w}{c^2}\right) (ew) dM + \left(-\frac{w}{c^2}\right) e f'(H) dH \text{ -- (12)}$$

$$0 = -\frac{f'(H)}{c^2} (-w(1-e)) dL + \left(-\frac{f'(H)}{c^2}\right) dY + \left(-\frac{f'(H)}{c^2}\right) (ew) dM + \left(-\frac{f'(H)}{c^2}\right) \frac{cf''(H) - [f'(H)]^2}{c^2} dH \text{ -- (13)}$$

9.4

$$\Rightarrow \frac{w}{c^2} dY = \left(-\frac{w}{c^2}\right) (ew) dM$$

$$\frac{dM}{dY} = -\frac{1}{ew} < 0$$

9.5

$$\frac{f'(H)}{c^2} dY = -\frac{cf''(H) - [f'(H)]^2}{c^2} dH$$

$$\frac{dH}{dY} = -\frac{f'(H)}{cf''(H) - [f'(H)]^2} < 0$$

$$\frac{f'(H)}{c^2} (w(1-e)) dL = \frac{f'(H)}{c^2} dY$$

$$\frac{dL}{dY} = \frac{1}{w(1-e)} > 0$$

9.6

$$-1 = ew \left(\frac{dM}{dY}\right) + e f'(H) \frac{dH}{dY}$$

$$-1 = ew \left(\frac{dM}{dY}\right) + e \left\{ \frac{cf''(H) - [f'(H)]^2}{c^2} \right\} \frac{dH}{dY}$$

$$|D| = \begin{vmatrix} ew & e f'(H) \\ ew & e \left\{ \frac{cf''(H) - [f'(H)]^2}{c^2} \right\} \end{vmatrix}$$

$$\Rightarrow ew \left[e \left\{ \frac{cf''(H) - [f'(H)]^2}{c^2} \right\} - e f'(H) \right]$$

Now if this term is 0,

$$e \{ cf''(H) - [f'(H)]^2 \} = e c^2 f'(H)$$

$$\Rightarrow C = \frac{f'(H)^2}{f''(H) - cf'(H)}$$

As C is a measure of consumption, $C > 0$ should satisfy. From the definition of $f(H)$, we know $f'(H) > 0$, $f''(H) < 0$. Thus, in the above equation, $C < 0$, is impossible. So $|D| \neq 0$

9.7

$$\frac{dM}{dY} = \frac{\begin{vmatrix} -1 & e \left\{ \frac{Cf''(H) - [f'(H)]^2}{C^2} \right\} \\ -1 & ef'(H) \end{vmatrix}}{|D|}$$

$$\frac{dM}{dY} = - \frac{ef'(H) + e\{Cf''(H) - f'(H)^2\}}{C^2} < 0$$

$$\frac{dH}{dY} = \begin{vmatrix} -1 & ew \\ -1 & ew \end{vmatrix} = 0$$

$$\frac{dH}{dY} = 0$$