Abstract Title Page

Title: Understanding Impact Variation in Family Rewards: The Role of Schools and Neighborhoods on a Conditional Cash Transfer Program

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Abstract Body

Background / Context:

It is often the case that policy programs operate differently for different groups of people based on various baseline characteristics. Thus there is often interest in how programs affect different smaller subgroups within the overall population receiving an intervention (Bloom & Michalopoulos, 2010). These types of inquiries expand the question of "what works?" to "what works for whom?" In addition to studying impact variation at the individual level, the setting in which a program is implemented is also critical to consider when understanding why a program is or is not effective (Boruch, 2005). These types of analyses ask the question "what works best in which contexts?" Setting-level moderators can exist at different levels, including the family, economic context, locale (urban/rural), or the prevalence of existing community services.

In 2007, the Center for Economic Opportunity (CEO) in the Mayor's Office of the City of New York mounted the first holistic Conditional Cash Transfer (CCT) initiative in an economically advanced, services rich jurisdiction. The initiative is known as Opportunity NYC-Family Rewards (henceforth "Family Rewards"). CCTs offer cash assistance to needy households, but condition these offers on families' making prestipulated investments in their children's education and health. Inspired by Mexico's pioneering "Progresa" program, the effects of Family Rewards are being measured via a randomized control trial. Initial findings from the program's early operating period show that the program reduced current poverty and hardship, increased receipt of preventive healthcare, and did not improve school outcomes overall for elementary, middle or high school students overall (Riccio et al., 2010).

Subgroup differences were found for educational impacts for high school students by proficiency level: While few impacts were observed for the full sample of high school students' academic outcomes (i.e., school attendance, course credits, grade advancement, and standardized test results), there were no impacts for those who were not academically prepared at baseline and strong impacts among those who were better academically prepared at baseline (Riccio et al., 2010). In addition, impacts observed on adolescents' time use activity patterns occurred only for adolescents who were proficient at baseline, and only for females (Morris et al., 2012). This study builds on these findings by extending subgroup definitions to the contextual level, and builds on and informs ecological theory (Bronfenbrenner & Morris, 2006) by focusing on how key school and neighborhood characteristics may have moderated the effects of Family Rewards.

Purpose / Objective / Research Question / Focus of Study:

Aimed at low-income families in six of New York City's highest-poverty communities, Family Rewards ties cash rewards to a set of activities and outcomes thought to be critical to families' short- and long-term success in the areas of children's education, family preventive health care, and parents' employment (see Table 1 for a description of key program activities and incentive amounts). This study addresses the following research question: How do key characteristics of schools (size, resources, and perceptions of safety) and neighborhoods (neighborhood SES and racial composition) moderate the impacts of Family Rewards on children's academic achievement, time-use, educational processes, parent financial investment in children's education, and families' poverty status and material hardship?

Setting:

The intervention was aimed at low-income families in six of New York City's highest-poverty communities in the Bronx, Brooklyn and Manhattan.

Population / Participants / Subjects:

Survey sample. The study involves approximately 3,750 families and their children selected for the 18-month survey, half of whom could receive the cash incentives if they meet the required conditions and half who were assigned to a control group. Eligible families had to have incomes at or below 130 percent of the federal poverty level and at least one child in the fourth, seventh, or ninth grade. These ages are widely believed to be at or near the start of critical educational transition years. A majority (81%) of the families were one-parent families at baseline. Over half of all families (57%) had only one or two children and 43 % of families had three or more children. Just under half (47%) of the families were Hispanic/Latino and most others (51%) were black, non-Hispanic/Latino. Just over half of parents (53%) were employed, with about 37 percent working full time. Half of the parents in the study had not completed high school and did not have a GED certificate, about a third (32 %) had only a high school diploma or GED certificate, and the rest of the parents (18 %) had an associate's or bachelor's degree. About 83% were U.S. citizens, and the rest (17%) were legal permanent residents.

Child and Family Embedded Study sample. A subset of 716 high school students and their parents were selected from the survey sample to participate in an additional 30-month survey to collect information on child and family processes that may have been affected by the intervention. Information was collected as part of this child study on 511 of them, representing an effective response rate of 72 percent (77 percent of parents were contacted and gave consent for their children to participate; of these, 93 percent of children consented to participate and complete a survey). An analysis of the survey respondents showed negligible differences between the child study sample and the survey sample. This sample was very similar demographically to the survey sample. The mean age at the time of the random assignment was 13.9 years, and at the time of the survey for this study was 16.6 years (SD=0.83). Nearly all adolescents attended public schools, and only a little over a third were found to meet learning standards for proficiency in English Language Arts (ELA) and Math.

Intervention / Program / Practice:

ONYC-Family Rewards is a multi-pronged intervention in which cash incentives are used to promote the families' participation in three key settings and systems –education, employment, and health care. ONYC-Family Rewards ties cash rewards to a pre-specified set of activities and outcomes in the areas of children's education, family preventive health care, and parents' employment (see Table 1 for program activities and incentive amounts). Reflecting the important role that parents can play in their children's success in school, the incentives in this domain are intended to encourage parents to become more fully engaged with their children's education. In this way, Family Rewards differs from school-based incentive programs that only offer rewards directly to students, largely bypassing their parents. Control group families were eligible for benefits generally serving low-income families, but did not receive any special services.

To implement Family Rewards, Seedco, the main implementing agency, assembled a network of local organizations in the designated community districts. Called "Neighborhood Partner Organizations" (NPOs), these agencies recruited and enrolled eligible families into the research sample and served as the face of the program in the communities. Seedco verified that families earned rewards by using a combination of automated data from some City agencies and special "coupon books" forms submitted directly by participants. After verification, it initiated a process of transferring payments electronically into bank accounts that participants newly opened or into their existing accounts they attached to the program, or, if they preferred, onto stored value cards. The payments were made every two months and families could access the

money at any time through any ATM. Envisioned as an "incentives-only" intervention, the program model does not provide social services or case management. The program also does not provide any direct services, such as tutoring or skill training. However, it does include an information-and-referral component wherein the implementing agencies (Seedco and the NPOs) refer families (upon request) to other agencies in the community that provide relevant services.

Research Design:

To ensure that the program reached a broad cross-section of children, not just the most motivated and active, potentially eligible families living in the targeted communities were identified from school lists from the NYC Department of Education. MDRC split this list into random batches of smaller groups of families, which were distributed to the NPOs one batch at a time. Seedco and the NPOs then attempted to recruit all families in a given batch, through mailings, phone calls, and home visits, before requesting the next batch from MDRC. As long as one child in the family was in the fourth, seventh, or ninth grade, with proper documentation the whole family could enroll in the program, including siblings under the age of 18 and both parents, if they were married or in a legal domestic partnership. Several analyses comparing families who entered the sample with those who were not in the study suggest that, despite its voluntary nature, the recruited sample is not a distinctively more advantaged or less advantaged subset of the broader target population. Randomization took place at the family-level after families enrolled in the program, off-site at MDRC. MDRC used batch random assignment for this process, which ensures that program and control group status is assigned randomly within the group of processed enrollees and that there was no attempts to "game the system" by looking for a pattern in the random assignment and trying to circumvent it. Half of the applicant families were picked for Family Rewards and offered the incentives and half were assigned to a control group that was not offered the incentives. Using such a random process to allocate sample members to one group or the other helps ensure that the program effects estimated by the evaluation are truly a result of the intervention.

Data Collection and Analysis:

Data collection. Data will come from three primary sources. First, the evaluation in this study uses an extensive set of quantitative data. This information includes administrative records on school outcomes, employment, earnings, public health insurance, welfare and food stamp payments, and housing subsidies obtained from various New York City and New York State agencies; and one wave of a survey in which a subset of parents in the program and control groups are interviewed 18 months after treatment began. The parent-survey, administered by the Department of Information Resources (DIR), was administered via telephone using CATI and had a response rate of 82%.

Second, the child and family embedded study survey was collected via surveys to assess three domains: (1) family context and decision-making (family climate, norms, and expectations; resource allocation; time use); (2) children's motivations and perceived competencies (academic efficacy, outcome expectations, intrinsic/extrinsic motivation); and (3) children's educational and mental health outcomes. Survey data was collect from parents and children and administered by the Department of Information Resources (DIR) via telephone using a mixed-mode (CATI/Field) methodology.

Third, data on baseline school characteristics will come from the NYC Department of Education's division of Student Performance and Accountability which offers many data-based resources, including comprehensive annual school reports with information about student and teacher characteristics, test results, as well as graduation and dropout rates. Data will be retrieved

through the Research Alliance at NYU and will be linked to children using the DBN (district borough number). Data on families' home neighborhood characteristics will come from the U.S. census tracts and will be geo-coded according to adolescents' home census tracts using ArcGIS software (ESRI, 2011). Using geocoding procedures, each child will be linked to census tracts from their home neighborhoods, and corresponding census data will be used to identify their home neighborhood characteristics.

Analysis. To test the hypotheses of paper 3, a set of hierarchical linear models (HLM) analyses will be used to understand whether and how levels of various school and neighborhood characteristics predict program impacts on specified adolescent academic and behavioral outcomes. Specifically, the following two-level model (with children nested in schools or neighborhoods) will be used to assess this (combined equation below):

$$Y = u_{00} + u_{01}\,(environmental\ characteristics) + u_{10}\,(treatment) + \mathbf{u_{11}\,(environmental\ characteristic*treatment)} + r_2\,(treatment) + r_1 + \beta_{2\text{-}j}\,(covars_j) + e$$

where u_{11} represents the cross-level interaction with school or neighborhood characteristic and treatment status, or the estimate of if and how this characteristic moderates program impacts.

Findings / Results:

Preliminary analyses. FR was implemented in six community districts (CDs). Diversity exists both across CDs and within neighborhoods in each CD (e.g., in terms of racial composition, percent of residents on public assistance, residential stability, school quality). With geocoded data and more detailed information at the census tract level, such differences in characteristics can be gathered in further detail at the *neighborhood* level. Preliminary analyses show that there is some variation in impact estimates across the six CDs (e.g., in changes to adolescent time use; see Table 2) and that these estimates are significantly different from each other. A further analysis of the neighborhood characteristics associated with this variation will allow for a more nuanced understanding of what specific contextual circumstances led to these differences. This paper will look at three structural characteristics that have been predominantly focused on in adolescent neighborhood research: neighborhood SES, neighborhood residential stability, and neighborhood ethnic diversity.

Preliminary analyses by school quality show some variation in impacts on educational on more process-oriented educational outcomes (e.g., adolescents attending the highest ranked schools are more likely to experience become academically-oriented as a result of FR. In addition, adolescents attending lowest-ranked schools are more likely to experience *increases* in academic motivation and adolescents attending schools ranked in the top third experiencing *reductions* in motivation; see Table 3). A further analysis of the school characteristics associated with this variation will allow for a more nuanced understanding of what specific contextual circumstances led to these differences. This paper will look at three dimensions of the school context that have been shown to influence adolescents' academic achievement: school resources, school size, and perceptions of school safety.

Conclusions:

This study explores impact variation by school and neighborhood characteristics, exploring how academic outcomes, mediating educational processes, and family hardship vary by important theoretically and empirically proven neighborhood and school characteristics.

This paper advances future efforts to expand and successfully implement conditional cash transfer programs.

Appendices

Appendix A. References

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Appendix B. Tables and Figures

Table 1. Schedule of Education, Health, and Workforce Rewards

Activity	Reward Amount
Education incentives	
Elementary and middle school students	
Attends 95% of scheduled school days *(discontinued after Year 2)*	$25 per month
Scores at proficiency level (or improves) on annual math and English Language Arts (ELA) tests	
Elementary school students	$300 per math test; $300 per ELA test
Middle school students	$350 per math test; $350 per ELA test
Parent reviews low-stakes interim tests *(discontinued after Year 1)*	$25 for parents to download, print, and review results (up to 5 times per year)
Parent discusses annual math and ELA test results with teachers *(discontinued after Year 2)*	$25 (up to 2 tests per year)
High school students	
Attends 95% of scheduled school days	$50 per month
Accumulates 11 course credits per year	$600
Passes NYS Regents exams	$600 per exam passed (up to 5 exams)
Takes PSAT	$50 for taking the test (up to 2 times)
Graduates from high school	$400 bonus
All grades	
Parent attends parent-teacher conferences	$25 per conference (up to 2 times per year)
Child obtains library card *(discontinued after Year 2)*	$50 once during program
Health incentives	
Maintaining public or private health insurance *(discontinued after Year 2)*	
For each parent covered	Per month: $20 (public); $50 (private)
If all children are covered	Per month: $20 (public); $50 (private)
Annual medical checkup	$200 per family member (once per year)
Doctor-recommended follow-up visit *(discontinued after Year 2)*	$100 per family member (once per year)
Early-intervention evaluation for child under 30 months old, if advised by pediatrician	$200 per child (once per year)
Preventive dental care (cleaning/checkup)	$100 per family member (once per year for children 1-5 years old; twice per year for family members 6 years of age or older)
Workforce incentives	
Sustained full-time employment	$150 per month
Education and training while employed at least 10 hours per week *(employment requirement discontinued after Year 2)*	Amount varies by length of course, up to a maximum of $3,000 over three years

Table 2. Impacts of Family Rewards on Select Adolescent Outcomes, by School Environment

	School Quality Rank					
	Bottom third	Middle third	Top third	Global F-test		*post-hoc*
	Diff (Impact)	Diff (Impact)	Diff (Impact)	F- or χ^2 stat	p-value	ref= top third
Time use activity pattern (%)						
Academic	0.07	0.10	0.13 *	0.52	0.770	
Social	-0.06	-0.02	-0.09	1.16	0.559	
TV/Computer	0.04	-0.11	-0.16 *	3.29	0.193	
Maintenance/Work	-0.06	0.03	0.13 *	4.27	0.118	*lo-hi*
Motivation to Learn						
Extrinsic motivation	0.18	0.04	-0.15	1.95	0.144	*lo-hi*
Intrinsic motivation	0.21	-0.03	-0.22	2.56	0.078	*lo-hi*
						lo-hi
Identified motivation	0.23 ***	0.05	-0.17 *	5.46	0.005	*med-hi*
Introjected motviation	0.24 **	0.03	-0.03	1.73	0.179	*lo-hi*
Academic Processes						
Mastery goal orientation	0.02	0.07	-0.12	1.01	0.365	*med-hi*
Performance avoidant goal orientation	0.12	0.31	-0.13	1.38	0.252	
School engagement	0.07	-0.09	0.04	0.65	0.520	
Academic efficacy	0.10	0.10	0.03	0.09	0.914	
Participation in organized activities						
School activity (%)	-0.05	0.18 **	-0.06	4.28	0.118	*med-hi*
Organized activity index	-0.07	0.10	0.29	0.45	0.637	
Sample size (total=511)	177	152	142			

Table 3. Impacts of Family Rewards on Select Adolescent Outcomes, by Site

	Site 1		Site 2		Site 3		Site 4		Site 5		Site 6		Global F-test		*post-hoc*
	Control	Diff (Impact)	Control	Diff (Impact)	Control	Diff (Impact)	Control	Diff (Impact)	Control	Diff (Impact)	Control	Diff (Impact)	F- or χ^2 stat	p-value	ref= site 6
Time use group membership (%)															
Academic	0.16	0.00	0.20	0.00	0.20	0.06	0.26	0.05	0.18	0.20 *	0.21	-0.02	4.11	0.534	*5-6*
Social	0.17	-0.15 *	0.16	0.04	0.28	-0.06	0.17	0.00	0.16	-0.06	0.30	-0.10	2.11	0.833	
TV/Computer	0.32	0.10	0.27	0.08	0.31	-0.12	0.27	0.00	0.48	-0.10	0.29	0.04	5.68	0.338	*3-6*
Maintenance/Work	0.36	0.04	0.36	-0.12	0.21	0.12	0.31	-0.05	0.19	-0.04	0.20	0.08	3.01	0.698	
Academic outcomes															
Attendance is 95% or higher, Year 2	0.25	0.03	0.25	0.03	0.28	0.18 *	0.29	0.03	0.30	0.16	0.20	0.08	4.03	0.545	*3-6*
Attempted 11 or more credit, Year 2	0.80	0.03	0.92	0.02	0.84	0.08	0.79	0.14 *	0.84	0.06	0.91	-0.04	5.59	0.348	*3-6, 4-6*
Earned 22 or more credits, Years 1 & 2	0.53	0.03	0.61	0.10	0.49	0.13	0.48	0.00	0.53	0.06	0.48	-0.01	4.82	0.438	*3-6*
Passed at least 1 Regents exam (%)	0.49	0.12	0.66	0.04	0.60	0.11	0.67	-0.06	0.54	0.16	0.53	0.04	6.86	0.231	*4-6*
Passed at least 2 Regents exam (%)	0.33	-0.01	0.49	0.02	0.42	0.12	0.49	-0.05	0.40	0.25 **	0.33	0.04	4.77	0.445	
Behavioral outcomes															
Aggressive behaviors (%)	0.26	-0.22 **	0.25	-0.10	0.17	-0.02	0.16	0.06	0.30	-0.12	0.25	-0.11	7.90	0.162	*1-6, 4-6*
Substance use (%)	0.43	-0.41 ***	0.30	-0.12	0.28	-0.13	0.26	-0.11	0.40	-0.20	0.39	-0.17 *	2.94	0.709	
Number of friends using substances	2.09	-0.39	2.05	-0.17	1.96	-0.10	1.89	-0.12	2.18	-0.44 **	1.89	-0.06	3.31	0.652	
Motivation to Learn															
Extrinsic motivation	3.08	0.13	3.10	-0.21	3.17	0.12	3.15	0.02	2.95	0.36 **	3.08	-0.05	1.11	0.352	*5-6*
Intrinsic motivation	2.42	0.68 ***	2.48	0.13	2.58	-0.32	2.68	-0.06	2.40	0.06	2.58	-0.24	2.00	0.078	*1-6*
Identified motivation	3.69	0.10	3.71	-0.04	3.62	-0.03	3.67	0.05	3.51	0.21	3.63	0.01	0.47	0.798	
Introjected motviation	2.91	0.33 *	3.12	-0.09	3.11	-0.08	3.21	-0.19	2.84	0.34 *	3.02	0.10	1.17	0.324	
Academic Processes															
Mastery goal orientation	4.63	0.01	4.43	0.03	4.43	0.09	4.45	-0.12	4.42	-0.01	4.48	0.05	0.49	0.784	
Performance avoidant goal orientation	2.91	0.00	3.17	0.07	3.16	-0.30	2.78	0.52 *	3.05	-0.16	2.72	0.60 **	1.64	0.149	*3-6, 5-6*
School engagement	4.45	-0.03	4.38	-0.09	4.14	0.17	4.29	0.05	4.15	0.15	4.29	0.04	0.14	0.982	
Academic efficacy	2.68	0.36 **	2.78	0.20	2.95	-0.08	3.00	-0.03	2.84	0.02	2.93	0.05	1.04	0.393	*1-6*
Participation in organized activities															
School activity (%)	0.62	0.24 *	0.53	-0.07	0.57	-0.04	0.48	0.07	0.73	-0.13	0.57	-0.14	7.28	0.200	*1-6*
Organized activity index	2.95	0.47	2.15	0.37	2.48	0.57	2.08	0.32	2.91	-0.53	2.54	-0.45	0.53	0.756	*1-6*
Sample size	64		76		96		93		71		111				