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Nexus between Poverty and Child Labor: A Case Study in Narayanganj Area of Bangladesh Using Binary Logistic Regression

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Abstract

The purpose of the study is to see how poverty influences child labor. To carry out the study, moderate poor people have been considered as respondents. Kalibazar and Langalband regions of Narayanganj district have been selected. Random sampling technique and Focused Group Discussion with children have been taken to conduct the study. Data has been collected from 50 Household Heads and 50 Children (male and female). For economic analysis, the Binary Logistic Regression model has been undertaken to see the relationship between poverty and child labor. The analysis shows that the odds ratio indicates that drop-out children from school are 11.34 times more likely to go for taking the occupation of child labor due to poverty (major cause) than those children who have been dropped out due to other reasons (reference category). The study also shows that the families having no loan are 0.444 times less likely to go for child labor due to major causes (poverty) than that of the families having a loan. Moreover, the odds ratio corresponding to the children who use their income to help their families is 3.26. It means that the children who use their income for family purposes go 3.26 times more likely to take the occupation of child labor due to a major cause (poverty) than those children who do not use their income for family purposes. At the same time, the children who use their income for treatment purposes go 1.45 times more likely to take the occupation of child labor due to poverty (a major cause) than those children who do not use their income for treatment purposes.

Keywords: Poverty, Child labour, Narayanganj, Children

Background of the Study

Bangladesh, situated in South Asia, is a unitary and the need to supplement income in every possible way and an independent country since 1971. It is a country of child work cannot be ignored. He showed that poverty is 1,47,570 km2 and around 149 million people with one of the most often cited reasons for the use of child labor in the world's most densely populated nations. The employment of children is an enormous problem in Bangladesh, with around increases in total family income (Alam et., al. 2008).

Child labor remains a widespread problem in the world today. In many families, child labor makes up about one-third of their family income. Poverty and economic deprivation lead to child labor. This exploratory study is important because it will give a picture of the state of child labor that is due to poverty in the selected areas of Narayanganj, Bangladesh, and also will help to indicate necessary changes in customs and laws to improve the existing child labor situation, to reduce the child labor in Bangladesh. Therefore, the present study aims to determine the effects of some selected variables on child labor that are mainly due to poverty in the study areas.

Statement of the Problem

Child labor is increasing in Bangladesh day by day, with 4.7 million or 12.6% of children aged 5 to 14 in the labor force. Out of the child labor engaged in the labor force, 83% are employed in rural areas and 17% are employed in urban areas (Atish, 2018). This is an enormous problem, which is the most threatening issue for the future generation of our country. Poverty is widely recognized and acknowledged as the primary cause of child labor in this country. Despite willingness, many children are not able to achieve a proper human basic need like food, education, clothes, households, proper health services, etc. from their parents due to the poverty phenomenon. And in Bangladesh, this scenery is so acute to notice. So, to identify this problem the author has selected Narayanganj district to see the relationship between child labor and poverty as it is one of the most industrial prone areas of Bangladesh, many children are engaged in working in a brick kiln, rickshaw pulling activities, restaurant, industries, boat operating, etc.

Justification of the Study

As a consequence of child labor, children are deprived of their childhood, their potential, and their dignity. It endangers their health and hinders their physical and mental development. Due to early entry into the labor force and lack of education, they accumulate less human capital. Due to poor health and less human capital accumulation, their productivity remains very low. Due to a lack of skills and lower productivity, they earn very little when they become adults. In this way, a child inherits poverty and child labor from his or her parents and transfers it to his or her next generation. Thus, poor families get stuck into a trap that leads to the intergenerational persistence of poverty and child labor. As they are being deprived of every aspect of their needs, so the author wants to see the scenario that exists in the Narayanganj area among the child laborers who are doing various economic activities which is unacceptable. As poverty is the main cause of child labor, the author wants to see what happens to the child laborers if the income of their households will increases. Thus, the author wants to examine the relationship between child labor and poverty, and to reduce the number of child laborers in the Narayanganj area, the author predicts poverty alleviation must be required.

Research Gap

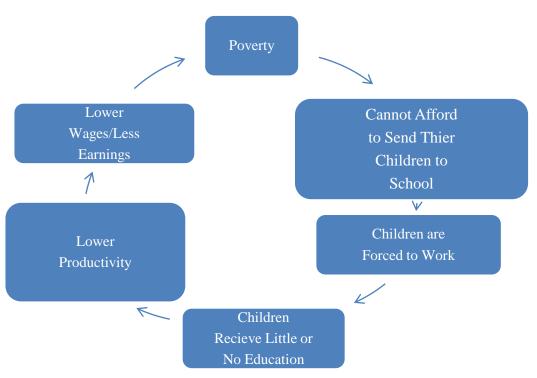
There are many research works on child labor and poverty issues. But to the best of my knowledge, this kind of study has never been undertaken in Narayanganj District.

Literature Review

The figure below explains how there exists a nexus between poverty and child labor. Poor families cannot afford to send their children to school because: a) they don't have money to afford their educational expenditures b) their survival is at stake and they want these little hands to work and supplement the household budget. Thus, mostly, children from poor households are forced to work instead of attending school. Consequently, they acquire little or no education which results in lower human capital accumulation. When these children accumulate little or no human capital, they lack the necessary skills.

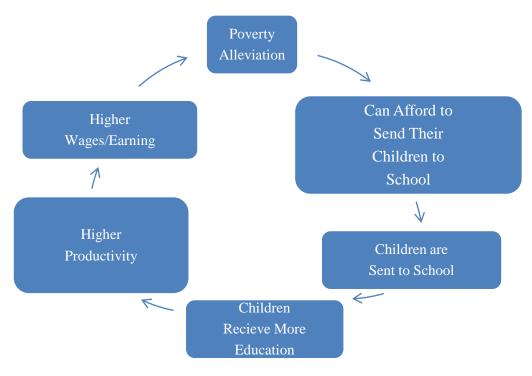
As a result of it they, once grown, have to do unskilled jobs and their productivity remains low. Thus their wages or earnings remain low. This reinforces poverty. In this way, children from poor families inherit poverty and child labor from their parents and transfer it to their next generation. This cycle of poverty and child labor, in which poverty causes child labor and child labor perpetuates poverty, continues. This leads to the intergenerational persistence of poverty and child labor. (Aqil, 2012).

Nexus between Poverty and Child Labor



Another following figure explains how poverty alleviation can break the cycle of poverty and child labor. Poverty alleviation will enhance the household budget of families with child labor. This will increase their affordability. They will be able to afford to send their children to school because: a) they will have money to spend on their educational expenditures b) they won't need little hands to work to supplement their household budget for the survival of the family. So, they will send their children to school for their better future. Children will receive more education and accumulate more human capital. This will help them to acquire skills that will help them to enter into and gain jobs in the skilled labor market. This will also increase their productivity. In this way, skilled jobs and higher productivity will lead them to higher wages/earnings. Once their earning/wages get increased this will increase their household budget, reduce poverty and enhance their affordability. Once their household budget and affordability increase they will spend more on the health, nutrition, and education of their children. In this way, the cycle of poverty and child labor will be broken and a new cycle of poverty alleviation and child labor reduction will start. (Aqil, 2012).

Impact of Poverty Alleviation on Child Labour



Fernandezand Abocejo (2014) examined the relationship between poverty and child labor in the Philippines by region. The study utilized data from the Bureau of Labor and Employment Statistics (BLES) and the National Statistics Coordination Board (NSCB) to determine the relationships among poverty, the prevalence of child labor, and the number of working children not attending school. Findings revealed that poverty incidence and prevalence of child labor were strongly correlated. Similarly, poverty incidence strongly associates with the number of working children not attending school. The study finds out that poverty displaces these children from school. School children are enticed to participate in the labor force because of short-term income opportunities. Children have taken on the responsibility of augmenting the household incomes and of providing the needs of their households. There is enough evidence that has been included in the study that shows that poverty pushes children to participate in the labor force for them to augment household income.

Another study examined that Income (or expenditure) is the most common poverty indicator which measures at the household level. Poor households have always thought that all household members share fortunes and misfortunes equally, which is particularly problematic in the case of children. This problem is exacerbated by globalization which could impact on reducing household incomes and worsen the position of children in the household. This study aims to identify the impact of economic globalization on poverty and to identify the relation between poverty and child labor. The results of this study indicated that changes in economic globalization, poverty, and household welfare shed light on the causes and consequences of child labor. (Sasongkoand et. al., 2016)

Akarro and Mtweve (2011) argue that child labor is a reflection of poverty and therefore tackling poverty will have a positive impact on child labor in Tanzania. Chi-square statistic analysis on the relationship between household poverty and child labor showed that household poverty was the factor that forced children to engage in economic activities. The major finding emanating from this study is that child labor is a reflection of poverty and therefore tackling

poverty will have a positive impact on child labor. This suggests that policies such as a ban on child labor in rural areas could have an adverse effect as child labor decisions are more likely a response to poverty and subsistence requirements.

Islam (2018) reported that although the per capita income of people in the country has increased, the socio-economic condition of general people is still very poor. On this practical ground, poor people who cannot earn their living are being compelled to send their children to work. He said in his article that among 40 lakh families living in Dhaka city, at least 30 lakh of them have domestic workers most of whom are child workers. If her/his parents had the capability, they would never send them to work. It is obvious that no child willingly engages in labor. He examined that poverty is the main reason behind every child labor in Bangladesh. And also stated that the families which send their children to work, do so mostly because of acute poverty while some child workers are victims of a family feud/broken family.

Another study analyzed that the number of child labor is increased rapidly day by day in Bangladesh. Also stated that it is a land of agriculture, and more than half of the rural population has landed. The study said that in contrast more than half of the rural population does not have land they are landless people. 75% of children under the age of 12 are suffering from ideal and balanced food. Among them, about 85% of the population lives below the poverty line. (Bashir, 2015).

The methodology of the Study Objectives of the Study

The research objectives are

- i. To see the relationship between child labor and poverty.
- ii. To see poverty alleviation may reduce child labor substantially.

Research Questions

- i. What is the present scenario and effectiveness of child labor in some chosen areas of the Narayanganj district?
- ii. What kind of policies can be taken to mitigate the problems of child labor?

Area Coverage

Two regions of Narayanganj district have been taken into account for the study purpose and those regions are Kalibazar and Langalband. As we can see the availability of a large number of child labor markets exists within these regions because these regions are the center of the City. So the author has chosen the Narayanganj district to implement the study.

Determining Sample Size and Sampling Technique

The study is based on a primary survey conducted on a sample of size 50 household heads and 50 child laborers. According to World Bank (2015), the people with daily income ranges from 1\$-2\$ are considered as moderate poor. So for the study purpose, moderate poor people (household heads) whose daily income ranges from 1\$ - 2\$ are considered as respondents.

A random sampling process has been adopted to select the sample. The distribution of the sample by category is presented in the following table.

Distribution of Sample Size

Category	Number of Respondents		
Household Heads	50		
Child Labors (Male and Female)	50		
Total	100		

Source: Author's Compilation, 2020.

The justification of the sampling technique is given below by the basic formula of sampling.

$SS = Z^{2*}(P)*(1-P) / c^2$

 $= (1.96)^2 (.5) (.5) / (.05)^2$

= 384

Where,

Z= Z Value (e.g.1.96 for 95% confidence level)

P= Percentage picking a choice, Expressed as decimal (.5 used for sample size needed)

c = Confidence interval, Expressed as a decimal

So the with the justification, the size of samples has become 384 households'. But due to lack of time and budget constraint, we have been able to take the sample size of 50 household heads and 50 child laborers (male and female).

Sources of Data:

In this study, the necessary information which could satisfy the objectives is collected. The author wants to get information from household heads and child laborers. The following two sources have been taken to conduct the study.

Primary Data:

To collect the primary data the author first prepared a structured questionnaire and on this basis, the author then asked the respondents and collected various required information. After getting the information from the primary sources the next steps were to modify and finalize the data for conducting a good research paper.

Secondary Data:

Secondary data collection processes are mainly reference-oriented.

Model Specification and Description of the Variables:

The Binary Logistic Regression model has been used to estimate the relationship between child labor and poverty. To estimate the Logistic Regression Model (MLM) we have used the maximum likelihood method. For the estimation and interpretation of the model, variables coded with '0' are taken as reference categories.

Child Labor (Y) = β_0 + β_1 Drop out Rate(X₁) + β_2 Loan Status of Family(X₂) + β_3 Income Used in the Purpose of + ξ

Description of the Variables

Variables	Name of the Variables	Definition
Dependent (Y)	Child Labor	Coded 0 = Child Labor Due to Other Reasons 1 = Child Labor Due to Poverty (Major Cause)
	Drop Out Rate	Coded 0 = Child Labor Due to Other Reasons 1 = Child Labor Due to Poverty
Independent (X)	Loan Status of Family	Coded 0 = Yes 1 = No
,	Income Used in the Purpose of	Coded 0= Don't Help 1= Family 2 = Treatment

Source: Authors' Compilation, 2020

Results and Discussions

Occupational Status of the Household Head

From the following table it can be seen, 12% of the total household head are unemployed and most of the adult family members in poor households work in jute mills (16%), work as a security guard (16%), day laborer (12%) and pulling rickshaw (8%), work in garments mill (6%) and rest of the respondents have been working as a fisherman (6%), the driver (4%), salon worker (2%), parlor worker (2%), shopkeeper (2%), household worker(2%), wood designer (2%), mason (2%), agriculture (2%), business (2%). By employing themselves in such kinds of works most of the adult family members can earn BDT 257.59 in a day. With this poor income level and vulnerability, children from such households are very are compelled to involve child labor activities.

Occupational Status of The Household Head

Occupation	Frequency	Percentage (%)
Unemployed	6	12
Jute Mill Worker	8	16
Security Guard	8	16
Day Labor	6	12
Rickshaw Puller	4	8
Garments Worker	3	6
Fisherman	3	6
Driver	2	4
Electrician	4	6
Salon Worker	1	2
Parlor Worker	1	2
Shopkeeper	1	2
Household Servant	1	2
Wood Designer	1	2
Mason	1	2
Total	50	100

Source: Calculation Based on Field Survey, 2020

Table no.4: Monthly Income of Household Head by Percentage

Income Range (BDT)		Frequency	Percentage (%)
Do Not Earn		8	16
0001 – 5000		24	48
5001 – 10000		18	36
Total		50	100
Mean Income	BDT 4643		
Maximum Income	BDT 10000		
Minimum Income	BDT 2000		
Standard Deviation	BDT 2504		
Daily Income	BDT 156		

Source: Calculation Based on Field Survey, 2020

Occupational Status of Child Labors

The study reveals that most of the children engage in hazardous work such as work at garments mill (26%), textile (12%), workshop (6%), garage (4%), mason (2%), brickfield (8%) and pulling rickshaw (4%), work as bus helper (6%). Children are also involved in working at restaurants (8%), household servants (4%), pharmacy (4%), wood designer (4%), and the rest of the 10% are employed in various shops. It can be stated that hazardous work as work at a garments factory, power looms, garage, brickfield, pulling a rickshaw, helping in vehicles is

very risky and harmful to the health of the child laborers. It causes various diseases such as injuries, asthma, muscle contraction, weakening of eyesight, and respiratory diseases of the child labor. Female child laborers not only face these problems but also are teased and abused at workplaces. By working in such a poor circumstance it hinders their physical and mental development and thus the child labor becomes vulnerable to many inhuman activities i.e. doing crime, became drug-addicted, smuggling, trading arms, and drugs, etc. This is very much alarming for our future generation.

Occupational Status of Child Labors by Percentage

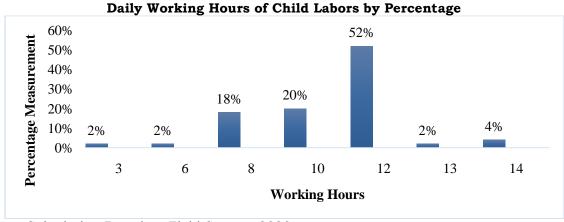
Occupation	Frequency	• •
•	Frequency	Percentage (%)
Garments Mill Workers	13	26
Work in Textile(Power loom)	6	12
Work at Restaurants	4	8
Work at Workshops	3	6
Bus Helpers	3	6
Pulling Rickshaw	2	4
Work in Garages	2	4
Household Servants	2	4
Work in Brick Fields	4	8
Work in Pharmacy	2	4
Mason	2	4
Wood Designer	2	4
Employed in Different Shops	5	10
Total	50	100

Source: Calculation Based on Field Survey, 2020

Daily Working Hours of Child labors

The study explores, about 52% of the respondents are working for 12 hours, 18% of the respondents are working for 8 hours, 20% of the respondents are working for 10 hours and 2% of the respondents are working for 13 hours, and the rest of 4% of the respondents are working for 14 hours in a day. According to International Labor Organization (ILO), standards on working time set 48 regular hours of work per week, with a maximum of eight hours per day. While the studied population is working for more than 8 hours in a day which is 10, 12, 13, 14 hours per day, and respectably which are 70, 84, 91, and 98 hours in a week. Working for such a countless period in such an early stage of life is too hard to explain and it is threatening both their physical and mental development.

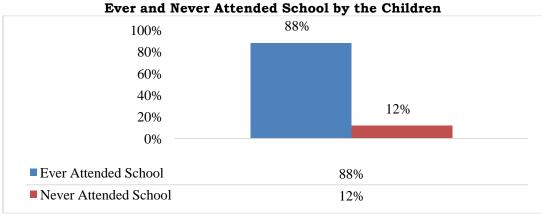
Having Focused Group Discussion (FGD) with the children it has been revealed that children are working for such a long hour and getting a very little wage with no weekly day off. There is no application of labor laws, no leisure time is required, and no minimum facilities are visible here. As a result, they are unable to attend school to continue their study and being dropped out of school. Thus they are maltreated day after day which is very much alarming for our future generation.



Source: Calculation Based on Field Survey, 2020

Percentage Distribution of Children Who Have Ever and Never Attended School

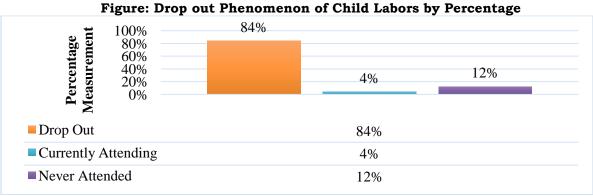
The figure below shows that 88% of 5 to 18 years old children have ever attended a school whereas 12% of the children have never attended school. 88% of the total children who have ever attended school among them 84% of them are dropped out from school and only 4% of them are currently attending school.



Source: Calculation Based on Field Survey, 2020

Percentage Distribution of Drop out Children

The study reveals that about 84% of those children aged from 5 to 18 years have dropped out from school, 4% of them are currently attending school and 12% of the total children have never gone to school at all.

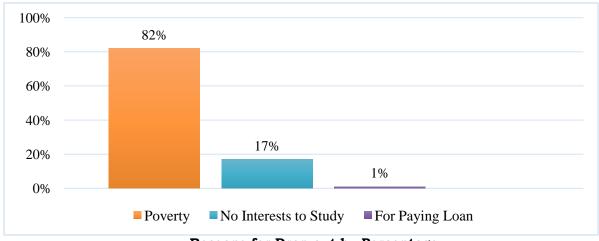


Source: Calculation Based on Field Survey, 2020

Reasons for Drop Out

Having surveyed it has been found that there are three causes behind this high rate of drop out of the children. The following figure depicts that 82% of the total children have been dropped and the main cause is poverty, 17% of the children have no interests to study and rest of the 1% of the children mentioned that due to pay the loan of the family they are not able to a study.

Having no interest in the study is an important factor for determining the child labor occupation and the percentage of these children is increasing day by day in the community which cannot be ignored. Poverty is also playing a role in having no interest in the study of the children. Because due to poverty, parents are unable to bear the costs of all the basic needs of the children i.e. send them to school, provide food, shelter, bear clothing expenses, etc. Therefore, the children have to find their sources of income and engage themselves in the child labor occupation. Due to the above circumstances, children are unable to give attention to their studies and then become dropped out from school and involved themselves in various activities of child labor.



Reasons for Drop out by Percentage

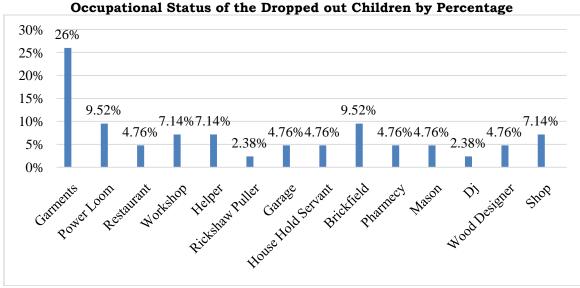
Source: Calculation Based on Field Survey, 2020

Occupational Status of the Dropped out Children

Most of the children who have been dropped outwork at garments factory (26%) and work at power looms (9.52%), restaurants (4.76%), workshops (7.14%), garages (4.76%), brickfields (9.52%), pharmacy (4.76%), shops (7.14%) and also engage themselves with child labor

occupation by pulling rickshaws (2.38%), as a helper (7.14%), household servant (4.76%), mason (4.76%), DJ (2.38%), wood designer (4.76%), etc.

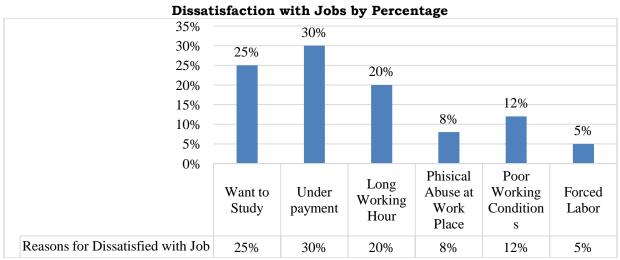
Findings suggest that school dropout children are doing works and most of them are even involved in hazardous jobs. FGD findings suggest that Hazardous work like work at a garments factory, power looms, garage, brickfield, and pulling a rickshaw, helping in vehicles is very risky and harmful to the health of the child laborers.



Source: Calculation Based on Field Survey, 2020

Reasons for Dissatisfaction with Jobs among Drop out Children

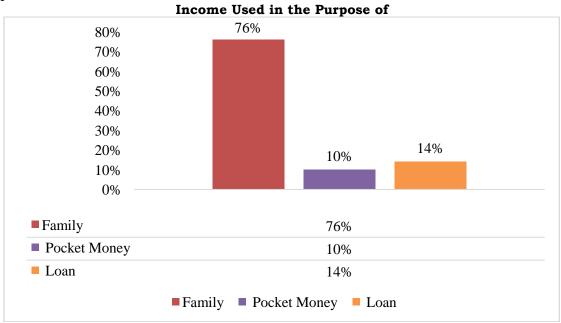
An overwhelming majority of child laborers is not satisfied with their jobs.30% of the children mention that they are being underpaid, 25% of them desire to study,12% of them mentioned that they work under poor working conditions and 20% of the children claimed that they have to work for long hours. The figure below also depicts some other reasons for dissatisfaction with a job where 8% of the children are being physically abused at the workplace and that 5% of the children mentioned that they are forced to go to work despite having unwillingness.



Source: Calculation Based on Field Survey, 2020

Purposes for which The Income of Child Labor is Used

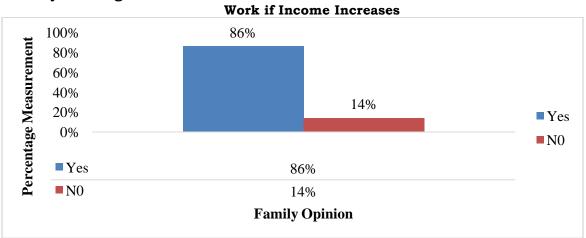
The study explores that children are spending their income for five different purposes. The following figure shows that 76% of the total population use their income for family purpose,10% of the population use their income for bearing pocket money, 10% of the population use their income for paying the loan, 2% of them use their income for earning pocket money and rest of 2% of them use their income for paying a loan. Due to poverty, the increased household expenditures are forcing children to get involved in the child labor occupation.



Source: Calculation Based on Field Survey, 2020

Impact of Poverty Alleviation on Child Labor

Having Surveyed it has been found that 86% of the respondents mentioned that if their household income gets increased up to an adequate level they will send their children to school and rest of 14% of the respondents denied sending their children to school, which is shown in the figure below.



Family's Willingness to Send Their Children to School and Make Them Free from their Work if Income Increases

Source: Calculation Based on Field Survey, 2020

Likewise, the majority of the respondents and also the respondents of FGDs with parents of child laborers mentioned that poverty is the foremost reason for their children's early drop out from school and if the income of the parents gets increased then parents won't engage their children in work and pay attention towards their basic physical and educational needs. This indicates that poverty alleviation will substantially reduce child labor in the targeted community.

Summary Results of Logistic Regression Model and Relative Odds Associated with Child Labor Due to Poverty (Major Cause)

As per the screening criterion, a variable is a candidate for the multivariate model when its p-value <0.25 (Hosmer et al, 2000). But, in this study, a p-value of 0.15 has been taken into account to choose a variable not to miss any possible variable associated with the dependent variable.

Summary Results of Logistic Regression Model

Summary Results of Logistic Regression Model			
Background Characteristics	P-value	Odds Ratio	
Incomecon	0.000	1.00	
Reasons for Drop outcast			
Due to Poverty	0.08	11.34	
Due to other Reason@	-	-	
Loan Status of the Family cat			
No	0.13	.444	
Yes@	-	-	
Income Used in the Purpose of cat			
Family	0.00	3.26	
Treatment	0.11	1.45	
Don't Help@	-	-	
Number of Observation = 100			
Omnibus Test of Model coefficient = 0.01			
Pseudo $R^2 = 0.34$			
*p<0.1,**p<0.05, ***p<0.01			

Source: Calculation Based on Field Survey, 2020

Note: 'con' stands for continuous variable and **'cat'** stands for categorical variables. The symbol '@' is noted as a reference category

4.23 Interpretation of the Model:

Logistic regression analysis can go some way towards identifying those variables, which are truly related to child labor. An odds ratio of greater than 1.00 suggests that an increased likelihood of the event occurring relative to the reference category, while an odds ratio less than 1.00 indicates a decreased likelihood of the event occurring relative to the reference category. The odds ratio indicates that drop-out children from school are 11.34 times more likely to go for taking the occupation of child labor due to poverty (major cause) than those children who are dropped out due to other reasons (reference category).

The loan of the family has a significant and positive influence on the reason for taking the occupation of child labor. The study shows that the families having no loan are 0.444 times less likely to go for child labor due to major causes (poverty) than that of the families having a loan.

The odds ratio corresponding to the children who use their income to help their families is 3.26. It means that the children who use their income for family purposes go 3.26 times more

likely to take the occupation of child labor due to a major cause (poverty) than those children who do not use their income for family purposes.

At the same time, the children who use their income for treatment purposes go 1.45 times more likely to take the occupation of child labor due to poverty (a major cause) than those children who do not use their income for treatment purposes.

Conclusions:

Child labor is injurious to health and dangerous for the future of children as well as for the nation. This study has identified several socio-economic characteristics using the logistic regression model, which influence the child in getting into the labor profession due to poverty. It indicates that poverty is the main reason for the Scientific Study of Population involvement of children in various hazardous and dangerous works. Furthermore, considering the global scenario there is hardly any alternative but to eliminate child labor from society. Emphasis on education could decrease child labor directly by increasing the time children devote to school and indirectly through investments in human capital that will improve productivity and family income. Future generations would be endowed with the attributes that we have found give families the luxury of keeping their young children out of the workplace, namely, greater parental education and higher family income.

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