

Review Article

The Comparative Effectiveness of Stipend Program and Feeding Program on Secondary School Participation Rate in Basail Upazila, Tangail

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Abstract - Bangladesh government initiated the Secondary Stipend Program in 1993 for the purpose of increasing the female enrolment rate at the secondary education level. For the purpose of diminishing hunger in the classroom and promoting school attendance, the Government of Bangladesh (GOB) and the World Food Program (WFP) introduced the School Feeding Program (SFP) in chronically food-insecure areas of Bangladesh in July 2002. The stipend program successively changes the educational profile in our country. Before 1993 the people of our country were unaware of the importance of female education. After the introduction of the stipend program, people became conscious of the importance of girls' education, and the government of Bangladesh became successful in increasing the female enrolment rate at the secondary education level. School Feeding Program (SFP) is important to increase the school participation rate in Bangladesh. This program provides nutrient-fortified biscuits to children in the intervention schools. This pilot project was funded by the U.S. Department of Agriculture (USDA), and it was implemented by the Land O'Lakes Foundation. Both stipend programs and feeding programs are effective in increasing the school participation rate in Basail Upazila in Tangail district. But Secondary School Feeding program is more effective in increasing the school participation rate in Basail Upazila in the Tangail district. The feeding program is working as an incentive for the student to participate in school regularly.

Keywords - Education; Stipend program; School Feeding Program (SFP); female enrolment.

I. INTRODUCTION

Secondary School Stipend Programs is a conditional cash transfer program that aims to increase the enrolment rate at the secondary school level. This program is

successful in increasing the enrolment rate at the secondary school level. Again school feeding programs also increase the school participation rate. School feeding programs are a form of conditional transfer which have a significant impact on the school participation rate. School feeding programs are promoted as a means to increase educational participation, achievement and cognition, and nutritional status. Despite the attention and resources devoted to school feedings programs, however, prior research on school feeding has been hindered by school-based rather than household-based samples, cross-sectional data, and non-randomized designs (Adelman, Gilligan, & Lehrer, 2008). Evidence of the impact of school feeding on learning achievement and cognitive function is also hard to find. Studies have shown significant impact in one but not multiple domains, e.g., increased math but not language scores or vice versa (Ahmed, 2004; Kristjansson et al., 2007; Tan, Lane, & Lassibille, 1999). Higher-income countries of Latin America, school feeding programs are just as common and more likely to be funded and operated on a large scale by government agencies (Bundy et al., 2009). So the study analyses the comparative effectiveness of the Secondary School Stipend Program and Secondary School Feeding program.

II. LITERATURE REVIEW

Khandker, Pitt, and Fuwa (2003) found a positive impact on the enrolment of secondary school girls in Bangladesh, while Filmer and Schady (2006) estimated that the Japan Fund for Poverty Reduction program in Cambodia significantly increased enrolment and attendance of girls in secondary school.

Skoufias and Parker (2001) show that the Progesa program significantly increased school enrolment and reduced participation in work activities of boys and girls in



Mexico. They concluded that this program lessened girls' drop out from secondary schooling.

Meme et al. (1998) did not find a difference in the attendance rates between schools with and without the school feeding program and others programs. He concluded that this program was not effective in increasing female enrolment.

Jacoby et al. (1996) conducted a study in Huaraz and showed that students who received breakfast at schools and which increased school attendance.

Anderson and Eswaran (2009), Ashraf (2009) Ashraf et al. (2014) studied the subsidy programs for girls' education. They concluded that these programs increase female enrolment and also enhance female autonomy.

Hunt (2008) studied subsidy programs for girls' education and concluded that drop-out and retention, a variety of factors had been shown to contribute to girls' enrolment.

Jacoby, Cueto and Pollitt. (1996). Benefits of the school breakfast program among Andean children in Huaraz, Peru. Yunusa (2012) studies that students in School Feeding Programs have the potential for improving their performance because it works as an incentive for them to attend school regularly and study more effectively. He found that in a study carried out in Jamaica, and girls are more eager to go to school. As a result, the enrolment was increased.

Angrist et al. (2006) studied the impact of stipend on enrolment and found that PACES increased the secondary school completion rate, which was very effective for girls schooling than boys schooling.

Robert and Weaver-Hightower (2011) found that the school feeding problem changes but does not disappear. Developing countries tend to have undernourishment, while developed ones are malnourished. One of them is that school food can play an important role in students' academic achievement.

School feeding programs improve the school participation rate and improve the micronutrient status of students (Allen and Gillespie, 2001), increase the growth of the students (Allen & Gillespie, 2001; Levinger, 1986), improve cognition (Levinger, 1986), improve the academic performance of the students (Allen & Gillespie, 2001; Levinger, 1986) and increase school attendance of the students.

Sandler (2011) found that school feeding programs have a positive impact on learning achievement, as measured by increases in test scores. He also investigated empirically that there are several econometric issues that raise questions about the validity of these results.

Chambers (1991) studied an evaluation of a school feeding program in Jamaica assessed the dietary impact of school breakfast consisting of a bun and half-pint of milk. He found that the program provided 32 per cent and 45 per cent of daily energy and protein requirements, respectively. Dall'Acqua (1991) examined the impact of the program on the consumption of calories and protein by school children in Sao Paulo. He found that participation in the program was associated with increased availability of 357 calories and 8.5 grams of protein.

III. OBJECTIVES OF THE STUDY

Following are the main objectives of this study.

- The main objective of the study is to find out which program is better between Secondary School Stipend Program and the Feeding program in BasailUpazila.
- The study also aims to identify the impact of these programs on the school participation rate.

The study also makes some recommendations for the betterment of these programs.

A. Methodology

The study is based on primary data. We use the purposive data collection method, and a household is a cross-sectional unit. Primary data is collected from BasailUpazila in the Tangail district. As our population is 400, we found that we need to collect at least 197 samples. So our sample size is 197. We also conduct a pilot survey in BasailUpazila. Survey Unit conducted interviews in focused Upazila of Tangail district for selection of enumerators. In BasailUpazila, a team of two enumerators comprising of two male enumerators was formed. We also used secondary data. Secondary data are collected from BABIES, BBS, etc. The data for the study was collected from different sources by using different instruments. This raw data was categorized into data files. The household-level questionnaires were coded and entered in the SPSS computer program. STATA is used to test different tests. Finally, we also use STATA to run the logistic regression. We use the findings of the FGD to support the field data and logistic regression results described in the results discussion part.

B. Results Discussion And Analysis

a) Econometric analysis

In this section, we reported the findings of the study. The school participation rate is determined by many economic and social factors such as father's education, mother's education, household size, household income, stipend, feeding, etc.

Report of model-1:

In this section, we show that all the variables are statistically significant in the schooling decision of the students. Only household size has a negative impact on the schooling decision of a student and father's education; mother's education, monthly income, and stipend have a positive impact on schooling decision.

Table 1. Impact of Stipend Program on the School Participation Rate

Dependent Variable: If student going to school =1, otherwise zero		
Independent Variables	Logit-Model	Marginal Fixed Effects
Fathers Education (feduc)	0.042* (0.013)	0.006* (0.0027)
Mother's Education (meduc)	0.036* (0.015)	0.0071* (0.0030)
Household size (hhsiz)	-0.0394* (0.0132)	-0.0077* (0.0024)
Monthly income(income)	0.53** (0.167)	0.023** (0.0076)
Amount of monthly stipend (stipend)	0.35*** (0.091)	0.021*** (0.0041)
Constant	-7.916** (2.311)	
Observations	197	
Pseudo R-square	0.50	
LR Chi2	137.45	
<i>Note. Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05</i>		

Here dependent binary variable is whether a student is currently attending a school or not. It is equal to unity if she attends the school and zeroes otherwise. Marginal fixed effects of explanatory variables are reported in the last column. The likelihood ratio tests the overall significance of the model. The value of Pseudo-R-square is 0.50.

Father's education is an important factor for a student to attend the school. We show that a father's education has a positive impact on the schooling. The probability of a student attending school increases by 0.6% with one year increase in the education of mothers. As the father's year of education is increased, the probability of a student attending the school is increased.

Mother's education is an important determiner for a student to attend school. In this section, we show that a mother's education has a positive impact on schooling. The probability of a student attending school increases by 0.7% with one year increase in the education of mothers. Family size has a negative impact on the schooling of the student. The probability of a student attending school decreases by 0.8% if there is an increase in one more family member. This effect is due to resource limitation that poor family faces. The family also prefers in favour of male child schooling, and they want to spend their limited resource on their mail child.

Family income is the most significant determinant of education. Generally, families with higher income and smaller family sizes can invest more resources in education. Low-income families have fewer resources, and they

invest fewer resources in the education of their children. On the other hand, poor families have to pull out their children from school and put them into informal labour to earn more for their families. So income is an important factor for schooling. A 1% rise in income increases the probability of students attending the school by 2.3%.

Stipend works as an incentive for the students to go to school. At this present time, stipend has become very effective to increase enrolment in our country. In this study, we show that the stipend program is highly significant in increasing enrolment in our country. In this study, we show that the probability of a student attending school increases by 2.1% if one more student receives a stipend.

Report of model-2:

In this section, we show that except for the father's education and household size, all the other variables are statistically significant in the schooling decision of a student. In this section, we show that a mother's education, monthly income, and feeding have a positive impact on schooling decisions.

Table 2. Impact of Feeding Program on the School Participation Rate

Dependent Variable: If student going to school =1, otherwise zero		
Independent Variables	Logit-Model	Marginal Fixed Effects
Fathers Education (feduc)	0.217 (0.908)	0.0417 (0.1702)
Mother's Education (meduc)	0.058** (0.019)	0.0116** (0.0042)
Household size (hhsiz)	-0.0189 (0.0122)	-0.0037 (0.0023)
Monthly income(income)	0.068** (0.212)	0.011** (0.005)
Feeding	0.241*** (0.055)	0.047*** (0.011)
Constant	-10.56** (2.91)	
Observations	197	
Pseudo R-square	0.57	
LR Chi2	157.21	
<i>Note. Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05</i>		

Here dependent binary variable is whether a student is currently attending a school or not. It is equal to unity if she attends the school and zeroes otherwise. Marginal fixed effects of explanatory variables are reported in the last column. The likelihood ratio tests the overall significance of the model. The value of Pseudo-R-square is 0.57.

Mother’s education is an important determiner for a student to attend school. In this section, we show that a mother’s education has a positive impact on schooling. The probability of a student attending school increases by 1.16% with one year increase in the education of mothers.

Family income is the most significant determinant of education. Normally the families with higher incomes and smaller family sizes can invest more resources in education. Low-income families have fewer resources, and they invest fewer resources in the education of their children. On the other hand, poor families have to pull out their children from school and put them into informal labour to earn more for their families. So income is an important factor for schooling. A 1% rise in income increases the probability of students attending the school by 1.1%. Stipend works as an incentive for the students to go to school. At this present time, stipend has become very effective to increase enrolment in our country. In this study, we show that the stipend program is highly significant in increasing enrolment in our country. In this study, we show that the probability of a student attending school increases by 4.7% if one more student receives feeding.

C. Comparative effectiveness of stipend program and feeding program

The stipend program is effective to increase the school participation rate as well as the feeding program is effective to increase the school participation rate. Now there is the question, “Which program is more effective?” In model-1, we show that the Pseudo R-square is 0.50 and all the variables are statistically significant, and in model-2, the Pseudo R-square is 0.57 and only three variables are statistically significant, including feeding. So feeding explained model-2 better than stipend in model-1. Again LR Chi2 measures the overall significance of the model. In model-1, LR Chi2 is only 137.45, whereas the LR Chi2 in model-2 is 157.21, which is higher than model-1. So we can say that model-2 is more significant than model-1. As other variables and data are the same in these two models, feeding and stipend are different variables in these two models. So we can conclude that feeding programs are more effective than stipend programs on school participation rates.

D. Descriptive Studies

In this section, we analyze the economic and social factors. The stipend program has benefits for the poverty-affected people and works as an incentive for these people to send their children to school. The feeding program is very effective, and it has a great influence on the schooling decision of the parents.

A parent’s occupation has important influences on the schooling decision, which is also related to the economic condition of the household. So parent's occupation also determines the schooling decision of the household. And students’ father’s occupation is mainly related to their household income because most of the mother’s

occupation is a housewife. So fathers are the main earning members of each household.

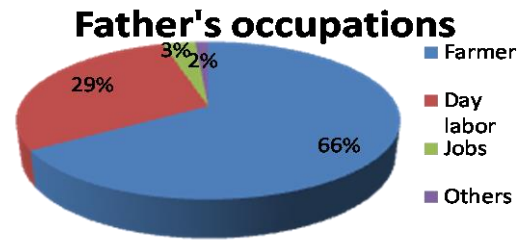


Fig. 1 Father’s Occupation of the Students

In this study, we show that most of the student’s father’s occupation is a farmer, and also a big portion of their father’s occupation is day labour. In figure-1, we find that about 66% of fathers’ occupation is farmer, about 29% fathers’ occupation is day labour about 3% father’s occupation is jobs and the rest 2% do any kinds of work. We find that most of the households directly or indirectly depend on agriculture. As a result, their main occupation is a farmer. In our country, most of the people’s main occupation is farmer because Bangladesh is an agricultural country. And again, another major portion of the total population occupation is day labour. Father’s occupation is also an important determiner in a child’s schooling decision. Household income is one of the most important factors in children’s schooling decisions; if the income of the household is high, the probability of schooling decision is in favour of schooling. This poverty affected family where schooling decision is mainly based on family income. So the income of the household is an important factor for schooling decisions.

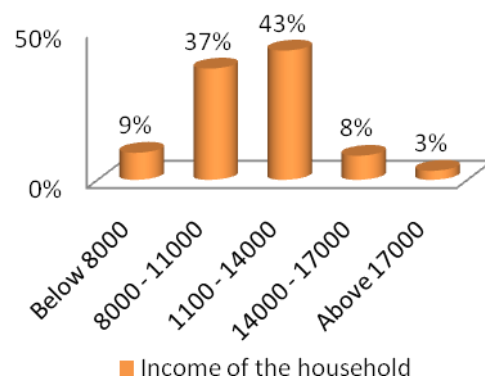


Fig. 2 Monthly Income Distribution of the Household

In figure-2, we show the income distribution of the respondent household. About 9% of household income is below 8000 takas, about 37% of household income belongs to 8000 – 11000 taka, about 43% household income belongs to 11000 – 14000 taka, about 8% of household

income belongs to 14000 – 17000 taka, and rest of the percentage household income belongs to above 17000 takas.

Above this discussion, it is clear that most of the monthly household income is below 8000 – 14000 taka. Their monthly income is not sufficient to fulfil all their needs. So stipend programs and feeding programs are very effective in increasing the school participation rate for these children who belong to this income group. The school participation rate is highly dependent on the income of the household.

There is a positive relationship between income and school participation rate. As the income of the household is increased, the school participation rate is also increased. So the income of the household has a significant impact on the schooling decision of a family. Father’s education has an important influence on the attendance of a student. If a father is conscious of the importance of learning, he will send his children to school. As the fathers receive more education, the probability of a student attending the school tends to increase. So father’s education is an important factor for a student to attend school.

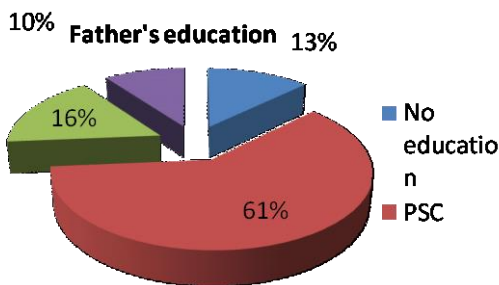


Fig. 3 Mother’s Educational Status

In figure-3, we show the father’s education status of the students. About 13% of fathers have no education. They are totally illiterate. About 61% of fathers have completed primary education, about 16% of fathers completed secondary education, and 10% of fathers have completed higher secondary education.

Most of the fathers have primary education. So we can say that, in the surveyed region, the educational status of fathers is very low. Many fathers are steel uneducated. As a result, the schooling decision becomes difficult for this child whose fathers are remained uneducated. Education is necessary for all these uneducated fathers.

Only 26% of fathers have completed their secondary and higher secondary education. So it is an alarming situation for this surveyed area. Necessary steps should be taken to improve the father’s educational status in this surveyed area. About 74% of fathers have very low

education, which is much unexpected in the present time. To increase the attendance rate father’s education is very important in this present context.

Mother’s education has an important influence on the attendance of a student. If a mother is conscious of the importance of learning, he will send his children to school. As the mothers receive more education, the probability of a student attending the school tends to increase. So mother’s education is an important factor for a student to attend school.

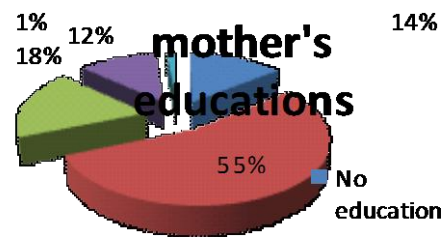


Fig. 4 Mother’s Educational Status

In figure-4, we show the mother’s education status of the students. About 14% of fathers have no education. They are totally illiterate. About 55% of fathers have completed primary education, about 18% fathers completed secondary education, 12% of fathers have completed higher secondary education, and only 1% completed graduation.

Most of the mothers have primary education. So we can say that, in the surveyed region, the educational status of mothers is very low. Many mothers are uneducated. As a result, the schooling decision becomes difficult for this child whose mothers remain uneducated. Education is necessary for these uneducated mothers.

IV. CONCLUSION

Stipend programs and Feeding programs are effective and increase the school participation rate in BasailUpazila. But Feeding program is more effective than the Stipend program to increase the school participation rate in BasailUpazila. Most of the parents are very poor, and their educational status is very low. As a result, they could not make a good decision about their children’s schooling. Both Stipend Programs and School Feeding Program are working as an incentive for the student to go to school. But Feeding program is more effective than other programs in BasailUpazila. So we can conclude that feeding programs are more effective than stipend programs on the school participation rate.

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