Educational support for school age children: targeting households with two or more children is most efficient

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Research Objectives: this research uses household vulnerability and poverty data to assess the likely impact of universal or targeted educational support programmes

Literature review: Approaches to reduce child poverty include discussion of educational support[1]. This research uses household vulnerability and poverty data to assess the likely impact of universal or targeted educational support programme. In Myanmar, although education is technically provided free at all levels, various levies are required to supplement local budgets, such as school fees, purchase of uniforms and equipment, and most significantly, tuition fees for extracurricular study, which is not mandatory, but which is known to be a prerequisite to passing any higher examinations. Out-of-pocket contributions from families is estimated at around 40,000 kyat for lower grades, 50,000 kyat for middle grades and significantly more for secondary school. These fees can be up to 6% of annual household income[2]. A study of causes of dropouts in rural communities revealed that 53% of families of children who had discontinued school cited poverty as the main reason. This relates not only to inability to pay school fees, but also the pressure on children to work to supplement the household income. An analysis of the dimensions of child poverty in Myanmar showed that households with a higher child: adult ratio experienced higher rates of vulnerability, food poverty and landlessness, and had comparatively poor debt profile, asset profile, livelihood diversity and housing. Likewise, such households were more likely to experience food insecurity.[3] These factors contribute to increased pressure on families, especially in rural areas, to withdraw children from school. Based on this, government and non-government organizations have proposed educational grants to support education costs at household level. However, the approach to targeting educational grants has not been confirmed.

Methodology: using the 'Umbrella Model', vulnerability and poverty data was collected on 3,808 households in 35 villages in Magwe Division, central Myanmar, in July 2012. Details of this method are

[1] Yoshimi Nishino and Gabriele Koehler "Social Protection in Myanmar:Making the Case for Holistic Policy Reform" IDS paper December 2011

[2] U Tin Nyo (2011) Educational and Vocational Training Issues and Strategies. Yangon

[3] Griffiths (2013) Using vulnerability mapping to identify and quantify dimensions of Child Poverty. Conference on Child Social Protection (SMERU/Jakarta 2013)

available in previously published papers (www.spprg.org). Analysis was conducted to compare households with one school aged child and those with more than one school aged child, and comparing vulnerable households with non-vulnerable households, in terms of school dropout rates of school-aged children. A school aged child was defined as a normally resident person aged between 5 and 17, and school dropout was based on parents or guardians responses to education questions in the survey.. Comparisons of proportions were made to calculate Odds Ratio with 95% confidence interval, and calculations of significance of differences in means were made using the Student's T-test. Further application was made to examine the relative sensitivity and specificity of universal versus targeted child education grants.

Findings and analysis: Analysis of 3,808 household sample yielded 2,530 households with school aged children, of which 1852 (73%) reported school dropout of one or more children in the household. Dropout rates were higher for households with more than one school aged child compared with those with only one school aged child (83% vs. 53%, Odds Ratio 4.5 (95% CI 4.3 – 4.6) and for vulnerable households (82% vs. 71%, Odds Ratio 1.9 (95% CI 1.6 – 2.1). The relative sensitivity (extent to which a test identifies all who need the intervention) specificity (the extent to which the test excludes those who do not need the intervention) positive predictive value (the ability of the test to identify those who need the intervention) and the F-score (a measure of the overall performance of the test) were calculated for three approaches to targeting: universal child grants, grants to vulnerable households with school aged children, and households with more than one school aged child.

Table 1: sensitivity and specificity of education grants

Targeting criteria	Sensitivity	Specificity	Positive predictive value	F-score (test performance)[4]	Beneficiaries/ 1000 households
Universal	100%	50%	73%	84.5%	646
Vulnerable households with school aged children	24%	29.2%	82%	37.1%	138
Households with more than one school aged child	88%	71%	85%	86.4%	428

Comparing the relative sensitivity, specificity, positive predictive value and the F-score, the approach with the highest power to accurately identify households with school children who were dropping out of school was the third approach, targeting households with more than one school aged children. This approach is also more cost-effective by reducing the number of false negatives (households who do not need interventions). Universal targeting is less cost-effective and efficient, and targeting based on vulnerability status excluded a large number of households who in fact would have benefitted from interventions.

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[4] In information retrieval positive predictive value is called precision, and sensitivity is called recall. The F-score can be used as a single measure of performance of the test, where F = 2x(sum(positive predictive value x sensitivity)/(sum(positive predictive value + sensitivity)