Evaluating the impact of scholarships in Cambodia

Deon Filmer

SIEF Workshop

The World Bank
December 2008
Context

- Grade attainment of youth 15-19

- Variety of scholarship programs *at the lower secondary level*
  - Government, Donor, NGO

- World Bank was considering supporting a scholarship program

Source: CSES 2004
How did the evaluation come about?

- Preparation of scholarship component of World Bank project
  - First step:
    - Assess status/effectiveness of existing programs
    - Evaluate the impact of a previous program: the Japan Fund for Poverty Reduction (JFPR) Scholarship Program
    - No ex-ante evaluation design … hard to establish counterfactual but nevertheless used retrospective methods
Basic features of retrospective JFPR program evaluation

• Control for observed differences between recipients and non-recipients (OLS; matching)
• Try to account for selection effects using instrumental variables
• Showed large **positive effects on enrollment**, particularly among the poorest

→ But interpretation of causality (“impact”) was subject to the strong assumption that there are no unobserved differences between recipients and non-recipients (after controlling for observed differences)
Development of Cambodia Education Sector Support Project (CESSP) Scholarship Program

• Build on existing (Government and NGO) models
• Emphasis on learning from the CESSP experience with an eye to the development of a future integrated National Scholarship Program
Goals of evaluation

• Establish the overall impact of the program on *school attendance* and *retention* - and explore heterogeneity of impact
• Explore the appropriate *amount* for the scholarship
• Explore the impact on *other dimensions*, not just those foreseen by the program

→ Note that these also address “*global*” questions about CCTs
  • In addition to issue of the applicability/effectiveness of CCTs in low-income countries
Evaluation methodology

– Extensive discussions
– Randomization rejected as an approach to evaluation—needed to find an alternative approach
– Used program structure to evaluate impact
Structure of CESSP scholarship program

- Selected 100 lower secondary schools
- All Grade 6 students from primary feeder schools fill out application form
- Applications forms are “scored” to generate a dropout risk for each applicant
- At the level of each secondary school, applicants with
  - the highest dropout risk offered $60 scholarship;
  - somewhat lower dropout risk offered $45;
  - and others offered no scholarship.
Data sources

• 26,537 Application forms
  – May 2005
• Official list of recipients (henceforth called “recipients” even if drop out and no longer receive payments)
  – November 2005
• Four school monitoring visits to program schools (100 schools+9 eligible alternative schools)
  – February/March 2006
  – April/May 2006
  – June 2006
  – June 2007
• Household survey with extensive household and applicant survey in 5 provinces
  – October/November 2006
Identification Strategy

• Method used
  – Regression Discontinuity Design ("RDD")

• Intuition:
  – For each LMC, the applicants “just above” and “just below” the cutoff for the scholarship are virtually identical, except for the fact that one received a scholarship and the other did not.
Regression discontinuity intuition

Compare applicants “just above” to those “just below threshold

Counterfactual

Higher dropout risk

Lower dropout risk
Estimation model

\[ Y = \alpha + \beta T + f(\text{Score}) + e \]

in practice \( f() = \) quartic (and test sensitivity to alternative functions)
Results:
Impact of scholarship receipt ($45 versus $0)

• School visits

• Household survey

→ Result 1: Large positive impact of program on attendance
Results:
Additional impact associated with more money:
impact of $60 over $45

• School visits
• Household survey

→ Result 2: First $45 is much more cost effective
Other dimensions of impact …

- Impact on work for pay
- Impact on sibling enrollment

→ Result 3: Impact on labor supply; but relatively small intra-household effects
Did scholarships have any impact on learning?

• Data currently being analyzed—but preliminary results suggest:
  – Overall, schooling is associated with higher test score achievement (math and vocabulary test).
  – In the raw difference recipients score worse than non-recipients.
  – But in the RD estimates: Recipients score no better than non-recipients despite the boost in attendance

➔Result 4: scholarship students are more likely to attend school but don’t perform any better on a test

• Note:
  – Results similar to those found in Mexico
• Why?
  – Are scholarship programs bringing into school children who are so disadvantaged in other ways that the amount of learning that takes place is limited (after all, these are “marginal” students)?
  – Are schools badly set up to teach these marginal children; i.e. is the issue with the quality of schooling?
Notes on evaluation design

• Limitations of RDD
  – Requires adherence to “scoring” protocol for straightforward estimation
  – Requires assumption of “smoothness” at threshold
  – Evaluates impact “at threshold”
    • Can the results be generalized?
    • Limits the extent to which heterogeneity can be explored
Evaluation in Cambodian education

• **Building** on the experience with evaluating lower secondary school scholarships, currently …
  – Evaluation of pilot scheme to provide scholarships to upper primary students in poor and remote provinces
  – Evaluation of alternative models of scaling up Early Child Development programs
• Both approaches using **randomized** designs