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Impact of Conditional Cash Transfer in the Philippines: The Case of Rural Vs. Urban Beneficiaries

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ABSTRACT

This paper analyzes the effectiveness of the CCT program in the Philippines in terms of its effect on conditionality goods as reflected by food, health, and education expenditures of households from rural and urban areas that benefitted the program. The study used secondary cross-section data and employed the Propensity Score Matching (PSM) methodology in estimating the average treatment effect on the treated. In terms of share to total expenditures, the study finds that CCT has a significant effect on education for household beneficiaries in rural areas and has improved the quality of food consumed by household beneficiaries in urban areas. Also, the study reveals a decrease in the per capita total expenditure and per capita food expenditure of the household beneficiaries in urban areas driven by their improved saving behavior. However, CCT has no significant effect on conditionality goods such as health and education for household beneficiaries in urban areas. For household beneficiaries in rural areas, only the increase in the share of education and carbohydrate foods are significant. Based on the findings of the study, the CCT program, at some point, is effective in meeting its short-term goal, but it must be more targeted in order to improve its impact on other conditionality goods.
Keywords: *Conditional cash transfers, expenditures, propensity score matching*

INTRODUCTION

The Philippines persistently suffers from several sociological and economic problems. Poverty remains a challenge in the country. The rate of poverty incidence among Filipino families is still high though it has declined from 22.2% in 2015 to 16.1% in 2018 based on the official Family Income and Expenditures Survey (Philippine Statistics Authority, 2018). The Philippine government has been addressing poverty and income inequality in the country through one of its social assistance programs which is the Conditional Cash Transfer (CCT) known as the Pantawid Pamilyang Pilipino Program (4Ps).

On April 17, 2019, a Republic Act No. 11310 known as 4Ps Act which institutionalizes the 4Ps was approved and signed by President Rodrigo Roa Duterte (Senate of the Philippines, 2019). The 4Ps now becomes one of the regular anti-poverty programs in the country which behooves every administration of the country to implement unless the law is repealed. Under the law, the DSWD is mandated to identify, select, and revalidate the beneficiaries by a standardized targeting system in every three years. An amount of Php 88.1 billion has been allocated for 4Ps in Year 2019 (DBM Website, 2018). As of March 31, 2019, the program has 4,183,403 active household beneficiaries in 41,539 Barangays in 1,482 municipalities in the country (DSWD Website, 2019).

This study generally aims to evaluate the effectiveness of 4Ps in reducing poverty in the country in terms of its effect on conditionality goods as reflected by food, health, and education spending of households who benefitted from the program. Consumption is

more likely to be directly affected by the cash grant coming from CCT program. Looking into the changes of the components of consumption expenditures such as food, health, and education will shed light whether the program has been successful in meeting its short-term objective.

Many of the studies conducted on the impact of the CCT program on consumption revealed different outcomes. On one hand, some studies showed that CCT has no impact on aggregate consumption of households (Canare, 2016; Tutor, 2014; and Chaudhury et al., 2013), but other studies arrived with an opposite outcome as they revealed an increased in the total consumption of households attributed to the cash grant received from CCT (Loureiro and Holanda, 2013; and Attanasio and Mesnard, 2014). Moreover, a positive impact on shares on spending for education was revealed (Tutor, 2014; and Chaudhury et al., 2013), and also an increase in spending on basic goods such as food, and clothing (Attanasio and Mesnard, 2014; and Kamakura and Mazzon, 2015), whereas only a positive impact on the health spending was found in CCT program of China (Han et al.,2016).

While there are lot of studies on the impact of different CCT programs on consumption in general, a less explored aspect is the differential impact of CCT programs among rural and urban beneficiaries. In the case of the CCT in the Philippines, there is no known study yet looking into the differences of the impact of the program on consumption between urban and rural household beneficiaries. Thus, this study aims to conduct a comparative analysis of the effect of CCT on expenditures on conditionality goods, i.e. food, health, and education, between the household beneficiaries living in urban and rural areas. Specifically, this paper seeks to determine the magnitude of the effect of 4Ps on conditionality goods (i.e., food, health, and education) in rural and urban areas in order to assess whether the program has increased the 4Ps household expenditures on conditionality goods (i.e., food, health, and education).

RESEARCH METHOD

The study used secondary cross-section data of the 2016 Annual Poverty Indicators Survey (APIS) coming from the Philippine Statistics Authority (PSA). APIS aims to generate income and non-income-based indicators for researchers and policymakers to assess or monitor the various programs that seek to reduce poverty in the country. The 4Ps (CCT Program) is one of the social protection programs in the country that is included in the APIS questionnaire for monitoring. This enables the identification of households that are 4Ps beneficiaries and non-beneficiaries from rural and urban areas.

In this study, Propensity Score Matching (PSM) is used to measure the effect of 4Ps (CCT in the Philippines) on the treated households (4Ps households) in terms of their expenditure on conditionality goods (i.e., food, health, and education) by comparing it to the expenditures on conditionality goods (i.e., food, health, and education) of their matched controlled households (non-4Ps households). PSM is known to form a matched set of the treatment and the controlled group who are on the average are statistically similar in terms of the observable pre-treatment characteristics *C* of the treatment group

(Rosenbaum & Rubin, 1983). These characteristics *C* are the observable pre-treatment characteristics of 4Ps households that made them part of the program.

RESULTS

Outcome Variables for ATT

The outcome variables are the expenditures on conditionality goods (i.e., food, health, and education) and other items such as savings, recreational expenditure, and the aggregate expenditure of the 4Ps households. The 4Ps households from rural and urban areas differ in terms of their expenditure on food and the total expenditure. The differences can be attributed to a higher cost of living in urban areas than in rural areas as prices of food on the average is higher in urban areas (Dandekar and Rath,1971). 4Ps households have an average monthly per capita savings of Php 244.95 in rural areas and Php 255.27 in urban areas. In terms of average monthly per capita expenditure on conditionality goods (i.e., food, health, and education), 4Ps households in rural areas spend Php 1055.48 for food, Php 37.12 for health, and Php 165.58 for education. While in urban areas, the 4Ps households spend Php 1197.28 for food, Php 42.25 for health, and Php 188.30 for education. In terms of share to total expenditures, food accounts the largest fraction which is 61% in rural and 58% in urban followed by education (9% in rural and 8% in urban) and health (2% in rural and 2% in urban) respectively which reflects poverty.

Three food consumption components are included in the study. These are carbohydrate foods, protein foods, and fruits and vegetables. In terms of the food items, carbohydrate foods which is the main source of energy account the highest share (25% in rural and 22% in urban) of food expenditure followed by the protein foods such as meat, fish, and dairy products (17% in rural and 16% in urban) and then fruits and vegetables (2% in rural and 2% in urban) in both 4Ps households in rural and urban areas. A significant difference in the share of carbohydrate foods of the 4Ps households from rural and urban areas is expected as rural households have easy access to food rich in carbs such as corn and sweet potatoes, for instance. For recreation, both 4Ps households in rural and urban areas have the same share of 2% out of the total expenditure, which is equivalent to Php 20.60 in rural areas and Php 23.22 in urban areas in monthly per capita basis.

Propensity Score Estimation

Logistic regression is used in calculating the propensity scores. The estimates presented in Table 1 are the average marginal effect of logistic regression to see how each covariate may affect participation in the program, given the average values of the rest of the covariates with a dummy dependent variable equal to 1 if the household is 4Ps beneficiary and 0 otherwise. Overall, the model is significant at 1% level for both rural and urban. In terms of household head characteristics, a household with a married, employed and uneducated household head increases the probability of being admitted in the program for both households in rural areas and urban areas. Whereas a male-household head is statistically significant in increasing in the probability of household participation in 4Ps only in rural areas. For the asset owned by the household, that household with a motorcycle and the house-floor area negatively predicts household participation in rural areas.

For household characteristics such as household size, households with more members belong to 13-18 years old, and a household belongs to the bottom 40% of income decile are significant at a 5% level in both rural and urban areas and it increases the probability of household participation in 4Ps for both households in rural and urban areas. For income distribution, the result shows that 4Ps households in both rural and urban areas belonging to income decile 1 are more likely to be admitted as its marginal coefficient is

the highest compared to another income deciles, which is sensible because they are the poorest households. Lastly, the poverty incidence of the province is statistically significant in predicting participation only in urban areas, which implies that those households located in the poorest provinces are more likely to participate in 4Ps.

Table 1. Parameter estimated of Logistic regression for 4Ps household beneficiaries, Philippines, 2016

Variables	Rural		Urban	
	dy/dx (average marginal effect)	Standard Error	dy/dx (average marginal effect)	Standard Error
HH head is married	0.061**	0.024	0.054	0.032
HH head is male	0.043*	0.025	0.042	0.031
HH head is employed	0.116***	0.023	0.085***	0.028
HH head has no education	0.043***	0.013	0.039**	0.016
HH size	0.054***	0.004	0.026***	0.004
No. of HH members 13-18 years old	0.064***	0.008	0.057***	0.009
Floor area of the house	-0.001***	0.000	-0.000	0.000
HH has at least 1 motorcycle	-0.075***	0.017	-0.009	0.021
HH belongs to income decile 1	0.122***	0.027	0.169***	0.029
HH belongs to income decile 2	0.103***	0.026	0.101***	0.029
HH belongs to income decile 3	0.101***	0.026	0.061**	0.028
HH belongs to income decile 4	0.052*	0.027	0.067**	0.027
HH belongs to income decile 5	0.047*	0.028	-0.005	0.027
Poverty Incidence of Province	0.000	0.0004	0.001**	0.001
Sample Size 2021			4393	
Prob>chi2 0.000			0.000	
Pseudo-R2 0.140			0.148	

***Significant at 10%, **Significant at 5%, ***Significant at 1%**

Estimates of average treatment effect on the treated

Table 2 shows the average treatment effect on the treated (ATT) estimates using kernel matching. In urban, the program has a negative effect on the monthly per capita total expenditure of 4Ps households by an amount of Php 177.89, which is strongly significant at a 1% level. The reduction in per capita total expenditure of the 4Ps households in urban areas is possibly due to the increase of their monthly per capita savings by Php 122.69. The positive effect of 4Ps on savings supports Engel's theory that savings increases when there is an increase in income.

Table 2. The estimated effects of 4Ps on the expenditures on conditionality goods of the 4Ps households, Philippines, 2016

Outcome Variables	Kernel Matching	
	Rural	Urban
Monthly per capita (in pesos)		
Savings	32.12	122.69***
Total Expenditure	-42.97	-177.89***
Food Expenditure	-11.48	-68.64**
Health Expenditure	-5.30	-3.12
Education Expenditure	22.98	-18.75
Recreation	3.83	2.85
Protein Foods	-18.15**	-36.07**
Carbohydrate Foods	8.75	-6.53
Fruits and Vegetables	-0.45	2.96
Shares to total expenditure (%)		
Food Expenditure	0.005	0.010
Health Expenditure	-0.003	0.002
Education Expenditure	0.013**	0.007
Recreation	0.003***	0.0001***
Shares to total food expenditure (%)		
Protein Foods	-0.012***	-0.013**
Carbohydrate Foods	0.009**	0.012**
Fruits and Vegetables	0.000	0.008***

Note: **Significant at 5%, ***Significant at 1% level

However, for the case of 4Ps households in rural, the program does not affect their monthly per capita total expenditure and savings as their p-values are more than 5%. The reduction in the monthly per capita food expenditure of 4Ps households from urban by Php 68.64 is statistically significant at a 5% level, which is driven by the reduction of consumption on protein foods like meat. However, the negative effect of 4Ps on the share of food to total expenditure in urban areas is not statistically significant. Whereas for the 4Ps households in rural areas, the estimates on the effect of 4Ps on food, may be in per capita or share to total expenditure, is insignificant. This result is similar to the findings of Han et al. (2016), Tutor (2014), and Chaudhury et al. (2013) that CCT has no impact on food expenditure.

For the food components, a reduction in the monthly per capita protein food expenditure is significant at 5% level in both 4Ps households in rural and urban areas. The expenditure of 4Ps households on protein foods declines by Php 18.15 in rural areas and Php 36.07 in urban areas. The result is sensible because, among the food components (i.e., protein foods, carbohydrate foods, and fruit and vegetables), protein-based foods such as meat and dairy products are the most expensive. In terms of the share of protein food to total food expenditure, the negative estimate is significant for both 4Ps households in rural and urban areas. The decrease is equivalent to 0.005 percentage points for 4Ps households in rural and urban areas. The small increase in the share of carbohydrate food to total food expenditure is significant for both 4Ps households in rural and urban areas.

Rural 4Ps households raises it shares for carbohydrate food by 0.007 percentage points while an increase of 0.011 percentage points in urban 4Ps households. This is sensible because, out of the food components, 4Ps households in rural and urban mainly spend on food that are rich in carbohydrates (i.e. corn, rice, and bread). However, the increase

in the share of carbohydrate food to total food expenditure is too small causing the change on its per capita not to be significant.

For the share of fruits and vegetables to total food expenditure in Table 5, the positive estimate is statistically significant at a 1% level only for 4Ps households in urban areas, which is equivalent to an increase of 0.008 percentage points. However, it has no impact on the fruits and vegetable expenditure of 4Ps households in rural areas. Note that the retail food environment in urban areas is better than in rural areas as there are larger stores that are in urban areas that offer a variety of food than in rural areas (Kaufman, 2005). A more variety of food is associated with a higher intake of fruits and vegetables (Zenk et al., 2005). With a better retail food environment in urban areas and cash transfers received by the 4Ps households in urban areas, the increase in their consumption of fruits and vegetables indicates an improvement in the quality of food that they consumed.

As shown in Table 5, the program does not affect the health expenditures for both 4Ps households in rural and urban areas, which is similar to the findings of Macours et al. (2008) and Tutor (2014). Note that the health conditionalities of 4Ps are typically provided for free by the public health services (Tutor, 2014). The compliance on health conditionalities will also improve the health condition of 4Ps households. Also, 4Ps beneficiaries tend to have more access to free health services (i.e., free iron and vitamin A supplementation) compared to non-4Ps households (DSWD, 2014).

The share of education to total expenditures increase by 0.013 percentage points for the 4Ps households in rural areas only, which is statistically significant at 1% level. This result meets Engel's theory that the share in education rises when there is an increase in income. Though the increase is small, this still suggests that the program is successful in influencing 4Ps households to invest on education. However, note that there is no change in the per capita education expenditure per schooling member of the 4Ps households which is similar to the findings of Tutor (2014).

A little increase in the share of recreation to total expenditure is statistically significant at 1% level for both 4Ps households in rural and urban areas. It increases by 0.003 percentage points and 0.0001 percentage points for 4Ps households in rural and urban areas, respectively. Even though the increase is too small, this still satisfies the theory postulated by Ern's Engel that share for recreation rises as income increases.

CONCLUSION

In terms of the conditionality goods, we find that the program is only effective in increasing the share of education to total expenditures only for the 4Ps households in rural areas. This increase in education expenditure indicates that the program is effective in fostering the importance of human capital investment, particularly on education, to the 4Ps households in rural areas. Hence, 4Ps is more effective in rural areas compared to 4Ps households in urban areas.

The health expenditures of both 4Ps households in rural and urban areas are not affected by the program, possibly because 4Ps households have improved their health status through their compliance with conditionalities set for health that are typically provided for free. The improvement in the health status of the 4Ps households is apparent due to the significant increase in the share of their recreation expenditure to total expenditures as recreation is positively linked to health as it reduces stress and improves self-esteem (Morgan, 2018). However, the improvement in the health status of the 4Ps households

in rural and urban areas did not translate to a decrease in health expenditures, possibly because they only spend a smaller portion of their income on health-related items. Thus, the possible decrease in the health expenditure of 4Ps households in rural and urban areas due to improved health status may be too small to be statistically significant.

For food expenditure, there is a significant decrease in per capita total food expenditure for 4Ps households living in urban areas driven by the decrease in their expenditure on protein foods by 4Ps households in urban areas. The program did not increase the expenditure on food of 4Ps households in rural and urban areas, but it increases the share of some of the food components captured in this study. The study reveals a significant increase in the share of carbohydrate foods to total expenditures for both 4Ps households in rural and urban areas, which is sensible because poor households mainly spend on food that is rich in carbohydrates. The result also revealed an improvement in the quality of food consumed by the 4Ps households in urban areas since the share of the fruits and vegetables to total food expenditures have increased.

A significant negative effect of 4Ps on per capita total expenditures of the 4Ps households in urban areas can be attributed to the increase in their per capita savings whereas the program does not affect the per capita total expenditures and savings of the 4Ps households in rural areas. The reason for this is the possibility that 4Ps households in rural areas used a portion of the cash grant to pay their debts or for investment in some productive activities like backyard pig raising and backyard farming (Attanasio and Mesnard, 2014) which is not covered in this study. Also, the prevalence of extended families in rural areas that weakens the positive relationship of income and savings (Bautista and Lamberte,1990).

Based on the overall analysis, it is recommended that CCT Program in the country must continue because it is effective in affecting education in terms of increasing its share to total expenditures, particularly for the 4Ps households in rural areas. The program also improves the saving behavior and the quality of food consumed by the 4Ps households in urban areas based on the increased share in fruits and vegetables to total expenditures. However, the program must be more targeted (i.e., targeting the poorest of the poor households) in order to improve its impact on conditionality goods (i.e., food, health, and education) in both per capita terms and its share to total expenditures.

REFERENCES

Attanasio, O. and Mesnard, A. (2006), The Impact of a Conditional Cash Transfer Programme on Consumption in Colombia*. Fiscal Studies, 27: 421-442. doi:10.1111/j.1475-5890.2006.00041.x

Bautista, R. and Lamberte, M. 1990. Comparativesaving behavior of rural and urban households in the Philippines. Number Thirty One Volume XVII, No.2.

Caleindo, M. and Kopeinig, S. (2005).'Some Practical Guidance for the Implementation of Propensity Score Matching.' Discussion Paper No. 1588, IZA, Bonn.

Canare, T. 2016. The Impact of Conditional Cash Transfer on Savings and Other Associated Variables: Evidence from the Philippines' 4Ps Program. Southeast Asian Journal of Economics 5(1), January - June 2017: 107 – 145.

Chaudhury, N., Friedman, J., & Onishi, J. (2013). Philippines conditional cash transfer program impact evaluation 2012. Washington, DC: World Bank.

Dandekar, V. and Rath, N. Poverty in India, Indian School of Political Economy, June, 1971.

Department of Social Welfare and Development. March 2019. About the Program. Accessed on June11, 2019 from https://pantawid.dswd.gov.ph/about/.

Duvendack, M., & Palmer-Jones, R. (2012). High noon for microfinance impact evaluations: re investigating the evidence from Bangladesh. The Journal of Development Studies, 48(12), 18641880.

Heckman, J. J., Ichimura, H., & Todd, P. (1998). Matching as an econometric evaluation estimator. The Review of Economic Studies, 65(2), 261-294.

Heckman, J. J., LaLonde, R. J., & Smith, J. A.(1999). The economics and econometrics of active labor market programs. Handbook of Labor Economics, 3, 1865-2097.

Heckman, J., H. Ichimura, and P. Todd [1997] "Matching as an econometric evaluation estimator:Evidence from evaluating a job training programme", The Review of Economic Studies 64(4): 605–654.

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. Journal of Economic Literature, 47(1),5-86.

Philippine Statistics Authority. April 2019. Proportion of Poor Filipinos registered at 21.0 percent in the First Semester of 2018. Accessed on June 10, 2019 from https://psa.gov.ph/poverty press-releases/nid/138411.

Rosenbaum, P. R. (2002). Sensitivity to hidden bias. In P. R. Rosenbaum (Ed.), Observational studies (pp. 105-170). New York, NY: Springer.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. Biometrika, 70(1), 41-55.

Smith, J. A., & Todd, P. E. (2005). Does matching overcome LaLonde's critique of nonexperimental estimators?. Journal of Econometrics, 125(1), 305 353.

Tutor, Melba V. (2014): The impact of Philippines' conditional cash transfer program on consumption, UPSE Discussion Paper, No. 2014-05, University of the Philippines, School of Economics (UPSE), Quezon City

Zenk SN, Schulz AJ, Hollis-Neely T, Campbell RT, Holmes N, Watkins G, Nwankwo R, Odoms Young AAm J Prev Med. 2005 Jul; 29(1):1-9.