Ban on Child Labor and Encourage to Education: A Counter Hypothesis of James A. Beckers Theory.(A Study on Khulna District, Bangladesh.)

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Abstract - Ban on child labor is a crucial issue as children are engaged in different hazardous works which are likely to have adverse effect on the child's safety, health and moral development, However, A ban on Child labor decreases children's income and increases parental transfer which increases children's welfare. Furthermore, earlier researchers have argued that ban on child labor has negative impact on fruitfulness and produces uncertain effect on education. But, in developing countries like Bangladesh a ban on child labor has no impact on richness as well as it generates no negative impact on encourage due to ban on child labor. Besides, it is found that if child labor in banned most of the parents are highly agreed to schooling their children by scarifying their as low as possible. Therefore, ban on child labor undoubtedly increases the literacy rate.

Key Words: Child labor, Encourage, Child Education, Altruism, Fruitfulness, Literacy Rate.

Chapter–1: Introduction:

Over 200 million children between 5 and 14 years of age are working worldwide. About 111 million children are in what has been termed as "hazardous work "which refers to forms of labor which are likely to have adverse effect on the child's safety, health and moral development. The Hazardous and worst forms of child labor are of universal concern, given the obvious harm that they inflict on the lives of these children and their possibilities for a hopeful future.

However, Child labor also has important economic implications. Most notable are the substantial future income losses that working children will incur because of the negative consequences working will have on their human capital, including their health and education. Since children are more likely to work and not to go to school if their parents worked as children, the economic losses associated with child labor and implications for poverty are often transmitted across generations.

Moreover, children work for different reasons. In some cases, families have a greater incentive to put children to work than to send them to school because the expected returns to education are less than the returns to work. In other causes, economic returns may favor school but families are unable to educate their children because of various obstacle or constraints.

In fact, the vast majority of child workers are involved in agricultural work, typically in family-run farms. In Bangladesh, where the incidence of child labor is highest, rural children are at least twice as likely to be working as urban children. A significant proportion of working children are enrolled in school as well, although there is a lot of evidence confirming the adverse impact of child labor on educational achievement.

Reflecting this complex reality, addressing child labor and,thus achieving universal education goals requires complex approaches. Effective policy responses depend "upon recognizing that most children work with or for their parents in economies where markets are underdeveloped and the legal and political infrastructure is thin"(Bhalotra and Tzannatos,2003:54).

Moreover, children may work because the economic returns to working may be greater returns they would be able to accrue in low-quality, inaccessible schools. Or families in vulnerable situations may put children to work because they need the immediate benefits of their labor due to lack of access to credit instruments or social safety nets. Banning child labor will very likely make the family poorer, thus lowering the welfare of the child. Appropriate labor

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markets outcomes are dependent on income level .For many families, the work of children is essential to the survival of the family. Subsidizing a mother's wages can have perverse results if the objective is to increase the formal education of her children. In the case of girls, work in the home frequently makes it possible for the mother to engage in market work. The opportunity cost to the family of formal education, then, is the wage earned by the mother, rather than the child's wage .A rise in the mother's wage can, at some income levels, increase female child labor in the home by drawing the mother into the work place. A similar relationship has been established between adult male wages and the homework of their male children. Poverty and child labor are inexorable linked: poor households are often forced to make difficult decisions about current consumption and future income when deciding the number of children to have, the amounts of educational inputs for their children and how much to them work. In making such decisions families are required to forecast the future returns to education. The actual returns to education, however, will likely depend on a number of factors, including the growth of the overall economy and inputs into the education infrastructure by the government .It is unrealistic expect perfect foresight on the part of poor households, so these households will likely extrapolate the future returns to education based on their own experiences.

Child labor in some cases is used to reduce risk associated with a poor harvest or other instability in family income. Legal restrictions against child labor or mandatory schooling are not likely to be effective in manipulating the behavior of a family close prohibiting or circumscribing child labor may actually lower the value of the child to the family.

Identifying inappropriate child labor is difficult. Some labor, particular apprenticeships, may be more education than work. Children may acquire marketable skills, even though reading, writing and arithmetic are not among them. In communities where the quality of formal education is extremely poor, work may provide higher valued skills than formal schooling.

Therefore, this study proves that eliminating child labor and putting these children into education in developing countries like Bangladesh has Ban on Child Labor and Encourage to Education.

1.2 Background of the Study:

The term child labor is defined by the United States Department of Labor, as the employment of children when they are too young to work on wages or when they are employed for jobs unsuitable or unsafe for them. Child labor is a pervasive problem throughout the world, especially in developing countries. Children work for a variety of reasons, the most important being poverty and the induced pressure upon them to escape from this plight.

In Bangladesh, most children under the age of 15, who constitute about 45% of the country's population, live below the poverty line. People are economically handicapped. They are not to fulfill the basic needs of their families. Bangladesh is mainly a country of agriculture. It is believed that more sons will be able to help their parents in agriculture and or in business in order to increase their welfare. It is also believed that at least a mail child is needed in a family to contain the generation. After a certain age parents are completely depended on their son's or daughter's income. Most of the families in Bangladesh are joined i.e. grandfather, grandmother, father, mother, sons and daughters live together in Bangladesh. About 33% of the populations are ignorant, 30% have primary education,20% have secondary or higher secondary education and rest of them higher education. For the above reasons, in Bangladesh ban on child labor may not have any impact on fertility but it may have certain effect on Child education.

Most of the parents tried their best to increase the welfare of their children. They are very much eager to live with their children and grand-children and it increase their welfare as well as their joys. As most of the population is ignorant, they don't think of the current situation but they think that they will get better return from their children in future. Again there are hardly parents in Bangladesh that want one child weather they are educated or not. Most of the educated parents want at least two children. Some of the parents not belief in scientific birth control policy. Some parents like to have mail child as well as female child.

The economic condition of Bangladesh is not good. Thousands or Millions of people are unemployed. Again

children's income is very much insignificant. It is not enough to impact on fertility. But it will certainly increase child education. Again, it is very much difficult for the Government to implement ban on child labor in developing countries. Only proper education, proper campaign, proper realization can control the birth rate.

As the unemployment rate is very high in Bangladesh if child labor is banned, most of the poor people would not be able to properly educate their children because of financial obstacle and certainly unemployment rate would increase. Poor people become poorer because they would not be able to get any financial help from their child due to ban on child labor rather they have to transfer substantial portion of their income to educate their children. On the contrary, Wealthier parents who in turn would be able to compete in the job market which certainly leads them to be much wealthier.

1.3 Objective of the Study:

The main objective of the study were to justify whether the ban on child labor has any impact on fruitfulness and whether it produces a certain effect on child education in developing countries like Bangladesh .The specific objectives of the study were:

- To measure the extent of parental altruism as well as filial altruism in Bangladesh that plays an important role to maximize parental utility.
- To identify the extent to which parents willingness in changing their earlier plan to have children due to ban on child labor.
- To identify parents perception in schooling their children due to ban on child labor.

1.4 Limitation of the Study:

The Study was undertaken in Khulna city which is located in the South-western region of Bangladesh. It is the third largest city in the country with 1.2 million inhabitants(Statistical Year Book of Bangladesh 2000).Child labor is found more or less everywhere in both urban and rural areas of Bangladesh. The study was, therefore, confined among the urban and rural households. The Study was carried out from January2013 to March 2013.

1.5 Review of Literature:

The economics literature is ambiguous on the desirability of a ban on child labor. However, Child labor is typically viewed as the result of some deeper problem in the country, and addressing child labor without solving the problem that leads to its occurrence can make children worse off. For example, Dessy and Pallage(2005) present an environment where, although child labor has a negative direct impact on children's wellbeing, it is the best available choice for children.

There is a lot of evidence confirming the adverse impact of child labor on educational attainment. A significant proportion of children are simultaneously working and enrolled in school. While the evidence on the effect of child labor on school enrolment is not very strong ,there is evidence of a strong negative effect on school attendance, test scores, and grade completion(Orazem and Gunnarsson,2003).Household decisions regarding children's activities are also affected by the relative returns to education, compared to returns from child labor activities(Ravaillon and Wodon,2000;Ilahi,2001).

Bonnet (1993)focuses on poverty as an explanation ,and this is also found to be important by Cartwright(1998)and Sakellariou and Lall(1998).Both Lavy (1996) AND Jensen and Nielsen (1997) find that transportation costs of schooling are important .Gertler and Glewwe(1990) refine this conclusion by investigating the willingness to pay for reducing the distance to school. They find that both the rich and the poor are willing to pay the price for reducing the distance to schools to less than one kilometer. Lavy(1996)finds some evidence of an effect of bad school quality on school attendance, although the effects are relatively small in magnitude.Bonnet(1993)argues that failure of the education system is an important explanation for the prevalence of child labor. When parents do not expect children to learn much in school, they decide to give them informal education in terms of work experience.

Gordon et al.(2004) mentioned that the incentives problem arises when the economic benefits of a child working will be greater than expected benefits of schooling. In these cases, then parents can be making economically rational decisions in sending their children to work. This situation in effect, where the ratio of the net returns to education relative to work is negative will typically arise where education is too costly or offers little benefit. High costs can refer to either direct or opportunity costs of education. Direct costs may be high because of access issues: for example, fees may be expensive or transportation may be costly because schools are far away. Opportunity costs may be high when Children are needed for nonschool activities that are critical for household welfare(e.g., helping with the harvest, fetching water).On the other side of the cost-benefit equation, the returns to education may be low because of quality issues such as a lack of teaching materials, poor curricula, or inadequately trained teachers.

Even when expected returns to education are favorable, and parents have an economic incentive to send their children to school, they might not be able to afford the current costs of schooling .Parents may be constrained from sending their children to school because of poverty or insurmountable short-term economic concerns. The direct costs of schooling may simply be unaffordable for

chronically poor families or for families that are in a situation of transitory poverty because of a shock(e.g., job loss of a parent, drought.etc).

In countries where child labor provides little or no opportunities for learning by doing, no law will emerge unless appropriately targeted poverty alleviation mechanisms are designed, in order to induce unskilled parents to allocate a positive fraction of child's time to schooling(Sylvain E.Dessy,2003).

In a word of perfect markets, parents could borrow against the future income gains from the higher human capital of their children to finance current education expenditures. However, such instruments are normally not available, especially for poor or otherwise vulnerable families lacking collateral. In fact, for some households, child labor constitutes the only mechanism for intertemporal allocation of resources.(i.e., using child labor to borrow from the future for present consumption).Imperfect labor markets may also pose constraints for households. Monitoring costs can make the employment of nonfamily members costly and lead households to use the labor of their own children as an alternative.

A growing theoretical literature points to the lack of access to credit as one of the main causes of the prevalence of child labor. For instance, Baland and Robinson (2000)and Ranjan (2001)find that inefficient child labor may arise in equilibrium as a result of credit constraints.

The adverse health and developmental effects of this labor on children including stunted growth and impaired learning as well know and documented. Their work is often hazardous and exposes them to great risk and occupational disease. In some countries the child morality just from pesticide poisoning in agriculture exceeds that of malaria, tetanus, diphtheria and other childhood diseases combined.

The denial of education to these children violates their most basic rights and also represents an enormous economic and social loss, in terms of reduced economic and citizenship potential to the countries in which these children live and work.

Nonetheless, it is sometimes objected that developing countries are too poor to take the measures that developed countries such as the United States have instituted to eliminate child labor. For example, an issue brief on child labor from the Heritage Foundation notes that "poor countries cannot necessarily afford such measures."

There is a substantial literature, pioneered by Basu and Van(1998) and skillfully summarized in section 6 of Basu (1999) suggesting that child-labor legislation may move the economy from a socially undesirable equilibrium.

In Baland and Robinson(2000),capital market imperfections do not allow altruistic parents to internalize the negative impact of child labor on children's human capital accumulation. A restriction on the amount of time allocated to work by children is suggested to reduce the resulting in silently high level of child labor. Finally,Rogers and Swinnerton(2002) advanced parents incomplete information on the type of work, safe or hazardous, their children as an argument for a ban on the worst forms of child labor.

Furthermore, the present study on "Ban on Child Labor and Encourage to Education:A Counter Hypothesis of James A. Beckers Theory.(A Study on Khulna District, Bangladesh.)" would be able to focus on this specific question whether developing countries like Bangladesh today can afford to regulate or ban on child labor by examining the impact on fruitfulness and encourage to education.

Chapter–2: Materials and Method:

2.1 The Basic Model:

The model has been developed by the models developed by Marie B.and James A.Robinson(2000),Basu andVan(1998),Feranda E.and Marie B(2006).The model consists of two periods=*1,2*.At the beginning of the first period there are L_p parent alive,who live for both periods. At the beginning of the first period they decide how many children to have, with each set of identical parents having n children .Children also live for both periods. In the first period parents decide how to allocate their children's unit time endowment between child labor and human capital accumulation. Parents work and supply labor in elastically, and I assume that each parents has A efficiency units of labor in each period. In *t=1*,parental labor supply is Al_P and the supply of child labor is $nL_pl_{c,}$ where $l_c \in [0,1]$ is the fraction of a child's time that is allocated to work .In *t=1*,parents control all income, including that earned by children. In *t=2*,children,now called adults, supply $nL_pk(1-l_c)$ units of efficiency labor where $k(1-l_c)$ are additional unit of human capital possessed by an adult who worked l_c unit of labor in period 1.The function k is twice continuously differentiable, strictly increasing, and strictly concave with *k(0)=1*(so that a child who spent all his time working in the first period still has a single efficiency unit the markets for young and old parental, child, and adult labor are all competitive with respective wages rates W_{P1},W_{P2},W_{C1} *and* W_{C2}(all wages rates are per unit of human capital).In this section I shall assume that firms have a linear technology so that profits are zero and let all wages be identical and set equal to one.

I assume that parents are endowed with a joint utility function defined over their own consumption of a single consumption (which is the numeraire in the economy with price normalized to unity), denote C_p^1 for *t=1,2*.Then parental utility is denoted as—

$W_P(C_p^1, A_p^2, \beta, W_C)=U(C_p^1)+U(C_P^2)+\beta Wc$----------(1)

Where, $U(C_p^1)$=utility function of parent at t=1

$U(C_P^2)$=utility function of parent at t=2

β =parental altruism,where,1> β>0

i.e. β is a parameter measuring the extent to which parents are altruistic.

Now let, $W_p = W_p^1 + W_p^2$ Where $W_p^1=U(C_p^1)$,is the total utility of parents in period 1

And $W_p^2 = U(C_P^2)+\beta W_c)$, is the total utility of parents in period 2.

Now ,children's utility function, in period 2,is defined as—

$W_C=V(C_c)+\lambda(U(C_P^2)+\beta W_c)$

or, $W_c=\frac{V(C_c)+\lambda U(C_P^2)}{1-\beta\lambda}$----------(2)

Where, λ=filial altruism,1>λ>0

i.e. λ is a parameter measuring the extent to which children are altruistic.

Putting equation (2) into equation (1) we get-

$W_p = U(C_p^1)+\frac{U(C_P^2)}{1-\beta\lambda}+\frac{\beta V(Cc)}{1-\beta\lambda}$ ----------(3)

Apart from choosing the time allocation of children, l_c, Parents can also decide to give them transfers of income in *t*=2,which we call bequests and denote by b≥0.They can also transfers of income between periods by saving ,denoted by s.

I assume that restricted to be non-negative. Also at period 2 children(adult)also transfer of their income to their parents, which we call filial transfer and is denoted by τ.

Parents. therefore, face the following budget constraints:

$C_p^1 = A+l_c-s$ in period 1.

$C_P^2 = A-b+s+\tau$ in period 2.

Children (adult)face the following budget constraint:

$C_c=K(1-l_c)+b-\tau$ in period 2.

Then parental utility function i.e. equation (3) becomes:

$W_p=U(A+l_c-s)+\frac{U(A-b+s-\tau)}{1-\beta\lambda}+\frac{\beta V(k(1-lc)+b-\tau)}{1-\beta\lambda}$ ----------(4)

Now assume that it cost α>0 units of income to have a child.In this case equation(4) becomes:

$W_p=U(A+nl_c-n\,\alpha-s)+\frac{U(A-nb+s+n\tau)}{1-\beta\lambda}+\frac{n\beta V(k(1-lc)+b-\tau)}{1-\beta\lambda}$ ---(5)

Now if parents income is fixed ,then the above function would clear choice of parents on fertility due to ban on child labor.Net effect due to ban on child labor are as follows:

- ✓ $U(A+nl_c-n\,\alpha-s)\rightarrow U(A-n\,\alpha-s)$,which implies that with increases of child(n)reduces parents utility in period 1.In this case parents utility will decrease sharply with increase of child (n).Because associated cost for having a children would increase. Due to ban on child labor parents generally tend to send their children to school in period 1 in order to maximize children's utility as well as their own utility in period 2.
- ✓ In period 2, parents utility mainly depends on the two factors β and λ which may differ from culture to culture.

2.2 Sampling and Data Acquisition Technique:

For acquiring data a questionnaire has been developed using Likert scale. For making decision or for comparison each scale has given a weight. In this study I have used 5

Strongly Agree(1)	Agree(2)	Undecided(3)	Disagree(4)	Strongly Disgree(5)

Each of the statement is developed in such a way so that it favors the attitude if it is strongly agreed or agreed and it disfavors the attitude if it is strongly disagreed or disagreed. Then the average mean value of the weighted average mean value of all of the statements has been used to make decision. If the average mean value is less than 3 then it is favorable to the attitude.

scale Likert scale weighted from 1 to 5.The weighted averages mean value for a particular statement will be calculated first. Then the average mean value of the total statements will be calculated to make decision about the attitude or hypothesis

A person has been selected from a family who mainly control the family. A questionnaire is developed (See Appendix-A) in such a way that each statement would be favorable to the hypothesis if the statement is strongly agreed or agreed and it would be unfavorable to the hypothesis if the statement is strongly disagreed or disagreed by the respondent.

The samples were taken randomly according to the following sample size determination table (Israel,1992)

Table1: Sample size for ±3%,±5%,±7%,±10% Precision Levels Where Confidence Level is 95% and P =5.

Size of population	Sample size (n) for precision(c) of:			
	±3%	±5%	±7%	±10%
500	a	222	145	83
600	a	240	152	86
700	a	255	158	88
800	a	267	163	89
900	a	277	166	90
1,000	a	285	169	91
2,000	714	333	185	95
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	959	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99
20,000	1,053	392	204	100
25,000	1,064	394	204	100
50,000	1,087	397	204	100
100,000	1,099	398	204	100
>100000	1,111	400	204	100

a=assumption of population is poor (Yamane,1967).The entire population should be sampled.

The population size is more than 100,000. So, according to the 'sample size determination table' at ±7% precision level,204 samples have been selected randomly from Khulna district. Samples are taken randomly from 5 regions of Khulna district as following:

	Name of the region				
	Khulna city corporation	Batiaghata Thana	Dumuria Thana	Paikgacha Thana	Koyra Thana
No.of Samples Taken	42	41	41	40	40

The weighted average mean value for a particular statement has been calculated by

$$WAMV=\frac{\sum XiWi}{N}$$

Where, x_i is the number of respondents for weight w_i

And N is the total number of respondents for the survey.

Suppose 20 respondents strongly agree with the statement,30 respondents agree with the statement,30 respondents agree with the statement,15 respondents agree with the statement and 5 respondents agree with the statement. Then weighted average mean value for the particular statement will be

$$WAMV=\frac{\sum x_i w_i}{N}=\frac{20\times1+30\times2+30\times3+15\times4+5\times5}{100}$$

=2.55

Which means that the statement is favorable to the attitude, as 2.55<3.00.

In the same way weighted average mean value for each individual statement will be calculated.

Then average mean for the attitude would be calculated as—

$$AMV=\frac{\sum_{i=1}^{n} WAMV_i}{n}$$

Where n is the total number of statement.

For example: if 5 statements, WAMV are respectively 3.00,2.55,2.26,3.20 and 1.50 then average mean value for the attitude would be

$$\frac{3.00+2.25+2.26+3.20+1.50}{5}=2.442$$

Which favor the attitude as it is less than 3.00.

This study based on secondary and primary data. The secondary data has been collected from various published papers, different books and articles on this issue. For

primary data 204 samples has been selected randomly from various regions in Khulna district.

Chapter–3: Analysis and Discussion:

3.1 Fertility Impact

It is foud that about 83% of the respondants strongly agreed not to change their earler plan to have n children although child lebour is banned. 45% and 37% respondants are respectively strongly agreed and agreed to have 2nd child although it is not easy to bear the cost of two child due to ban on child labor. About 95% and 99% of the respondants are strongly agreed respectively to show altruism to their parents and to show altruism to their children. About 98% oh the respondants strongly believe that, it is their responsibility to take care of their old parents. 67% of the repondants strongly believe that their children will take care of them when they become old.

The avove result indicate that due to ban on child labor most of the parents would not change their earliar plan to have n children which must decreases the parental utility in period I (mentioned in the model). This decreasing rate will increase with the increase of children (n).But it is also found that parental altruism and filial altruism is very much higher which must increase the parental utility in period 2 (mentioned in the model)

Testing on Hypothesis No 1:

Null hypothesis: There is no impact on fertility due to ban on child labor, i.e.

H_0 : **$\mu < 3$**

Alternative hypothesis: Their is negative impact on fertility due to ban on child labor,

i.e. H_A : $\mu > 3.00$

Table2: Calculation of standad deviation

Question No.	WAMV (X_i)	Mean value of WAMV ($\bar{x}$)	$\sigma = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n-1}}$
1	121	1.84	1.008808
2	3.08		
3	1.82		
4	1.05		
5	1.03		
6	1.02		
7	3.14		
8	1.03		
9	1.47		
10	3.51		

$$Z = \frac{\bar{x} - \mu_{H_0}}{\sqrt{\sigma/n}} = \frac{1.84 - 3.00}{\sqrt{1.0088/10}} = -3.636$$

At 5% level of significance the z value is less than 1.645 and hence the null hypothesis is accepted; i.e. ban on child labor has no impact on fertility which has been described in proposition 1.

Proposition 1. Ban on child labor has no impact on fertility in the devoloping countries like Bangladesh.

Proof: Parental utility (from equation 5) in period 1 is given by

$W_p^1 = U(A + nl_c - n\alpha - S)$----------(6)

i.e $W_p^1 = U(A - n\alpha - S)$----------(7) (if child labor is banned)

From equation (7), we find that parents utility in period 1 certainly decrease with the increase of child. In developing countries, capital market is imperfect, cutivable land is limited, thousands of people are unemployed. In these circumstances, scope of income from the child is limited and the child's income is insignificant.

So most of the parents have already taken plan to have n children. If child labor is banned it is not so bad for most of the parents because thousands/millions of people are already unemployed. If child labor is banned it is expected to have a substantial increase in adult labor income. So the above function should decrease parents' utility to some extant.

In period2, parental utility that function (from equation 5) is: $W_p^2 = \frac{U(A - nb + S + n\tau)}{1 - \beta\gamma} + \frac{n\beta V(K(1 - l_c) + b - \tau}{1 - \beta\gamma}$ ------(8)

Now, let assume that parental transfer b = filial transfer τ, then the equation (8) becomes- $W_p^2 = \frac{U(A + S)}{1 - \beta\gamma} + \frac{n\beta V(K(1 - l_c))}{1 - \beta\gamma}$

which mainly depends on λ and β.

If $\beta\lambda > \frac{1}{2}$, it will maximize the parental utility in period 2.

But in the 2nd period, the utility is increased because parental altruism λ, and filial alstruism β is very much high in Bangladesh.

From the above discussion it is found that parental utility will decreased in period 1 with the increase of child but in period 2 it increases with the increase of child as parental altruism as well as filial altruism is very high in Bangladesh. If capital market would be prefer, i.e. if every adult would be employed, then the parental utility in period 2 would be very greater. As capital market is not perfect in developing countries so ban on child labor has no impact on fertility. So, proposition 1 i proved.

3.2 Walfare Impact on Parents

In this case, assumed that child labor and adult labor are perfect substitiutes. A good equilibrium is one where wages are high and there is no child labor. A bad eqilibrium is one where wages are low and child labor exists. The existance of multiole equilibria may be good if child labor is banned. But if there is no existance multiple eqilibria then ban on child labor would decrease the welfare of parents. In developing countries like Bangladesh there is no perfect existance of multiple equilibria. So parents' welfare decrease if child labor is banned.

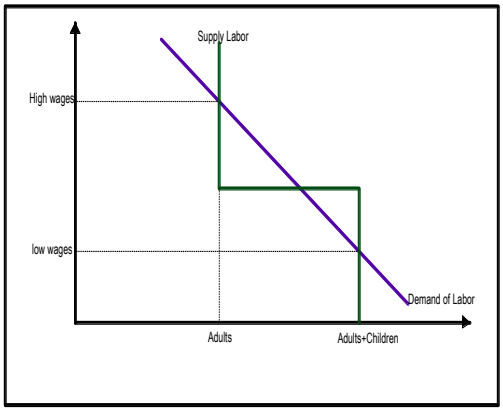

Figure 1: Multiple equilibria of demand and supply of adult and child labor

In figure 2, it is shown that in period 1 parents' welfare decrease sharply with the increase of child if capital market is perfect and child labor is banned. But it decreases less sharply if capital market is imperfect and child labor is banned. In Bangladesh, capital merket is not perfect. Therefore, due to ban on child labor parents welfare decreases less sharply with the increase of child.

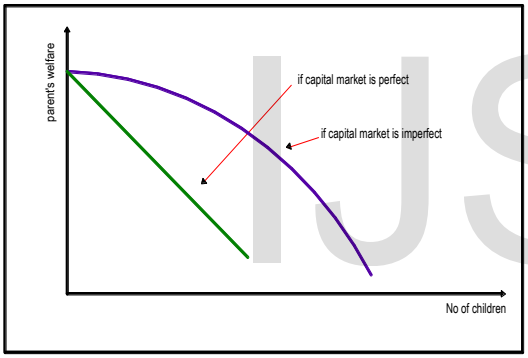

Figure 2: parents' welfare in relation to number of children in period 1 due to ban on child labor.

In figure 3, it is shown that in period 2, parents' welfare increases sharply if capital market is perfect and chils labor is banned. It is because, due to ban on child labor children would be able to allocate more time on human capital accumulation and hence he/she would be able to earn more in period 2 which would lead him/her to transfer more to his/her parents. Parental transfer would be lower in period 2. Again parental altuism and filial altruism are very high in Bangladesh.

That is why, in period 2, parents' welfare would increase sharply. But if capital market is imperfect, then children would not be able to earn enough and hence in period 2, parents' welfare would increase less sharply.

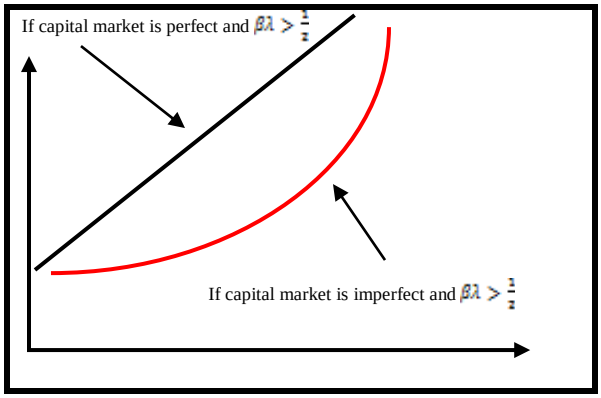

Figure 3: parents' welfare in relation to number of children in period 2 due to ban on child labor

3.3 Effect on Child Education

Again, 75% of the respondants strongly agreed to send their children school due to ban on child labor. 75% of the respondents hihgly belive that their children would be abl to allocate more time in edication due to ban on child labor. 83% of the respondents strongly desire to send their children to primary school due to ban on child labor. 93% of the respondants strongly agreed to send their child to secondary school who does good result in primary school. 80% of the respondants strongly agreed to send their children to higher secondary school who do good result in secondary school. 54% of the respondants strongly agreed to send their children to university who do good result in the higher secondary school. It is also found that weighted average mean value of weighted of most of the statements are favorable to the hypothesis. the average value of most the statements is 1.69 which indicates that due to ban on child labor literacy rate will increase in Bangladesh. Also, children would be able to allocate more time in education that enable them to aqquire proper knowledge and skill to be a valuable human resourse.

Testing of Hypothesis No 2:

Null hypothesis: There is a certain effect on child education due to ban on child labor,
i.e. H_o : $\mu < 3.00$
Alternative hypothesis: There is uncertain effect on child education due to ban on child labor,
i.e. H_o : $\mu > 3.00$
Table 3: Calculation of standard of standard deviation

Question No	WAMV (X_i)	Mean value of WAMV $(\bar{x})$	$\sigma = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n-1}}$
1	3.56	1.69	0.906287
2	1.23		
3	1.23		
4	1.15		
5	1.07		
6	1.20		
7	1.47		
8	2.62		

$$z = \frac{\bar{x} - \mu_{H_o}}{\sqrt{\sigma/n}} = \frac{1.69 - 3.00}{\sqrt{0.906287/8}} = -3.89209$$

At 5% level of significance the z value is less than 1.645 and hence the null hypothesis is accepted.
So there is a certain impact on child education due to ban on child labor which has been described in proposition 2.

Proposition 2: Ban on child labor has certain effect on child education in developing countries like Bangladesh.

Proof: $k(1-l_c)$ represents the human capital he/she possesses in period 2, if he/she worked l_c units of worl period 1. An increasing in schooling will increase the amount of human capital but in decreasing rate. Due to ban on child labor parents generally wants to send their children to school in period 1 in oeder to increase the human capital in period 2. Children would be able to allocate more time in edication which help them to prosses human capital. As the capital market is imperfect in developing countries, due to ban on child labor parents would not want to keep their children idle rather they would prefer to send them to school. So due to ban on child labor child education will cetainly increase. Hence, proposition 2 is proved.

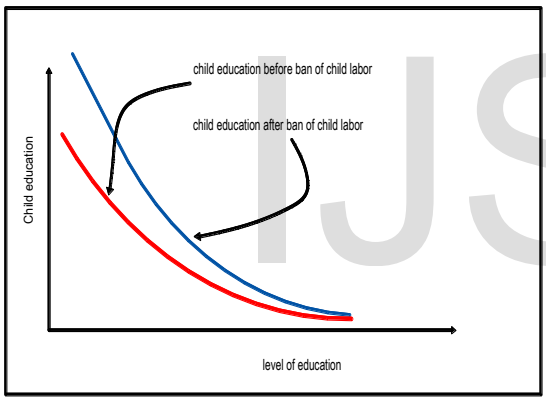

Figure 4: Effect on child education due to ban on child labor

In figure 4, it is shown that child education would increase due to ban on child labor but it increases in decreasing rate with the level of education. with the increases of the level of education the cost of educating children also increases which may not be possible to bear for poor parents. That is why, due to ban on child labor education of children certainly increase but in decreasing rate.

3.4 Walfare Impact on Both Parent and Child:

Due to ban on child labor, in period 1, parents' welfare must decrease because they have to spend substantial portion of income in educating their children but they get no income from their children. But in period 1, children's welfare increases because they are not engaged in work, they can allocate more time in education, they can spend in sports etc. That is why children's welfare must increase in period 1, due to ban on child labor.

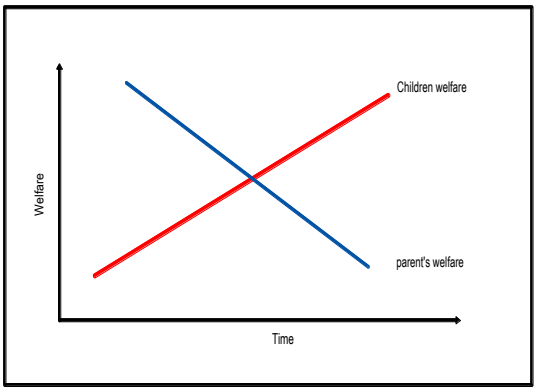

Figure 5: welfare of parents and children in period 1

On the other hand, both parent's and children welfare increase, in period 2, due to ban on child labor. In period 2, parents need not to spend on education and receive filial transfers that increase oarents' welfare. Whereas, in period 2, children (now called adult) has aquired human capital and also get parental transfers which increase their welfare.

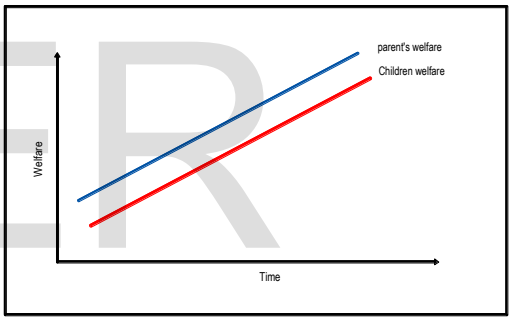

Figure 6: welfare of parents and children in period 2
From the above discussion it is found that due to ban ob child labor parents' welfare decreases in period 1 and increases in period 2. But ban on child labor increases children's welfare both in period 1 and 2. Again, child education certainly increases due to ban on child labor but it increases in decreasing rate.

Chapter–4: Conclusion:

In the socioeconomic view, it is found that parental altruism as well as filial altruism is very high in Bangladesh which maximizes parental utility in period 2. In period 1, parental utility decreases with the increase of child. But parents are very much eager to decrease their utility in period 1 in order to increase their utility in period 2. The socioeconomic condition of Bangladesh influences them to maximize utility in period 2 insted of period 1. It is become most of the people of Bangladesh prefer to live in join family than to live unit family. That is why, ban on child labor has no impact on fertility in the developing country like Bangladesh.Furthermore, due to ban on child labor parents don't want to keep their children idle but send them to school which decreases their utility in period 1, but increases their utility in period 2. Therefore, due to ban on child labor certainly education of child would increase substantially and children would be able to allocate more time in education. Besides,welfare of the children would increase.

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Appendics:

Appendics-A

Questionnaire

Name:.....Today's date:.....
Address:..... .....
Telephone: ..... Date of Birth:.....
Occupation: .....
Sex: □ Female □ Male
Education: □ Nil □ Primary □ S.S.C □ H.S.C □ Bachelor
Please choose your responses according to the statements put (√) mark in the cell where your response meets the corresponding score with the statement,. The scoring is as follows: stringly agree = (1), agree = (2), undecided = (3), disagree = (4), strongly disagree = (5)

	Statements	**Responses**				
	The following statements will be interpreted to make decission on encourage due to ban on child labor.	1	2	3	4	5
1	In spit of ban on child labor, you will not change your earlier plan to have *n* child					
2	Your all *n* children are female and you still want to have a male child though child labor is banned.					
3	Due to ban on child labor, suppose you are able to bear the cost of at least one child but still you desire to have 2nd child					
4	You desire to live together with your children as well as with your parents.					
5	As a child (adult) you generally want to show altruism to your parents.					
6	As a parent you generally want to show altruism to your childern.					
7	Mortality risk might influence you to have more children.					
8	As a child (adult) you think that, it's your responsiblity to take care of your old parents.					
9	As a parent you belief that, your children would take care of you when you will become old.					
10	Insufficient scientific agricultural instrument might be an obstacle to have fewer childern.					

	Statements	Responses				
	The following statements will be interpreted to make decission to encourage on child education due to ban on child labor.	1	2	3	4	5
1	If there is no ban on child labor, you will not send all of your children to school.					
2	Due to ban on child labor you certainly want not to keep your child idle and so you at least want to send them in school.					
3	Due to ban on child labor, children would be able to allocate more time in study.					
4	You would like to send all of your children to primary school if the child labor is banned.					
5	If some of your children score well in the primary education then you will try your best to send them in secondary school for higher education.					
6	If some of your children score well in the higher secondary education then you will try your best to send them in college for higher education.					
7	If some of your children score well in the higher college education then you will try your best to send them in university for higher education.					
8	Marginal return would be higher for 1 year additional schooling.					

Appendix-B

Data Tabulation and Calculation

Table 4: Responses of the respondents for the 1st ten statements.

Statement	Responses				
(1)	(1)	(2)	(3)	(4)	(5)
(2)	167	33	3	1	0
(3)	17	67	36	51	33
(4)	92	75	20	15	2
(5)	194	10	0	0	0
(6)	199	4	0	1	0
(7)	201	3	0	0	0
(8)	9	29	97	62	7
(9)	198	6	0	0	0
(10)	137	42	23	1	1
	0	6	102	81	15

Table 5: weighted average mean values for the 1st ten statements.

	statements									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Weighted average mean value (WAMV)	1.21	3.08	1.82	1.05	1.03	1.02	3.14	1.03	1.47	3.51

Then average mean value of the 1st ten statements:

$$AMV = \frac{\sum_{i=1}^{n} WAMV_i}{n}$$

$$= \frac{1.21+3.08+1.82+1.05+1.03+1.02+3.14+1.03+1.47+3.51}{10}$$

=1.836

Table 6: Responses of the respondents for 2nd eight statements.

Statement	Responses				
	(1)	(2)	(3)	(4)	(5)
(1)	6	33	47	76	42
(2)	154	50	0	0	0
(3)	154	50	0	0	0
(4)	174	30	0	0	0
(5)	190	14	0	0	0
(6)	164	40	0	0	0
(7)	110	93	1	0	0
(8)	21	51	118	13	1

Table 7: Weighted average mean value for the 2nd eight statements.

	statements							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weighted average mean value (WAV)	**3.56**	**1.23**	**1.23**	**1.15**	**1.07**	**1.20**	**1.47**	**2.62**

Then average mean value of the 2nd eight statements:

$$AMV = \frac{\sum_{i=1}^{n} WAMV_i}{n}$$

$$= \frac{3.56+1.23+1.23+1.15+1.07+1.02+1.47+2.62}{8}$$

=1.66875
=1.67

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Map of Khulna District, Bangladesh.