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EVALUATING THE LONG-TERM IMPACT OF ANTI-POVERTY INTERVENTIONS IN RURAL BANGLADESH

The Medium-Term Impact of the Primary Education Stipend in Rural Bangladesh

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This series of notes summarizes findings of a project entitled “What development interventions work?” undertaken by researchers from the Chronic Poverty Research Centre, the International Food Policy Research Institute, and Data Analysis and Technical Assistance Ltd. As part of a larger longitudinal study that resurveyed 1,907 households and 102 villages in 14 of Bangladesh’s 64 districts, the project focused on assessing the long-term impacts of a number of anti-poverty interventions—specifically, microfinance, agricultural technology, and educational transfers—on a range of monetary and non-monetary measures of well-being. This note focuses on the medium-term impact of Bangladesh’s major, primary-level cash-for-education program: the Primary Education Stipend program. It is hoped that these results will facilitate policy-makers, donors, and other stakeholders in effectively evaluating different interventions, thereby contributing to the design of future anti-poverty programs in South Asia.

OVERVIEW OF THE PRIMARY EDUCATION STIPEND PROGRAM IN BANGLADESH

The Primary Education Stipend (PES) program aims to increase school enrollments and attainments by providing cash incentives for poor parents to send their children to school. Households with qualifying pupils who attend school 85 percent of the time receive 100 Taka (Tk) per month for one child (about US\$1.76) and Tk 125 per month for more than one child. To qualify for the program, children must be of primary school age and meet at least one of the following five eligibility criteria:

1. Belong to a landless or near landless household (one that owns less than half an acre of land)
2. Have parents who work as day laborers

BACKGROUND AND METHODOLOGY

Although Bangladesh experienced impressive reductions in poverty from the mid-1990s until the onset of the food price crisis in 2007—with the percentage of the population living in poverty falling from 51 percent in 1995 to 40 percent in 2005—50 million of the country’s people still live in extreme poverty, and 36 million people cannot afford an adequate diet. The number of children enrolled in primary school has almost doubled, from 8.9 million in 1985 to 16 million in 2005, with enrollments of girls now slightly exceeding those of boys. Bangladesh has some of the longest-running education transfer programs in the world, beginning with the Food for Education program, implemented in 1993, and followed by the more ambitious Primary Education Stipend program, implemented in 2002/03.

This study focused on determining (1) the long-term impacts of educational transfers on per capita consumption and gender-disaggregated measures of monetary and nonmonetary well-being; (2) the impact of educational transfers on physical and human capital accumulation; and (3) the underlying processes—at household, community, and national levels—that contributed to the success or failure of the transfers.

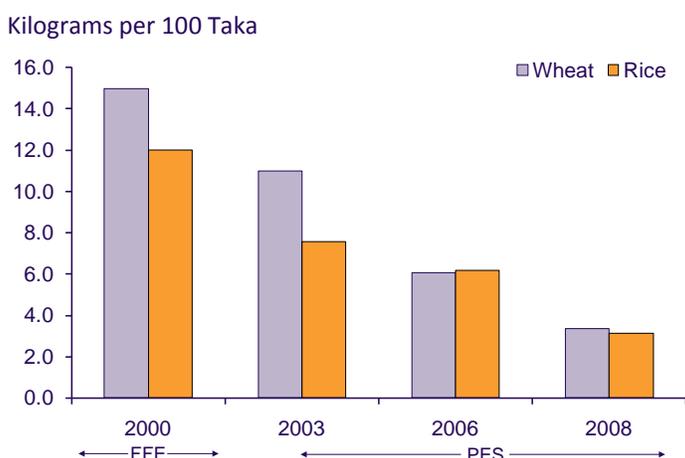
These research questions were investigated using the quantitative techniques of propensity score matching and panel data analysis. This aspect of the study built on a carefully created evaluation sample of households and villages, both of which included treatment and comparison groups. Impacts were then evaluated by comparing the average impacts within each group, along with any changes in the groups prior to and following the intervention being investigated. This latter technique is known as the “difference-in-difference” approach and is intended to eliminate any unobserved pre-existing differences between the two groups.

3. Belong to a female-headed household (one where the head is widowed, separated, or divorced or where the husband is disabled)
4. Belong to a household that derives its living from fishing, pottery, weaving, blacksmithing, or cobbling)
5. Belong to a household that derives its living from sharecropping

In 2002, the PES program replaced the Food for Education (FFE) Program, which distributed wheat and rice to poor households that sent their children to school. Unlike the FFE program, which only operated in economically disadvantaged rural areas, the PES program operates in all rural areas. The PES program was rolled out between July 2002 and January 2003, and during the first phase of its implementation (2002–08) the Ministry of Primary and Mass Education estimated that 5.5 million children received the stipend at a budgetary cost of Tk 2.82 billion (approximately US\$45 million), representing an estimated 19 percent of the primary education budget. The PES program was extended for a second five years in June 2008, with a budgetary allocation of Tk 2.44 billion (about US\$37 million). Some 4.8 million children are expected to benefit from the program between 2008 and 2013.

The monetary amount of the stipend has remained constant since the program's inception, which means its real value has declined. Tk 100, for example, would buy 11 kilograms of wheat flour and 7.5 kilograms of rice in late-2003, compared with about 6 kilograms of wheat or rice in late-2006, and by the height of the food crisis in August 2008, the stipend would only buy a little over 3 kilograms of wheat or rice. When these volumes are compared with the 15 kilograms of wheat or 12 kilograms of rice that were provided under the FFE program, it is clear that the value of the educational transfers has declined substantially over time (Figure 1).

Figure 1. The Declining Value of Educational Transfers



Note: FFE indicates the Food for Education program; PES indicates the Primary Education Stipend program.

DESCRIPTIVE ANALYSIS OF THE IMPACT OF THE PRIMARY EDUCATION STIPEND PROGRAM

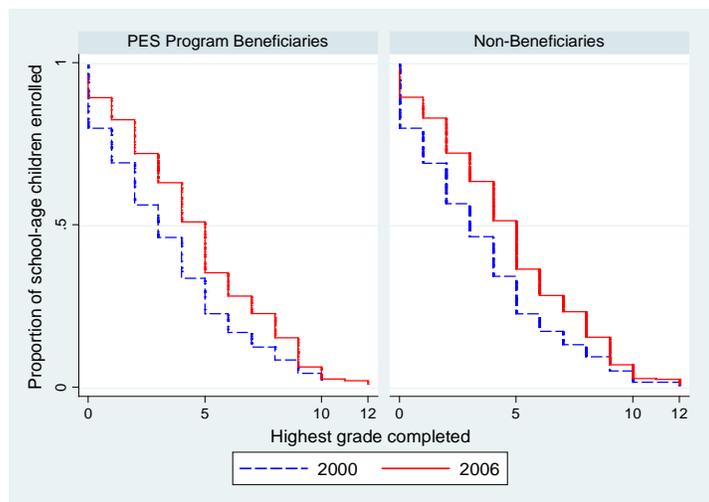
The first question addressed was how successful the PES program has been in targeting its intended beneficiaries: the poorest 40 percent of rural households. Data analysis suggests that the program's targeting is weak, given that just under half of the program's 2006 beneficiaries (48 percent) came from the poorest two-fifths of households, measured in terms of household expenditure. Furthermore, of households receiving the stipend in 2006, 27 percent were not entitled to do so (an increase from the 17 percent in 2003); and of the eligible households in the study villages, 31 percent did not receive the stipend (Table 1). In addition, 14.5 percent of the children receiving the stipend in 2003 and 35.3 percent of those receiving it in 2006 were more than 11 years old (the age at which children should complete primary school). These results are consistent with other studies arguing that the conditionality of the PES program is light and that schools often "adjust" eligibility criteria and school attendance records to ensure that "deserving" students receive the stipend. The weak targeting of the program is further exacerbated by its decentralized targeting, under which school management committees must pick around 40 percent of pupils to receive the stipend, regardless of their location's overall level of poverty.

The outcome variables examined in this study include a range of household- and individual-level variables (including expenditures, school enrollments, calorie and protein consumption, levels of child stunting and thinness, and asset ownership). The range of outcomes selected goes beyond the conventional measures used to assess the performance of educational interventions and is broadly comparable with those used in the companion brief in this series on the long-term impact of improved vegetable and fish technologies by N. Kumar and A. Quisumbing (see Further Reading).

Table 1. Targeting of the Primary Education Stipend program, 2006

PES Program Status	Eligible for program (%)		
	Yes	No	Total
2003			
Beneficiary	82.9	17.1	100
Nonbeneficiary	55.4	44.6	100
Total	65.2	34.8	100
2006			
Beneficiary	72.6	27.4	100
Nonbeneficiary	31.6	68.4	100
Total	40.1	59.9	100

Figure 2. Proportion of children enrolled in school by program beneficiary status



Note: PES indicates Primary Education Stipend program.

At the household level, between 2000 and 2006 the change in all but four of the outcomes is greater for program beneficiaries than for nonbeneficiaries. However, only two of these changes (stunting and enrollments in primary school) are statistically different from zero using conventional levels of significance. Furthermore, when enrollments are disaggregated by grade, there is actually very little difference based on participation in the program. As Figure 2 shows, while there was a substantial increase in the proportion of children enrolled in grades 1 to 5 between 2000 and 2006, together with subsequent progression through the grades, there is little difference in the results for beneficiaries and nonbeneficiaries. It is therefore difficult to attribute the change in school enrollments to the PES program.

Moving on to individual-level outcomes, the only statistically significant change in the three outcomes considered is for the number of grades a primary-school age child had advanced in 2000 and 2006. But the change in this variable is larger for the nonbeneficiary group than for the beneficiary group.

A final point of note is that the number of households receiving the stipend in 2006 is less than half the comparable number in 2003. This phenomenon, which is related to the ageing of children in the longitudinal study, makes the comparability of the treatment and comparison households vital to ensure the validity of the difference-in-difference estimates of the program's impact.

RESULTS

After matching households and individuals in the treatment and comparison groups (to ensure comparability of all characteristics other than program participation), the PES program's impacts at the household level were found to be mostly as expected—that is, positive for expenditures, calorie and protein consumption, and assets. However, most of these

impacts were not statistically significant at conventional levels. The program does, however, have a robust effect on ownership of consumer durables. Among nonbeneficiary households of the earlier FFE program (which operated from 1993 until 2002), the percentage of thin children also declined by one-fifth. This suggests that, although the PES program may only have had marginal effects on current consumption levels, it does protect households from income variability due to shocks, thereby allowing nutrition and assets to be built-up gradually over time. However, by far the biggest surprise was that the PES program had no discernible impact on primary school enrollments at the household level.

The sample of individuals is larger than the household sample because some households have more than one child of primary-school age, and nearly all the households had children under 12 years old in 2000. This allowed for better matching of children who were eligible and those who were ineligible for the PES program; it also allowed outcomes to be disaggregated by gender. For the two nutrition indicators, the effects of the program were found to be positive, but not statistically significant. However, when recipients who benefited from both the FFE and PES programs were excluded, the impact of the PES program became statistically significant in terms of the thinness of boys and the height of girls. For grade progression, a statistically significant negative impact was found on outcomes, in that children eligible to receive this stipend progressed about half a grade less than ineligible children, with the effect being stronger among boys than girls. This negative impact may be due to the light conditionality of the program and the greater work opportunities for older boys. In addition, the fact that only girls from disadvantaged households can receive a stipend for attending secondary school may provide an incentive for boys to stay in primary school longer.

CONCLUSIONS AND POLICY IMPLICATIONS

The PES program shows few signs of improving school enrollments, household expenditures, or calorie or protein consumption. This finding contrasts with the positive impacts of the earlier FFE program but is consistent with the declining value of the PES program, which has remained fixed in nominal terms since 2003. A wider range of asset variables suggests that the program may have provided beneficiary households with a constant source of income over time, which may have encouraged them to adopt less risk-adverse livelihood strategies and, in turn, led to asset accumulation over the medium term.

At the individual level, results indicate that the PES program has had a statistically significant impact on grade progression, but that, paradoxically, this impact is lower among program beneficiaries than it is among nonbeneficiaries. There are also some signs of impact on height-for-age scores and the body mass indexes among children of primary school age, with boys more likely to experience improvements in terms of body mass and girls more likely to improve in terms of height for age.

Overall, however, the impacts of the PES program are remarkably small given its size and expense. The well-known problems of poor targeting—in particular its limited coverage combined with its lack of geographical targeting—and the declining value of the cash transfer involved seem to be the most plausible reasons for this lack of impact. Since the PES program was renewed for another five-year period in July 2008, it would be timely to review the program's targeting mechanisms and, in particular, whether it would be more efficient to target larger cash transfers to smaller numbers of the poorest households. If this could be done, primary education stipends still have great potential to interrupt the intergenerational transfer of poverty for millions of Bangladeshi children.

FURTHER READING: Ahmed, A., "Comparing food and cash incentives for school in Bangladesh," (IFPRI, Washington, DC, and United Nations University, Tokyo, 2005); Al-Samarrai, S., "The impact of governance on education inequality: Evidence from Bangladesh," *Public Policy and Administration* 29 (2009); Davis, P., and B. Baulch, *Parallel realities: Using mixed methods to explore poverty dynamics in rural Bangladesh*, CPRC Working Paper No. 142 (Manchester, UK: CPRC, 2009); Kumar, N., and A. Quisumbing, *Access, adoption, and diffusion: Understanding the long-term Impacts of improved vegetable and fish technologies in Bangladesh*, IFPRI Discussion Paper No. 995 (Washington, DC: IFPRI, 2010); World Bank, *Education for all in Bangladesh: Where does Bangladesh stand in achieving the EFA Goal by 2015?* *Bangladesh Development Series* 24 (Washington DC: World Bank, 2008).

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