DO CONDITIONAL CASH TRANSFERS IMPROVE SCHOOL ATTENDANCE? EVIDENCE FROM LATIN AMERICA USING A DIFFERENCE-IN-DIFFERENCES APPROACH

Assignment Type

MSc Dissertation / Development Economics Evaluation Study

Tools Used

R (plm, fixest, did), World Bank Microdata, UNESCO Education Statistics

1. Introduction

Conditional Cash Transfer (CCT) programs have gained popularity as a poverty alleviation strategy tied to human capital development. This case evaluates the effectiveness of these programs in improving school attendance among children in rural areas of Latin America. Using household survey data from two waves—before and after CCT implementation—we apply a difference-in-differences (DiD) methodology to identify the causal effect of the policy.

2. Research Questions

- 1. Do CCTs improve school attendance rates among children aged 6–14?
- 2. Is the effect stronger for girls than boys?
- 3. Does the income quintile of the household influence the effectiveness?

3. Literature Context

- Fiszbein & Schady (2009): CCTs effective across Latin America, but effect size varies by country
- Behrman et al. (2005): Greater impacts observed in households with lower maternal education
- Glewwe & Kassouf (2012): In Brazil, CCTs affected younger children more than teens
- de Janvry et al. (2006): Supply-side educational quality also moderates outcomes

4. Data Description

Data Source

• National household panel survey datasets from two Latin American countries (e.g., Mexico and Honduras) with baseline (pre-CCT) and follow-up (post-CCT) years

Sample

- 12,450 children aged 6–14 from rural districts
- Treated vs control groups based on program eligibility criteria

Key Variables

Variable	Туре	Description
School Attendance	Binary	1 = attends school; $0 =$ does not
Treated	Binary	1 = household received CCT
Time	Binary	1 = post-intervention; 0 = pre
Treated × Time	Interaction	Captures DiD effect
Gender	Binary	1 = Female
Income Quintile	Categorical	1 = poorest, $5 =$ richest
Mother's Education	Numeric	Years of formal schooling

5. Empirical Strategy

 $Attendance_{it} = \alpha + \beta_1 Treated_i + \beta_2 Time_t + \beta_3 (Treated_i \times Timet) + \gamma Xit + \mu_i + \varepsilon it$

- **DiD Framework**: Compares pre/post changes in treatment vs control
- Controls: Gender, mother's education, household size
- Robust SEs: Clustered at household level
- Heterogeneity Analysis: Interactions by gender and income quintile

6. Parallel Trends Validation

• Pre-trend analysis confirms no significant difference in school attendance growth rate across treated and control groups before program rollout (p > 0.25)

7. Results

Main DiD Estimation Table

Variable	Coefficient	Std.	р-	Interpretation	
		Error	value		
Treated × Time	0.071	0.021	0.001	7.1% increase in school attendance	
				due to CCT	C
Gender (Female)	0.022	0.008	0.004	Girls attend more regardless of	
				treatment	
Income Quintile	0.045	0.015	0.003	Stronger impact in poorest households	
(Q1)					

Subgroup Plot – Marginal Effects

- Girls: +8.9% improvement
- Boys: +5.2% improvement
- Poorest quintile: +9.3%; Richest: No significant effect

8. Visuals and Tables

- Figure 1: DiD graph showing parallel pre-trends and divergence post-CCT
- Figure 2: Interaction effects by gender (marginal effects plot)
- Table A1: Full regression with and without controls
- Table A2: Attendance rates by region and year

9. Interpretation

CCTs significantly improve school attendance, especially for girls and low-income households. The results reinforce the hypothesis that conditionality linked to education yields measurable human capital gains, but diminishing returns exist at higher income levels. Programs should consider regional education infrastructure to sustain long-term participation.

10. Limitations

- Cannot control for unobserved policy spillovers (e.g., simultaneous school funding)
- Survey attrition in follow-up data may bias estimates

• Results only capture short-run effects (2–3 years)

11. Policy Recommendations

- Extend CCTs to cover secondary education to reduce dropout
- Link CCTs with supply-side improvements (teacher incentives, infrastructure)
- Use biometric attendance tracking to improve data accuracy

12. Deliverables to Student

- 8,000-word dissertation (Introduction, Lit Review, Method, Results, Discussion, Policy)
- Clean R script (.Rmd), datasets (CSV), and exportable graphs
- LaTeX and Word versions of all regression tables
- APA 7th-style citation file (.bib and .txt)
- Presentation-ready policy brief (2-pager)