

**Bachelor's Degree Program in Politics: Philosophy
and Economics**

Course of Political Economy of Development

**Investing in Human Capital: Impact Analysis
of Cash Transfer Programs on Long-Term
Economic Development**

Prof. Francesco Ferrante

SUPERVISOR

Matteo Verbo 104362

CANDIDATE

Index

Introduction.....	4
I. THE IMPACT OF HUMAN CAPITAL ON ECONOMIC DEVELOPMENT.....	8
1.1. Theoretical Growth Model.....	8
1.2. Empirical Estimation Strategy.....	11
II. CASH TRANSFER PROGRAMS.....	16
2.1. Overview.....	16
2.2. Actors Involved in Developing and Implementing Cash Transfer Programs Globally...	17
a. National Governments.....	17
b. International Organizations and Multilateral Institutions.....	18
i. World bank.....	22
ii. Safety Nets.....	24
c. Non-Governmental Organizations (NGOs).....	19
d. Private Sector and Financial Service Providers.....	20
e. Donor Governments and Global Alliances.....	20
f. Research Institutions, Think Tanks, and Policy Networks.....	21
2.3. Types of Cash Transfers.....	26
2.4. Accountability, Monitoring and Evaluation.....	31
2.5. End-of-Program Transitions.....	32
2.6. Conditional Cash Transfers for Education.....	33
a. Theory of Change.....	38
III. CASE STUDY: PROGRESA/PROSPERA.....	40
3.1. Program Design and Short-Term Evidence.....	40

3.2. Sample Design, Tracking, and Mobility.....	41
3.3. Empirical Strategy.....	43
3.4. Findings: <i>Early Childhood Cohort</i> (Age 18–20).....	44
3.5. Findings: <i>School Cohort</i> (Age 29–35).....	46
3.6. Conclusions.....	51
3.7. World Bank Support for Mexico’s PROSPERA Program.....	53
a. The <i>Social Protection System Project</i> (P147212).....	53
b. Achievements and Impact.....	54
c. Program Operation and Integration.....	56
d. Future Prospects and Challenges.....	57
Conclusion.....	59
Bibliography.....	61

Introduction

In a world now marked by prejudice and indifference, it is the most vulnerable who suffer the consequences—those who often belong to a social stratum that few want to talk about and even fewer care about. While “almost 700 million people (8.5 percent of the global population) live in extreme poverty¹” and “1 in 8 people is estimated to have been exposed to conflict [...] in 2024²,” a small minority enjoys disproportionate wealth. However, *homo sum, humani nihil a me alienum puto*³ (“I am human; nothing human is alien to me”), said Terence in *Heautontimorumenos*. In the same way, we should remember that we all equally belong to the human race, that we are part of the same nature, and that we all have the right to a dignified life—one where we do not have to fear hunger, illness, or an unjust death. On the contrary, in the hope that values such as solidarity and cooperation may shine once again, investing in people—that is, in human capital—can lead to long-term development.

Human capital—typically embodied in people’s education, skills, and health—is widely recognized as a fundamental driver of economic growth. Just as physical capital contributes directly to output, investments in human capital raise workers’ productivity (the *level effect*) and also facilitate technological innovation and diffusion (the *rate effect*). This thesis systematically explores the role of human capital in long-run development by analyzing how cash transfer programs—especially those targeting education and health—can accumulate human capital and thereby reduce poverty across generations. The work is organized in three main chapters: Chapter I develops the theoretical framework and empirical strategy for linking human capital to growth; Chapter II surveys global cash-transfer policies—including conditional cash transfers—and their implementation; and Chapter III presents an in-depth case study of Mexico’s national program (*PROGRESA/Oportunidades/PROSPERA*). In addition, there are sections on program actors, monitoring, and evaluation of cash transfer programs.

Chapter I—*The Impact of Human Capital on Economic Development*—reviews economic theory and evidence on human capital and growth, drawing on *Freire-Serén* (2001). It begins by defining

¹ World Bank. “Poverty, Prosperity, and Planet Report 2024.” World Bank, 2024.

² ACLED, “ACLED Conflict Index,” ACLED, December 2024.

³ Publius Terentius Afer, *Heautontimorumenos*, I, 1, 25

human capital as the knowledge, skills and health embedded in individuals that raise productivity. Building on classic models (e.g., augmented Solow growth), the thesis explains how schooling and skills enter production functions and can have both immediate output effects and longer-run spillovers through innovation. The chapter then describes the author’s empirical approach: using cross-country and country-panel regressions to estimate how changes in educational attainment and health outcomes translate into GDP growth, while controlling for other factors. This empirical strategy draws on existing literature, whereby each additional year of schooling yields a return to income. The theory predicts that nations investing more in human capital will converge toward higher income levels and faster growth rates. In this section, the thesis also discusses data sources for human capital (e.g., schooling years, health indicators) and the expected sign and magnitude of coefficients based on past empirical studies.

Chapter II—*Cash Transfer Programs*—examines the global landscape of cash-based social policies and how they are designed to build human capital in poor households. The chapter opens by noting that cash transfers have become a cornerstone of poverty reduction: they are now common tools used by developing-country governments and donors to alleviate poverty. For example, by 2015 nearly 63 countries had a conditional cash transfer (CCT) scheme—up from only 2 countries in 1997—and today over 200 countries operate hundreds of cash programs worldwide. Many were launched as emergency relief during the COVID-19 pandemic. Cash transfers can be of different types, ranging from unconditional—no required actions by beneficiaries—or conditional—requiring specific behaviors such as children’s school attendance or health visits. In practice, unconditional transfers are more common in sub-Saharan Africa, whereas Latin America pioneered large CCTs (e.g., Mexico’s *PROGRESA*) that tie payments to education and health compliance. Section 2.1 provides an overview of cash-transfer goals (i.e., poverty reduction, human capital) and modalities. Section 2.2 surveys the key actors involved in designing and funding cash programs—including national governments, international organizations (e.g., World Bank, UNICEF, etc.), NGOs, and donors—noting how multilateral and bilateral donors often support program start-up and evaluation. For brevity, later subsections touch only briefly on these actors. Section 2.3 classifies different program types, while Section 2.4 discusses the importance of accountability, monitoring and evaluation frameworks to ensure program effectiveness. Section 2.5 considers “exit strategies” for cash programs (i.e., how benefits are phased out or replaced), and Section 2.6 focuses on Conditional Cash Transfers for Education.

Here the thesis develops the theory of change for CCTs: by making transfers contingent on children's school enrollment and health check-ups, CCTs directly boost human capital inputs. This section draws on the literature showing that poor households often cannot afford basic schooling or clinics, and that giving cash conditional on schooling attendance or vaccinations is intended to encourage these investments. The thesis notes, for instance, that proponents argue direct cash empowers families to meet diverse needs flexibly, but also that conditionality is often justified to ensure funds go toward children and to maintain public support.

Chapter III—Case Study: *PROGRESA/PROSPERA*—provides an in-depth empirical evaluation of Mexico's landmark conditional cash transfer program, drawing on *Araujo and Macours (2021)* and *WB Report No. ICR00005632*. *PROGRESA* (later renamed *Oportunidades* and then *PROSPERA*) was the world's first nationwide CCT. Section 3.1 describes the program design and early evidence: *PROGRESA* provided bi-monthly cash to low-income mothers on the condition that children received health check-ups and attended school. Women were given increasing payments as children aged, with slightly higher payments for girls. This demand-side approach was novel: Mexican policymakers had previously built more schools and clinics (a supply-side response), but found that household poverty remained a critical barrier. Instead, *PROGRESA* gave families cash so they could afford nutritious food or pay for schooling, overcoming those resource constraints. Importantly, *PROGRESA* included rigorous impact evaluations from the outset. Early experimental studies showed it successfully boosted school attendance and reduced child labor. However, questions remained about long-term impacts: would more schooling in rural Mexico translate into higher future earnings despite local labor-market frictions? Sections 3.2 and 3.3 outline the case-study data and empirical strategy. The analysis exploits *PROGRESA*'s randomized rollout in 1997–2000 and later household tracking surveys. Two “treatment cohorts” are identified: children exposed in utero or infancy—the *early childhood cohort*—and children exposed starting in late primary school—the *school cohort*. Section 3.4 reports results for the *early childhood cohort* (now age 18–20): compared to comparable children who entered *PROGRESA* 18 months later, treated children completed significantly more schooling and had higher expected labor income. In particular, even small delays in exposure (the experiment's control group) translate into large differences in secondary and tertiary completion rates. Section 3.5 analyzes the *school cohort* (now age 29–35) and finds that the program's short-run schooling gains endured: treated individuals have higher adult incomes and greater geographic mobility, including a higher

likelihood of internal or international migration. In other words, by investing in children's human capital, *PROGRESA* led over the long run to higher educational attainment and earnings, and in some cases enabled youth to move to areas with better job opportunities. Sections 3.6–3.7 conclude the case study by summarizing *PROGRESA*'s overall impacts and describing subsequent government and WB efforts—such as the *Social Protection System Project*—to institutionalize and expand Mexico's conditional transfer model.

In conclusion, this thesis argues that cash-transfer programs which promote human capital investment can be powerful engines of growth. By condensing each chapter above, the reader is guided through: (1) the theory linking education and health to economic expansion; (2) how cash transfer initiatives operate worldwide (with special focus on CCTs); and (3) a deep empirical case showing that Mexico's *PROGRESA* program achieved sustained improvements in human capital and livelihoods. The overarching takeaway is that human capital accumulation via cash transfers is essential for long-term development and for breaking the intergenerational poverty cycle. At the same time, the thesis emphasizes that cash transfers alone are not a panacea. As Mexican experience illustrates, even with stronger schooling outcomes, poor families may still migrate in search of jobs, and long-term prosperity depends on complementary supply-side investments. In other words, to fully realize development goals, cash-transfer interventions should be paired with quality schools, healthcare infrastructure, and local economic opportunities. Only by combining demand-side support—e.g., cash for families—with improvements in supply and the labor market can countries help households transition to sustainable livelihoods and reduce perpetual reliance on aid.

I. THE IMPACT OF HUMAN CAPITAL ON ECONOMIC DEVELOPMENT

drawing on Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001

The role of education—and more broadly, the development of human capital—in the growth process has been widely explored in theoretical literature, which highlights two primary channels through which educational investment can drive economic growth. First, human capital can directly enter the production process as a productive input, meaning that its accumulation leads directly to higher output levels—an effect known as the *level effect*. Second, human capital facilitates technological advancement by supporting innovation, diffusion, and the adoption of new technologies. Through this channel, the stock of human capital influences the rate of productivity growth—referred to as the *rate effect*.

Based on the assumption that the economy’s income level influences human capital accumulation by increasing individuals’ incentives to pursue higher education, this perspective enables us to examine the role of human capital in income growth while simultaneously accounting for how income levels affect the accumulation of human capital. To do so, one estimates a dynamic system that captures the joint evolution of income and human capital. This simultaneous estimation approach—implemented using instrumental variables—is particularly valuable as it addresses potential measurement error issues. The results confirm “human capital has a positive and significant effect on the growth rate of income⁴.”

1.1. Theoretical Growth Model

Freire-Serén (2001) adopts a Cobb–Douglas production function with constant returns to scale. Specifically, in each period t , output is given by

⁴ Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001.

$$Y_t = K_t^\alpha H_t^\beta (A_t B_t)^{1-\alpha-\beta} \{1\}$$

“where Y_t is aggregate output, K_t is the stock of physical capital, H_t is the stock of human capital, A_t is a technical efficiency index that grows at a constant and exogenous rate, g , and L_t is labor⁵.”

In each period t , a constant fraction s_k of output is invested in physical capital, and capital depreciates at rate δ . Thus, physical capital evolves according to the standard Solow-type law of motion:

$$\dot{K}_t K_t = s_k Y_t - \delta K_t \{2\}$$

Human capital accumulation is modeled differently: individuals “invest” in schooling, not by diverting output, but by increasing the average schooling of the labor force. Let $\tilde{Y}_t = Y_t/L_t$ and $\tilde{H}_t = H_t/L_t$ be per-worker output and schooling, respectively. The paper posits a linear differential equation for average schooling: since higher income induces higher schooling, while existing human capital depreciates (through retirements), the law of motion for human capital per worker is

$$\dot{\tilde{H}}_t = \gamma \tilde{Y}_t - (\eta + n) \tilde{H}_t \{3\}$$

where γ measures the responsiveness of schooling to output, and η captures the retirement rate (plus population growth n) of skilled workers. In equilibrium, higher output per worker leads to a rise in average schooling (positive “reverse” causation), while larger existing H_t tends to reduce the growth rate of H due to retirements. Normalizing all quantities by efficiency units $A_t L_t$ (i.e., $k_t = K_t/A_t L_t$, $h_t = H_t/A_t L_t$, $y_t = Y_t/A_t L_t$), one obtains the dynamic system in intensive form:

$$\dot{k}_t = s_k k_t^\alpha h_t^\beta - (n + g + \delta) k_t \{4\}$$

$$\dot{h}_t = \gamma k_t^\alpha h_t^\beta - (n + g + \eta) h_t \{5\}$$

This two-equation system is locally stable: the economy converges to the steady state. Setting $\dot{k}_t = 0$ and $\dot{h}_t = 0$ and solving, yields the steady-state output per efficiency units of labor:

⁵ Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001.

$$Y = \left[\left(\frac{\gamma}{n+g+\eta} \right)^\beta \left(\frac{s_k}{n+g+\delta} \right)^\alpha \right]^{1/1-\alpha-\beta} \quad \{6\}$$

Thus, “the long-run level of income is determined by the technological parameters α and β , the exogenous investment rate s_k , the parameters defining human capital accumulation γ and η , the depreciation rate of physical capital δ , and the long-run growth rate $n + g$.”⁶

Around this steady state, *Freire-Serén* (2001) derives log-linear approximations. In particular, they show that output per efficiency-unit obeys a first-order linear relation:

$$\ln \dot{y}_t = \alpha [-(1-\alpha)(n+g+\delta) + \beta(n+g+\eta)] (\ln k_t - \overline{\ln k}) + \beta [\alpha(n+g+\delta) - (1-\beta)(n+g+\eta)] (\ln h_t - \overline{\ln h}) \quad \{7\}$$

This expression shows how deviations of k and h from steady state drive deviations in y . More importantly, *Freire-Serén* (2001) derives the simultaneous dynamic equations in log form to capture two-way causation:

$$\ln \dot{h}_t = (n+g+\eta)(\ln y_t - \ln h_t) + (n+g+\eta) \ln \left(\frac{\gamma}{n+g+\eta} \right) \quad \{8\}$$

$$\ln \dot{y}_t = \beta \ln \dot{h}_t + (n+g+\delta)\beta \ln h_t + \alpha(n+g+\delta) \ln \left(\frac{s_k}{n+g+\delta} \right) - [(1-\alpha)(n+g+\delta)] \ln y_t \quad \{9\}$$

Because data are in per-worker units [i.e., $\tilde{y}_t = \ln(Y_t/L_t)$, $\tilde{h}_t = \ln(H_t/L_t)$], *Freire-Serén* (2001) further writes these in discrete time (five-year intervals) as regression equations:

$$\frac{\widetilde{h_{t+\tau}} - \widetilde{h_t}}{\tau} = g + (n+g+\eta)(\tilde{y}_t - \tilde{h}_t) + (n+g+\eta) \ln \left(\frac{\gamma}{n+g+\eta} \right) + \varepsilon_{ht+\tau} \quad \{10\}$$

$$\frac{\widetilde{y_{t+\tau}} - \widetilde{y_t}}{\tau} = \beta \frac{\widetilde{h_{t+\tau}} - \widetilde{h_t}}{\tau} + \beta(n+g+\delta)\tilde{h}_t - (1-\alpha)(n+g+\delta)\tilde{y}_t + \alpha(n+g+\delta) \ln \left(\frac{s_k}{n+g+\delta} \right) + g(1-\beta) + (1-\alpha-\beta)(n+g+\delta)(\ln(A_0) + gt) + \varepsilon_{yt+\tau} \quad \{11\}$$

⁶ Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001.

“This econometric specification permits us not only to obtain the estimated coefficients of α and β , but also the estimated values of γ and η . Thus, we can simultaneously obtain the double direction in the relationship between output and human capital⁷.”

1.2. Empirical Estimation Strategy

Freire-Serén (2001) tests the model using cross-country panel data (1960–1990, in five-year intervals). Three country samples are used: NONOIL (72 non-oil countries, including most of Africa, Asia, Latin America; excludes very small or data-poor nations), INTER (65 intermediate countries, excluding very small ones and new countries like former USSR states), and OECD (30 advanced economies). Data on income, population, labor force, and investment come from *Summers-Heston* (1996, Penn World Table) in real PPP terms. Human capital is proxied by “average years of schooling” of the population aged 25+, using the updated *Barro–Lee* (1996) dataset. “The investment rate, s_k , and the growth rate of the labor force, n , are both computed for each country as the average of their respective annual values, i.e., $s_k = \frac{1}{5} \sum_{t=1}^5 (I_t/Y_t)$ and $n_t = \frac{1}{5} \ln(L_{t+5}/L_t)$ ⁸.” The depreciation rate is set to $\delta = 0.05$ and technological growth to $g = 0.02$ (fixed *a priori*). Because the model implies simultaneity between income and human capital, *Freire-Serén* (2001) jointly estimates the system {10} and {11}. Equations {10} and {11} are triangular, i.e., the schooling change depends on current income, and income change depends on future schooling change. Since the random perturbations may be correlated, a joint estimation method to obtain consistent and efficient estimators is required, such as two-stage nonlinear least squares: first the schooling equation {10} is estimated (including country or continent dummies), then the predicted $\Delta \tilde{h}$ from {10} is used as an instrument in {11}. Standard errors in {11} are adjusted for using the first-stage predictions. This joint estimation of {10} and {11} provides estimated values of γ and β , which respectively give output’s effect on human capital accumulation and the human capital’s effect on the growth rate of output, i.e., the *level effect* of human capital.

⁷ Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001.

⁸ Id.

Table 1 from Freire-Serén, María Jesús, "Human capital accumulation and economic growth", *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, p. 593, 2001

TABLE 1
Estimation of the human capital equation in the dynamic system

$$\frac{\tilde{h}_{t+\tau} - \tilde{h}_t}{\tau} = g + (n+g+\eta)(\tilde{y}_t - \tilde{h}_t) + (n+g+\eta) \ln\left(\frac{\gamma}{(n+g+\eta)}\right) + \varepsilon_{ht+\tau}$$

	NONOIL		INTER		OECD
η	0.064 (0.005)	0.064 (0.004)	0.064 (0.006)	0.064 (0.006)	0.066 (0.008)
γ	1.12E-08 (1.06E-09)	1.15E-08 (4.4E-09)	4.6E-08 (9.1E-10)	4.99E-09 (9.13E-10)	4.4E-09 (6.7E-10)
t.d.	yes	no	yes	no	yes
c.d.	no	yes	no	yes	no

Notes: There are six observations for each country. Sample period for estimation is 1960-1990. The NONOIL sample has a total of 432 observations, the INTER sample has a total of 390 observations, and the OECD sample has a total of 132 observations.

t.d. indicates whether the estimation includes "time dummies".

c.d. indicates whether the estimation includes "continent dummies".

Standard errors are in parenthesis.

Table 2 from Freire-Serén, María Jesús, "Human capital accumulation and economic growth", *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, p. 595, 2001

TABLE 2
Estimation of the output per worker equation in the dynamic system

$$\frac{\tilde{y}_{t+\tau} - \tilde{y}_t}{\tau} = \beta \frac{\tilde{h}_{t+\tau} - \tilde{h}_t}{\tau} + \beta(n+g+\delta)\tilde{h}_t - (1-\alpha)(n+g+\delta)y_t + \alpha(n+g+\delta) \ln\left(\frac{s_k}{n+g+\delta}\right) + g(1-\beta) + (1-\alpha-\beta)(n+g+\delta)(\ln(A_0) + gt) + \varepsilon_{y_{t+\tau}}$$

	With instrumental variable	With instrumental variable	Without instrumental variable	Without instrumental variable	Islam (1995)
NONOIL					
Constant	29.0 (2.381)	35.0 (7.464)	8.0 (0.548)	9.0 (0.574)	
α	0.38 (0.155)	0.35 (0.021)	0.64 (0.012)	0.58 (0.020)	0.80 (0.053)
β	0.39 (0.067)	0.40 (0.034)	0.01 (0.012)	0.02 (0.013)	0.05 (0.102)
t.d./c.d.	yes/no	no/yes	yes/no	no/yes	no/no
λ_1 / λ_2	0.022/0.09	0.024/0.09			0.0069
N	432	432	432	432	480

INTER					
Constant	38.0 (12.61)	32.0 (9.962)	8.3 (0.622)	9.2 (0.666)	
α	0.39 (0.058)	0.43 (0.054)	0.68 (0.014)	0.64 (0.021)	0.78 (0.006)
β	0.38 (0.029)	0.33 (0.030)	0.02 (0.001)	0.03 (0.012)	-0.007 (0.129)
t.d./c.d.	yes/no	no/yes	yes/no	no/yes	no/no
λ_1 / λ_2	0.022/0.09	0.024/0.09			0.0079
N	390	390	390	390	370
OECD					
Constant	21 (25.26)		5.7 (0.798)		
α	0.49 (0.058)		0.70 (0.032)		0.60 (0.101)
β	0.21 (0.056)		-0.02 (0.012)		0.017 (0.180)
t.d./c.d.	yes/no		yes/no		no/no
λ_1 / λ_2	0.025/0.09				0.016
N	132		132	432	110

Notes: There are six observations for each country. Sample period for estimation is 1960-1990. The NONOIL sample has a total of 432 observations, the INTER sample has a total of 390 observations, and the OECD sample has a total of 132 observations. t.d. indicates whether the estimation includes "time dummies". c.d. indicates whether the estimation includes "continent dummies". Standard errors are in parenthesis.

Table 1 reports estimates of η and γ from the schooling equation {10}, and Table 2 reports α and β from the output equation {11}.

According to the data, the income–human capital link ($\gamma > 0$) is small but statistically significant. For the NONOIL sample, $\gamma \approx 1.12 \times 10^{-8}$ ($SE 1.06 \times 10^{-8}$), and the retirement rate $\eta \approx 0.064$ ($SE 0.005$)—similar $\eta \approx 0.064$ is found in INTER; $\eta \approx 0.066$ in OECD. The interpretation is that each additional dollar of GDP per worker raises yearly schooling by roughly γ years: so, e.g., an extra \$1,000 in income induces ≈ 0.0000115 more years of schooling per five-year period. Thus, higher income significantly stimulates human capital accumulation, i.e., the “reverse causation”.

Production function shares: With instruments, the estimated output elasticity of K is $\alpha \approx 0.38$ and of H is $\beta \approx 0.39$ in the NONOIL sample (standard errors roughly 0.16 and 0.07). For INTER, $\alpha \approx 0.39$, $\beta \approx 0.38$ ($SE \sim 0.06, 0.02$). For OECD, the elasticities are somewhat higher on capital ($\alpha \approx 0.50$) and lower on schooling ($\beta \approx 0.13$). These imply that physical capital and human capital together account for 0.77 of output (NONOIL), with the remainder from effective labor. The standard errors (Table 2) show these coefficients are highly significant.

Critically, ignoring simultaneity changes the estimates (Table 2, “without instrumental variable”). When H is treated as exogenous, the estimated β often falls or becomes insignificant (e.g., $\beta \approx 0.01$ in INTER without instruments). In fact, *Freire-Serén* (2001) notes that the *level effect* of education on growth is not clear-cut without the joint IV approach. In contrast, the joint estimation finds a clear positive *level effect*: higher human capital raises output (since $\beta > 0$ in the IV results). Thus, accounting for endogeneity flips the conclusion: education has a significant *level effect* on income only when simultaneity is handled. On the flip side, the output equation’s use in {10} provides a (strong) first-stage instrument for schooling. The positive and significant γ confirms that growth causally affects education. *Freire-Serén* (2001) stresses that the “level of income has a positive and significant effect on the process of human capital accumulation⁹.” Ignoring that feedback biases the analysis, because poorer countries endogenously accumulate less schooling, confounding any pure schooling effect on growth.

The two-equation system {4}-{5} has a Jacobian with two negative eigenvalues, say λ_1 and λ_2 , governing the speed of convergence of (k, h) to steady state. These eigenvalues are reported at the bottom of Table 2 (for NONOIL and INTER, $|\lambda_1| \approx 0.022$, $|\lambda_2| \approx 0.090$; for OECD, $|\lambda_1| \approx 0.025$, $|\lambda_2| \approx 0.090$). The larger magnitude root, λ_2 , dominates the short-run speed of adjustment, while the smaller root, λ_1 , represents a very slow mode. Using these estimates, *Freire-Serén* (2001) computes the half-life of convergence: the time to halve the gap to steady state is about 30–36 years depending on sample. In other words, predicting convergence speeds comparable to standard Solow/MRW estimates.

Together, the estimates indicate a positive *level effect* of education on income: countries with higher average schooling have higher output per worker, even after accounting for capital. The estimated β (about 0.35–0.40 in broad samples) means raising average schooling by 1 year (say 4–5 years) raises output by roughly 13–16%. Conversely, higher income levels spur more schooling: the positive γ shows a feedback from GDP to education accumulation. Ignoring that feedback leads to biased—and often weaker—schooling coefficients. Finally, the convergence analysis (eigenvalues $\lambda_{1,2}$) shows the model is stable and predicts an economy will converge to its *human-capital-augmented* steady state at an empirically plausible pace. The small eigenvalue (\approx

⁹ Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001.

0.02) indicates very slow adjustment along one dimension, while the larger (≈ 0.09) yields the 30-year half-life result.

II. CASH TRANSFER PROGRAMS

2.1. Overview

Cash transfers (CTs)—also referred to as social (assistance) transfers or payments—are widely advocated for their potential to alleviate poverty, transform the relationship between citizens and the state, reshape gender roles and household dynamics, enhance the efficiency of development aid, and mitigate the economic impacts of ecological and other crises. Reflecting this enthusiasm, a 2018 joint statement by several UN agencies described “cash-based assistance as one of the most significant reforms in humanitarian assistance in recent years¹⁰” (OCHA et al. 2018).

In 2021 alone, there were 95,000 publications on CTs across various languages, making them arguably the most extensively studied social programs. Many CT initiatives are designed with research protocols embedded, allowing for continuous expert evaluation, particularly when implemented as experiments. Governments, NGOs, and intergovernmental organizations regularly release reports on individual programs or comparative analyses, typically highlighting CTs' success in achieving their objectives or offering recommendations for improvement. Through ongoing research, evaluation, and reporting—often funded by multilateral agencies or the tech industry in Silicon Valley—CTs have been increasingly framed as a global technocratic innovation rather than merely a local policy experiment.

The COVID-19 pandemic reignited interest in CT policies. During 2020 and 2021, in what has been called “the largest scale-up in history¹¹,” three-quarters of countries worldwide either expanded or modified existing CT programs or launched new ones to protect livelihoods amid escalating economic crises. CTs—varying in scope, generosity, and duration—accounted for one-third of all COVID-related social protection measures and reached 1.36 billion people. In other words, during this period, one in every six individuals received at least one CT payment. Four years later, cash transfers remain a key instrument in strategies for pandemic recovery amid sluggish economic growth. However, debates persist over the form these policies should take.

¹⁰ Fotta, Martin, and Mario Schmidt, “Cash transfers,” *The Open Encyclopedia of Anthropology*, 2022

¹¹ *Id.*

Some argue that the pandemic has bolstered the case for a universal basic income (UBI)—regular, unconditional payments to all citizens. Others view CTs as a temporary replacement for lost income or advocate for targeting only the most vulnerable populations. Some propose linking cash transfers to specific conditions or combining them with additional financial services like insurance and credit. Despite these divergent views, CT programs are often framed as broadly similar across different contexts, allowing them to be described as a "traveling model" or an example of "fast policy"—globally circulating "ideas that work." Part of CTs' appeal lies in their capacity for standardization and adaptability across diverse settings, enabled by new infrastructural tools. Anthropological perspectives, however, stress that CTs are not merely technical solutions but also moral and political projects, shaped by the particularities of who implements them, where, and under what conditions.

2.2. Actors Involved in Developing and Implementing Cash Transfer Programs Globally

First and foremost, countries vary in how they balance economic freedom and social protection, determining the extent to which they trade economic freedom for greater social safeguards. Institutions can be wealth-extracting or wealth-creating, inclusive or non-inclusive. Inclusive wealth-creating institutions create and redistribute social value, thereby improving people's well-being, while non-inclusive wealth creating institutions generate social value but distribute it unevenly across society. On the other hand, non-inclusive wealth-extracting institutions are designed by elites to extract wealth from those outside their ranks. The type which is going to be present in this thesis is undoubtedly the first one.

a. National Governments

National governments are the primary designers and implementers of cash transfer programs (CTPs) worldwide, particularly those focused on human capital development through investment in education, health, and early childhood nutrition. These programs are often nested in broader

social protection systems and aim to break the intergenerational cycle of poverty by encouraging behaviors that lead to better future outcomes. Paradigmatic examples are Brazil's *Bolsa Família* (now *Auxílio Brasil*), which significantly increased school attendance and reduced child malnutrition, and offered a model that has inspired similar programs all over Latin America and the world in general, Mexico's *PROSPERA* (formerly *PROGRESA/Oportunidades*), which will be taken as case study in chapter III of this thesis, *Kenya's National Safety Net Programme*, Ghana's *LEAP (Livelihood Empowerment Against Poverty)*, India's *Janani Suraksha Yojana program*, the *Kanyashree* scheme in West Bengal, etc. Governments typically fund these programs from their national budget, at times with the help of donors, and implement them under inter-ministerial coordination between education, health, and social development departments. They are also investing more in digital infrastructure, biometric IDs, and social registries to improve targeting and delivery, so that human capital investments reach the most vulnerable populations efficiently and transparently.

b. International Organizations and Multilateral Institutions

International organizations and multilateral institutions provide the basis for conceptualization as well as implementation of CTPs as related to human capital development. They are the ones providing funds, technical assistance, and expertise on monitoring and evaluation to help the countries adopt and scale effective systems which enhance educational attainment, improve maternal and child health, and increase long-term outcomes. One such example is the World Bank, which assists more than 80 nations in cash-based interventions aimed at early childhood development, nutrition, and learning outcomes, and will be subsequently discussed further. On top of that, UNICEF is particularly concerned with child-sensitive social protection, advocating for cash transfers that reduce the barriers to education and health care for the most vulnerable children, especially in humanitarian situations. Its work in sub-Saharan Africa and the Middle East has helped governments include cash in child development policies. The World Food Programme (WFP) uses cash transfers in school feeding programs, in which parents are given monthly payments if children attend school regularly. The International Labour Organization (ILO), traditionally focused on employment and social insurance, now also provides growing support to

the design of universal child grants and maternity benefits that foster better developmental outcomes. The FAO (Food and Agriculture Organization) promotes “cash+” models in rural areas that combine financial assistance with school garden programs or health education. These agencies frequently collaborate, such as in the *2030 Cash Transfers Sprint* led by Brazil and supported by over 40 countries and institutions, which emphasizes the use of cash to combat hunger and improve educational and health access at scale and is “part of the 2030 Sprints Announcements for the Global Alliance Against Hunger and Poverty, held [on] November 15¹²” 2024. Through such efforts, international organizations not only help expand coverage but also promote high standards in program design, equity, and evaluation.

c. Non-Governmental Organizations (NGOs)

Non-Governmental organizations are key to the design, experimentation, and local implementation of CTPs, particularly for health and education outcomes. Their adaptability and grassroots nature make them particularly well-placed to reach marginalized groups, test new program models, and fill government voids. NGOs operate in fragile and rural areas where state institutions are absent or weak. One of the most striking examples is New Incentives, which uses conditional cash transfers in Nigeria to incentivize child immunization. Its approach has had a striking impact on infant vaccine uptake, reducing preventable disease and infant mortality. GiveDirectly, although more famous for unconditional transfers, has just begun to pilot reward programs for school attendance or other health behaviors in Uganda and Kenya. In crisis environments, groups like Save the Children and CARE use cash transfers to pay for children's re-enrollment in school following crises, sometimes providing additional money for uniforms or school lunches. Mercy Corps has launched adolescent-focused programs that utilize cash incentives to allow girls to stay in secondary school and delay early marriage. NGOs also work with clinics and schools to impose compliance with stipulations and provide complementary services such as parental education workshops or tutoring. They use their knowledge of community dynamics to develop culturally appropriate incentives and to provide accommodations for inclusivity, especially among the poor

¹² Global Alliance against Hunger and Poverty, “Governments, development banks and international organizations announce new concerted push to expand cash transfer programmes, commitments made to reach more than 500 million people in low and lower middle-income countries by 2030,” November 15, 2024

and marginalized such as girls, disabled children, or ethnic minorities. Furthermore, most NGOs generate quality evidence and share learnings on global platforms, thus influencing policy as well as donor agendas on cash transfers focused on human capital.

d. Private Sector and Financial Service Providers

The private sector, especially financial service providers and technology firms, plays an increasingly central role in the delivery infrastructure and innovation of CTPs that promote human capital. As many governments and organizations digitize their social protection systems, private actors offer the tools needed to distribute cash efficiently, securely, and at scale. Mobile money programs, such as Kenya's *M-PESA* or Bangladesh's *bKash*, enable parents in rural areas to receive education or child health-related stipends without the necessity to travel far to a bank or government bureau. These systems are particularly vital for women, whose mobility is usually limited and who benefit disproportionately from digital financial inclusion. Fintech companies assist in constructing real-time monitoring platforms, biometric authentication, and fraud detection, which are key features for assuring the provision of cash transfers in a transparent manner and properly tracking conditionalities (e.g., school attendance). In India, for instance, public-private mechanisms enable education stipends to be transferred directly into schoolgirls' bank accounts after verification of enrollment and attendance using *Aadhaar*-based digital ID platforms. Payment providers also work together with telecommunication companies and NGOs to design financial literacy programs, which could be bundled with investments in human capital for improved effects. At times, private health insurance companies have bundled health or maternity insurance with CTPs, further reinforcing the safety net for poor households. While their role raises legitimate issues about privacy of data and profit motives, the private sector has improved greater reach, reliability, and innovation in delivering such transfers that contribute toward children's education, maternal health, and overall human development.

e. Donor Governments and Global Alliances

Donor governments and global partners play a key role in investing in financing, advocating, and coordinating the implementation of CTPs focused on education, health, and investment in long-term human capital. This is usually through such bilateral donors as USAID, UK's FCDO, and the European Union, which have provided significant research and programming toward understanding how cash incentives can reduce school dropout rates, increase vaccination coverage, and improve early childhood development. Their investments often allow governments to scale up pilot programs into national systems: e.g., the UK supported “the Child Development Grant Programme (CDGP) [...] a 6 year, DFID-funded pilot programme (2013 to 2019) that is being implemented in Zamfara and Jigawa states in northern Nigeria¹³,” which provided pregnant women conditional cash transfers to attend prenatal care and their children to school. Global partnerships amplify these efforts by bringing in donors, international organizations, and governments around shared goals. The prominent proposal, as aforementioned, is the Global Alliance Against Hunger and Poverty, initiated by Brazil and supported by over 40 nations, aiming to cover 500 million individuals with cash transfers by 2030, with a focus on using them for better access to education and health. Similarly, “the Better Than Cash Alliance [hosted by the Sustainable Finance Hub] is a partnership of governments, companies, and international organizations established to scale financial inclusion by transitioning economies from cash to responsible digital payments¹⁴.” Thus, it is also a mean to deliver education and health-linked transfers more efficiently and transparently. The alliances spur normative change through the production of global reports, summits, and peer learning. The donor community's need for robust evidence of impact increases, and this has driven the proliferation of evaluations and real-time monitoring mechanisms. By funding both systems and services, donors can ensure that cash transfers are not just emergency handouts but long-term tools for building more equal and capable societies.

f. Research Institutions, Think Tanks, and Policy Networks

¹³ Department for International Development, “Child Development Grants Programme, Nigeria,” GOV.UK, 19 April 2018

¹⁴ Sustainable Finance Hub, “Better Than Cash Alliance,” UNDP

Academic institutions, research organizations, and policy networks are crucial to building the knowledge base that shapes global thought and action on cash transfers to promote human capital development. What they do goes beyond determining if cash transfers work or not, since it considers how, for whom, and under what circumstances they work best to improve education and health outcomes. Abdul Latif Jameel Poverty Action Lab (J-PAL) has conducted numerous randomized control tests comparing conditional cash transfers tied to school attendance, such as in Honduras and Morocco, and published influential policy briefs on how to design successful education incentives. Innovations for Poverty Action (IPA) has also focused on linking cash to vaccination coverage and maternal health outcomes in several African countries. The Center for Global Development (CGD) considers political economy and scalability of cash-based human development programs on a routine basis, and the Institute of Development Studies (IDS) analyzes equity and inclusion in these systems. In Brazil, the International Policy Centre for Inclusive Growth (IPC-IG) has completed extensive comparative analysis of the methods of Latin American countries in employing cash transfers to increase schooling and health of children. Platforms like the CALP Network and *socialprotection.org* serve as clearing houses for knowledge, examples, and exchange to make sure that practitioners and policymakers get access to the latest findings. Such agencies not only influence donor agendas and government policies but also equip civil society with the ability to advocate for more inclusive, evidence-based, and rights-oriented human capital development through cash transfers.

i. World bank

The World Bank (WB) is an international development institution owned by 187 countries, dedicated to reducing poverty by providing financial support to the governments of its less affluent members. Its goal is to strengthen their economies and enhance the quality of life for their citizens. In addition to its financial role, the Bank is one of the world's leading research centers in development. Its specialized departments utilize this expertise to advise nations on key sectors such as “health, education, nutrition, finance, justice, law, and the environment.”¹⁵ Furthermore,

¹⁵ World Bank, “Getting to Know the World Bank,” 2012

the World Bank Institute offers training programs for government officials and other stakeholders worldwide, collaborating with local research and educational institutions.

Established in 1944, under the name of “International Bank for Reconstruction and Development” (IBRD), it aimed to contribute to rebuilding Europe and Japan after WWII. From having just 38 members in 1946, now it counts most of the countries in the world as members and represents an institution from which to borrow money, which is essential for the world’s poorest countries to finance development projects, whose purpose is to help “people become educated, live healthy lives, get jobs, and contribute as active citizens.¹⁶”

Within itself, it contains five specialized institutions, which form the World Bank Group, i.e., IBRD, International Development Association (IDA), International Finance Corporation (IFC), Multilateral Investment Guarantee Agency (MIGA), International Centre for Settlement of Investment Disputes (ICSID).

The WB can be described as a “giant cooperative, where its members are shareholders and is operated for the benefit of those using its services¹⁷”, while the number of shares depends on the size of the country’s economy (e.g., the US is the largest single stakeholder). The Bank’s government shareholders are represented by a “Board of Governors”, who are usually country ministers and, additionally, the ultimate policymakers in the Bank, meeting once a year at the “Bank’s Annual Meetings,” where they decide how to deal with development issues and set the main yearly targets to reduce poverty worldwide.

Money is lent to middle-income countries by the WB at interest rates lower than those of commercial banks, while the poorest developing countries, which often have no other sources of loans, receive money at no interest. Moreover, borrowing from the WB means having a much longer period to repay loans and not having the obligation to start repaying for several years.

The money lent by the WB is borrowed. Thanks to its substantial financial reserves and strong credit rating, the Bank can secure loans at low interest rates from global capital markets and lend it to developing countries on favorable terms. These reserves stem from different sources, such as

¹⁶ World Bank, “Getting to Know the World Bank,” 2012

¹⁷ Id.

funds raised in financial markets, investments' earnings, fees paid in by member countries, the contributions of some of them, and borrowing countries when their loans is paid back.

Only a portion of the money needed for a project is lent by the WB, and the borrowing country must add the rest from other sources or its own funds, meaning that in the end, after paying back the loan, it pays for most, or all, of the project itself.

There are many fields in which the WB directly operates to help countries, but it also encourages “investment and lending by countries, companies, and private investors, [and] lends money to hire industry experts [that contribute to reshape countries' economies] to make them more efficient and productive.¹⁸” On top of that, the Bank offers its staff's advice and experience or its environmental and social standards, which are essential for a project's realization.

Furthermore, there are different steps for a project to be implemented. First and foremost, after identifying a need, a country develops a plan and ask the WB for a loan. Subsequently, experts from both the Bank and the borrowing country study the plan. Then, before negotiations for its implementation take place, the WB's staff reviews the plan and asks questions about it. The work begins when an agreement is reached and the loans are approved, while always being monitored by the Bank itself.

Finally, the assessment of the projects' effects is essential, since resources must be allocated where they can generate the greatest impact and reach the people they are aimed at. Indeed, monitoring and assessment are key factors, which also help to choose which future project to design.

ii. Safety Nets

More than 350 million individuals are currently supported by the WB with social safety net programs worldwide, and the COVID-19 pandemic triggered the most extensive expansion of social safety net transfers ever recorded.

Social safety net programs are a key asset in the global fight against poverty, since data shows that they allowed 36% of the poorest people to escape extreme poverty, and that “these programs lower

¹⁸ World Bank, “Getting to Know the World Bank,” 2012

inequality [...] and reduce the poverty gap by about 45[%]¹⁹” both in low and middle-income countries. Nonetheless, “one in five of the world’s poorest people still lack safety net coverage²⁰” in low-income countries.

On the other hand, safety nets cash transfers not only encourage countries to invest in human capital but also provide a vital source of income for the poor, helping to raise their standard of living. Besides, out of 2.5 billion people covered by safety net programs, 250 million people (56%) are part of the poorest quintile.

“Social safety nets can be defined as policies and programs that help individuals and families manage risk and volatility, protect them from poverty and inequality, and help them to access economic opportunity²¹.” These programs, also known as social assistance, rely on key instruments such as cash transfers, in-kind and productive inclusion interventions, and are built on national delivery systems—for identification, payments, and social registries—to ensure that aid properly reaches the right beneficiaries.

A component of the World Bank’s broader strategy on social protection, which aims to achieve universal coverage by 2030, is the expansion of social safety net programs. Besides this, social safety nets focus on three primary objectives: equity, resilience, and opportunity.

The first one is promoted by ensuring that poor and vulnerable individuals receive the necessary support to maintain a basic standard of living, ergo, fostering greater equality of opportunity. Secondly, they enhance resilience by preventing people from falling into or sinking deeper into poverty, particularly in response to shocks that might otherwise generate negative coping strategies, i.e., reducing food consumption, selling productive assets, or withdrawing children from school for their labor, since these actions can have long-term consequences. Lastly, they create opportunity by investing in human capital and facilitating access to income-earning opportunities. Indeed, these programs increasingly serve as a foundation for linking individuals, especially adolescent girls and women, to productive inclusion and job opportunities.

¹⁹ World Bank, “Getting to Know the World Bank,” 2012

²⁰ Id.

²¹ World Bank, “Safety Nets,” 2024

In the end, “social safety nets have positive and significant impacts on education, health, and food security, but also promote households’ ability to generate income that can lead to positive effects in local economies²².”

2.3. Types of Cash Transfers

Cash transfers can be differentiated into six groups: (1) conditional cash transfers (CCTs), (2) unconditional cash transfers (UCTs), (3) labelled cash transfers (LCTs), (4) cash-for-work (CFW), (5) vouchers, and (6) E-transfers.

1) Today, CCTs are one of the most prevalent social assistance programs in low and middle-income countries (e.g., in Latin America and the Caribbean, there were 26 CCT programs in operation in 2017). Born in the late 1990s in Latin America, they give cash payments to target households on the condition that they invest in the human capital of children. These conditions may regard both health & nutrition, and education. The first ones generally require medical visits and vaccinations for children less than 5 years of age, at attendance by a parent at periodic information talks, while the second type of conditions usually necessitates enrollment, continued attendance, and some measure of performance.

This type of cash transfer will be analyzed in more depth in section 2.6.

2) UCTs consist in cash assistance to individuals or households without any condition upon the beneficiaries' behavior. The recipients are selected by a program's 'targeting criteria' (e.g., if an individual or family is internally displaced). Such assistance offers more agency to people affected by a crisis and is typically considered the most dignified assistance. Indeed, they are increasingly being utilized by humanitarian actors as a first choice. Smaller, frequent UCTs often cover daily needs (e.g., food, medicine), whereas larger one-time payments may support livelihood recovery.

UCTs possess a wide range of strengths in humanitarian aid mechanisms. They are highly instrumental to respond to emergency needs because they have built-in flexibility and dignity they accord recipients, hence the most suitable vehicle to meet urgent basic needs. They

²² World Bank, “Safety Nets,” 2024

minimize barriers to access, as they remove conditionalities, therefore vulnerable populations are not excluded from help. In addition, UCTs are cheaper compared to other forms of humanitarian response, with less administrative expense. This is a cost advantage that enables coverage on a large scale, particularly where the intention is to cover the maximum number of people. Moreover, UCTs are more easily integrated into existing social protection systems, hence improving long-term resilience among communities and enabling them to recover more quickly from crises. Evidence also indicates that such transfers have a beneficial effect on wellbeing, lowering the likelihood that displaced households will skip meals or forego medical treatment due to financial issues, and assisting in reducing malnutrition rates among children. UCTs, however, also have limitations. They are not an option where markets do not function or where goods and services that are needed are not available, since recipients would not be able to buy what they require. Moreover, when humanitarian interventions aim to induce specific behavioral effects—e.g., the enrollment of girls in school or the consumption diversity of children—CCTs, with the use of requirements or activities on the part of beneficiaries, can prove to be more effective in inducing the intended effects.

E.g., “Mercy Corps Niger, in partnership with four US and European Foundations, implemented “Responding to the Food Crisis in Niger” (PROSAZ) from May 2012 through July 2013²³,” which provided monthly UCTs (about USD 114 per household) to 1,800 vulnerable farming families. This one-year relief program found that cash injections increased food access by 23% (e.g., households went from 2 to 3 meals per day) and helped restart agriculture.

- 3) On the other hand, LCTs are cash transfer programs in which recipients are given guidance or a “label” about how to use the money, but without any enforcement or penalties for non-compliance. In *Heinrich & Knowles* (2020), LCTs are described as transfers distributed with a “nudge” or “label” indicating an intended use (e.g., for health or education), in contrast to a “monetary carrot or stick²⁴.” In other words, beneficiaries are informed about preferred uses of the cash, but program rules are not monitored, and no sanctions (such as fines) are imposed.

²³ Mercy Corps, “Cash Transfer Programming: toolkit, Cash Transfer Programming: Methodology Guide (Part I),” Chapter 1, p. 4

²⁴ C.J. Heinrich and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, p. 3, 2020

LCTs offer several key advantages. First, they can deliver similar outcomes to CCTs, but at a lower cost. *Heinrich and Knowles (2020)* found that households receiving an LCT performed just as well on program goals, such as child vaccinations and school attendance, as those in a fully conditional arm. In their randomized evaluation of *Kenya's Orphans and Vulnerable Children (OVC)* program, they observed “little difference in program outcomes²⁵” between the CCT and LCT groups. This suggests that an LCT can achieve comparable impacts to a CCT without the expense of monitoring or enforcing conditions.

Moreover, LCTs significantly reduce the administrative burden. Since they do not require verifying compliance, such as checking school attendance or health visits, LCTs avoid the substantial public and private costs typically associated with administering conditions. *Heinrich and Knowles (2020)* emphasize that enforcing conditions involves “burdensome” costs related to staffing and reporting systems, which LCTs manage to sidestep. In practice, LCTs only involve informing recipients of suggested uses, usually through “loose guidance²⁶” or simple messaging, making them far cheaper and simpler to operate than CCTs.

Another advantage is the better protection of the poorest households. Since LCTs impose no penalties for noncompliance, they do not risk pushing vulnerable families further into hardship. In the *CT-OVC* study, the conditional arm, which involved penalties for noncompliance, led to significant declines in non-food consumption among the poorest beneficiaries, whereas the LCTs did not. This implies that LCTs avoid the regressive impacts that monetary penalties can introduce, while CCTs with fines can produce “unintended, regressive policy effects for the most vulnerable.²⁷”

Finally, LCTs provide a soft “nudge” effect. Although they lack enforcement mechanisms, LCTs still communicate program goals to beneficiaries, potentially influencing behavior. The label—such as suggesting that funds be spent on nutrition or education—can encourage households to act in ways aligned with program intentions. For instance, if an LCT is meant to support food security, administrators may simply offer guidance suggesting that the money be used for food. In this way, LCTs combine the behavioral messaging of CCTs with the flexibility

²⁵ C.J. Heinrich and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, p. 1, 2020

²⁶ C.J. Heinrich and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, p. 3, 2020

²⁷ C.J. Heinrich and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, p. 1, 2020

and respect for autonomy characteristic of UCTs. Indeed, *Heinrich and Knowles (2020)*, referencing the work of *Benhassine et al. (2013)*, highlight how labeling acted as a gentle but effective reminder in other programs.

Despite these benefits, LCTs also have important limitations. Most notably, LCTs offer no enforcement of conditions. By design, they have no mechanism to ensure that the guidance provided is actually followed. *Heinrich and Knowles (2020)* explicitly state that under an LCT, “no monitoring takes place to determine whether the recipients are following the guidance²⁸.” As a result, households are free to disregard the intended uses and spend the money at their own discretion. If recipients do not voluntarily adhere to the suggested behavior, the transfer functions effectively as an unconditional grant. In the worst-case scenario, program goals such as improved schooling or child health might not be achieved, since families face no direct incentive to comply.

Therefore, relying heavily on voluntary compliance, this nudge may prove too weak. Because no sanctions are imposed, the success of an LCT depends entirely on how beneficiaries react to the suggested uses. If families lack information, motivation, or find other priorities more pressing, they may ignore the label. *Heinrich and Knowles (2020)* themselves question whether a mere nudge can achieve the same behavioral changes as a “monetary stick.”

Another potential drawback is the ambiguity in program messaging. Without clear enforcement, the guidance provided by an LCT can be perceived as optional advice rather than a strong expectation. Some critics argue that labeling cash introduces a “soft” rule that could easily be misunderstood, leading to inconsistency in compliance. However, *Heinrich and Knowles (2020)* did not find negative outcomes from LCTs in their study, observing that households’ beliefs about the existence of rules were remarkably similar under both CCT and LCT programs.

- 4) Cash-for-Work consists in short-term wages paid to individuals in exchange for labor on public or community projects (e.g., repairing roads, irrigation, schools). CFW is a *work-for-pay* scheme: beneficiaries only receive cash after completing the work task—the “condition” is doing the work. Its aim is to inject income while rebuilding local assets and giving people a constructive role after displacement or disaster. CFW is usually time-limited (e.g., 4–6 week

²⁸ C.J. Heinrich and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, p. 3, 2020

cycles) and often incorporates both unskilled and skilled tasks. Implementers must set wages carefully—typically just below market rates—to avoid pulling labor away from private work, and provide alternatives—such as UCTs—for those unable to work. E.g., following Pakistan’s 2010 floods, which displaced over 20 million people, “with USD 5 million from USAID’s Office of Foreign Disaster Assistance (OFDA)²⁹,” Mercy Corps ran a CFW program for 12 months with 27,500 participants across 5 districts. Laborers worked in 42-day cycles to repair flood-damaged roads, canals and walls, and women received culturally appropriate tasks (e.g., cleaning schools, community halls) so they could participate fully.

- 5) Vouchers are coupons (paper or electronic) that beneficiaries exchange for specified goods/services at approved vendors. They are used when agencies wish to control purchase categories (e.g., shelter materials, hygiene items) or when cash handling is risky. They involve more logistics (e.g., designing/printing vouchers, registering vendors, reconciliation) and are usually justified only when needed. Vouchers can take forms like *cash vouchers* (spendable like cash at selected shops), *restricted vouchers* (limited to a list of commodities), or *commodity vouchers* (exchangeable only for a specific item). E.g., “In 2012, Mercy Corps Mali worked to meet emergency food needs and build resilience through a one-year cash voucher program targeting 12,000 of the most vulnerable individuals in the Ansongo District of the Gao region. The OFDA-funded “Response to Food Security Needs in Northern Mali” was proposed in response³⁰ to political instability that had worsened existing food insecurity. Vouchers were chosen due to the absence of functional banking infrastructure in Gao and the region’s insecurity. They also served to incentivize vendors to expand their presence in the target area. To reduce the risk of fraud, vouchers were printed in neighboring Niger and could be used to purchase any items—except cigarettes and alcohol—from the 18 participating vendors. Issued in small denominations, the vouchers enabled beneficiaries to make smaller, more manageable purchases, and ongoing monitoring revealed that 95% of the vouchers were spent on food.
- 6) E-transfers consist in electronic disbursement mechanisms (i.e., mobile money, smart cards, mobile vouchers) used to deliver any of the above CTP types. E-transfers are how the cash/voucher is delivered rather than a separate modality. They offer advantages like discreet

²⁹ Mercy Corps, “Cash Transfer Programming: toolkit, Cash Transfer Programming: Methodology Guide (Part I),” Chapter 1, p. 6

³⁰ Mercy Corps, “Cash Transfer Programming: toolkit, Cash Transfer Programming: Methodology Guide (Part I),” Chapter 1, p. 8

delivery, increased efficiency, safety and reduced costs for implementers. However, they depend on network power/internet, and require beneficiaries to have certain literacy and tech ability. Programs must take special care to include vulnerable people (e.g., women, elderly, illiterate) when using e-transfers. E.g., “Mercy Corps Nepal was the host of Phase I of the Electronic Voucher Assistance (ELEVATE) pilot project to test the speed, security and cost-effectiveness of mobile voucher solutions in CTP. Funded by MasterCard Worldwide, Phase I³¹” was launched in early 2013 using two mobile voucher platforms: SMS-based and smartphone-based systems. During the pilot, 129 vulnerable urban Nepalese and six vendors processed 228 vouchers totaling USD 7,750. The transition from paper to mobile vouchers enhanced transparency and significantly reduced staff time needed for printing, distributing, and processing vouchers. The web-based smartphone system emerged as the preferred option, offering lower error rates and real-time reporting of reimbursements. However, illiterate and innumerate beneficiaries faced challenges with the new technologies, often requiring assistance. “Helpers” were involved in 89% of SMS transactions and 37% of smartphone transactions observed.

2.4. Accountability, Monitoring and Evaluation

Community accountability in CTP requires establishing channels through which beneficiaries can ask questions, provide feedback, or lodge complaints. Program staff must ensure at least one, and ideally two, accessible feedback mechanisms are in place. These may include public hotlines (via phone or SMS), suggestion or complaint boxes at distribution sites, community meetings, or surveys and interviews. It is crucial that at least one of these channels allows beneficiaries to contact the implementing agency directly, rather than only through intermediaries, so that issues can be addressed transparently and promptly. All complaints should be managed by a trained staff member who is not directly involved in the distribution process to preserve confidentiality and impartiality. In culturally sensitive contexts, the presence of both male and female staff to handle complaints is recommended, ensuring that women or survivors of abuse can report concerns safely.

³¹ Mercy Corps, “Cash Transfer Programming: toolkit, Cash Transfer Programming: Methodology Guide (Part I),” Chapter 1, p. 10

These accountability systems are essential for detecting and correcting problems such as fraud, logistical errors, or disputes, while also reinforcing beneficiaries' sense of dignity and trust in the program.

Monitoring and Evaluation (M&E) in CTP operates under the same principles as in other humanitarian programs but is tailored to the unique dynamics of cash assistance. Monitoring focuses on real-time tracking of program delivery: assessing whether activities are on schedule, whether the intended households are receiving transfers, and whether the disbursement mechanisms function effectively. It also gathers data on how beneficiaries use the cash and whether local markets remain stable. Evaluation, in contrast, examines the broader outcomes—specifically, the impact of transfers on recipients and their communities. It seeks to determine whether the program helped rebuild livelihoods, improve food security, or enhance economic resilience. According to Mercy Corps, M&E should answer key questions about the program's process (e.g., whether implementation is being done correctly), design (e.g., whether the transfer value and schedule are appropriate), context (e.g., whether assumptions about the environment still hold), results (e.g., who received what), and impact (e.g., how the cash was used and what broader effects it had). Much of this insight comes from post-distribution monitoring, such as randomized household surveys or focus groups conducted after each transfer.

2.5. End-of-Program Transitions

Even though CTP is often implemented in response to urgent needs, planning for the program's exit strategy should begin as early as the design phase. It's important to establish clear exit criteria and identify transitional activities that align with the program's objectives. Exit strategies will vary depending on the intended purpose of the cash intervention.

When CTP is aimed at meeting basic needs—such as bridging a temporary food gap—cash assistance should conclude once households are able to resume their livelihoods and local markets have recovered. In these cases, no follow-up programming may be required. However, to prevent beneficiaries from falling back into crisis, particularly in conflict-affected or chronically unstable areas, it is advisable to connect participants to longer-term support services such as microcredit,

vocational training, or social protection systems before the CTP ends, ensuring a smoother transition to self-reliance.

If the objective was to jumpstart economic recovery, exit planning should involve linking CTP beneficiaries to broader development or resilience-building initiatives. As markets stabilize and incomes begin to return, it's recommended to integrate cash transfers with activities like financial literacy education, business development training, or the formation of savings groups. These complementary interventions help households turn short-term cash assistance into long-term stability and can be particularly transformative for disadvantaged or vulnerable groups. Although early recovery phases often face funding constraints, investments in such transitional support tend to generate more durable outcomes.

For Cash-for-Work (CFW) programs, the end point should coincide with the completion of infrastructure goals—such as repairing roads, rebuilding schools, or clearing irrigation canals—or after the designated period of paid labor ends. At that stage, assets developed through the program should be formally handed over to community leaders or local authorities for ongoing maintenance. To strengthen community ownership, tools may be donated to workers or official inauguration ceremonies held. Where further community needs persist, agencies might consider shifting to non-cash interventions that reinforce the same development goals.

Finally, in contexts where CTP has contributed to fostering stability—by reducing the risk of displacement, unrest, or social breakdown—teams should aim to transition recipients into programs focused on longer-term peacebuilding and resilience. These could include youth engagement initiatives, conflict resolution activities, disaster risk reduction, or livelihood diversification efforts that help communities better withstand future shocks.

In all scenarios, transparent communication with beneficiaries is crucial. Participants must understand when the cash assistance will stop, why the program is ending, and what opportunities or support may follow. By doing so, CTP can serve as a foundation for sustained recovery and avoid fostering dependency.

2.6. Conditional Cash Transfers for Education

Conditional cash transfer (CCT) programs first emerged in the late 1990s, with early examples including the *Female Secondary School Stipend Programme* in Bangladesh, *Bolsa Escola* in Brazil, and *PROGRESA* in Mexico (launched in 1997, later called *Oportunidades* and *PROSPERA*), which will be analyzed in chapter III. These initiatives were designed with two primary objectives: to reduce poverty in the short term and to foster long-term human capital development among younger generations, thereby helping to break the cycle of intergenerational poverty.

In many countries—especially in the developing world—CCTs have become a central element of social protection systems. They offer non-contributory cash assistance and facilitate the integration of families with children into broader national social protection. While typically framed as antipoverty interventions, CCTs also intersect significantly with education policy. They commonly require school-aged children to enroll in and regularly attend school, and sometimes to meet specific educational performance criteria. The combination of financial transfers and education-related conditions raises households' unearned income and lowers the marginal cost of child time, thereby reinforcing incentives for increased school participation.

Over the past two decades, CCT programs have seen rapid global growth: from just three initiatives in 1997 to 32 by 2008, and reaching 50 by 2016. The most significant expansion occurred between 2004 and 2009, although no new CCT have been launched since 2015. As of 2020, a total of 87 CCT programs operating across 50 countries have been identified. Latin America accounts for the largest share (44%), followed by Asia (24%), Africa (17%), and North America (8%).

Most of these programs (59%) are nationwide initiatives implemented at scale. Notable examples include Colombia's *Familias en Acción*, Brazil's *Bolsa Escola*, Nigeria's *Care for the Poor*, Mongolia's *Child Money Programme*, and Bangladesh's *Female Secondary School Stipend Programme*. A smaller share (13%) consists of subnational programs administered by states or municipalities—for instance, New York City's *Opportunity NYC* in the U.S., the *Conditional Cash Transfer for Girls' Education* in Kano State, Nigeria, and Buenos Aires' *Ciudadanía Porteña Con Todo Derecho* in Argentina. The remaining 28% (24 programs) are smaller-scale pilot or demonstration initiatives, such as Colombia's *Subsidios Condicionados a la Asistencia Escolar*, Cambodia's pilot *Primary School Scholarship Program (CSP)*, and Morocco's *Tayssir*.

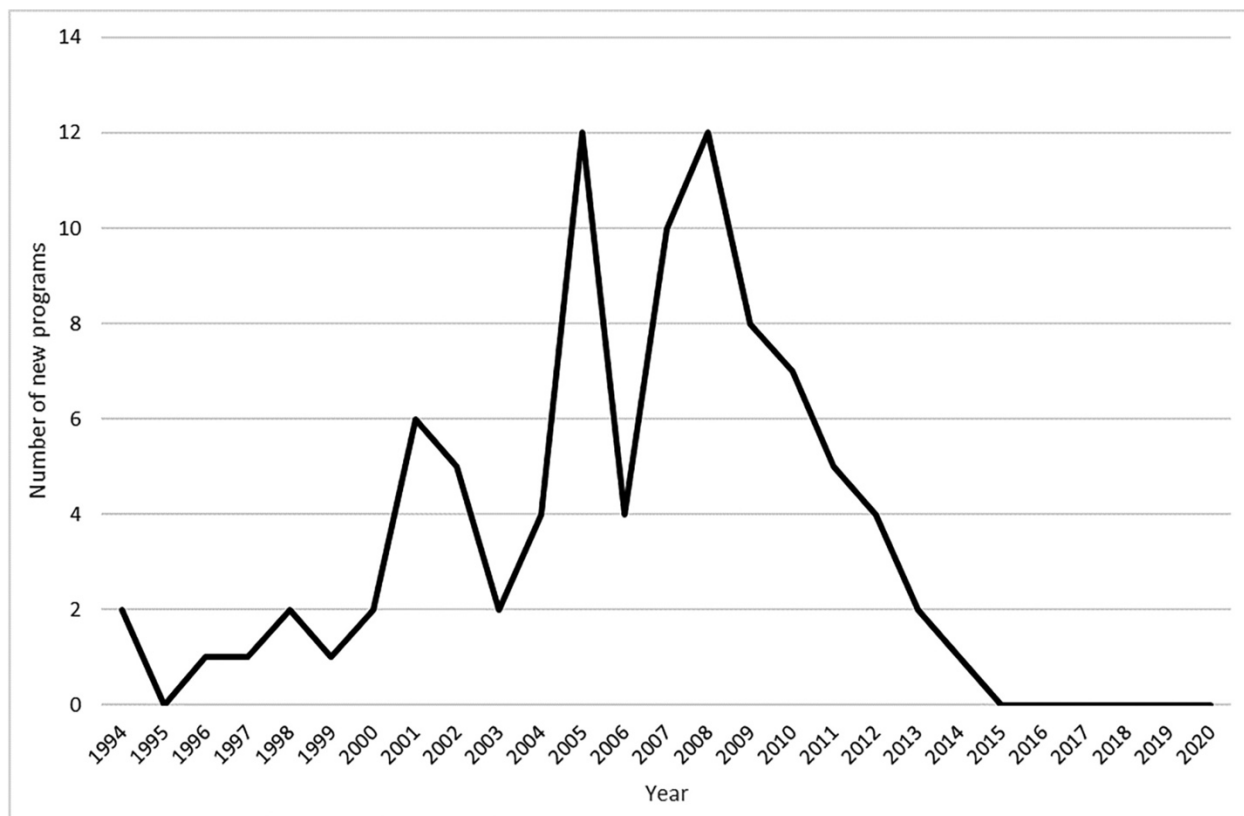


Figure 1 “Staggered expansion of CCT programs around the world” from García, Sandra, Saavedra, Juan, “Conditional Cash Transfers for Education,” NBER Working Paper No. 29758, Cambridge, MA: National Bureau of Economic Research, February 2022

Although the core structure of educational CCTs involves providing targeted cash payments tied to specific schooling-related conditions for children, these programs are often complex, with numerous factors shaping their final form. Typically determined by national policymakers, these factors include the amount of the transfer, the timing and method of payment, the strictness of compliance requirements, and the criteria for eligibility. As a result, CCT program designs vary significantly across contexts.

Table 3 “Characteristics of CCT programs” from García, Sandra, Saavedra, Juan, “Conditional Cash Transfers for Education,” NBER Working Paper No. 29758, Cambridge, MA: National Bureau of Economic Research, February 2022

	n	%
<i>Region</i>		
Latin America and the Caribbean	39	42.4
Africa	12	13.0
Middle East and North Africa	3	3.3
East Asia and Pacific	12	13.0
South Asia	9	9.8
North America	12	13.0
Easter Europe and Central Asia	5	5.4
<i>Scale</i>		
Pilot	30	32.6
National	52	56.5
State/City/Region	10	10.9
<i>CCT Type</i>		
Primary only	14	15.2
Secondary only	22	23.9
Primary and secondary	56	60.9
<i>Education conditionality requirements</i>		
Enrollment	7	7.6
Attendance	21	22.8
Enrollment and attendance	30	32.6
Grade promotion or achievement	34	37.0
<i>Household school subsidy varies by</i>		
Number of eligible children	28	30.4
Age or grade and number of eligible	17	18.5
Gender & age/grade and number of eligible children	5	5.4
Achievement/completion and number of eligible children	17	18.5
Flat transfer per hh	21	22.8
Other	4	
<i>Payment frequency</i>		
Monthly	32	34.8
Bimonthly	22	23.9
Quarterly	13	14.1
Semesterly	5	5.4
Annually	5	5.4
Other	15	16.3
<i>Supply incentives for education</i>		
Yes	6	6.5
No	86	93.5
Number of programs	92	

As shown in Table 3, 60% of educational CCT programs target children enrolled in both primary and secondary school, while 17% focus exclusively on primary school students and 23% target only those in secondary education. This distinction is especially relevant in contexts where primary school enrollment is nearly universal; in such cases, the transfer functions more like an unconditional benefit and has limited impact on the opportunity cost of children's time. In contrast, where secondary school enrollment is less widespread, program conditions tied to secondary education are more likely to influence that opportunity cost and, consequently, behavior.

The most common condition attached to these programs is a minimum school attendance requirement—about 60% of CCTs make payments contingent on children attending school. However, there is considerable variation in how these attendance thresholds are defined. Stricter attendance requirements are more likely to influence the opportunity cost of time for a broader share of beneficiaries, potentially leading to more pronounced changes in behavior. Some programs go further by conditioning transfers on educational outcomes, such as satisfactory grade progression or graduation. For instance, in Cambodia’s *CESSP* and *JFPR* programs, households receive payments only if students not only enroll and attend regularly but also maintain passing grades.

The structure of payments in educational CCT programs also differs considerably across cases. In 24% of programs, households receive a fixed payment that does not vary with the number of children enrolled. In contrast, 16% of programs provide payments on a per-child basis, meaning differences in household benefits stem solely from the number of eligible children. Meanwhile, 22% of programs adjust transfer amounts based on the estimated opportunity cost of children’s time. These programs tend to offer higher payments for older children and those in higher grades—where dropout rates are typically higher—as well as larger transfers for girls compared to boys. Additionally, in educational CCT programs that include performance-based conditions, payments are frequently linked to the attainment of specific academic milestones. E.g., India’s *Apni Beti Apna Dhan* (“Our Daughter, Our Wealth”) program provides higher payments to students who remain unmarried, with bonus transfers awarded upon completing grades 5 and 8.

Payment frequency also varies across educational CCT program designs. Some researchers argue that when educational expenses are concentrated at specific times and households face difficulty saving, larger but less frequent payments may encourage greater investment in schooling. In practice, 55% of educational CCT programs provide monthly payments to households, while 14% distribute payments quarterly, and 10% offer only one or two payments per year.

Another important aspect of variation in program design is whether educational CCTs are paired with supply-side subsidies or interventions. As discussed in the following section, the core theory of change behind these programs assumes that easing demand-side constraints—such as the opportunity cost of children’s time—will lead to greater investments in human capital. However,

in many settings, the education system may lack adequate resources, including schools, teachers, or textbooks. To address these limitations and support the anticipated rise in enrollment prompted by cash transfers, some programs include a supply-side component aimed at strengthening educational infrastructure.

Finally, a key question in the literature is how differences in program design translate into variation in educational outcomes and cost-effectiveness. In the next section, a theory of change for educational CCTs along with a conceptual framework for household decision-making are outlined. This framework, in particular, illustrates how specific program features—such as minimum attendance requirements or the size of the subsidy—can drive differences in program impact.

a. Theory of Change

CCTs provide financial support to targeted households on the condition that they meet specific education and health requirements designed to promote children’s human capital development. The rationale behind this approach is that effective poverty reduction requires addressing both immediate needs and long-term goals. In the short term, cash transfers supplement household income, allowing families to cover essentials like food and basic services. Once these immediate needs are met, the attached conditions serve as incentives for low-income households to invest in their children's education and health. Over time, these investments are intended to enhance children’s human capital and help break the cycle of intergenerational poverty

By making financial assistance conditional on school enrollment and attendance, CCTs alter the opportunity cost of education, reducing its relative cost compared to alternatives such as child labor. “Because income and price effects operate in the same direction, economic theory predicts that imposing conditions should raise usage of educational services more than would an unconditional transfer, given that an unconditional transfer only has an income effect³²,” according to *Fiszbein et al.* (2009), *Garcia and Saavedra* (2017), and *Grosh et al.* (2008).

³² García, Sandra, Saavedra, Juan, “Conditional Cash Transfers for Education,” NBER Working Paper No. 29758, Cambridge, MA: National Bureau of Economic Research, February 2022

There are two main economic justifications for imposing conditions. First, households may underinvest in their children's education because they do not account for the broader social benefits—such as increased civic participation, improved productivity, and reduced crime—that accrue from higher levels of education. Second, households may face informational and behavioral barriers. Parents and children may hold inaccurate beliefs about the returns to education or may underestimate its long-term value. In some cases, parents may also exhibit time-inconsistent preferences, overly discounting future benefits. This may be especially relevant for girls' education, where parents might overvalue the short-term benefits of girls' domestic labor or underestimate the returns to educating daughters due to cultural norms or expectations about marriage and caregiving roles.

Beyond the economic rationale, there are political economy arguments for conditionality. Conditions can increase public support for redistribution by ensuring that benefits go to the “deserving” poor who comply with socially beneficial behaviors, unlike UCTs, which may be seen as unjustified handouts.

Nonetheless, conditionality remains a contentious issue. Critics such as *De Brauw and Hoddinott* (2011) point to several drawbacks: conditions raise administrative complexity and costs, and compliance burdens often fall disproportionately on women. Moreover, monitoring compliance may open the door to corruption and be viewed as paternalistic or degrading, implying that poor households lack agency.

Setting aside debates around conditionality, the core premise of CCTs as an educational policy is that they enhance learning and attainment by helping households overcome key demand-side barriers—such as externalities, information gaps, and intra-household decision-making problems. When these are the main constraints, CCTs can effectively boost educational outcomes and reduce long-term poverty dependence. However, if underinvestment in education stems from supply-side issues—such as inadequate school infrastructure, underqualified teachers, or weak curricula—then demand-side financial incentives alone are unlikely to produce meaningful improvements in educational attainment.

III. CASE STUDY: PROGRESA/PROSPERA

drawing on Araujo, Maria Caridad, and Karen Macours, “Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years,” *HAL Open Science*, 2021; World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, Washington, DC: World Bank, December 1, 2021

PROGRESA (later *Oportunidades*, now *PROSPERA*) was a pioneering, large-scale CCT targeting poor, rural families in Mexico and was introduced in 1997 to simultaneously reduce poverty and increase investments in health, nutrition and education.

3.1. Program Design and Short-Term Evidence

Households were selected using an *asset-based poverty index*. Eligible mothers received monthly nutrition grants and schooling grants that increased with the child’s grade level (and were ~13% higher for girls). These transfers were conditional on health visits and school attendance. The program phased in gradually for evaluation: 506 villages were randomized in 1997, with 320 villages receiving transfers in May 1998 (T1) and 186 villages starting 18 months later in November 1999 (T2). All participating households ($\approx 24,000$) were tracked in surveys from 1997 through 2007.

Short-term impact evaluations of this design found notable human capital improvements. Health check-ups and nutrition support reduced childhood illnesses and anemia, and increased growth: young children in T1 villages were taller and had lower anemia prevalence than those in T2. *PROGRESA* mothers also made more prenatal care visits and fed children more nutrient-rich foods. In education, Schultz (2004) documented that *PROGRESA* raised secondary enrollment: “in the short term, children assigned in treatment localities attained 0.66 years more years of schooling than those in the control ones³³.” In the 2003 follow-up, Behrman, Parker and Todd (2009) found

³³ Maria Caridad Araujo, and Karen Macours, “Education, Income and Mobility: Experimental Impacts of Childhood Exposure to *Progresa* after 20 Years,” *HAL Open Science*, 2021

that high-risk students who would have dropped out otherwise gained about 0.5 years of schooling from earlier *PROGRESA* exposure, although overall gains in test scores or higher education levels were small. These initial results led to rapid scaling-up of *PROGRESA* nationally and inspired similar programs region-wide.

Thus, by 2003 *PROGRESA* had established proof-of-concept that CCTs could raise schooling and improve child health in the short run. However, the persistence of these gains into adulthood was unknown. The study, conducted by *Maria Caridad Araujo and Karen Macours*, leverages the original randomized rollout to compare long-term outcomes for “early vs late” exposure, under the assumption that baseline balance ensures these comparisons yield valid *intent-to-treat* (ITT) estimates of 18-month difference in program timing.

3.2. Sample Design, Tracking, and Mobility

The two cohorts of interest were defined retrospectively using baseline data. The *early childhood cohort* consists of children born between 1997 and 1999 in *PROGRESA*-eligible households. In T1 villages these children were exposed to *PROGRESA* in utero or during their first years, whereas T2 children only began receiving transfers after their first year(s) of life. On the other hand, the *school cohort* consists of children who were in 6th grade of primary school in November 1997 (*age* ~11–12). Those in T1 villages got *PROGRESA* grants just before entering secondary school, while the T2 group started 18 months later, after the typical transition point. In 2017, these cohorts were *age* ~18–20 and ~29–35, respectively.

To construct the tracking sample, the authors started with all eligible households in the original 506 villages (24,000+ families). They then intensively sought to locate every child in the two cohorts. In practice, they attempted to track 6,750 individuals (4,461 in *early cohort*; 2,289 in *school cohort*) from 5,468 households in 456 villages. Surveys were conducted in 2017 in two phases (i.e., *May–Aug* and *Sept–Dec*) and employed multiple methods: repeated village visits, household visits, phone interviews with migrants (including in the U.S.), community networks, and even personalized letters and WhatsApp videos to inform respondents. Safety constraints led

to dropping 47 villages where fieldwork was deemed too risky, but these were balanced across T1/T2 and accounted for in analysis.

The tracking was highly successful: 93% of targeted individuals were interviewed (93% in each cohort). Of these, about half of interviews were face-to-face and ~35% by phone, supplemented by proxy interviews (often mothers) for any remaining 8%. Tests showed no systematic bias by tracking mode. The 2017 survey collected detailed information on education, income, migration, occupation, marriage and fertility. Crucially, the authors also gathered data on current and past location, capturing the remarkable geographic mobility: over half of the sample had left their home village and migrated elsewhere in Mexico or to the U.S. This high mobility underscores the importance of locating respondents across a broad array of destinations; it also highlights mobility itself as an outcome of interest. The final data include nearly 7,000 individuals with rich adult-life information, enabling a credible long-term ITT analysis of *PROGRESA*'s childhood exposure.

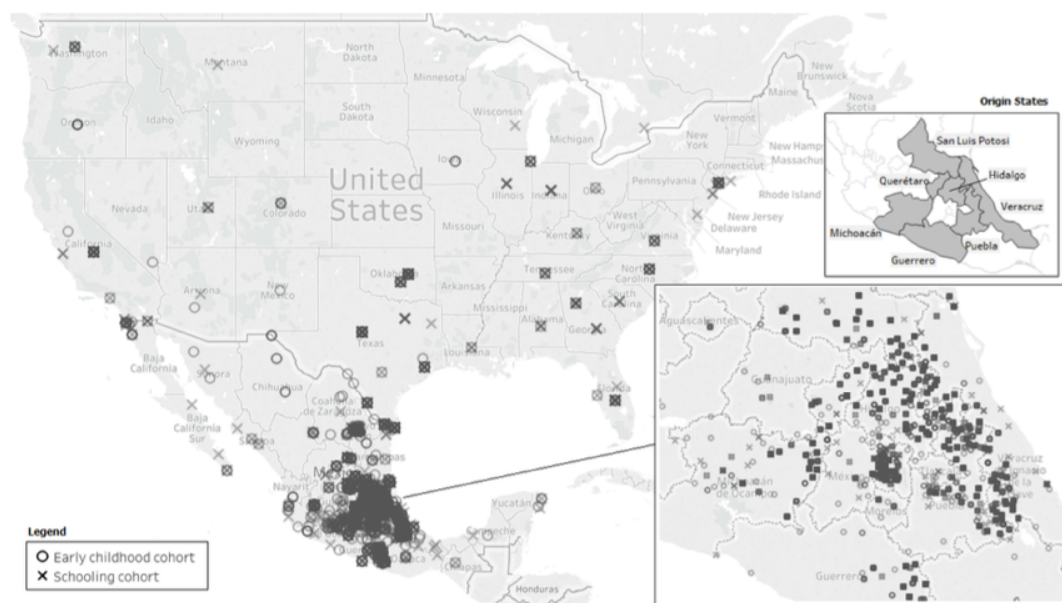


Figure 2 "Villages of origin and locations in 2017 of individuals in the tracking sample" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," *HAL Open Science*, 2021

3.3. Empirical Strategy

The analysis estimates ITT differences between T1 and T2 groups within each cohort, controlling only for the stratification variables (five regions and four village-size categories) used in the randomization. Formally, for individual i in baseline locality l the model is:

$$Y_{il} = \alpha + \beta T_l + \varepsilon_{il}$$

“where Y_{il} is the 2017 outcome for individual i from baseline locality l . T is an [ITT] indicator that equals one for localities randomly assigned to T1 and zero for localities randomly assigned to T2, so that the estimate of β gives the impact of 18-month earlier exposure to *Progresa*³⁴.” Standard errors are clustered at the village level. No further covariates are needed for identification, but the authors also present results with rich baseline controls [i.e., using *Belloni et al. (2014)* post double selection lasso] and various robustness samples (e.g., excluding insecure strata, using weights for representativeness). All specifications yield similar conclusions.

Each cohort is analyzed separately. For the *early-childhood cohort* (age 18–20), the primary outcomes are educational attainment and income expectations. Since many in this cohort were still students by 2017, their actual earnings were censored; instead, the survey asked them to report expected annual income at age 30 (about the age of the *school cohort*). For the *school cohort* (age 29–35), who are fully into adulthood, the outcomes include final schooling attainment, current labor income, migration, occupation, and family formation (marriage and fertility). The authors focus on long-run differences to confirm that the short-run schooling gains were sustained and to uncover broader impacts on economic mobility. They also explore gender differences by estimating β separately for women and men and testing for significance of the difference.

All results reported are ITT estimates of the exposure timing effect. In particular, for the *early cohort* they show that excluding children conceived after the start of *PROGRESA* (i.e., born in 1999) does not change the results, suggesting the findings reflect in-utero/infancy exposure rather

³⁴ Maria Caridad Araujo, and Karen Macours, “Education, Income and Mobility: Experimental Impacts of Childhood Exposure to *Progresa* after 20 Years,” HAL Open Science, 2021

than postnatal timing differences. These comprehensive specifications ensure the results reflect causal impacts of early *PROGRESA* exposure at scale.

3.4. Findings: *Early Childhood Cohort (Age 18–20)*

In terms of educational attainment, children exposed to *PROGRESA* from conception/infancy (T1) achieved modestly higher schooling by age 18–20. Table 4 and Figure 3 show that T1 individuals completed 0.35 more grades on average than T2 (about 0.4 years). The gains occur across the board: T1 was 5 percentage points more likely to finish lower secondary school (7% relative increase) and 4 percentage points more likely to finish upper secondary (18% relative increase). Notably, even tertiary attainment was affected: the probability of having completed any university was 2 p.p. higher (a 65% jump from the low baseline of 3%) in T1. All these differences are statistically significant at conventional levels, and the overall effect is a rightward shift in the education distribution.

The benefits were larger for girls: T1 girls were particularly more likely to attain higher education. For example, among women the likelihood of finishing upper secondary jumped by 22% (relative to T2) and the probability of any university more than doubled. Consistent with these gains, T1 youths were less likely to have completed schooling in their home village, reflecting that many traveled farther for advanced schooling. Excluding children born in 1999—who saw some first-exposure effect in utero—leaves the results essentially unchanged. These findings provide new experimental evidence that improving nutrition and health conditions in the first 1,000 days of life leads to measurable gains in educational attainment two decades later. The authors note that these estimates may understate final impacts, since T1 youth were more likely to still be in school at 2017 (though insignificantly), suggesting additional education gains may materialize beyond age 20.

On the other hand, with regards to income expectations, in order to assess returns to these education gains, the study uses the 18–20-year-olds' reported expected annual income at age 30. Although this variable is noisy, the authors find that expected income is 8% higher in T1 than T2 (income is logged in regressions). The implied return is larger for girls (point estimates suggest +13% for

young women). This aligns broadly with the actual 16% higher labor income observed in the older cohort (25% for women). The expectation estimates exclude individuals (12.5% of sample) who could not answer the question, and non-response was balanced across T1/T2. Taken together, early exposure to *PROGRESA* appears to raise young adults' beliefs about future earnings, consistent with the notion that the enhanced schooling will pay off over time.

In summary, the *early-childhood cohort* experienced statistically significant but quantitatively modest gains from 18 months earlier *PROGRESA* exposure: roughly one-third to one-half of a year more schooling, several-percent higher completion rates, and correspondingly higher expected incomes. These are substantial given the low baseline schooling and severe disadvantage of the sample. The findings support the hypothesis that investments in early-life health and nutrition can have durable human capital returns and hint at higher lifetime earnings for those exposed to *PROGRESA* from birth.

Figure 3 "Cumulative distribution of grades attained in 2017 - early childhood cohort" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," *HAL Open Science*, 2021

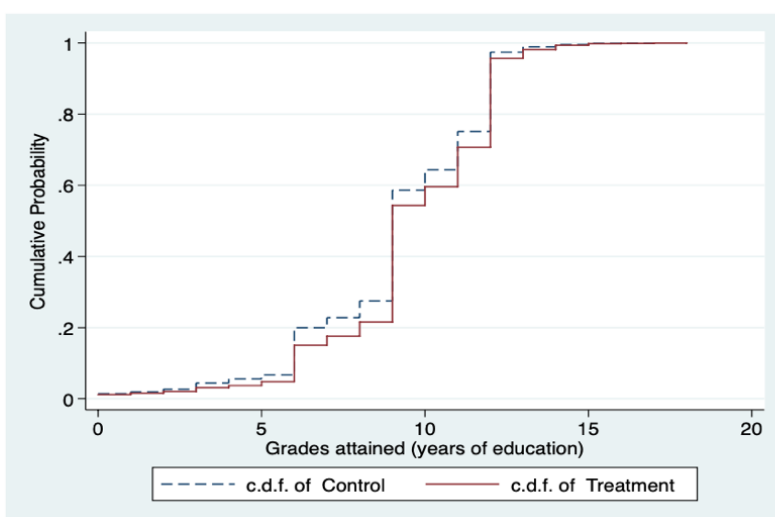


Table 4 "20-year differential treatment effects for the early childhood cohort: educational attainment" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility:

Experimental Impacts of Childhood Exposure to ProgresA after 20 Years,” HAL Open Science, 2021

	All		Women		Men		P-value Women=Men (4)	Born in 1997 or 1998	
	Obs (1)	coef. (1)	Obs (2)	coef. (2)	Obs (3)	coef. (3)		Obs (5)	coef. (5)
Completed primary school									
T1	4103	0.017	2069	0.015	2034	0.02	0.804	3009	0.018
s.e.		(0.01)*		(0.013)		(0.013)			(0.01)*
mean T2		0.933		0.943		0.923			0.931
Completed lower secondary school									
T1	4103	0.053	2069	0.051	2034	0.056	0.861	3009	0.048
s.e.		(0.024)**		(0.027)*		(0.027)**			(0.024)**
mean T2		0.725		0.751		0.697			0.731
Completed upper secondary school									
T1	4103	0.044	2069	0.055	2034	0.034	0.416	3009	0.026
s.e.		(0.02)**		(0.026)**		(0.024)			(0.024)
mean T2		0.249		0.262		0.235			0.3
Completed some tertiary education									
T1	4103	0.017	2069	0.028	2034	0.007	0.09*	3009	0.021
s.e.		(0.006)***		(0.009)***		(0.008)			(0.008)***
mean T2		0.026		0.028		0.023			0.032
Grades attained (years of education)									
T1	4103	0.354	2069	0.391	2034	0.324	0.688	3009	0.322
s.e.		(0.153)**		(0.178)**		(0.173)*			(0.161)**
mean T2		9.133		9.27		8.987			9.213
Last schooling in locality of origin									
T1	3760	-0.071	1934	-0.074	1826	-0.069	0.898	2734	-0.08
s.e.		(0.031)**		(0.036)**		(0.033)**			(0.031)**
mean T2		0.392		0.38		0.405			0.394
Still studying									
T1	4137	0.021	2083	0.029	2054	0.012	0.562	3036	0.042
s.e.		(0.019)		(0.023)		(0.024)			(0.017)**
mean T2		0.215		0.222		0.207			0.15

Notes: ITT estimates with region and village population size fixed effects. Col. 1 shows results for the full early childhood cohort, Col. 2 for female and Col. 3 for males. Col. 4 shows the p-values for tests that the effects are identical between males and females. Col (5) shows results restricting to those born in 97 and 98. Each column shows the number of observations and the estimated differential treatment effect in the first row, standard errors are in the second cell row parentheses, clustered at locality level, with ***, **, * indicating significance at 1, 5 and 10%; and mean in T2 localities in the third row.

3.5. Findings: *School Cohort* (Age 29–35)

With respects to educational attainment, the cohort exposed during school-age (transition to secondary) also shows lasting education gains from earlier transfers. By 2017 the T1 group was 7 percentage points more likely to have finished lower secondary school (9th grade) than T2—i.e., a 12% relative increase. Primary school completion was nearly universal in both groups and unaffected. There were no significant differences in completion of higher levels (upper secondary or tertiary). In practical terms, the 18-month head start in *PROGRESA* shifted many children who would have dropped out after primary to complete lower secondary instead. The point estimate corresponds to about 0.3 additional years of schooling on average for T1. This effect likely represents the permanent gap in completed schooling, since virtually no one in this cohort was still in school by 2017.

Gender effects mirror the schooling results: T1 girls in the *school cohort* saw a 10 p.p. increase in lower secondary completion, against 4 p.p. for boys. Point estimates for women exceed those for

men at each threshold—though some differences lack statistical significance. This gender gap echoes the short-run findings: *PROGRESA*'s grants and conditions had a bigger impact on girls' progression to secondary school. The observed pattern is consistent with the view that earlier *PROGRESA* support enabled many girls to continue schooling beyond primary, while boys—who had higher baseline schooling—showed smaller gains.

On the other hand, in terms of labor income and employment, the schooling advantage translated into higher adult earnings. T1 individuals in the *school cohort* earned about 16% more in labor income than T2 (*PPP-adjusted*), with women experiencing about a 25% boost. This is roughly in line with the 15% ITT gain for the cohort (and 25% for women) reported in the conclusion. Notably, overall labor force participation rates were similar across groups: almost all men worked and about 38% of women worked, in both T1 and T2. Thus, the income gains come from higher wages or earnings for those employed, not from more people working. Indeed, among those with any job—including self-employment—T1 individuals earned more than T2, suggesting productivity differences or network effects. The quantile regressions show that the income gains are concentrated in the upper tail (i.e., top quartile), implying that a subset of young adults captured most of the benefit.

These differential gains likely stem from mobility. First and foremost, they are related to international migration: T1 members were twice as likely to report any U.S. dollar earnings, rising from 4% in T2 to 8% in T1. This means more T1 individuals had worked in the United States, where wages are much higher. In fact, the PPP-adjusted analysis shows a 16% overall income increase (25% for women), and the authors note that 8% of T1 have U.S. income, which contributes heavily to that gain. Because migrants self-select, part of the income boost may reflect who moved, but the experimental design ensures these patterns are effects of the transfer timing. Secondly, internal mobility: T1 individuals on average lived 55 km farther from their village of origin in 2017. Table 5 shows that T1 subjects were 5 p.p. less likely to remain in their home village, and more likely to have moved to smaller towns or semi-urban areas. In contrast, they were somewhat less likely to migrate to large metropolitan cities. This suggests that completing secondary school may have enabled rural youths to relocate to moderately larger localities—often nearer jobs—rather than staying in very small villages. The authors conjecture that the broader horizons and networks gained through schooling helped T1 youths migrate to places with better

opportunities. While many jobs in those areas may still be in agriculture or commerce, even a slight shift away from subsistence farming can raise incomes when markets are imperfect.

Table 5 "20-year differential treatment effects for the school cohort: geographic mobility" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," HAL Open Science, 2021

	All		Women		Men		P-value
	Obs	coef.	Obs	coef.	Obs	coef.	Women=Men
	(1)		(2)		(3)		(4)
Living in locality of origin							
T1	2153	-0.049	1097	-0.07	1056	-0.03	0.269
s.e.		(0.028)*		(0.033)**		(0.034)	
mean T2		0.386		0.363		0.409	
Living in municipality of origin							
T1	2153	-0.014	1097	-0.035	1056	0.007	0.312
s.e.		(0.03)		(0.037)		(0.036)	
mean T2		0.487		0.509		0.464	
Ever migrated outside of the municipality of origin							
T1	1882	0.07	1002	0.088	880	0.044	0.367
s.e.		(0.029)**		(0.039)**		(0.033)	
mean T2		0.617		0.565		0.68	
Migrated and returned to municipality of origin							
T1	1882	0.037	1002	0.039	880	0.027	0.82
s.e.		(0.02)*		(0.023)*		(0.03)	
mean T2		0.189		0.136		0.255	
Ever migrated to the USA							
T1	2149	0.037	1094	0.032	1055	0.038	0.852
s.e.		(0.024)		(0.023)		(0.036)	
mean T2		0.201		0.097		0.31	
In USA in 2017							
T1	2149	0.032	1096	0.032	1053	0.03	0.923
s.e.		(0.018)*		(0.017)*		(0.026)	
mean T2		0.09		0.042		0.139	
Distance (km) from locality of origin to 2017 location							
T1	2149	55.008	1096	61.471	1053	45.421	0.724
s.e.		(38.732)		(36.197)*		(58.776)	
mean T2		299.976		185.583		420.629	
Log(Population size of the largest town in municipality if in Mexico in 2017)							
T1	1865	-0.33	1006	-0.198	859	-0.476	0.202
s.e.		(0.161)**		(0.198)		(0.197)**	
mean T2		10.374		10.325		10.431	
By type of destination in Mexico							
In metropolitan areas of Mexico in 2017							
T1	2149	-0.055	1096	-0.03	1053	-0.082	0.137
s.e.		(0.026)**		(0.031)		(0.033)**	
mean T2		0.207		0.191		0.224	
In other urban municipality of Mexico in 2017							
T1	2139	0.02	1089	0.02	1050	0.02	0.945
s.e.		(0.023)		(0.034)		(0.026)	
mean T2		0.189		0.224		0.152	
In semi-urban municipality of Mexico in 2017							
T1	2139	0.028	1089	0.024	1050	0.034	0.649
s.e.		(0.017)*		(0.025)		(0.018)*	
mean T2		0.101		0.138		0.062	
In rural municipality of Mexico in 2017							
T1	2139	0.025	1089	0.027	1050	0.023	0.849
s.e.		(0.01)**		(0.015)*		(0.01)**	
mean T2		0.024		0.036		0.012	

Notes: ITT estimates with region and village population size fixed effects. Col. 1 shows results for the schooling cohort, Col. 2 for female and Col. 3 for males. Col. 4 shows the p-values for tests that the effects are identical between males and females. Each column shows the number of observations and the estimated differential treatment effect in the first row, standard errors are in the second cell row parentheses, clustered at locality level, with ***, **, * indicating significance at 1, 5 and 10%; and mean in T2 localities in the third row.

The combined effect is that schooling plus mobility together raised earnings for a group that otherwise would have been left behind in the local economy. *PROGRESA*'s effect on schooling seems to have translated into mobility, which in turn increased earnings. Only 4% of T2 reached the U.S., versus 8% of T1. Since higher income in the U.S. explains much of the group difference, the mobility findings underscore how the program's educational impulse unleashed migration as a

pathway to higher income. Aside from income and migration, differential outcomes in occupation or job quality were small: the analysis finds little evidence that T1 shifted into visibly better jobs or industries, or that they enjoyed better employment conditions (Table 6). This implies the income gains stem mainly from where people work—often outside home areas—rather than what jobs they hold.

Table 6 "20-year differential treatment effects for the school cohort: job characteristics" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," HAL Open Science, 2021

	All	Women	Men	P-value			
	Obs	coef.	Obs	coef.	Obs	coef.	Women=Men
	(1)	(2)	(3)	(4)			
Receives social security benefits from job							
ITT	1882	-0.011	1002	-0.003	880	-0.034	0.419
s.e.		(0.02)		(0.019)		(0.034)	
Mean control		0.184		0.097		0.289	
Receives pay every 15 days							
ITT	1884	-0.003	1003	0.004	881	-0.015	0.534
s.e.		(0.015)		(0.014)		(0.025)	
Mean control		0.098		0.061		0.143	
Receives weekly pay							
ITT	1884	-0.016	1003	-0.014	881	-0.048	0.442
s.e.		(0.024)		(0.026)		(0.035)	
Mean control		0.429		0.235		0.665	
Number of months worked - 1&2 job combined							
ITT	1884	0.086	1003	-0.285	881	0.07	0.516
s.e.		(0.276)		(0.358)		(0.201)	
Mean control		6.888		3.847		10.581	
Worked 12 months in same job							
ITT	1884	-0.001	1003	-0.053	881	0.03	0.074*
s.e.		(0.025)		(0.029)*		(0.033)	
Mean control		0.48		0.292		0.708	

Notes: ITT estimates with region and village population size fixed effects. Col. 1 shows results for the schooling cohort, Col. 2 for female and Col. 3 for males. Col. 4 shows the p-values for tests that the effects are identical between males and females. Each column shows the number of observations and the estimated differential treatment effect in the first row, standard errors are in the second cell row parentheses, clustered at locality level, with ***, **, * indicating significance at 1, 5 and 10%; and mean in T2 localities in the third row.

Furthermore, with regards to family formation and fertility, the two cohorts also diverged in family timing. In the *school cohort*, by 2017 about 80% of both T1 and T2 men and women were married and had children. The key difference is timing: T1 individuals delayed marriage and first birth by about 0.5 years compared to T2. This delay was observed for both genders (no significant male–female difference). Graphical distributions (Figures 4–5) show the childbearing age profile shifted right by about 1–2 years for T1 (from age 18 upward). The postponement does not reflect fewer teen pregnancies—in fact, those were negligible—but rather that T1 youth spent their early 20s accumulating resources, through education and migration, before starting families.

Figure 4 "Cumulative distribution of age at which school cohort women had their first child" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," HAL Open Science, 2021

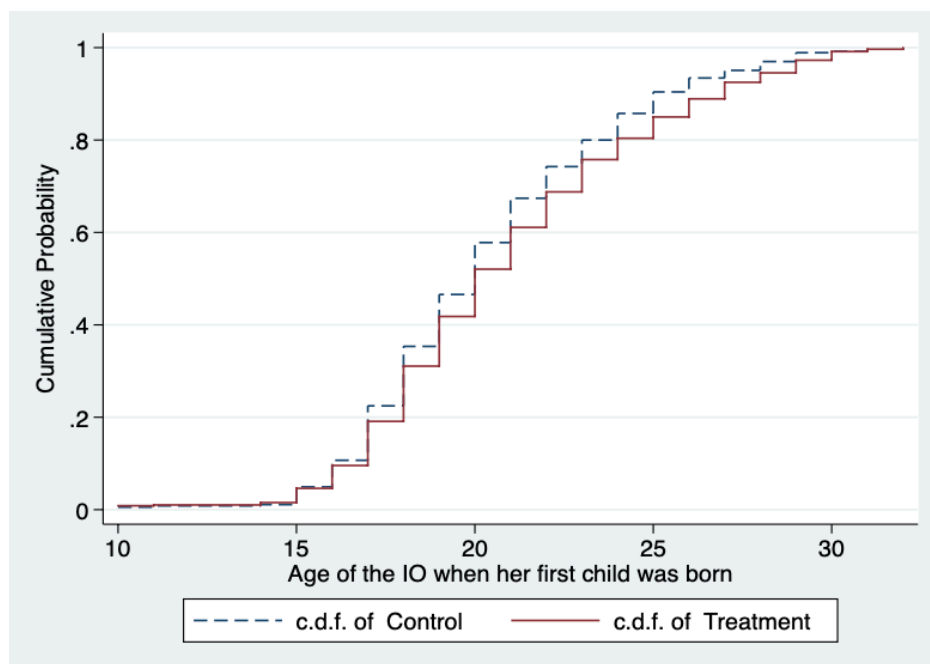
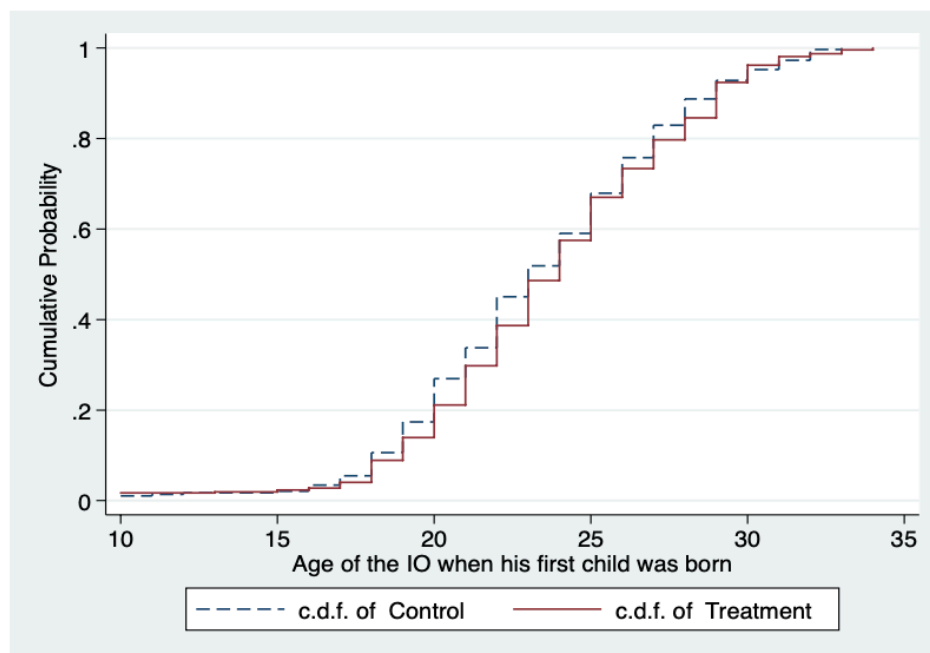


Figure 5 "Cumulative distribution of age at which school cohort men had their first child" from Araujo, Maria Caridad, and Karen Macours, "Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years," HAL Open Science, 2021



By age 30, T1 women were more likely than T2 women to have a very young child at home: T1 women were more likely to have a child under age 2 and had a younger average eldest child. Nonetheless, total fertility by 2017 was the same (about 2 children per person on average) in T1 and T2, and spacing between births did not differ. In other words, *PROGRESA* led to a later start of childbearing but no reduction in number of children. The delay meant that many T1 individuals had not yet completed family formation by 2017. This interplays with labor supply: even though T1 women attained more education, they did not have higher workforce participation by age 30, possibly because they were caring for younger children longer, or investing in careers early.

Finally, the authors examine whether non-cohort siblings in beneficiary households also gained from *PROGRESA*'s fortuitous timing. They gathered data on all children under 18 at baseline living with cohort members ("sibling sample"). These children tended to be younger or older siblings (or cousins) of the focal cohorts. The analysis shows that lagging or out-of-school siblings (*ages* ~9 – 17) also benefited: T1 households saw about an 8 p.p. higher primary completion rate among siblings who were behind grade 6 or not enrolled. This effect is smaller than for the main *school cohort* but still significant, indicating spillover of resources to older children. However, these sibling gains did not translate into increased migration: attending primary school in the home village, where all primary schools are located, did not enhance geographic mobility for siblings. In fact, the mobility effects reported for the main cohorts are not driven by detracting resources from siblings but rather reflect the overall human-capital channel. In short, the sibling results suggest *PROGRESA*'s earlier start modestly boosted schooling for other children in the family, without reducing inter-village movement.

3.6. Conclusions

More than two decades after *PROGRESA*'s inception, this study provides rare experimental evidence on the long-term adult outcomes of a large-scale CCT. The main lessons are clear: exposure to *PROGRESA* during critical childhood years had persistent positive impacts on education, mobility, and income. Even after 20 years, those randomly exposed 18 months earlier enjoyed higher schooling (about one-third to one-half more year), especially completing secondary and university education (in percentage terms), with the greatest gains for females. They also had

higher earnings and more migration: the *school-age cohort* saw roughly a 16% increase in annual labor income (25% for women), and much higher U.S. migration and U.S. earnings. Both cohorts were more geographically mobile after 20 years, reflecting an ability to migrate for opportunities. Finally, early exposure delayed family formation by about half a year, indicating a shift toward investing in income/labor before settling down.

These experimental findings validate the view that cash transfers that improve child health and keep children in school can yield substantial long-run benefits. Even if the ITT estimates capture only the 18-month head start—an understatement of the full program effect—the results show human capital investments paid off through higher education attainment and income decades later. In context, these gains are impressive given that the children grew up in very poor, rural areas where national averages of schooling were much higher (e.g., *average schooling* ~10–10.4 years nationally vs 9.5–8.8 in this sample). One reason is that schooling created networks and mobility channels: by finishing secondary school outside their home villages, T1 youth accessed better-connected labor markets. In Mexico’s imperfect labor market, these mobility pathways appear to have been more crucial for income than purely local wage gains. The analysis underscores that evaluating education programs must account for migration dynamics, a point often overlooked.

From a policy perspective, the study reinforces the value of early-life and schooling support in CCTs. It provides large-scale empirical confirmation that *PROGRESA*’s model produced real long-run returns to human capital. The findings also highlight heterogeneity: women benefited especially from the program’s educational components. Not all cohorts profited equally: those who would have dropped out without the program gained the most, while others had smaller effects. The fact that many T1 youth ultimately migrated suggests complementary policies (e.g., facilitating safe migration or local job creation) could amplify the program’s impact. Importantly, the study was possible only because *PROGRESA*’s initial design embedded an RCT. The resulting evidence has influenced social protection worldwide, and now shows that these policies do produce enduring intergenerational mobility.

In conclusion, Araujo and Macours find that 20 years of *PROGRESA* exposure yielded measurable gains in education, incomes and economic mobility for the first beneficiaries. The differential exposure design provides credible proof-of-concept that CCTs can have lasting effects on human

capital and welfare. These results argue for continuing to invest in such programs—with attention to continuing support in secondary and tertiary education, as Mexico has begun in later reforms—and for tracking beneficiaries over time. They also suggest that the long-run payoff of education is realized not only through classroom learning but by opening doors to migration and broader opportunities. As such, the paper contributes a rare large-scale experimental data point on the lifelong returns to early childhood and school-age interventions in a developing country.

3.7. World Bank Support for Mexico’s PROSPERA Program

Mexico’s flagship *PROSPERA* program has long been a core pillar of the country’s social protection strategy, and by the mid-2010s it provided CCTs to roughly one-quarter of Mexican households, reinforcing children’s school attendance and health check-ups. Evaluations consistently found large benefits—e.g., significant increases in children’s schooling, nutrition and health among beneficiary families. The World Bank has been deeply involved in this program’s evolution. Notably, a major Bank-financed *Support to Oportunidades project* (with original funding ~\$1.5 billion plus \$1.25 billion in additional finance) operated until 2013. In practice, the Bank’s role combined lending with technical and convening services: it financed a substantial share of the cash transfers and also organized international workshops, peer exchanges and impact evaluations to guide program design. Thus, by 2014, Mexico had a *de facto* partnership with the WB: *PROSPERA* was government-financed but Bank-supported, with a strong focus on evidence-based policy.

a. The *Social Protection System Project* (P147212)

Building on that history, the WB approved the *Social Protection System Project* (P147212) on October 24, 2014, with an initial IBRD loan of US\$350 million. The project’s goals were explicitly linked to *PROSPERA*: its first objective was to “increase access of *PROSPERA* beneficiaries to

social and productive programs³⁵,” thereby enhancing the program’s poverty-reduction impact. A second objective was to develop instruments for a more integrated social protection system in Mexico. In concrete terms, Component 1 of the project financed *PROSPERA*’s CCTs and upgraded its operations, while Component 2 supported data systems and planning tools at the Secretariat of Welfare (formerly SEDESOL – *Secretariat of Social Development*). In 2018, an *Additional Financing* loan of US\$300 million (Loan 8823-MX) was added to extend these activities through mid-2021. Overall, the Bank committed about \$650 million to this new phase of *PROSPERA* support, making it the centerpiece of Mexico’s WB program in social protection.

The project explicitly built on prior WB engagement: as the ICR notes, “the first PDO [Project Development Objective] builds on World Bank support to the Government of Mexico since 2009 to strengthen the country’s social protection system, including through *PROSPERA*, and specifically in this Project the innovations of its redesign³⁶”. In other words, the Bank’s strategy shifted *PROSPERA*’s focus from only cash transfers to adding connections with other social and productive programs. Under Mexican government policy, twenty-nine federal programs modified their rules to give *PROSPERA* households “preferential access,” and new staffing and communication tools were put in place to link beneficiaries to, for example, higher-education scholarships or job-training services. The project also financed the creation of a unified *Social Information System* to coordinate benefit registries (i.e., the PUB registry) and integrate thousands of development centers (CIDs) across the country. In short, P147212 sought to reengineer *PROSPERA* for an “integrated” social protection era.

b. Achievements and Impact

The WB reports that the project substantially met its objectives. By project close, nearly all performance targets under PDO 1 were exceeded. For instance, the project supported over 25

³⁵ World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, p. 1, Washington, DC: World Bank, December 1, 2021

³⁶ World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, p. 13, Washington, DC: World Bank, December 1, 2021

million direct beneficiaries—virtually the entire *PROSPERA* caseload—and the share of transfers reaching the poorest quintile rose (from 68.5% to ~70%) as intended. The outcomes on poverty and shared prosperity were positive: *PROSPERA* “managed to marginally exceed³⁷” its target of shifting more benefits to low-income families. Crucially, long-term studies financed by the Bank under the project confirmed the program’s lasting effects. Rigorous *Reimbursable Advisory Services* (RAS) evaluations found that children from *PROSPERA* households attained more education and had higher earnings as adults, breaking intergenerational poverty chains. These results resonated with global evidence—the Bank’s efficiency analysis observed that the social returns on *PROSPERA* far exceeded its costs.

The project also delivered important institutional outcomes. Its first component went beyond cash transfers to strengthen *PROSPERA*’s own capacity. For example, *subcomponent 1.b* financed organizational reforms (redefining staff roles, training and communications) to make *PROSPERA* a more effective coordinator of social and productive services. The project underwrote a modern targeting system, updated *Management Information System* (MIS) tools, and even bilingual community promoters, leveraging Mexico’s extensive field infrastructure. As the *Implementation Completion and Results Report* (ICR) notes, these activities “contributed to the institutional strengthening of *PROSPERA* and SEDESOL³⁸,” building on their long-standing partnership with the Bank not just through lending but also through knowledge exchange.

Likewise, Component 2 significantly upgraded Mexico’s social protection architecture. It financed the design and rollout of an integrated beneficiary database and geographic tools. Bank advisers ran training workshops and shared best practices on database management. The result was a substantial digital overhaul: by project end, thousands of local *Centros Integradores de Desarrollo* (*CIDs*) were connected to the new system, facilitating real-time data on millions of families. These innovations helped Mexican planners identify gaps in coverage and avoid duplication among hundreds of safety-net programs. Thus, Bank support helped turn *PROSPERA*’s program database into a national asset.

³⁷ World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, p. 21, Washington, DC: World Bank, December 1, 2021

³⁸ *Id.*

The project even had “global knowledge” impacts. Mexico hosted over 20 international delegations (from countries like Bangladesh, Guatemala, India, Ethiopia, etc.) to share lessons from *PROSPERA*. As the ICR highlights, “Mexico shared best practices and experiences on the implementation of *PROSPERA*³⁹,” with visiting officials learning about its “technical, operational, and administrative features⁴⁰”. In this way, the WB helped elevate *PROSPERA* as a model CCT program worldwide.

c. Program Operation and Integration

Under *PROSPERA*—and its predecessors—eligible families received regular cash stipends conditioned on school enrollment and clinic visits. The mother was typically the beneficiary, reflecting the program’s family-oriented design. The WB project did not change these core mechanics, but it broadened *PROSPERA*’s role. For example, it funded mechanisms to enroll *PROSPERA* families into complementary programs—such as rural income supports or health insurance—effectively using *PROSPERA*’s registry as a gateway. The new data tools (i.e., PUB registry, targeting algorithms) improved beneficiary identification. Moreover, the project helped refine the poverty index that targets *PROSPERA*, aligning it with other social programs for more efficient cross-enrollment. In practice, this meant field agents could see a family’s status in multiple programs at once.

By project end, then, *PROSPERA* operated not as an isolated subsidy but as an entry point into Mexico’s social protection *portfolio*. Almost all Component 1 results indicators were met: e.g., the share of *PROSPERA* households accessing additional social programs—like elderly pensions or job training—climbed sharply. Notably, female participation among beneficiaries—already high—exceeded gender targets, reflecting the program’s emphasis on empowering mothers. Indeed, 63.3% of participants in social programs were *PROSPERA* women, above the 55% target. These

³⁹ World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, p. 21, Washington, DC: World Bank, December 1, 2021

⁴⁰ *Id.*

operation-level successes show that Bank-financed reforms made *PROSPERA* more fully integrated and effective on the ground.

d. Future Prospects and Challenges

By the project's close in 2021, the landscape for Mexico's social protection had shifted. *PROSPERA* as such was formally eliminated under a new federal administration in 2018–2019. The government replaced its educational and human-capital components with the *Benito Juárez National Program of Scholarships for Welfare*, an unconditional grant program for students. Yet importantly, the Bank's ICR notes that the goal of breaking intergenerational poverty through human capital remains central. The design may have changed, but the “objective of bolstering human capital development of the poor and vulnerable [...] is at the heart⁴¹” of both *PROSPERA* and the new scholarship program. In other words, WB-supported investments into data systems and outreach networks continue to serve Mexico's social policy even after *PROSPERA*'s end.

Several enduring legacies and prospects emerge. First, much of *PROSPERA*'s administrative apparatus survives: state-level coordinators, CIDs, and *promotores bilingües* (bilingual community promoters) were largely retained under the new regime. The integrated information system has also been institutionalized by law as the *Sistema de Información Social*, ensuring continuity of the technical infrastructure built under the project. Secondly, the evaluation evidence, funded by the Bank, gives policymakers confidence that long-term human-capital gains justify continued investment. Surveys show that even under the scholarship program, former *PROSPERA* households maintain high access to social programs, suggesting sustained impact.

Nonetheless, challenges remain. The ICR cautions that some vulnerable groups (e.g., young children and mothers) lost targeted support when *PROSPERA* shifted focus. Integrating hundreds of legacy programs into a unified system is an ongoing task, as indicated by a recent CONEVAL report: Mexico reduced the number of federal social programs from 233 to 123 during 2014–2021, but more consolidation is needed. From a WB perspective, these reforms represent both a success

⁴¹ World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, p. 13, Washington, DC: World Bank, December 1, 2021

and a reminder: financing and advice can build robust social infrastructure, but political changes, such as a new administration's agenda, will always shape how programs evolve.

In conclusion, the WB's contributions to *PROSPERA* over two decades span large-scale financing, technical expertise and global knowledge-sharing. The *Social Protection System Project* (P147212) epitomized this role by funding CCTs (over \$300 million) and modernizing Mexico's social safety net architecture. The project's outcomes—from improved targeting and data systems to demonstrated poverty impacts—affirm that Bank support helped strengthen *PROSPERA* and the broader social protection system. Looking forward, the emphasis on human capital endures in Mexico's new policies, and the information platforms and lessons learned under *PROSPERA* will guide future poverty-alleviation efforts.

Conclusion

Mexico's landmark *PROGRESA/PROSPERA* program provides compelling evidence that early, targeted human-capital investments can yield lasting poverty reduction. Over two decades of follow-up show that children who benefited from *PROGRESA*'s conditional cash grants achieved higher educational attainment and earned higher incomes as adults. In fact, long-term studies find that beneficiaries' families today hold more assets and enjoy higher consumption than comparable non-beneficiaries. These outcomes—and the fact that *PROGRESA* was the first large-scale, government-implemented CCT to show such effects—help explain why the “Mexican model” has been copied in 50+ countries across Latin America, Asia, and Africa. Global experience confirms the logic: CCTs motivate poor families to send children to school and clinics in early childhood and school age, and these human-capital gains materialize in greater lifetime earnings, health and social mobility.

Yet, *PROGRESA* also underscores that cash incentives alone are not enough, since scholars emphasize that CCTs must be matched with strong supply-side investments. For example, if a village's school lacks qualified teachers or books, families may still struggle to benefit from attendance conditions. Indeed, “Providing financial incentives to continue in school [...] does not directly address the conditions that undergird school failure, dropout and poor educational quality⁴².” Likewise, access to health checks and nutrition services requires functional clinics and trained staff. In practice, countries have seen the best results when CCTs are integrated with improvements in school infrastructure, teaching quality, and healthcare capacity. Such complementary investments ensure that the additional demand created by *PROGRESA*-style grants translates into real learning and health gains for children.

Moreover, human-capital programs must be linked to local economic opportunities. Cash transfers increase families' resources and skills, but without jobs nearby, educated youth may be compelled to migrate for work. Indeed, evidence suggests that education-linked transfers can even raise migration by expanding beneficiaries' aspirations and means to move. To avoid this, national strategies should foster rural and local job creation—through infrastructure, credit for small

⁴² Reimers, Fernando, Carol DeShano da Silva, and Ernesto Trevino, *Where is the “Education” in Conditional Cash Transfers in Education?*, in UIS Working Paper No. 4, UNESCO Institute for Statistics, Montreal, 2006

businesses, agricultural support, or other rural development—so that families can build livelihoods at home. In Mexico today, many *PROGRESA* graduates have climbed the economic ladder in part by finding better-paying jobs outside their home villages, sometimes even abroad. While such migration may raise incomes, a development model that relies on foreign labor markets is fragile. The ideal outcome is that children grow up to work in a flourishing local economy, reducing the need for governments to depend on external remittances or prolonged transfers.

In conclusion, *PROGRESA*'s long-run success demonstrates that strategic investments in early childhood and school-age human capital can break intergenerational poverty cycles and set families on a path to self-sufficiency. The evidence is now clear that when properly designed, CCTs generate higher school enrolment, better health, and higher lifetime earnings. For low-income countries seeking sustainable development, the lesson is that cash transfers are most powerful when integrated into a broader human-capital and economic strategy. By coupling conditional grants with quality education and healthcare services and by expanding local economic opportunities, governments help children turn increased schooling into productivity gains. Over time, these human-capital investments raise national productivity and social welfare and allow households to graduate off subsidy rolls. In this way, programs like *PROGRESA/PROSPERA* not only alleviate poverty in the short term but also foster enduring development and financial independence for the next generation.

Bibliography

ACLED, “ACLED Conflict Index,” ACLED, December 2024, <https://acleddata.com/conflict-index/>.

Ángel Borrella-Mas, Miguel, Jaime Millán-Quijano, and Anastasia Terskaya, “HOW DO LABELS AND VOUCHERS SHAPE UNCONDITIONAL CASH TRANSFERS? EXPERIMENTAL EVIDENCE FROM GEORGIA,” IEB Working Paper 2023/09, Barcelona Institute of Economics (IEB), December 2023, https://www.calpnetwork.org/wp-content/uploads/2024/01/IEB23-09_BorrellaMillanTerskaya.pdf

Araujo, Maria, and Karen Macours. “Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years,” HAL Open Science, October 4, 2021. <https://shs.hal.science/halshs-03364972v1>.

Bredenkamp, Caryn. “India - the Janani Suraksha Yojana (JSY) Program.” World Bank, 2025. <http://documents.worldbank.org/curated/en/763241468042842529>.

Center for Global Development, “About CGD,” <https://www.cgdev.org/page/about-cgd>

Department for International Development, “Child Development Grants Programme, Nigeria,” GOV.UK, 19 April 2018, <https://www.gov.uk/government/publications/child-development-grants-programme-nigeria>

ECLAC, “Non-contributory Social Protection Programmes Database - Latin America and the Caribbean - Benito Juárez Scholarships for the Well-being (2019),” United Nations, <https://dds.cepal.org/bpsnc/programme?id=175#>

Fotta, Martin, and Mario Schmidt, “Cash transfers,” The Open Encyclopedia of Anthropology, 2022, <https://www.anthroencyclopedia.com/entry/cash-transfers>

Freire-Serén, María Jesús, “Human capital accumulation and economic growth”, *Investigaciones Económicas*, vol. XXV, núm. 3, Fundación SEPI, pp. 585-602, 2001, <https://www.redalyc.org/pdf/173/17325306.pdf>

García, Sandra, and Juan Saavedra, “Conditional Cash Transfers for Education,” NBER Working Paper No. 29758, Cambridge, MA: National Bureau of Economic Research, February 2022, <http://www.nber.org/papers/w29758>.

GiveDirectly, “Cash Aid in Kenya,” <https://www.givedirectly.org/kenya/>

Global Alliance against Hunger and Poverty, “Governments, development banks and international organizations announce new concerted push to expand cash transfer programmes, commitments made to reach more than 500 million people in low and lower middle-income countries by 2030,” November 15, 2024, <https://globalallianceagainsthungerandpoverty.org/new/2030-cash-transfers-sprint-press-release/>

Heinrich, C.J., and M.T. Knowles, “A fine predicament: Conditioning, compliance and consequences in a labeled cash transfer program,” in *World Development* 129, Elsevier, January 2020, <https://doi.org/10.1016/j.worlddev.2020.104876>

Innovations for Poverty Action, “Emerging Opportunities for Impact at Scale,” 2023

Institute of Development Studies, “Vision & strategy,” <https://www.ids.ac.uk/about/vision-strategy/>

International Policy Centre for Inclusive Growth, “The Impact of Cash Transfers on Local Economies,” in *Policy in Focus*, vol. 11, no. 1, 2015, Brasília: United Nations Development Programme. https://www.ipcundp.org/pub/eng/PIF31_The_Impact_of_Cash_Transfers_on_Local_Economies.pdf

Kanyashree Online 8.0, “Kanyashree,” https://www.wbkanyashree.gov.in/kp_4.0/index.php

Mercy Corps, “Cash Transfer Programming: toolkit”, https://www.calpnetwork.org/wp-content/uploads/2020/01/mercycorpscashtransferprogrammingtoolkitpart1.pdf?utm_source=chatgpt.com

Mercy Corps, “Why Adolescent Girls’ Programming Matters,” <https://www.mercycorps.org/research-resources/child-maternal-health-adolescents-niger>

Ministry of Gender, Children and Social Protection, “Livelihood Empowerment Against Poverty (LEAP),” <https://www.mogcsp.gov.gh/projects/livelihood-empowerment-against-poverty-leap/>

New Incentives, “Our Work,” <https://www.newincentives.org/our-work>

Publius Terentius Afer, *Heautontimorumenos*, I, 1, 25

Reimers, Fernando, Carol DeShano da Silva, and Ernesto Trevino, *Where is the “Education” in Conditional Cash Transfers in Education?*, in UIS Working Paper No. 4, UNESCO Institute for Statistics, Montreal, 2006,
https://uis.unesco.org/sites/default/files/documents/where-is-the-education-in-conditional-cash-transfers-in-education-06-en_0.pdf#:~:text=programmes,create%20pressures%20for%20parents%20and.

Rossi, Federico, and Michael Weber, “Human capital investments spur economic growth and development,” in *Protect and Invest in People*, World Bank Blogs, November 2024,
<https://blogs.worldbank.org/en/investinpeople/human-capital-investments-spur-economic-growth-and-development>

Sustainable Finance Hub, “Better Than Cash Alliance,” UNDP, <https://www.betterthancash.org>

The Abdul Latif Jameel Poverty Action Lab (J-PAL), “Introduction to randomized evaluations,” April 2023, <https://www.povertyactionlab.org/resource/introduction-randomized-evaluations>

The CALP Network, “Unconditional Cash Transfers,” 2025, <https://www.calpnetwork.org/cash-and-voucher-assistance/types-of-cva/unconditional-cash/>

World Bank Group, “A Model from Mexico for the World,” November 2014,
<https://www.worldbank.org/en/news/feature/2014/11/19/un-modelo-de-mexico-para-el-mundo>

World Bank Group, “Kenya - National Safety Net Program for Results Project: additional financing (English),” Washington, D.C.: World Bank Group,
<http://documents.worldbank.org/curated/en/268021493431277322>

World Bank, “Getting to Know the World Bank,” 2012,

https://www.worldbank.org/en/news/feature/2012/07/26/getting_to_know_theworldbank

World Bank, “Implementation Completion and Results Report on Loans IBRD-8447-MX in the Amount of US\$350 Million and IBRD-8823-MX in the Amount of US\$300 Million to the United Mexican States for a Social Protection System Project,” Report No. ICR00005632, Washington, DC: World Bank, December 1, 2021

World Bank, “Poverty, Prosperity, and Planet Report 2024,” World Bank, 2024,

<https://www.worldbank.org/en/publication/poverty-prosperity-and-planet>.

World Bank, “Safety Nets,” 2024, <https://www.worldbank.org/en/topic/safetynets>