Pantawid Pamilyang Pilipino Program
Third Wave Impact Evaluation (IE Wave 3)

Regression Discontinuity Report

January 2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Executive Summary

1. The Pantawid Pamilyang Pilipino Program (Pantawid Pamilya) is a conditional cash transfer program launched by the Philippine Government under the Department of Social Welfare and Development in 2008. It stands as the main social protection strategy of the government, the main objective of which is to break the intergenerational transfer of poverty by investing in the health, and education of children from poor households.

2. Previous impact evaluation studies on the impact of the program show that Pantawid Pamilya has been successful in keeping children healthy and in school (Department of Social Welfare and Development (DSWD) and World Bank 2014, Department of Social Welfare and Development (DSWD) 2014). The program has improved education outcomes such as school enrollment, school attendance, and likewise increased access to key maternal and child health care services among the beneficiary households. However, there are also some findings and observations that need to be looked at more closely, such as the lack of impact on mean per capita consumption, childhood immunization coverage, and the persistent incidence of child labor among the beneficiary households. In addition, the findings of the RCT cohort analysis have shown mixed results in terms of the program outcomes measured.

3. The third impact evaluation (IE Wave 3) aims to reassess the program impact on short term and intermediate outcomes on health, education, household welfare, and other socio-behavioral domains. The evaluation examines program impacts following key design modifications that the program has undergone after the last rigorous evaluation done in 2014. The study sampled 10 municipalities per major island cluster (i.e. Luzon, Visayas, and Mindanao), covering a total of 6,775 households across 180 barangays. This includes beneficiaries that were registered from 2008 to 2014, thereby having at least two years of exposure to the program.

4. Like the second wave of impact evaluation of the Pantawid Pamilya program, this evaluation employs regression discontinuity design to analyze program impact. Regression discontinuity design is a quasi-experimental method which creates a valid counterfactual by comparing households near a pre-determined cutoff. In this case, households are ranked according to their PMT scores and their assignment to treatment and comparison groups depends on whether their PMT scores are below or above respective provincial poverty threshold and whether the household has children aged 0-18 years old or pregnant household members.

5. Results of the evaluation show that:

    - ***Pantawid Pamilya raises awareness and use of modern family planning methods among program beneficiaries.*** Program beneficiaries have higher awareness of modern family planning methods. Moreover, a larger proportion of beneficiaries reported having used a modern family planning method at least once, although there is not enough evidence of sustained use of these commodities among beneficiaries.

Increased awareness of modern family planning methods among beneficiaries may be due to attendance to Family Development Sessions and family planning counseling in health facilities. Supply conditions, previous experience in use of FP methods, decision-making between husband and wife, and other factors may explain discontinued use of these methods and should be studied.

- ***Pantawid Pamilya increases the availment of prenatal care services and skilled birth attendance.*** Availment of prenatal care services at least 4 times during pregnancy is higher among Pantawid mothers compared to non-Pantawid. The program, however, has no impact on the availment of postnatal care services within 72 hours, postnatal care from a skilled professional, and in a health facility. This suggests that beneficiary women do not give equal importance to prenatal and postnatal care, which is concerning, given that these are both program conditionalities. This finding needs to be investigated further by qualitative studies. The program increased Pantawid deliveries assisted by a doctor or nurse in urban areas and midwife-assisted deliveries in rural areas. The program also increased facility-based deliveries in urban areas. These results suggest that availability and access to health facilities and resources influence the usage of maternal health care services.
- ***Pantawid Pamilya increases access to child health care services but shows mixed impacts on nutrient supplementation and nutrition outcomes.*** Provision of deworming pills at least twice is higher among beneficiary children 6 to 14 years old. The program has also increased vitamin A supplementation, but, similar to previous evaluations, the program still does not have any impact on complete immunization of children. More Pantawid Pamilya children 0 to 5 years old visit health facilities for weight monitoring. These mixed results on child health service utilization may be due to supply-side factors—such as the absence of health facilities in certain areas or lack of medical supplies—or gaps in updating of household composition and compliance monitoring. These need to be validated by further qualitative studies. In terms of nutrition outcomes, the study finds negative program impact on the prevalence on stunting of children 0 to 5 years old. This is inconsistent with findings of the RCT cohort study of the 3rd wave evaluation which observed that receipt of program benefits during the first 1000 days of life results in improved nutrition outcomes. It is possible that negative impact on nutrition is not due to current child care and dietary practices, but due to past practices and other factors which accumulated starting from conception. Mixed results in health can also be explained by the ineffective enforcement of program conditions and insufficient monitoring of young children and pregnant women due to gaps in updating. These nuances need to be investigated further in order to confirm this negative finding and understand possible contributing factors.
- ***Program impact in education is more pronounced among older children but education outcomes for elementary-aged children remain at satisfactory rates.*** The program has improved education outcomes of older children, possibly due to the extension of age coverage in 2014 that included older children 15 to 18 years old and provided higher grants for high school students. Specifically, the program has increased school enrollment of beneficiary children aged 12-17 and improved outcomes such as age-appropriate enrollment in junior high school, and lower drop-out rates. Although very minimal program impact was observed on younger

children, enrollment and attendance rates of elementary-aged children are high for both beneficiaries and non-beneficiaries. Monitoring status is also a factor affecting education outcomes, with monitored children, particularly those in older age groups, having better education outcomes. Higher expenditures on education was also observed among children beneficiaries who were enrolled in the last school year, compared to non-Pantawid children. Given the larger benefits and higher risk of dropout among older children, the program should consider ways of refocusing education interventions, or concentrate efforts of monitoring among older children.

- ***Pantawid Pamilya no longer affects child labor either in terms of incidence or duration***. Unlike in the previous evaluation, the study finds no program impact on the incidence and the number of days spent by children 10 to 14 years old in paid and unpaid labor. However, the proportion of working children among Pantawid beneficiaries decreased since the previous evaluation. The current data also shows that 90% of children who are working are also attending school. This indicates that children are not dropping out despite financial concerns—and that additional income is used to supplement the cash grant to cover costs of education. The program needs to reassess the amount of grant and examine the opportunity costs of forgoing child labor among Pantawid children.
- ***Pantawid Pamilya improves household welfare.*** The study finds that the program grants increase the household per capita income significantly. Beneficiaries spend more on clothing and footwear compared to non-beneficiaries, but no strong program impact was noted on other expenditure items. In terms of food security, less Pantawid Pamilya households experienced hunger compared to non-Pantawid households. However, the frequency of episodes of food insecurity or hunger for those that experienced it is unaffected by the program. Subgroup analysis revealed that program impact on income, and other household welfare indicators are significantly large in urban areas. The impact on income in urban areas is retained even if cash grants are excluded in the equation, which can largely be attributed to positive program impact on per capita income from salary and wages of urban beneficiaries.
- ***Program does not increase expenditure on vice goods.*** Consistent with earlier findings and international literature on CCTs (Evans and Popova 2017), Pantawid beneficiaries do not have higher spending on vice goods such as alcohol, tobacco, and gambling compared to non-beneficiaries. This is both in terms of share of expenditures on vice goods to total household expenditures and average per capita expenditures. This also holds true in the urban/rural subgroup analysis.
- ***Program does not encourage dependency.*** Beneficiaries are equally likely to be in the labor market although beneficiaries have lower likelihood of being employed. However, once employed, beneficiaries work more hours and, in more jobs, compared to non-beneficiaries. The study also did not find significant difference between the proportion of unemployed looking for work among beneficiaries and non-beneficiaries of Pantawid implying that they are equally eager to look for work when unemployed as their counterparts among non-beneficiaries.
- ***Program increases participation in the community and community development of adults but has limited impact on locus of control and future expectations.*** More Pantawid Pamilya beneficiaries participate in community organizations and voluntary community activities. They also display better disaster preparedness,

which is likely due to attendance to family development sessions on this topic. There is very little impact of the program on the outlook or expectations of parents about the future of their children; and on locus of control among Pantawid women.

- ***Beneficiary children have higher grit.*** Pantawid Pamilya children have more determination, compared to their counterparts, to complete and succeed in schoolwork despite challenges. Future studies should attempt to unpack these results and the program should consider systematically developing interventions on this front.

6. Generally, the results of the evaluation indicate that the program shows desirable impacts on most of the target education and health outcomes of children and pregnant women. In addition, the program has shown positive impacts on household welfare such as income and food security; large positive impacts on community participation, and awareness of basic means to mitigate vulnerabilities such as disaster preparedness among adults; and, strong impact on "grit" or determination of children. Nevertheless, some results of the study are also unexpected and are inconsistent with previous evaluations. The results on the negative impact on nutrition, particularly on the incidence of stunting, provide strong motivation to refocus health interventions and compliance monitoring on pregnant mothers and young children during critical growth periods such as the first 1000 days' window. More study should be done to understand the discrepancies in the utilization of health services such as immunization, and iron supplementation. The program can also benefit from monitoring the type and quality of services accessed by beneficiaries to ensure that they are able to fully maximize utilization of the interventions available. The findings on education may also indicate the need to concentrate efforts on improving outcomes of older children since younger children are already able to achieve satisfactory enrollment and attendance rates even without the program. The lack of impact on child labor calls for a thoughtful examination of the opportunity costs incurred by working children when they study, as well as the corresponding adjustment in the policies or incentives that the program provides—particularly in terms of reevaluating the value of the cash grant. Interventions such as employment facilitation can be useful in increasing employment rates among working age members of beneficiary households. Lastly, the program, and the Government should take full advantage of the positive program impacts on the behavior of children and adults as a model and/or platform for other interventions.

1. Background

The Pantawid Pamilyang Pilipino Program (Pantawid Pamilya) is the Philippines' version of conditional cash transfer (CCT) program aimed at stopping the intergenerational transmission of poverty through investment in the human capital of children of poor households. Pantawid Pamilya is largely modelled after the CCTs in the Latin American countries particularly Brazil and Mexico that first implemented such programs in the late 1990s. CCTs have since been widely used as a social safety net and social protection program across many developing countries.

Pantawid Pamilya was officially launched in 2008 by the Department of Social Welfare and Development (DSWD) registering approximately 300,000 household beneficiaries on its first year. In succeeding years, the program has continuously expanded its coverage and currently covers more than four million poor households from almost all municipalities[1] and provinces nationwide. With the expansion in coverage is the increase in budget allocated to the program. From an allocation of 50 million pesos in 2008, the program budget has increased to 78 billion pesos in 2017. This constitutes 61% of the DSWD budget and 0.5% of the nation's GDP in that year. With approximately 60% of the poorest quintile of households in the country covered (World Bank, 2018), the program is considered the core pillar of the government's social protection strategy.

Rigorous evaluations of CCTs all over the world have found that CCTs, on the average, have positive impacts on smoothing consumption of beneficiaries and increasing investment in human capital, while some have shown positive impacts on poverty alleviation (Fiszbein, et al., 2009). Most evidence show that CCT programs result in increased school enrollment and utilization of health care services while several studies indicate longer-term impacts (Gertler, Martinez and Rubio-Codina 2012).

Pantawid Pamilya has undergone the same rigorous evaluations as other CCTs as part of its monitoring and evaluation system. The first-round impact evaluation was conducted in 2011 and a second study was conducted in 2013. In both rounds of evaluation, findings show that the program has been successful so far in achieving its primary objective of keeping children in school and keeping them healthy through increased utilization of maternal and child health care services. However, the two impact evaluations have also shown mixed results for some outcomes while no program impact has been observed in some crucial indicators such as total household consumption and infant immunization. Marking the tenth year of program implementation, another impact evaluation was conducted to reassess the program impact on short term and intermediate outcomes, as well as confirm mixed results of the previous waves of studies. The evaluation also attempts to assess the impact of Pantawid Pamilya after the program has undergone design modifications since the first and the second studies.

This report presents the findings of the main study of the third wave impact evaluation of Pantawid Pamilya (IE Wave 3) which used Regression Discontinuity Design (RDD). A sub-study was also done on the impact of time-critical inputs to education and health using data from a cohort of beneficiaries from the original Randomized Control Trial (RCT) of the first

[1] Since 2015, the program has covered all municipalities except those in the province of Batanes and the Kalayaan Group of Islands in Palawan.

wave impact evaluation. The findings of the latter are discussed in a separate report but are also mentioned here to supplement the discussion of the main study.

This report is divided into seven sections. The succeeding discussions in this section provide a background of the previous program evaluations and identify the specific objectives and research questions the current evaluation is trying to address. Section 2 is an overview of the program design including its conditions, targeting, and eligibility criteria for beneficiaries as well as accounts of recent program changes since the most recent impact evaluation in 2014. Section 3 presents the program theory of change and hypotheses of interest. Section 4 discusses the methodology, data sources and identification strategy while Sections 5 and 6 present and discuss the results of the evaluation. Finally, Section 7 provides conclusions and actionable policy recommendations.

1.1. Previous Impact Evaluation Studies

Prior to this evaluation, two rounds of rigorous evaluations were conducted by the Department of Social Welfare and Development and World Bank (DSWD and World Bank 2014a; DSWD and World Bank 2014b). The first impact evaluation was conducted in 2011 by the DSWD with the help of Australia's Department of Foreign Affairs and Trade (DFAT), the World Bank (WB), and the Asian Development Bank (ADB). The data collection was accomplished during the last quarter of the year and the report became available in 2012.

The 2011 impact evaluation survey (IE Wave 1) followed a Randomized Control Trial (RCT) design as the program was just starting then and coverage was not yet extensive. The study covered a sample of 3,742 households from four provinces and eight municipalities spanning the three major island clusters in the Philippines. Of the sample, the main RCT analysis included 1,418 poor households from barangays (villages) randomly assigned as control and treatment areas. The rest of the sample was used to measure the unexpected effects of the program (spill-over effects) among the non-target population living in program areas.

For the main analysis, a phased-in RCT evaluation design was used where the 'treatment' areas were exposed to the program for 2.5 years, but program benefits were withheld for the 'control' areas to serve as source of counterfactual information and observe what would have happened without CCT implementation. Program impact was then estimated by comparing outcomes between eligible households in the treatment areas with those of comparable households in the control areas.

The result of the RCT analysis showed that Pantawid Pamilya is reaching most of its key objectives of improved education and health outcomes. Some of the key findings are:

- The program helps keep children in school. Results show increased school enrollment among younger children (3 – 11 years old) and increased school attendance among children 6 – 17 years old.
- The program helps keep poor children healthy. Results show severe stunting was reduced by 10 percentage points indicating improved long-term nutritional status of the children. The program also encouraged poor mothers to avail maternal health care services and poor children to take Vitamin A, deworming pills, and regular weight monitoring.

- The program encourages beneficiary households to invest in the health and education of their children. Results show that beneficiaries spend more on health and education and less on vice goods compared to non-beneficiaries.
- The program has not affected decisions to work and fertility rates. Results did not find evidence that adults in beneficiary households worked less or made less effort to find work. Neither did it find evidence that beneficiary households are having more children than non-beneficiaries.

The second wave of impact evaluation (IE Wave 2) was conducted in 2013 using Regression Discontinuity Design (RDD). At this point, the program had expanded its coverage to almost all areas of the country making it difficult to find representative areas not yet exposed to CCT to conduct an experimental study. The use of RDD avoids this challenge because the design uses ineligible households near the cutoff (poverty threshold) as comparison group.

In the RDD evaluation, the survey covered 5,041 households that are just below (poor and eligible) and just above (near-poor, not eligible) the poverty threshold. These households are from 30 randomly selected municipalities (10 per island group) covering 26 provinces. The sample of CCT beneficiaries came from those registered from 2008 to 2011 and were therefore exposed to the program at least two years before the data collection.

The results showed that after five years of implementation, Pantawid Pamilya is still on track in keeping children healthy and in school. Some of the key findings are the following:

- The program keeps older children in school. Gross enrollment among high school children 12 – 15 years old is higher for beneficiary children.
- The program increases households' investment in education. Pantawid households spent ₱206 more per school-aged child per year compared to non-beneficiary households.
- The program improves children's access to some key health care services. Take up of Vitamin A, iron supplements, deworming pills, and weight monitoring service were higher among beneficiary children.
- The program promotes facility-based services and access to professional postnatal care. More Pantawid mothers delivered in health facilities and availed of postnatal care services by skilled health professionals.
- The program contributes to reducing hours of child labor among poor children. Pantawid children (10 – 14 years old) work seven days less in a month compared to non-beneficiary children.

In summary, the findings of the first two waves of impact evaluation show that Pantawid Pamilya has been successful in achieving short term objectives of increasing school enrollment, school attendance, and access to key maternal and child health care services. However, there are also some findings and observations that need to be investigated more closely such as the lack of impact on mean per capita consumption and childhood immunization coverage, as well as the persistent incidence of child labor among the beneficiary households.

1.2. Research Questions and Objectives

The study aims to reassess the program impact on short term and intermediate outcomes after almost 10 years of implementation. Specifically, the evaluation aims to confirm or reexamine the program impact on the following domains:

a. **Health** – utilization of reproductive, maternal, and child health services
b. **Education** – school participation of children; improved education outcomes, and reduction of the incidence and time spent on child labor.
c. **Household welfare** – income, expenditure, labor participation, access to government services and benefits, participation in community activities
d. **Other Socio-behavioral outcomes** – locus of control, grit, etc.

In view of the objectives above, the third wave of impact evaluation aims to address the following set of research questions:

- Does the program increase awareness and utilization of responsible parenthood interventions?
- Does the program increase utilization of maternal health care services?
- Does the program increase utilization of health care services of children?
- Does the program improve child care practices of parents?
- Does the program improve nutrition and health outcomes of children?
- Does the program increase school participation of children?
- Does participation in the program result in improved education outcomes of children?
- Does the program reduce the incidence and time spent on child labor?
- Does the program promote higher investments on education?
- Does the program increase household consumption and income?
- Does the program encourage dependency?
- Does the program promote participation in community development activities?
- Does the program improve outlook of beneficiaries of their current situation and future of children?

2. About the Program

This section presents a detailed overview of the program design including relevant design modifications that were not yet implemented as of the last impact evaluation survey in 2013.

2.1. Program Overview

The Pantawid Pamilyang Pilipino Program aims to break the intergenerational cycle of poverty by encouraging poor households to invest in their health and education. As with most CCTs, the program pays grants to beneficiaries upon meeting conditionalities related to the education and health of children and pregnant women. In Pantawid Pamilya, a third unique conditionality on family development is introduced and tied with continuous provision of health grants.

The program aims to improve the health of young children and mothers through increased utilization of preventive health care services and better health seeking behavior; increase

enrollment and attendance rates of children in school; and, promote family development and community participation among beneficiaries.

2.1.1. Program conditions

The program provides cash grants if the beneficiaries comply with three sets of conditions: (1) time-specific take up of basic maternal and child health services, (2) enrollment and regular attendance in schools, and (3) regular attendance to family development sessions. The health conditions are required of children from birth up to 14 years of age and of pregnant women in household, while the education conditions apply to children 3 to 18 years old. The specific conditions for health and education are as follows:

Health conditionalities for pregnant women

a) Pregnant Household Member/s should visit a health facility at least once every two months to avail of pre- and postnatal care services. The pregnant woman, during her pregnancy should have at least one prenatal consultation for every trimester.
b) Pregnant women should avail of Basic/Comprehensive Emergency Obstetric and Newborn Care (BEmONC/ CEmONC) services or avail of delivery services from a skilled health professional
c) Avail of postnatal care services within six weeks after delivery of child

Health conditionalities for children

a) Children below two years old should be completely immunized according to the DOH vaccination schedule
b) Children 2 to 5 years old should visit health centers once every two months for regular weight monitoring
c) Children 6 to 14 years old must receive deworming pills at least twice per year

Education conditionalities

a) Children 3 to 5 years old should enroll in Daycare or Kindergarten and attend at least 85% of the school days in a month
b) Children 6 to 18 years old should enroll in Elementary or High School and attend at least 85% of the school days in a month

Family Development Session (FDS)

The third conditionality requires Pantawid Pamilya beneficiaries to attend monthly Family Development Sessions (FDS). The FDS are learning seminars for parents that promote and teach key messages on family development and participation in community development affairs. The objective is to capacitate beneficiaries, so they are able to perform their roles in the human capital development of children and participate as active members of the community. The FDS also serves as a venue for the program to remind beneficiaries to comply with program conditions and encourage peer support among beneficiaries (DSWD 2015).

The discussions in FDS are based on the manual of instruction *"Gabay sa Pagpapaunland ng Pamilyang Pilipino"* developed by the DSWD. Upon a household's registration to the program, nine sessions are devoted to discussing the objectives of the program, its expected outcomes, and the roles of the beneficiaries in achieving these outcomes. The succeeding sessions cover topics related to family development from "preparation for family life" up to ways of

"strengthening the family". These topics include husband-wife relations, parent and child relationships, responsible parenthood and family planning, maternal health, infant and child care, child development, child rights, family resource management, and protection of children against abuse. The remaining topics in the manual focus on community development such as, roles in community development, active citizenship, and disaster preparedness.

Aside from the topics included in the main FDS manual, several supplementary modules have been developed for the FDS. Some of the key supplementary modules are on child labor, prevention of child sexual abuse, Water Sanitation and Hygiene (WASH), food and nutrition, and regional modules on Indigenous Peoples. The complete list of supplemental modules available and other modules in development as of writing are in Appendix 1.

The delivery of the FDS is primarily done by the municipal-level staff of the DSWD and other resource persons depending on the scheduled topic. For instance, FDS topics on health are usually delivered by key personnel from health facilities in the community (e.g. doctors, midwives) and/or representatives from other government agencies[2], Civil Society Organizations (CSOs), and non-government organizations with health-related advocacies. Likewise, special topics on disaster preparedness and management are delivered by resource speakers from the local government or organizations with knowledge on the subject matter.

The FDS is delivered partially as a needs-based intervention. Aside from the program orientation module in the main FDS manual, the topics to be delivered in FDS depend on what is deemed necessary to the beneficiaries based on consultations with local stakeholders (e.g. local government, local offices of line agencies, etc.) and monitoring data. For example, beneficiaries in a community with high number of reported cases of abuse will most likely receive more frequent sessions and campaigns about abuse prevention and related social issues. Sometimes, FDS topics can also be thematic and "seasonal" such as discussing fire prevention in the month of March, *Dengue* prevention during the rainy season, and discussion of emerging diseases during outbreaks.

The grantee of the household – the adult member authorized to withdraw or receive the grants and is usually the mother of the children beneficiaries – is expected to attend the FDS sessions. In select sessions, couples or the parents of the children are required to attend[3]. By attending the FDS, the beneficiaries are expected, primarily, to have increased appreciation for human capital investments in education and health. Moreover, the FDS is expected to increase their knowledge and improve their practices in the care of children, performance of familial roles and participation in community development activities.

2.1.2. Targeting and eligibility

To be eligible to the program, households must be identified as poor by the *Listahanan* formerly known as National Household Targeting System for Poverty Reduction Program (NHTS-PR); must have a pregnant member or at least one child aged 0-18[4] years old at the time of assessment; and must be willing to commit to comply with the program conditionalities.

[2] NAC Resolution 28 Series of 2015: Inter-agency Collaboration to Strengthen the FDS
[3] NAC Resolution 23 Series of 2014: Mandatory Attendance of Couples in Specific Sessions in Modules 2.1 and 2.2 of the Family Development Sessions
[4] The program used to cover only children 0-14. The eligible age was expanded to include children 15 to 18 in 2014 through NAC Resolution xx.

During the early years of the program, the DSWD employed a two-stage targeting system which begins with selection of areas based on poverty incidence estimates. Due to limited resources, the program prioritized registration of eligible beneficiaries in areas with high poverty incidence. Starting 2010 however, subsequent expansions of the program no longer used geographic targeting in actual implementation and relied on the direct household targeting of the *Listahanan*.

The *Listahanan* targets beneficiaries through a household assessment survey and application of a Proxy Means Test (PMT) methodology[5] to predict income of households using household characteristics such as household composition, education of members, housing conditions, assets, tenure status, and access to basic services, and regional control variables. Predicted incomes are then compared with official poverty thresholds at the provincial level to determine households that are poor (below threshold) or non-poor (equal or above threshold).

2.1.3. Transfer package and payment system

Currently, the program provides three types of cash grants to the beneficiary households. These are:

Education grant. This grant is provided to every child who complies with the education conditions of the program. Children enrolled in daycare/kindergarten or elementary receive 300 pesos per month while children enrolled in high school receive 500 pesos per month for 10 months. The program maintains a limit of three child beneficiaries for the education grants, who are monitored for their attendance in school. A household with three children in high school can receive a maximum of 15,000 pesos per year while a household with three children in elementary can receive up to 9,000 pesos annually.

Health grant. This grant amounts to 500 pesos monthly per household and is only given if all health conditions are complied with and they attend the Family Development Sessions for the month. Per year, a household can receive up to 6,000 pesos if all health and FDS conditions are satisfied.

Rice subsidy. This grant is provided per household at 600 pesos per month. This is provided to household beneficiaries that comply with either the education or health-FDS conditions. The maximum amount per year is 7,200 pesos. This grant is not originally part of the program benefits and was only added starting 2017 with the objective of improving the food security situation of the beneficiaries.

Given the above list of benefits, a fully compliant household can receive up to 28,200 pesos if there are three monitored children who are enrolled in high school. If all three monitored children in the household are enrolled in pre-school or elementary school, the maximum amount that can be received per year is 22,200 pesos.

Upon registration to the program, a beneficiary household receives unconditional, non-compliance-based cash grants based on the composition and number of eligible household members. The succeeding grants, however, are computed based on the compliance of the

[5] Proxy variables were selected from the analysis of data of two main surveys produced by the PSA - the Family Income and Expenditure Survey (FIES) and Labor Force Survey (LFS) that are also available in the Listahanan.

household to the program conditions. From the start of the program until 2011, cash grants were paid to beneficiaries on a quarterly basis; and, in the succeeding years up to present, cash grants are paid every two months.

Cash grants are delivered to beneficiaries through two modes of payment: through bank cash cards where the grants are withdrawn via Automated Teller Machines (ATM); and over-the-counter (OTC) transactions where the grants are provided directly to beneficiaries and in the form of cash. The payment delivery system is currently being managed by the Land Bank of the Philippines (LBP) as the program's authorized government depository bank (AGDB). In areas with available ATMs, beneficiaries are enrolled to have LBP cash card accounts and have their cash grants transferred to their cards/accounts during payout schedules every two months. In contrast, in areas with difficult or zero access to banks or ATMs – usually rural areas – LBP hires payment conduits such as rural banks and cooperatives to pay the beneficiaries over-the-counter. In OTC mode of payments, beneficiaries are assembled in a payout venue every two months where the conduits give out the cash grants due to them. In 2017, 44% of the total cash grants were delivered through cash cards, and the remaining proportion (56%) receive it through over-the-counter payments (DSWD, 2017).

2.2. Program Implementation

Compliance of beneficiaries with the program conditions are monitored through a process that is done jointly by the DSWD, the Department of Health through the local government units, and the Department of Education. The process is done every two months and starts with generating the list of monitored household members for each type of condition. The lists are printed in monitoring forms (i.e., Compliance Verification Forms) that are distributed to schools, health facilities, and DSWD staff in charge of reporting the compliance status of beneficiaries for the reference period. Compliance with education condition of at least 85% attendance every month is reported by the head of school or the assigned Pantawid Pamilya focal person for the school. Likewise, compliance with health conditions is monitored and reported by the health facility head and/or the program focal person in the facility. Monitoring of attendance to FDS is the responsibility of the DSWD municipal staff (Table 2.1). The compliance data is encoded and approved at DSWD regional offices, and later consolidated at the program's central information management system at the national level. The compliance data are used as basis for payment of grants, and in the identification of possible support interventions such as counselling for those who are non-compliant.

Table 2.1 Compliance verification frequency and person-in-charge by type of condition

	Monitored member	Conditionality	Frequency	In charge of monitoring
Education	3 - 18 years old	85% attendance per month	Monthly	School head/ focal person for Pantawid Pamilya
Health	Pregnant women	Prenatal Care Postnatal care within 6 weeks after childbirth	Once every two months	Head of health facility/ focal person for Pantawid Pamilya
	0 to 2 years old	Avail of immunization	Monthly	
	2 to 5 years old	Weight monitoring and nutrition counseling	Once every two months	
	6-14 years old enrolled in elementary		Twice every year	
FDS	Grantee/Parents	Attendance in FDS	Monthly	Pantawid Municipal staff

Source: DSWD Operations Manual (2015)

Average compliance rates reported by the program are high. Based on the DSWD administrative data, from 2010 to 2018, average compliance rate was 95% for health and education conditions. Compliance rates were generally above 90% for all health and education conditions, except for deworming of 6 to 14 years old where a dip in the proportions is observed starting 2016 (Table 2.2). The high compliance rates suggest that the beneficiaries of the program are continuously utilizing health services and sending their children to school.

Table 2.2 Average compliance rates in Pantawid Pamilya, 2010 to 2017

	Education			Health (0 to 5 years old)	Deworming (6 to 14 years old)	Health (Pregnant)
Year	3 to 5	6 to 14	15 to 18[a]			
2010	93.8	95.5	-	95.5	94.3	88.0
2011	93.3	94.7	-	95.5	95.8	93.7
2012	94.1	96.5	-	96.0	98.6	95.9
2013	93.6	96.8	-	95.3	99.5	95.8
2014	94.3	97.0	91.0	95.8	99.5	97.3
2015	95.3	97.2	94.0	95.7	99.3	96.1
2016	94.9	96.5	93.0	96.0	82.8	96.5
2017	95.5	96.5	93.5	97.0	82.4	96.6
2018[b]	96.6	96.6	94.5	97.5	78.5	96.8
Average	94.6	96.4	93.2	96.1	92.3	95.2

Source: DSWD

Notes: a – From 2008 to mid-2014, the program only covered children 3 to 14 years' old for education benefits; b – Data covers until November 2018

The compliance verification process relies on a system that requires beneficiaries to file forms updating basic household member information in the program administrative database. Without these updates, the compliance data of beneficiaries will not be collected completely and correctly, thereby affecting the payment of grants. The most crucial updates include those bearing information on the enrollment of the school-aged child, new births in the households, succeeding pregnancies, transfer of residence, transfer of school and health centers related to the monitoring of the compliance of beneficiaries. To illustrate, transfer of residence of the household should be filed as an update so program implementers are aware of their new address, and monitoring responsibilities will be delegated to the DSWD staff assigned in their new location, to the school head of the new school the children will transfer to, and to the head of the health facility to be visited by the household. Updates, however, are triggered by the forms submitted by beneficiaries to DSWD which are later encoded and approved in order to be reflected in the program database.

2.3. Program Modifications

Since its launch in 2008, the program has undergone several design modifications. These are summarized below as they are deemed relevant to the analysis.

2.3.1. Extension of age coverage

Initially, the program was designed to provide benefits for children 0 – 14 years old for five years. Following a key policy recommendation to expand age coverage, DSWD in 2014 decided to extend the education grants to children up to 18 years old. The rationale is to support beneficiary children to at least finish high school and thereby increase their chances of getting better-paying jobs and thus higher income in the future. Together with the extended coverage is an increase of the education grant from Php300 to Php500 in consideration of the bigger expenses in high school education and higher opportunity cost for older children.

This major policy decision was based on the result of the first impact evaluation (DSWD 2012) and analyses by Paqueo et al, 2013 and Reyes et al, 2013, suggesting that first, the gains of the program in education can be further sustained if children beneficiaries finish high school; secondly, children with high school diplomas have better income opportunities as they could earn 40% more in wages compared to those who have only completed elementary (Reyes et al, 2013); and lastly, extending the age coverage could also result to "much greater impact on the welfare of the poor" (Paqueo et al, 2013).

2.3.2. Change in exit policy

In addition to the coverage of older children 15 to 18 and the differentiation of grants for elementary and high school, the DSWD lifted the five-year limit of program participation. In the new program exit policy, beneficiary households cease to receive program benefits when the last of their (three) children beneficiaries in education graduates from high school or reaches 19 years old, whichever comes first.

2.3.3. Open selection of monitored children

In the first semester of 2015, parent beneficiaries were provided the opportunity to reselect children within the household who would be monitored under the education conditionality in an activity called "Open Selection". Prior to the Open Selection, selection of monitored

children within the household was done by a computer-automated system that prioritizes certain children from certain age groups. Upon registration, this system selects a maximum of three children per household by prioritizing the youngest children aged 6 to 14 first, then selecting the eldest from 3 to 5-year-old age group if the maximum number has not yet been reached.

The Open Selection was implemented by the DSWD in response to observations that some households have less than three children being monitored in the program (DSWD 2014). The activity served as a massive updating effort to correct the information of beneficiaries, especially those pertaining to the schooling information of children. The activity followed the recent introduction of the expanded age coverage in 2014 where the age eligibility of children beneficiaries was extended from 3 to 14 years to 3 to 18 years.

2.3.4. Rice Subsidy

Starting January 2017, the program added a third type of cash grant on top of the education and health grants that the beneficiaries receive. The provision of rice subsidy aims to increase the food consumption of the beneficiaries. The rice subsidy can be received by the households if they comply with either the education or the health and FDS conditionalities of the program.

3. Analytical Framework

3.1. Program Theory of Change

Pantawid Pamilya aims to break the intergenerational cycle of poverty[6] by promoting investment in human capital of children of poor households. The strategy is to encourage poor households to invest in the education and health of their children so the children can have a better chance of higher productivity and subsequently higher income in the future. The program recognizes that poor households are trapped in a poverty cycle. Children of poor families generally have lower educational attainment and poor health conditions because of their families' limited resources, limited access to economic opportunities of their parents, limited access to basic education and health services, and human capital investments too far removed compared to their immediate needs for survival. These children grow into adults with limited education and skills, and poor health conditions; they are less likely to be engaged in productive jobs; and, will most likely start their own families earlier than usual with the same poor living conditions, and limited access to resources and opportunities to escape poverty.

Pantawid Pamilya aims to break the poverty cycle through four pathways: (1) income augmentation through the cash grants; (2) education pathway; (3) health pathway; and (4) the FDS or social pathway. The fourth pathway is concerned with the social and behavioral

[6] Levy (2018), in his book, *Under-Rewarded Efforts: The Elusive Quest for Prosperity in Mexico*, notes that although CCTs – in the case of Mexico, the former *Oportunidades*, now *Prospera* – do generate improvements in health, education, and other socio-economic outcomes, these are not sufficient to address intergenerational poverty. This is due to the effect of the larger socio-economic environment composed of labor or entrepreneur-worker relations, taxation, and market conditions, termed by Levy as ***E(****L, T, M)*, which hinder poor workers from obtaining better and more stable jobs (Levy 2018, 279). Given this, Levy forwards that rather than relying primarily on CCTs and their complementary programs to serve as the primary poverty alleviation strategy of government, there should also be a shift in policy focus toward addressing stagnant growth and productivity in order to raise worker welfare and break the intergenerational transmission of poverty.

intervention of the program – the Family Development Sessions. Through the FDS, the beneficiaries are expected to have increased knowledge on parenting and awareness on family and social issues; improved parenting attitudes and practices on child rearing, finances, gender and marital relations, and increased valuation of education and health. In the medium term, beneficiaries are expected to actively engage in community development affairs and demand other/better services. The long-term outcome is for beneficiaries to experience improved subjective welfare and aspirations and social integration.

Ultimately, the beneficiaries of the program are expected to accumulate human capital that will enable them to have higher productivity and prepare them to have better access to opportunities that will improve their income and welfare. Through these outcomes, the program aims to lower the incidence of future poverty among program beneficiaries.

The achievement of program outcomes relies on several assumptions. One assumption is that the grant amount is enough to incentivize households to comply with program conditions and invest in human capital of their children. It also assumes that the supply conditions allow the realization of this goal, i.e. health and school facilities are available and accessible to the beneficiaries, and that the quality of services are acceptable. This also assumes that the grantees find FDS topics interesting, resource persons effective, time and venue convenient so that attendees to FDS can absorb information provided to them. Lastly, the program banks on favorable macroeconomic conditions, infrastructures, and institutions, among others to provide better employment and entrepreneurial opportunities. The nonfulfillment of these assumptions could hinder the achievement of expected program outcomes.

Although the TOC presents all expected outcomes, including those that are expected in the long-term or after a generation, the analysis will focus only on select short- and medium-term outcomes (Figure 3.1, Appendix 2).

It should be emphasized that there is no clear distinction between the pathways in terms of how they contribute to human capital development. In addition, it should also be recognized that outcomes usually are not derived from a single pathway alone. Nevertheless, the diagrams attempt to present the program theory and expected short-, medium-, and long-term outcomes through different pathways.

The provision of cash grants augments the income of households. The additional income is expected to smoothen the consumption of poor households particularly in terms of food and other basic needs, help lower the incidence of income poverty and hunger in the short term, lessen the effects of economic shocks, and, in the long term, contribute to higher savings and improve investment behavior of households.

The conditionalities on education and health, coupled with the incentive of receiving the grants, aim to encourage poor households to invest in the education and health of children and pregnant women. By requiring children to enroll in and attend school at least 85% of the time, education outcomes are expected to improve. Short-term outcomes include higher school enrollment and attendance rates while medium term outcomes relate to better performance in school such as increased promotion, completion, and transition rates and reduced repetition and dropout rates. The long-term outcome expected for the education pathway is that children beneficiaries will study until they finish high school or attain higher education levels. The better education

outcomes are expected to contribute to the productivity of these children when they enter the labor force as adults.

In terms of health outcomes, the program is expected to increase the utilization of preventive health care and improve the overall health-seeking behavior of beneficiaries. Short term outcomes include increased immunization, growth monitoring, and preventive health care visits of children. Because of the expected increase in food consumption of the households and regular growth monitoring, children are also expected to have better nutrition outcomes. Because of the increased immunization rate, decrease in incidence of vaccine-preventable childhood diseases is expected in the medium term. The long-term outcome is reduced morbidity and mortality of children. The program also expects improved cognitive skills of children, as proper child health and nutrition, especially among children under-five years old, are associated with better cognitive development (Nyaradi, et.al, 2013). In terms of maternal health, the program expects increased utilization of maternal health care services such as prenatal and postnatal care, facility-based delivery, and skilled birth attendance, among others. Because of increased utilization and better maternal health practices, reduced cases of pregnancy complications, neonatal, and maternal mortalities are expected in the longer term.

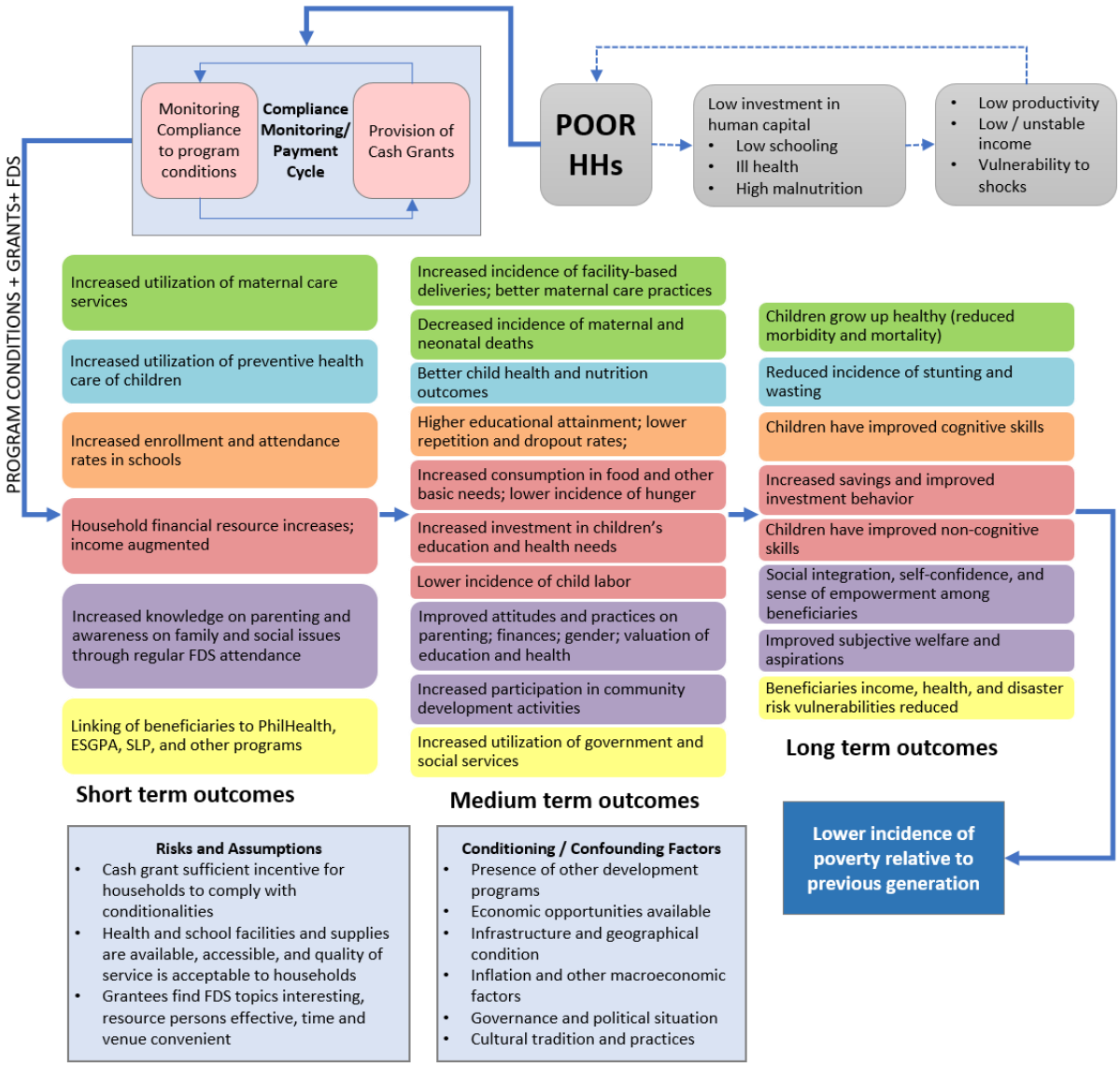
The fourth pathway is concerned with the social and behavioral intervention of the program – the Family Development Sessions. Through the FDS, the beneficiaries are expected to have increased knowledge on parenting and awareness on family and social issues; improved parenting attitudes and practices on child rearing, finances, gender and marital relations, and increased valuation of education and health. In the medium term, beneficiaries are expected to actively engage in community development affairs and demand other/better services. The long-term outcome is for beneficiaries to experience improved subjective welfare and aspirations and social integration.

Ultimately, the beneficiaries of the program are expected to accumulate human capital and that will enable them to have higher productivity and prepare them to have better access to opportunities that will improve their income and welfare. Through these outcomes, the program aims to lower the incidence of future poverty among program beneficiaries.

The achievement of program outcomes relies on several assumptions. One assumption is that the grant amount is enough to incentivize households to comply with program conditions and invest in human capital of their children. It also assumes that the supply conditions allow the realization of this goal, i.e. health and school facilities are available and accessible to the beneficiaries, and that the quality of services are acceptable. This also assumes that the grantees find FDS topics interesting, resource persons effective, time and venue convenient so that attendees to FDS can absorb information provided to them. Lastly, the program banks on favorable macroeconomic conditions, infrastructures, and institutions, among others to provide better employment and entrepreneurial opportunities. The nonfulfillment of these assumptions could hinder the achievement of expected program outcomes.

Although the TOC presents all expected outcomes, including those that are expected in the long-term or after a generation, the analysis will focus only on select short- and medium-term outcomes.

Figure 3.1 Pantawid Pamilya Program Theory



Source: Adapted from the official TOC prepared by the Impact Evaluation Technical Working Group (18 August 2017)

3.2. Hypotheses

The analysis for the third wave of evaluation focuses on hypotheses that fall under the domains of health, education, household welfare and access to government services, and other behavioral outcomes. These hypotheses address the short, medium- and long-term outcomes shown in the program Theory of Change. These hypotheses are presented in groups following the order of child development from womb to school.

3.2.1. Maternal Health

- *Hypothesis 1. Pantawid Pamilya promotes higher awareness and utilization of responsible parenthood interventions.* The first hypothesis tests whether Pantawid Pamilya increases awareness of responsible parenthood information and services. Because of increased utilization of maternal health services, beneficiaries are expected to have better access to responsible parenthood services and commodities.

- *Hypothesis 2. Pantawid Pamilya promotes utilization of maternal health care services.* Because of the program conditionalities for pregnant women and promotion of better maternal health practices via the FDS, Pantawid Pamilya beneficiaries are more likely to avail of pre- and postnatal services, to deliver in health facilities and to seek assistance from skilled health professionals.

- *Hypothesis 3. Pantawid Pamilya mothers experience less problems during pregnancy and delivery.* Provided that Pantawid Pamilya pregnant women have accessed prenatal care and have better knowledge, attitude, and practices (KAP) on maternal health, pregnancy and delivery health problems are expected to be lower among pregnant women from beneficiary households.

3.2.2. Child Health

- *Hypothesis 4. Pantawid Pamilya increases utilization of health care services by children.* Because of the program conditionalities and promotion of better child care practices via the FDS, Pantawid Pamilya children beneficiaries are expected to have higher utilization of health care services such as preventive health care visits, growth and weight monitoring, immunization, deworming, and micronutrient supplementation.

- *Hypothesis 5. Pantawid Pamilya participation improves child care practices of parents.* Through the FDS, and increased knowledge on child care gained from consultations in health facilities, we expect improvement in child care practices of parents. This covers time spent on child care, food hygiene and feeding practices, child disciplining, awareness of the rights of the child, among others.

- *Hypothesis 6. Pantawid Pamilya children have better nutrition and health outcomes.* Pantawid Pamilya is expected to improve nutritional outcomes of children as a result of increased food consumption, better child care and food hygiene practices, regular growth monitoring, and deworming. Likewise, incidence of common illnesses and

vaccine-preventable diseases is lower among Pantawid Pamilya children beneficiaries than their counterparts because of higher immunization rates, better child care practices, growth monitoring, regular preventive health facility visits, and improved nutrition.

3.2.3. Education and Child Labor

- *Hypothesis 7. Pantawid Pamilya increases school participation of children.* Because it is one of the direct program conditionalities, school enrollment and attendance rates are expected to be higher among Pantawid Pamilya children. It is expected to raise enrollment rates in pre-school, which are usually low, and among high school-aged children who are most prone to drop out of school.

- *Hypothesis 8. Pantawid Pamilya results in improved education outcomes of children.* Testing this hypothesis determines whether Pantawid Pamilya beneficiaries have better education outcomes than their counterparts as a result of higher valuation in education and increased school participation (increased enrollment and attendance of children in school). This hypothesis will explore whether Pantawid Pamilya beneficiaries have lower drop-out rates and are enrolled in age-appropriate education levels.

- *Hypothesis 9. Pantawid Pamilya reduces the incidence and time spent on child labor.* Because of higher school enrollment and attendance rates of children, it is expected that incidence of child labor is reduced. Children are more likely to spend time in school than be engaged in economic activities.

- *Hypothesis 10. Pantawid Pamilya promotes higher investments on education.* This hypothesis tests if Pantawid Pamilya beneficiaries spend more on the education of their children compared to non-Pantawid households. Through the conditionality and messages delivered in the FDS, the beneficiaries are expected to put more value in their children's education through higher school-related expenditures compared to non-beneficiaries.

3.2.4. Household consumption and income

- *Hypothesis 11. Pantawid Pamilya increases household consumption and income.* Because *Pantawid Pamilya* provides additional income to the households, it is expected that beneficiaries would have higher consumption and income than their counterparts, as well as lower incidence of hunger.

- *Hypothesis 12. Pantawid Pamilya does not encourage dependency.* Program beneficiaries are not expected to have lower labor force participation rate and reduced time spent in work compared to non-beneficiaries.

- *Hypothesis 13. Pantawid Pamilya increases access to social services and increases utilization of government services and benefits.* Because of the platform that the program provides for beneficiaries to access other social protection programs, and the information provided to beneficiaries regarding available government services and

benefits that they can avail, beneficiaries are expected to have better access and more of them would have availed of government services.

3.2.5. Other behavioral outcomes

- *Hypothesis 14. Pantawid Pamilya increases participation in community development activities.* Because beneficiaries are enabled through FDS to become more aware of their civic rights and duties and become more empowered as women or as representatives of marginalized groups, they are expected to participate more in community development activities.

- *Hypothesis 15. Pantawid Pamilya promotes better outlook of their current situation and future of their children.* Because of the improvement of welfare of households, beneficiaries are expected to have a better outlook for their families and the future of their children.

4. Methodology

4.1. Regression Discontinuity Design

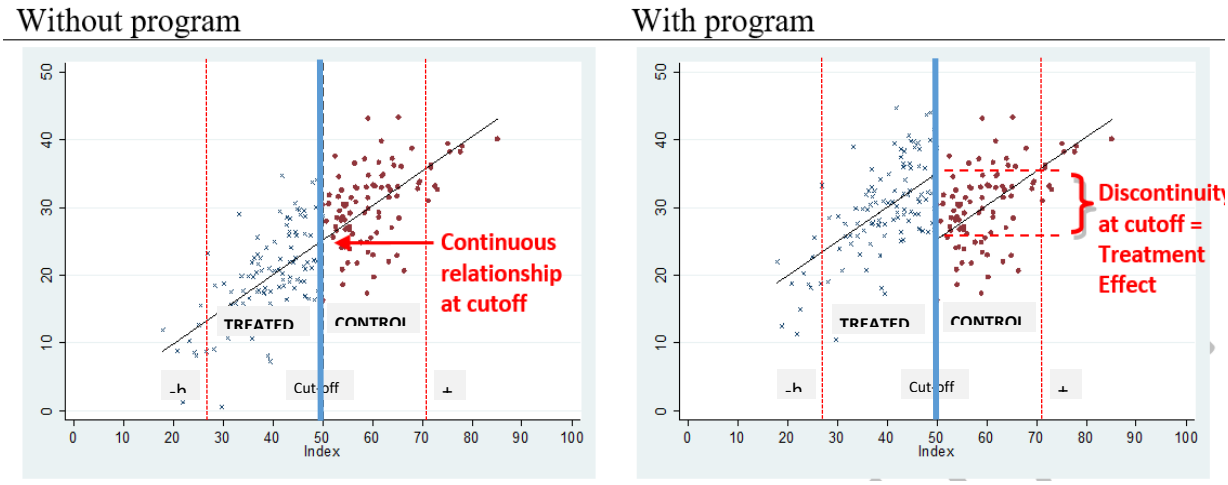
Regression Discontinuity Design (RDD) is a quasi-experimental method that measures program impact based on observed discontinuity of the outcome of interest at the cutoff of a running variable that determines treatment assignment. This was first introduced in Thistlewaite and Campbell (1960) as an alternative method in program evaluation. The review of the literature on recent developments and practical guides on the method are described in Lee and Lemieux (2010), Imbens and Lemiuex (2008), Cattaneo, Idrobo and Titiunik (2018a) and Cattaneo, Idrobo and Titiunik (2018b). In the case of Pantawid Pamilya, households are ordered based on the proxy means test (PMT) scores that estimate the income of the households. Eligibility of households was determined by comparing the PMT score with the official provincial poverty thresholds. Households below the poverty threshold with children aged 0-18 years old or pregnant household members are eligible to become program beneficiaries.

Regression discontinuity assumes that near the cutoff, observations below or above the eligibility criteria are comparable and assignment to treatment or comparison group is considered as if done randomly. This means that before the intervention, observations just below the cutoff are similar and compare well to those just above the cutoff. Without the intervention, it is expected that the values of the outcome variables run smoothly and continuously around the cut off as the running variable changes. Therefore, a large jump in an outcome variable at the cutoff after the intervention has been implemented can be causally attributed to the intervention (Figure 4.1).

In RDD, program impact is commonly measured using local linear regressions confining the analysis of program impact to those observations that are near the cutoff in order to implement the similarity assumption of observations just below and just above the cutoff. In practice, the observations considered in the estimation are optimally determined by balancing bias and

variance based on the characteristics of the data. In terms of internal validity, RDD performs next only to RCT, but its primary weakness is that the results are only applicable for observations sufficiently near the cutoff or threshold.

Figure 4.1.Regression Discontinuity Design



Source: Impact evaluation concept note, World Bank

4.1.1. Estimation Strategy

The analysis employed sharp and fuzzy RDD in the estimation of program impacts. In sharp RDD, there is perfect or near perfect compliance to the treatment assignment. This means that all households eligible to be program beneficiaries (i.e., those with income below the poverty thresholds) participated in the program while those who are not eligible did not receive program benefits. In the analysis, the sharp RD design considers all households below the cutoff (poverty threshold) as treated regardless if they actually received the program or not, while those who are on or above the threshold are part of the control or comparison group. This analysis reports intent-to-treat (ITT) effects. ITT presents the unbiased effect of the intervention among all eligible households regardless of their adherence to the treatment assignment.

On the other hand, fuzzy RDD reports the treatment effects on the treated (TOT) or the effect of the program considering the compliance to the treatment assignment. For example, some households who are eligible to the program may have chosen to waive their benefits and not participate in the program resulting in imperfect compliance to the treatment assignment. Similarly, households who are not supposed to be eligible are able to maneuver to receive the program benefits. To address the issue of noncompliance, an instrumental variable approach is used. The administrative information of the actual receipt of Pantawid benefits determines who got the benefits while the treatment assignment based on the eligibility criteria is used as the instrument.

4.1.2. Main Analysis

The main analysis of the study measures the program impact using local linear regression models. To illustrate. the expected program impact in a sharp RD is estimated by the equation:

$$y^- - y^+ = \lim_{x \uparrow \bar{x}} E[Y_i | X_i = x] - \lim_{x \downarrow \bar{x}} E[Y_i | X_i = x]$$

For the fuzzy RD the estimating equation is as follows:

$$\frac{\lim_{x \uparrow \bar{x}} E[Y_i | X_i = x] - \lim_{x \downarrow \bar{x}} E[Y_i | X_i = x]}{\lim_{x \uparrow \bar{x}} E[T_i | X_i = x] - \lim_{x \downarrow \bar{x}} E[T_i | X_i = x]}$$

where *Y* is outcome of interest, *X* is the running variable with cut-off or threshold *x*, and *T* is the treatment assignment variable.

The analysis used the Stata package *rdrobust* developed by Calonico, Cattaneo, and Titiunik in 2014, and later upgraded by Calonico, Cattaneo, Farrell and Titiunik in 2016. The command allows for data-driven bandwidth selection and cluster-robust options for variance estimation, as well as bias correction procedures for the RD estimator resulting in more robust inference. The impact estimates and the significance levels for both sharp and fuzzy RD estimation presented in this report are based on this command.

Means of outcomes for the treatment and comparison groups were computed by getting the predicted values of the outcome at the threshold using standard least-squares regression that replicate the conventional estimates of *rdrobust*. The base estimation model for sharp RD is:

$$Y_i = \beta_0 + \tau T_i + \beta_1 \bar{X}_i + \beta_2 T_i \bar{X}_i + \beta_{\mathrm{n}} \mathbf{z} + \varepsilon_i$$

where $\bar{X}$ is the running variable; *T* is the treatment assignment; and z are other covariates included in the model. The equation is estimated within the bandwidth *h* determined by rdrobust. For fuzzy RD, two-stage least squares estimation was used with the with the treatment assignment as the instrument of the actual receipt of Pantawid benefits.

The impact of the program on each outcome is estimated within three sets of bandwidths: (1) Coverage error rate (CER)-optimal bandwidth; (2) Mean square error (MSE)-optimal bandwidth; and (3) full sample bandwidth. The first two bandwidths were derived by the Stata package *rdrobust*, while the third covers the full sample of observations in the dataset. The discussion in the report is mainly based on the CER-optimal bandwidth as it is observed to be generally the narrowest among the three bandwidths and thus offers the least bias in the estimates. In some instances, MSE-optimal and full sample estimates are also discussed, especially when estimates are consistent in magnitude across the bandwidths. Consistency of estimates across the bandwidths reveal robustness of estimates.

The PMT scores were re-centered at the cutoff to simplify the interpretation of results given that the cutoff (poverty threshold) varies per province. Municipal dummies were included in the model to account for municipal fixed effects and the variance estimates were adjusted for

barangay cluster effects. Supply covariates and baseline covariates were also included in the models primarily to improve the precision of estimates[7].

4.1.3. Subgroup Analysis

Aside from the main analysis using sharp and fuzzy RD, sub-group analyses were also performed. However, since sampling was not designed for differential impact analysis, there were not enough observations to produce estimates for some outcomes and bandwidths.

The following grouping variables were used:

i. Urban or rural classification of barangay
ii. Sex of child
iii. Monitoring status of beneficiary child

Subgroup analyses were performed by estimating the impact of the program separately on subsets of the sample. Differences between impact estimates for the subgroups were tested using z-test of equality of coefficients:

$$Z = \frac{\tau_1 - \tau_2}{\sqrt{(se_1)^2} + \sqrt{(se_2)^2}}$$

where: τ_1 = coefficient (program impact) on the first subgroup
τ_2 = coefficient (program impact) on the second subgroup
se_1 = standard error of the impact estimate on the first subgroup
se_2 = standard error of the impact estimate on the second subgroup

4.1.4. Validation of assumptions

The validity of program impacts detected from an RDD analysis relies on three assumptions: (1) beneficiaries should not have any influence on the treatment assignment; (2) households to the left and right near the cutoff are comparable in terms of key baseline characteristics; and (3) outcomes, at the baseline, should not show discontinuity at the cutoff. Nonfulfillment of these assumptions jeopardizes the credibility of estimates. Validation tests were conducted to check for these issues.

Discontinuity tests were performed on the: (i) running variable; (ii) available baseline covariates expected to affect the outcomes of interest; and (iii) available outcomes indicators in the baseline. The validation tests primarily used information from the *Listahanan* data used for identifying the program beneficiaries in 2008 to 2010.

- Discontinuity of the running variable at the threshold. The distribution of households on the running variable (PMT) should be checked for possible manipulation of the assignment to the program by the beneficiaries. Marked lumping of observations near the cutoff may indicate that the households have a direct influence on the assignment variable.

[7] Changes in precision of models were noted in the width of the confidence intervals. Reduction in the confidence interval means increase in precision of the model,

- Discontinuity of baseline covariates at the threshold. Baseline characteristics that are expected to affect the outcomes of interest should not show any discontinuity at the threshold, as these are variables measured prior to the intervention.

- Discontinuity of outcome indicators at the threshold at the baseline. There should be no discontinuities in the outcome indicators at baseline as the intervention has not been implemented yet. Discontinuity at baseline would invalidate the program impacts based on discontinuities found after the intervention has been implemented.

The full results are presented in Appendix 6.

4.1.5. Limitations of RDD

The main limitation of an RD design is its low external validity given that estimation is "local" because it considers only observations near the eligibility threshold. The impact estimated, therefore, cannot be taken as the average impact among the beneficiaries, but rather the average among the observation units near the eligibility threshold. In the context of Pantawid Pamilya, this means that the RD design will estimate the impact of the program among poor households with the highest PMT scores, and those with lowest PMT scores among the non-poor households or those that are considered 'near poor'. In contrast, an RCT is able to generate an estimate of the average impact of the program among all beneficiaries including the poorest among them. Unfortunately, at the current level of coverage of the program, an RCT design is no longer an option for evaluating the whole program.

This limitation of the RD prevents the evaluation to say something about the differential impacts of the program on the poorer segments of beneficiaries. If it is true that the program has higher impact among poorer households as shown in some studies by Reyes et al. (2013) and Tutor (2014), then impact estimates in this evaluation should be considered under-estimates of the true impact. In addition, it is likely that the evaluation may find no impact of the program at the threshold, even though there may be impact if observations farther away from the threshold were studied.

During the planning stage of the IE Wave 3, attempts were made by the technical working group to look for options to study the effect of the program on poorer segments of the beneficiaries such as extrapolations using multiple cutoff approach in RDD. However, these attempts were unsuccessful as variation in the poverty thresholds per province were merely driven by nominal differences in prices, and no real differences in the thresholds were present to allow extrapolation.

Nonetheless, the use of a Regression Discontinuity design is advantageous because it has high internal validity, next only to RCT. It also requires weaker assumptions compared to other non-experimental designs such as matching, difference-in-difference, and instrumental variable analysis.

4.2. Data Source and Sampling

4.2.1. Sampling

IE Wave 3 covers households with at least two years of program exposure or those registered in the program from 2008 to 2014. At the time of data collection, households have already been exposed to the program for a minimum of two and a maximum of nine years.

Municipalities covered in the RCT subsample were excluded from the pool of potential sites. To ensure that there will be enough households and barangays, only municipalities with at least 20 barangays having at least 30 households were retained. From the 664 municipalities that satisfied these criteria, 30 municipalities were drawn making sure that 10 municipalities come from each of the three major island clusters. In total, 180 barangays with 38 to 39 households were the target sample for the data collection. Using IE Wave 2 data, power calculations by Cattaneo and Vasquez-Bare (2017) found that the sample has enough power (80%) to detect program impacts at the following effect sizes for the corresponding primary outcome indicators of the program (Table 4.1).

Table 4.1 Power calculations for IE Wave 3 RDD sample

Outcome indicator	Standardized Effect size
Household total per capita consumption	0.12
Prenatal check-up by a skilled health professional	0.10
Weight monitoring of children age 0 to 2 years	0.15
Receipt of deworming pills of children age 6 to 14 at least twice in the past year	0.15

Source: Cattaneo and Vasquez-Bare, 2017

Consistent with the RDD, households were sampled based on how near they are to the cutoff or poverty thresholds. That is, households nearer to the poverty threshold have a higher probability of being drawn in the sample. This allows sampling to maximize the internal validity of the RDD.

Treatment and comparison group assignment in the sample was based on their estimated annual per capita income or proxy means test (PMT) scores and the corresponding provincial poverty thresholds used in targeting.

- **Treatment:** Households with PMT scores below the provincial poverty threshold / cutoff score for eligibility and have children 0-18 years old or pregnant household member at the time of targeting were considered the treated group.
- **Comparison:** The comparison households consisted of households in the same barangay as the treatment households with PMT scores on or above the poverty thresholds and have children 0-18 years old or pregnant household member at the time of targeting.

As with the original sample households, replacement households were selected based on their proximity to the cutoff or threshold. If some of the households selected for the sample could not be found for a given barangay, the household with PMT score nearest the cutoff is selected next for interview.

4.2.2. Survey Instruments

The primary source of data for IE Wave 3 is the survey conducted specifically for the study by the Social Weather Stations. The data collection occurred from November 2017 to January 2018.

There were six instruments used in the IE Wave 3 survey. These include four questionnaire modules for household interviews, a module for health facilities, and another module for barangay officials.

Module A is the main household questionnaire that covered information on various socio-economic characteristics and program participation. The module consisted of three parts with different target respondents for each part. Part 1 was answered by the household head and covered questions on the household roster information, labor participation of household members, residential characteristics, availment of social services and other government services by the household members, and household experience on economic difficulties and shocks. Part 2 covered questions on income and expenditures of the household and should ideally be answered by the spouse of the household head or the person most responsible in managing the household's finances. Part 3 is the functional literacy assessment module. It should be answered by all respondents of the modules who were 10 years old or over and have not completed high school education at the time of the survey.

Module B captured reproductive history, contraceptive use, and the knowledge, attitude, and practices of women 15-49 years old who have had a partner in the past – or women 50 years old and over who were pregnant at the time.

Module C was dedicated for school-aged household members (6-20 years old) and gathered data on school participation of children 6 to 20 years old and child labor among children 10 to 20 years old. Part 1 (on schooling information) was answered by the mother or caretaker of the child, while Part 2 (on child labor) was answered by the child of interest.

Module D captured information on health and nutrition, as well as anthropometric measurements of 0 to 5-year-old children. The ideal respondent for this module was the mother or caretaker of the child.

Module G collected information on the characteristics, catchment population, resources (supplies and personnel) of health facilities. It also asked questions that aim to assess the knowledge and perceptions of the health facility respondent on Pantawid Pamilya. The ideal respondent was the head of the health facility or his/her designated representative. This information was collected for all Rural Health Units (RHUs) and Barangay Health Stations (BHS) reportedly visited by the beneficiaries according to the household survey.

Module H collected data on barangay characteristics and other supply-side indicators. The ideal respondent was the Barangay Captain or other officials who could provide the needed information, e.g. Barangay Secretary.

Relative to the instruments of the IE Wave 2, there were new questions asked in IE Wave 3. These include questions on: income of the households; access of households to government

services; coping mechanisms during economic difficulties; community involvement and social integration; access to information (e.g. printed, TV, radio, internet, etc.); perception of non-4Ps beneficiaries of the program (e.g. targeting, provision of financial assistance to 4Ps households); assessment of functional literacy; questions on food hygiene and positive disciplining practices of mothers; locus of control test statements; decision-making/arguments in the household; participation of child in extracurricular activities and receipt of awards; questions on grit and parent-child relations; incidence of vaccine preventable diseases; feedback on the quality of health service received (last visit) and reason for satisfaction/ dissatisfaction; perception of frequency of violence and trust within the community, among others.

During the data collection, the field interviewers were not aware of the treatment and control assignments of the sample households.

4.2.3. Description of the sample

Thirty (30) municipalities (10 municipalities per major island cluster) were selected out of the 1,627 cities and municipalities covered by the Pantawid Pamilya program (Appendix 3). Six villages per municipality were drawn, totaling to 180 villages across 25 provinces. A total of 6,775 households from 180 villages were covered in the study, with around 38 households interviewed per village.

As earlier discussed, IE Wave 3 measures both intent-to-treat (ITT) effects and treatment-of-the-treated (TOT) effects through sharp and fuzzy RD estimations, respectively. In sharp RD, treatment assignment is based strictly on the household's distance or position relative to the eligibility cutoff or the provincial poverty threshold. Households below the poverty threshold were assigned to the treatment group, regardless of their self-reported beneficiary status. Households on or above the poverty threshold with school-aged children or a pregnant household member were assigned to the comparison group. Meanwhile, in Fuzzy RD, compliance to the treatment assignment is considered and used to correct the identification of the impact estimates. For this reason, it is important that the actual receipt of benefits of the households and the corresponding compliance or cross-over rates with regard to the original treatment assignment is examined.

Table 4.2 presents treatment assignment and beneficiary status according to the program administrative data. Beneficiary status is defined as receipt of program cash grants at least once since the start of the program in 2008 up to the date of data collection. This criterion for beneficiary status was adapted instead of the reported beneficiary status of the respondent households during the survey because of minor inconsistencies in the data. From the table, a total of 511 households (14.8%) have never received cash grants from the program, despite being below the poverty threshold. On the other hand, 82 (2.5% of the sample) received program benefits despite being above threshold at the time of the survey.

Table 4.2 Distribution of sample according to beneficiary status

***Listahanan* 1 Category**	**Never paid**		**Paid at least once[1]**		**Total**
Above Threshold / Ineligible	3,243	(0.975)	82	(0.025)	3,325
Below Threshold / Eligible	511	(0.148)	2,939	(0.852)	3,450
TOTAL	3,754	(0.554)	3,021	(0.446)	6,775

Note: Paid at least once during from 2008 to Feb 2018 according to DSWD data

Eligibility status of the households was based on poverty threshold and PMT score in *Listahanan* as of 2011 while the beneficiary status was based on the program administrative data as of 2017 to 2018. The 82 households that were ineligible, meaning their PMT score was above or equal to the threshold in 2011 may have been enrolled in the program through the program's grievance process in the succeeding years. In this process, a non-beneficiary may appeal for inclusion in the program. The household is assessed using the same PMT model used in targeting and may be registered once found eligible. However, since the data on *Listahanan* used is based on the baseline values, the updated PMT values and categories are not reflected. On the other hand, the 511 households who were eligible as of 2011 but were not beneficiaries per program data may include households who waived their program benefits or may still be waiting for their first cash grants but are unable to do so due to various reasons (e.g., no availability payment)

The study included Pantawid households, whose registration in the program ranged from 2008-2014. At the time of data collection (November 2017-January 2018), household program exposure ranged from 2-9 years. In total, there were 3,450 households in the treatment group and 3,325 households in the comparison group that were included. Household composition of treatment and comparison groups was comparable. Expectedly, estimated income (based on 2008 PMT score) was relatively lower for the treatment group (Table 4.3).

Table 4.3 Household composition and estimated income of households at baseline, by treatment assignment

	Treatment	Comparison	All
Total number of households	3,450	3,325	6,775
Average number of household members	5.17	5.10	5.13
Average number of HH members by age group:			
0 to 5 years old	0.6	0.59	0.6
6 to 14 years old	1.28	1.21	1.25
15 to 18 years old	0.5	0.47	0.48
19 to 60 years old	2.48	2.49	2.48
Total no. of WRA (aged 15-49 years)	2,646	2,494	5,140
Ave. estimated income based on PMT	PHP 14,466	PHP 15,596	PHP 15,017

The formal tests on the discontinuity of baseline characteristics of the treatment and comparison households are presented in Appendix 6. These tests were done to identify possible threats in the identification strategy.

In addition, a brief description of the supply conditions in the study areas are presented in Appendix 4. The data used came from interviews of health facility heads and barangay captains interviewed in Module G and Module H discussed above. This information on the supply conditions were also used as additional control variables in the impact estimation models.

5. Results

This section presents and discusses the estimation results of this study. The results of the estimation are presented under four groups of outcome indicators: (i) health; (ii) education; (iii) household welfare; and, (iv) other socio-behavioral outcomes.

The tables present the estimated impact of the program using three types of bandwidths – CER-optimal, MSE-optimal, and the full sample bandwidth. The first two bandwidths were data-derived based on the procedure and software developed by Calonico, Cattaneo and Titiunik (2014), while the third used all the sample observations in the analysis. The discussion of the results, however, is based mostly on the results using the CER-optimal bandwidth as it is generally the narrowest among the three bandwidths and offers the least bias in the estimation. Estimates generated using the MSE bandwidth were also lightly discussed to supplement the CER findings, while sample bandwidth estimates were reported mostly to demonstrate robustness.

In the tables below, impact refers to the estimated program impact at the threshold; *se* is the standard error of the estimated impact; non-Pantawid is the predicted mean of outcome variable for non-treated observations (comparison group) above the poverty threshold under the Sharp RD estimation. To arrive at the predicted mean for the predicted mean of the treated or Pantawid group, the estimated impact should be added to the predicted mean of the non-Pantawid group. It must be noted that these values are predicted at the threshold based on the estimation model and is not the actual mean of the sub-sample of the comparison and treatment groups. The actual means and simple comparison of means between Pantawid and non-Pantawid are presented in Appendix 7 for reference. The predicted means are only presented for the sharp RD tables as means for the fuzzy RD are adjusted for participation rates or the actual receipt of benefits.

For some binary outcomes (i.e., outcomes that are expressed in percentages or incidence), the predicted means may exceed 100% or have a negative value. This is because the estimation used linear probability model in estimating impact, which means the predicted means are unbounded and may exceed 0 or 100. The estimated impact, however, remains valid as it reports the difference between the predicted means of the treated and the untreated group[8].

Both sharp and fuzzy RD estimates are presented. Generally, the results of the fuzzy estimation are consistent with the sharp RD in terms of direction. As expected, the fuzzy estimates are also generally higher in magnitude than that of the sharp RD. This is because the fuzzy RD impact is measured with consideration of the actual program take-up rates among the eligible households.

In addition to the main results, subgroup analyses for urban or rural location, sex, and monitoring status are also discussed. The full results are presented in the appendices. Comparisons are also made between the predicted means from the estimation with available statistics based on other data sources such national surveys. Differences in the definitions and other possible nuances in the comparison are mentioned. The most important thing to note

[8] For comparison, estimates using logistic regression models may be generated upon request. However, it must be noted that the optimal bandwidths were derived based on a linear function, and therefore may not be appropriate for non-linear model estimations.

however is that RDD estimates are local and do not represent the average behavior of the beneficiaries or poor households in general.

5.1. Impact on Health

The succeeding tables present the estimates of program impact on health outcomes of children and mothers. The outcome indicators include utilization of modern family planning (FP) interventions, utilization of maternal and child health services, nutrition outcomes, and child care practices and health-seeking behavior of the households.

Subgroup analysis based on the urban-rural location of the households was performed for all health outcomes, while subgroup analysis by sex was only performed for child health indicators. Analysis by monitoring status of the children and pregnant women was not pursued as matching with the list of monitored children showed that only a very small percentage of the sample are monitored by the program at the time of data collection. Out of the 2,049 children aged 0-5 years old in the treatment group, only 91 (less than 1%) were monitored in the program for compliance with health conditionalities. Out of the 122 currently pregnant women in the treatment group, no one was being monitored by the program. The very low proportions of monitored children and pregnant women in the sample did not allow successful estimation for health outcomes among monitored and non-monitored HH members.

5.1.1. Hypothesis 1. Pantawid Pamilya promotes higher awareness and utilization of responsible parenthood interventions.

Findings show that among women of reproductive age (WRA)[9] in the sample, Pantawid women are aware of more types of modern family planning (FP) methods compared non-Pantawid WRA. Both Pantawid and non-Pantawid WRA women are aware of at least one modern FP method (99 to 100%), but on the average, Pantawid beneficiaries in the sample are aware of around seven types of modern FP methods compared to around six types among non-Pantawid beneficiaries. This result is consistently observed in both fuzzy and sharp RD estimates. In the second impact evaluation of the program, high awareness levels for modern FP methods was also observed of beneficiary and non-beneficiary WRA (99%). Unfortunately, the 2nd impact evaluation study did not include the number of FP methods the respondents are aware of.

The results also show that the program encourages trial use of modern family planning methods by 5.3 percentage points compared to non-Pantawid beneficiaries (75%) in the sharp RD estimation and up to 7.5 percentage points based on the fuzzy RD results. This is also mirrored in the count of modern FP methods ever used by the respondents, where slightly higher count of modern FP method types was ever used by Pantawid beneficiaries. However, this result is only statistically significant in the fuzzy RD estimation. A higher proportion of Pantawid beneficiaries (4 to 5 percentage points higher) reported being current users of modern FP methods; but, the difference between Pantawid and non-Pantawid is only statistically significant if estimated using the full sample. In the narrower bandwidths, the estimates are not significant but are around the same magnitude as the full sample estimate. The same result is observed for contraceptive prevalence rate (CPR) which was computed among women currently in-union (i.e., married, living together). Although the CPR among Pantawid beneficiaries is higher by 5 to percentage points compared to non-Pantawid (51% Pantawid, 46% Non-Pantawid), the difference is only significant if estimated using the full sample of

[9] Women age 15 to 49 years old or pregnant women at the time of interview regardless of age

observations in both sharp and fuzzy RD estimations. Similar results for trial use of modern FP methods were observed in the second wave of impact evaluation.

The predicted proportions on awareness of family planning methods compare well with the estimates of the most recent National Demographic Health Survey (NDHS) in 2017. The NDHS estimated 99% awareness of modern contraceptive methods among the lowest wealth quintile of respondents. Meanwhile, contraceptive prevalence rate of modern methods is estimated at 43% among the lowest wealth quintile which is only slightly lower than the estimated mean of the sharp RD estimation.

In terms of urban-rural location, findings show positive impact on the proportion of WRA from rural municipalities aware of at least one modern family planning method while no significant impact was observed in urban areas. It must be noted however that predicted proportions are high for treatment and comparison in both rural and urban locations, i.e., from 98 to 100%. In terms of other outcomes such as the count of modern FP methods aware of, proportion of WRA who ever used modern FP methods, and count of modern FP method ever used, significant positive program impact was observed for urban areas only. This discrepancy between urban and rural residents may be influenced by possible differences in accessibility of modern FP methods between the two types of residence. No significant differences in impacts are noted for other indicators related to family planning.

Table 5.1. Awareness and use of Family Planning methods

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Awareness of any modern RH method	impact	-0.47	-0.19	0.08	-1.12	-0.61	0.09
	se	0.52	0.45	0.26	0.74	0.65	0.32
	non-Pantawid	99.71	99.56	99.52	100.00	99.74	99.52
	number of obs.	2,638	3,223	5,138	2,091	2,608	5,138
Count of modern RH methods aware of	impact	0.41*	0.39**	0.27**	0.51*	0.48**	0.32**
	se	0.21	0.19	0.10	0.27	0.23	0.12
	non-Pantawid	6.29	6.28	6.31	6.27	6.26	6.30
	number of obs.	2,188	2,737	5,138	2,126	2,645	5,138
Ever use of any modern RH method	impact	5.30*	4.81*	2.25**	7.46*	6.65*	2.71**
	se	2.94	2.69	1.70	3.94	3.58	2.04
	non-Pantawid	75.40	75.59	76.70	74.69	75.07	76.61
	number of obs.	2,480	3,039	5,117	2,059	2,575	5,117
Count of modern RH methods ever used	impact	0.11	0.10	0.07	0.19*	0.17*	0.09
	se	0.07	0.06	0.04	0.11	0.10	0.05
	non-Pantawid	1.27	1.28	1.29	1.24	1.25	1.29
	number of obs.	3,238	3,828	5,138	2,069	2,587	5,138
Current users of modern RH method	impact	4.68	4.77	4.20*	4.76	6.33	5.05*
	se	3.86	3.49	2.04	5.06	4.59	2.46
	non-Pantawid	43.50	43.31	42.74	43.87	42.98	42.59
	number of obs.	2,535	3,125	5,138	2,262	2,811	5,138
Contraceptive prevalence rate	impact	4.59	5.43	4.13*	4.30	6.63	4.92*
	se	4.02	3.64	2.19	5.14	4.65	2.61
	non-Pantawid	47.42	46.90	46.66	47.93	46.71	46.51
	number of obs.	2,230	2,726	4,594	1,980	2,469	4,594

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

The results indicate that although the program was able to encourage use of modern family planning methods, there is not enough evidence to confirm sustained use of modern FP methods among Pantawid beneficiaries as there is no strong impact observed on current use. This is consistent with the findings of the second impact evaluation. The higher awareness of modern FP commodities may be due to increased utilization of maternal health services, and visits to health facilities where they can have access to responsible parenthood interventions such as family planning counseling and provision of free FP commodities. This may also due to their attendance to the Family Development Sessions where reproductive health and family planning are discussed. Still, it must be noted that use of modern FP methods can be influenced by other factors such as costs, perceived or real health risks, underlying fertility behavior, decision-making between couples, and others. Results of the urban-rural disaggregation of the analysis point to possible differences in accessibility of modern FP methods as more outcomes returned significant impact in urban areas.

5.1.2. Hypothesis 2. Pantawid Pamilya promotes utilization of maternal health care services.

Prenatal care

The study finds a positive program effect on availing of prenatal checkup at least four times among pregnant beneficiaries, but no conclusive result was observed on availing of prenatal check-up at least once (Table 5.2). For both sharp and fuzzy RD estimations, at slightly higher proportion of Pantawid pregnant women avail of at least one prenatal checkup during their pregnancy; but this result is only statistically significant when estimated using the full sample of WRA respondents. According to the fuzzy RD results within the CER bandwidth, Pantawid beneficiaries are more likely to avail of at least four prenatal checkups during pregnancy by up to 12 percentage points compared to non-beneficiaries. A much lower impact estimate that is not statistically significant was noted in the sharp RD within the CER bandwidth at around 7 percentage points. The estimates are only statistically significant in both Fuzzy and Sharp RD if using the full sample of observations (+5pp and +6 pp, respectively).

The observed positive program impact on prenatal visits is a welcome finding since the Department of Health (DOH) recommends at least four prenatal check-up visits during pregnancy[10]. Likewise, the program conditionality requires pregnant women to avail of a prenatal check-up at least once during each trimester of the pregnancy. While no significant difference in one-time prenatal care visits was observed, it must also be noted that predicted proportions for those in the narrowest bandwidth are already very high at 97% to 99% for both beneficiaries and non-beneficiaries. In the second wave of impact evaluation, there was no significant impact measured on availment of prenatal care services and proportions were similarly high. Understandably, when certain behaviors or outcomes are almost universal for the non-beneficiaries, it is difficult for the program to have a larger or significant marginal increase in proportions among its beneficiaries.

In terms of availing of prenatal checkup from a skilled professional (i.e., doctor, nurse, or midwife), there is no significant difference between the utilization rates of Pantawid and non-Pantawid pregnant women. The same is true for availment of prenatal care in a health facility.

[10] The WHO has since updated its recommended number of prenatal contacts to 8 in the duration of a woman's pregnancy (WHO 2016).

Again, the proportions are already very high and almost universal even in the raw sample means (up to 96%) of both indicators.

Using the 2017 NDHS data, we estimate that 76% of poor pregnant WRA attend at least four prenatal checkups which is similar to the predicted proportions of the sharp RD estimation for non-Pantawid women. The proportion of WRA who received prenatal care provided by a skilled professional from the NDHS is 86% and 95% among the lowest and second lowest wealth quintiles, respectively. The predicted proportion of the RD model is nearer the latter.

Subgroup analysis shows some indication that the program may be affecting rural women more positively compared to those in urban areas. Results show that the program positively impacts availment of minimum four prenatal checkups in rural areas (+11 to +13pp) and showed negative program impact on women in urban areas in terms of availment of at least one prenatal checkup (-4 pp) and prenatal care provided by skilled professional (-4 to -5pp). The more positive results for rural beneficiaries may be attributed to low baseline means for rural women, and very high proportions for most prenatal care outcomes of urban women.

In summary, the program has positive impact on the availment of prenatal health care services particularly in terms of availing the minimum required number of check-ups prescribed by the DOH. Aside from it being a program conditionality, the positive impact on availing of the minimum desired number of prenatal checkups may be due to the reinforcement provided by the FDS. One of the core chapters of the FDS curriculum is devoted in maternal care including availing of prenatal care services for pregnant women.

Table 5.2. Prenatal care

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
At least one prenatal checkup	impact	-1.40	-0.83	1.50**	-2.04	-1.67	1.84**
	se	1.23	1.09	0.68	1.73	1.52	0.83
	non-Pantawid	98.63	98.23	96.46	98.86	98.65	96.42
	number of obs.	1,304	1,634	3,139	1,044	1,318	3,139
At least 4 prenatal checkups	impact	6.71	6.38	5.25**	11.75*	8.44	6.41**
	se	4.07	3.54	1.96	5.73	5.04	2.38
	non-Pantawid	76.02	76.38	77.69	74.11	75.71	77.53
	number of obs.	1,320	1,675	3,139	1,043	1,315	3,139
Frequency of prenatal checkup	impact	-0.09	-0.09	-0.02	-0.13	-0.11	-0.03
	se	0.31	0.27	0.17	0.45	0.39	0.21
	non-Pantawid	6.25	6.24	6.20	6.28	6.25	6.20
	number of obs.	1,366	1,708	3,051	1,061	1,355	3,051
Prenatal care provided by skilled professional	impact	-2.36	-1.45	1.32	-3.59	-3.14	1.62
	se	2.42	2.12	1.05	3.56	3.11	1.28
	non-Pantawid	96.35	95.90	94.11	96.55	96.51	94.07
	number of obs.	1,291	1,630	3,180	1,009	1,266	3,180
Prenatal care availed in health facility	impact	-1.49	-0.59	1.91	-3.20	-2.29	2.34
	se	1.63	1.45	0.94	2.70	2.32	1.15
	non-Pantawid	97.02	96.19	94.37	97.66	97.33	94.30
	number of obs.	1,619	1,986	3,178	1,061	1,343	3,178

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Skilled birth attendance and Facility-based delivery

Moving on to the birth attendance and delivery, the study did not find any impact of the program on skilled birth attendance (SBA) defined as delivery assisted by either a doctor, midwife, or nurse (Table 5.3). The same findings were reported in the second evaluation study.

Disaggregating by type of health professional, positive impact on birth attendance by a doctor was observed. Pantawid pregnant women have higher incidence of giving birth assisted by a doctor by up to 9 percentage points (CER) compared to non-Pantawid pregnant women (36%) in the sharp RD results, while the impact estimate reached up to 15 percentage points if we consider the beneficiaries who actually participated in the program as shown in the fuzzy RD result. The proportion of pregnant women assisted by a nurse during birth is also higher among Pantawid beneficiaries by 5 percentage points according to the fuzzy RD results within the MSE-optimal bandwidth. This result is not observed in the narrower CER-bandwidth and in the sharp RD results, hence may not be a conclusive finding of the program's impact. Interestingly, the proportion of Pantawid pregnant women being assisted by a midwife are lower compared to non-Pantawid in both sharp and fuzzy RD results. However, unlike the sharp RD estimates, the fuzzy RD model also noted positive program impact on SBA by a nurse (+4pp) and negative program impact on SBA by a midwife (-11pp). These results may indicate shifting from midwife-assisted deliveries to doctor-assisted deliveries among Pantawid beneficiaries. The results may be due to changes in preference of the beneficiaries from home deliveries to health facilities or from small to bigger health facilities where it is more likely that a doctor is available.

Table 5.3. Skilled birth attendance and facility-based delivery

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Skilled birth attendance	impact	-0.52	0.11	1.57	0.05	-0.13	1.93
	se	3.22	2.84	1.81	5.12	4.40	2.21
	non-Pantawid	85.61	85.41	85.81	85.16	85.33	85.77
	number of obs.	1,446	1,777	2,936	1,012	1,294	2,936
Skilled birth attendance by a doctor	impact	8.78*	8.66**	3.84**	14.95*	11.37	4.71**
	se	4.69	4.18	2.40	7.05	6.14	2.93
	non-Pantawid	35.90	35.64	37.82	33.76	35.44	37.71
	number of obs.	1,408	1,731	2,936	1,047	1,323	2,936
Skilled birth attendance by a midwife	impact	-7.27	-5.23	-0.62	-14.64**	-10.40*	-0.76
	se	4.48	4.03	2.49	6.92	6.20	3.06
	non-Pantawid	48.26	47.11	45.72	51.33	49.13	45.74
	number of obs.	1,409	1,736	2,936	963	1,205	2,936
Skilled birth attendance by a nurse	impact	2.92	0.66	0.67	4.55	4.71*	0.83
	se	1.96	1.78	1.29	2.96	2.71	1.58
	non-Pantawid	3.64	5.43	6.79	2.34	2.58	6.77
	number of obs.	1,334	1,661	2,936	883	1,102	2,936
Facility-based delivery	impact	2.53	2.93	2.87	3.83	3.00	3.52
	se	3.36	2.95	1.92	5.50	4.68	2.34
	non-Pantawid	80.58	80.59	81.65	79.94	80.44	81.57
	number of obs.	1,648	1,963	2,941	1,128	1,427	2,941

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Consistent to the above proposition, subgroup analysis by urban-rural location show positive program impact on skilled birth assistance, and deliveries assisted by doctors and nurses in urban areas only. There is a large difference between the impact of the program on SBA by a doctor and by a nurse for urban mothers, possibly due to better access in urban areas (19 and 8 percentage points difference, respectively). The contrary is observed with regard to SBA by a midwife, with positive impact noted for rural beneficiary mothers (22 percentage points difference). This marked difference between urban and rural subgroups implies that there is still limited access to doctors in rural areas compared to urban areas and points to supply-side issues that need to be addressed for the program to achieve its desired impact.

In terms of program impact on facility-based delivery, no significant difference is observed for both sharp and fuzzy RD results except for the estimate of the MSE-optimal bandwidth in the fuzzy RD. Generally, higher predicted proportions of FBD is observed for the Pantawid group but the lack of statistical significance suggest that the impact measured is not robust in narrower bandwidths and there is no strong evidence to indicate that the program increases FBD rates.

Breaking down by urban and rural location, larger positive program impact on FBD is observed only among women in urban areas. Although smaller positive impacts were also observed among rural women (+4pp), only the result among urban women is significant (+14 to 18pp). Even if the estimations controlled for some supply variables, this discrepancy in impact may indicate differences in access to these health facility resources depending on the location. This is consistent with the finding on skilled birth attendance where urban women prefer deliveries assisted by doctors and nurses, while rural women avail more of the midwife assisted deliveries. It is ordinary that doctors and nurses perform delivery services in health facilities, while midwives can perform deliveries at home or in health facilities.

According to the 2017 NDHS, 58% and 74% of women in the lowest and second lowest quintiles, respectively, deliver in health facilities. These NDHS proportions are slightly lower compared to the predicted proportions at the threshold. The predicted proportions in this evaluation are higher than the predicted proportions reported in the second evaluation of the program. However, given that the program aims to ensure that beneficiaries avail of maternal health care services, the FBD utilization rates observed in this 3rd round of evaluation can still be increased.

Postnatal care

No significant impact was observed on availing of postnatal care within 24 or 72 hours, postnatal care from a skilled professional, and postnatal care from a health facility (Table 5.4).

Based on the results, 51% of Pantawid pregnant women avail of postnatal care within 72 hours from delivery compared to 48% of non-Pantawid pregnant women. In terms of postnatal care from a skilled professional within 72 hours, the proportions are 46% and 48% among Pantawid and non-Pantawid pregnant women using the narrowest bandwidth (CER), respectively. However, these differences are not statistically significant across all bandwidths used in the estimation. Lastly, availing of postnatal care from a health facility for Pantawid and non-Pantawid women are at 79% and 82% respectively. These findings are inconsistent with the second impact evaluation where positive program impact on availing of postnatal care from a skilled health professional and availing of postnatal care in a facility were estimated.

Subgroup analysis show that urban beneficiary mothers have the advantage in terms of access to postnatal care in health facilities. Despite having the advantage of more health facility resources, it is surprising to note that predicted means are lower for urban areas compared to rural in terms of availing of postnatal checkup within 72 hours and within 72 hours attended by a health professional. This result may indicate that the availment of postnatal care services is not influenced so much by supply conditions, but by other factors like level of awareness and behavior of pregnant beneficiaries.

Given the significant impact of the program on prenatal care and the lack of significant impact on postnatal care, the results seem to indicate that there is an unequal understanding and/or appreciation among the beneficiaries of the value of postnatal care relative to prenatal care even though both are required by the program.

Table 5.4. Postnatal care

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Postnatal check within 72 hours	impact	2.74	0.09	-2.48	4.26	0.32	-3.01
	se	6.13	5.47	2.83	8.04	7.05	3.42
	non-Pantawid	48.19	49.57	50.56	47.72	49.46	50.62
	number of obs.	1,016	1,278	2,418	963	1,213	2,418
Postnatal check within 72 hours by a skilled professional	impact	1.99	0.37	-1.27	3.67	0.52	-1.54
	se	5.91	5.32	2.80	7.94	7.01	3.40
	non-Pantawid	45.93	46.81	47.45	45.38	46.77	47.48
	number of obs.	1,031	1,307	2,416	937	1,187	2,416
Postnatal check up in a facility	impact	-2.72	-3.36	-0.83	-0.51	-3.41	-1.02
	se	4.00	3.58	2.20	5.81	5.10	2.70
	non-Pantawid	81.70	82.12	80.12	80.17	81.81	80.15
	number of obs.	1,364	1,691	2,933	1,076	1,357	2,933

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

5.1.3. Hypothesis 3. Pantawid Pamilya mothers experience fewer health problems during pregnancy and delivery.

In this hypothesis, pregnancy problems are defined as symptoms or conditions experienced such as vaginal bleeding, headache, dizziness, blurred vision, night blindness, swollen face/hands/feet, anemia, fatigue, among others. On the other hand, problems during delivery include long labor that lasted more than 12 hours, excessive bleeding, infection or sepsis, and loss of consciousness. Although the program is not designed to counter the incidence of pregnancy and delivery problems and these problems can be caused by other factors including chronic illnesses and health facility quality and supply conditions, the program may have an indirect impact because of increased utilization of health care services for pregnant women such as prenatal care and reproductive health counseling, as well as better nutrition due to increased food consumption in the household.

The results show that in terms of experiencing pregnancy problems, differences in incidence between Pantawid and non-Pantawid are not significant except when using the full sample wherein more Pantawid pregnant women (higher by 3 to 4 percentage points) experience at

least one type of problem during pregnancy. However, when looking at the count of pregnancy problems, Pantawid Pamilya beneficiaries experience significantly lower count pregnancy problems compared to non-Pantawid pregnant women (Table 5.5) as shown in the fuzzy RD results. The results also show that proportion of Pantawid pregnant women who experienced problems during delivery is lower by 1 to 4 percentage points compared to non-Pantawid women, although, these differences are not statistically significant for all bandwidths including the full sample.

Predicted proportions using the sample are high compared to the 2017 NDHS which reported only 58% of women having experienced problems during pregnancy. This estimate of the NDHS however represents the nationwide population and may not be comparable to the sample in this evaluation where the households are poor or near-poor[11] In contrast, the predicted proportions for women who experienced problems during delivery are comparable with the NDHS estimate of 26%.

Subgroup analysis results indicate that a lower proportion of Pantawid women in urban areas experience signs of pregnancy risks (-4.3 percentage points based on sharp RD) compared to counterparts in non-treated group. Results also showed fewer signs of pregnancy problems experienced by beneficiaries in urban areas (-0.43 signs), while no significant impact was observed among women in rural areas. No significant program impact was observed in other indicators.

All in all, the results indicate small but positive indirect effects of the program in reducing problems experienced during pregnancy and delivery. However, results are inconclusive and require further investigation using more rigorous design specific to the outcomes of interests.

Table 5.5 Problems experienced during pregnancy and delivery

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Experienced any signs of pregnancy risks	impact	1.64	2.16	3.36**	2.62	2.73	4.15**
	se	2.33	2.06	1.23	2.76	2.41	1.53
	non-Pantawid	94.74	94.18	93.13	94.30	93.94	93.01
	number of obs.	1,072	1,316	2,178	1,218	1,446	2,178
Count of signs of pregnancy risks experienced during pregnancy	impact	-0.27	-0.22	-0.08	-0.37*	-0.29	-0.10
	se	0.16	0.14	0.08	0.22	0.19	0.10
	non-Pantawid	1.95	1.92	1.77	1.98	1.94	1.78
	number of obs.	986	1,245	2,178	936	1,184	2,178
Experienced at least one delivery complication	impact	-0.60	-0.25	-3.51	-0.45	-1.09	-4.29
	se	4.14	3.79	2.24	5.94	5.28	2.74
	non-Pantawid	27.49	27.59	29.28	27.41	27.67	29.39
	number of obs.	1,484	1,838	3,182	1,134	1,433	3,182

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

5.1.4. Hypothesis 4. Pantawid Pamilya increases utilization of health care services by children.

[11] Households that are considered not poor but with incomes very near the poverty threshold

Growth monitoring of children 0 to 5 years' old

The results of the study show positive impacts on weight monitoring of children aged 0 to 5 years old (Table 5.6). Regular weight monitoring among children 0 to <2 years old – defined as weighing at least once a month – is higher among Pantawid beneficiaries by up to 12 percentage points based on the MSE-optimal bandwidth of the sharp RD and up to 15 percentage points higher in the fuzzy RD result. Comparable estimates were generated in the narrower CER-optimal bandwidth, but the results were not statistically significant, possibly due to the small number of observations included in the analysis. However, in terms of frequency, there is no significant difference between beneficiaries and non-beneficiaries.

Regular weight monitoring among children 2 to 5 years old – defined as monitoring at least once every two months – is higher among Pantawid children by around 9 percentage points in the narrowest bandwidth in the sharp RD estimation, while the positive impact based on the fuzzy RD result is up to 11 percentage points higher. In terms of frequency, significant difference between beneficiaries and non-beneficiaries is only detected within the sampling bandwidth (0.3 to 0.4 higher) for both sharp and fuzzy RD estimations.

Table 5.6. Growth monitoring

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Regular weight monitoring for 0 to <2-year olds (0 to 23 months)	impact	12.85	11.80*	-6.82	17.42	15.43*	-8.45
	se	8.83	7.87	3.50	12.06	10.43	4.34
	non-Pantawid	14.31	15.99	25.88	13.61	15.57	26.01
	number of obs.	384	487	1,124	391	494	1,124
Frequency of weight monitoring for 0 to <2-year olds in the past six months (0 to 23 months)	impact	0.21	0.10	-0.30	0.29	0.14	-0.37
	se	0.47	0.41	0.20	0.62	0.55	0.25
	non-Pantawid	2.98	3.07	3.23	2.96	3.06	3.24
	number of obs.	482	611	1,124	478	602	1,124
Regular weight monitoring for 2 to 5-year olds (24 to 71 months)	impact	9.17*	9.35*	6.61**	11.21*	12.02**	8.05**
	se	4.60	4.29	2.61	6.03	5.52	3.18
	non-Pantawid	28.18	28.41	32.08	27.70	27.64	31.89
	number of obs.	1,257	1,539	2,716	1,119	1,421	2,716
Frequency of weight monitoring for 2 to 5-year olds in the past six months (24 to 71 months)	impact	0.27	0.32	0.35***	0.33	0.42	0.42***
	se	0.22	0.21	0.15	0.27	0.26	0.18
	non-Pantawid	2.22	2.22	2.31	2.22	2.20	2.30
	number of obs.	1,114	1,406	2,716	1,203	1,496	2,716

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

The findings are consistent with the second wave of evaluation results where regular weight monitoring is significantly higher for beneficiaries in both age groups. This means that the program has sustained its effect on the utilization of growth monitoring of young children. As parents are also expected to perform the weight monitoring in health facilities, the finding implies that children beneficiaries visit health facilities more often compared to non-Pantawid children. Note, however, the low proportion of Pantawid children 0-2 years old and 2-5 years' old that are weight-monitored at 18 to 31% and 37 to 40%, respectively. These proportions are slightly higher than those obtained in wave 2 which are 11 to 12% for 0-2 years old and 25 to

28% for 2-5 years old. In addition, while the frequency is near the required 3 times in 6 months (i.e., once every two months) for children 2-5 years old, the average frequency falls short for younger children under 2 years old who are supposed to be weighed monthly (i.e., 6 times/ 6 months) but are only weighed every other month.

The low proportion of weight monitoring is surprising since the program requires children 2 to 5 years old to visit health facilities every two months for weight monitoring. The low proportion can indicate a deficiency of the program to influence beneficiary behavior related to this conditionality, and/or the existence of other factors that hinder them to comply with the condition. The growth monitoring of children below two years of age, on the other hand, is not explicitly stated as a program condition based on the programs' operations manual (2015). Even so, it is very important for beneficiaries to do this as this age group of children encompasses the first 1000 days of child development known to affect long term child outcomes on health and cognitive development (UNICEF 2013, WHO).

In terms of urban/rural location, significant impact was noted on regular weight monitoring of children age 0 to less than 2 years old only in rural areas (higher by 29pp versus non-Pantawid). The opposite is observed for weight monitoring of children 2 to 5 years' old where significant positive impact was observed only in urban areas (higher by 16 percentage points). However, results in the frequency of weight monitoring of children 2 to 5 years' old indicate more frequent weight monitoring of Pantawid children in rural areas (+0.7 times).

Meanwhile, results of the subgroup analysis by sex imply that the program impacts male children more in terms of regular weight monitoring. Results show that the proportion of male children less than two years' old who are regularly weighed is 24 to 30 percentage points higher than that of non-Pantawid children who are of the same age group and sex. For older male children 2 to 5 years old, the estimated program impact is also high at 18 to 22 percentage points. These results may have been because baseline proportion of male children regularly weighed is lower compared to female children.

Micronutrient supplementation, immunization, and health facility visit

More Pantawid children 6 months to 5 years old received vitamin A supplementation compared to non-Pantawid children by 6 percentage points based on estimates of the sharp RD for all bandwidths used. A larger impact was noted in the fuzzy RD result at around 7 percentage points but these are only significant in the MSE-optimal and sampling bandwidths (Table 5.7).

The positive impact on Vitamin A supplementation is consistent with findings of both first and second waves of impact evaluation. In the first round of evaluation which used an RCT design, program impact is also estimated at 6 percentage points. The second round which used RDD reported significant increase by 12 percentage points using the second narrowest bandwidth[12]. Interestingly, the impact estimate using the narrowest bandwidth was also 6 percentage points although not significant. These results show that the positive impact of Pantawid Pamilya on

[12] The 2nd wave of impact evaluation used a different set of bandwidths proposed in Imbens and Kalyanaraman (2012), and Calonico, Cattaneo, and Titiunik (2014a)—IK and CCT bandwidths (using uniform kernel) and the sampling bandwidth as estimated in Grover (2013)

intake of Vitamin A among young children has been sustained since the early stages of implementation of the program.

Compared to the 2017 NDHS, the predicted proportions are close to NDHS estimate of 81% estimate among children from the 2nd lowest wealth quintile.

Disaggregating by sex of child, there is some indication that program impact is slightly higher among male children compared to female (higher by 3 percentage points) when using the full sample bandwidth for sharp RD. The estimates for the narrower bandwidths, however, show that the program impact on male and female children do not differ, hence there is not enough evidence to conclude that male children benefit more. By urban and rural location, there is no discernable difference in the impact of the program on vitamin A supplementation.

Table 5.7. Child health services

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Vitamin A supplementation (6 months to 6 years old)	impact	5.83*	5.62*	5.65**	5.44	7.43*	6.90**
	se	3.34	2.99	1.74	4.74	4.12	2.13
	non-Pantawid	78.44	78.59	78.64	78.99	78.10	78.48
	number of obs.	1,768	2,165	3,621	1,439	1,802	3,621
Iron supplementation among low birthweight children (under 6 years old)	impact	-3.92	-1.60	-0.10	-10.99	-5.29	-0.12
	se	7.60	6.88	4.76	12.14	10.11	5.75
	non-Pantawid	37.14	37.07	35.36	38.56	37.33	35.36
	number of obs.	454	569	944	359	451	944
Full immunization at age 1	impact	-0.37	-1.10	-0.66	-0.32	-0.63	-0.80
	se	4.35	3.84	2.34	6.06	5.31	2.84
	non-Pantawid	25.64	26.56	27.09	25.44	25.85	27.11
	number of obs.	1,547	1,893	3,013	1,303	1,651	3,013
Visited a health facility or health professional in the past 8 weeks	impact	-1.72	-1.28	4.03	-2.16	-2.37	4.96
	se	3.89	3.49	2.16	5.53	4.86	2.66
	non-Pantawid	39.24	38.76	35.71	39.59	39.37	35.60
	number of obs.	1,916	2,353	3,983	1,560	1,952	3,983

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias

Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

No impact was observed on the proportion of iron supplementation among low birthweight children or children with birth weight below 2500 grams in both sharp and fuzzy RD models. The lack of impact may be due to the insufficient sample power as the outcome indicator was only estimated for a subset of children. Interestingly, as the sample size increases in the estimations, the more the impact estimates approach zero suggesting no difference between the treated and comparison. No significant differences in impact were also observed when disaggregated by sex of the child or by urban-rural location.

Although the program does not specifically require beneficiaries to practice iron supplementation, the requirement for children beneficiaries to visit the health facilities is expected to have an indirect effect on the utilization health services that are available for younger children in need of this intervention.

In the second evaluation, iron supplementation was estimated among all children below six years old, regardless if they were born with low birth weight or not. Program impact was consistently estimated across all bandwidths to be at least 12 percentage points increase in iron supplementation. Per the Department of Health, however, iron supplementation is only provided to children who are born with low birth weight as they are at risk of micronutrient deficiencies including iron-deficiency anemia.

Among children 1 to 5 years old, there is still no discernable impact on full immunization as observed in the previous waves. This observation is consistent for the sharp RD, the fuzzy RD estimation, and the subgroup analyses. The lack of impact may be explained by the previous power calculations made by Cattaneo and Vasquez-Bare (2017) predicting that the current sample only have around 30% power to detect impact on immunization at 0.15 standardized effect size.

Moreover, it is important to note that the proportion of children that were fully immunized are low. Based on the predicted means, only 1 in 4 Pantawid and non-Pantawid children age 1 to 5 years were completely immunized for age appropriate vaccinations excluding Haemophilus influenzae (HiB). These are slightly lower than the second wave of evaluation proportions which were at around 32%. The proportions cannot be directly compared with the 2017 NDHS results because the NDHS survey only reports immunization rates only for children age 12 to 23 months and 24 to 35 months and includes HiB in their definition of complete immunization. Nevertheless, the fact that children in Pantawid households are not fully immunized, even if it is a program conditionality suggests a gap in the utilization of this health service by the beneficiaries.

Lastly, no program impact was detected on proportion of children who visited a health facility or health professional in the past 8 weeks. This means that an equal proportion of children in Pantawid and non-Pantawid households visited a health facility or professional in the past 8 weeks. The estimated proportions range from 37 to 41% in the sharp RD estimation. The lack of impact is also observed in the subgroup analysis for urban and rural areas, and by sex of the child.

Given that the program encourages monthly health facility visits for children 0 to 5, the proportions observed in the study are very low. Overall, only around 1 in 3 children age 0 to 5 in the sample visited a health facility in the past 2 months. Partially, the supply conditions in the barangay may explain these low proportions. From the interviews of the barangay captains in the study sites, only 91% of the barangays have Barangay Health Stations (BHS) while only 20% have Rural Health Units within their jurisdiction.

Overall, the results on the availing of child health services are mixed. Positive impacts are noted on Vitamin A supplementation and growth monitoring, but results are underwhelming for immunization and health facility visits. These results warrant further analysis of determinants that affect availing of these services to understand why the program does not have any impact on these outcomes.

Deworming

In terms of intake of deworming pills, no impact is observed on deworming of both children under-six years old and children 6 to 14 years old (Table 5.8). Note, however, that the predicted probabilities for intake of deworming pills among 6 to 14 years old are high at around 89 to

90%. This also indicates a substantial improvement in the proportion of children 6 to 14 years' old who received at least 1 deworming pill in a year from the 2nd impact evaluation which was at 69 to 73%.

Positive impact is observed on receiving deworming pills at least twice, with 8 to 9 percentage points higher proportion among Pantawid children compared to non-Pantawid children in sharp and fuzzy RD models, respectively. This positive program impact was consistently observed in all bandwidths. In contrast, the second impact evaluation study found positive impact on receipt of deworming pills at least once and found no impact on receipt of deworming pills at least twice.

Despite this positive impact of the program, the proportion of children that take deworming pills at least twice per school year is still low at only 32 to 34% among Pantawid children despite it being a conditionality of the program. In addition, this is also lower than the proportion estimated in wave 2 which puts the estimate at 50%. Further investigation is needed to find out whether other factors such as supply chain of deworming medicine, efficiency of program monitoring, or other behavioral reasons can explain the lower proportions observed.

Table 5.8. Deworming

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Deworming (under 6 years old)	Impact	4.52	3.83	3.05	6.06	5.08	3.74
	Se	3.98	3.66	2.26	5.30	4.76	2.77
	non-Pantawid	43.69	44.49	46.12	43.25	44.06	46.03
	number of obs.	1,727	2,173	3,949	1,603	2,008	3,949
Deworming at least once (6 to 14 years old)	impact	1.10	0.74	2.09	0.98	1.06	2.43
	se	1.87	1.62	1.05	2.33	2.01	1.22
	non-Pantawid	87.55	87.88	87.18	87.53	87.71	87.11
	number of obs.	4,729	5,723	8,336	4,341	5,310	8,336
Deworming at least twice (6 to 14 years old)	impact	7.67**	8.46***	5.37**	9.46***	10.03***	6.23**
	se	3.30	3.03	1.78	3.68	3.37	2.05
	non-Pantawid	24.31	23.91	26.84	23.71	23.64	26.67
	number of obs.	3,661	4,569	8,299	4,144	5,110	8,299

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Disaggregating by urban and rural areas, results show that the significant impact on deworming of at least twice is driven by the rural areas (+9 to 12pp) while no impact was observed in the urban areas. By sex, positive program impact on one-time intake was observed among male children under six years old (+15 to 17pp) and was not observed among female children. This result coincides with the positive impact observed on weight monitoring among male children 0 to 5 years old and lack of impact among female children of the same age group.

5.1.5. Hypothesis 5. Pantawid Pamilya participation improves child care practices of parents.

Table 5.9 shows the results of impact estimates on the feeding practices among children 0 to 5 years old. No impact was observed on exclusive breastfeeding although the predictive proportions are high at around 82%, meaning it is expected that 8 out of 10 children from both

non-Pantawid and Pantawid households are exclusively breastfed for six months . This was consistently observed in the main estimation using sharp RD and fuzzy RD models, and in subgroup analyses on urban-rural areas, and sex of child. The lack of program impact observed is consistent to the findings in the first two waves of evaluation.

In terms of dietary intake of certain food items in the past seven days, no program impact was observed except for intake of vegetables. Only found to be statistically significant when using the full sample of observations, intake of eggs is 2 percentage points higher among Pantawid children compared to non-Pantawid children. In the first round of impact evaluation, Pantawid children were more likely to be fed eggs and fish compared to their counterparts in non-Pantawid households.

Table 5.9. Dietary practices for children under-six years' old

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Exclusive breastfeeding for six months	impact	0.56	1.42	1.08	-1.06	0.52	1.31
	se	3.56	3.28	2.03	5.27	4.70	2.47
	non-Pantawid	80.46	79.99	80.37	81.56	80.53	80.34
	number of obs.	1,669	1,989	3,076	1,060	1,348	3,076
Dietary intake of eggs (past 7 days)	impact	-3.82	-2.13	1.98*	-2.91	-1.58	2.42*
	se	2.99	2.65	1.30	3.43	3.00	1.59
	non-Pantawid	93.32	92.43	89.91	92.66	92.05	89.85
	number of obs.	1,160	1,471	3,563	1,384	1,735	3,563
Dietary intake of fish (past 7 days)	impact	-2.22	-0.70	1.68	-5.05	-2.28	2.05
	se	2.48	2.23	1.24	3.36	3.00	1.52
	non-Pantawid	91.50	90.98	90.14	92.51	91.43	90.09
	number of obs.	1,633	2,015	3,563	1,353	1,714	3,563
Dietary intake of meat (past 7 days)	impact	-0.02	0.14	3.17	-3.05	0.39	3.87
	se	4.08	3.52	1.94	5.80	4.92	2.37
	non-Pantawid	69.97	70.26	69.74	71.21	69.88	69.65
	number of obs.	1,625	2,002	3,548	1,326	1,686	3,548
Dietary intake of vegetables (past 7 days)	impact	7.99**	8.07**	4.77***	9.91*	10.07*	5.83***
	se	3.59	3.13	1.79	5.46	4.68	2.20
	non-Pantawid	78.29	78.35	80.42	78.02	77.84	80.28
	number of obs.	1,816	2,211	3,558	1,371	1,724	3,558
Dietary diversity score (1 to 7)	impact	-0.11	-0.09	0.05	-0.17	-0.13	0.06
	se	0.13	0.12	0.06	0.18	0.15	0.08
	non-Pantawid	4.91	4.92	4.89	4.92	4.92	4.89
	number of obs.	1,662	2,110	3,983	1,499	1,900	3,983

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Pantawid children are 8 to 10 percentage points more probable to be fed vegetables in the past seven days compared to non-Pantawid children based on the CER bandwidth estimates of both Sharp and Fuzzy RD. This may be due to the recent promotion of backyard and communal gardening activities among beneficiaries. In 2017, in time with the release of the rice subsidy, the beneficiaries were encouraged to have vegetable backyard gardens as a part of the efforts

to address food insecurity in the household[13]. Although not conclusive, the result of the third evaluation may indicate changes in dietary practices in younger Pantawid children since the earlier evaluations. The total dietary diversity score – or the index of variation in food groups in a child's diet, however, does not differ between Pantawid and non-Pantawid children controlling for age.

Results for intake of protein-rich foods are markedly different for beneficiaries in urban and rural municipalities. Program impact on intake of fish is significantly lower for Pantawid beneficiaries in urban areas, while intake of meat is significantly higher for Pantawid children in rural areas. In most of the indicators, rural children seem to have experienced larger positive program impact (i.e., higher protein consumption). A possible explanation for this variance would be differences in costs of food items in urban and rural areas and how the beneficiaries' additional purchasing power and preferences are affected by the grants. This needs a more rigorous examination.

In terms of sex of the child, intake of vegetable is higher for Pantawid male and female children, but results show slightly stronger impact among male children in the narrowest bandwidths.

Table 5.10 shows the estimates of program impact on the incidence of common and vaccine-preventable diseases as well as health facility visits of children during incidence of illness in the past month. No program impact was observed on the incidence of common and vaccine-preventable diseases – the latter being expected based on the lack of impact on immunization in this evaluation and the previous rounds. Neither is there impact on visits to health facility during incidence of fever or cough in the past month. This means that for the sample, equal average proportion of poor children are ill and visit a health facility when they are sick regardless if they are beneficiaries of the program or not. The latter may be due to a prevailing belief or practice that they do not need to visit a health facility when the child is ill with fever or cough, or possibly due to high transportation and opportunity costs (e.g., time, foregone income) incurred when visiting a health facility. Based on the IE wave 3 survey, the average waiting time in the health facility starting from arrival until the time that the child is examined or given care is 39 minutes, with 12% of the respondents claiming waiting time of more than 1 hour. Moreover, 11% of the rural barangays in the study sites also do not have a government health facility within its premises (Appendix 4).

Subgroup analysis by sex show no significant differences in impact between male and female children. By rural-urban location, significant reduction in incidence of fever or cough was observed only in rural areas while significantly higher incidence of vaccine preventable diseases was reported in urban areas. In terms of the probability of going to a health facility for a checkup during incidence of illness, the estimated impacts were not statistically significant for all bandwidths.

[13] NAC Resolution 34 Series of 2016: "Enjoining the *Pantawid Pamilya* Households to Engage in Backyard/Communal/Container Gardening" encourages all the *Pantawid* households to establish their backyard and/or communal gardens with the aim of improving nutrition outcomes and alleviating food security

Table 5.10. Health facility visit during illness

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Child visited a health facility during incidence of fever in the past month	impact	6.14	2.52	0.59	14.07	7.85	0.75
	se	7.26	6.31	3.97	12.50	10.32	5.10
	non-Pantawid	49.26	50.53	53.64	46.83	49.07	53.62
	number of obs.	603	751	1,272	488	619	1,272
Child visited a health facility during incidence of cough in the past month	impact	-8.24	-8.88	-3.25	-13.62	-11.05	-4.19
	se	7.00	6.20	3.86	10.81	9.52	4.97
	non-Pantawid	58.54	58.40	56.11	60.81	58.95	56.23
	number of obs.	655	812	1,394	522	644	1,394
Child visited a health facility during incidence of fever or cough in the past month	impact	-3.17	-4.00	-2.04	-1.12	-4.94	-2.68
	se	5.74	5.15	3.39	9.16	8.05	4.44
	non-Pantawid	55.10	55.28	55.38	54.25	55.49	55.47
	number of obs.	906	1,110	1,862	722	917	1,862

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

5.1.6. Hypothesis 6. Pantawid Pamilya children have better nutrition and health outcomes.

Results of the estimation of program impact on nutrition outcomes are unexpected. As shown in Table 5.11, more Pantawid children are stunted (5.5 percentage points higher) and severely stunted (5 percentage points higher) compared to non-Pantawid children. On the other hand, no program impact was observed on all other nutrition indicators such as underweight, severe underweight, wasting, and severe wasting. These results were consistently observed for both sharp and fuzzy RD models.

In terms of prevalence, the predicted proportions for severe underweight based on the estimation are slightly lower compared with the estimates of the 2015 Updating Survey of the Food and Nutrition Research Institute (FNRI). The FNRI estimated 8% severely underweight children 0 to 5 years old among the poorest quintile of the population, while this evaluation only estimates around 6 to 7% severely underweight among the children in the study sample. Predicted proportions of underweight Pantawid children are also slightly lower at around 25% compared to the estimated prevalence of the FNRI among the poorest quintile of 32%. For stunting, the FNRI estimates 49.7% stunting and 20.2% severe stunting prevalence among 0 to 5 children belonging to the poorest segment of the population. This estimate is higher than the predicted proportions of the model among Pantawid children with around 35 to 38% stunting prevalence, and 13 to 15% severe stunting prevalence. On the other hand, wasting prevalence predicted by the estimation models at around 11 percent is higher compared to the proportions reported by the FNRI which is 8.1%. Severe wasting prevalence is also slightly higher in the estimation compared with the FNRI report of 1.9% severe wasting among the poorest quintile.

Table 5.11. Nutrition and child health outcomes (among children below 6 years old)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Underweight	impact	5.32	4.50	2.20	6.07	5.18	2.70
	se	3.37	3.03	1.74	4.06	3.63	2.13
	non-Pantawid	20.10	20.16	20.14	20.02	20.06	20.08
	number of obs.	1,688	2,091	3,717	1,829	2,247	3,717
Severe underweight	impact	1.22	1.04	0.96	1.94	1.29	1.18
	se	1.95	1.72	1.02	2.58	2.24	1.25
	non-Pantawid	5.09	4.91	4.70	4.91	4.95	4.67
	number of obs.	1,705	2,095	3,717	1,584	2,012	3,717
Stunting	impact	5.53*	5.60*	4.59**	8.69*	7.14*	5.61**
	se	3.04	2.80	2.01	4.26	3.88	2.45
	non-Pantawid	29.77	29.51	29.68	29.28	29.55	29.56
	number of obs.	2,059	2,477	3,628	1,529	1,928	3,628
Severe stunting	impact	5.34**	4.98**	3.06**	7.27**	6.42**	3.73**
	se	2.40	2.18	1.25	3.28	2.91	1.53
	non-Pantawid	8.16	8.47	9.30	7.53	8.05	9.22
	number of obs.	1,770	2,156	3,628	1,445	1,825	3,628
Wasting	impact	-1.17	-1.24	0.37	-1.67	-1.22	0.45
	se	3.10	2.78	1.52	3.71	3.28	1.85
	non-Pantawid	12.35	11.84	10.65	12.29	11.53	10.64
	number of obs.	1,343	1,698	3,239	1,489	1,842	3,239
Severe wasting	impact	-2.05	-1.83	-0.81	-3.29	-2.72	-0.98
	se	1.60	1.41	0.91	2.51	2.18	1.11
	non-Pantawid	4.23	4.07	3.65	5.04	4.52	3.67
	number of obs.	1,949	2,340	3,239	1,338	1,689	3,239
Diarrhea	impact	1.80	1.14	-1.21	0.96	1.97	-1.48
	se	2.46	2.18	1.34	3.66	3.32	1.65
	non-Pantawid	9.44	10.06	11.12	9.43	9.31	11.16
	number of obs.	1,701	2,158	3,980	1,231	1,558	3,980
Fever or cough	impact	-3.08	-4.79	-6.69***	-2.50	-4.07	-8.24***
	se	4.62	4.17	2.35	6.90	6.04	2.90
	non-Pantawid	49.35	50.57	50.59	48.51	49.57	50.78
	number of obs.	1,560	1,951	3,981	1,235	1,566	3,981
Vaccine preventable diseases	impact	3.51	2.44	0.99	5.10	4.39	1.22
	se	2.60	2.36	1.39	3.78	3.33	1.71
	non-Pantawid	12.19	11.99	11.18	12.40	11.97	11.15
	number of obs.	1,743	2,191	3,983	1,415	1,787	3,983

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Disaggregating by age group, no significant difference was observed between proportions of underweight, stunting, and wasting between Pantawid and non-Pantawid children 0 to less than 2 years old (Table 5.12) and 2 years to 5 years old (Table 5.13) using sharp and fuzzy RD models. However, the lack of significance may be partly due to the reduction in power after

trimming the sample. For both age groups, the estimates still indicate higher proportion of underweight and stunting as in the main estimation table.

Table 5.12. Nutrition and child health outcomes (among 0-2 years old)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Underweight (among children 0-2 years old)	impact	-4.75	-2.03	-0.41	-9.24	-5.22	-0.51
	se	6.02	5.34	3.32	8.87	7.74	4.14
	non-Pantawid	17.15	15.42	14.07	19.04	16.87	14.08
	number of obs.	596	717	1,072	497	616	1,072
Severe underweight (among children 0-2 years old)	impact	-0.17	0.40	-0.10	0.85	-0.28	-0.12
	se	3.66	3.19	1.70	5.47	4.63	2.12
	non-Pantawid	4.00	3.61	4.03	3.82	3.93	4.04
	number of obs.	516	635	1,072	437	549	1,072
Stunting (among children 0-2 years old)	impact	5.75	5.50	3.77	8.72	7.46	4.64
	se	5.79	5.23	3.32	8.86	7.68	4.08
	non-Pantawid	16.87	16.78	17.42	16.45	16.71	17.37
	number of obs.	575	691	1,031	449	567	1,031
Severe stunting (among children 0-2 years old)	impact	3.33	3.87	1.47	5.62	4.13	1.80
	se	4.14	3.82	2.37	6.19	5.47	2.92
	non-Pantawid	5.73	5.65	6.62	5.19	5.69	6.60
	number of obs.	583	700	1,031	447	567	1,031
Wasting (among children 0-2 years old)	impact	-7.88	-5.01	2.58	-8.48	-4.56	3.11
	se	9.63	8.44	4.54	11.61	9.94	5.47
	non-Pantawid	26.67	24.20	19.94	25.86	23.36	19.91
	number of obs.	371	460	748	418	502	748
Severe wasting (among children 0-2 years old)	impact	-4.43	-4.49	-4.06	-5.12	-6.91	-4.90
	se	5.23	4.72	2.70	6.20	5.41	3.26
	non-Pantawid	8.83	8.62	9.41	8.62	9.38	9.47
	number of obs.	363	452	748	426	510	748

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Table 5.13. Nutrition and child health outcomes (among 2-5 years old)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Underweight (among children 2-5 years old)	impact	5.49	4.86	3.64	8.61	6.54	4.40
	se	4.01	3.63	2.39	5.50	4.87	2.89
	non-Pantawid	22.80	22.81	22.49	21.97	22.65	22.40
	number of obs.	1,506	1,814	2,645	1,251	1,522	2,645
Severe underweight (among children 2-5 years old)	impact	0.66	0.46	1.32	1.34	0.78	1.60
	se	2.39	2.10	1.29	3.44	2.89	1.56
	non-Pantawid	5.81	5.68	5.03	5.83	5.79	5.00
	number of obs.	1,476	1,765	2,645	1,210	1,483	2,645
Stunting (among children 2-5 years old)	impact	2.83	3.62	4.84	4.16	4.52	5.84
	se	4.80	4.30	2.74	5.25	4.64	3.31
	non-Pantawid	36.42	35.81	34.61	35.82	35.45	34.49
	number of obs.	1,409	1,671	2,597	1,643	1,943	2,597
Severe stunting (among children 2-5 years old)	impact	4.58	4.25	3.79*	5.51	5.08	4.58*
	se	2.86	2.59	1.62	3.45	3.11	1.95
	non-Pantawid	10.01	10.35	10.36	9.87	10.23	10.26
	number of obs.	1,447	1,733	2,597	1,449	1,739	2,597
Wasting (among children 2-5 years old)	impact	-0.13	-0.18	-0.10	-0.06	-0.02	-0.12
	se	2.90	2.62	1.55	3.42	3.05	1.88
	non-Pantawid	8.03	7.65	7.74	7.85	7.46	7.74
	number of obs.	1,189	1,448	2,491	1,275	1,539	2,491
Severe wasting (among children 2-5 years old)	impact	-1.46	-0.95	-0.02	-2.25	-1.77	-0.03
	se	1.52	1.32	0.84	2.16	1.85	1.01
	non-Pantawid	2.94	2.62	2.04	3.37	2.99	2.04
	number of obs.	1,563	1,862	2,491	1,297	1,563	2,491

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

By urban and rural location, results show that the increase in prevalence of severe stunting is only observed among children 0 to 5 years old living in urban areas. Using the narrowest bandwidth, the prevalence of severe stunting among Pantawid children is higher by 6 percentage points compared to non-Pantawid children. In the sharp RD estimation, however, this is only significant for the MSE-optimal bandwidth, with an impact of 8 percentage points. In contrast, program impact on children residing in rural areas are near zero and not statistically significant. No differential impact was observed in other nutrition indicators between urban and rural-located children for sharp and fuzzy RD estimations.

Subgroup analysis by sex shows that more male Pantawid children 0 to 5 years old are underweight (+9 percentage points), stunted (+12pp), and severely stunted (+12pp) based on the narrowest bandwidth. Significant impact is also observed in fuzzy RD estimates, but with larger impact per outcome. In contrast, program impact on these indicators among female children of the same age group are generally small and not statistically significant. Interestingly, this finding coincides with the earlier observation that program impact on growth monitoring of male children is higher relative to female children. This may mean that

beneficiaries themselves feel the need to monitor the growth of male children as prevalence of malnourishment is higher for them.

Generally, no impact is noted by the study on nutrition outcomes aside from stunting. However, the negative result on stunting is surprising given that participation in the program is expected to improve nutritional outcomes of children as a result of increased food consumption, better maternal and child care, food hygiene practices, regular growth monitoring, and deworming. The results are inconsistent with the findings of the first wave of impact evaluation that noted a 10-percentage point reduction in the prevalence of stunting in Pantawid children. In the second wave of evaluation, no significant impact was observed on any of the nutritional outcomes.

Moreover, the results are also inconsistent with the findings of the RCT cohort study [14]of the 3rd wave evaluation. In the RCT cohort study, the original treatment and control areas of the first evaluation were revisited. Nutrition and other outcomes were compared based on the assumption that children or mothers in treatment areas received program benefits during the critical first 1000 days of a child's life. The hypothesis is that children who received program benefits at the right time (the treatment) have better outcomes compared to children who received program benefits later (the control). Results of the study show that receipt of the program benefits during the first 1000 days of life results in better nutrition outcomes among children 3 percentage points reduction in the likelihood of being severely underweight among children in treatment group. No impact on other nutrition outcomes were observed but rates were consistently lower in treatment compared to control and are in the correct sign.

As discussed earlier, there was not much significant difference in the dietary intake of children in Pantawid and non-Pantawid households except for the intake of vegetables. There was no observed difference in the dietary diversity between the two groups. Following this observation and the inconsistency with the RCT study, it is possible that the negative effect on stunting are not due to current dietary practices or more recent child care behavior, but may have been due to past practices and other factors that accumulated starting from when these children were conceived. According to the WHO (2010), stunting occurs from the accumulation of ill effects of undernutrition and infections since the child's fetal development. Wasting in general is considered acute or sudden weight loss due to illnesses, while underweight is considered a hybrid indicator that may occur due to stunting and/or wasting. In addition, the UNICEF (2017) estimates that 20% of stunting is determined by maternal health during pregnancy. Keeping these in mind, the negative result on stunting and the lack of significant difference on wasting could suggest that these are effects of more chronic behavior among the beneficiaries that the program has not addressed.

A possible explanation is that the children in the sample were not exposed to the program at the right time to counter or reverse the chronic effects of nutrition deficiency as in stunting. In the RCT study, children that were included in the treatment group were exposed to the program during their first 1000 days of life. In contrast, children in the Pantawid group that were included in the analysis did not necessarily benefit from the program during this critical period.

To approximate the RCT design, additional analysis was performed to a limited sample of children who were estimated to have been exposed to the program starting conception based

[14] A separate report was prepared on the RCT cohort study

on their birthday and receipt of first payment of cash grant by the household (Table 5.14). Only stunting and underweight were included in the analysis to focus on the chronic outcomes of undernourishment.

Table 5.14. Underweight and stunting among limited sample of children born after first receipt of program cash grants

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Underweight	impact	3.14	1.68	-0.56	3.46	2.13	-0.57
	se	4.4	3.94	2.34	4.67	4.17	2.38
Severe underweight	impact	1.11	0.94	0.4	1.00	1.17	0.4
	se	2.41	2.15	1.35	2.83	2.44	1.38
Stunting	impact	7.27	5.66	2.75	6.56	5.68	2.8
	se	4.55	4.16	2.59	4.5	4.13	2.64
Severe stunting	impact	4.62	4.34	2.69*	5.02	4.44	2.74*
	se	3.24	2.92	1.76	3.44	3.07	1.8

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias.

Results of the analysis returned no significant differences in the prevalence of underweight and stunted between the treatment and comparison groups. However, this could have been due to the smaller sample included in the analysis as estimates of impact are still positive in sign, meaning an increase in prevalence of undernutrition indicators. Impact on severe stunting is still observed for the full sample estimation although significance disappears in the narrower bandwidths.

Further study on the health knowledge of child-caregivers and specific behaviors like maternal care during pregnancy, and dietary practices in the past for these specific cohort of children should be performed to better understand the findings of this evaluation. Additional analysis can also focus on the utilization of health services such as deworming for 0 to 5 years old, growth monitoring for younger children, labor force participation of mothers, and visits to health facilities for treatment.[15]

5.2. Impact on Education

This section presents the estimates of program impact on education outcomes including enrollment and attendance in school, and household investments on education of children. Also discussed in this section are program impact on child labor since we expect that incidence and time spent on child labor will be affected by changes in school attendance.

As in the discussion of program impact on health outcomes, the discussion of program impact on education outcomes will also include the subgroup analyses done for urban and rural areas, and by sex of child. In addition, the results will also include the subgroup analysis according to the monitoring status of the child. Unlike in health, there were enough number of children 6

[15] Supplemental study is currently being conducted by the ADB on this topic. A qualitative follow-up study will also be conducted by the PIDS with focus on the program effect on nutrition

to 20 years old who were monitored and not monitored to do a meaningful comparison of program impact between groups (Table 5.15).

Table 5.15. Number of program-monitored and non-monitored children, by age group

Age Group	**No. of not monitored (%)**		**No. of Monitored (%)**		Total
6 – 11 years old	1,263	(47.0)	1,713	(63.7)	2,689
12 - 15 years old	566	(33.3)	1,378	(81.1)	1,700
16 - 17 years old	332	(42.5)	528	(67.6)	781
12 - 17 years old	898	(36.2)	1,906	(76.8)	2,481
6 - 14 years old	1,684	(42.1)	2,788	(69.7)	3,998
15 - 20 years old	1,207	(63.0)	920	(48.0)	1,915

5.2.1. Hypothesis 7. Pantawid Pamilya increases school participation of children

The estimated program impact on enrollment of children in school by age group is shown in Table 5.16. Based on the sharp RD results, the program increased the enrollment rates of older children but not the enrollment rates of younger children. From the sharp RD results within the CER bandwidth, positive impact of enrollment rates was observed for children 12-17 years old (88% in non-Pantawid versus 93% in Pantawid). No significant difference in enrollment rates was observed in elementary-aged children where enrollment rate is relatively high even for the non-Pantawid group at around 98% for children age 6 to 11 years and children 6 to 14 years old. In the fuzzy RD model, enrollment rate among children 6 to 14 years old was also found to be significant, aside from those already found in the main result. The magnitude of impact, however, is very small (+2 percentage points within cER) given that enrollment of children in this age group is almost universal, leaving not much room for the program to marginally increase it. These results are consistent with the findings of the second evaluation. The results also indicate that the expansion of the program to cover older children has translated to increased school participation for older children.

While the program has shown positive impact on enrollment rates of older children and high enrollment rates for elementary-aged children, no program impact was observed on the enrollment of children age 3 to 5 years old in nursery, daycare, preschool or kindergarten. Moreover, enrollment rates are both low for non-Pantawid and Pantawid children at only around 53 to 56%. This means that only half of children 3 to 5 years old are in school. In the survey, mothers or guardians were asked why children aged 3 to 5 years old were not enrolled in school, majority of the respondents reported that the child is too young or unprepared to go to school.

Disaggregating by urban and rural location, heterogeneity in program impact was observed for enrollment of children 16 to 17 years old, and enrollment of children 12 to 17 years old. In both indicators, higher positive program impact was observed in urban areas compared to rural. For children 12 to 17 years old, increase in enrollment rate was 9 percentage points in urban areas while impact estimate in rural areas is smaller in magnitude and not significant. Even larger difference in impact was observed for the older children 16 to 17 years old where increase in enrollment rate is estimated at 30 percentage points for urban areas, and no impact for rural areas. Fuzzy RD estimates also noted increase in enrollment rates by 11 percentage points and 34 percentage points for 12 to 17 and 16 to 17 age groups, respectively. These results were observed even though baseline enrollment rates were already relatively higher in urban areas

compared to rural. With these results, differences in access to junior and senior high schools between urban and rural areas (Appendix 4) are highlighted. In the study sites, 74% of urban barangays have a high school compared to only 55% of rural barangays.

In contrast, for children 6 to 14 years old, higher significant impact on enrollment was observed among children in rural areas compared to urban areas in both models. Since supply of elementary schools does not differ for urban and rural areas, this result can only be explained by the lower baseline enrollment rate in rural areas.

Table 5.16. Enrollment

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Enrollment of children 3 to 5 years old	impact	-1.11	-0.14	2.10	-1.55	-0.17	2.55
	se	4.83	4.32	2.74	5.94	5.33	3.32
	non-Pantawid	54.73	54.09	54.19	54.89	54.08	54.13
	number of obs.	1,164	1,373	2,138	1,150	1,362	2,138
Enrollment of children 6 to 11 years old	impact	0.62	0.72	0.08	0.89	0.77	0.10
	se	0.72	0.69	0.49	0.89	0.84	0.57
	non-Pantawid	97.85	97.80	98.18	97.80	97.80	98.18
	number of obs.	2,778	3,460	5,663	2,444	3,089	5,663
Enrollment of children 12 to 15 years old	impact	-0.15	0.73	1.91**	0.48	1.60	2.19**
	se	1.99	1.85	1.14	2.16	2.04	1.31
	non-Pantawid	94.28	93.68	93.45	93.90	93.25	93.39
	number of obs.	1,448	1,837	3,643	1,670	2,080	3,643
Enrollment of children 16 to 17 years old	impact	8.47	7.42	6.24*	10.36	9.09	7.31*
	se	5.18	4.62	2.84	6.31	5.69	3.32
	non-Pantawid	78.03	78.80	80.11	77.58	78.37	79.91
	number of obs.	927	1,102	1,641	923	1,099	1,641
Enrollment of children 12 to 17 years old	impact	4.46*	3.80	3.56***	4.88*	4.40	4.11***
	se	2.32	1.99	1.12	2.54	2.23	1.29
	non-Pantawid	88.19	88.32	89.13	88.09	88.19	89.02
	number of obs.	2,295	2,866	5,284	2,444	3,002	5,284
Enrollment of children 6 to 14 years old	impact	1.20	1.31	1.15***	1.63*	1.97**	1.34***
	se	0.79	0.74	0.44	0.84	0.77	0.51
	non-Pantawid	96.61	96.48	96.71	96.38	96.26	96.68
	number of obs.	3,700	4,650	8,467	4,929	5,917	8,467
Enrollment of children 15 to 20 years old	impact	-0.09	0.27	0.56	0.13	0.41	0.64
	se	0.61	0.55	0.33	0.67	0.61	0.38
	non-Pantawid	97.86	97.71	97.65	97.76	97.67	97.64
	number of obs.	1,583	1,961	3,020	1,769	2,111	3,020

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Disaggregating by sex of child, significant difference was observed for male children 6 to 14 years old. Looking closely, enrollment rate for female children is estimated at high rates of around 98 to 99% making it difficult for the program to marginally increase the proportions further. Impact on enrollment for younger children (aged 3-5 years) is also higher for female beneficiaries compared to male beneficiaries (impact for male is -1; +4 pp for female using the

full sample). These results confirm observations in several statistics and studies that more girls are enrolled in school compared to boys.

Analysis by monitoring status shows strong disparity between children who are monitored in the program versus those who are not, based on sharp and fuzzy RD estimates. For all age groups except 3 to 5, program impact on enrollment is strongly positive among monitored children with around 21 percentage point increase in enrollment among children 15 to 20 years old. For younger children, the difference between the monitored and non-monitored children is relatively smaller implying that younger children, regardless of monitoring status, are equally likely to be affected by the program and are equally likely to attend school. On the other hand, for older children, being monitored in the program increases the probability of enrollment in school, relative to non-Pantawid children and to children who are not monitored. Conversely, older children who are not monitored in the program have reduced likelihood of being enrolled in school compared to monitored beneficiary children as well as non-beneficiaries.

In terms of attendance rates, no significant difference was observed between the Pantawid and non-Pantawid children across all age groups including pre-school age for both sharp and fuzzy RD models (Table 5.17). On the average, attendance rate is around 88% for children 3 to 5 years old, 97% for children 6 to 11 years old, 98% for children 12-15 years old, and 98% for children 16 to 17 years old. Likewise, no significant difference was observed in terms of proportion of Pantawid and non-Pantawid children that attended class at least 85% of the school days (Table 5.18). Despite the lack of impact on attendance rates, it must be noted that the attendance rates for all age groups are already very high even for the older children who we expect to have higher risks of dropping out of school. In the second impact evaluation, a positive impact on attendance of children 3 to 5 years old was identified; this was not observed in this study.

Disaggregating by urban and rural location, a significant impact is observed on the attendance rate of children 3 to 5 years old in rural areas by 8 percentage points (93% in Pantawid and 84% in non-Pantawid). A positive, but smaller impact was also observed for older children 16 to 17 years old in rural areas where Pantawid impact is 2 percentage points based on the sharp RD estimation, no significant impact is observed on this outcome, however, using fuzzy RD. In terms of proportion of children who with at least 85% attendance, an increase of 22 percentage points for sharp RD and 27 percentage points using fuzzy RD, was noted for children 3 to 5 years old in rural areas.

Meanwhile, the subgroup analysis by sex showed disparity in the program impact on attendance rates of male and female children for the age groups 12 to 15 and 6 to 14 years old. For both outcomes, small positive impact was noted for female beneficiary children using both sharp and fuzzy RD, while no impact was noted for male beneficiary children.

No significant impact was observed by sharp and fuzzy estimations on attendance rates for children 3 to 5 and 6 to 11 years old, regardless if they are monitored or not. Estimates using the narrow bandwidths were not available due to the small number of monitored children 3 to 5 years old. For the age group 6 to 14 years old, attendance was higher for non-monitored children by 1-2 percentage points based on sharp and fuzzy RD estimates, respectively. Results for age group 12 to 15, and 16 to 17 are contradicting. For children 12 to 15 years old, attendance rate of non-monitored children is significantly higher for Pantawid versus non-Pantawid. On the other hand, for children 16 to 17 years old, attendance rates for non-monitored

children are significantly lower for non-monitored children while no impact was observed among monitored children. This is consistent across sharp and fuzzy models, although higher magnitude of impact is observed for fuzzy RD.

Table 5.17. Attendance rates (in percentage)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Attendance rate of children 3 to 5 years old	impact	1.25	1.45	-1.13	0.98	1.94	-1.37
	se	3.14	2.77	1.64	4.35	3.72	2.01
	non-Pantawid	86.53	86.66	88.45	86.70	86.42	88.49
	number of obs.	512	616	1,139	466	589	1,139
Attendance rate of children 6 to 11 years old	impact	0.85	0.69	0.52	1.01	0.88	0.60
	se	0.66	0.58	0.31	0.84	0.72	0.36
	non-Pantawid	96.56	96.73	96.99	96.48	96.64	96.97
	number of obs.	2,687	3,364	5,558	2,450	3,093	5,558
Attendance rate of children 12 to 15 years old	impact	0.58	0.58	0.73	0.68	0.65	0.84
	se	0.63	0.55	0.31	0.70	0.62	0.36
	non-Pantawid	96.95	97.03	97.22	96.94	97.03	97.20
	number of obs.	1,804	2,220	3,438	1,849	2,269	3,438
Attendance rate of children 16 to 17 years old	impact	-0.94	-0.70	0.23	-1.16	-0.88	0.27
	se	1.01	0.90	0.58	1.24	1.12	0.67
	non-Pantawid	98.26	98.17	97.79	98.33	98.23	97.78
	number of obs.	692	859	1,365	683	842	1,365
Attendance rate of children 12 to 17 years old	impact	0.05	0.16	0.59	0.06	0.20	0.68
	se	0.58	0.51	0.27	0.66	0.59	0.31
	non-Pantawid	97.35	97.36	97.38	97.36	97.35	97.36
	number of obs.	2,273	2,833	4,803	2,347	2,891	4,803
Attendance rate of children 6 to 14 years old	impact	0.77	0.63	0.59	0.89	0.85	0.68
	se	0.57	0.49	0.26	0.73	0.64	0.30
	non-Pantawid	96.65	96.81	97.06	96.56	96.67	97.04
	number of obs.	4,014	4,984	8,235	3,430	4,321	8,235
Attendance rate of children 15 to 20 years old	impact	-0.09	0.27	0.56	0.13	0.41	0.64
	se	0.61	0.55	0.33	0.67	0.61	0.38
	non-Pantawid	97.86	97.71	97.65	97.76	97.67	97.64
	number of obs.	1,583	1,961	3,020	1,769	2,111	3,020

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Table 5.18. Attendance of at least 85%

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Attendance of at least 85% among children 3 to 5 years old	impact	0.14	1.57	-1.36	-1.53	0.99	-1.65
	se	6.39	5.59	3.47	9.33	7.69	4.23
	non-Pantawid	71.94	71.79	73.97	72.59	71.84	74.02
	number of obs.	543	662	1,139	477	598	1,139
Attendance of at least 85% among children 6 to 11 years old	impact	1.75	1.55	2.00	2.17	1.96	2.32
	se	1.83	1.62	0.97	2.36	2.10	1.12
	non-Pantawid	92.50	92.84	93.21	92.19	92.54	93.15
	number of obs.	3,201	3,844	5,563	2,711	3,380	5,563
Attendance of at least 85% among children 12 to 15 years old	impact	-0.55	-0.73	0.57	-0.62	-0.89	0.66
	se	2.21	1.93	1.08	2.47	2.19	1.25
	non-Pantawid	93.98	94.28	94.20	94.03	94.35	94.19
	number of obs.	1,763	2,173	3,443	1,816	2,228	3,443
Attendance of at least 85% among children 16 to 17 years old	impact	-3.70	-3.84	0.26	-4.82	-4.58	0.30
	se	3.33	3.05	1.96	3.84	3.66	2.27
	non-Pantawid	96.94	96.84	94.74	97.23	97.02	94.73
	number of obs.	624	762	1,369	685	843	1,369
Attendance of at least 85% among children 12 to 17 years old	impact	-1.54	-1.56	0.44	-1.85	-1.79	0.51
	se	1.98	1.76	0.90	2.24	2.00	1.05
	non-Pantawid	94.82	94.93	94.37	94.93	95.02	94.36
	number of obs.	2,276	2,822	4,812	2,384	2,930	4,812
Attendance of at least 85% among children 6 to 14 years old	impact	0.96	0.76	1.54	1.12	1.10	1.78
	se	1.50	1.33	0.76	1.95	1.73	0.88
	non-Pantawid	92.90	93.26	93.58	92.68	92.90	93.53
	number of obs.	4,292	5,264	8,242	3,491	4,404	8,242
Attendance of at least 85% among children 15 to 20 years old	impact	0.05	0.52	1.36	0.50	0.88	1.56
	se	1.91	1.70	1.05	2.04	1.86	1.20
	non-Pantawid	94.76	94.54	94.26	94.54	94.46	94.22
	number of obs.	1,568	1,953	3,029	1,834	2,167	3,029

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

5.2.2. Hypothesis 8. Pantawid Pamilya participation results in improved education outcomes of children.

Table 5.19 presents the estimates of program impact on enrollment by level of corresponding age group. For this set of indicators, children age 3 to 5 years old must be enrolled in nursery up to kindergarten; children 6 to 11 years old must be enrolled in elementary, children 12 to 15 years old must be enrolled in junior high school; and children age 16 to 17 must be enrolled in senior high school. These indicators were designed to capture delays in entry and progression in schooling. Among the school levels, only enrollment in junior high school returned positive significant impact for the sharp and fuzzy RD. Using sharp RD, the probability of the Pantawid children age 12 to 15 years old to be enrolled in junior high school is higher by 5 percentage points than their counterparts who are from non-Pantawid households (78% in non-Pantawid

and 83% in Pantawid, CER). Fuzzy RD estimates, on the other hand, show an increase by 6 percentage points (78% in non-Pantawid and 84% in Pantawid, CER). No significant difference is noted on age-appropriate enrollment in daycare/kindergarten (3-5 years old), elementary (6-11 years old) and senior high school (16-17 years old) for both models. Consistent with the increased enrollment rates among high-school age children, these findings suggest that more children of Pantawid beneficiaries enter school at the prescribed age and keep progressing the education ladder compared to their counterparts. It also suggests that the expansion of the age coverage of the program resulted in better education outcomes for older children who are at more risk of dropping out of school and engaging in child labor.

Table 5.19. School level enrollment

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Enrollment in daycare, nursery, preschool/kindergarten of children 3 to 5 years old	impact	-0.71	0.15	1.40	-1.37	-0.44	1.71
	se	6.41	5.67	3.52	8.52	7.49	4.29
	non-Pantawid	36.42	35.49	35.02	37.04	36.02	34.97
	number of obs.	721	862	1,357	640	775	1,357
Enrollment in preschool or kindergarten children 5 years old	impact	0.80	0.82	-3.39	2.36	1.22	-4.17
	se	9.41	8.52	5.28	12.35	10.93	6.51
	non-Pantawid	53.35	53.54	56.33	52.87	53.21	56.43
	number of obs.	425	507	781	390	468	781
Enrollment in elementary of children 6 to 11 years old	impact	0.01	0.18	-0.59	-0.39	0.17	-0.69
	se	1.39	1.27	0.84	1.74	1.57	0.97
	non-Pantawid	95.24	95.02	95.16	95.54	95.09	95.18
	number of obs.	2,735	3,409	5,663	2,427	3,071	5,663
Enrollment in junior high school of children 12 to 15 years old	impact	5.22*	5.69**	4.03***	6.00*	6.55**	4.66***
	se	2.57	2.25	1.40	3.00	2.66	1.62
	non-Pantawid	78.19	78.39	80.45	78.00	78.15	80.33
	number of obs.	2,736	3,330	5,284	2,662	3,270	5,284
Enrollment in senior high school of children 16 to 17 years old	impact	4.57	4.48	3.06	5.71	5.41	3.58
	se	6.06	5.28	3.35	7.39	6.53	3.92
	non-Pantawid	46.88	47.24	50.35	46.59	46.99	50.25
	number of obs.	927	1,102	1,641	917	1,094	1,641

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Subgroup analysis by urban and rural location on age-appropriate education level shows higher program impact among children in urban areas compared to rural. For children 12 to 15 years old, both urban and rural areas showed positive impact on enrollment rate in junior high school, but using sharp RD, the impact in urban areas is slightly higher at 9 percentage points compared to 7 percentage points in rural areas. For older children 16 to 17 years old, impact in urban areas is up to 27 percentage points, while impact is lower in magnitude and statistically not significant for rural areas. Among elementary-aged children, significant decrease in proportion in rural areas was observed (-4 percentage points lower for Pantawid compared to non-Pantawid) while impact in urban areas is positive, with a 3 percentage point increase in enrollment. Fuzzy RD estimates are similar, but display greater magnitude of impact compared to sharp RD. These disparities between urban and rural areas in terms of age-appropriate

enrollment is mostly consistent with the earlier finding on enrollment rates where urban areas experienced stronger program impacts. These results can be associated with the differences in the supply of schools between urban and rural. As discussed earlier, a lower proportion of rural areas have secondary schools within their premises.

In terms of differential impact by sex of child, results show no significant differences in program impact between male and female children except for the junior high school level for sharp and fuzzy RD models. A higher proportion of female Pantawid Pamilya children 12 to 15 years old (by 9 percentage points) are enrolled in junior high schools compared to non-Pantawid children of the same age group and sex. Aside from this, it must be noted that for all age groups (i.e., 6 to 11, 12 to 15, and 16 to 17), baseline proportions of age-appropriate enrollment in the corresponding school level are consistently higher for female children compared to male children. This observation is consistent with national statistics that girls have better education outcomes compared to boys. However, the finding that females are more strongly impacted by the program means that additional effort should be done to improve the education outcomes of male children.

Between monitored and non-monitored children, higher program impact was noted among monitored children age 12 to 15 and 16 to 17, consistent for both sharp and fuzzy RD estimations in terms of impact and magnitude. The proportion of children 12 to 15 years old enrolled in junior high school is 10 percentage points higher among children beneficiaries monitored in school compared to non-beneficiaries, while no significant impact was observed when comparing non-beneficiaries with children beneficiaries who are not monitored in school. Among children 16 to 17 years old, the impact on children monitored in school is 18 percentage points, while no impact was noted for non-monitored children.

In terms of school dropout rates, desired program impact was observed only among children age 6 to 14 years old. In this age group, dropout rate is 1 percent lower among Pantawid children compared to non-Pantawid children (2 percent versus 1 percent in Pantawid, CER), fuzzy RD also results in comparable impact estimates. This reduction in dropout rates is not significant for other age groups in the narrowest bandwidth, although comparison of the magnitude of impact estimates across age groups suggest that the program impact among the 6 to 14 years old is more prominent in the older (i.e. starting 12 years old) rather than younger children. This reduction in the dropout rates of older children can be observed in the 12 to 15 and 12 to 17 age groups, although statistically significant only when the full sample is used for both sharp and fuzzy RD. These results are consistent with the earlier results on increased enrollment and school-level enrollment of older children. In contrast, no program impact was found on drop-out rates in the second wave of evaluation.

Table 5.20. Dropout rate

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Dropout rate among children 6 to 11 years old	impact	-0.26	-0.38	-0.02	-0.32	-0.39	-0.02
	se	0.58	0.57	0.31	0.69	0.69	0.36
	non-Pantawid	1.02	0.98	0.78	1.05	1.00	0.78
	number of obs.	2,319	2,932	5,548	2,159	2,701	5,548
Dropout rate among children 12 to 15 years old	impact	-1.56	-1.54	-1.18*	-1.30	-1.79	-1.36*
	se	1.22	1.12	0.77	1.53	1.37	0.88
	non-Pantawid	3.53	3.42	3.06	3.40	3.58	3.09
	number of obs.	1,911	2,348	3,511	1,592	1,970	3,511
Dropout rate among children 16 to 17 years old	impact	-4.13	-2.29	-1.76	-5.03	-2.81	-2.03
	se	3.54	3.21	1.97	4.33	3.94	2.28
	non-Pantawid	9.17	8.36	7.52	9.43	8.51	7.59
	number of obs.	698	852	1,436	697	851	1,436
Dropout rate among children 12 to 17 years old	impact	-1.68	-1.53	-1.24*	-1.59	-1.90	-1.43*
	se	1.38	1.20	0.72	1.76	1.54	0.83
	non-Pantawid	4.87	4.85	4.30	4.65	4.94	4.34
	number of obs.	2,167	2,698	4,947	1,797	2,287	4,947
Dropout rate among children 6 to 14 years old	impact	-1.03*	-1.13**	-0.44*	-1.21*	-1.33**	-0.51*
	se	0.56	0.54	0.32	0.66	0.63	0.37
	non-Pantawid	1.90	1.88	1.46	1.95	1.93	1.48
	number of obs.	3,721	4,645	8,275	3,605	4,523	8,275
Dropout rate among children 15 to 20 years old	impact	-1.24	-1.26	-0.46	-1.33	-1.68	-0.52
	se	2.66	2.36	1.30	2.90	2.59	1.49
	non-Pantawid	8.26	8.30	7.27	8.32	8.29	7.28
	number of obs.	1,492	1,849	3,141	1,650	2,027	3,141

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Subgroup analysis by urban and rural location show significant reduction in drop-out rates of children 6 to 14 years old, and 12 to 15 years old in rural areas, while no significant impact of the program on drop-out was observed in urban areas. On the other hand, among older children 16 to 17 years old, significant reduction in drop-out rates was observed in both urban and rural areas. Estimation of impact is consistent between sharp and fuzzy models.

In terms of the sex of the child, a 4-percentage point reduction in drop-out rates was observed among female children 12 to 17 years old using both sharp and fuzzy models. No significant program impact on drop-out rates of male children were observed for these age groups. Meanwhile, for younger children 6 to 14 years old, reduction in drop-out is observed in male children while no significant impact was observed among female children for the two models. These results suggest that the program keeps younger boys in school, but the program impact dwindles as the children grow older. Conversely, the program has a stronger effect on keeping girls in school as they grow older. This finding captures a missed opportunity for the program because boys are more at risk of dropping out especially as their age increases. For all age groups, male children consistently have higher proportions of dropping out compared to female children.

As in other indicators in education, program impact on drop-out rates between beneficiary children who are monitored and not monitored in school were also compared. Results show larger decrease in dropout rates among monitored beneficiary children for all age groups for both sharp and fuzzy RD estimations. Reduction in drop-out rates become larger as the age group increases, possibly due to the higher baseline proportions of drop-out for older children.

Program impact on participation of children in extracurricular activities was also analyzed (Table 5.21). These extracurricular activities include participation in academic, artistic, and/or athletic competitions in school, as well as memberships in school clubs and organizations. This was used as a composite indicator of the child's academic and athletic capabilities, willingness to participate and immerse in learning activities outside of the classroom, as well as self-esteem. Based on both sharp and fuzzy estimates, a higher proportion of Pantawid Pamilya children participate in extracurricular activities. Participation rates of beneficiary children are significantly higher by 6 percentage points based on sharp RD (CER), and by 7 percentage points using fuzzy RD (CER). No significant impact on number of activities participated in was observed for both models.

Table 5.21. Participation in extracurricular activities among school-aged children

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Participation in any extracurricular activity in school	impact	5.85**	4.09*	1.34	7.08**	5.86**	1.55
	se	2.65	2.41	1.38	3.23	2.92	1.60
	non-Pantawid	47.72	48.93	51.49	47.31	48.17	51.45
	number of obs.	5,077	6,389	11,773	4,686	5,842	11,773
Count of extracurricular activities participated in school	impact	0.04	0.05	-0.01	0.04	0.06	-0.01
	se	0.09	0.08	0.05	0.11	0.10	0.05
	non-Pantawid	1.10	1.10	1.18	1.10	1.10	1.18
	number of obs.	4,425	5,581	11,773	4,330	5,469	11,773

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Subgroup analyses showed positive program impact on extracurricular participation for children beneficiaries who are in rural areas, male, and monitored in the program using sharp and fuzzy RD models. Based on the results of sharp RD, beneficiaries in rural areas are more likely to participate in extracurricular activities by 6 percentage points, compared to non-Pantawid children in urban areas. Larger impact is observed using fuzzy RD, with positive impact of 10 percentage points. By sex, program impact is only observed among male children for both participation in any extracurricular activity and number of extracurricular activities participated in, with larger impact using fuzzy RD. This is likely due to lower baseline proportions among male compared to female children. Among non-Pantawid children only 42% of the males participate in extracurricular activities compared to 53% among females. Likewise, both sharp and fuzzy results observed a 9-percentage point increase in participation among children beneficiaries who are monitored in school. No impact was observed when comparing non-monitored Pantawid and non-Pantawid children.

5.2.3. Hypothesis 9. Pantawid Pamilya reduces the incidence and time spent on child labor.

No significant difference was observed for child labor, both in terms of incidence of child labor and time spent on child labor. This was consistently observed in both the sharp and fuzzy RD models.

The proportion of Pantawid and non-Pantawid children aged 10-14 years' old who worked at least an hour in the past month are comparable at 5.8% and 5.5%, respectively. The second wave of evaluation also found no impact on work incidence for this age group but noted a higher percentage (12%) of beneficiary and non-beneficiary children who were engaged in labor.

On the duration of work per month, non-Pantawid children aged 10 to 14 years old engage in paid or unpaid work for 5.2 days in one month while Pantawid children of the same age are working almost a half-day shorter (0.4-day reduction) or 4.8 days. This reduction in the duration of engagement in child labor not statistically significant, possibly due to the small number of observations (n=121, CER). A larger, albeit still insignificant reduction is also observed in the fuzzy RD estimation (0.5-day reduction; n=115, CER). In contrast, a significant reduction in the number of days spent on child labor was reported in IE wave 2 (i.e., 6 days lower).

Despite the lack of impact of the program on child labor indicators, however, the data also showed that children engaged in economic activities are also attending school. Of the children who worked at least one day in the past 12 months, 9 out 10 were also enrolled in school at the same time. This suggests that children are not dropping out of school despite concerns. A possible motivation for this behavior is to generate additional income to supplement the cash grants in covering education expenses.

Table 5.22. Child labor (10 to 14 years old)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
At least 1 hour of work (with or without pay) last month, 10-14 yrs. old	impact	0.35	0.85	0.97	1.22	0.40	1.12
	se	1.69	1.50	0.98	2.24	2.03	1.13
	non-Pantawid	5.52	5.06	4.26	5.52	5.65	4.23
	number of obs.	2,815	3,368	4,557	2,097	2,579	4,557
At least 1 hour of paid work last month, 10-14 yrs. old	impact	0.76	1.31	1.09	1.68	0.65	1.26
	se	1.54	1.38	0.95	2.22	2.00	1.10
	non-Pantawid	4.96	4.46	3.98	5.09	5.32	3.95
	number of obs.	3,072	3,572	4,557	2,013	2,484	4,557
Number of days worked (with or without pay) last month, 10-14 yrs. old	impact	-0.40	-0.03	-0.05	-0.54	-0.17	-0.06
	se	1.39	1.23	0.65	1.78	1.53	0.68
	non-Pantawid	5.20	5.07	5.21	5.28	5.12	5.21
	number of obs.	121	137	207	115	131	207
Worked with or without pay in the last 12 months, 10-14 yrs. old	impact	-0.20	-1.02	0.08	0.10	-0.83	0.10
	se	2.34	2.16	1.28	2.72	2.55	1.48
	non-Pantawid	8.85	8.84	6.99	8.85	8.90	6.98
	number of obs.	2,174	2,670	4,560	1,990	2,451	4,560

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Results of the subgroup analysis for urban and rural areas using both sharp and fuzzy RD models are interesting. In urban areas, a significant increase in the proportion (+6pp) of children 10 to 14 years old engaged in paid and unpaid work was observed among beneficiaries. In contrast, a significant reduction in the proportion of child labor (-6pp) was observed in rural areas. This finding supports the earlier hypothesis that children engaged in child labor do so to supplement the cash grants as cost of education and cost of living are generally higher in urban areas compared to rural. No significant impact on duration of child labor was observed in urban and rural areas.

No differences in program impact was observed between male and female children.

5.2.4. Hypothesis 10. Pantawid Pamilya promotes higher investments on education.

Total school expenditures per child were significantly higher by almost 9% for Pantawid children, with spending of Php396 on average monthly total school expenses in the last school year, compared to Php366 for non-Pantawid children[16] (Table 5.23). This translates to Php320 (i.e., Php32 per month for 10 months) higher expenditure on education for Pantawid children per school year compared to non-Pantawid children. This is higher than the reported program impact on education expenditure per school-aged child in the second wave of evaluation which is at Php200 only. The mean spending on individual education components such as school materials, allowances, and uniforms was also higher for beneficiary children, however, these differences were not statistically significant except for indications of small impact on expenditures on uniforms.

The fuzzy RD estimation also found a significant increase in the monthly expenditure in education of Pantawid children compared to non-Pantawid, but these were observed only in the model using the full sample of observations. Monthly expenditures on school materials and supplies is 6% higher for beneficiaries, while monthly expenditures on school uniform and total average monthly expenditures are 8% and 7% higher for beneficiaries compared to non-beneficiaries, respectively.

Results on monthly education expenditures in rural and urban areas are comparable for sharp and fuzzy RD models. Monthly expenditures on school materials and supplies is higher by 4% among Pantawid children compared to non-Pantawid in rural areas. Expenditures on school uniforms is also higher for rural beneficiaries, but no significant difference was observed in urban areas. For other education expenditure items such as tuition, uniform, etc., no significant impact was observed for both urban and rural areas. Likewise, no significant impact of the program on education expenditures was also observed by sex.

By monitored children, monthly expenditures on school materials and supplies was 12% higher for Pantawid monitored children compared to non-beneficiaries. In addition, monthly expenditure on school uniform is 11% higher, and average monthly total school expenditures is 3% higher for monitored Pantawid children. For all these indicators, no impact was observed when comparing Pantawid children who are non-monitored with non-Pantawid children. These results are consistent with the findings in other education indicators showing monitored

[16] Data used in the estimation are from the Module C questionnaire which asks itemized expenditures on education per child enrolled in school in the school year 2016-2017

children benefit more from the program compared to other children in Pantawid Pamilya households.

Table 5.23. Education expenditures

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Expenditures on tuition and other fees (per month) in the last school year	impact	-0.03	-0.03	0.01	-0.04	-0.02	0.01
	se	0.06	0.06	0.03	0.06	0.06	0.04
	non-Pantawid	3.27	3.29	3.28	3.28	3.29	3.28
	number of obs.	4,551	5,694	9,138	5,447	6,551	9,138
Expenditures on school materials and supplies (per month) in the last school year	impact	0.07	0.06	0.05*	0.08	0.08	0.06*
	se	0.04	0.04	0.02	0.05	0.05	0.03
	non-Pantawid	3.43	3.44	3.45	3.41	3.43	3.45
	number of obs.	5,955	7,248	11,153	5,012	6,267	11,153
Expenditures on school uniform (per month) in the last school year	impact	0.05	0.06	0.07**	0.07	0.08	0.08**
	se	0.04	0.04	0.02	0.04	0.04	0.03
	non-Pantawid	3.81	3.81	3.80	3.80	3.81	3.79
	number of obs.	3,566	4,464	8,714	3,998	4,961	8,714
Expenditures on school allowance (per month) last school year	impact	0.04	0.04	0.01	0.01	0.04	0.01
	se	0.07	0.06	0.04	0.09	0.08	0.05
	non-Pantawid	5.42	5.42	5.43	5.45	5.43	5.43
	number of obs.	6,941	8,246	11,234	5,308	6,624	11,234
Total school expenditures (per month) last school year	impact	0.08*	0.09**	0.06***	0.08	0.09	0.07***
	se	0.04	0.04	0.02	0.05	0.05	0.03
	non-Pantawid	5.90	5.89	5.90	5.90	5.90	5.90
	number of obs.	7,284	8,580	11,520	5,274	6,561	11,520

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

5.3. Impact on Household Welfare

This section presents the results on the program impact on measures of household welfare including household consumption and income, measures of dependency, access to government services and participation in community development activities, perception on violence against women and outlook on the future of their children.

Subgroup analysis that were performed include: rural and urban classification of areas for most indicators; sex of household members for labor outcomes; and monitoring status of children for indicators on outlook.

5.3.1. Hypothesis 11. Pantawid Pamilya increases household consumption and income.

Beneficiary households had a larger share of expenditures on clothing and footwear compared to non-beneficiary households (Table 5.24). Pantawid households share of clothing and

footwear expenditures is 0.3 percentage points higher than that of non-Pantawid households based on results of sharp and fuzzy RD estimations. Beneficiary households were also observed to have higher expenditures on clothing and footwear in the preceding evaluation.

Table 5.24. Household expenditures: Share to total expenditures

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Share of food to total expenditures	impact	1.36	1.31	0.35	1.70	1.65	0.43
	se	0.96	0.85	0.53	1.26	1.16	0.64
	non-Pantawid	63.13	63.13	63.42	63.13	63.06	63.41
	number of obs.	2,699	3,357	5,523	2,277	2,848	5,523
Share of non-food to total expenditures	impact	-1.36	-1.31	-0.35	-1.70	-1.65	-0.43
	se	0.96	0.85	0.53	1.26	1.16	0.64
	non-Pantawid	36.87	36.87	36.58	36.87	36.94	36.59
	number of obs.	2,699	3,357	5,523	2,281	2,848	5,523
Share of education to total expenditures	impact	-0.03	0.03	0.14	-0.19	-0.08	0.17
	se	0.21	0.19	0.11	0.32	0.28	0.13
	non-Pantawid	2.36	2.35	2.29	2.42	2.38	2.29
	number of obs.	3,026	3,670	5,523	2,252	2,819	5,523
Share of clothing and footwear to total expenditures	impact	0.27***	0.25***	0.22***	0.32***	0.31***	0.26***
	se	0.10	0.09	0.05	0.12	0.11	0.06
	non-Pantawid	1.06	1.09	1.17	1.05	1.08	1.17
	number of obs.	2,384	2,987	5,523	2,375	2,975	5,523
Share of health to total expenditures	impact	0.26	0.17	0.08	0.37	0.31	0.09
	se	0.17	0.14	0.09	0.25	0.20	0.11
	non-Pantawid	0.88	0.90	0.91	0.85	0.87	0.91
	number of obs.	2,957	3,578	5,523	2,396	2,995	5,523
Share of alcohol and tobacco to total expenditures	impact	0.03	0.03	-0.18	0.05	0.03	-0.22
	se	0.24	0.21	0.10	0.29	0.25	0.12
	non-Pantawid	1.55	1.54	1.63	1.54	1.54	1.64
	number of obs.	2,119	2,675	5,523	2,212	2,757	5,523

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Results of the analysis show no significant program impact on the average total per capita expenditure of households in the sample. The lack of strong impact on per capita expenditure has been consistently observed in the first and second wave of evaluations. It is important to note, however, that unlike in RCT evaluations, the sample of an RDD evaluation includes households that are near the threshold, or households relatively richer compared to the average of the poor. This means that it may be more difficult for the program to make a substantial marginal contribution to the average expenditures of the sampled households as this is expected to be higher than that of the average poor household. In addition, the amount of grants received by the beneficiaries have not substantially increased since the program pilot implementation in 2008, and the real value of the grants have only been diminishing.

Positive program impact on average per capita food expenditure was observed only when using the full sample of observations in the sharp RD estimation, although the equal magnitude of impact was estimated for all three bandwidths. Positive impact is also observed in the fuzzy

RD estimates using the MSE and sampling bandwidths. From the results of the sharp RD estimation, the average per capita food expenditure of Pantawid beneficiaries is 5.4% higher compared to non-Pantawid households (Table 5.23). In peso terms, this translates to Php965 additional amount of per capita food expenditure among beneficiaries. In contrast, no impact was observed for annual per capita expenditure on non-food items, with or without disbursements (e.g. taxes, insurance, etc.).

The study observed no increased spending on vice goods for Pantawid beneficiaries. Expenditures on vice goods such as alcohol and tobacco were not significantly different for program beneficiaries and non-beneficiaries, like the findings in the first and second waves of impact evaluation as well as various studies on other CCTs that report no impact on expenditure on vice goods.

No impact on education expenditure per school-aged child was noted based on the household level reported expenditure in contrast to the estimates presented in Table 5.23. The difference between the estimates presented in Table 5.23 and this table is that the estimates in the former is based on the school expenditures per child that was enrolled in the last school year; while the estimates in this table were based on lump sum expenditures reported for all children in the household. Note that the average expenditure on education per school-aged child is higher for Pantawid households compared to non-Pantawid households but the difference between the comparison groups are not statistically significant.

Consistent to the earlier finding on share of expenditures on clothing and footwear, average per capita expenditure of Pantawid Pamilya households on clothing and footwear is higher by 61% compared to non-Pantawid households. This is equivalent to a Php63 increase in spending on clothing by beneficiaries (Php167 for Pantawid households versus Php104 in non-Pantawid households). This increase in expenditure in clothing and footwear may be due to increase in purchase of uniforms of clothing for schooling of children as noted by Tutor (2014) and Adriano et. al. (2016).

Increase in average per capita expenditure on medical services and commodities was also observed but only when using the full sample. The estimated increase is 27% or Php6 additional expenditure per capita, per year. This is on top of the baseline expenditure of non-Pantawid households at Php24. This result may mean increases in preventive medical services and commodities like vitamins, family planning commodities, and health check-ups but this may also mean additional expenses for curative services such as treatment for illnesses. No significant difference in expenditures on inpatient care and outpatient care were observed.

Results of the fuzzy RD are consistent with the sharp RD estimation, but with slightly higher estimates of impact. Increase in average per capita food expenditure is estimated at 7% using the MSE bandwidth, while impact on average per capita expenditure on clothing and footwear is equivalent to an 80% increase.

Table 5.25. Household expenditures: Average per capita

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Average total per capita expenditure	impact	0.02	0.03	0.04	0.03	0.03	0.05
	se	0.03	0.03	0.02	0.04	0.04	0.02
	non-Pantawid	10.28	10.28	10.28	10.28	10.28	10.28
	number of obs.	2,643	3,284	5,523	2,346	2,953	5,523
Average per capita food expenditure	impact	0.05	0.06	0.05**	0.06	0.07*	0.06**
	se	0.04	0.03	0.02	0.04	0.04	0.02
	non-Pantawid	9.80	9.79	9.80	9.80	9.79	9.80
	number of obs.	2,723	3,392	5,680	2,744	3,415	5,680
Average per capita non-food expenditure	impact	0.01	0.02	0.03	0.01	0.02	0.04
	se	0.04	0.04	0.02	0.06	0.05	0.03
	non-Pantawid	9.23	9.22	9.22	9.23	9.23	9.22
	number of obs.	3,302	4,079	6,561	3,085	3,816	6,561
Average per capita non-food expenditure (including other disbursements)	impact	0.01	0.02	0.04	0.02	0.02	0.04
	se	0.04	0.04	0.02	0.06	0.05	0.03
	non-Pantawid	9.21	9.20	9.20	9.20	9.21	9.20
	number of obs.	3,301	4,074	6,561	2,719	3,383	6,561
Average per capita expenditure on vice goods (e.g. alcohol, tobacco)	impact	-0.10	-0.07	-0.04	-0.16	-0.09	-0.05
	se	0.25	0.22	0.12	0.32	0.29	0.14
	non-Pantawid	3.19	3.18	3.24	3.21	3.18	3.24
	number of obs.	2,752	3,400	6,087	2,457	3,073	6,087
Average per capita expenditure on inpatient care	impact	0.16	0.10	0.06	0.25	0.17	0.07
	se	0.13	0.11	0.06	0.17	0.15	0.08
	non-Pantawid	0.39	0.41	0.39	0.37	0.39	0.39
	number of obs.	3,208	3,989	6,635	2,810	3,517	6,635
Average per capita expenditure on outpatient care	impact	-0.08	-0.04	0.06	-0.13	-0.09	0.07
	se	0.10	0.09	0.06	0.14	0.12	0.07
	non-Pantawid	0.67	0.63	0.54	0.69	0.66	0.54
	number of obs.	3,123	3,864	6,597	2,753	3,433	6,597
Average per capita expenditure on medical services and commodities	impact	0.24	0.22	0.28*	0.30	0.29	0.33*
	se	0.18	0.16	0.10	0.24	0.21	0.12
	non-Pantawid	3.17	3.17	3.14	3.17	3.15	3.13
	number of obs.	3,307	4,098	6,766	2,918	3,628	6,766
Average per capita expenditure on education per school age child	impact	0.08	0.10	0.13	0.09	0.10	0.15
	se	0.23	0.20	0.12	0.29	0.26	0.14
	non-Pantawid	5.42	5.42	5.49	5.43	5.42	5.48
	number of obs.	3,001	3,710	6,666	2,728	3,401	6,666
Average per capita expenditure on clothing and footwear	impact	0.48***	0.48***	0.36***	0.59***	0.58***	0.43***
	se	0.15	0.13	0.08	0.20	0.18	0.10
	non-Pantawid	4.64	4.67	4.79	4.58	4.62	4.78
	number of obs.	3,383	4,160	6,580	2,711	3,376	6,580

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

In terms of location, program impact on household expenditure varies between urban and rural areas. While generally no significant impact on expenditure is observed in urban areas, rural areas showed a 2.5 percentage point decrease in the share of their non-food consumption, and an increase of the same amount in the share of their food consumption. Positive impact was observed among households in urban areas in terms of health, specifically, a 57% increase in share of health to total expenditures (increase by 0.5 percentage points for both sharp and fuzzy RD). Positive impact on clothing and footwear share in expenditures is seen in both urban and rural areas.

Program impact on average per capita food expenditure is estimated at 11% increase in rural areas if using the narrowest bandwidth of the sharp RD estimation. Positive impact on this outcome is also observed for the same bandwidth in the fuzzy RD results but with a higher estimate of increase at 13%. In contrast, increase in average per capita non-food expenditure is 16% and 19% in urban areas using sharp and fuzzy RD models, respectively. These results are consistent with the above observations on the share of food and non-food expenses between urban and rural areas. For clothing and footwear, positive impact was also observed in both urban and rural areas, but the statistically significant of increase in expenses is only observed within the sampling bandwidth. Lastly, average per capita expenditure on vice goods such as alcohol or tobacco does not differ between Pantawid and non-Pantawid households, regardless of location (urban/rural).

Aside from expenditures, the third wave of impact evaluation also gathered information on household income (Table 5.26). Household per capita income for beneficiary households is significantly higher by 52% when grants are included (higher by approximately Php4,908). Excluding the grants, no significant difference was observed between the per capita income of non-Pantawid and Pantawid households despite the 14% higher value of income for Pantawid households. Mean per capita income from entrepreneurial activities and salaries and wages are also higher in Pantawid households by 3% and 12%, respectively; but differences were also not statistically significant. The same results were observed in the fuzzy regression discontinuity model.

Based on the results, the cash grants increase the income of the Pantawid households by more than half the original household income per capita. Looking at the raw means, the share of the cash grants only amounts to 11% of the total per capita income of the treatment households. This observation indicates that the program may have a multiplier effect on the household income, that is, aside from the additional amount added by the cash grants to the household money pool. A possible scenario is that a portion of the grants are being used for capital formation for entrepreneurial activities and other investments in that bring additional income to the households. It is also possible that the program or its outcomes has created shifts in the type of employment within the beneficiary households resulting in higher pays (e.g. from informal employment to formal employment). In support of this hypothesis is the 14% higher predicted income of beneficiary households compared to non-beneficiaries even if the cash grants are excluded.

Table 5.26. Household income

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Per capita income including grants	impact	0.42***	0.43***	0.45***	0.50***	0.53***	0.54***
	se	0.11	0.10	0.06	0.13	0.12	0.07
	non-Pantawid	9.15	9.11	9.15	9.14	9.10	9.13
	number of obs.	2,783	3,460	6,617	2,721	3,393	6,617
Per capita income without grants	impact	0.13	0.12	0.02	0.14	0.16	0.02
	se	0.15	0.14	0.08	0.18	0.17	0.10
	non-Pantawid	8.98	8.95	9.06	8.99	8.95	9.06
	number of obs.	2,853	3,548	6,591	2,591	3,239	6,591
Per capita income from salaries and wages	impact	0.11	0.08	0.02	0.20	0.12	0.02
	se	0.28	0.25	0.17	0.37	0.34	0.20
	non-Pantawid	6.83	6.78	6.66	6.88	6.82	6.66
	number of obs.	3,344	4,129	6,773	2,771	3,456	6,773
Per capita income from entrepreneurial activities	impact	0.03	0.08	-0.02	-0.01	0.04	-0.02
	se	0.16	0.15	0.09	0.21	0.19	0.10
	non-Pantawid	8.10	8.08	8.17	8.12	8.09	8.17
	number of obs.	1,369	1,720	2,962	1,108	1,409	2,962
Per capita income from other receipts (excluding grants)	impact	-0.14	-0.09	-0.08	-0.19	-0.12	-0.10
	se	0.16	0.14	0.09	0.20	0.18	0.11
	non-Pantawid	8.09	8.07	8.14	8.10	8.08	8.14
	number of obs.	1,397	1,710	2,796	1,380	1,691	2,796

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

As in the results of analysis of expenditures by urban and rural location, program impact on per capita income also differ between rural and urban barangays in the sample. Per capita income including grants is significantly higher by 80% in urban areas (Php16,420 for Pantawid, Php9,136 for non-Pantawid) versus 61% increase in rural areas (Php14,184 for Pantawid, Php8,792 for non-Pantawid). Increase in income without grants is maintained at 68% for urban areas, but the impact disappeared in rural areas. This finding proves the earlier observation that the program has increased the income of the household not just through the grants. However, this is only true for urban areas and not for the rural areas.

Looking further into the results, there is a high estimated program impact on per capita income from salaries and wages in urban areas for both sharp and fuzzy RD models. Specifically, per capita income from salaries and wages is more than 5 times larger among Pantawid Pamilya beneficiaries compared to non-Pantawid. This result is not seen in rural areas and would explain the persistent impact on the total per capita income even if the grants are excluded in the analysis. Meanwhile, no difference in capita income from entrepreneurial activities were observed for both urban and rural areas while per capita income from other receipts (excluding grants) is significantly lower in urban areas.

Results show that the program has a positive significant impact on hunger: reducing incidence of hunger in Pantawid Pamilya households by around 5 and 7 percentage points in sharp and fuzzy RD (Table 5.27), although a larger impact was observed in the second impact evaluation, with beneficiary households having a lower incidence by 10 percentage points. There is also a

lower average number of days experiencing hunger for beneficiary households, but this result is not statistically significant.

In terms of self-rated poverty, the study found no difference in the proportion of Pantawid and non-Pantawid households that consider themselves as "poor". In the second wave study, self-rated poverty status among Pantawid beneficiaries is lower by 7 percentage points compared to non-Pantawid households.

Subgroup analysis by location for both sharp and fuzzy RD showed program impact to be concentrated in urban areas. Incidence of hunger is 9-11 percentage points lower among Pantawid Pamilya households compared to non-Pantawid in urban areas. Lower incidence of hunger was also observed in rural areas, but it is of smaller magnitude (-2 percentage points reduction) and not statistically significant. Moreover, the proportion of households in urban areas that consider them non-poor is higher by 8-10 percentage points among beneficiaries compared to non-beneficiaries. This, again, was not observed in rural areas.

Table 5.27. Hunger and self-rated poverty

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Incidence of hunger	impact	-4.67**	-3.52*	-2.58**	-7.45**	-6.16**	-3.11**
	se	2.14	1.94	1.37	3.15	2.86	1.66
	non-Pantawid	17.73	17.00	15.45	19.44	18.39	15.52
	number of obs.	4,132	4,922	6,773	2,816	3,497	6,773
Number of days experienced hunger in the past 3 months	impact	-0.18	-0.18	-0.08	-0.14	-0.22	-0.10
	se	0.28	0.26	0.16	0.35	0.33	0.19
	non-Pantawid	0.96	0.93	0.79	0.96	0.97	0.79
	number of obs.	3,362	4,159	6,758	2,819	3,512	6,758
Self-rated poverty status (Poor)	impact	-0.74	0.59	1.83	-1.74	-0.27	2.21
	se	2.73	2.44	1.55	3.64	3.23	1.87
	non-Pantawid	20.91	20.47	19.85	21.23	20.71	19.80
	number of obs.	3,259	4,043	6,754	2,827	3,519	6,754
Self-rated poverty status (Not-Poor)	impact	0.95	0.95	0.91	1.15	1.22	1.09
	se	2.21	1.98	1.20	2.58	2.27	1.45
	non-Pantawid	12.98	12.73	12.01	12.86	12.51	11.99
	number of obs.	3,206	3,952	6,754	3,584	4,346	6,754

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

The study also considered the possible boosting effect on household welfare brought by other social protection or assistance programs that use the same targeting mechanism as Pantawid Pamilya. A critical program that was considered in the analysis is the Sustainable Livelihood program (SLP), also being implemented by DSWD, which provides micro-enterprise development grants and "starter kits", as well as employment facilitation assistance in the form of skills training and grants. The SLP, like Pantawid Pamilya, targets beneficiaries identified as poor in the Listahanan, and is likewise designed to prioritize Pantawid Pamilya beneficiaries in identifying its beneficiaries.

The sample households covered in the analysis were matched with the list of SLP beneficiaries that received benefits of any type (i.e., Micro-enterprise Development, or employment facilitation) from 2011 to 2017. The matching results showed that only 5%, or 329 out of the 6,775 sample households received SLP benefits in the span of seven years. Since there are only few SLP beneficiaries in the sample, more conventional tests for heterogeneity such as analysis of subsets of the sample and/or use of models with interactions, were not feasible. Instead, the same models used in this section were re-estimated only among Pantawid Pamilya beneficiaries that never received SLP benefits in the preceding years.

These additional analyses can be found in Appendix 9 of this report. From the results, the observed impact on the in the tables above are retained when using the limited sample that does not include SLP beneficiaries. This is somewhat expected as the number of SLP beneficiaries in the sample is only 5% of the sample households.

5.3.2. Hypothesis 12. Pantawid Pamilya Pantawid Pamilya does not encourage dependency.

The study observed mixed results on labor market outcomes. Similar to findings in the second impact evaluation, program beneficiaries and non-beneficiaries are equally likely to be in the labor market (Table 5.28). Pantawid beneficiaries have a significantly higher number of work hours when employed and are more likely to have another job or business besides their primary occupation. Compared to non-beneficiaries, Pantawid beneficiaries work 2.4-2.6 more hours per week in total (43 hours for Pantawid, compared to 40 hours for Non-Pantawid). A higher percentage of beneficiaries (6%) are more likely to have another job or business besides their primary occupation in contrast to non-beneficiaries (3%).

However, this evaluation also finds impacts different from earlier evaluation. Program beneficiaries were observed to have a lower likelihood of being employed (by 3 percentage points), with the employment rate of Pantawid beneficiaries at 90% compared to 93% for non-Pantawid. Beneficiaries are also no longer more likely to be looking for additional work when unemployed. Lastly, a lower proportion of beneficiaries were observed to be looking for work when unemployed (by 14-16 percentage points), however, this is not statistically significant and needs further investigation, as the estimates were only computed within a small sample size preventing the inclusion of municipal fixed effects.

Fuzzy RD results on employment and labor force participation outcomes are consistent with the sharp RD estimation. Employment is significantly lower for beneficiary households by 3.2 percentage points. A significant increase in the likelihood of Pantawid members having a job or business besides their primary occupation was also observed. The fuzzy RD estimation also observed higher work hours per week for Pantawid beneficiaries.

Table 5.28. Employment

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Labor force participation	impact	0.10	0.79	0.69	-0.21	0.12	0.85
	se	1.13	0.97	0.61	1.65	1.41	0.74
	non-Pantawid	57.97	57.62	57.50	58.18	57.97	57.48
	number of obs.	12,564	15,143	22,315	10,172	12,549	22,315
Employment	impact	-2.69**	-2.59***	0.08	-3.24**	-3.25***	0.10
	se	1.11	0.96	0.52	1.39	1.21	0.63
	non-Pantawid	92.99	92.80	91.83	93.09	92.93	91.82
	number of obs.	4,784	6,077	12,860	4,655	5,918	12,860
Usual work hours per week in primary occupation	impact	1.78	1.11	0.28	2.20	1.37	0.35
	se	1.13	0.99	0.60	1.40	1.22	0.74
	non-Pantawid	39.47	39.71	39.81	39.41	39.67	39.80
	number of obs.	5,710	7,021	11,731	5,718	7,029	11,731
Other job or business besides primary occupation	impact	2.81*	2.30*	0.18	3.21*	2.64	0.22
	se	1.60	1.44	0.71	1.91	1.73	0.87
	non-Pantawid	5.30	5.41	6.92	5.27	5.37	6.92
	number of obs.	4,005	5,132	11,675	4,297	5,471	11,675
Usual work hours per week in other jobs	impact	1.05	1.62	2.27	1.12	1.76	2.84
	se	2.97	2.76	1.78	3.34	3.17	2.23
	non-Pantawid	17.04	16.66	16.94	17.06	16.68	16.83
	number of obs.	315	387	816	310	377	816
Total usual work hours per week	impact	2.62**	1.92*	0.49	2.36*	1.58	0.60
	se	1.22	1.07	0.61	1.33	1.16	0.75
	non-Pantawid	40.20	40.44	40.94	40.37	40.61	40.93
	number of obs.	5,108	6,360	11,732	6,388	7,721	11,732
Looking for additional work if employed	impact	-0.73	-0.70	0.27	-0.85	-1.04	0.33
	se	1.60	1.38	0.71	2.21	1.92	0.87
	non-Pantawid	9.14	8.90	8.32	9.46	9.17	8.31
	number of obs.	5,439	6,726	11,871	4,483	5,684	11,871
Unemployed and looking for work	impact	-14.13	-14.02	-4.22	-16.35	-18.13	-5.10
	se	10.59	9.13	4.33	14.00	12.11	5.24
	non-Pantawid	36.76	36.69	30.29	37.03	37.42	30.38
	number of obs.	502	607	1,043	469	566	1,043

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Additional estimation results by age group and for households that never received SLP benefits and are also presented in Appendix 8 (with the other tables) and Appendix 9, respectively.

These results generally indicate positive program impact despite some surprising findings. No significant difference was observed between labor force participation of beneficiaries and non-beneficiaries indicating that the program, on the average, does not affect willingness to work of beneficiaries. Reduction in employment rate of beneficiaries was observed but this does not necessarily mean beneficiaries are discouraged to look for work. Employment, unlike labor force participation, depends on both the demand and supply for workers, and reduction in employment could mean lack of available jobs for beneficiaries as much as it could mean lack

of available workers willing and able to accept the job. The results also revealed that beneficiaries who are employed work longer and work more types of jobs than their counterparts who are non-beneficiaries. This negates concerns of dependency as this observation means employed beneficiaries put more effort in earning additional income. However, the opposite was observed for other members who are not working as the analysis show reduction in work-seeking behavior of the unemployed, although this is not statistically significant. To further understand the findings, subgroup analyses by age group, sex and urban-rural location were performed.

Disaggregating by age group, results are generally consistent across both sharp and fuzzy RD results. No significant difference between labor force participation rates of Pantawid and non-Pantawid household members was observed except for the older age group (65 years old and older) where the estimate is 8-18 percentage points higher for beneficiaries for MSE and sampling bandwidths of the sharp RD estimation, and all bandwidths of fuzzy RD. Employment rate is lower for beneficiaries age 55 to 64 years old, robust across all bandwidths and sharp and fuzzy estimates, while no significant program impact was observed for other age groups (15 to 24; 25 to 34; 35 to 44; 45 to 44; and 65 and older). No significant difference was observed for the likelihood of having other jobs aside from the main occupation, but in almost all the age groups, the proportions are higher for beneficiaries than non-beneficiaries. Number of work hours per week are higher among beneficiaries for age groups starting 25 years to 54 years; but, the largest impact was observed in the age group 45 to 54 years old where usual working hours in the main occupation 6-7 hours longer for beneficiaries, and total working hours including other jobs is 7-9 hours longer for beneficiaries.

Results of both sharp and fuzzy RD estimations show that reduction in employment rate is significant for male beneficiaries (lower by 3 percentage points), but at the same time, male Pantawid beneficiaries also had significantly longer duration of work hours (longer by 3 hours per week) and higher proportion of having other jobs aside from main occupation (4-5 percentage points higher) compared to male non-Pantawid. No statistically significant impact was observed on work-seeking behavior for both female and male subgroups.

In terms of urban and rural areas, no significant difference in labor force participation was observed for both urban and rural sub groups. This means that for both subsets of the sample, labor force participation is the same for Pantawid and non-Pantawid individuals. Reduction in employment rate among beneficiaries was observed only in rural areas. Duration of work is both longer for employed Pantawid beneficiaries in urban (longer by 7 to 9 hours) and rural (longer by 3 hours) areas compared to non-Pantawid. Proportion of employed individuals who look for additional work is significantly lower for Pantawid beneficiaries in urban areas (lower by 9 percentage points) but higher for rural areas (higher by 7 percentage points). This result is understandable as employed beneficiaries in urban areas already work 47 hours per week based on the predicted values, while beneficiaries in rural areas only work 41 hours per week on the average. Lastly, no significant program impact was observed on proportion of unemployed individuals looking for work when broken into subgroups of urban and rural. However, estimated impacts are still negative (but not significant) for both urban and rural indicating possible reduction in work-seeking behavior.

5.3.3. Hypothesis 13. Pantawid Pamilya increases access to social services and increases utilization of government services and benefits.

Results for government and social service utilization are consistent between sharp and fuzzy RD estimates. Pamilya beneficiary households have a significantly higher likelihood of having at least one member of the PhilHealth Indigent program (8% for Pantawid compared to 59%), consistent with findings of the previous impact evaluations (Table 5.29).

Subgroup analysis on government service utilization by location showed results consistent with the main observation. Some differential impacts are observed, although these are in the same direction for both urban and rural beneficiary households, albeit impact being larger for urban beneficiaries. This is expected since inclusion in Pantawid Pamilya automatically qualifies the program grantee to be a principal member of PhilHealth. Pantawid households also have a higher likelihood (by 10-13 percentage points) of having a household member who is a member of SSS or PhilHealth. The number of SSS or PhilHealth memberships, however, is not significantly different but a higher mean is observed for Pantawid households.

Beneficiaries have a significantly higher likelihood (3-5 percentage points) of having a copy of their birth certificate, which is a notable achievement, given the high means for both groups (87-89% for Pantawid beneficiaries, 84 to 85% for non-Pantawid). In this study, having a copy of one's birth certificate is considered a proxy indicator of poor households' probability to qualify in social and government services as it is one of the basic documentary requirements that is most accessible to poor households.

No significant impact was observed in terms of utilization of other government services, even if there are higher means for beneficiaries in terms of households having at least one beneficiary of any social protection program and PhilHealth utilization. Subgroup analysis on government service utilization by location showed results consistent with the main observation. Some differential impacts are observed, although these are in the same direction for both urban and rural beneficiary households, albeit impact being larger for urban beneficiaries.

Table 5.29. Government and social services[17]

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Household has at least one member of PhilHealth indigent	impact	22.80***	21.86***	19.07***	28.96***	28.06***	22.99***
	se	2.90	2.60	1.73	4.02	3.58	2.06
	non-Pantawid	59.31	60.13	62.77	57.52	58.21	62.22
	number of obs.	3,620	4,386	6,764	2,760	3,437	6,764
Number of memberships in SSS and PhilHealth	impact	0.08	0.10	0.09	0.09	0.11	0.11
	se	0.09	0.08	0.05	0.11	0.10	0.06
	non-Pantawid	1.79	1.77	1.71	1.80	1.77	1.71
	number of obs.	2,987	3,708	6,773	2,828	3,520	6,773
Household has at least one member in Philhealth or SSS	impact	9.82***	9.46***	8.65***	13.00***	11.97***	10.43***
	se	2.02	1.80	1.14	2.68	2.35	1.36
	non-Pantawid	83.74	83.87	84.46	83.03	83.34	84.21
	number of obs.	3,315	4,104	6,773	2,857	3,555	6,773
Number of social protection and other programs accessed	impact	0.04	0.05	0.04*	0.04	0.06	0.05*
	se	0.05	0.04	0.02	0.06	0.06	0.03
	non-Pantawid	0.41	0.40	0.41	0.42	0.40	0.41
	number of obs.	3,315	4,105	6,773	2,808	3,485	6,773
Household has at least one beneficiary of social protection and other programs	impact	0.68	1.21	1.15	-0.76	0.71	1.39
	se	3.03	2.69	1.63	4.19	3.78	1.97
	non-Pantawid	31.66	31.25	31.94	32.73	31.72	31.90
	number of obs.	3,615	4,373	6,773	2,825	3,518	6,773
Count of type of government services accessed in the past 12 months	impact	-0.01	0.02	0.02	-0.01	0.00	0.02
	se	0.09	0.08	0.05	0.12	0.10	0.06
	non-Pantawid	1.29	1.28	1.29	1.29	1.28	1.29
	number of obs.	3,277	4,060	6,772	2,766	3,451	6,772
Accessed any type of government service in the past 12 months	impact	-0.27	-0.26	-1.27	-0.28	-0.62	-1.53
	se	3.39	3.06	1.80	4.29	3.88	2.17
	non-Pantawid	65.28	65.32	65.68	65.27	65.41	65.72
	number of obs.	2,967	3,686	6,773	2,765	3,447	6,773
Utilized PhilHealth during latest health facility visit	impact	1.81	0.92	-0.26	4.73	3.23	-0.32
	se	2.30	2.07	1.35	3.63	3.12	1.66
	non-Pantawid	7.77	7.96	7.80	6.97	7.31	7.81
	number of obs.	2,012	2,402	3,673	1,437	1,806	3,673
Has copy of birth certificate	impact	2.67***	2.06**	1.15**	4.90***	4.48***	1.39**
	se	0.91	0.81	0.52	1.46	1.29	0.62
	non-Pantawid	84.56	84.89	85.30	83.85	83.92	85.26
	number of obs.	19,101	23,075	34,740	11,619	14,845	34,740

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

[17] Self-reported

5.3.4. Hypothesis 14. Pantawid Pamilya promotes participation in community development activities

Expectedly, a higher proportion of Pantawid Pamilya households (+27 percentage points) reported ever attending any parenting session compared to non-Pantawid households. This is primarily because beneficiaries are required to attend FDS every month as part of the program conditions. Despite this, however, not all the treated households reported ever attending any parenting session in the past six months. One possible explanation is that the respondent in the survey is not the person attending the FDS, but some other household member is.

The third impact evaluation also included questions on community participation and development in order to observe possible socio-behavioral effects of attendance to Family Development Sessions by program beneficiaries. Pantawid Pamilya significantly improved participation in community development activities.

Pantawid beneficiaries are more likely to participate in community activities by 19 percentage points compared to non-Pantawid. Program beneficiaries also have a higher likelihood of being members (+11 percentage points) - and officers (+17 percentage points) - of an organization in the community compared to non-beneficiaries. Given this, future impact evaluations may want to look deeper into this phenomenon and ask more specific questions about the nature of community participation.

Positive impact is also observed on the ownership of evacuation kit by the household. Pantawid households are 11 percentage points more likely to own an evacuation or emergency kit compared to non-Pantawid households. This may be due to the inclusion of series of sessions in the FDS dedicated to disaster preparedness and management.

The same results were observed in the fuzzy regression discontinuity model but with slightly higher magnitude of impact than in the main estimation. Proportion of beneficiaries attending parenting sessions is 34 percentage points higher than non-beneficiaries. Community participation is 23 percentage points higher in beneficiaries while membership in organizations and being an officer in an organization are 14 and 24percentage points higher, respectively. Ownership of evacuation kit is 12 percentage points higher among beneficiaries.

Program impact in these indicators was still observed in the subgroup analysis by urban and rural location but some differences in magnitude were noted. Results showed stronger positive program impact in urban areas in terms of attendance to parenting session and ownership of evacuation kits, while higher impact in rural areas was noted for participation in community activities. For membership in organizations, impact is almost the same for the two subgroups.

Table 5.30. Family development and community participation

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Ever attended any parenting session	impact	27.12***	26.28***	31.19***	33.92***	32.11***	37.63***
	se	3.26	2.90	1.85	4.05	3.62	2.21
	non-Pantawid	40.58	40.48	37.18	39.32	39.58	36.27
	number of obs.	2,966	3,682	6,765	2,789	3,471	6,765
Voluntary participation in community activities in the past six months	impact	19.06***	19.17***	14.96***	23.39***	23.49***	18.06***
	se	3.43	3.00	1.82	4.07	3.57	2.18
	non-Pantawid	31.93	32.39	36.06	31.16	31.62	35.62
	number of obs.	2,753	3,437	6,766	2,788	3,472	6,766
HH owns evacuation kit - seen or not seen	impact	10.53***	9.67***	10.15***	12.37***	11.40***	12.23***
	se	3.11	2.83	1.69	3.61	3.28	2.04
	non-Pantawid	20.98	21.92	21.84	21.06	21.96	21.55
	number of obs.	2,657	3,320	6,754	3,003	3,719	6,754
At least one HH member who is a member of an organization in the community	impact	11.45***	11.33***	5.55***	14.33***	13.67***	6.70***
	se	3.24	2.95	1.62	3.51	3.21	1.95
	non-Pantawid	23.49	23.32	25.77	22.49	22.46	25.61
	number of obs.	2,120	2,717	6,753	2,991	3,710	6,753
At least one HH member who is an officer of an organization in the community	impact	16.97***	14.18***	0.74	23.79***	21.75***	0.89
	se	4.37	4.04	2.54	6.34	5.57	3.04
	non-Pantawid	5.14	7.99	16.79	2.27	4.62	16.76
	number of obs.	573	728	1,932	513	657	1,932

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Regarding women's empowerment and attitudes towards violence against women, there was generally no significant impact observed except for one indicator (Table 5.31). Fewer Pantawid women think that the husband or partner is justified in hitting his/her wife if she argues with him (lower by 3 percentage points). However, this is only significant for Sharp RD results. Moreover, it should be noted that the proportion of women in the sample who think the violence against women is justified is 10% on the average, regardless of their beneficiary status.

Table 5.31 Perception on violence against women (VAW)

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Husband is justified in hitting wife if she goes out without telling him	impact	-2.39	-1.40	0.68	-2.79	-1.51	0.81
	se	1.59	1.41	0.85	1.90	1.69	1.01
	non-Pantawid	5.36	4.95	3.81	5.43	4.94	3.78
	number of obs.	1,833	2,294	4,571	1,901	2,379	4,571
Husband is justified in hitting wife if she neglects the children	impact	0.75	1.63	1.34	-0.47	1.16	1.60
	se	2.14	1.92	1.20	2.87	2.55	1.43
	non-Pantawid	8.93	8.13	7.61	9.68	8.72	7.56
	number of obs.	2,258	2,783	4,555	1,894	2,369	4,555
Husband is justified in hitting wife if she argues with him	impact	-2.74**	-2.24*	0.47	-1.97	-0.70	0.56
	se	1.32	1.28	0.73	1.48	1.38	0.87
	non-Pantawid	4.67	4.49	2.90	4.29	3.70	2.88
	number of obs.	1,444	1,821	4,565	2,089	2,578	4,565
Husband is justified in hitting wife if she refuses to have sex	impact	1.19	1.46	1.02	0.91	1.68	1.22
	se	1.15	1.04	0.64	1.49	1.33	0.76
	non-Pantawid	1.66	1.54	1.61	1.79	1.52	1.57
	number of obs.	2,367	2,888	4,563	2,099	2,587	4,563
Husband is justified in hitting wife if she burns the food	impact	-0.76	-0.37	-0.72	-2.09	-1.31	-0.86
	se	1.12	0.99	0.68	1.67	1.46	0.81
	non-Pantawid	2.98	2.85	2.98	3.50	3.18	3.01
	number of obs.	2,627	3,165	4,586	1,888	2,352	4,586
Husband is justified in hitting wife if any of the conditions above are met	impact	-0.30	0.71	1.08	-3.99	-1.56	1.30
	se	2.09	1.87	1.22	3.23	2.79	1.46
	non-Pantawid	10.70	9.95	9.34	12.79	11.41	9.30
	number of obs.	2,888	3,465	5,138	2,042	2,553	5,138

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Results of the subgroup analysis using both sharp and fuzzy RD estimations showed significant reduction in proportion of women who think VAW is justified in urban areas only. Among women in urban areas, proportion of women who think VAW is justified if they go out without the permission of their partners is 4-6 percentage points lower among beneficiaries. Proportion of women who think VAW is justified if they argue with their partners is also 4-5 percentage points lower among beneficiaries in urban areas. Lastly, proportion of women who think that VAW is justified if they do any of the mentioned actions (i.e., go out without permission, neglect children, argue with husband/partner, refuse sex, or burn the food) is 8-9 percentage points lower among beneficiaries in urban areas. For all indicators, no program impact was noted in rural areas.

5.3.5. *Hypothesis 15. Pantawid Pamilya improves household outlook of their current situation and future of their children*

With regard to household outlook and future expectations, the study did not detect significant impact on most of the outcomes except for the outlook on the child growing up healthy, where more Pantawid parents (higher by 1 percentage point) believe that their children will grow up healthy (Table 5.32). This significant impact was only seen in rural areas based on the results of the subgroup analysis. This may be due to generally lower baseline means for child health and nutrition outcomes in rural areas. Increased knowledge on proper child care practices may have also contributed to a more positive outlook of parents by increasing their confidence in their ability to care for their children. However, given the mixed findings on child health and nutrition, further study needs to be conducted to validate the factors that affect parents' outlook on health and whether this is also shaped by parents' misconceptions about the status of their children's health.

Table 5.32. Future expectations

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Child will finish elementary	impact	1.19	1.25	0.49	1.30	1.49	0.57
	se	0.89	0.82	0.53	1.07	0.98	0.61
	non-Pantawid	97.16	97.08	97.61	97.19	97.03	97.60
	number of obs.	3,261	4,012	6,415	3,008	3,734	6,415
Child will finish high school	impact	-0.18	-0.28	0.58	0.17	-0.28	0.67
	se	0.73	0.69	0.47	0.91	0.84	0.54
	non-Pantawid	97.02	97.03	96.77	96.89	97.05	96.75
	number of obs.	5,102	6,357	10,435	4,286	5,412	10,435
Child will finish college	impact	0.40	0.26	2.34	0.48	0.32	2.70
	se	1.95	1.73	0.95	2.32	2.06	1.10
	non-Pantawid	90.76	90.76	89.87	90.75	90.76	89.81
	number of obs.	3,607	4,540	8,150	3,523	4,430	8,150
Child will grow up healthy	impact	0.92*	0.75	0.40*	1.14*	0.92	0.46*
	se	0.53	0.49	0.32	0.62	0.58	0.37
	non-Pantawid	98.23	98.28	98.51	98.18	98.24	98.50
	number of obs.	6,199	7,451	11,512	5,850	7,178	11,512
Child will have decent employment	impact	-0.58	-0.45	0.40	-0.53	-0.30	0.46
	se	0.57	0.54	0.36	0.64	0.62	0.41
	non-Pantawid	98.44	98.32	97.94	98.34	98.20	97.93
	number of obs.	4,166	5,232	10,498	5,290	6,503	10,498
Child will have better future	impact	2.74	2.22	1.08**	3.19	2.60	1.26**
	se	1.86	1.59	0.91	2.18	1.86	1.06
	non-Pantawid	87.32	87.72	88.82	87.23	87.64	88.78
	number of obs.	6,194	7,609	12,081	6,184	7,603	12,081

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

In general, Pantawid and non-Pantawid parents had a similar outlook in terms of their children's future educational attainment like in the second impact evaluation. However, average outlook on completion of elementary, high school, and college for both beneficiaries and non-beneficiaries are higher than results in the second impact evaluation.

Impact on parent's belief that their child will have a better future was also observed in both sharp and fuzzy estimates, but only when using the full sample.

5.4. Impact on Other Socio-behavioral Outcomes

Other socio-behavioral outcomes such as grit, locus of control, and parenting style were also included by the third wave of impact evaluation. This is the focus of this section.

Pantawid children were more likely to have more grit or determination in contrast to non-beneficiary children. Significantly higher proportion of beneficiaries gave affirmative responses to statements on grit. Beneficiary children displayed more determination in terms of school-related challenges, except when these consider limited time and resources (Table 5.33). Among the indicators, the strongest impact was for the statement "Finish school work before playing or resting" with 6 percentage points higher proportion for beneficiaries than non-beneficiaries for both sharp and fuzzy RD estimations. Interestingly, this indicator also has the lowest baseline proportion for non-Pantawid children with proportion of only up to 77%. The highest baseline proportion is for "asking for help when lesson is difficult" where 9 out of 10 children in both Pantawid and non-Pantawid groups responded affirmatively.

Table 5.33. Grit

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Grit: Ask for help when lesson is difficult	impact	3.03**	1.86	0.75	4.40**	3.88**	0.86
	se	1.45	1.30	0.86	1.95	1.72	0.99
	non-Pantawid	88.19	88.81	89.72	87.42	87.88	89.70
	number of obs.	5,373	6,373	8,763	4,096	5,058	8,763
Grit: Strive to get higher grades	impact	2.98**	2.68**	2.15**	3.53*	3.41*	2.48**
	se	1.46	1.28	0.83	1.84	1.62	0.96
	non-Pantawid	88.71	88.92	89.05	88.46	88.68	88.99
	number of obs.	4,937	5,933	8,756	4,196	5,193	8,756
Grit: Finish school work before playing or resting	impact	5.79**	4.38**	2.39	5.58**	4.25**	2.76
	se	2.27	1.97	1.19	2.39	2.13	1.37
	non-Pantawid	71.62	72.17	73.60	71.83	72.38	73.52
	number of obs.	3,650	4,537	8,748	4,152	5,110	8,748
Grit: Finish school work despite lack of time and resources	impact	2.23	2.95	2.99*	2.60	3.44	3.45*
	se	1.99	1.78	1.06	2.25	2.03	1.22
	non-Pantawid	82.01	81.76	82.09	81.90	81.65	82.00
	number of obs.	4,146	5,111	8,762	4,182	5,178	8,762
Grit index	impact	0.13**	0.12**	0.08**	0.16**	0.15**	0.10**
	se	0.05	0.05	0.03	0.06	0.06	0.03
	non-Pantawid	3.30	3.31	3.34	3.29	3.30	3.34
	number of obs.	4,592	5,605	8,776	4,163	5,132	8,776

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Results of the subgroup analysis revealed that children in rural areas experienced stronger program impact compared to urban areas. Program impact is both significantly positive for asking help in difficult lessons, but impact is slightly higher for rural areas. For other items such as "striving to get higher grades", "finishing school work before playing or resting", and the grit index, program impact was only observed in rural areas and not in urban areas. In terms of sex, the results are mixed but are mostly in favor of male children. Program impact was observed only among male children for asking for help if the lessons are hard, finishing school work before playing or resting, and the overall grit index. On the other hand, impact on striving to get higher grades was observed only among female children.

Aside from grit, this evaluation also looked at the locus of control of WRA respondents in the survey. Locus of control is an indicator of a person's belief of whether the outcomes he/she is experiencing are products of internal or external factors. In the analysis, a low score means an internal locus of control or a belief that the outcomes are mainly driven by internal factors such as own actions and decisions, while a high locus of control index means that these outcomes are due to other external factors beyond the control of the person.

In terms of locus of control, no program impact was observed, except for small impact on the overall score for locus of control observed in the MSE bandwidth of the fuzzy RD estimation (Table 5.34). This suggests that Pantawid mothers do not differ from non-Pantawid mothers in terms of their perceived control over the outcome of events in their lives. Breaking into rural and urban subgroups, results showed significant program impact for women residing in rural areas under the first test statement "What happens to me is my own doing" and the overall locus of control score, although the latter is only significant for the MSE bandwidth of the sharp RD estimation, and CER and MSE bandwidths for fuzzy. For both of these items, women beneficiaries in rural areas have significantly higher locus of control scores than non-Pantawid women revealing relatively more external locus of control.

Table 5.34. Locus of control

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Locus of control: What happens to me is my own doing	impact	0.09	0.09	0.04	0.12	0.10	0.05
	se	0.07	0.06	0.04	0.09	0.08	0.04
	non-Pantawid	2.01	1.97	1.91	2.02	1.99	1.91
	number of obs.	2,328	2,888	5,138	2,147	2,687	5,138
Locus of control: I am almost certain I can make my plans work.	impact	0.06	0.06	0.02	0.07	0.08	0.02
	se	0.07	0.06	0.04	0.09	0.08	0.05
	non-Pantawid	1.88	1.91	1.90	1.88	1.91	1.90
	number of obs.	2,438	3,003	5,138	2,413	2,961	5,138
Locus of control: Getting what I want has little to do with luck.	impact	-0.06	-0.04	-0.01	-0.07	-0.03	-0.02
	se	0.08	0.07	0.04	0.09	0.08	0.05
	non-Pantawid	2.30	2.26	2.18	2.29	2.25	2.18
	number of obs.	1,922	2,444	5,137	2,187	2,729	5,137
Locus of control: Good or bad luck does not play an important role in my life	impact	0.09	0.07	0.03	0.11	0.10	0.03
	se	0.07	0.06	0.04	0.10	0.08	0.05
	non-Pantawid	2.40	2.42	2.50	2.38	2.41	2.50
	number of obs.	2,460	3,029	5,137	2,205	2,758	5,137
Locus of control index	impact	0.19	0.21	0.08	0.24	0.27*	0.09
	se	0.14	0.12	0.08	0.16	0.14	0.09
	non-Pantawid	8.96	8.92	8.95	8.93	8.90	8.95
	number of obs.	2,254	2,808	5,138	2,528	3,117	5,138

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

Program impact on parenting styles was also studied. Although there is no specific style of parenting that the program is advocating, it is interesting to know whether there have been changes in the overall parenting style for the beneficiaries. The classification used in this study was based on the paper by Hock, et. al. (2015) that studied the link between parenting styles and emerging adult drug abuse in Cebu, Philippines. Children 10 to 20 years old in the sample were asked whether they consider themselves "close" with their mother or father, as well as whether they think their mother or father is strict as a parent. The responses were then used to categorize parenting styles. A strict parent is considered "authoritative" if the child considers him/herself to be close with this parent; otherwise, the parent is considered "authoritarian". A parent who is not strict is considered "permissive" is the child this he/she is close to this parent; otherwise, this parent is considered "neglectful".

Results showed significant reduction in proportion of both parents in the household being considered authoritative for both sharp and fuzzy RD estimates (lower by 7-8 percentage points) (Table 5.35). Significant increase in proportion of cases where the parents are considered both permissive (higher by 5-6 percentage points) was also observed in both estimations. The results specific for mothers and fathers are showed in Appendix 8. Results showed shifting of styles to permissive parenting among Pantawid mothers and away from authoritarian parenting as observed among Pantawid fathers. These results indicate reduction

in proportion of children who think that their parents are strict. No impact was observed on proportion of parents who are authoritarian or neglectful which are indicators where children are not close to their parents. Interestingly, baseline proportions for these types of parenting styles are low regardless of beneficiary status.

Table 5.35. Parenting style and relationship of child to parents

Outcomes		Sharp RD			Fuzzy RD		
		CER Optimal	MSE Optimal	Sample	CER Optimal	MSE Optimal	Sample
Both parents have authoritative parenting style	impact	-6.96**	-7.50***	-0.72	-7.72***	-6.27**	-0.83
	se	3.11	2.79	1.54	3.02	2.78	1.77
	non-Pantawid	40.70	40.84	37.95	40.59	39.84	37.97
	number of obs.	2,808	3,549	7,443	3,775	4,613	7,443
Both parents have authoritarian parenting style	impact	0.37	0.47	0.10	0.35	0.50	0.12
	se	0.39	0.37	0.24	0.45	0.42	0.28
	non-Pantawid	0.53	0.52	0.83	0.53	0.51	0.83
	number of obs.	3,075	3,850	7,669	2,878	3,637	7,669
Both parents have neglectful parenting style	impact	0.07	0.26	-0.43	-0.03	0.18	-0.50
	se	0.67	0.59	0.37	0.80	0.70	0.43
	non-Pantawid	1.67	1.56	2.03	1.74	1.60	2.04
	number of obs.	3,969	4,838	7,700	3,653	4,510	7,700
Both parents have permissive parenting style	impact	3.52	5.48**	-0.95	5.81*	5.19**	-1.10
	se	3.03	2.69	1.50	3.18	2.84	1.73
	non-Pantawid	36.38	35.07	37.01	35.20	35.46	37.04
	number of obs.	2,615	3,328	7,440	3,035	3,776	7,440

Notes: Standard error presented is based on the conventional RD estimation; the p-value is from the robust version that corrects for bias
Treatment and control means are calculated using predicted values from a replication of the rdrobust routine using least-squares regression

6. Discussion

Overall, the results of this evaluation revealed generally positive program impact on the outcomes studied. However, there were also results that are underwhelming and inconsistent with expected outcomes. Subgroup analyses provide supplemental information that could possibly explain most of these inconsistencies.

The rest of this section discusses the specific themes based on the results of the evaluation and attempt to provide explanations to the observed changes in behavior of poor households that are targeted by the program relative to poor households who were not targeted. Comparisons with other studies on the program and with other CCTs are also made to supplement the discussion.

At this point, it is also important to reiterate the limitation of the regression discontinuity as a methodology. As discussed earlier, the RDD only captures program impact on the sample of households around the poverty thresholds. As such, RDD estimates do not represent the

average program effects on the poor households, and it is possible that impacts detected in this evaluation are underestimated.

The program increases awareness of modern family planning methods although there is not enough evidence of sustained use of these commodities among beneficiaries.

Higher awareness of modern FP methods among Pantawid Pamilya beneficiaries may be due to increased utilization of maternal health services, health facility visits, and attendance to FDS. Although the program does not require beneficiaries to subscribe to modern family planning methods, such information is made available to the beneficiaries through the FDS and other services offered in health facilities. In the main FDS modules, four sessions are included covering topics on the importance of family planning, sharing of responsibilities between couples in family planning, family planning methods, and responsible parenthood. Meanwhile, the Department of Health also has specific interventions that aim to increase modern contraceptive prevalence rate (CPR) and reduce the unmet need for modern family planning among women of reproductive age provided in health facilities. Following the increased use of maternal health care services such as prenatal care, the probability for Pantawid Pamilya women of receiving these interventions is also increased

Despite the increased awareness levels and trial use of modern FP methods, the beneficiaries failed to show sustained use of these methods. This may be due to access barriers including lack of supply and capacity to buy these commodities and services when these are not available in public clinics. Based on the 2017 NDHS, more than half of the modern contraceptives in the country is provided by the public sector. Of which, half is provided by barangay health stations while the rest of the public share comes from government hospitals and rural health units. In terms of costs, the NDHS estimates that only 40% of women obtained their FP method for free, while 55% reported paying an amount for the commodities and services. Of the public sector sources, more than 20% reported paying an amount for modern FP commodities. This means that although modern FP commodities are provided in public health facilities, utilization can still be affected by the access to the health facility in the barangay, supply of these facilities, and the costs of these commodities.

Another factor that may explain the lack of sustained use is the experience during trial use of these methods. The WHO (2012), after studying series of demographic health survey data, identified primary reason for discontinuation as method-related, including dissatisfaction with method, health concerns, and side effects experienced during trial use of family planning methods. Other factors that influence behavior include personal preferences, cultural and/or religious beliefs, among others.

A study by Ginson-Bautista and Yap (2017) among Pantawid Pamilya beneficiaries found that more than half (56%) of women beneficiaries needed permission of their husbands before availing of family planning commodities and/or services. Likewise, per the 2017 NDHS, only 65 percent among poor couples' have a consensus on the ideal family size in the household. It is therefore important that providing information on family planning is targeted to couples instead of just the women beneficiaries. A policy of the program, the National Advisory Council (NAC) Resolution 23 Series of 2014, requires attendance of couples in sessions concerning gender sensitivity, and responsible parenthood and family planning, instead of just

the grantees who are mostly females. However, it is unclear in this evaluation how many of the beneficiaries comply with this requirement.

In other CCTs, studies mostly found increased contraception use among beneficiaries. In a comprehensive review by Bastagli et. al. (2016), 5 out of 9 studies looking into impact of a cash transfer on the use of contraception reported increased contraceptive use. These include cash transfer programs in South Africa, Mexico, Peru, and Nicaragua. In Progresa in Mexico, use of any modern contraceptive is up to 16 percentage points higher among beneficiaries. In the Peru study (Perova and Vakis, 2012) there is even an indication that the increase in contraceptive use increases with the length of exposure to the cash transfer program.

One key reproductive behavior-related issue not studied in this evaluation is whether Pantawid Pamilya encourages families to bear more children. In the CCT evaluation literature, there is no evidence for increased fertility among beneficiaries of cash transfer programs. In most of the studies, likelihood of pregnancy or giving birth is even lower for beneficiaries compared to non-beneficiaries. Among the evaluations reviewed by Bastagli et. al. (2016), only the study on Honduras' PRAF program showed increase in fertility (Stecklov et al., 2007). The authors explained that this is due to the program design where cash grants increase for additional pregnant women or new child born to the family. Such design feature is not found in Pantawid Pamilya, however.

Pantawid Pamilya increase availment of some but not all basic maternal health care services.

The findings show the program has positive impact on use of some maternal health care services. That Pantawid Pamilya increases the number pregnant mothers availing of at least 4 prenatal care checkups is notable because this is the recommended frequency of checkups by the DOH. This result is somewhat expected since the Pantawid program requires prenatal care at least once each trimester. Nevertheless, this improvement may be influenced by both the grants incentive as well as the reinforcement provided by the FDS through messages on maternal health. Different results in pre- and postnatal care utilizations suggest that the beneficiaries may not have the same level of appreciation of the importance of postnatal relative to prenatal care, despite both being conditionalities of the program. Further examination on the FDS messages and availability of services in health facilities should be able to clarify this discrepancy in utilization of services.

Results on skilled birth attendance (SBA) is indicative of a shift from midwife-assisted to doctor-assisted deliveries for beneficiary mothers. Difference in urban/rural results for SBA highlights the still limited access to doctors in rural areas compared to urban areas. This also points to supply-side issues that need to be addressed for the program to achieve desired impact.

The study found significant impact on facility-based delivery only in urban areas. This implies that perhaps this discrepancy is also influenced by supply of health facilities. Based on the NDHS report, the top reasons for not delivering in facilities are lack or difficult transportation to the facility (32%), high costs (25%), delivering in facilities being not necessary (22%), unexpected delivery (16%), and lack of trust in the health facilities (12%). Of the top five reasons, three relate to the supply conditions (i.e., transportation, costs, and quality of services) and only one relates to lack of awareness or behavior (i.e., not necessary). The 2017 NDHS also reports that only 20% that give birth in public health facilities avail of delivery services

for free. Among those who pay, the median cost of delivery is around Php5,400 pesos. In comparison, median cost in private sector facilities is up to Php26,300 while median cost for home deliveries is around Php1,570.

From these pieces of information, it may be inferred that the use of maternal care services, especially SBA and FBD, are affected by the availability of health resources and access to these resources by poor women. Unfortunately, some of the study sites were found to have limited access to health resources, for example, 1 in 10 rural barangays do not have a nearby public health facility. Average number of doctors in the barangays is less than one with average catchment population of health facilities reaching up to more than 30,000 in urban areas. Although costs can be allayed through the automatic PhilHealth membership of beneficiaries, not all of the beneficiaries are aware that they are eligible for PhilHealth benefits. At the same time, only 35% and 11% of the health facilities in urban and rural barangays, respectively, are PhilHealth accredited[18]. The percentage of PhilHealth accredited maternity care providers is even lower at 14% and 8% of facilities in urban and rural barangays, respectively.

In general, the results showed generally high uptake rates of maternal health services. However, given that some of these outcomes are program conditions, the expected proportions should be higher. There is still room to boost demand for health care services through the FDS. Correspondingly, closing the supply side gaps in health services should also occur especially since heterogeneity in program impact suggests that supply conditions play an important part in the achievement of program desired outcomes.

Studies on other CCTs show that these programs significantly increase utilization of maternal health services. Regarding prenatal care, there have been significant findings for beneficiary mothers having at least one prenatal checkup during pregnancy but there are mixed findings for multiple visits. Barber and Gertler (2008) found positive impact on prenatal visits at least once during pregnancy for Oportunidades beneficiary mothers, but no impact for multiple visits. A study on the Program Keluarga Harapan or PKH in Indonesia, however, observed a significant impact on prenatal visits, for measures of at least one visit and multiple visits (World Bank 2011). In the long-term, however, another study on the PKH program did not find impact on pre- and postnatal care utilization (Cahyadi et al. 2018). One possible explanation offered by the study was that the control group was able to catch up with the treatment group in the intervening years.

In India, Lim et al. (2010) found that Janani Suraksha Yojana (JSY), a CCT program created to address high maternal and child mortality rates, had a significant impact on rates of prenatal checkup and facility-based delivery or skilled birth attendance after at least two years of program implementation. Skilled birth attendance and facility-based delivery were also significantly higher for program beneficiaries of PKH after six years of implementation (Cahyadi et al. 2018).

[18] Proportions were determined by matching the name of health facilities visited by beneficiaries and the published the list of PhilHealth accredited facilities

Pantawid Pamilya increases access to child health care services but results also showed negative impact on stunting.

More Pantawid Pamilya children 0 to 5 years old visit health facilities for weight monitoring. Twice a year deworming rate is also higher among beneficiary children age 6 to 14 compared to non-beneficiaries. The program has also increased vitamin A supplementation. However, the program still does not have any impact on complete immunization of children, as in the previous rounds of evaluation. Low proportions were observed for some outcomes that are required by the program such as growth monitoring of 2 to 5-year-old children, immunization, health visits and deworming twice a year. In terms of nutrition outcomes, the study finds negative program impact on stunting of children 0 to 5 years old. These mixed results on program impact warrants further study on the determinants of availment of specific child health services, as well as factors that lead to the negative nutrition outcomes among beneficiaries. This is further nuanced by the nature of stunting being a result of accumulated nutrition deprivation from conception to early years of life.

The result is also inconsistent with the cohort study done on the original RCT sample of the first evaluation that found no significant difference in the prevalence of stunting among program beneficiaries. The result of the RCT study suggests that timeliness in provision of program interventions is crucial in arresting negative nutrition outcomes such as stunting at the time where it matters – during the first two years or first thousand days of life.

Impact of cash transfers on child health and nutrition is relatively well-studied given that it is a major focus of conditional cash transfer programs. The results of most of these studies suggest that cash transfer programs improve child health and nutrition outcomes, and the negative results of this evaluation are therefore uncommon.

Unlike the results in this evaluation, many studies noted a significant decrease in the prevalence of stunting for beneficiary children (Bastagli et al. 2016). PKH in Indonesia had a notable effect on stunting in Indonesia after six years of program implementation. The study by Cahyadi et al. 2018 found substantial reductions in the incidence of stunting and severe stunting for beneficiary children, and reduction in malnourishment for boys, which the authors attributed to increased health seeking behaviors and improved nutrition in earlier years. The RPS program in Nicaragua also resulted in significant decline in stunting which was found among beneficiary children under 5 years old (Maluccio and Flores 2005). Manley et al. (2013) observed that there are higher marginal effects on stunting for countries with initially poor health indicators and that there is a larger impact on girls compared to boys. But, at the same time, a significant number of studies also found no significant impact on stunting despite an increase in height-for-age scores (Gertler 2004; Attanasio et al. 2005; Leroy et al. 2009; Macours et al. 2012). None of the studies reviewed, however, found negative impact of cash transfers on stunting and other nutrition outcomes in contrast to the results in this evaluation. As mentioned earlier, this result deserves in-depth analyses to unpack the likely causes and identify needed interventions.

Several studies also looked at the effect of the duration of receipt of benefits vis-à-vis nutrition outcomes. In most of these studies, significant improvement in nutrition and health indicators of children were associated with the longer duration of receipt of program benefits (Buser et al.,2014; Fernald et al., 2008; Fernald et al., 2009; Perova and Vakis, 2012; Behrman et al. 2005) as well as higher amount of grants (Fernald et al., 2008). Crucial information is provided

by the study by Buser et al. (2014) on Ecuador's BDH program which found detrimental effects in nutrition outcomes after benefits were discontinued while the child is still young or in-utero. The study found significantly lower weight- and height-for-age for these children, and the authors attributed this as a disruption in the food consumption pattern of the households after the loss in income. Overall, the results highlight the importance of the timing of benefits similar to what was observed in the analysis with regard to length of exposure that was done in this evaluation.

While this evaluation found no significant increase in health visits, studies on other CCTs found general improvement in uptake of preventative health visits for children (Davis et al. 2002; Barber and Gertler 2008). Positive impact on health checkups was observed in terms of compliance (Attanasio et al. 2005) and number of visits (Levy and Ohls 2007; Akresh et al. 2012; Evans et al. 2014). In a review of multiple studies on conditional cash transfer programs in low- and middle-income countries, Lagarde et al. (2009), observed that CCTs can effectively increase utilization of health services, specifically for free preventive services. Positive results were also observed by Cahyadi et al. (2018) on regular monitoring for beneficiary children below five years old under PKH in Indonesia.

Gertler (2004) analyzed the impact of the Programa de Educacion, Salud y Alimentacion (PROGRESA) program in Mexico and found that it had a significant effect on child morbidities, where beneficiary newborns and children aged 0-35 months were less likely to be sick compared to non-beneficiary children. Beneficiary children aged 12-48 months were also found to have a lower likelihood of being anemic. In this evaluation, no significant impact was observed in the incidence of diarrhea, fever, cough, and vaccine preventable diseases.

Impact of cash transfer programs on vaccinations are inconsistent in the literature. Increase in coverage for vaccines such as measles, DPT, and TB was observed by studies in Mexico, Honduras, and Columbia. The findings in this evaluation, on the other hand, have similar results as the evaluation of Red de Protección Social (RPS) in Nicaragua where no significant impact was noted (Lagarde et al. 2009).

Numerous studies also cited supply-side factors (i.e., availability of medicine and accessibility of health facilities) as crucial in instigating significant impacts on health outcomes. The conduct of workshops on health and nutrition, comparable to the Family Development Sessions of Pantawid Pamilya, was also cited as potentially having an influence on health behaviors and outcomes (Lagarde et al. 2009).

Gaps in monitoring of young children and pregnant women contribute to inconsistent program impact on some maternal and child health outcomes

The mixed results in health can also be partially explained by gaps in monitoring. As discussed in Section 5.1, very few of the children and pregnant women in the sample were monitored in the program as of data collection time. According to studies by Akresh et al. (2012), Attanasio et al. (2015), and Benedetti and Ibarraran (2015), conditionalities and monitoring are crucial in achieving desired impacts on health among beneficiaries of cash transfer programs. Attanasio et al. (2015) noted a decrease in health care visits among new children to whom the program health conditions of Colombia's Familias en Accion no longer apply. Meanwhile, Akresh et al. (2012) studied the effects of conditionalities by comparing impact of a conditional cash transfer

and an unconditional cash transfer program on the frequency of health care visits of children recipients. Significant positive impact was only observed among CCT children relative to control, signifying the positive impact of the conditionalities in the utilization of health services. In both studies, the effect of the conditionalities were also hypothesized to have been reinforced by the monitoring of compliance and enforcement of the conditions (Bastagli, et al. 2016). Benedetti and Ibarraran (2015) also found positive significant effect of conditionalities and labelling of grants as conditional among children under six years old and pregnant women in Honduras' Bono 10,000 program. In contrast, no significant impact was noted in a similar group that did not have conditions and labelling but had double the amount of benefits.

In recent years, the number of children that the program monitors particularly those below 5 years of age has declined due to inadequate number of updates received and processed by the program information management system. By default, the information on the household roster of beneficiaries comes from the initial targeting survey done by DSWD and the first round of Listahanan survey conducted from 2008 to 2010. All succeeding updates in the information come from updates filed by beneficiaries. If the beneficiary has not filed any update on the household composition, particularly children that were born after the initial round of targeting survey, the information on the household composition would not be updated in the program database.

Figure 6.1 and Figure 6.2 present the number of monitored children in education conditions, and children and pregnant women in health conditions of the program. In both graphs, the number of children 0 to 5-year-old monitored for education and health conditions started declining around 2013 to 2014, despite the increasing number of households and number of older children who were monitored in the program. Assuming consistent fertility behavior through the years, the number of newborn children should at least grow in the direction of the increase in number of households in the program. This trend in the number shows that the program was not able to capture all children being born into the beneficiary households. This is further confirmed by the slow decline in the number of children 6 to 14 years old starting 2016 indicating that the cohort of monitored children is already "ageing" and is moving to higher age groups through time. From two million children aged 0 to 5 being monitored for health conditionalities in the beginning of 2013, the number has been drastically reduced to about 200,000 by end of 2018. Similarly, the number of pregnant women being monitored has been low since the beginning and has not increased through the years. The highest number of monitored pregnant women was during the early 2013 at approximately 32,000. As of November 2018, the program is monitoring only around 5,500 pregnant women out of its four million beneficiary households.

Given the declining trend in the number of young children and pregnant women monitored in the program, it is almost expected to have mixed or underwhelming impacts on health outcomes. As shown by several studies, imposition of conditionalities, as well as effective monitoring and enforcement of these conditions result in increased take-up of health care services among children and pregnant women.

Figure 6.1 Number of monitored children in education conditions by age group, 2010-2018

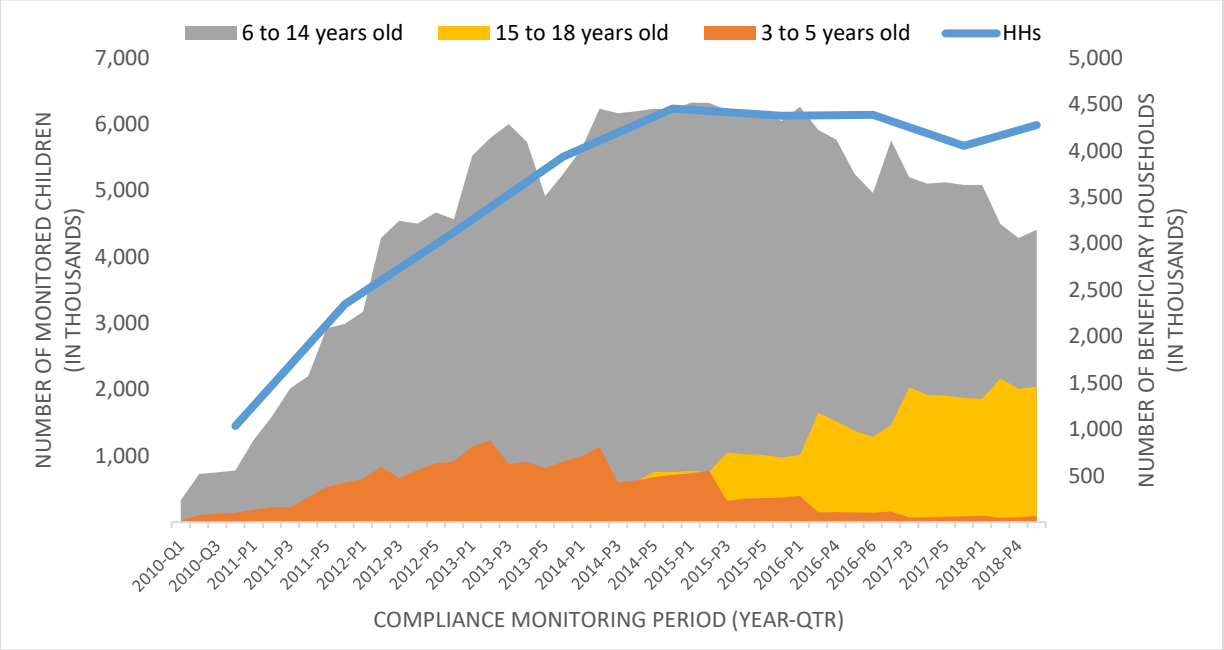
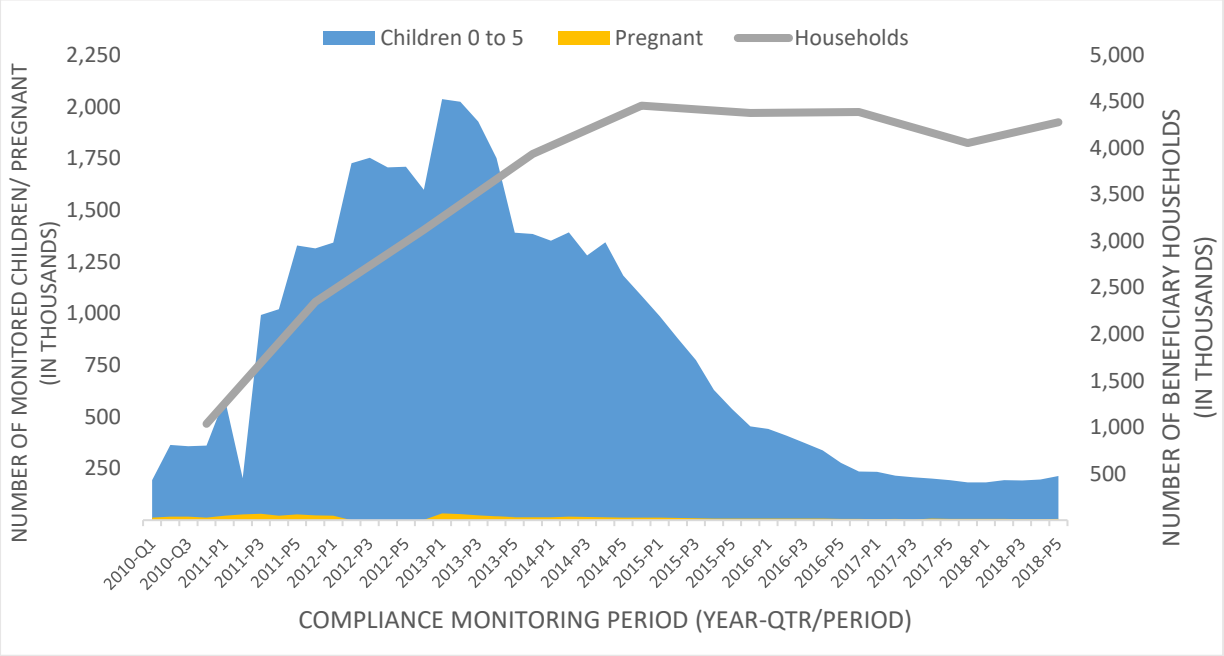


Figure 6.2 Number of monitored children and pregnant women in health conditions, 2010-2018



This gap in monitoring stems from the design of the update system which relies on the beneficiaries to proactively submit update forms. Filing of updates require effort from the beneficiaries not only in filling-out of forms, but also in securing documentary requirements for these updates to be approved and entered in the program information system. For instance, beneficiaries are required to submit birth certificates or health facility registration certification for newly born children in order for the updates to be considered valid and accepted by the DSWD. Although this is a form of safeguard against abuse and misrepresentation, it also requires effort from the beneficiaries. This becomes a problem since there is not much

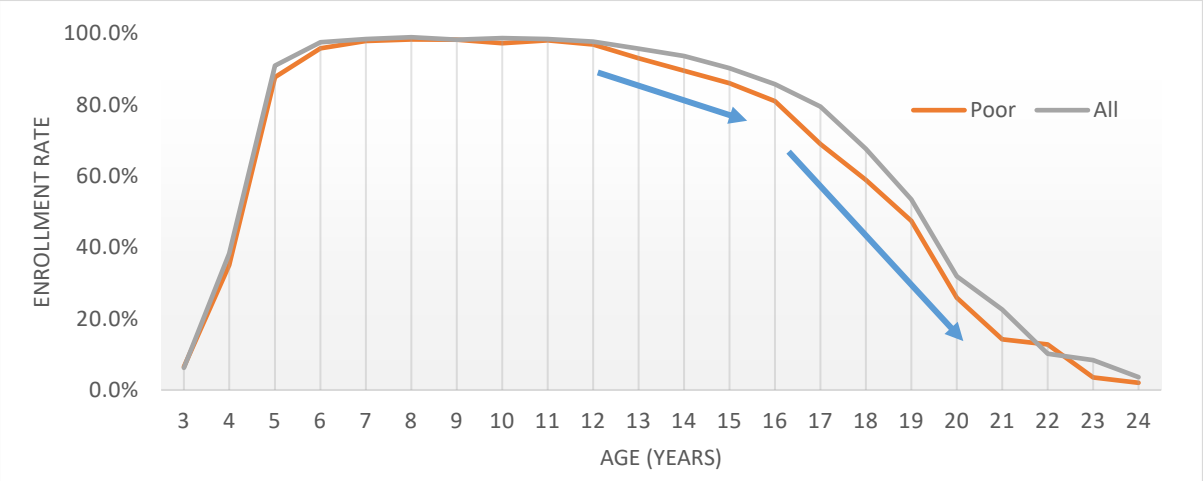
monetary incentive for beneficiaries to file updates. The amount of health grants remains fixed per household regardless of how many members are monitored in the program, and the number of children in education is only capped at three children per household. This assumes that all beneficiaries are aware that these updates should be filed, however, program spot check reports also indicate that not all beneficiaries are aware that updates for newborn children and pregnant members should be filed.

Program impact in education is more pronounced among older children but education outcomes for younger children remain at satisfactory rates.

The program has improved education outcomes of older children, possibly due to the extension of age coverage in 2014 that included older children 15 to 18 years old and provided higher grants for high school students. Specifically, the program has increased school enrollment of children 12-17 years old, improved outcomes such as age-appropriate enrollment in junior high school, and lowered drop-out rates. Although minimal program impact was observed among younger children, enrollment and attendance rates of elementary-aged children are high for both beneficiaries and non-beneficiaries. The minimal impact on elementary-age children is possibly due to the already high enrollment rates regardless of beneficiary status. In a review of 20 studies that looked at the impact of cash transfer programs on education, Bastagli et al. (2016) noted that marginal effects of programs are highest when baseline rates are lower.

The results provide motivation to shift incentives to older children as younger children have already high enrollment and attendance rates. Older children, on the other hand, are more at risk of dropping out of school due to various reasons. In Figure 6.3, trends in enrollment show that enrollment rates among the poor[19] start to drop at age 12. The positive impact among older children means that the program can arrest this trend and keep children in school at least until they finish high school.

Figure 6.3 Average enrollment rate by age, 2017



Source of basic data: APIS, 2017
Note: "Poor" is defined as bottom three per capita income deciles in the APIS data

[19] Poor is defined as bottom three income deciles of the APIS data

In general, positive impact of CCTs on school enrollment and attendance has been documented in numerous studies, hence the positive findings of this study are not at all surprising. A review of studies on cash transfers and education outcomes observed that majority found a significant increase in school attendance (Bastagli et al. 2016). Ferro et al. (2010) for Bolsa Escola program in Brazil resulted in the increased school enrollment of program beneficiaries while Skoufias et. al. (2001) found significantly higher attendance in secondary school for children aged 12-17 years old. In an impact evaluation of the Nicaraguan CCT program, Red de Protección Social, Maluccio and Flores (2005) found significant impact on school enrollment and attendance of beneficiary children.

The results of this evaluation are more consistent with the evaluation of PKH in Indonesia which found larger program effects on older students (Cahyadi et al. 2018). Also similar are the findings by sex of child where no impact on high school completion is found for girls, but there is a significant increase in high school completion for boys (4 to 7 percentage points for PKH beneficiaries). The PKH study also found impacts on enrollment to be largely driven by impact on boys (9 to 13 percentage points) while no impact on high school enrollment was found for girls. In this evaluation of Pantawid Pamilya, male children age 6 to 14 years old showed significant increase in enrollment rates despite no significant impact on the overall indicator for both sexes, and no significant impact among girls. This result can be due to the almost universal enrollment rates and generally better performance in education outcomes of girls compared to boys in the sample. Findings are consistent with other studies which also reported gender disparities in basic education in the Philippines, with lower enrollment rates for boys compared to girls (Paqueo and Orbeta 2019; David and Albert 2015). David et al. (2018) noted higher rates of out-of-school children (OOSC) among boys for both primary- and high school-aged cohorts, with sharper differences for older age cohorts.

Table 6.1. Rate of out-of-school children (OOSC) including senior high school (in %), by sex: Philippines 2017

Age (Years)	OOSC Rate		
	Boys	Girls	Both Sexes
5	9.1	8.9	9.0
6–11	5.4	3.4	4.5
12–15	8.0	3.1	5.6
16–17	22.3	11.6	17.4
Philippines (5–17)	10.7	5.7	8.3
Philippines (5–15)			

Note: Attention to 5–15 years old is provided for comparability with previous PIDS reports on OOSC.
Source: Calculations by David et al. (2018) based on 2017 Annual Poverty Indicators Survey (APIS) (PSA 2017)

The IE Wave 3 also found low enrollment rates among children 3 to 5 years old, which is confirmed by the trend presented in Figure 6.3. As previously discussed, a common reason for this trend is the perception among parents that children within this age group are too young to attend school. Unfortunately, there is limited information on the effect of cash transfer programs on school enrollment and attendance of children under-five.

The evaluation did not investigate the long-term impact of the program on educational attainment and high school completion due to the fact that the extension of age coverage and increase of benefits in high school have been in effect only for three years as of data collection.

With the recent roll-out of the K-12 education system, the additional two years of high school education also limited the data on beneficiaries that completed high school. Nevertheless, the positive impact on age-appropriate enrollment for junior high school and increased enrollment rates for older children 12 to 17 years old suggest that the program may also improve completion rates in high school. In the literature, multiple studies have already shown that CCT beneficiaries have higher likelihood of completing high school (Baez and Camacho 2011; Cahyadi et al. 2018; Parker and Vogl 2018; Araujo et al. 2018). Parker and Vogl (2018) identified the length of exposure as a factor in increasing high school graduation. In Mexico, a 10-15 percentage increase in the likelihood of completing high school is found for PROGRESA beneficiaries of both sexes, for boys and girls who started benefiting from the program at an early age.

This evaluation was not able to check Pantawid Pamilya's effect on learning outcomes because DepEd data on national achievement test (NAT) scores were not available during the analysis. In the evaluation literature, there is limited impact of CCTs on achievement test scores and cognitive outcomes due to the influence of other factors such as program design and background characteristics of beneficiaries (Bastagli et al. 2016). Few studies have looked at test scores and cognitive outcomes and many did not observe significant impact for reasons such as moderating and contextual factors (Bastagli et al. 2016; Behrman et al. 2005).

Program impact is concentrated among monitored children

This evaluation found that positive program impacts are mostly concentrated among children that are monitored in the program for their school attendance. This result confirms what other studies found in terms of the importance of conditionalities and labelling in achieving desired impacts of cash transfer programs. Akresh et al. (2013) did an experiment which compared program impact of a UCT and CCT in Burkina Faso on school enrollment and attendance. The authors found significantly larger impact of CCT in enrollment of at-risk children relative to the UCT program. Baird et al. (2011) also did a similar experiment comparing UCT and CCT in Malawi and found that the conditionalities increased the effectiveness of the cash grants in keep adolescent children in school.

Interestingly, a study by Benhassine et al., 2015 found that a "labelled" cash transfer program performs as well as a regular CCT. In the study, an unconditional cash transfer program was strongly labelled making parents perceive the goal of the program with regard to accumulation of human capital and its intention of increasing enrollment of children. The results showed that the LCT performed as well, or even better than the CCT in improving education outcomes. In this evaluation of Pantawid Pamilya, monitoring status was based on the administrative data of the program. Further analysis can be done with regard to the perceived monitoring status of the children beneficiaries and explore whether the same "labelling effect" can be observed.

Pantawid Pamilya no longer affects child labor either in terms of incidence or duration.

Unlike in the previous evaluation, the study finds no program impact on the incidence and the number of days spent by children 10 to 14 years old in paid and unpaid labor. Further examination of the data shows that 9 in 10 children who are engaged in work are enrolled in school, implying that children beneficiaries do not drop out of school, nor do they entirely

substitute schooling for engaging in work. This finding is consistent with the study of de Hoop et al. (2017) which used data from the follow-up survey of the first impact evaluation in 2012. Their study found no reduction of child labor for cash transfer beneficiaries in the Philippines. Specifically, children aged 10 – 14 under the Pantawid Pamilya program are 6 percentage points more likely to be working while attending school compared to non-beneficiary children. Further, their study also found that although Pantawid children have higher attendance rates, they also have a higher probability of engaging in paid work outside the household. This is attributed by the authors to the need for additional income in order to supplement schooling expenses, as the grant provided by the program does not cover the full cost of education.

This finding is contrary to common findings in the literature on child labor wherein CCTs have been successful in the reduction of child labor in various contexts. Beneficiary children have a lower probability of working which coincide with increased schooling, especially for boys (Skoufias et al. 2001; Behrman et al. 2011; Cahyadi et al. 2018). Ferro et al. (2010) found lower incidence of child labor for Bolsa Escola beneficiaries in Brazil while Maluccio and Flores 2005 observed the same for Red de Protección Social program in Nicaragua.

Results of this evaluation also showed no significant impact on child labor even if the sample is disaggregated by sex. In contrast, in Mexico, Skoufias et al. (2001) found that the PROGRESA program significantly lowered participation in work activities for boys aged 8 – 11, and boys and girls aged 12 – 17, alongside an increase in school enrollment. Behrman et al. (2011), noted similar findings for younger boys (9-10 years old). These differences were attributed to different propensities to work between the beneficiaries, as well as different kinds of work undertaken (i.e., wage labor for boys, domestic labor for girls).

The findings on number of work hours for beneficiary children, however, are mixed. Some studies do observe a reduction of work hours for beneficiary children, but others do not find a significant impact, despite a lower incidence of child labor under the program (Skoufias et al. 2001; Ferro et al. 2010).

Household welfare is generally improved but mixed results is observed in some indicators.

The current study asked questions on income from salaries, wages, entrepreneurial activities, and other receipts for the first time. It has been shown that the cash grants on average do increase the income of CCT recipients as expected. However, the observed higher income did not necessarily translate to higher overall consumption compared to non-beneficiaries.

While no impact on total consumption or expenditure was observed, specific expenditure items have been affected positively such as total school expenditures, share of, and average per capita expenditure on clothing and footwear. These reflect the reinforcing effect of the program conditionality on giving priority to the schooling needs of children, and this has been consistently shown since the first impact evaluation. Impact on health expenditure, although very small, is also positive and significant. This could mean that they either spend more for preventive (checkups, vitamins, etc.) or for curative health needs (either the treatment for their illness is costlier or they get sick more often). In any case, this should be investigated further using other health-related data and in connection with PhilHealth benefits usage.

The impact on food expenditure can almost be said to be significantly positive (except that the impact vanishes under a more precise estimate) and could possibly explain why a lower

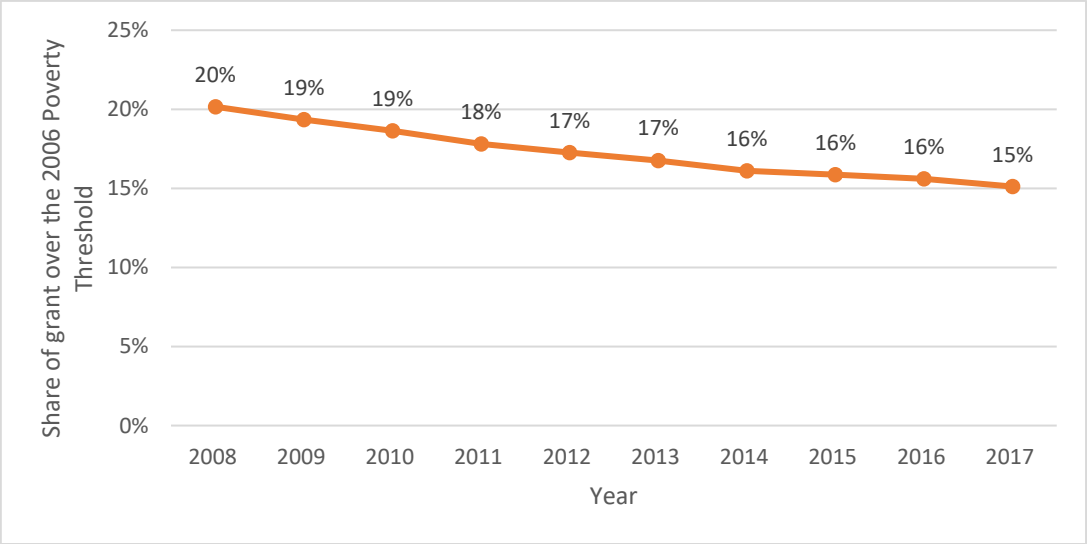
proportion of CCT households report experiencing hunger. Spending on vice goods is still negligible and less compared to non-beneficiaries. This means that CCT households are rational in spending priorities as they allocate more for essential needs such as education, health, and food.

In the literature, conditional cash transfers have been observed to have a significant impact on household consumption, particularly food consumption. In general, share of food to total expenditures is found to be higher for CCT beneficiary households (Fiszbein and Schady 2009). Households are observed to invest in better quality and nutrient-rich food such as meat, eggs, and vegetables. Attanasio and Mesnard (2006) found that CCTs increase total and food consumption of beneficiary households of Familias en Acción in Colombia. No significant impact is observed for expenditures on goods such as alcohol, tobacco, and adult clothing. Cahyadi et al. (2018), on the other hand, did not observe a significant program impact of PKH on overall per-capita consumption, food expenditures, health and education expenditures, and spending on vice goods. This finding is explained by the authors as reflective of the intention of the program to solve poverty in the next generation, but not in the short term.

The size of transfers was identified by Fiszbein and Schady (2009) to be a major determinant of household consumption, larger transfers result in larger household consumption. Other factors affecting household consumption were program priorities (i.e. intergenerational versus short-term poverty) and program impact on child labor.

At this point, it is important to emphasize that majority of the cash grants in Pantawid Pamilya have retained their nominal value since the pilot implementation in 2008 (Figure 6.4). At the start of implementation, a household with at three beneficiary children in elementary and compliant with all program conditions can receive up to Php15,000 per year. In 2008, this comprises 20% of the projected 2006 poverty threshold in 2008. The denominator corresponds to the minimum amount of money that a household of five members needs in order to equal the poverty line in 2006. From 20% share, this was reduced to only 15% in 2017 due to the erosion of real value following yearly inflation rates since 2008.

Figure 6.4 Share of the real value of grants over 2006 poverty threshold, by year



Note: Simulation of a household with 3 children in elementary and fully compliant with conditionalities
2006 threshold was projected to 2008 value using CPI.

Fernandez and Olfindo (2011) noted that at the start of the program implementation, the original amount of the grants was comparable to the CCTs in Latin American countries, with the transfer size of *Oportunidades* in Mexico and *Red de Protección Social* in Nicaragua making up 21% and 17% of total annual household expenditures, respectively. Now, this is not true given the reduction of the value of grants. The maximum amount of Php15,000 in 2008 is now lower by 34% equivalent to roughly Php10,000 only. This of course assumes that the household has perfect compliance to program conditions and has the maximum number of children as program beneficiaries. The actual amount of grants entitled to and received by beneficiaries is lower than this given imperfect compliance and lower number of children beneficiaries.

Although grant amounts were increased for the high school children, it is not certain that this amount is able to cover costs in secondary education. The rice subsidy of Php 600 monthly, provided starting 2017, is expected to somehow allay the lost value of grants in the past years.

Pantawid Pamilya does not encourage dependency

The analysis results on labor outcomes generally indicate that the program does not encourage dependency. No significant difference was observed between labor force participation of beneficiaries and non-beneficiaries indicating that the program, on the average, does not affect willingness to work of beneficiaries. Further, the reduction in employment rate of beneficiaries does not necessarily mean that beneficiaries are discouraged to look for work. Employment, unlike labor force participation, depends on both the demand and supply for workers, and reduction in employment could mean lack of available jobs for beneficiaries as much as it could mean lack of available workers willing and able to accept the available jobs. Despite the lower employment rates, the study also found that among those who are employed, Pantawid Pamilya beneficiaries were significantly more productive than their counterparts who are non-beneficiaries. Beneficiaries tend to work more jobs and work for longer duration of hours per week. Likewise, no significant difference was observed in the proportion of unemployed looking for work in Pantawid and non-Pantawid groups.

The literature on conditional cash transfers and employment support the study's general finding that CCTs do not foster dependency. Various studies found no significant negative impact on beneficiary employment and labor force participation. Maluccio and Flores (2005) found no impact on adult labor force participation of program beneficiaries of RPS in Nicaragua. Similar results were observed by Skoufias and Di Maro (2006) for PROGRESA beneficiaries in Mexico, bolstered by their finding that the CCT program also led to a reduction in current poverty. In a study on the long-term impact of CCTs, Cahyadi et al. (2018) also observed that long-term exposure to PKH did not result in a decrease in enrollment for heads of beneficiary households. In previous impact evaluations on the Pantawid Pamilya Pilipino Program, no significant impact on employment was observed, besides positive impact on looking for additional work for employed beneficiaries. On the other hand, employment was found to be significantly higher for both beneficiary fathers and mothers of Bolsa Escola in Brazil (Ferro, Kassouf and Levision 2010).

In a review of Latin American CCT programs, Alzúa et al. (2013) observed small negative effects on adult labor market outcomes, but these were not statistically significant and were not interpreted to reflect dependency. In terms of number of hours worked, a significant decrease was found for beneficiaries at the household level, but not for individual adults. Decreased

working hours were also observed for rural mothers and urban fathers under Bolsa Escola in Brazil (Ferro and Nicollela 2007), which was attributed to more time being spent on child care or more leisure time afforded by beneficiaries.

A re-analysis of the six randomized controlled trials of CCT programs in six developing countries (the Philippines included) was done in Banerjee, et al. (2017). They find no systematic evidence that cash transfers programs discourage either the propensity to work or overall number of hours worked for either men or women.

In summary, no evidence of dependency or work disincentives was observed by studies on conditional cash transfer programs. In general, CCTs were found to have no significant impact on labor force participation and employment. More nuanced effects, however, were observed for some programs, such as PROGRESA, on other labor market outcomes such as number of hours worked.

Pantawid increases access to social services and increased utilization of government services

This evaluation shows that one unintended consequence of being a Pantawid household is that more of them tend to have copies of their birth certificate which is one of the basic documentary requirements in accessing government services. This is most likely because Pantawid beneficiaries are asked to file updates on basic information, which in many cases should be supported by a birth certificate. Though more beneficiaries have birth certificates, PhilHealth membership and SSS membership, the data show this does not easily translate to a significantly higher rate of availing government services. In the study of Quimbo et al. (2008), they identified that there was lower utilization of PhilHealth benefits for the hospitalization of children of mothers with low educational attainment, and with shorter lengths of stay in the hospital. Other barriers identified by their study using NDHS 2003 data were low awareness of program benefits, high transactions costs, and complicated claiming process. Succeeding evaluations and studies need to delve further into this and identify and validate potential reasons behind underutilization of government and social services, particularly among Pantawid beneficiaries, who have relatively more access to information on these kinds of programs.

FDS messages are reflected in the attitudes and behavior observed among Pantawid Pamilya beneficiaries

Based on the results of this evaluation, Pantawid Pamilya promotes participation in community development activities. One of the program objectives is to encourage participation in community development activities and for the first time there is now evidence that this is happening among Pantawid Pamilya beneficiaries. More of them are members of and even hold officer positions in community-based organizations. They are also significantly more likely to participate in volunteer work.

In the last quarter of 2015, Pantawid Pamilya delivered FDS topics that revolve around active citizenship. In the second half of 2016, the program took a community organizing turn and attempted to encourage parent groups to self-organize and advocate for their community needs. The positive civic involvement outcomes could be the result of these sustained efforts two years priors to the third impact evaluation. The significantly higher rate of having emergency kits among beneficiaries further proves that FDS has the potential to drive more tangible results in

terms of adopting a particular practice such as preparing for disasters, when it is reinforced regularly (disaster preparedness is a recurring FDS topic).

Higher participation in community organizations and voluntary community activities among beneficiaries is observed but it is not clear from the study the type of activities and involvement of beneficiaries. It may be better to ask more specific questions about community participation of beneficiaries in future studies.

On the attitudes towards violence against women, it is good to note that the female respondents hardly agree with any justification for physical violence of their husbands. That female Pantawid Pamilya beneficiaries agree less to physical violence when they go out without notifying their husband or when they argue with their husbands could mean that they are protective of their personal freedoms (freedom of movement and freedom of expression) that does not necessarily affect their performance of familial (neglecting children and burning the food) and marital duties (refusing to have sex). This positive outcome, although small in magnitude, could still be traced to and is quite consistent with the frequent attention given to gender empowerment in FDS. It is also worthwhile to study in the future whether this effect is greater among female headed households.

Pantawid Pamilya increases grit of children

There is very little impact of the program on the outlook or expectations of parents regarding the future of their children. On the other hand, the findings show that Pantawid children are more determined compared to their counterparts. The program should take advantage of the results on grit as it has been identified in the literature together with other socio-emotional skills to have a big impact on the future of children when they become part of the labor force. Heckman and Kautz (2012) noted that soft skills – particularly grit and related traits – are predictive of outcomes later in life. Future studies should attempt to unpack these results and the program should consider systematically developing interventions on this front.

7. Recommendations

The findings of the evaluation generally indicate that the program is still able to achieve most of its short- and medium-term objectives of making children enter and stay in school and improve their health outcomes, albeit some unexpected and conflicting results that need further study. Likewise, the results of the evaluation also suggest program impacts on desirable behavioral outcomes of both children and adult members of the households.

Despite these positive program impacts observed by the study, it is apparent that there are gaps that need to be addressed such as the negative impact on nutrition, low utilization of some child and maternal health care services, minimal impact on education among children 3 to 5 years old, and persistent incidence of working children, among others. Thus, the following recommendations are proposed:

1. Strengthen program aspects that influence the first thousand days to promote better health among young children and pregnant women. The law on the first thousand days has been passed in November 2018 to support the nutrition of mothers and their infants

before, during, and after pregnancy. Outside the initiatives of the Department of Health, Pantawid Pamilya is the only other nationwide program that has the capacity to influence maternal and child health particularly among the poor. This provides unique opportunity for DSWD and DOH to work together and with other agencies to promote better nutrition outcomes at that crucial stage of life. Many other health- and children-focused civil society organizations should be tapped to help in educating and providing the needed nutritional supplements to lactating mothers and their infants to help efforts of the government.

2. Address the gaps in updating of changes in household composition - especially newborns and new pregnancies. A more updated and comprehensive roster of household members is critical in understanding impact of the program on young children and the whole family besides the children monitored by the program. This can also enable studying the impact of the program on fertility that was mentioned as one gap in this evaluation. The program implementers should take a more active role in updating the records of beneficiaries, instead of relying in voluntary updates filed by beneficiaries. Pantawid Pamilya can learn from the experience of Bolsa Familia wherein provision of grants is also made conditional on the households' timely filing of updates.

3. Strengthen the monitoring of compliance to health conditions to capture better the utilization levels of available services by beneficiaries. The program can benefit from monitoring the type and quality of services available and accessed by beneficiaries. This will help identify gaps in services as well as understand better the role of services on health outcomes. Assistance of the Department of Health and the local government units in this area are vital.

4. Do further studies on the determinants of availing of child and maternal health services in order to understand the reason for the lack of impact and the seemingly conflicting results. There is a need to understand better the role of supply-side factors given the mixed results. It should be noted that supply-side covariates were already included in the estimation models. Perhaps a more qualitative study that teases out the issues on the role of provision of health services and the corresponding responses or demand from the beneficiaries may be useful.

5. Do an in-depth study on the puzzling impact of nutrition. That most CCT programs in other countries have shown that the program leads to a decline in prevalence of malnutrition makes the case of the Philippines of special interest that needs to be better understood. It has been shown that the perverse impact of program on stunting virtually disappears when one includes in the analysis only children who benefited from the program from conception. Nonetheless, it is still important to understand the mechanisms with which the program affects nutrition status of children. Identifying the important intermediate factors that drive the impacts on nutrition are as important as the impact on the final outcomes itself.

6. Consider more effective and efficient ways of using the education grant. One option is to refocus education intervention to older children where benefits are larger, and

children are more at risk of dropping out of school. There are several ways to do this and it should be done in gradual manner. One way is to remove elementary education grant, and therefore conditionality of school attendance, by replacing it with a reasonably attractive amount of grade level completion and enrollment in the next level grants. The amount saved from not giving grants conditional on school attendance in elementary could be reallocated to increase the amount of education grants for high school children still conditional on their enrollment and regular school attendance. In a study by Barrera-Osorio et al. (2008) in the CSAE program in Colombia, schemes that provide bulk cash transfer benefits at the end of each grade level, and cash transfer benefits conditional to the student's graduation and subsequent enrollment in the next level returned even stronger program impacts on education outcomes than the schemes that depend on monthly attendance.

7. Pursue studies that will analyze the impact of the program on learning. It has been established in this and in previous evaluation rounds that program increases school attendance except in the elementary grades because the attendance rates are already near universal. The next important education outcome to school attendance is learning. This will require having the achievement test scores of beneficiary children and their counterparts. The program should endeavor to get the achievement test scores of the students from DepEd in order to understand the impact of the program on learning. This is important because literature reveals that school attendance does always translate into learning (World Bank 2018).

8. Look for solutions how to reduce child labor incidence and duration. Findings show that children are still going to school despite their employment. This indicates that a big part of the problem is not driven by behavior of beneficiaries (such as, lack of interest), but more of the costs they incur in order to pursue schooling. With the declining real value of the grants, continued employment may have been resorted to by children to support their schooling and/or contribute to household income. An interesting intervention to pursue is whether increasing the amount of education grants for high school children will produce desirable impact on the incidence and duration of child labor. A notable result in Edmonds and Theoharides (2018) shows that asset transfer that improved welfare of the household had increased rather than reduce child labor and economic activity in the household increased.

9. Identify and define more clearly, make these measurable and monitor the knowledge, attitude, and practices that the FDS want beneficiaries to adopt. Findings show that FDS has been effective in promoting some messages such as those related to civic participation and disaster preparedness. This confirms the potential of the FDS as a platform to initiate behavioral changes among beneficiaries. However, following the recommendations from the 2014 impact evaluation, the program should still work on sharpening the delivery of key ideas and messages. It should start conducting FDS in a directed manner with a short curriculum of at least six (6) months on the most important topics like maternal and child health and nutrition and parenting towards promoting child protection and health- and education-seeking behavior. This should facilitate reinforcement through the short and directed FDS curricula. This will also provide the framework and facilitate the evaluation of the impact of the FDS on these identified intermediate learning goals.

10. Do further studies on the impact of the program on labor market outcomes. It must be clear, however, that the immediate labor market outcomes of the working age members of beneficiary families are not the primary outcomes the program is targeting. Nonetheless, it has been used as arguments against the program by critics. In addition, labor market responses due the program can also provide insights on how to facilitate the graduation of beneficiary families from the program. For instance, the study has pointed out the heterogeneity in impact between urban and rural areas. This should be explored especially with regard to possible difference in employment types and skill requirements. To help increase employment rates, for instance, the DSWD can start by providing inputs on accessing and maximizing livelihood opportunities through FDS and accompany this with employment facilitation assistance through the Sustainable Livelihood Program. However, since this is not the primary objective of the program, in doing this DSWD should not lose sight of improving the future employment prospects of the children still studying. It should not also forget and be open to the possibility that this can be more efficiently performed by other agencies such as DOLE, TESDA, and DTI.

11. Taking the cue from the results on grit, the program should start doing studies that will enhance understanding of how the program may help promote or discourage socio-emotional skills. The literature has identified grit together with other socio-emotional skills to have a big impact on the future of children when they become part of the labor force (Heckman and Kautz, 2012). Future studies should attempt to unpack these results and should consider how to systematically identify and develop interventions that will enhance socio-emotional skills.

References

Akresh, Richard, Damien de Walque, and Harounan Kazianga. 2012. *Alternative Cash Transfer Delivery Mechanisms: Impacts on Routine Preventative Health Clinic Visits in Burkina Faso.* IZA DP No. 6321, Bonn: Institute for the Study of Labor (IZA).

Alzúa, María, Guillermo Cruces, and Laura Ripani. 2013. "Welfare Programs and Labor Supply in Developing Countries: Experimental Evidence from Latin America." *Journal of Population Economics* 1255-1284. Accessed December 8, 2018. doi:10.1007/s00148-012-0458-0.

Araujo, M. Caridad, María Adelaida Martínez, Sebastian Martinez, Michelle Pérez, and Mario Sánchez. 2018. *Do Larger School Grants Improve Educational Attainment?* IDB-WP-864, Inter-American Development Bank.

Attanasio, Orazio P., Veruska Oppesdisano, and Marcos Vera-Hernández. 2015. "Should Cash Transfers Be Conditional? Conditionality, Preventive Care, and Health Outcomes." *American Economic Journal: Applied Economics* 35-52. http://dx.doi.org/10.1257/app.20130126.

Attanasio, Orazio, and Alice Mesnard. 2006. "The Impact of a Conditional Cash Transfer Programme on Consumption in Colombia." *Fiscal Studies* 27 (4): 421-442. Accessed December 8, 2018. doi:https://doi.org/10.1111/j.1475-5890.2006.00041.x.

Attanasio, Orazio, Luis Carlos Gómez, Patricia Heredia, and Vera-Hernández. 2005. *The short-term impact of a conditional cash subsidy on child health and nutrition in Colombia.* Institute for Fiscal Studies. Accessed December 10, 2018. https://www.ifs.org.uk/edepo/rs_fam03.pdf.

Baez, Javier Eduardo, and Adriana Camacho. 2011. *Assessing the Long-Term Effects of Conditional Cash Transfers on Human Capital: Evidence from Colombia.* IZA DP No. 5751, Bonn: Institute for the Study of Labor (IZA).

Banerjee, A., R. Hanna, G. Kreindler, and B. Olken. 2017. "Debunking the Stereotype of the Lazy Welfare Recipient: Evidence from Cash Transfer Programs." *The World Bank Research Observer* 32 (2): 155-184.

Barber, Sarah L, and Paul J Gertler. 2008. "Empowering women to obtain high quality care: evidence from an evaluation of Mexico's conditional cash transfer programme." *Health Policy and Planning* 24 (1): 18-25. Accessed December 14, 2018. doi:doi:10.1093/heapol/czn039.

Barham, Tania, Karen Macours, and John Maluccio. 2013. *More Schooling and More Learning? Effects of a Three-Year Cash Transfer Program after 10 Years.* IDB Publications (Working Paper), Inter-American Development Bank. Accessed November 6, 2018.

Barrera-Osorio, Felipe, Marianne Bertrand, Leigh L. Linden, and Francisco Perez-Calle. 2008. *Conditional Cash Transfers in Education : Design Features, Peer and Sibling Effects Evidence from a Randomized Experiment in Colombia.* Policy Research Working Paper

No. 4580, Washington DC: World Bank. https://openknowledge.worldbank.org/handle/10986/6726.

Bastagli, Francesca, Jessica Hagen-Zanker, Luke Harman, Valentina Barca, Georgina Sturge, Tanja Schmidt, and Luca Pellerano. 2016. *Cash Transfers: What Does the Evidence Say? A Rigorous Review of Programme Impact and of the Role of Design and Implementation Features*. London: Overseas Development Institute.

Behrman, Jere R., Susan Wendy Parker, and Petra E. Todd. 2005. *Long-Term Impacts of the Oportunidades Conditional Cash Transfer Program on Rural Youth in Mexico.* Discussion papers // Ibero America Institute for Economic Research, No. 122, Göttingen: Ibero-Amerika-Inst. für Wirtschaftsforschung. doi:10.7551/mitpress/9780262113243.003.0008.

Behrman, Jere, Susan Parker, and Petra Todd. 2011. "Do Conditional Cash Transfers for Schooling Generate Lasting Benefits? A Five-Year Followup of PROGRESA/Oportunidades." *The Journal of Human Resources* 46 (1): 93-122. doi:10.3368/jhr.46.1.93.

Benedetti, Fiorella, Pablo Ibarrarán, and Patrick McEwan. 2015. *Do Education and Health Conditions Matter in a Large Cash Transfer? Evidence from a Honduran Experiment.* IDB WORKING PAPER SERIES No. IDB-WP-577, Inter-American Development Bank.

Benhassine, Najy, Florencia Devoto, Esther Duflo, Pascaline Dupas, and Victor Pouliquen. 2015. "Turning a Shove into a Nudge? A "Labeled Cash Transfer" for Education." *American Economic Journal: Economic Policy* 7 (3): 86-125.

Bhutta, Zulfiqar A, Jai K Das, Joy E Lawn, Rehana A Salam, Vinod K Paul, Jeeva M Sankar, Hannah Blencowe, Arjumand Rizvi, Victoria B Chou, and Neff Walker. 2014. *Can Available Interventions End Preventable Deaths in Mothers, Newborn Babies, and Stillbirths, and at What Cost?* Lancet, May 20. Accessed December 10, 2018. doi:http://dx.doi.org/10.1016/S0140-6736(14)607923.

Buser, Thomas, Hessel Oosterbeek, Erik J. S. Plug, Juan Ponce, and José Rosero. 2014. *The Impact of Positive and Negative Income Changes on the Height and Weight of Young Children.* IZA Discussion Papers, No. 8130, Bonn: Institute for the Study of Labor (IZA). http://hdl.handle.net/10419/96810.

Cahyadi, Nur, Hanna Rema, Benjamin A Olken, Rizal Adi Prima, Elan Satriawan, and Ekki Syamsulhakim. 2018. *Cumulative Impacts of Conditional Cash Transfer Programs: Experimental Evidence from Indonesia*. Working Paper, Cambridge: National Bureau of Economic Research. Accessed December 10, 2018. https://www.nber.org/papers/w24670.pdf.

Calonico, Sebastian, Matias Cattaneo, and Rocio Titiunik . 2014. "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs." *Econometrica* 2295-2326.

Calonico, Sebastian, Matias Cattaneo, and Rocio Titiunik. 2014. "Robust data-driven inference in the regression-discontinuity design." *The Stata Journal* 1-36.

Calonico, Sebastian, Matias D. Cattaneo, Max H. Farrell, and Rocio Titiunik. 2017. "rdrobust: Software for Regression Discontinuity Designs." *Stata Journal* 17 (2): 372-404.

Cataneo, M., and G. Vaquez-Bare. 2017. "Report on Sampling Design for Pantawid Pamilya 3rd Wave Impact Evaluation." Report submitted to that Asian Development Bank and Department of Social Welfare.

Cattaneo, M., and G. Vasquez-Bare. 2017. "Report on Sampling Design for Pantawid Pamilya 3rd Wave Impact Evaluation." Report submitted to the Asian Development Bank and Department of Social Welfare.

Cattaneo, M., M. Idrobo, and R. Titiunik. 2018. *A Practical Introduction of Region Discontinuity Designs: Volume II.* August 10. http://www.umich.edu/~cattaneo/books/Cattaneo-Idrobo-Titiunik_2018_CUP-Vol2.pdf.

Cattaneo, M., N. Idrobo, and R. Titiunik. 2018. *A Practical Introduction to Regression Discontinuity Designs: Volume I.* August 10. http://www.umich.edu/~cattaneo/books/Cattaneo-Idrobo-Titiunik_2018_CUP-Vol1.pdf.

Cattaneo, M., N. Idrobo, and R. Titiunik. 2018. *A Practical Introduction to Regression Discontinuity Designs: Volume II.* August 10. http://www.umich.edu/~cattaneo/books/Cattaneo-Idrobo-Titiunik_2018_CUP-Vol2.pdf.

Cattaneo, Matias, and Gonzalo Vasquez-Bare. 2017. *Report on Sampling Design for Pantawid Pamilya 3rd Wave Impact Evaluation.* unpublished.

Cattaneo, Mattias D, Rocio Titiunik, and Gonzalo Vazquez-Bare. 2017. "Comparing inference approaches for RD designs: A reexamination of the effect of head start on child mortality." *Journal of Policy Analysis and Management* 643-681.

David, Clarissa C., and Jose Ramon G. Albert. 2015. *Recent Trends in Out-of-School Children in the Philippines.* PIDS DP 2015-51, Quezon City: Philippine Institute for Development Studies (PIDS).

David, Clarissa C., Jose Ramon G. Albert, and Jana Flor V. Vizmanos. 2018. *Out-of-School Children: Changing Landscape of School Attendance and Barriers to Completion* . PIDS DP 2018-25, Quezon City: Philippine Institute for Development Studies (PIDS).

de Hoop, Jacobus, Jed Friedman, Eeshani Kandpal, and Furio C. Rosati. 2017. *Child Schooling and Child Work in the Presence of a Partial Education Subsidy.* WPS8182, Washington DC: World Bank. doi:10.1596/1813-9450-8182.

Department of Science and Technology - Food and Nutrition Research Institute (DOST-FNRI). 2016. *Philippine Nutrition Facts and Figures 2015: Anthropometric Survey.* Taguig: DOST-FNRI.

Department of Social Welfare and Development (DSWD) and World Bank. 2014. *Philippines Conditional Cash Transfer Program Impact Evaluation 2012.* Report Number 75533-PH, Washington DC: DSWD and World Bank.

Department of Social Welfare and Development (DSWD). 2014. "Keeping Children Healthy and in School: Evaluating the Pantawid Pamilya Using Regression Discontinuity Design."

Department of Social Welfare and Development (DSWD). 2018. *Pantawid Pamilyang Pilipino Program Implementation Status: 2nd Quarter of 2018.* Accessed December 11, 2018. https://pantawid.dswd.gov.ph/wp-content/uploads/2018/09/Pantawid-Pamilya-2nd-Quarter-Report-2018.pdf.

Department of Social Welfare and Development (DSWD). n.d. *Pantawid Pamilyang Pilipino Program Implementation Status: 4th Quarter of 2017.* https://pantawid.dswd.gov.ph/wp-content/uploads/2018/07/2017-Pantawid-Pamilya-4th-Quarter-2017.pdf.

—. 2014. "Terms of Reference for Open Selection of Children for Monitoring in the Pantawid Program." Quezon City, December 04.

Department of Social Welfare and Development. 2015. *Pantawid Pamilya Operations Manual.* Quezon City: DSWD.

Department of Social Welfare and Development. 2010-2017. *Pantawid Pamilyang Pilipino Program Annual Report.* DSWD.

Dornbusch, Sanford M., Philip L. Ritter, Herbert Leiderman, Donald F. Roberts, and Michael J. Fraleigh. 1987. "The Relation of Parenting Style to Adolescent School Performance." *Child Development* 58 (5): 1244-1257. Accessed December 15, 2018. https://www.jstor.org/stable/1130618.

Edmonds, Eric, and Caroline Theoharides. 2018. "The short-term impact of a productive asset transfer in families with child labor: Experimental evidence from the Philippines."

Evans, David K., and Anna Popova. 2017. "Cash Transfers and Temptation Goods." *Economic Development and Cultural Change* 65 (2): 189-221. doi:http://dx.doi.org/10.1086/689575.

Evans, David K., Stephanie Hausladen, Katrina Kosec, and Natasha Reese. 2014. *Community-Based Conditional Cash Transfers in Tanzania: Results From a Randomized Trial.* World Bank Studies, Washington DC: World Bank. http://dx.doi.org/10.1596/978-1-4648-0141-9.

Fernald, Lia C. H., Paul J. Gertler, and Lynette M. Neufield. 2009. "10-year effect of Oportunidades, Mexico's conditional cash transfer programme, on child growth, cognition, language, and behaviour: a longitudinal follow-up study." *Lancet* 374. doi:10.1016/S0140-6736(09)61676-7.

Fernald, Lia C. H., Paul J. Gertler, and Lynette M. Neufield. 2008. "The Importance of Cash in Conditional Cash Transfer Programs." *Lancet* 828-837. doi:10.1016/S0140-6736(08)60382-7.

Ferro, Andrea R., and Alexandre C. Nicollela. 2007. "'The impact of conditional cash transfer programs on household work decisions in Brazil." *IZA/World Bank Conference on Employment and Development.* Bonn: Institute for the Study of Labour (IZA).

Accessed December 10, 2018. www.iza.org/conference_files/worldb2007/ferro_a3468.pdf.

Ferro, Andrea, Ana Lucia Kassouf, and Deborah Levision. 2010. "The Impact of Conditional Cash Transfer Programs on Household Work Decisions in Brazil." *Research in Labor Economics* (Emerald Group Publishing Limited) 31: 193-218. Accessed November 6, 2013. doi:doi:10.1108/S0147-9121(2010)0000031010.

Fiszbein, Ariel, Francisco H.G. Ferreira, and Norbert Schady. 2009. *Conditional cash transfers : reducing present and future Poverty.* Washington, DC: World Bank.

Gertler, Paul. 2004. "Do Conditional Cash Transfers Improve Child Health? A Randomized Experiment." *The American Economic Review* 336-341. Accessed October 6, 2014. http://www.jstor.org/stable/3592906.

Gertler, Paul, Sebastian Martinez, and Marta Rubio-Codina. 2012. "Investing Cash Transfers to Raise Long-term Living Standards." *American Economic Journal: Applied Economics* 4 (1): 164-192.

Ginson-Bautista, Maria Cristina, and Maria Eufemia Yap. 2017. *A Study on the Enabling Factors and Challenges in the Utilisation of Maternal Health Care and Family Planning Services of Pantawid Pamilya Beneficiaries.* Quezon City: DSWD.

Heckman, James J, and Tom Kautz. 2012. "Hard evidence on soft skills." *Labour Economics* 19 (4): 451-464. doi:https://doi.org/10.1016/j.labeco.2012.05.014.

Hock, Rebecca S., Michelle J. Hindin, Judith K. Bass, Pamela J. Surkan, Catherine P. Bradshaw, and Tamar Mendelson. 2015. "Parenting styles and emerging adult drug use in Cebu, the Philippines." *International Journal of Culture and Mental Health* 9 (2): 108-119. https://doi.org/10.1080/17542863.2015.1091486.

Imbens, G., and T Lemiuex. 2008. "Regression Discontinuty Designs: A Guide to Practice." *Journal of Econometrics* 142: 615-635.

Lagarde, Mylene, Andy Haines, and Natasha Palmer. 2009. "The impact of conditional cash transfers on health outcomes and use of health services in low and middle income countries (Review)." *Cochrane Database of Systematic Reviews* (John Wiley & Sons Ltd.) (4). Accessed December 8, 2018. doi:10.1002/14651858.CD008137.

Lee, D. S., and T. Lemieux. 2010. "Regression Discontinuity Designs in Economics." *Journal of Economic Literature* 142: 281-355.

Leroy, Jef L., Marie Ruel, and Ellen Verhofstadt. 2009. "The impact of conditional cash transfer programmes on child nutrition: a review of evidence using a programme theory framework." *Journal of Development Effectiveness* 1 (2): 103-129. doi:10.1080/19439340902924043.

Levy, Dan, and Jim Ohls. 2007. *Evaluation of Jamaica's PATH Program: Final Report.* Mathematica Policy Research Reports, Washington DC: Mathematica Policy Research, Inc.

Levy, Santiago. 2018. *Under-rewarded efforts: the elusive quest for prosperity in Mexico.* Washington DC: Inter-American Development Bank. doi:http://dx.doi.org/10.18235/0001189.

Lim, Stephen, Lalit Dandona, Joseph Hoisington, Spencer James, Margaret Hogan, and Emmanuela Gakidou. 2010. "India's Janani Suraksha Yojana, A Conditional Cash Transfer Programme to Increase Births in Health Facilities: An Impact Evaluation." *Lancet* 375: 2009-2023.

Macours, Karen, Norbert Schady, and Renos Vakis. 2012. "Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment." *American Economic Journal: Applied Economics* 247-273. http://dx.doi.org/10.1257/app.4.1.247.

Maluccio, John, and Rafael Flores. 2005. *Impact Evaluation of a Conditional Cash Transfer Program: The Nicaraguan Red de Protección Social.* Research Report, Washington, DC: International Food Policy Research Institute.

Manley, James, Seth Gitter, and Vanya Slavchevska. 2013. "How Effective are Cash Transfer Programmes at Improving Nutritional Status?" *World Development* (Elsevier Ltd.) 48: 133-155. Accessed December 8, 2018. doi:https://doi.org/10.1016/j.worlddev.2013.03.010.

Molina-Millan, Teresa, Barham, Tania Barham, Karen Macours, John Maluccio, and Marco Stampini. 2016. *Long-Term Impacts of Conditional Cash Transfers in Latin America: Review of the Evidence.* IDB Working Paper Series: 732, Inter-American Development Bank.

Neidhöfer, Guido, and Miguel Niño-Zarazúa. 2017. *The Long(er)-term Impacts of Chile Solidario on Human Capital and Labour Income.* Working Paper, United Nations University World Institute for Development Economics Research.

Nyaradi, Anett, Jianghong Li, Siobhan Hickling, Jonathan Foster, and Wendy Oddy. 2013. "The role of nutrition in children's neurocognitive development, from pregnancy through childhood." *Frontiers in Human Neuroscience.* doi:10.3389/fnhum.2013.00097.

Paqueo, Vicente B., and Aniceto C. Jr. Orbeta. 2019. *Gender Equity in Education: Helping the Boys Catch Up.* PIDS DP 2019-01, Quezon City: Philippine Institute for Development Studies (PIDS).

Paqueo, Vicente, Aniceto Orbeta, Tarcisio Castaneda, and Chris Spohr. 2013. "After Five Years of Pantawid, What Next." *Philippine Institute for Development Studies Discussion Paper 2013-41.*

Parker, Susan, and Tom Vogl. 2018. *Do Conditional Cash Transfers Improve Economic Outcomes in the Next Generation? Evidence from Mexico.* NBER Working Paper No. 24303, National Bureau of Economic Research, Inc.

Perova, Elizaveta, and Renos Vakis. 2012. "5 Years in Juntos: New Evidence on the Program's Short and Long-Term Impacts." *Economía* 53-82.

Philippine Statistics Authority (PSA) and ICF. 2018. *Philippines National Demographic and Health Survey 2017.* Quezon City, Philippines, and Rockville, Maryland, USA: PSA and ICF.

Philippine Statistics Authority (PSA). 2018. *Annual Poverty Indicators Survey 2017: Final Report.* Quezon City: PSA.

Philippine Statistics Authority. 2018. "Annual Poverty Indicators Survey 2017: Final Report."

Quimbo, Stella, Jhiedon Florentino, John W Peabody, Riti Shimkada, Carlo Panelo, and Orville Solon. 2008. "Underutilization of Social Insurance among the Poor: Evidence from the Philippines." *PLoS ONE* 3 (10). doi:10.1371/journal.pone.0003379.

Reyes, Celia, Audrey Tabuga, Christian Mina, and Ronina Asis. 2013. "Promoting Inclusive Growth Through the 4Ps." *Philippine Institute for Development Studies Discussion Paper 2013-09.*

Skoufias, Emmanuel, and Vincenzo di Maro. 2006. *Conditional Cash Transfers, Adult Work Incentives, and Poverty.* Policy Research Working Paper 3973, Washington DC: World Bank.

Skoufias, Emmanuel, Susan Parker, Jere Behrman, and Carola Pessino. 2001. "Conditional Cash Transfers and Their Impact on Child Work and Schooling: Evidence from the PROGRESA Program in Mexico." *Economía* 2 (1): 45-96. http://www.jstor.org/stable/20065413.

Stecklov, Guy, Paul Winters, Jessica Todd, and Ferdinando Regalia. 2007. "Unintended effects of poverty programmes on childbearing in less developed countries: Experimental evidence from Latin America." *A Journal of Demography* 125-140. https://doi.org/10.1080/00324720701300396.

Thistlewaite, Donald L., and Donald T Campbell. 1960. "Regression-discontinuity analysis: An alternative to the ex post facto experiment." *Journal of Educational Psychology* 51 (6): 309-317. http://dx.doi.org/10.1037/h0044319.

Tutor, Melba. 2014. "The Impact of Philippines' Conditional Cash Transfer Program on Consumption." Quezon City: University of the Philippines School of Economics (UPSE), April. https://ideas.repec.org/p/phs/dpaper/201405.html.

UNICEF. 2013. *Improving Child Nutrition: The Achievable Imperative for Global Progress.* New York: UNICEF.

UNICEF. 2017. *Reducing Stunting in Children Under 5 Years of Age: A comprehensive evaluation of UNICEF's strategies and programme performance – Global synthesis report.* New York: UNICEF.

UNICEF. 2017. *Reducing Stunting in Children Under 5 Years of Age: A comprehensive evaluation of UNICEF's strategies and programme performance – Global synthesis report.* New York: UNICEF.

USAID. 2015. *The 1000-Day Window of Opportunity: Technical Guidance Brief.* Technical Guidance Brief, Washington D.C.: United States Agency for International Development.

World Bank. 2018. "World Development Report." *Learning to Realize Education's Promise.* Washington DC: 2018 International Bank for Reconstruction and Development/ The World bank.

World Bank. 2018. *World Development Report 2018: Learning to Realize Education's Promise.* Washington, D.C.: World Bank.

World Health Organization (WHO). 2010. *Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide.* Geneva: WHO.

World Health Organization (WHO). 2016. *WHO recommendations on antenatal care for a positive pregnancy experience.* Geneva: World Health Organization.