Labour Market Effects of a Female Stipend Programme in Bangladesh

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Routledge
Taylor & Francis Group

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ABSTRACT   *Bangladesh's female secondary education stipend programme was one of the first conditional cash transfer programmes in the world. While numerous studies have investigated the impacts of such programmes on school enrolment, attendance and learning, less attention has been paid to their long-term labour market effects. This article extends the literature by studying the effects of Bangladesh's programme on earnings and the sector of employment, as well as on labour force participation and education outcomes, using repeated cross-sectional data in a difference-in-difference framework. We find that exposure to 5 years of the programme is be associated with a 1-year increase in education level completed and an increase in female labour force participation by six percentage points. However, we find that wages decrease by about 17% because the women have difficulties in finding a good job and end up in low productivity self-employment work.*

JEL Classification: J20, J30, O12, O53

1. Introduction

Most developing countries are now using some form of conditional cash transfer programmes (CCTs) to attempt to reduce poverty and increase human capital. The first country to implement a CCT was Bangladesh. It implemented the Female Secondary Education Stipend Programme (FESP) with the aim of increasing educational attainment among women, which empowers them by increasing their job opportunities and earnings. Although there have been many research studies on the effects of CCTs on enrolment, attendance and learning outcomes, few have focused on the long-term labour market effects. This article aims to evaluate the effects of FESP on female earnings, the sector of employment and labour force participation.

As in many developing countries, gender disparity is common in Bangladesh. Culture, religion, and poverty all collude to prevent girls from attending higher education and ultimately from participating in productive employment opportunities. However, gender inequality has been falling dramatically over the past two decades (World Bank, 2012). While Bangladesh ranked 86th in the World Economic Forum gender gap index in 2012 (World Economic Forum, 2012), it ranked 68th in 2014 (World Economic Forum, 2014). In comparison with India and Pakistan, which have similar cultural and religious dynamics, the gender gap is lower in Bangladesh (see Table 1). According to the World

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Table 1. World economic forum on selected gender gap ranking

|	Bangladesh	India	Pakistan
Overall	68	114	141
Economic opportunity	127	134	141
Education	111	126	132
Health	122	141	119
Political empowerment	10	15	85

Source: World Economic Forum, 2014.

Economic Forum's Global Gender Gap Report 2014, Bangladesh is outperforming both of these countries in terms of gender equality in education, economics and political empowerment.

The FESP was piloted in 1982 and gradually rolled out nation-wide in 1994. Under the programme, girls attending grades from 6 to 10 are given school stipends, free tuition books and exam allowances. According to data from World Bank Development Indicator (see Figure 1(a)), there was a dramatic jump in secondary school enrolment for both boys and girls in the mid-1990s. However, secondary enrolment increased by 40 percentage points for girls, while it increased by only 20 percentage points for boys between 1994 and 1997. More importantly, since 1998 female enrolment has surpassed male enrolment in secondary school. Tertiary enrolment increased at the same rate for both males and females between 1994 and 1997 (see Figure 1(b)). These observations arouse interest in the role played by FESP in the dramatic increase in female enrolment rates, given that the programme benefits only secondary school girls.

In terms of labour market outcome, since 1995 female labour force participation has increased from 10% to 28% while male labour force participation has remained at around 90%. Between 1995 and 2010, the female wage rate increased by 7.6 times. However, the labour force participation of women and their wage rate are still substantially lower than those of men in Bangladesh. Figure 2(a),(b) shows the trends in labour force participation and the daily real wage rate, using various rounds of the Household Income and Expenditure Surveys of Bangladesh (HIES) and the Labour Force Surveys (LFS). As shown in the figures, while the gender gap in labour force participation dramatically decreased between 1995 and 2010, the wage gap did not narrow significantly.

Previous literature on female stipend programmes in Bangladesh has found that it narrowed the gender gap in secondary school enrolment and educational attainment (Khandker, Pitt, & Fuwa, 2003 and Fuwa, 2001). Hong and Sarr (2012) also found that the programmes increased the marriage age of women and their labour force participation, although the effect on labour force participation depended on the sample chosen. However, these studies have all focused on the Female Secondary School Assistantship Programme (FSSAP), the part of FESP financed by the World Bank, and did not take into account that FESP was piloted in 1982 and eight *thanas* (administrative districts) were already receiving the stipend programme before 1994. Ignoring these facts could potentially bias estimates of the impact of the stipend programme since depending on the date of implementation, different cohorts are in the intended treated group in the different *thanas*. Similarly, two additional educational programmes – compulsory free primary education and tuition programmes for girls in grades six through eight – were also launched in 1990, and failure to take them into account might lead to bias in the estimation
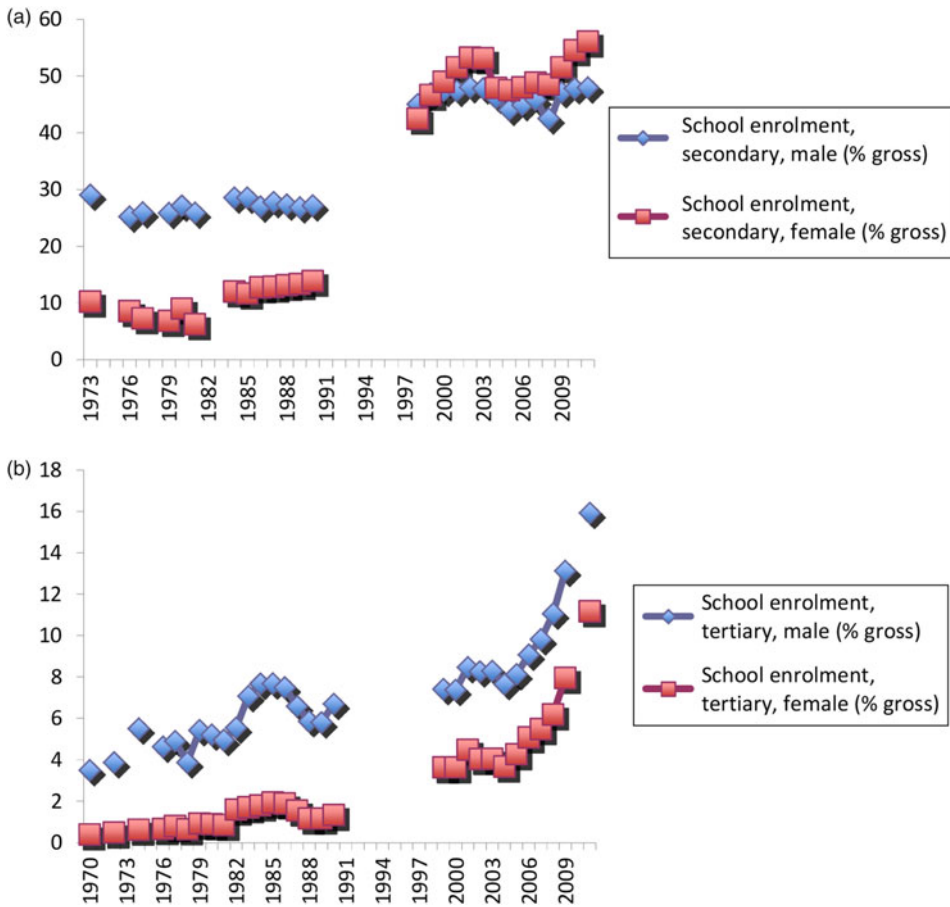
Figure 1. (a) Gender difference in secondary school enrolment. *Source*: The World Bank (2013). (b) Gender difference in tertiary enrolment. *Source*: The World Bank (2013)

of the effect of FESP. This article thus extends the existing literature by identifying the effect of FESP on earnings; labour force participation; and the sector of employment through the variation in timings of implementation, exposure by gender, region and age and by factoring in other educational programmes.

Our results suggest that although FESP increased the education level and labour force participation among females by 1 year and 6 percentage points, respectively, it actually decreased earnings by about 17% as the surplus of secondary-educated females failed to find productive employment. This suggests that in order to empower women economically, demand-side interventions are also needed.

The rest of the article proceeds as follows: section "Female Secondary School Stipend Programme" describes the educational programmes in detail. Section "Literature Review" gives the literature review, while section "Data and Identification Strategy" describes the methodology and the data. Next section reports the results, and final section is "Conclusion".
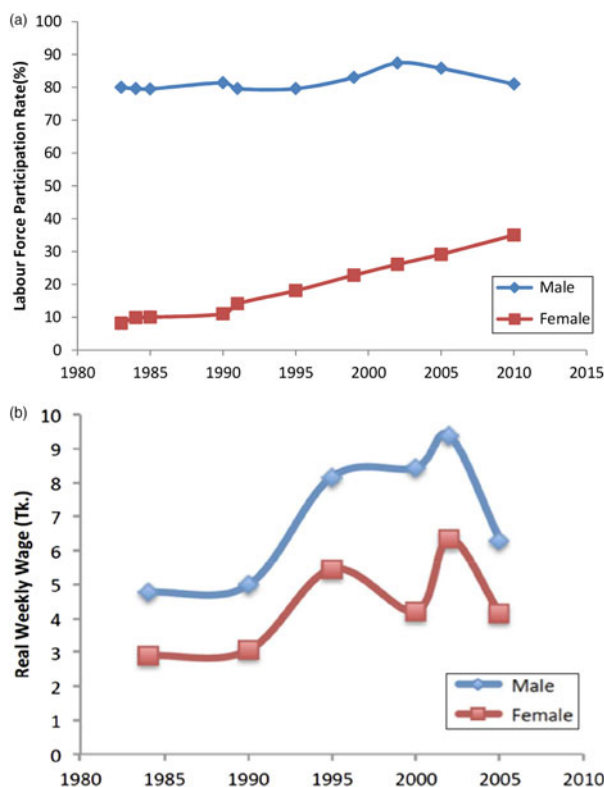
Figure 2. (a) Gender difference in labour force participation rate. *Source*: Author's calculation from Labour Force Survey (LFS), 1983, 1984, 1985, 1990, 1991, 1995, 2000, 2005, 2010. (b) Gender difference in real wage. *Source*: Author's calculation from Household Income and Expenditure Survey (HIES), 1985, 1990, 1995, 2000, and 2005.

2. Female Secondary School Stipend Programme

The FESP was first piloted in two *thanas* or *upazilas* (administrative units) of Bangladesh in 1982 in order to increase girls' access to secondary education and improve women's economic and social empowerment. It was implemented by a local NGO with the financial assistance of the United States Agency for International Development. A third *thana* was added in 1984 and four more in 1986. In 1990, the government of Bangladesh introduced free tuition – a different programme from FESP – to 453 *thanas* for girls in grades six to eight. In the same year, it also announced that primary education would be free and compulsory for all. An eighth *thana* was added under FESP when Norwegian Agency for Development Cooperation (NORAD) took over the funding in 1992. In 1994, the government of Bangladesh, with the help of the World Bank and the Asian Development Bank (ADB), extended the FESP stipend programme to girls in grades six and nine in 453 *thanas*. Grade 10 was included in 1995 and grades seven and eight were added in 1996 in these 453 *thanas*. The stipend programme in *thanas* funded by the government continued under the name FESP, while that under the World Bank was called FSSAP and that under ADB was called Secondary Education Development and Improvement Project (SEDIP/SESIP). NORAD took over

Table 2. Timeline of development of education programmes

Year	Programme timeline
1982	FESP introduced in Shaharasti and Kaharole *upazilas*
1984	FESP introduced in Chadpur *upazila*
1986	FESP introduced in Haimchur, Baruda, Burichang and Chandina
1990	Free tuition introduced to grades 6–8 in 453 *thanas*
1992	FESP introduced in Gopalganj *upazila*. NORAD takes over funding of FESP in seven *upazilas*
1994	FESP introduced in 453 more *upazillas* to grades 6–9 (grade 10 included in 1995). World Bank, government of Bangladesh and ADB jointly financed
1996	FESP extended to grades 7 and 8
1997	NORAD takes on funding of Chikorgacha, Avaynagar, Keshabpur and Baghapara Monirampur, Shailkupa, Kaligang, Magura Sadar, Shalikha, Lohapara, Maksudpur and Kalkini

Source: Adapted from Schurmann (2009), Raynor and Wesson (2006) and Directorate of Secondary and Higher Education (DSHE) (1997).

funding of another 12 *thanas* in 1997 from the government. Table 2 gives more details about the timeline of the introduction and evolution of these programmes.

The rates of stipend and tuitions fees were uniform across the stipend programme, irrespective of the agency funding it (Directorate of Secondary and Higher Education (DSHE), 1997). Table A1 in the Appendix shows the monthly breakdown of the programme. Overall, each girl enrolled in secondary school, grades 6 through 10, received a monthly stipend, free tuition, a yearly books allowance, and a one-time SSC (Secondary School Certificate) exam fee allowance. Any girl enrolled in a secondary school was eligible as long as she remained unmarried, had a 75% school attendance rate, and scored at least 45% in their school exams. Early child marriage is a common phenomenon in Bangladesh where about 50% girls marry before they are 15 years old (Hong & Sarr, 2012). Early marriage leads them to drop out of school in order to care for their household and is often associated with a higher fertility rate, especially in countries like Bangladesh where premarital sex and use of contraceptives are not socially acceptable (UNICEF, 2006).

The stipend was paid directly to an account in the girl's name at the nearest Agrani Bank, a state bank with branches all over Bangladesh. The stipend programme was complemented by curriculum reforms, occupational skill development programmes, instructional development materials, teacher training, recruitment of female teachers, improvement of school infrastructure, awareness programmes at the community level and institutional capacity building.

Table A2 in the Appendix summarises the total number of beneficiaries and the cost of the stipend programme by academic year. In just 1 year from 1994 to 1995, the number of beneficiaries doubled as the programme was extended to include grade 10 and SSC exam candidates.

3. Literature Review

This article extends the existing literature in two ways. First, it investigates the effect of FESP on earnings and the sector of employment. Second, it takes into account other educational programmes and the variation in the implementation of FESP in different regions at different times.

Previous literature on the effect of FESP has focused on FSSAP, the part of FESP funded by the World Bank, and found significant effects on educational attainment and mixed results on enrolment. Khandker et al. (2003) used school-level data from 1991 to 1998 to study the impact of FSSAP on female enrolment. Using the variation in the introduction of the programme to different class cohorts, they found that an additional year of programme exposure increased the female enrolment rate by 8%. Fuwa (2001) found a 2% increase in female enrolment and a 3% decrease in male enrolment, using the World Bank's project data. Asadullah and Chaudhury (2009) argued that the female stipend programme may be responsible for the reverse in the gender gap in schooling; however, Heath and Mobarak (2012) studied the effects of the explosive growth in the garment sector on young girls' enrolment and found no significant effect of the female schooling subsidy on their enrolment. The study's authors concluded that demand from the garment sector plays a key role in the enrolment decision. However, they used recall data from only four sub-districts in Dhaka division, where most of the garment sector firms are located, and it is unlikely the same result would hold for all of Bangladesh. Recall data may explain why the authors found similar discontinuities in the years just before and after 1994 since parents may not have remembered the exact grade their child attended every year. Hong and Sarr (2012) used the Demographic and Health Survey 2007, which only included married women, and found that FSSAP increased women's years of education by 1.6–2 years while the free tuition policy did not lead to any significant effects. They also found that the stipend programme increased the age of marriage for females by 1.4–2.3 years, while increasing labour force participation among married females with at least 5 years of education by about 2.4–5.4%. Since Hong and Sarr only looked at data for married women, their results could be biased as more educated and working women might marry later. Another problem with their study is that they claim FSSAP was introduced to rural areas only in 1994, but in reality it was introduced to both rural and urban areas and only the metropolitan areas were left out. Schurmann (2009) pointed out that only metropolitan *thanas* were excluded and the programme was actually piloted earlier in 1982.

FESP is a conditional cash transfer and research conducted on the effects of other conditional cash transfer programmes in different countries have found significant impacts of cash transfers on school enrolment and attainment, child labour, current consumption and adolescents' marriage and fertility decisions. Alam, Baez, and Carpio (2011), Behrman, Parker, and Todd (2005), Maluccio and Flores (2005), and Soares, Ribas, and Hirata (2008) reported these results for Pakistan, Mexico, Nicaragua and Paraguay, respectively. Angrist, Bettinger, and Kremer (2006) found that PACES, a conditional cash transfer in Colombia, increased the secondary school completion rate, while Barham, Macours, and Maluccio (2013) found that RPS (Red de Proteccion Social) in Nicaragua increased maths and language achievement scores for boys in the 10 years after the start of the programme. Rodriguez-Oreggia and Freiji (2012) studied the effect of Oportunidades on labour market outcomes after 10 years of implementation and found very little effect on the employment likelihood and wages among rural youth. However, they found that women who received treatment for less than 3 years were more likely to experience upward occupational mobility. Gertler, Martinez, and Rubio-Codina (2012) reported that Oportunidades increased consumption in the long-run through investment in productive assets, including human capital.

A large body of literature has focused on the effect of education policies on labour market outcomes. Duflo (2001) evaluated the effects of building schools on education and earnings in Indonesia using a single cross-sectional dataset. Combining differences across regions in

the number of schools constructed with the differences across cohorts induced by the timing of the programme, Duflo found that each primary school constructed per 1000 children led to an increase of 0.12–0.19 years of education and 1.5–2.5% increase in wages. Oreopoulos (2006) studied the effects of the change in the minimum school leaving age in the UK, the USA and Canada and found significant positive effects on educational attainment and earnings. Card and Krueger (1992) studied the effect of school quality on earnings while Card and Lemieux (2001) investigated the effect of college education on earnings. More recently, Havnes and Mogstad (2011) suggested that subsidised childcare in Norway has promoted upward inter-generational mobility and closed the gender wage gap.

While previous literature has found that FESP and other conditional cash transfer programmes may promote labour market outcomes, in this article we investigate whether the FESP has any substantial effect on earnings, labour force participation and the employment sector.

4. Data and Identification Strategy

4.1 Data

The data used for the analysis in this article come from four quinquennial, nationally representative Household Income and Expenditure Surveys (HIES) from 1995 to 2010 (Household Income and Expenditure Survey (HIES), 1995, 2000, 2005 and 2010). The combined dataset contains information on the demographics, education background, labour market outcomes, consumption and investment for Bangladesh. We restricted the sample to individuals (both males and females) aged between 25 and 50 years.

4.2 Identification Strategy

We matched individuals to the education programmes that were in place in their *thanas* when they were supposed to be in secondary school. Bangladeshi children normally attend secondary school between the ages of 11 and 15. Thus, girls who were born in 1967 at Sharasti and Kaharole *thanas* were in grade 10 (15 years old) in 1982 when FESP was first launched and received the stipend. Similarly, girls who were born in 1977 in the 453 *thanas* which were not under FESP in 1990 were in grade 8 (13 years old) when the free tuition programme was introduced; they were the first cohort to receive the free tuition. Table 3 provides details about the eligibility of each birth cohort. To summarise: girls born before 1967 in all 461 *thanas* and girls born before 1977 in the 453 *thanas* were not covered by any programme. The free tuition policy cohort is made up of girls born between 1977 and 1979 in the 453 *thanas*, while the stipend programme cohort includes: girls born in and after 1967 in Shaharasti and Kaharole *thanas*; girls born in and after 1969 in Chadpur sadar; girls born in and after 1971 in Haimchur, Baruda, Burichang and Chandina; girls born in and after 1977 in Gopalganj; and girls born after 1979 in all 461 *thanas*. Boys and girls born in and after 1980 were covered by the compulsory and free primary education programme, but only the girls received the stipend in secondary school. Thus, identifying the effect of the different policies is derived from considering the difference in the timings of implementation in different regions and for the different genders. It should be mentioned here that grade repetition and delayed school entry could substantially bias our estimation. Although micro-level data on grade repetition are not

Table 3. Eligibility of cohort for free tuition and Female Secondary Education Stipend Programme (FESP)

Birthyear	Grades							Eligible for tuition	Eligible for FESP
	1982	1984	1986	1990	1992	1994	1996		
1967	10	12							in Shaharasti and Kaharole
1968	9	11							in Shaharasti and Kaharole
1969	8	10	12						in Shaharasti, Kaharole and Chadpur
1970	7	9	11						in Shaharasti, Kaharole and Chadpur
1971	6	8	10						in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand and Chandia
1972	5	7	9						in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand and Chandia
1973	4	6	8	12					in Shaharasti, Kaharole, Chadpur,Haimchur, Baruda, Burichangand and Chandia
1974	3	5	7	11					in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand and Chandia
1975	2	4	6	10	12				in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand and Chandia
1976	1	3	5	9	11				in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand and Chandia
1977		2	4	8	10	12		Free tuition	in Shaharasti, Kaharole, Chadpur, Haimchur,Baruda, Burichangand, Chandia and Gopalganj
1978		1	3	7	9	11		Free tuition	in Shaharasti, Kaharole, Chadpur, Haimchur, Baruda, Burichangand, Chandia, Gopalganj
1979			2	6	8	10	12	Free tuition	in Shaharasti, Kaharole, Chadpur, Haimchur,Baruda, Burichangand, Chandia, Gopalganj
1980			1	5	7	9	11	Free tuition	in all 461 thanas
1981				4	6	8	10	Free tuition	in all 461 thanas
1982				3	5	7	9	Free tuition	in all 461 thanas
1983				2	4	6	8	Free tuition	in all 461 thanas
1984				1	3	5	7	Free tuition	in all 461 thanas
1985					2	4	6	Free tuition	in all 461 thanas

available, the 1995 HIES reports the time taken for individuals to complete secondary and primary education. The upper line in Figure 3 reveals the average number of years taken to complete secondary and primary education by birth cohort, while the bottom line shows the proportion of the secondary- and primary-school educated who took more than 5 years to complete the respective education levels. The average maximum number of years taken for a cohort to complete secondary school appears to be 5.2 years with no systematic difference for the cohorts intended to receive the stipend, which provides some evidence to support the identification technique. Figure 3 shows that the proportion of individuals taking more than 5 years to complete secondary education is also low, at 0–2% for most birth cohorts. The World Bank Development indicator reports that the repetition rate among secondary school pupils in Bangladesh is only about 5%.

Since the duration of secondary school is 5 years, some birth cohorts received the stipend for only 1 year, while some received it for 2 years and so on, for a maximum of 5 years. The effect of the programme is likely to vary with the time of exposure to it. As a result, we consider two groups in our analysis. One group comprises those females who were supposed to get the stipend for all 5 years of secondary education, and the other group comprises those who were supposed to receive FESP for less than 5 years.

To investigate the effect of the female stipend programme on years of education, we estimate the following two equations in a triple-difference framework:

$$edu_i = B_c + B_0 T_o + B_1 T_3 + B_2 \text{Female} + B_3 T_o{}^*\text{Female} + B_4 T_3{}^*\text{Female} + B_5 X_i$$
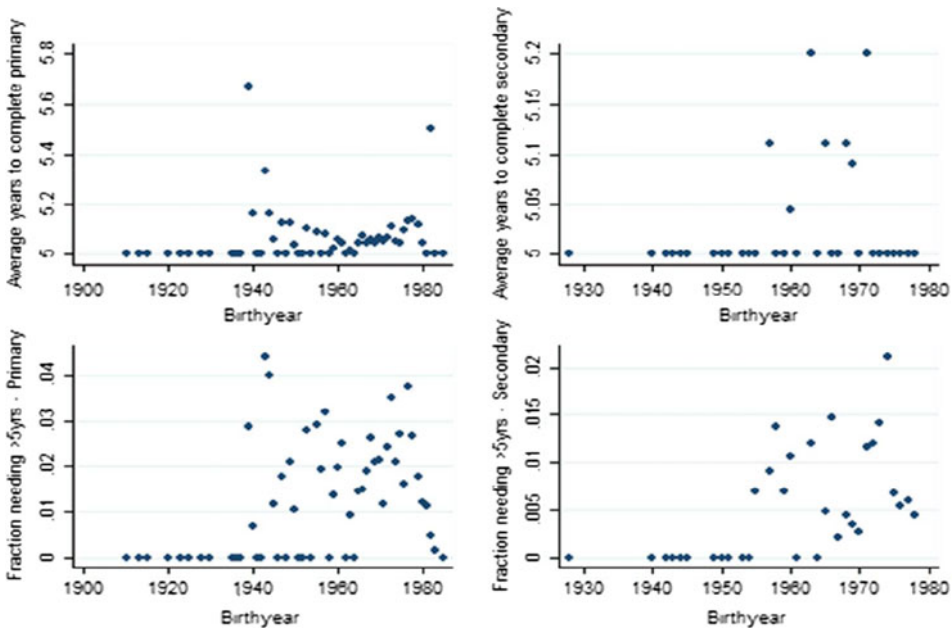
$$+ e_y + e_r + e_B + v_i \tag{1}$$

Figure 3. Average number of years to complete primary and secondary school and proportion of graduates who took more than 5 years, by birth cohort. *Source*: HIES, 1995

$$edu_i = a_c + a_0 T_1 + a_1 T_2 + a_2 T_3 + a_2 \text{Female} + a_4 T_1 * \text{Female} + a_5 T_2 * \text{Female}$$

$$+ a_6 T_3 * \text{Female} + a_7 X_i + e_y + e_T + e_B + v_i \tag{2}$$

where edu_i is the individual's years of education; T_0 is a dummy variable that takes the value of 1 if the individual is in the targeted birth cohorts as shown in Table 3 and is living in a region covered by FESP; and T_3 is an indicator variable that takes the value of 1 if the individual was born between 1977 and 1979 and lived in the 453 *thanas* covered under the tuition programme. X_i includes individual-level characteristics like age, a dummy for being married and the household size, e_y, e_T and e_B are fixed effects for survey years, *thanas* and birth cohorts, respectively, and v_i is the error term. The birth cohort fixed effects for birth cohorts of 1980 and onwards included in the estimation take into account the compulsory primary school policy that covered both male and female in all *thanas*. In Equation (2), the FESP indicator variable is divided into two indicator variables: T_1 which comprises of those who received the stipend for only a portion of their secondary school years; and T_2 which comprises of those who received the stipend for all 5 years of secondary education. Since the tuition programme and FESP targeted only girls, B_3 and B_4 in Equation (1) identify the effect of FESP and the effect of the tuition programme, respectively. Similarly, in Equation (2), a_4 and a_5 identify the effects of FESP on those who received the stipend for a portion of their secondary education and on those who received it throughout their secondary school years, respectively.

An alternative method to estimate the effect of the stipend programme would be to restrict the sample to just the girls, and identify the effect through differencing the outcomes in the treated and the untreated regions in a double-difference framework. A potential problem with this form of identification is sample selection as it does not account for the fact that the stipend programme targeted girls, due to the initial condition of females in terms of education and labour market outcomes being worse than males in Bangladesh. We nevertheless conduct the analysis in the double-difference framework for robustness checks. The specification we estimate is as follows:

$$edu_i = u_c + u_0 T_1 + u_1 T_2 + u_2 T_3 + u_7 X_i + e_y + e_r + e_B + g_i \tag{3}$$

where u_0 and u_1 are estimates of the impacts of FESP.

It should be mentioned here that the policies targeting females might have some spill-over effects on males, which may bias our estimates. In order to explore the existence of any such effect, we estimate the above equations by restricting the sample to males and then estimate the impact in a similar difference-in-difference framework. Although the tuition and the stipend programmes are targeted at the secondary school level, it may also have some positive spill-over effects on females to complete primary education with the expectation of receiving the stipend at the secondary level and on their tertiary education if they become motivated to continue their education further. Thus, we conduct some robustness checks by restricting the sample first to those who have more than primary education, and then to those who have not completed primary education, and finally to those who have completed more than secondary education.

Attaining higher education should improve women's labour market outcomes. To investigate whether FESP had any impact on women's labour market performance, we

investigate the impact of education on labour force participation, earnings, sector and type of employment among those who benefitted from the education programmes. We do this by using the tuition programme and the FESP as instrumental variables. The baseline instrumental variables equations which we estimate are as follows:

$$Y_i = \gamma_c + \gamma_0 T_1 + \gamma_1 T_2 + \gamma_2 T_3 + \gamma_3 \text{Female} + \gamma_4 \widehat{edu} + \gamma_5 X_i + e_y + e_r + e_B + e_i \quad (4)$$

$$Y_i = \delta_c + \delta_1 \widehat{edu} + \delta_2 X_i + e_y + e_r + e_B + e_i \quad (5)$$

where Y_i is the labour market outcome; and $\widehat{edu}$ is the predicted education after estimating Equation (2) in Equation (4), and the predicted education after estimating Equation (3) in Equation (5). The labour market outcomes we concentrate on are labour force participation, log of real earnings, the likelihood of working in the agriculture, manufacturing and service industry, and the likelihood of being a worker and self-employed. In the triple-difference framework, the differential effect of FESP according to exposure is the product of γ_4 and a_4 and γ_4 and a_5 respectively, and in the difference-in-difference method, the effect of FESP is identified through the product of δ_1 and u_0 and δ_1 and u_1.

5. Results

Table 4 reports the impact of the tuition and the stipend policy on years of education by estimating Equation (1). The tuition policy seems to have no significant effect on female

Table 4. Impact of free tuition and FESP on years of education

	All education levels	>5 years of education	< = 5 years of education	>10 years of education
Female	−1.50*	−1.49*	−0.26*	−0.32*
	(−65.45)	(−66.74)	(−25.18)	(−9.92)
T_0 (stipend)	−0.29*	−0.14	−0.00026	0.13
	(−2.25)	(−1.13)	(-0.00)	(0.81)
T_3 (free tuition)	0.15	0.17	−0.13	0.67*
	(0.66)	(0.79)	(−0.99)	(2.90)
Female × T_0	0.74*	0.68*	0.080	−0.23
	(5.70)	(5.34)	(0.84)	(−1.24)
Female × T_3	0.15	0.19	0.26+	−0.75*
	(0.71)	(0.89)	(1.89)	(−2.72)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	67,069	56,609	10,460	11,803
R^2	0.211	0.207	0.096	0.560

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
+$p < 0.10$, *$p < 0.05$.

education attainment, while FESP seems to increase the level of education among women by 0.74 years. The effect decreases to 0.68 years when we restrict the sample size to those who have more than primary school education. The stipend programme also seems to have no effect on those who do not have primary school education and those with more than secondary education. The results suggest that the stipend programme has a higher effect on those females who might otherwise have left school in fifth grade. It encourages girls to stay in school longer as they are getting the stipend, but not long enough to finish secondary education and continue with higher education.

Table 5 shows the results for Equation (2) where we are differentiating between beneficiaries according to time of exposure to the programme. Receiving 5 years of the stipend programme increases women's education levels by 1.08 years, while receiving less than 5 years of the stipend increases women's education by 0.36 years. Restricting the sample to those with more than primary school education decreases the effect of receiving 5 years of the stipend programme to 1.03 years, suggesting that the stipend programme has a higher effect on those who might otherwise have left school in fifth grade. Restricting the sample across gender and running the respective counterparts of Equation (3), we find that the stipend programme has significant positive effect on female education levels but no significant effect on that of males (Table 6). Receiving 5 years of the stipend programme increases female education by about 0.83 years, while receiving less than 5 years of the

Table 5. Impact on education by years of exposure to FESP

	All education levels	>5 years of education	< = 5 years of education	>10 years of education
Female	− 1.50*	− 1.49*	0.084*	− 0.32*
	(− 65.45)	(− 66.73)	(4.85)	(− 10.06)
T_1 (stipend for less than 5 years)	− 0.073	− 0.014	0.019	0.27
	(− 0.43)	(− 0.08)	(0.12)	(1.38)
T_2 (stipend for 5 years)	− 0.60*	− 0.37*	0.076	− 0.10
	(− 3.44)	(− 2.15)	(0.56)	(− 0.45)
T_3 (free tuition)	0.15	0.17	− 0.052	0.67*
	(0.66)	(0.78)	(− 0.30)	(2.92)
Female × T_1	0.36*	0.29	− 0.012	− 0.18
	(1.99)	(1.63)	(− 0.07)	(− 0.66)
Female × T_2	1.08*	1.03*	− 0.082	− 0.15
	(6.03)	(5.92)	(− 0.50)	(− 0.60)
Female × T_3	0.14	0.18	− 0.098	− 0.74*
	(0.65)	(0.82)	(− 0.49)	(− 2.70)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	67,069	56,609	10,460	11,803
R^2	0.211	0.207	0.254	0.560

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
[+]$p < 0.10$, *$p < 0.05$.

Table 6. Effects of free tuition and FESP on years of education across gender

	Female All education levels	Female >5 years of education	Male All education levels	Male >5 years of education
T_1 (stipend for less than 5 years)	0.69*	0.61*	0.16	0.12
	(5.46)	(4.93)	(1.09)	(0.81)
T_2 (Stipend for 5 years)	0.83*	0.75*	−0.033	−0.15
	(6.98)	(6.38)	(−0.25)	(−1.16)
T_3 (Free tuition)	0.49*	0.51*	0.52*	0.42*
	(3.13)	(3.20)	(2.97)	(2.45)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	25,990	21,393	41,079	35,216
R^2	0.228	0.236	0.159	0.144

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, $^*p < 0.05$.

stipend increases the female education level by 0.69 years. The effect of the free-tuition programme is positive and significant for both females and males. This may suggest that households are using the extra money freed up by the free tuition for the girls in order to finance education for their boys.

Table 7 reports what happened to those females who were affected by the free tuition and the stipend programme in terms of labour force participation and earnings. It shows that one additional year of schooling increases girls' labour force participation by about 6.1 percentage points. Based on this result, receiving less than 5 years' stipend leads to 2.2 percentage points increase in female labour force participation, while receiving the 5-year stipend increases the female labour force participation points by 6.6 percentage points on average. Restricting the sample to only those with higher than primary education decreases the impact of one additional year of schooling to 5.8 percentage points, suggesting that the impact of the stipend programme was higher for those who might otherwise have left in the fifth grade (Tables 8–11).

However, the result on earnings is not encouraging as one additional year of schooling is found to decrease earnings by about 16%. This translates into a programme impact of a decrease of 17% in earnings among those who received the stipend for 5 years, and a decrease of 5.8% among those who had the stipend for less than 5 years. This result is expected given the increase in labour force participation was not accompanied by any substantial change in the demand for this labour, and excess labour supply pushes down wages.

The estimates on the returns to education are higher than the least-squares estimates shown in Tables 12 and 13. This is because the IV-estimates measure the returns to schooling only for those affected by the stipend and the free tuition programmes. Table 14 shows that returns to schooling in terms of earnings is only positive for those with higher than secondary school education. The results seem to indicate that although

Table 7. Impact of free tuition and FESP on labour force and wage

	Labour force All education levels	Labour force >5 years of education	Real wage All education levels	Real wage >5 years of education
4 Years of education	0.061*	0.058*	-0.16^+	-0.18^+
	(4.12)	(3.51)	(-1.69)	(-1.82)
Female	-0.73*	-0.73*	-0.72*	-0.64*
	(-33.51)	(-30.16)	(-17.96)	(-15.68)
T_1(Stipend for less than 5 years)	-0.055*	-0.059*	0.061	0.14
	(-4.28)	(-4.21)	(0.71)	(1.63)
T_2(Stipend for 5 years)	-0.026*	-0.045*	0.14	0.15
	(-2.04)	(-3.16)	(1.59)	(1.63)
T_3(Free tuition)	-0.037*	-0.041*	-0.085	-0.055
	(-2.41)	(-2.42)	(-0.87)	(-0.53)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	67,146	56,686	9,136	8,128
R^2	0.704	0.689	0.215	0.182
F-stat	13.38	12.38	4.11	4.12

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are clustered by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, *$p < 0.05$.

FESP succeeds in attracting women to the labour market, it fails to reward them appropriately and the surplus labour lowers the wages for those employed. Without higher wages, FESP may fail to empower women and the social benefit of the programme may not be enough to outweigh the costs. The results also seem to suggest that empowering girls will just not be realised by building human capital without enhancing job market opportunities.

Table 8 reports that one additional year of schooling for girls increases their likelihood of working in the service industry and decreases their likelihood of working in manufacturing. Receiving 5 years of FESP increases the likelihood of women working in the service industry by 11.9 percentage points, while receiving less than 5 years of FESP increases the likelihood of working in the service industry by 4 percentage points. Similarly, receiving 5 years of FESP decreases the likelihood of working in manufacturing by 5.4 percentage points, while receiving less than 5 years of FESP decreases the likelihood of working in manufacturing by 1.8 percentage points. The findings in Table 9 suggest that FESP promotes self-employment. Among those who received the stipend, education increased self-employment, although as Tables 12–14 suggest that for the overall population in Bangladesh higher education leads to lower participation in self-employment. Anecdotal evidence (Kabeer & Mahmud, 2004) suggests that most self-employment among women in Bangladesh involves running a poultry farm or a tailoring shop or cultivating one's own land. These kinds of employment require very little education and the least-squares estimation suggests that fewer people enter into self-employment as their education level increases. However,

Table 8. Impact of FESP on sector of employment

	Agriculture All education levels	Agriculture >5 years of education	Manufacturing All education levels	Manufacturing >5 years of education	Service All education levels	Service >5 years of education
5 Years of education	0.022	0.0095	−0.050*	−0.045*	0.11*	0.11*
	(1.43)	(0.58)	(−3.34)	(−2.80)	(5.67)	(5.33)
Female	−0.21*	−0.21*	−0.21*	−0.21*	−0.27*	−0.28*
	(−9.43)	(−8.59)	(−9.59)	(−8.62)	(−9.90)	(−9.16)
T_1 (Stipend for less than 5 years)	0.00088	0.00049	−0.034*	−0.033*	−0.018	−0.019
	(0.07)	(0.04)	(−2.66)	(−2.53)	(−1.06)	(−1.08)
T_2 (Stipend for 5 years)	0.0091	0.0022	−0.0059	0.0032	−0.012	−0.034 +
	(0.67)	(0.14)	(−0.45)	(0.21)	(−0.74)	(−1.85)
T_3 (Free tuition)	0.0056	−0.0053	−0.0075	−0.011	−0.034	−0.025
	(0.33)	(−0.30)	(−0.42)	(−0.59)	(−1.55)	(−1.04)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	67,146	56,686	67,146	56,686	67,146	56,686
R^2	0.294	0.293	0.136	0.142	0.287	0.292
F-stat	13.38	12.38	13.38	12.38	13.38	12.38

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses. $+ p < 0.10$, $* p < 0.05$.

Table 9. Impact of FESP on type of employment

	Worker All education levels	Worker >5 years of education	Self-employed All education levels	Self-employed >5 years of education
5 Years of education	-0.035^+	-0.016	0.086^*	0.074^*
	(-1.88)	(-0.77)	(5.75)	(4.48)
Female	-0.36^*	-0.34^*	-0.14^*	-0.16^*
	(-12.96)	(-11.34)	(-6.54)	(-6.57)
T_1(Stipend for less than 5 years)	0.0096	0.0087	-0.064^*	-0.061^*
	(0.57)	(0.49)	(-4.53)	(-4.09)
T_2 (Stipend for 5 years)	0.0042	0.0053	-0.024^+	-0.037^*
	(0.26)	(0.28)	(-1.86)	(-2.38)
T_3 (Free tuition)	-0.0041	0.0090	-0.044^*	-0.049^*
	(-0.19)	(0.38)	(-2.47)	(-2.50)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	67,146	56,686	67,146	56,686
R^2	0.208	0.209	0.191	0.188
F-stat	13.38	12.38	13.38	12.28

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, $^*p < 0.05$.

the stipend beneficiaries enter the labour force but face difficulties in finding a productive job, and as a result they have to move into self-employment that gives lower returns to their education.

Robustness checks by restricting the sample only to women and estimating in a double-difference framework do not affect the overall results (see Tables 10 and 11). Although the

Table 10. Impact of FESP on female labour force and wage

	Labour force All education levels	Labour force >5 years of education	Real wage All education levels	Real wage >5 years of education
5 Years of education	0.094^+	0.064^+	-0.038^+	-0.070
	(1.96)	(1.67)	(-1.67)	(-0.26)
Time dummies	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes
Observations	25,990	21,393	788	725
R^2	0.093	0.104	0.223	0.243
F-stat	2.25	2.78	1.97	1.99

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, $^*p < 0.05$.

Table 11. Impact of FESP on sector and type of female employment

	Agriculture >5 years of education	Manufacturing >5 years of education	Service >5 years of education	Worker >5 years of education	Self-employed >5 years of education
5 Years of Education	−0.00061	−0.0040*	0.023*	0.026*	0.0035*
	(−0.93)	(−4.37)	(16.47)	(16.94)	(4.37)
Time dummies	Yes	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes	Yes
Observations	21,393	21,393	21,393	21,393	21,393
R^2-squared	0.02	0.09	0.109	0.09	0.03
F-stat	2.17	2.17	2.17	2.17	2.17

Note: Variables included in the regressions, whose coefficients are not reported, are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, $^*p < 0.05$.

magnitudes of the impact change, the signs of the relationship do not and this adds credence to the reliability of the results. The difference in the results of the double-difference method from the triple-difference method may be due to endogeneity problems arising because of sample selection. By restricting the sample by gender, we may be biasing the results as we are not controlling for the fact that female education levels and positions in the labour market are worse than for males in Bangladesh.

6. Conclusion

In developing countries like Bangladesh, credit-constrained households are more likely to invest in boys' education than that of girls, and the existing literature shows that providing assistance to credit-constrained individuals to go to school has both short- and long-term positive impacts on the economy (Carneiro & Heckman, 2002). Thus, conditional cash transfer (CCT) programmes have rapidly become a key policy instrument used by governments and international development organisations to increase human capital in developing countries. This article looks into the long-term effects of one such programme and finds that FESP in Bangladesh has increased women's years of education by 0.36–1.08 years. It has also increased female labour force participation by about 2.2–6.6 percentage points, but decreased earnings by 5.8–17%. The programme is also associated with an increased likelihood of women working in the service industry and in self-employment. The decrease in earnings among the beneficiaries raises concerns about the effectiveness of FESP to meet its long-term goal of empowering women and enhancing social benefits. The results suggest that in order for programmes like FESP to have beneficial long-term labour market impacts, it has to be combined with demand-side interventions. Policymakers in Bangladesh should focus on reducing bottlenecks, building infrastructure and attracting foreign investment, which will lead to more and better jobs for both males and females.

This article supports the earlier findings of Hong and Sarr (2012) that the stipend increases labour force participation among females, and extends the literature by

Table 12. Effect of education on labour market outcomes (sample with at least 5 years of education)

	Labour force	Wage	Agriculture	Manufacturing	Service	Worker	Self-employed
Years of education	0.0042*	−0.020*	−0.016*	−0.0084*	0.027*	0.026*	−0.0075*
	(7.58)	(−5.79)	(−29.14)	(−16.82)	(36.43)	(34.69)	(−12.65)
Female	−0.81*	−0.76*	−0.25*	−0.15*	−0.40*	−0.28*	−0.28*
	(−286.57)	(−18.40)	(−90.40)	(−60.27)	(−110.08)	(−78.46)	(−95.47)
Age	−0.0053*	0.0014	0.0022*	−0.0023*	−0.0049*	−0.0047*	−0.0027*
	(−10.96)	(1.06)	(4.60)	(−6.07)	(−9.10)	(-9.17)	(-5.91)
Household size	−0.00062*	−0.00080	−0.000061	−0.00066*	−0.0000067	−0.00077*	0.000068
	(−10.00)	(−0.81)	(−0.84)	(−10.26)	(−0.07)	(−8.18)	(0.79)
Married	0.042*	0.24*	0.035*	0.012*	0.029*	0.0086	0.033*
	(8.25)	(5.74)	(8.36)	(2.87)	(4.90)	(1.47)	(6.97)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	56,609	8,088	56,609	56,609	56,609	56,609	56,609
R^2	0.690	0.272	0.305	0.147	0.312	0.230	0.191

Note: Variables included in the regressions are age, household size, a dummy if married, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^{+}p < 0.10$, $^{*}p < 0.05$.

Table 13. Effect of education on labour market outcomes (sample with all levels of education)

	Labour force	Wage	Agriculture	Manufacturing	Service	Worker	Self-employed
Years of education	0.0020*	−0.017*	−0.014*	−0.0076*	0.022*	0.021*	−0.0066*
	(4.65)	(−5.79)	(−30.68)	(−18.75)	(37.11)	(35.15)	(−13.58)
Female	−0.82*	−0.80*	−0.26*	−0.15*	−0.40*	−0.28*	−0.28*
	(−333.96)	(−19.74)	(−105.21)	(−65.73)	(−123.40)	(−87.46)	(−105.93)
Age	−0.0048*	0.00019	0.0023*	−0.0023*	−0.0045*	−0.0042*	−0.0029*
	(−11.57)	(0.15)	(5.32)	(−6.97)	(−9.29)	(−9.05)	(−6.84)
Household size	−0.00067*	0.000026	0.000041	−0.00075*	−0.000083	−0.00095*	0.000047
	(−11.95)	(0.03)	(0.60)	(−13.02)	(−0.97)	(−11.41)	(0.61)
Married	0.027*	0.27*	0.031*	0.0042	0.022*	−0.0093[+]	0.035*
	(5.57)	(6.76)	(7.88)	(1.11)	(4.02)	(−1.70)	(8.00)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	67,069	9,096	67,069	67,069	67,069	67,069	67,069
R^2	0.705	0.299	0.306	0.141	0.304	0.227	0.194

Note: Variables included in the regressions are age, household size, a dummy if married, female, dummies for *thanas*, dummies for birth-years and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
[+]$p < 0.10$, *$p < 0.05$.

Table 14. Effect of education on labour market outcomes (sample with at least 10 years of education)

	Labour force	Wage	Agriculture	Manufacturing	Service	Worker	Self-employed
Years of education	0.0050*	0.045*	−0.015*	−0.012*	0.032*	0.046*	−0.024*
	(3.06)	(6.81)	(−12.23)	(−8.64)	(15.04)	(21.36)	(−14.68)
Female	−0.65*	−0.39*	−0.092*	−0.15*	−0.39*	−0.26*	−0.29*
	(−94.80)	(−9.32)	(−24.03)	(−32.70)	(−50.89)	(−33.17)	(−53.09)
Age	−0.011*	0.011*	0.0028*	−0.0031*	−0.010*	−0.0084*	−0.0059*
	(−11.06)	(6.56)	(3.11)	(−5.55)	(−10.85)	(−8.54)	(−8.50)
Household size	−0.000036	0.00010	−0.00011	−0.00063*	0.00061*	−0.00080*	0.00079*
	(−0.30)	(0.08)	(−1.16)	(−5.83)	(3.56)	(−4.48)	(5.09)
Married	0.075*	0.027	0.039*	0.022*	0.055*	0.053*	0.031*
	(8.83)	(0.56)	(7.34)	(3.43)	(5.38)	(5.14)	(3.77)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth-year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thana dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,048	3,983	21,048	21,048	21,048	21,048	21,048
R^2	0.517	0.300	0.334	0.176	0.289	0.228	0.214

Note: Variables included in the regressions are age, household size, a dummy if married, female, dummies for *thanas*, dummies for birth-year and dummies for survey years. Standard errors are weighted by population weights. *t*-Statistics in parentheses.
$^+p < 0.10$, $^*p < 0.05$.

investigating the effects of the policy on earnings, sector of employment and the type of employment. It also extends the literature by taking into account that FESP was actually piloted and introduced 12 years before the nation-wide rollout in 1994. It additionally controls for the other education programmes which were implemented in Bangladesh concurrently with FESP; namely, the introduction of compulsory primary school and the secondary school tuition programme.

This article focuses on the intent-to-treat effect of the female stipend programme, and future research could attempt to evaluate the effect on the treated. It should be noted that countries like Bangladesh have limited resources and financing girls for 5 years of secondary education may constrain its fiscal position. Consequently, further research also needs to investigate how the efficiency of the stipend programme could be improved, including possibly targeting those who would gain the highest returns from it.

Disclosure Statement

No potential conflict of interest was reported by the authors.

References

Alam, A., Baez, J. E., & Carpio, X. V. D. (2011). *Does cash for school influence young women's behavior in the long term: Evidence from Pakistan*. Unpublished manuscript.

Angrist, D., Bettinger, E., & Kremer, M. (2006). Long-term educational consequences of secondary school vouchers: Evidence from administrative records in Colombia. *American Economic Review*, *96*, 847–862.

Asadullah, N., & Chaudhury, N. (2009). Reverse gender gap in schooling in Bangladesh: Insights from urban and rural households. *Journal of Development Studies*, *45*, 1360–1380. doi:10.1080/00220380902935824

BANBEIS. (2012). *Secondary education statistics*. Retrieved from http://www.banbeis.gov.bd

Barham, T., Macours, K., & Maluccio, J. A. (2013). More schooling and more learning? Effects of a three-year conditional cash transfer program in Nicaragua after 10 years. IDB Working Paper Series. IDB-WP-432.

Behrman, J. R., Parker, S. W., & Todd, P. E. (2005). *Long term impacts of Opprtunidades Conditional Cash Transfer Program on rural youth in Mexico*. Unpublished manuscript.

Card, D., & Krueger, A. B. (1992). Does school quality matter? Returns to education and the characteristics of public schools in the United States. *Journal of Political Economy*, *100*(1), 1–40. doi:10.1086/261805

Card, D., & Lemieux, T. (2001). Can falling supply explain the rising return to college for younger men? A cohort-based analysis. *Quarterly Journal of Economics*, *116*, 705–746. doi:10.1162/00335530151144140

Carneiro, P., & Heckman, J. J. (2002). The evidence on credit constraints in post-secondary schooling. *Economic Journal*, *112*, 705–734. doi:10.1111/1468-0297.00075

Directorate of Secondary and Higher Education (DSHE). (1997). *Female secondary education stipend project – 2nd phase*. Bangladesh. Unpublished manuscript.

Duflo, E. (2001). Schooling and labor market consequences of school construction in Indonesia: Evidence from an unusual policy experiment. *American Economic Review*, *91*, 795–813. doi:10.1257/aer.91.4.795

Fuwa, N. (2001). *The net impact of the female secondary school stipend program in Bangladesh*. Unpublished manuscript.

Gertler, P J., Martinez, S. W., & Rubio-Codina, M. (2012). Investing cash transfers to raise long-term living standards. *American Economic Journal: Applied Economics*, *4*, 164–192. doi:10.1257/app.4.1.164

Havnes, T., & Mogstad, M. (2011). No child left behind: Subsidized child care and children's long-run outcomes. *American Economic Journal: Economic Policy*, *3*, 97–129. doi:10.1257/pol.3.2.97

Heath, R., & Mobarak, A. M. (2012). *Does demand or supply constrain investments in education: Evidence from garment sector jobs in Bangladesh*. Unpublished manuscript.

Hong, S. Y., & Sarr, L. R. (2012). *Long-term impacts of the free tuition and female stipend programs on education attainment, age of marriage, and married women's labor market participation of in Bangladesh*. Washington, DC: World Bank. Retrieved from http://documents.worldbank.org/curated/en/2012/10/

18257128/long-term-impacts-free-tuition-female-stipend-programs-education-attainment-age-marriage-married-womens-labor-market-participation-bangladesh

Household Income and Expenditure Survey (HIES). (1985). Dhaka: Bangladesh Bureau of Statistics.

Household Income and Expenditure Survey (HIES). (1990). Dhaka: Bangladesh Bureau of Statistics.

Household Income and Expenditure Survey (HIES). (1995). Dhaka: Bangladesh Bureau of Statistics.

Household Income and Expenditure Survey (HIES). (2000). Dhaka: Bangladesh Bureau of Statistics.

Household Income and Expenditure Survey (HIES). (2005). Dhaka: Bangladesh Bureau of Statistics.

Household Income and Expenditure Survey (HIES). (2010). Dhaka: Bangladesh Bureau of Statistics.

Kabeer, N., & Mahmud, S. (2004). Globalization, gender and poverty: Bangladeshi women workers in export and local markets. *Journal of International Development*, *16*, 93–109. doi:10.1002/jid.1065

Khandker, S., Pitt, M., & Fuwa, N. (2003). *Subsidy to promote girl's secondary education: The female stipend program in Bangladesh*. Unpublished manuscript.

Labour Force Survey (LFS). (1983). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (1984). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (1985). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (1990). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (1991). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (1995). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (2000). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (2005). *Bangladesh Bureau of Statistics (BBS)*.

Labour Force Survey (LFS). (2010). *Bangladesh Bureau of Statistics (BBS)*.

Maluccio, J. A., & Flores, R (2005). *Impact evaluation of a conditional cash transfer program. The Nicaraguan Red de Proteccion Social*. Unpublished manuscript.

Oreopoulos, P. (2006). Estimating average and local average treatment effects of education when compulsory schooling laws really matter. *American Economic Review*, *96*, 152–175. doi:10.1257/000282806776157641

Raynor, J., & Wesson, K. (2006). The girls' stipend program in Bangladesh. *Journal of Education and International Development*, *2*. Retrieved from http://www.equip123.net/JEID/articles/3/Girls'StipendPrograminBangladesh.pdf

Rodriguez-Oreggia, E., & Freiji, S. (2012). Long-term impact of a cash-transfers program on labor outcomes of the rural youth. CID Working Paper. 230.

Schurmann, A. (2009). Review of the Bangladesh female school stipend project using a social exclusion framework. *Journal of Health, Population and Nutrition*, *27*, 505–517.

Soares, V., Ribas, F. R. P., & Hirata, G. I. (2008). *Achievements and short-falls of a conditional cash transfers: Impact evaluation of Paraguay's Tekopora Programme*. Unpublished manuscript.

UNICEF. (2006). Early marriage in South Asia. Retrieved from www.unicef.org/rosa/earlymarriage (lastversion).doc.

World Bank. (2012). *Poverty Assessment Report for Bangladesh: 2010*.

The World Bank. (2013). *Data retrieved March 2, 2013, from World Development Indicators Online (WDI) database*.

World Economic Forum. (2012). *The global gender gap report: 2012*.

World Economic Forum. (2014). *The global gender gap report: 2014*.

Appendix

Table A1. Monthly stipend and tuition fees under FESP, by grade

		Monthly tuition fee (Taka)		
Grade	Monthly stipend (Taka)	Government school	Non-government school	Yearly books/SSC exam fee (Taka)
6	25	10	15	250
7	30	12	15	250
8	35	12	15	250
9	60	15	20	250
10	60	15	20	250

Source: Project Profile, Bangladesh Directorate of Secondary and Higher Education (Directorate of Secondary and Higher Education (DSHE), 1997).

Table A2. Coverage and cost of the FESP, by academic year

Year	Total number of secondary schools	Number of institutions received stipend	Number of female students received stipend	Amount disbursed (Million Tk)
1994	11,488	12,713	70,886	657.79
1995	12,012	14,119	1,409,382	1116.88
1996	12,978	16,722	2,300,062	1337.14
1997	13,778	17,847	2,825,350	1625.15
1998	14,518	18,721	3,198,559	2507.68
1999	15,460	18,788	3,564,404	1895.73
2000	15,720	19,919	3,961,194	2009.46
2001	16,166	21,027	4,191,058	2202.41
2002	16,562	22,893	4,193,352	2375.01

Source: Hong and Sarr (2012) and Ministry of Education (BANBEIS, 2012).