Presented at the DLSU Research Congress 2014
De La Salle University, Manila, Philippines
March 6-8, 2014

Optimal Allocation of School and Health Resources for Effective Delivery of the Conditional Cash Transfer Program in Bagac, Bataan

Mitzie Irene P. Conchada[1] and Marites Tiongco[2]
[1] *School of Economics, De La Salle University*
[2] *School of Economics, De La Salle University*
**Corresponding Author: mitzie.conchada@dlsu.edu.ph*

Abstract: Improving accesses to education and health for the poor in developing countries is of paramount importance for any poverty program. The conditional cash transfer aims to provide monetary transfers to the poor provided that they comply with several of the program requirements. Beneficiaries are required to use education, maternal and child health services in exchange for the transfer. The access of the poor households to these services increases their private benefit from education and health. Another equally important aspect of the program is the supply-side which will most likely lead to a decrease in the private cost of education and health. This study looks at the supply-side of the conditional cash transfer program in Bagac, Bataan. More specifically, the study looks into the number of schools, school resources, teachers, health care providers, and health centers that are complementary to the efficient and effective delivery of health and education services. It is hypothesized that the number of day care centers, public primary and secondary education facilities, health facilities teachers, midwives, nurses, and doctors should be sufficient to meet the increase in demand for such services because of the conditional cash transfer program.

Key Words: conditional cash transfer; optimal allocation of resources; supply-side factors; private cost of education and health; public cost of education and health

1. INTRODUCTION

1.1 Background of the study

The problem of poverty in the Philippines is deeply rooted and can be traced back to many generations. This means that breaking the cycle of poverty may be a daunting task but needs to be addressed nevertheless. Efforts have been in order since the government adopted Latin America's conditional cash transfer program (CCT). The local context of the program was called the Pantawid Pamilyang Pilipino Program (4Ps) and was pilot tested in 2007. According to the second quarter report 2013 of the Department of Social Welfare and Development (DSWD), there were over 3.8 million families covered in 143 cities and 1,484 municipalities in 79 provinces. Based on the

distribution of households, the island Luzon has the most number of households covered with 42 percent mainly because of the magnitude of population (DSWD, 2013). On the other hand, the Mindanao island which has the highest poverty incidence has a household coverage of 38 percent.

As of the second period of the year 2013, the total cash grant given to eligible and compliant household beneficiaries amounted to PhP12.9 billion – PhP6.1 billion for education and PhP6.8 billion allotted for health. Given the large amount of budget spent, there is a need to delve into the supply-side factors of the program, particularly the health and education services (i.e. number of schools). The study thus will try to answer the question: what is the optimal allocation of resources on education and health for 4Ps household beneficiaries in Bagac, Bataan? In order to answer the question, the following are the objectives of the study: (1) to present the number of public elementary schools, days care centers, and health centers; (2) draw conclusions based on the FGDs and interviews conducted.

1.2 Literature on conditional cash transfer and poverty

1.2.1 Breaking the cycle of intergenerational poverty through the CCT

One compelling rational for the provision of transfer payments is to redistribute resources especially among the poor. This may lead to higher welfare gains, increased human capital, and may serve as a safety net against shock for those below the poverty line. Through this, a transfer payment may contribute to minimizing incidence of intergenerational poverty. The conditional cash transfer (CCT) program is different from the ordinary transfer payment because it imposes certain conditions. There are conditions imposed on the women and children for them to avail health and educational benefits. It depends in various countries where the program is implemented but usually the conditions are education and health.

The cash transfer is used to augment the family's meager income to meet basic needs such as education and health. In some countries, the conditional cash transfer was used as a safety net for the poor to cushion the impact of a crisis. For families who are temporarily experiencing unemployment, the cash transfer can help supplement the family income. This also helps in minimizing conflict between current needs and future welfare. For poor families, they tend to sacrifice education and health needs over food just to make ends meet.

The conditional cash transfer could be a more effective way of addressing intergenerational poverty since it targets the poorest of the poor. This depends on the targeting methods used by the implementing agency. As much as possible, the leakage rate should be close to zero to indicate that the program is effective in targeting the intended beneficiaries.

1.2.2 Poverty in the Philippines

In an effort to address poverty through the millennium development goals on through human capital development via education, health and women empowerment, various programs have been implemented but progress has been slow in reducing poverty. Table 1 shows that poverty incidence in the Philippines has not improved that much since year 1991. Moreover, the magnitude of poor families has increased from 3.3 million families in 2003 to 3.9 million in 2009 (NSCB, 2012).

Table 1. Poverty incidence among families (%)

Region/Province	Poverty Incidence Among Families (%)			
	1991 a/	2003	2006	2009
PHILIPPINES	28.3	20	21.1	20.9

Source: National Statistical Coordination Board

The same story is can be found in table 2 on poverty incidence among the population. Not much improvement can be seen since 2003, although the poverty incidence has dropped from 33.1 percent in 1999 to 24.9 percent in 2003.

Table 2. Poverty incidence among population (%)

Region/Province	Poverty Incidence Among Population (%) Estimates (%)			
	1991 a/	2003	2006	2009
PHILIPPINES	33.1	24.9	26.4	26.5

Source: National Statistical Coordination Board

The picture seems worse if we compare our country with other Asian countries such as Indonesia, Malaysia, Thailand and Vietnam. Figure 1 shows that there has been minimal decline in poverty headcount ratio based on the World Bank's $2. Though poverty declined from the period 1993 to 1998, other Asian countries have exhibited more significant reductions.

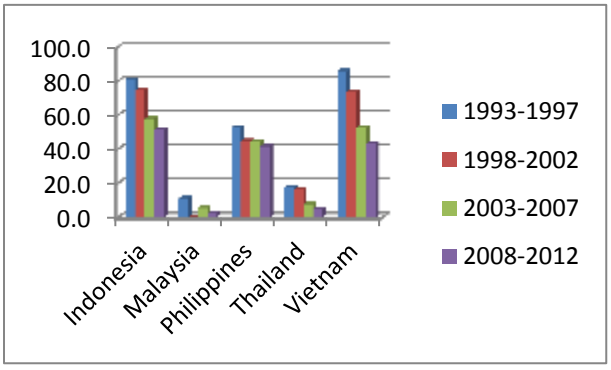

Fig. 1. Average poverty headcount ratio at $2/day at PPP in selected Asian countries (%)

The challenges to poverty reduction in the Philippines according to Usui (2011) are the following: limited job opportunities caused by weak growth performance in the industrial sector; and poorly targeted and fragmented social protection programs resulting in high errors of inclusion and exclusion. Part of the solution is a strategy for inclusive growth that can address poverty (Son, 2008). Inclusive growth is anchored on three pillars (Ali 2007 as mentioned in Son, 2008). The first pillar is the generation of full and productive employment. Second is providing mechanisms for capability enhancement such as human capital development. Third and last is providing social protection for the vulnerable. An important ingredient here is safety nets that can address the welfare of the vulnerable.

This is where welfare programs such as a conditional cash transfer comes in. The conditional cash transfer is a safety net that can cushion the impact of a shock such as a recession. It is perceived as an effective tool for poverty alleviation as such is the case in Latin American countries (Son, 2008). Figure 2 shows that there has been significant reduction in poverty headcount ratio especially from the year 2003 onwards, shortly after the program was introduced in the late 1990s.

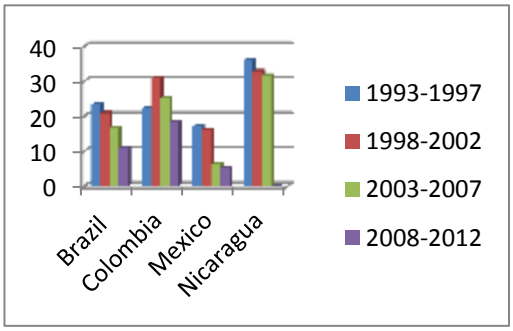

Fig. 2. Average poverty headcount ratio at $2/day at PPP in selected Latin American countries (%)

1.2.3 Conditional cash transfer: experiences and lessons in Mexico

An integrated approach to poverty alleviation in Mexico included the conditional cash transfer program. Its main objective was to improve human capital through education and health. Mexico was the first country to design and implement a program aimed at providing transfers to the poor in exchange for sending their children to school and health clinics for check-ups and vaccinations, thus called the conditional cash transfer.

The program in Mexico was first implemented in 1997 and was called *Progresa* but was changed to *Opportunidades* and eventually became the benchmark for other poverty alleviation programs in Central and South American countries

(Gantner, 2007). The program was designed to replace many earlier subsidy and poverty alleviation programs and was so complex that it needed the support of several government agencies. The program initially started with 300,000 families with a budget of USD5.8 million and was gradually phased over in the next years targeting the poorest of the poor. The phasing of the program allowed the government to evaluate the program's impact by comparing the beneficiaries and non-beneficiaries with the same characteristics (Gantner, 2007).

The program was deemed to be generally successful in improving conditions of the poor in its initial impact evaluation thus it was continued but with some modifications. There was an improvement in school attendance and showed lower incidence of illnesses among children. Food expenditure of poor households also increased with the program allowing family members to consume more quality food and increase calorie intake (Gantner, 2007).

Several studies have been done on the impact of the program in Mexico. The estimation of the impact of CCTs on child labor and school participation was attempted by Skoufias and Parker (2001) in their study of the Mexican CCT called the Education, Health, and Nutrition Program, or *Progresa*. The study by Skoufias and Parker (2001) on the program notes outcomes that provide valuable insight on aspects such as time allotted for both leisure and work on top of the usual aspects such as the incidence of child labor and levels of school participation. It was found that school participation increased while time spent on labor decreased for children whose families received the benefits of *Progresa*.

Another study by Rawlings & Rubio (2003) further supports the claim that CCT promotes human capital accumulation among poor households in Mexico. This is evident in the increase in the enrollment rates and attendance rates of the mentioned countries. Through the CCT program in Mexico, it is estimated that the impact in enrolment rates for girls ranged from 7.2 to 9.3 percentage points and 3.5 to 5.8 percentage points for boys. The program is also effective in decreasing the situation of child labor. In Mexico, the probability of working among aged 8 to 17 reduced by 10 to 14 percent. The effect is higher for boys aged 12 to 13, there is about 15 to 20 percent decrease in the probability of working and the girls also show a significant decrease in the probability of working.

The last effect of CCTs can be measured in terms of promoting gender equality. According to the study of Molyneux (n.d.), by awarding the cash transfers to the women, CCTs, in a way, promotes gender equality and women empowerment. Oportunitades claims to 'promote equal access of women to its benefits'. One of *Progresa*'s objectives is to empower the beneficiary mothers and daughters, it also aims to give the women the power to decide as a household member. They believe that through women empowerment, families will have a better quality of life.

1.2.4 Supply-side constraints of the CCT program

As the literature points out, most of the CCTs evaluated against outcomes such as school enrollment and attendance show positive results such as that found by Baez and Camacho (2011). This is most likely the result since these are the conditions specified by the program for the family to continue availing of the transfer. In instances where school participation is limited, this may be caused by fixed school buildings, classrooms and teachers. The same is also true for health outcomes. The fixed number of health care centers, nurses and doctors, and sometimes medicines can prevent other beneficiaries from availing of free prenatal care, vaccination, and health monitoring of children. This limitation is sometimes overlooked because of so many players involved. Moreover, the financial banking system is very important to ensure that the transfers are easily accessible to the beneficiaries and would not impose too much of administrative cost (Son, 2008). The quality of the services should be ensured to make the program more successful.

Institutional issues could also serve as a constraint to the attainment of the objectives of the CCT. With so many agencies involved, such as the case of the Philippines, it is quite overwhelming to manage the whole program. There is also the issue on whether the program should be managed on a centralized or localized level. If the program is centralized, the national government does not have much information about the profile of beneficiaries much so how to oversee the implementation and monitoring of the program. On the other hand, if the local government units are empowered to do this it would be easier administratively and would help promote accountability and transparency. Caution has to be made here as this power given to the local

government could be used for political reasons.

1.2.5 Pantawid Pamilyang Pilipino Program

The Pantawid Pamilyang Pilipno Program was implemented as an aid to is aimed at providing assistance to extremely poor households to improve their health, nutrition, and education particularly children aged 0 to 14. According to the DSWD website, the selection process is done through the National Household Targeting System for Poverty Reduction using the proxy means test, which determines the socio-economy category of the families by evaluating certain proxy variables such as ownership of assets, housing type, household head's education, family's livelihood and access to water and sanitation facilities. According to DSWD, beneficiaries should comply with the following conditions: pregnant women must avail pre- and post-natal care and be attended by a trained health professional during childbirth; parents must attend Family Development Sessions; 0 to 5 year old children must receive regular preventive health check-ups and vaccines; 3 to 5 year old children must attend day care or pre-school classes at least 85 percent of the time; 6 to 14 year old children must enroll in elementary or high school and must attend at least 85 percent of the time; and 6 to 14 years old children must receive de-worming pills twice a year.

It provides an education grant of Php300 per child per month up to a maximum of 3 children or Php3,000 per year. Households eligible for this grant must have children aged 5 years old and/or aged 6-14 years old that attend school at least 85 percent of the time. The program also provides health and nutrition grant of Php500 per month or Php6,000 per year per household. Households eligible for are those with children 0 to 14 years of age and/or pregnant women. Table 5.1 shows the summary of the various grants and the corresponding amount.

Table 3. Pantawid Pamilya Grant Package

Type of grant	Amount	Eligibility
Health grant*	Php 500/month per beneficiary household	has children aged 0-14 years or pregnant women
Education grant**	Php 300/month/child aged 6-14 (up to 3 children)	has children aged 6-14
		has children aged 3-5 years and less than three children aged 6-14 years

*for 12 months of the year

**for 10 months of the year

The conditional cash transfer program in the Philippines has adopted the best practices in Latin American countries such as Brazil and Mexico. Though the program in the Philippines is still in its first and second stage of implementation, the results have yet to be evaluated. Both developing countries have implemented this program to address poverty issues that affect human capital particularly in the areas of education and health.

The table below summarizes the similarities and differences between the program in Latin America and the Philippines.

Table 4. Characteristics of CCT in Latin America and the Philippines

Characteristics	Latin America	Phils.

Targeted toward poor households	Yes	Yes
Female heads are recipients of cash transfer	Yes	Yes
Program include nutrition and education program	Yes	Yes
Cash transfers vary with number of children	Yes	Yes
Size of cash transfer changes with age and gender of children	Yes	No

Source: Son, 2008

Though the Pantaiwid Pamilyang Pilipino Program has the same objective of alleviating current poverty, it falls short of addressing the increasing opportunity cost as the child gets older. While in most Latin American countries the transfer for education increases especially when the child is in high school, the Philippines does not observe this practice. The transfer for each child is the same whether the child is in grade school or in high school. An older child, one who is in high school, has a higher opportunity cost than a grade school student because he is more likely to get a job and earn income.

Furthermore, Latin American countries pay a higher transfer to females to encourage greater school attendance. School attendance for females in these countries is very low compared to males. This is one way of empowering women and giving them more opportunities to develop their capacity and become more productive. In the case of the Philippines, transfer for education is the same for both male and female. Both males and females receive the same amount of transfer.

2. METHODOLOGY

Most of the data were collected through a series of focused group discussions and interviews held in July and August 2013. The local municipality of Bagac also made the information on the beneficiaries available to us. Most of these information were used in the study.

PROFILE OF BAGAC, BATAAN

Based on the National Statistics Coordinating Board, Bagac, Bataan is a third class municipality that has a population of 24,202 and 5,124 households as of 2007 and is the biggest in terms of land area in the province. Poverty incidence is 19.7 percent (NSCB, 2009) and is the second poorest municipality in the province of Bataan. It has a total of 14 barangays, 5 of which are urban barangays and the rest are rural barangays. Thirty two percent of the population are concentrated in the dependency group, particularly the age between 1until 14, with a total of 7,769 individuals. There are a total of 6,792 individuals who belong to the school age group of ages 5 to 24 years old, based on school year 2007-2008 (NSO, 2012). Most of the school age group population is concentrated in the age group 5-9 and 10-14 with 2,501 and 2,775 students respectively.

The main source of livelihood are agriculture, and fishing with 2,692 individuals employed in the agricultural sector (CBMS, 2010). Most of their agricultural production is concentrated on rice, vegetables and other high value crops. Fishing is also one of the main sources of income especially for coastal barangays such as Binuangan, Quinawan, Paysawan, Pag-asa, Saysain, and Banawang (COSCA, 2012).

3. RESULTS AND DISCUSSION

The followings tables describe the current status of the number of children and mother beneficiaries in Bagac, Bataan. The number of public schools, day care centers, and health centers will likewise be presented to set an overview of the supply-side factors.

Based on the latest data from the local government of Bagac and DepEd, there were a total of 3,359 students enrolled in the public school from grades 1 until 6 in SY2013-2014. This was a 3.7% increase from the previous school year. The table 5 summarizes the total number of students enrolled in the public school from SY2011-2012 until SY2013-2014. It could be noted that the grade level 4 had the highest increase in enrolment in the SY2013-2014. Assuming that there are 50 students per class, grade

levels 2, 3, and 4 indicate that there was an additional class for the SY2012-2013 and SY2013-2014. Based on the interviews and FGD conducted, there were no additional classrooms built or teachers added since the 4Ps started in Bagac.

Table 5. Public school enrolment in Bagac

Grade Level	SY 2011-2012	SY 2012-2013	SY 2013-2014
1	668	637	641
2	556	598	627
3	494	545	600
4	470	497	533
5	492	472	496
6	519	490	462

Source: www.data.gov.ph

There are a total of 10 public elementary schools in Bagac and Bagac Elementary School has the highest number of population. As of this school year, they have a total enrolment of 1,371 students from grade levels 1 to 6. Table 6 shows the total number of students per public school for SY2013-2014.

Table 6. Total number of students for SY2013-2014

Public Elementary School	Grade Level 1	2	3	4	5	6
Bagac	301	247	249	211	197	166
Banawang	38	58	63	39	44	28
Binuangan	19	16	13	18	15	23
Binukawan	41	46	37	45	32	35
Overland	36	40	37	39	35	23
Parang	71	62	60	61	44	57
Paysawan	16	21	17	19	20	13
Pinagsumilan	34	33	25	25	25	31
Quinawan	20	22	11	15	11	18
Saysain	65	82	88	61	73	68

Source: www.data.gov.ph

Based on the latest data of Bagac Municipality as of July 2013, there are a total of 2,183 children who are beneficiaries of the education grant. These children are between the age of 3 to 14 years old but only 1,879 are attending school. The table below shows most of the students attending school are in day care.

Table 7. Number of students between age 3-14

Grade Level	Number of children
Day care	495
Kinder	158
Grade 1	313
Grade 2	289
Grade 3	231
Grade 4	161
Grade 5	110
Grade 6	122

Source: Bagac LGU, 2013

There are a total of 10 public elementary schools and 16 day care centers. The succeeding table lists the various public elementary schools and their location and day care centers.

Table 8. List of day care centers in Bagac

No.	Day Care Center
1	Parang Day Care Center
2	San Antonio Day Care Center
3	Binukawan Day Care Center
4	Sitio Antipolo Day Care Center
5	Atilano Ricardo Day Care Center
6	Banawang Day Care Center
7	Bagumbayan Day Care Center
8	Ibaba Day Care Center
9	Pag-Asa Day Care Center
10	Ibis Day Care Center

11	Sitio Salaman Day Care Center
12	Saysain Day Care Center
13	Sitio Duhat Day Care Center
14	Paysawano Day Care Center
15	Binuangan Day Care Center
16	Quinawan Day Care Center

Source: Bagac LGU, 2013

Table 9. Number of public elementary schools

No.	Public School	Address
1	Parang ES	Parang, Bagac
2	Pinagsumilan ES	San Antonio, Bagac
3	Binukawan ES	Binukawan, Bagac
4	Overland ES	Atilano Ricardo, Bagac
5	Banawang ES	Banawang, Bagac
6	Bagac ES	Tabing-Ilog (Poblacion)
7	Saysain ES	Saysain, Bagac
8	Paysawan ES	Paysawan, Bagac
9	Binuangan ES	Binuangan, Bagac
10	Quinawan ES	Quinawan, Bagac

Source: Bagac LGU, 2013

As for the health grantees, there are a total of 846 eligible household members. Out of the 847, 46 are pregnant while the rest are between ages 0 to 5 years old. They are required for pre-natal check-ups, visits to the health center for vaccines and health check-ups for the children. The total number of children between age 0 to 5 amounted to 801, most of which are between the age 3 to 4. Most of the children are males – 405.

Table 10. Number of children between 0 - 5

Age	Number
0	2
1	82
2	209
3	242
4	242
5	24
Total	801

Source: Bagac LGU, 2013

There are a total of 15 health centers in Bagac. The main health center is located at the plaza while the 14 other health centers are located in each barangay. For each barangay, there is one midwife and one barangay health worker. There are several nurses that visit the health center but there is no permanent nurse assigned. Moreover, there are no doctors stationed in the health center but there is one doctor assigned in the main health center. At times, medical missions serve the barangays with additional doctors and nurses.

Table 11. Number of health centers in Bagac

No.	Health Center
1	Parang Health Center
2	San Antonio Health Center
3	Binukawan Health Center
4	Atilano Ricardo Health Center
5	Banawang Health Center
6	Bagumbayan Health Center
7	Ibaba Health Center
8	Pag-Asa Health Center
9	Tabing-Ilog Health Center
10	Ibis Health Center
11	Saysain Health Center
12	Paysawan Health Center
13	Binuangan Health Center
14	Quinawan Health Center

Source: Bagac LGU, 2013

Each health center provides dental care but is only limited to tooth extraction, birth delivery, and vaccinations. Basic supplies such as cotton, syringes, and betadine are limited. The main health center located in the plaza has complete equipment for basic health care. When it comes to the accessibility of the health centers, most of them are located in highly accessible areas, usually near the barangay hall,

except in coastal areas where people have to travel by boat. The health centers are open from 8am until 5pm but midwives are on-call for birth delivery.

On the average, there are 40 to 50 people who visit the health centers for consultations on fever, diarrhea, and other common illnesses among children. For the adults that visit the health center, they visit for blood pressure and diabetes monitoring. It has been observed that since the implementation of the 4Ps, the number of people who visit for consultation for weight measurement etc. has increased. Monthly weighing is monitored for children between 0 to 71 months old and they are also given vitamin A. Deworming is also conducted among children who are in their school age. This is given to them in school and is conducted twice every year.

Supplies and equipment for prenatal, delivery, and post natal care is limited. For instance, there is no ultrasound equipment and the pregnant mothers have to go to the nearest public hospital to undergo various tests. But for prenatal care, vitamins and supplements such as ferrous sulfate and folic acid are available. Consultation is also given to the pregnant women.

4. CONCLUSIONS

With the condition of household beneficiaries sending their children to school, undergoing check-ups for pregnant mothers, and heath check-ups for children enrolment rates and those visiting the health centers have increased.

The number of children who are attending day care and elementary has increased as a result of the 4Ps program. Overall enrolment for public schools in the elementary level increased 1.3 percent in SY2012-2013 and 3.7 percent in SY2013-2014. The level grade 4 had the highest increase (7.2%) this school year. Despite the increase, the number of classrooms and teachers still remain the same. The number of students in day care, at least for beneficiaries, amounted to 495. This implies that there is an average of 31 children per day care for each of the 16 centers.

Health care provision, especially for the pregnant mothers, is very limited. The resources and personnel available in the health center has not changed since the 4Ps started, given that the number of users increased. There is only one doctor servicing the main health center, one midwife per health center, but there is a limited number of nurses. The ratio of midwives per barangay is only one is to one. Lack of supplies and certain medicines is also a concern for the health centers.

Given the issues faced by health centers, there is a need to increase the number of health workers and supplies in the barangays especially with the increase in demand because of the compliance with the 4Ps program.

5. ACKNOWLEDGMENTS

The study is a part of the CCT project funded by the Angelo King Institute for Economic and Business Studies.

6. REFERENCES

Baez, J. and Camacho, A. (2011). Assessing the Long-term Effects of Conditional Cash Transfers on Human Capital: Evidence from Colombia. World Bank.

Department of Social Welfare and Development (2013). Retrieved from http://www.dswd.gov.ph

Gantner, L. (2007). Case Study #5-1, "PROGRESA: An Integrated Approach to Poverty Alleviation in Mexico". In: Per Pinstrup-Andersen and Fuzhi Cheng (editors), "Food Policy for Developing Countries: Case Studies." 11 pp. Retrieved from: http://cip.cornell.edu/dns.gfs/1200428168

National Statistical Coordinating Board (2013). Retrieved from: http://www.nscb.gov.ph/poverty/default.asp

Rawlings, L. & Rubio, G. (2003). *Evaluating the impact of conditional cash transfer programs: Lessons from Latin America*. Retrieved from http://info.worldbank.org/etools/docs/library/79646/Dc%202003/courses/dc2003/readings/ccteval.pdf

Skoufias, E., & Parker, S.W. (2011). Conditional cash transfers and their impact on child work and schooling: Evidence from the PROGRESA program in Mexico. *Economia.*

Son, H. (2008). Conditional cash transfer programs: An effective tool for poverty alleviation? ERD Policy Brief Series No. 51. Asian Development Bank.

Usui, N. (2011). Searching for effective poverty interventions: Conditional cash transfers in the Philippines. *Asia Development Bank*.