

Measuring the impact of *Pantawid Pamilyang Pilipino Program* on health and education in Maangas Presentacion, Camarines Sur: A regression discontinuity design approach

¹Shaina Barbado, ¹Angela Credo, ¹Diane Espiritu, ¹Novie Mae Gubat, ¹Ophirly Llagas & ²Emmanuel Onsay

Abstract

This study measures the impact of the Pantawid Pamilyang Pilipino Program (4Ps) on the health and education of its beneficiaries in Maangas, Presentacion, Camarines Sur. The study compares individuals who receive 4Ps benefits to a control group of non-recipients with similar characteristics. Using a Randomized Control Trial (RCT) approach, the study collects data from 157 participants of treatment group (beneficiaries) and control group (non-beneficiaries) through conventional questionnaires. Descriptive statistics are employed to determine the economic profiles of the respondents, including factors such as age, gender, number of children, occupation, educational attainment and household size. Logistic Regression and Regression Discontinuity (RDD) Design were used to evaluate the program's impact and assess the relationship between its objectives and the beneficiaries' health and education outcomes. The analysis of the RDD provides evidence that the program successfully increased education enrolment among the participants. This suggests that similar populations can replicate the programs strategy to boost education enrolment. The effectiveness of the program is evident from the shift in enrolment rates at the eligibility cut off indicating an impact on education enrolment. However, when it comes to health outcomes, the findings highlight a need for improved economic development approaches in terms of access to medications and vaccines, enhanced health and nutrition outcomes and insurance coverage for beneficiaries who cannot afford it. Moreover, the 4Ps program shows an impact on both the overall health and education of its beneficiaries.

Keywords: *Pantawid Pamilyang Pilipino Program, 4Ps, health, education, beneficiaries, economic development, regression discontinuity design*

Article History:

Received: December 24, 2023

Accepted: February 6, 2024

Revised: January 12, 2024

Published online: February 8, 2024

Suggested Citation:

Barbado, S., Credo, A., Espiritu, D., Gubat, N., Llagas, O. & Onsay, E. (2024). Measuring the impact of Pantawid Pamilyang Pilipino Program on health and education in Maangas Presentacion, Camarines Sur: A regression discontinuity design approach. *International Student Research Review*, 1(1), 73-80. <https://doi.org/10.53378/isrr.01246>

About the authors:

¹Bachelor of Science in Business Administration major in Financial Management. Partido State University.

²Corresponding author. Director, Partido Institute of Economics. Partido State University, Philippines. Email: emmanuel.onsay@parsu.edu.ph

© The author (s). Published by Institute of Industry and Academic Research Incorporated.



This is an open-access article published under the Creative Commons Attribution (CC BY 4.0) license, which grants anyone to reproduce, redistribute and transform, commercially or non-commercially, with proper attribution. Read full license details here: <https://creativecommons.org/licenses/by/4.0/>.

Introduction

Poverty remains an issue with the World Bank predicting that approximately 702.1 million people were living below the poverty line in 2012. This estimate is considered the reliable from times. According to the World Bank around 700 million individuals, accounting for 9.6% of the world's population may have experienced poverty in 2015. Out of this number 347.1 million people (35%) were estimated to be residing in Sub Saharan Africa while around 231.3 million lived in South Asia (13.5%). The World Bank reports that between 1990 and 2015 extreme poverty rates decreased from 37.1% to, below 10% marking the time it fell below this threshold (theworldcounts.2016).

A large percentage of the Philippine population has been affected by poverty for many years now (Reyes et al., 2014). As a result, the government has implemented a number of social programs and laws in an effort to at least reduce the prevalence of poverty. Nevertheless, they have shown to be unsustainable and ineffective since the majority are tied to single-focus solutions (Florentino, 2008). Not until year 2008 that the nation enacted the Pantawid Pamilyang Pilipino Program (4Ps), one of the most well-liked social policies (Dungog-Cuizon & Cuizon, 2016). The 4Ps has a dual objective as the flagship poverty alleviation program of the administration of the former President Benigno Aquino III such as social assistance, giving monetary support to extremely poor families to respond to their immediate needs, and social development, breaking the intergenerational poverty cycle by investing in the health and education of poor children through programs such as, health check-ups for pregnant women and children aged zero (0) to five (5), deworming of school children aged six (6) to fourteen (14), enrollment of children in daycare, elementary, and secondary schools, and family development sessions (officialgazette.gov.ph.2017).

Orbeta (2013) describes 4Ps as the main social protection initiative of the Philippine government. Like conditional cash transfer programs in other countries, it provides cash grants to beneficiaries if they comply with specified conditions such as keeping their children in school, getting health check-ups, and attending family development sessions. However, the impact of this program on the status of its beneficiaries remains unclear. Moreover, examining how 4Ps affect its beneficiaries can contribute to poverty reduction efforts not only in the Barangay Maangas, Presentacion, Camarines, Sur, but also in the Philippines and other developing countries facing similar issues. Most research and studies on the impact of

the 4Ps in the Philippines are concentrated on its indirect effects. However, only very few researchers conducted studies regarding the expected and direct impacts such as education and health of its beneficiaries.

This study assessed the 4Ps and its socioeconomic impact on the beneficiaries' living conditions in barangay Maangas, Presentacion, Camarines Sur. Also, the study sought to profile the demographic and economic characteristics of the recipients, measure the impact of 4Ps to the health and education of the beneficiaries, and determine the relationship between the level of attainment of goals and objectives and the impact of 4Ps to the health and education of the beneficiaries.

Methodology

This study utilized a quantitative research method to measure the impact of 4Ps in terms of health and education. The process involved gathering quantitative data through checklist-questionnaire, which involves collecting and analyzing numerical data to examine relationships between variables (Watson, 2015). This study utilized Regression Discontinuity Design, a quasi-experimental method that measures program impact based on observed discontinuity of the outcome of interest at the cutoff of running variable that determine assignment. A counterfactual can be generated by comparing households around predetermined cutoff.

The respondents of the study consisted of 4Ps beneficiaries from Brgy, Maangas Presentacion. Two sets of households within Maangas, Presentacion were compared: 4Ps beneficiaries and Non-4Ps beneficiaries. To ensure the accuracy of representation, strict adherence was followed regarding the criteria for inclusion and exclusion. Each group consisted of 157 beneficiaries, which were randomly selected using the Cochran formula where this study adopted the 0.50 value of the degree of variability, 95% confidence level, and $\pm 5\%$ precision level. This randomized allocation facilitated unbiased group selection and enabled thorough verification of group allocation. The respondents served as the basis for subsequent interventions and analysis in the randomized controlled trial

In this study, data from municipality in Maangas Presentacion were utilized. The data encompassed information from a specific number of households and their members. The data

included information about a number of households and their members. From this data, it was found that there were 262 individuals who benefitted from the 4Ps. Further calculations revealed that 157 of these beneficiaries were part of the treatment group. The control group consisted of an equal number of non-beneficiary households from the database, carefully selected to have similar characteristics to the treatment group. The selection process for the treatment group and control group was conducted using a randomized control trial.

The researchers followed the rules by using research protocols. The informed consent was given out and its content was addressed with the respondents during the researchers' data collection. This notice of consent ensured that the researchers informed the respondents of the nature and purpose of the study, its causes and benefits from the study. The researchers also guaranteed the utmost confidentiality of all responses and emphasize that participants have the freedom to decline participation if they so choose. To access agency data, the researchers formally sought approval through a letter signed by research specialists and the relevant department.

Findings

The study found significant differences between 4Ps beneficiaries and non-beneficiaries in terms of their demographic characteristics; gender, civil status, occupation, highest educational attainment, sources of income, and number of household members. In terms of gender, the majority of respondents were female. Most respondents were married. Housewives were the most common occupation for beneficiaries, while vendors were the most common occupation for non-beneficiaries. Beneficiaries were more likely to have a high school education, while non-beneficiaries were more likely to have an elementary education. Beneficiaries' primary income sources were fishing and copra-related activities, while non-beneficiaries' primary income sources were teaching, construction, fishing, and vendor activities. Beneficiary household members were slightly smaller than non-beneficiary households. Beneficiaries were more likely to have a higher number of children and have lived in their locality for a longer period of time. While non-beneficiaries were also more likely to have a lower number of children and to have lived in their locality for a shorter period of time.

The analysis of the RDD provides evidence that the program successfully increased education enrolment, among participants. This suggests that similar populations can replicate the programs strategy to boost education enrolment. The effectiveness of the program is evident from the shift in enrolment rates at the eligibility cut off indicating an impact on education enrolment. However, when it comes to health outcomes, the findings highlight a need for improved economic development approaches in terms of access to medications and vaccines, enhanced health and nutrition outcomes, and insurance coverage for beneficiaries who cannot afford it. Moreover, the 4Ps program shows an impact on both the overall health and education of its beneficiaries.

Conclusion

This study concludes that the intervention successfully boosted enrollment among participants. The analysis using regression discontinuity design revealed a statistically significant difference in education enrolment between participants who were below and above the eligibility threshold. The magnitude of the effect is also noteworthy, as it represents more than 50% increase in the likelihood of being enrolled in education. Regarding health, the findings suggest that being a member of 4Ps, visiting a health clinic or doctor and BO are all associated with the health outcome of interest. However, further research is necessary to confirm these results and identify contributing factors to this health outcome.

The study recommends that policymakers and administrators should consider adopting or expanding the program to improve achievement in underserved communities. Furthermore, future researcher could delve into the underlying mechanism by which the program's success in increasing enrollment. This exploration could help identify the components of the program that are most effective and facilitate the development of more targeted interventions. Moreover, it would be beneficial for research to investigate the long-term impact of the program, on achievement and other related outcomes. Regarding health, it is recommended that governmental bodies and other stakeholders collaborate to create programs and interventions aimed at addressing factors associated with a reduced likelihood of maintaining health. Furthermore, it would be beneficial for the program to investigate the factors that contribute to rates of child's growth in specific areas. Once these factors are

identified, targeted interventions can be implemented by the program to address them effectively.

References

- Aguado, A. (2021). Implementation of Pantawid Pamilyang Pilipino Program (4ps) in Barangay Talumpok, Batangas City. *International Journal of Research*, 10(7), 13-20.
- Asian Development Bank. (n.d.). *Poverty in the Philippines*. <https://www.adb.org/countries/philippines/poverty>
- Basas III, G. O. (2021). The socio-economic conditions of the household-beneficiaries of Pantawid Pamilyang Pilipino Program (4Ps). *Interdisciplinary Journal of Applied and Basics Subjects*, 1(6), 52-73.
- Basu, A., Stuckler, D., Chatterji, S., & Kothari, A. (2014). Health care utilization and preventive care in india: Evidence from a large-scale insurance experiment. *The economics Quarterly Journal of Economics*, 129 (3), 1101-1158
- Cacapit, M. E. P., Josen, J. P. G., Paragas, L. C., Reyes, C. A., & Rebong, N. A. (n.d.). Level of application of health-related family development session to Pantawid Pamilyang Pilipino Program (4Ps) beneficiaries in Bayambang. *Journal of Education, Health, Arts, Sciences and Technology*, 27-33
- Casco, J. J. M. J. (2015). *The impact of Pantawid Pamilyang Pilipino Program on civic engagement: A propensity score matching approach*. Doctoral dissertation, De La Salle University-Manila.
- Chaudhury, N., Friedman, J., & Onishi, J. (2013). Philippines conditional cash transfer program impact evaluation 2012. *Development Economics Research Group*, 14-17.
- Conchada, M. I. P., Tiongco, M. M., Castillo, P. J., & Edralin, D. E. (2017). Evaluating government programs for enhancing the welfare of the youth towards entrepreneurship. *DLSU Business & Economics Review*, 27(1), 59-71.

- Dela Torre, B. (2016, May). Financing education through the Pantawid Pamilyang Pilipino Program (4Ps). *International Journal of Humanities and Social Science*, 6(5), 99-108.
- Flores, M. J. S., Espinoza, C. A. B., Enrico, H. C., & Casimiro, R. R. (2019). Pantawid Pamilyang Pilipino Program (4Ps): Its effect on the academic performance of student-beneficiaries in Calaba National High School in the Philippines. *Journal of Public Administration and Governance*, 9(2), 193-208.
- Food and Agricultural Organization. (n.d.). *Nutrition country profiles: Philippines summary*. http://www.fao.org/ag/agn/nutrition/phl_en.stm
- Gertler, P., Martinez, S. & Rubio-Codina, M. (2012). Investigating Cash Transfers to Raise Long-term Living Standards. *American Economic Journal: Applied Economics*, 4(1), 164-192
- Cutler, D. M., & Young, A. S. (2019). *Health insurance and the price and quality of health care*.
- Kearney, P. J., Klesner, J. L., & Lichterman, S. (2018). The impact of eligibility expansion on health care access, utilization, and the affordable care act. *Health Services Research*, 53 (6), 1284-1304.
- Leventhal, H., Leventhal, E.A. & Cameron, L.P. (2008). Illness representations and coping with health threats. *In Handbook of Psychology and Health, Volume IV*. Routledge.
- Onsay, E.A. (2021). *Does Pantawid Pamilyang Pilipino Program (4Ps) alleviate poverty and promote economic development? Evidence from community-based monitoring system through impact evaluation in Naga City, Bicol Region, the Philippines*.
- Orbeta, A.C. (2015). *Impact of time-critical household investments in Pantawid Pamilyang Pilipino Program: Evaluating the Pantawid Pamilya using RCT-Cohort analysis*. World Bank.
- Pantawid Pamilyang Pilipino Program Official Gazette of the Republic of the Philippines <http://www.officialgazette.gov.ph/programs/conditional-cash-transfer>
- Philippine Institute for Development Studies (2020). *Pantawid Pamilyang Pilipino Program Third Wave Impact Evaluation (IE Wave 3)*

- Reyes, C., Tabuga, A., Mina, C., Asis, R. & Datu M. (2011). Chronic and transient poverty. *PIDS Discussion Paper Series No. 2010-30*. Philippine Institute for Development Studies.
- Sasis, P. L., Pelenio, E., & Dalde, M. N. D. (2019). The impact of Pantawid Pamilyang Pilipino Program (4Ps) to its beneficiaries. *SMCC Higher Education Research Journal (Business Administration Journal)*, 1(1).
- Sobreviñas, A. B. (2020). Examining chronic and transient poverty using the community-based monitoring system (CBMS) data: The case of the Municipality of Orion. *DLSU Business & Economics Review*, 30(1), 111-129
- Tutor, M. V. (2014). The impact of Philippines' conditional cash transfer program on consumption. *Philippine Review of Economics*, 51(1), 117-161.
- Velarde, R., & Fernandez, L. (2011). Welfare and distributional impacts of the Pantawid Pamilyang Pilipino Program. *The World Bank Group: Philippine Social Protection Note*, 201(3).
- Watson, R. (2015). Quantitative research. *Nursing Standard*, 29(31): 44-50