

# Poverty and Social Impact of the Stipend Program for Secondary School Girls of Sirajganj District in Bangladesh: Poverty and Social Impact Analysis

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In 1994, a female stipend program was created to boost female enrolment, making secondary education free for girls. This research was started to look into the poverty and social impact of a conditional cash transfer program for secondary school girls in Bangladesh's Sirajganj area. The impacts of the Female Secondary Stipend Program on female enrolment in secondary school in Sirajganj district are investigated in this research. The stipend increased the number of years of school for eligible females, according to our findings. This paper also examines some social factors that influenced female enrollment rate. We also estimate that parental awareness about the evil effects of early marriage on female enrollment rate which increase the enrollment rate by delaying age at marriage. The dropout rate for girls in grades 6 through 10 was also lowered as a result of this initiative. In this situation, a stipend program should be continued for the benefit of these poor individuals. The stipend program has increased female enrolment in the Sirajganj area, as well as raising awareness of female education among disadvantaged households. The stipend program encourages disadvantaged families to send their female children to school. These findings suggest that through the conditional cash transfer program in secondary



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school, school-based stipend programs can boost female enrolment rates.

**Keywords:** *Stipend program; conditional cash transfer; female enrollment; age of marriage; Sirajganj.*

*JEL classification: E63; H52; I25*

## **Introduction**

Education and development are related generally. Women developments also depend on girl's education. Moreover, stipend programs help to promote girls' education. Secondary education serves an essential developmental objective by allowing students to participate actively in the global knowledge economy, acquire civic skills, and foster social cohesiveness (Education Watch, Dhaka, 2005). Stipend is the Government funded project which aims to develop the human resources. Female stipend program is another government-funded initiative aimed at increasing female enrollment. Females make up around half of our population. Poverty, early marriage, the socio-economic system, and religious conservatism all have an impact on these women. So Stipend Program is urgent necessary to increase female enrolment. Here poverty refers to the absolute poverty that means people who are unable to meet the basic needs of human life (World Bank, 2019). Despite the fact that poverty is the greatest hurdle to increasing female enrolment, a stipend program assists disadvantaged families in sending their children to school.

In this context, the stipend program is critical for secondary school girls' enrollment. Because the poor family's finances are restricted, they are unable to invest in their children's education. Poverty is the main impediment to increase female enrolment rate but stipend program helps this poverty affected people to send their child into school. So stipend program is necessary for this poverty stricken family. Sirajganj district is situated in the northern part of Bangladesh. Most of the people are engaged in agriculture and Handloom weaving. The literacy rate of Sirajganj district is low comparative to others district in Bangladesh. The literacy rate is only 40.6% where male literacy rate is 45.5% and female literacy rate is only 35.4% which gives us a clear idea that the enrolment rate is low in Sirajganj district. For this dispersion, Sirajganj district is selected for this purpose. In Sirajganj, most of the families are poor; the head of the family is unable to fulfill the basic needs of the family members including educational attainment. Secondary female stipends can assist them in obtaining an education and allowing them to participate in decision-making.

The Female Secondary Stipend Program was established in 1982 with the goal of increasing female enrolment rates in Bangladesh. After increasing female enrolment rates after 1983, the government of Bangladesh embarked on a new stipend program.

Table 1. Girl's enrolment rate in Bangladesh

Year	Enrolment		
	Total	Girl	% Of girl
1995	5115461	2402784	46.91
1998	6769078	3464742	51.18
2002	8162134	4360778	53.43
2006	7419179	3876914	52.26
2010	7465774	3979686	53.31
2014	9160365	4875084	53.22
2018	10475100	5655381	53.99

Source: BANBIES, 2018

In table-1, the overview of girl's enrolment rate of Bangladesh has been described as a consequence of Stipend Program. In 1995, the girl enrolment rate was 46.91% only. After 1995, female enrolment rate had been increased rapidly. The girl's enrolment had been increased to 51.18% in 1998. Perhaps this happened because people accepted stipend program as the economic benefit of the poverty-stricken family. In this way, the female enrolment rate had been increased to 53.99% in 2018.

Table 2. Number of Student and Amount of disbursed money

Number of Project	Number of Student receive stipend	Total amount disbursed (million Tk)
4	2377903	20234.02

Source: BANBIES, 2018

Secondary Education Stipend Project (SESP-2), Higher Secondary Stipend Project, Secondary Education Sector Investment Project (SESIP), and Prime Minister's Education Assistance Trust Degree (Pass) Equivalent Level are four initiatives that have been striving to increase female participation in Bangladesh. In 2018, 2377903 students got stipends, with a total amount of money given of 20234.02 million Tk (Table-2). In order to improve the efficacy of the Stipend Program, the Bangladeshi government implemented it through mobile banking in 2014. In 2018, the Bangladeshi government first issued stipend money to the student's guardians' cell phone numbers. As a result, dropout rates have dropped from 61.38 percent in 2008 to 38.30 percent in 2018.



Stipend program is established not only in our country but also others country as well. The government of a foreign nation launched a stipend program with the goal of reducing hunger, raising marriage age, and so forth. However, the Stipend program is primarily designed to increase female enrollment in secondary education in our nation. The impact of this stipend program across all over the world has been analyzed a lot. Since the objective of this program is to reduce poverty and to make some social change, this perspective of this program needs to be measured. Thus, our attempt is to evaluate the specific socio-economic impact of this stipend program.

The structure of the paper is as follows: the second part discussed the existing literature; the third part explains research methodology and the last and final part elaborates concluding remarks and provides policy recommendations.

### **Literature Review**

According to Fuwa (2001), Other aspects have been added to stipend programs, including as curriculum revisions and the production of instructional materials, teacher training, the recruitment of female teachers, and improvements to school infrastructure, community awareness programs, and institutional capacity building. He concluded that these programs are fully effective to increase the secondary female enrolment rate.

Hong and Sarr (2012) look at the FSSSP's effect on marriage age and several labor market outcomes. These studies indicated that females exposed to the program had a lower age of marriage, higher female enrollment, and united labor market results.

Jacoby (2002) and Ahmed (2004) look at the intra-household flypaper effect to examine how much of the food assistance "sticks" to the targeted recipients. According to studies from Bangladesh and the Philippines, the nutritional benefit of school meals is dependent on how much of the rations given to the child's family are consumed by younger children, which is also connected to enrolment. If they aren't, the nutritional impact of school feeding is determined by how much of the rations given to the child's family are consumed by younger children, which is also connected to enrolment.

Tan and his coworkers (1999) Miguel, Kremer, et al. (2004) and Evans, Kremer, Ngatia, et al. (2008) indicate that whereas school meal programs are frequently established especially in disadvantaged areas or educational institutions, they are seldom aimed at the most vulnerable students inside those schools. A stipend is also given to female students in order to improve their school completion rate.



According to Schuler et al. (2006), Bangladesh has a high rate of early marriage. In 2004, It had the second-highest number of adolescent brides in the world, with 68.4 percent of females married by the time they were 18. They concluded that secondary female stipend program can prevent early marriage and increase enrolment.

Baird et al. (2010) and McIntosh et al. (2011) investigate the impact of financial transfers meant to encourage females to stay addressing the subject of early marriage in school, adolescent pregnancy, and self-reported outcomes in Malawi. These initiatives were found to minimize early marriage and improve enrollment.

In Bihar, Muralidharan and Prakash (2014) found that providing school-aged females with funding to get a bicycle and ride it to school resulted in a substantial rise in female enrolment rates. The FSSSP is a fascinating complement to stipend schemes.

Khandker, Pitt, and Fuwa (2003) discover a distinct trend of increased secondary school enrollment among girls when compared to boys. They came to the conclusion that a feeding program and a female stipend program improved the number of women in the workforce.

According to Mahmud and Amin (2006) and Ullah (2013), who showed that a high percentage of girls from non-poor households dropped out of secondary school to be married, early marriage is still a cultural norm in Bangladesh. The family's financial position frequently influences parents' decisions to marry off their daughters at a young age. Furthermore, younger girls are in higher demand in the marriage market, which reduces the dowry burden. So, they concluded that secondary female stipend program has significant impact on reducing early marriage and increasing female enrolment.

Stipend programs, according to Raynor and Wesson (2006), promote female enrolment in grades 6–10, assisting them in passing the Secondary School Certificate test and qualifying for positions as primary school teachers, agricultural extension agents, health and family planning professionals, and non-governmental organization field workers as well as keeping them in school and preventing them from marrying young. In certain project regions, the pilot FSSP resulted in an increase in secondary enrolment by females, from 7.9% to 14%, and a reduction in dropout rates ranged between 14.7 and 3.5 percent.

Only a few studies in the literature measuring enrolment impacts use a randomized design, according to Kristjansson, Petticrew, MacDonald, et al. (2007) Adelman, Gilligan, et al. (2008) Bundy, Burbano, Grosh, et al. (2009). This could be due to the popularity of the intervention and political obstacles to randomization. They came to the conclusion that the Stipends program aids in increasing female enrollment.



The influence of school meals on learning attainment and cognitive function, as shown by Ahmed (2004), is likewise difficult to detect. Studies have found that there is a big influence in one area but not in others, such as enhanced scores in math but not in language, or vice versa and a significant impact on enrolment.

Grantham-McGregor, Simeon, and others (1989) According to Whaley, Sigman, Neumann, et al. (2003), the impact of school meals on achievement and cognition appears to be reliant on initial nutrition status, with undernourished children reaping the greatest benefits, which also improves the decision to attend school and enrolment.

Enrollment rises as a result of school food programs, but no extra instructors are employed, according to Grantham-McGregor, Chang, and Walker (1998). Classroom congestion may impair effective teaching. Providing a lunch to students throughout the school day, in particular for on-site feeding, may take away from instructional time.

Iron supplements given to children to avoid anemia have been shown to improve cognitive development and school attendance, and female stipend programs affect female dropout from schools, according to Bobonis, Miguel, Puri-Sharma, et al. (2006) McCann, Ames, et al. (2007).

According to Powell, Walker, Chang, et al. (1998), van Stuijvenberg, Kvalsvig, Faber, et al. (1999), and Grillenberger, Neumann, Murphy, et al. (2001), micronutrient shortages and short-term hunger may be easily addressed through school meals (2003). Existing data shows that school food has an impact on child enrolment.

Colombia's *Familias en Accion* program, according to Attanasio, Fitzsimons, and Gomez (2005) increased enrollment among adolescents aged 12 to 17, but had little effect on children aged 8 to 11.

Overall, the stipend program across the world is mostly effective particularly to increase enrollment rate. Though a good number of studies analyze the impact of this stipend program in Bangladesh at the national level, its impact on the district level is yet to be measured. Thus, our effort is to determine the impact of the stipend on girls' education and social standing in one of the districts (Sirajganj) in Bangladesh. The study also intends to identify the key elements that influence girls' secondary school enrollment. In addition, the research will give recommendations for improving educational stipends programs in future programs in order to minimize school dropout rates and improve completion rates.

## Research Methodology

The research relies on primary data. We utilize a method of purposive data collection. A household is a cross-sectional unit in this case. Chauhali, Kazipur, Shahjadpur, and Tarash are the four Upazilas in Sirajganj district where primary data is gathered. We used Cochran formula for selecting number of samples from unknown large population. The formula is  $n_0 = Z^2 pq / e^2$

Where, e is the desired level of precision, p is the proportion of population which has the attribute in question and q is (1-p). According to this formula, the calculated sample size is 384. As our population is unknown, we found that we need to collect at least 384 samples. So our sample size is 384. We should collect 384 samples. In the district of Sirajganj, we also conduct a pilot survey. For the purpose of selecting enumerators, the Survey Unit conducted interviews in four targeted Upazilas in Sirajganj. A team of two male enumerators was created in each Upazila. Secondary data was also utilised. Secondary data is gathered through BANBIES, BBS, and other sources. The study's data is gathered from a variety of sources and with a variety of tools. Data files were created from the raw data. The SPSS computer software was used to code and input the home level surveys. STATA is a program that is used to test various trials. Finally, STATA is used to do the logistic regression. The FGD (Focus Group Discussion) findings are used to support the field data and logistic regression results described in the results discussion section. The responder in four targeted Upazilas of Sirajganj district, namely Chauhali, Kazipur, Shahjadpur, and Tarash, is identified using a random sample approach. Table -3 shows the sample distribution for this investigation.

Table-3 Sampling distribution

Upazila	Household Survey	Sample (%)
Chauhali Upazila	100	26%
kazipur Upazila	100	26%
Shahjadpur Upazila	94	24.5%
Tarash Upazila	90	23.5%

Econometric model:

We can express the model as-

$$Z_i = \ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + u_i \dots \dots (1)$$

Where:

X1 = father's education

- X2 = mother's education  
X3 = Household size  
X4 = household income  
X5 = amount of monthly stipend  
X6 = sickness at home  
X7 = parental awareness about early marriage  
X8 = distance from High School and  $u_i$  is the error term.

The results will show in favor of the odds ratio- the ratio between the probabilities of girls will going to school and the probability of girls will not going to school.

### Results Analysis and Discussion

Cronbach's Alpha: Cronbach's Alpha is used to assess the data's reliability and internal consistency. Here value of Cronbach's Alpha is 0.71. So the data is reliable (See Table-4).

Table 4: Reliability statistics

Cronbach's alpha	N of items
0.714	9

### Heteroscedasticity test:

Table 5: Breusch-Pagan test for heteroscedasticity

H <sub>0</sub> : Constant Variance		
Variables: fitted values of enrolment		
Chi2(1)	=	19.63
Prob>chi2	=	0.0000

In my heteroscedasticity test P value is 0.000. That means P value of less than 0.05 is considered significant. As a result, the null hypothesis is rejected and the alternative hypothesis is accepted. It implies the presence of heteroscedasticity in the residuals which means that residual is not distributed with equal variance. So, OLS is not applicable. Again, we could not apply LPM because the value of probability could not exceed 1 and not less than 0. As the dependent variable is qualitative or binary response variable, we apply Logistic Regression model (See Table-5).

Table 6: Logistic regression model

<b>Dependent Variable: If female student going to school =1, otherwise zero</b>		
<b>Independent Variables</b>	<b>Logit-Model</b>	<b>Marginal Fixed Effects</b>
Fathers Education	0.09 (0.268)	0.0008 (0.0021)
Mother's Education	0.38* (0.172)	0.009* (0.0019)
Household size	-0.11* (0.049)	-0.027* (0.0081)
Monthly income	0.42** (0.167)	0.014** (0.006)
Amount of monthly stipend	0.20*** (0.101)	0.013*** (0.0031)
Sickness at home	-0.10* (0.050)	-0.004* (0.0011)
Awareness about early marriage	0.13** (0.057)	0.052** (0.023)
Distance from High School	-0.22* (0.071)	-0.0081* (0.004)
Constant	-41.48** (15.58)	
Observations	384	
Pseudo R-square	0.59	
LR Chi2	313.10	

Note. Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05

### Analysis of the logistic regression model

The results of the econometric estimating approach are presented in this section. The combination of social, economic, and cultural variables influences household education decisions. It is attempted to evaluate the influence of these factors on the possibility of girls entering secondary education. Father's education, mother's education, family size, monthly household income, amount of stipend each student receives, sickness at home, knowledge of early marriage, and distance from school are the factors that included in this study.

Table 6 shows regression results from a logit model in which the dependent binary variable is whether or not a girl is currently enrolled in school. If she attends school, it is equivalent to one,



and if she does not, it is zero. The last column reports marginal fixed effects, which are derived using the average value of explanatory factors. The likelihood ratio evaluates the model's overall significance. Pseudo-R-square has a value of 0.592.

All factors in the model, except father's education, are statistically significant, according to the findings of this study. The presence of an educated family member has a substantial influence on the education of children. The education of children is related to the education of their parents, since educated parents understand the necessity of reading, particularly for females, for future generations. Mothers' education has a favorable influence on girls' schooling; for every year that mothers' education improves, the likelihood of a girl attending school increases by 0.9 percent.

Family size has a negative influence on females' schooling; adding one extra family member reduces the likelihood of a girl attending school by 2.7 percent. Because of the resource constraints that households experience, this impact occurs. The family likewise favors male child education and wishes to devote their limited resources on their male child.

The financial situation of a family has an impact on a girl's schooling. Higher-income households with smaller families can devote more money to schooling. Low-income families have fewer resources to devote to their child's education. Poor families, on the other hand, must take their children out of school and place them in the informal labor market to support their family. As a result, income is an essential aspect in a girl's education. A 1% increase in household income improves the likelihood of a female attending school by 1.4 percent. Hobcraft and Kiernan (2001) found that family income has a considerable influence on children's current options, including schooling, and our findings are consistent with their findings.

Our results show that stipend is positively related to female enrolment. If a girl receives the stipend money, her likelihood of attending school improves by 1.3 percent. This occurs because the poor family utilizes the stipend to provide clothing, school materials, and other necessities for the girls. This variable is highly significant to increase female enrolment.

Sickness has a negative influence on girls' schooling; if they are unwell for one extra day, their chances of attending school drop by 0.4 percent.

The parental awareness about early marriage has important impact on female school going decision. As more the parent become aware about the evil effect of early marriage, they will send their female child to school.

In this study, parental awareness of the negative effects of early marriage has a beneficial influence; if the family is aware of the negative effects of early marriage, the chance of a girl attending school increases by 5.2 percent.

The capacity of girls to attend school has an impact on their education. The findings show that school distance has a negative and considerable influence on females' education. With increasing distance from school, a girl's likelihood of attending school diminishes. The distance also has an impact on the girl's schooling. With each additional unit of distance, the chance of girls attending school reduces by 0.8 percent.

In fine, we can say that among all the variables, stipend is more efficient in this case.

### **Impact of Stipend Program on Educational Poverty for Secondary Level:**

The stipend money reduced educational poverty in the majority of the Upazilas in Sirajganj district, according to the findings. Several financially strapped families who cared about their daughters' education were given a break because to this stipend money. After this stipend program, many families enlisted, and the monetary incentive supplied by this stipend program was excellent for the poorest of impoverished families. According to survey data (Figure 1), 94 percent of families have now enrolled their daughters in secondary school, while 6 percent of households did not even wish to take advantage of the stipend amount for girls' education and had no motive to enroll their female child.

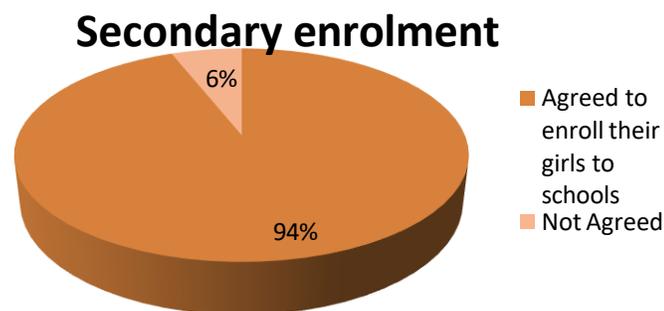


Figure-1 Secondary level Enrolment after Stipend Program

Table-7 displays the percentage change in the enrolment rate of females in the presence of a stipend program by Upazila. In all of the assessed Upazilas, there is evidence of a rise in the number of girls enrolled in secondary schools.

Table-7 Households' Willingness for Girls' Secondary Schooling

	Whole Sample	Chauhali	Kazipur	Shahjadpur	Tarash
Willingness after primary (%)	84	77	90	88	81
After the stipend program (%)	94	91	95	94	97
Percentage Change	10%	14%	5%	6%	16%

According to the data, around 94 percent of families decided to participate in the stipend program, and 6 percent more girls are enrolled in secondary school as a result of the initiative. The impact of the stipend program is positive, with 14 percent and 16 percent of households in Chauhali and Tarash agreeing to send their daughters to secondary school, respectively (Figure-2). Higher enrolment also indicates that girls' weddings will be postponed, that they will have higher human potential, and that they will be more socially secure.

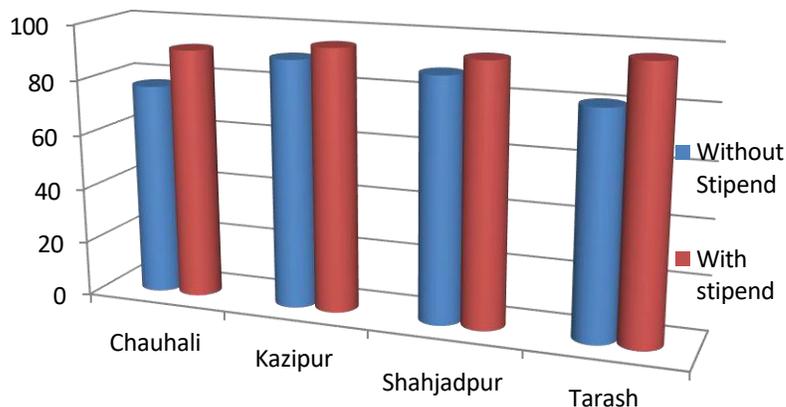


Figure-2 Enrolment Rates with and without Stipend in Different Upazila

Secondary schooling will pave the door for more girls to pursue higher education, with many of them enrolling in college and then going on to universities. McMahon (1998) used gross enrolment rates to quantify human capital and discovered that secondary and higher education expenditures



contributed more to increasing female enrolments. For the stipend-holder girls' families, the program has some considerable beneficial externalities.

## **Conclusion**

This study evaluates the stipend program's influence on female enrolments in Sirajganj district in Bangladesh. According to a review of family and school-level statistics, the rural stipend program for girls has had a strong beneficial influence on secondary school enrolment of school-aged females. Finally, we can say that female stipend programs help to increase the female enrolment rate in Sirajganj district in secondary level. Poor families in Sirajganj benefit from stipends, which encourage them to send their female children to school.

As a result, the female enrollment rate in Sirajganj has risen. Other factors, such as the mother's education, family income, and parental awareness of the negative consequences of early marriage, have a significant impact on increasing female enrolment rates in Sirajganj, but female secondary stipend programs are more effective than other factors in increasing female enrolment rates.

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