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Gender Disparity in Household Preference for Child Labor in Bangladesh

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Abstract

Child labor and gender discrimination are striking issues in developing countries like Bangladesh. The socio-cultural setting that encourages the preference of son and patriarchy in Bangladesh calls for a national study of the gender dynamics of child labor. This research aims to explore the household's preference of gender in sending their children to the labor market within the age range of 5-17 years using data collected from Household Income and Expenditure Survey (HIES) 2016 of Bangladesh. The result from the binary logistic regression suggests that boys are significantly more likely to be the earners compared to girls in Bangladesh. Other potential factors having significant association with child labor were found to be age, education, school enrollment, mother's educational attainment and working status, family income, household size, head of the household, and poverty status. The bargaining power of the household shows that children are less likely to be laborers when the father is the head of the household compared to the mother, controlling for other variables.

Key Words: *Gender disparity, Household preference, Child Labor, Bangladesh*

Introduction

Despite being a human rights violation, child labor is a prevalent phenomenon in Bangladesh. International Labor Organization (ILO) globally estimates 218 million children to be a part of child labor in the age range of 5-17 years with 73 million performing hazardous tasks (ILO, 2017). ILO also set the minimum age for labor from 13-15 for light work, at 18 for hazardous work, and from 12-14 for inadequately developed countries (ILO, 2020). However, Bangladesh has not ratified the ILO Convention No. 138 which sets the minimum employment age. Research

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shows that child labor is prevalent from the age of 5 years in Bangladesh. ILO report of Bangladesh National Child Labour Survey conducted in 2002-03 shows that 3.4 million boys and 1.3 million girls in the age group of 5-14 are child workers (ILO, 2020).Similar finding was suggested by a recent sector specific study by Winrock International that shows that 20% child workers (5-17 years) are in the dried-fish sector in Cox's bazar in which 41% counted for below 14 years and 59% counted for 14-17 years (Hossain et al. (2020)).

In a patriarchal, patrilineal, and patrilocal society like Bangladesh, gender discrimination is another striking issue which leads to missing girls, wage gap, and differential of education level. Gender discrimination also prevails in the labor market. According to Kapsos (2008), men, on average earn TK 17.2/hour whereas women earn TK 14.2/hour. Kapsos(2008) further states that women on average work fewer hours compared to men across all industries and the educational attainment within each industry is higher for men than women. Because of the lower educational attainment, women work mostly in the non-formal sectors like dried fish and even for the child labor 72% of them were found to be female workers (Hossain et al., 2020). In Bangladesh, since women are predominantly responsible for non-market activities, the lower working hours can be explained by the time allocated for household chores or taking care of children and the elderly. Moreover, the lower human capital investment in women can be due to the gender wage gap, where the son's future earning potential is likely to be higher and also due to the patrilocality, where the daughter's income share is likely to add value for her in-laws.

Therefore, the practice of son preference leads to discrimination in the allocation of scarce resources within the household. Hence, female children are at a higher risk of exploitation and deprivation. Lower educational investment and early entry into the labor market can prevent female children from breaking the vicious cycle of child labor, earning higher income as adults, and narrowing the gender gap. Therefore, this study has strong rationale to investigate the preference of the families employing their children into the labor market; especially into the child laborers.

Studies show that gender, age, socio-economic status, income, family size, number of siblings, and parent's educational attainment are some of the determinants of child labor. Based on these determinants, the objective of the current study is to explore the individual household's sex preference while employing their children to the labor market. More specifically, are

families prefer female children to employ in the child labor more than male children within the age ranges from 5 to 17 years? How other socio-economic factors influence the families to drive their decisions? To explore the truth, the current study depends upon the country-wide large data set collected by the Bangladesh Bureau of Statistics 'Households Income Expenditure Survey 2016'.

Literature Review

The societal perception of gender roles leads to gender differentials in the labor market of child labour participation. According to Amin et al. (2004) jobs of salesmen, transport and communications workers, and day laborers are predominantly or completely assigned to boys, whereas girls mostly work in production factories, such as garments, or as maids and domestic servants. It also states that working as a maid prepares girls to take on future roles as mothers and wives. Therefore, gender roles lead to differences in the type of work available to boys and girls.

In terms of earnings differential in gender role, Alam et al., (2015) find that boys earn approximately 31% more than girls. Birth order and income shocks can also lead to gender differentials. According to Kumar (2015), "first born male children are less likely to participate in the labor force and combine study and work and are more likely to just study and neither study nor work compared to first-born female children". However, Kumar (2015) also finds that in case of income shock, boys have a higher probability of joining the labor force and quitting school because of higher earnings potential and social norms that restrict women working outside home. Research from different countries validates that gender significantly affects child labor. According to Gurmu and Tilahun (2016), Ethiopia constituting of 77,008 children of age 5 to 17 years indicates that the probability of working increases by at least 15% provided that the child is female.Because the prevalence of son preference puts the domestic as well as an economic burden on the girl child. Amin and Chandrasekhar (2009) find that the probability of working (domestic and other works) is higher for girls than boys in rural areas. Contrarily, Amin et al., (2015), using data from Household Expenditure Survey 1995-96, with a sample of 11,373 children aged 5 to 14 years, find that being a boy increases the probability of working by 0.04. Khanam (2006) finds that the labor force participation of girls was significantly lower than that of boys during the 1990s by accounting only for wage work.

The educational attainment of the parents is linked with the child labour. However, the effect differs for children based on their sex. According to Emerson and Souza (2002), the higher the years of schooling or parental educational attainment, the lower the chances of child labor. Similar findings were confirmed by Sakamoto (2006) that fathers who have completed middle school are less likely to send male children to work but more likely to send female children compared to fathers who have had no formal education. Moreover, the study also states that mothers with primary level of education are less likely to encourage child labor compared to mothers with no formal education. In concordant with previous studies, Ilahi (2001) shows that higher educational attainment of the prime-oldest woman in the household reduces child labor for both males and females. Contrarily, Kumar (2011) finds that even though probability of child labor decreases for both genders with the increasing education level of the father, the incidence of child labor only decreases for male children with the higher educational attainment of the mother.

The bargaining power of the households' plays a significant role in promoting child which has been shown by Haddad (2017) that mother's bargaining power significantly affects child labor in Iranian households. However, the effect is subject to change with respect to the child's gender. In another study conducted in rural India, Sakamoto (2006) finds that in male-dominated households children are more likely to work. Reggio (2011) finds that the working hours of children decrease with the increasing bargaining power of mothers where the effect is significant on the daughter's labor supply but insignificant on the son's labor supply. According to Basu and Ray (2002), children are least likely to work in households where the bargaining power is balanced between the husband and wife. While most studies suggest a significant relationship between child labor and the bargaining power of mothers though there is little research carried out in Bangladesh.

The household characteristics such as poverty plays a key role in contributing to child labor in developing countries like Bangladesh. Salmon (2005) shows that since children significantly contribute to the household income, child labor is the last economic resort to combat poverty in some of the poorest households. Sakamoto (2006) and Shafiq (2007) demonstrate the similar finding that household poverty positively affects the occurrence of child labor.

The reviewed literature shows that being a child labor depends on children gender and some of the households demographic and socio-economic characteristics including age, education, school enrollment, parent's educational attainment and working status, family income, household size, head of the household and poverty status. But, to the best of the present authors' knowledge, no significant study has so far been conducted that focuses on these issues combined in the context of Bangladesh. Hence, the existing studies might have been contaminated with a potential omitted variable problem that could seriously undermine the reliability of the findings. Moreover, very little research is carried out on the impact of the some of the key determinants of Child labor such as bargaining power of the mother in the context of Bangladesh. Therefore, the present study revisits both the issue of potential gender gap and the impacts of other demographic and socio-economic characteristics on child labor participation combined with a very large and reliable survey data from Bangladesh Bureau of Statistics (BBS, 2016) by employing standard econometric procedure.

Materials and Methodology

The study used the secondary data from 'Bangladesh Household Income and Expenditure Survey, 2016 (HIES 2016)' primarily collected by Bangladesh Bureau of Statistics, the World Bank Group and World Food Program. Using a structured questionnaire, the HIES (2016) collected information on household characteristics, education, health, economic activities and wage employment, non-agricultural enterprises, housing, agriculture, income, asset ownership, and consumption habits. With a stratified two-stage sampling design, HIES (2016) incorporated 2,304 primary sampling units (PSU) (at the district level) with a sample size of 46,080 from 64 districts from both urban and rural areas making it nationally representative. The unit of analysis is the household.

In HIES (2016), household information such as educational attainment, school enrollment, working status, etc. are available for the age of 5 and above. Therefore, this study targets children from the age of 5-17 years. Here, children are considered to be child laborers if they are classified as earners (i.e., they actively participate in economic activities) (Islam, Alam&Afzal, 2021).

After compiling the data, a binary logistic regression model is utilized to determine the possible factors affecting the incidence of child labor. Since the outcome variable is dichotomous, a binary logistic regression model fits

the model better as opposed to a multiple regression model (Alam&Zakaria, 2013). The suggested regression model is as follows;

$$Logit\,(Child\ Labor) = \beta_0 + \beta_1\, Sex + \beta_2\, Age + \beta_3\, Edu + \beta_4\, Sch + \beta_5 MEdu + \beta_6\, MWork + \beta_7\, Inc + \beta_8\, HHsiz + \beta_9 HHead + \beta_{10} Pov + U \quad ----------(i)$$

Here ß$_0$ is the intercept term whereas ß$_i$'s (i =1, 2,3,..., 10) are the coefficients of the explanatory variables.

In equation (i), logit(odds) is the log transformation of the dependent variable corresponding to the conditional probability that the outcome variable equals 1 (presence of child labor i.e., Yi=1 if child i is an earner) divided by the probability that it equals 0 (absence of child labor i.e., Yi=0 if child is not an earner). In equation (i), 'Sex' is the key explanatory(a dummy) variable, getting a value of 1 for male and 0 for female. The coefficient of 'Sex' is anticipated to be negative as female children are more likely to be child laborers compared to male children. Other predictor variables are represented as follows: 'Age' for age of child in year of data collection, the coefficient is expected to be positive because families are more likely to send older children to work compared to younger children. 'Edu' for the highest education level of a child, 'MEdu' for mother's highest educational attainment, The educational attainment of the children as well as parents are divided into three categories.:1= 'No education', 2= 'Primary education or below', and 3= 'Above primary education. To incorporate the impact of educational attainment two dummy variables (primary or below primary, and above the primary) for child education and mother's education have been added in the model. The other category (no education) has been considered as the base group.The coefficient of 'Edu' is anticipated to be negative because the higher the educational attainment of the child, the more likely the child is to remain in school and less likely to join the labor force. Similarly, as mothers who are more educated are less likely to promote child labor, therefore, the coefficient of 'MEdu' is expected to be negative. 'Sch' for current schooling status of the child, is dummy getting a value of 1 if attending any kind of educational institution and 0 for otherwise. The expected sign of' Sch' is negative because children currently attending school are less likely to be child laborers compared to the alternative group. 'MWork$_i$' stands for mother's working status, a dummy variable coded as 1 if the individual is an Earner and 0 otherwise. The coefficient of MWork is expected to be positive because if the mother is an earner, the children are expected to be an earner considering the poverty of the households. 'Inc' stands for household

monthly income, which is calculated using the sum of daily wage and salaried wage of all the members in each household excluding the children's income. For calculating the income per month, the following formula was implemented: *Income= Daily wage*30 + Salaried wage.* As the household income increases, families are less likely to send children into the labor force. Therefore, the coefficient of income is expected to be negative. 'HHsize' stands for household size measuring the total number of members in the family. A positive coefficient is expected because with more mouths to feed, the family's need for a child's income increases. 'Head' refers to the head of the family which is used as a proxy for bargaining power; coded as 1 if the individual is male and 0 otherwise. Since mothers might be less willing to encourage child labor, the coefficient of ' head' is predicted to be negative, and finally, 'Pov' for poverty status of each household which is assigned with a binary value after calculating the poverty line of Bangladesh in 2016. According to Knoema (2020), the purchasing power parity (PPP) of Bangladesh in 2016 was 28.5. Moreover, Bangladesh Bureau of Statistics, the food consumer price index (FCPI) show that the purchasing power in 2016 was 234.77 (BBS, 2016). Subsequently, the poverty line is calculated, using the following formula: Poverty line= ($ 1.25*PPP_2016/100)*FCPI = 1.25*(28.5/100)*234.77*30= TK 2509/month.Therefore, the households with consumption expenditures below this poverty line (<2509) are considered as poor. Hence, 'Pov' is coded as 0 for poor and 1 for non-poor. Since poor families are more likely to send their child into the labor market. Thus, the coefficient of 'Pov' is expected to be negative.

Empirical Findings

Descriptive Statistics

The cross-tabulation between the occurrence of child labor and each of the independent variables gives a P-value<0.05 (except income). Hence, it can be concluded that there is a significant association between the incidences of child labor with each of the predictor variables. Table 1 below summarizes the descriptive statistics of the respondents. As it is seen, out of 46,317 children, approximately 47% are females and 53% are males. However, the corresponding proportion of working children is found to be about 13% and 87% respectively. This is concordant with much previous research which shows that male child labor force participation is higher excluding the domestic chores. In terms of age distribution, the mean age of the children aged between 5 to 17 years is 10.9 years.

Table1: Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Hhold size	46,317	1128367	691846	1001	2304093
Sex	46,317	0.529	0.499	0	1
Age	46,317	10.916	3.575	5	17
Child_labor	46,279	0.044	0.205	0	1
Education	42,214	2.193	0.653	1	3
Sch_enroll	46,258	0.848	0.359	0	4
Mother's edu	28,121	2.535	0.509	1	3
Workingmother	45,890	0.127	0.332	0	1
Head	46,317	0.897	0.304	0	1
Income	31,090	14482.730	14533.200	0	480000
Childincome	1,458	6986.290	3813.458	0	50416.67
Povertystatus	31,090	0.472	0.499	0	1
Hhold_size	46,317	4.833	1.395	1	20

The frequency distribution of age shown in Figure 1 demonstrates an approximately normal distribution between the age group of 5-17 years whereas the box plot (Figure 2) represents a significant difference between the age group of child laborers and non-child laborers. The mean age of non-child laborers is 10.7 years and that of child laborers is 15.0 years. Therefore, as age increases, frequency of child laborers increase.

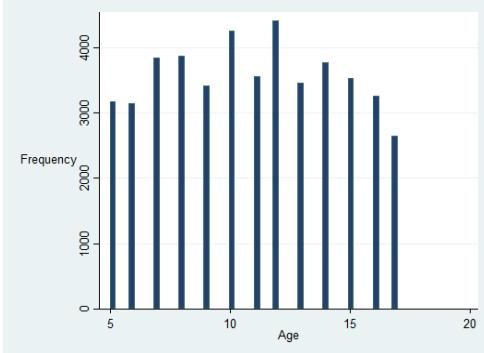

Figure 1: Age distribution of the respondents

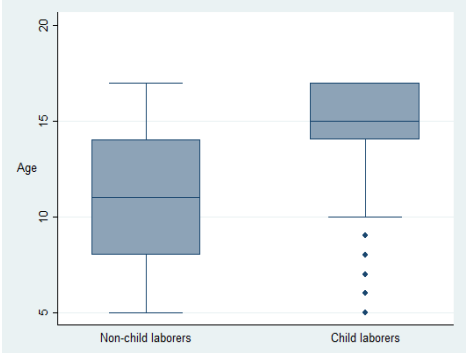

Figure 2. Age distribution of the respondents by categories

In terms of the years of education, the mean is 2.2, where no education is the minimum education acquired, and above primary education is the highest level of education.

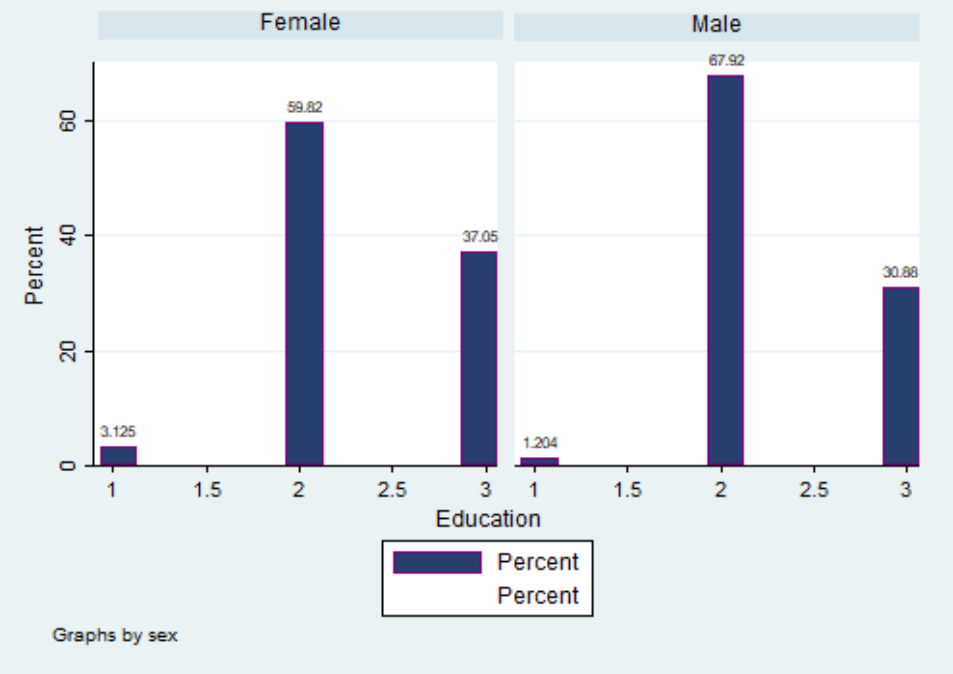

Figure 3.Frequency distribution of educational attainment by sex.

Furthermore, Figure 3 portrays the educational attainment of child laborers by sex. Regardless of the sex, the highest education attained by the majority of the child laborers is primary education or below (coded as 2). Around 68% of male child laborers completed primary education or below compared to nearly 60% of female child laborers. The difference may be due to preference of education for the boys.

Moving on to the size of the family, the average household size is 5 which is a typical size of a Bangladeshi family. The minimum number of people in a household is found to be 1 whereas the maximum is observed to be 20.

Subsequently, the mean child income is TK 6986.29/month (Table 1) which is higher than what is generally expected from a child laborer. However, this could be because of the outliers in the sample such as the household where the child earns TK 50416.67/month.

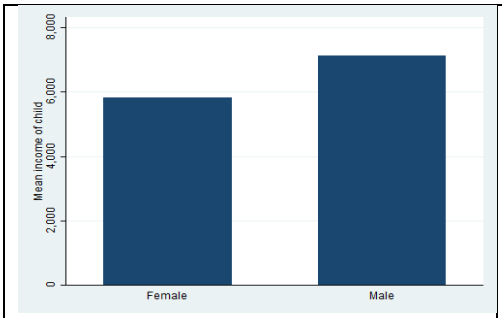

Figure 4. Average child income by sex.

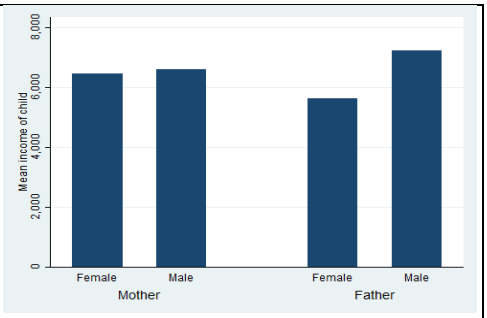

Figure 5. The average income of children by sex and head of household.

With the prevailing gender discrimination, the wage gap between boys and girls can be observed in the dataset. Figure 4 shows that on average a male child earns TK 7134 whereas a female child earns TK 5840. This is consistent with previous studies which show that the male wage is higher than female's. However, interestingly, Figure 5 shows that when the head of the family is the mother, on average the child's income is almost similar whereas, in the case of families headed by fathers, the gender wage gap is persistent.

After summing income of all the adult family members, the average income of a household is found to be about TK 14483/month (Table 1). According to Trading Economics (2020), the average monthly income in 2016 was Tk. 12,897/month, thus the sample data is consistent and representative. To add more, the average income of households where child labor persists is Tk. 18171.72/month whereas in the alternate case it is Tk. 14260/month.

It is also found that almost 90% of the cases, fathers are the head of the households and only 10% cases mother leads a family. In families where child labor exists, the corresponding proportions are about 83% and 17% respectively, which is most likely as Bangladesh conforms to a patriarchal society and thus most of the household decisions are taken by the male.

Table 2: Proportion of children enrolled in school

	For all children		For child laborers		For boy laborers		For girl laborers	
School Enrollment	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No	7,019	15.17	1,843	90.79	1,627	92.5	216	79.7
Yes	39,238	84.82	187	9.21	132	7.5	55	20.3
Total	46,258	100	2,030	100	1,759	100	271	100

Table 2 demonstrates that 84.82% of the children in the sample are currently enrolled in school whereas only 9% of child laborers are enrolled in the school. This data depicts that either majority of them have already completed the primary education or have dropped out, and thusjoined to the child laborer for contributing extra income to the households. Interestingly, 20.3% of the female child laborers are still enrolled in the school while the corresponding value for male child laborers is 7.5% only.

Results from Logistic Regression

Results obtained from the binary logistic regression are presented in Table 3. Since the coefficients explain the log of odd ratios, thus the explanation of the variables are made based on the anti-log of the estimated coefficients. For example, the anti-log of the coefficient of 'sex' (1.472)is 4.349 which refers that a male child is 4.34 times more likely to be a child labor than his counter part of a female child. The estimated coefficient of 'sex' is highly significant below to 1% level but it does not meet the expected hypothesis that a female child is more likely to work. For the 'age' it is found that if age of the child increases by one, he/she is 1.39 times more likely to be a child labor. The 'age' variable meets the expectation that is,the higher the age of the child, the more likely he/she is to be an earner and the coefficient is highly significant too. The 'education' variable also meets expectation as higher level of education reduces the likelihood of being a child worker. For example, if a child has primary or below education level, he/she is more likely to work (0.471) than a child having above primary educational level (0.327). Children who are currently enrolled in a school are less likely to work (0.014) than who are not enrolled now. The coefficients of the 'Mothers' Education' also shows the similar result, that is, higher educational attainment of the mothers reduces the likelihood of the child to be child worker.The coefficient of 'Mother Working' has the expected sign which shows that a child of a working mother is more likely to work (2.12) than a child of a non-working mother, and this coefficient is highly significant.

Table 3: **Results from Logistic Regression**

Variables	**Coefficients**	**Std. Err.**	**Z**	**P > z**	**Anti-log of Coefficients**
Constant	-4.360	0.952	-4.58	0.0001**	-
Sex	1.472	0.1596	9.22	0.0001**	4.349
Age	0.330	0.0343	9.61	0.0001**	1.391
Education					
primary or below	-0.752	0.441	-1.70	0.088*	0.471
above primary	-1.117	0.469	-2.38	0.017**	0.327
School enrollment	-4.271	0.175	-24.38	0.000**	0.014
Mother's Educ					
primary or below	-0.207	0.741	-0.28	0.780	0.813
above primary	-0.436	0.7467	-0.58	0.559	0.647
Working Mother	0.754	0.1794	4.20	0.000**	2.125
Income	0.000003	0.000004	0.74	0.460	1.000003
Hhold_size	-0.1478	0.050	-2.93	0.003**	0.862
HHhead	-0.563	0.2257	-2.49	0.013**	0.570
Poverty_status	0.412	0.1442	2.86	0.004**	1.510
Pseudo R2	0.584		*Prob> chi2*	0.00001**	1.793
N= 16405					

Note: **, and * indicate statistical significance at below 1% and below 10% levels respectively.

The coefficient of 'household income' exhibits an insignificant result. It shows that if household income increases by one taka, the log of odd ratio increases by only 0.000003 that describes that a child is not more likely (1.000003) to be a child worker. For bigger households, children are less likely to work (0.86) and the coefficient of 'household size' (-0.1478) is highly significant below to 1% level. The finding also shows that if father is the head of a family, a child is less likely (0.57) to be a child laborer with its log of add ratio (-0.563),which is highly significant. The coefficient of poverty status (0.412) shows that a non-poor family child is 1.5 times more likely to work than a child of poor family which is very unlikely though it is found statistically significant. However, the overall model is

significant with P-value < 0.01. The regression analysis also reports a Pseudo R^2 value of 0.584. Therefore, the explanatory variables used in the model can jointly explain about 58% variation in the dependent variable (log of odd ratio of the child labor) and hence the goodness of fit of the model is 0.58 which is quite high.

Discussion

The findings show that being a female does not increase the odds of being a child laborer compared to a male child which is contrary to the findings of the most of the existing studies such as Gurmu and Tilahun (2016) and Amin et al., (2015). However, research also shows that most of the domestic chores are assigned to the female child rather than the male child. Hence the hypothesis could have been true if domestic chores were integrated into the study. To add more, in Bangladesh, the practice of seclusion often restricts girls to work inside homes whereas boys can participate in outdoor works such as agriculture or business. Children were considered to be laborers only if they responded yes to being an earner. Since household works do not directly generate income and thus the work executed by girls may have been underrepresented. Another reason could be the average income of male children which is higher than that of female children, so households prefer to employ the boys in the labor force rather than the girls.

The age variable demonstrates the expected results. Regarding the highest educational level of the child, attainment of primary education or below as well as above primary education reduces child labor which is in line with the findings of Emerson and Souza (2002), and Sakamoto (2006).

Moving on, while the mother's working status shows significant effect on the incidence of child labor with a p value< 0.01, her education level even though shows expected sign conforming with the findings of Sakamoto (2006) and Ilahi(2001), fails to demonstrate a statistically significant effect. Children whose mothers are working are 2.12 times more likely to be child laborers compared to children whose mothers are not working. The reasons why the active working status of the mother encourages child labor could be the higher volatility of the mothers' income compared to that of the fathers, and the poverty. Regarding the mother's education status, a large number of missing values of this variable could be a reason why the variable demonstrates an insignificant effect on child labor.

Since Bangladesh conforms to a patriarchal society, male members are conventionally the head of the household, having the bargaining power in decision making. However, in cases where a male member is absent or deceased, female members might acquire the bargaining power. It turns out

that the bargaining power of the mothers does not reduce the labor force participation of the children which is contrary to the findings of the most of the existing studies such as Haddad (2017), Sakamoto (2006) and Reggio (2011) etc. Due to lower investment in female education and the persistence of wage gap and the lack of stability of mothers' income are responsible for child labor. The finding of the poverty status is contradictory to the existing research and it could be because of the large number of missing values in the poverty status variable. Lastly, increase in household size also demonstrates the lower likelihood of child labor. This is consistent with Sakamoto (2006) which suggests that the greater number of adult members potentially decreases the demand for child labor. Lastly, the income of the household does not show any significant effect on the odds of child labor.

Finally, this study confirms no gender disparity into the preferences of the households on child laborers. The finding of this study rejects the hypothesis that families prefer girls to be employed into the child laborers. This study suspects that exclusion of households' chores and domestic works could be the tentative reason for the rejection of the hypothesis.

Conclusion and Limitations

This study considers the child labor as a function of set of explanatory variables and finds male children are at a higher risk of joining into the child laborer and lower schooling. The study also finds that the female children are attending more than the male children but the household chores that the female children do are not reported as those are not generating income directly. Thus, there is a high chance of underreporting of the contribution of the female children. Perhaps, if hours of work of a female children is considered and compared with the allowable working hours of a children might explore the actual number of the female child laborers in Bangladesh. Therefore, further research that encompasses market and non-market activities, as well as paid and unpaid jobs executed by children, needs to be pursued to understand the labor division by gender.

This study also suffers from a few limitations. First, the observations encompassing children categorized as a brother, sister, nephew, niece, grandchild, servant, employees, head of the household etc. were dropped from the study while filtering the dataset. Second, even though the sample size is 46,317, the logistic model only considered 16,405 observations due to a large number of missing values. Lastly, since some children belonged

to the same household leading to cluster effects, a multilevel logistic regression analysis would have been more appropriate for the model.

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