

# Who benefits from 4Ps?

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DECEMBER 2023

DISCUSSION PAPER SERIES NO. 2023-43

### Who Gets Monitored among Philippines' 4Ps Children and Why It Matters for Their Nonmonitored Siblings

*Michael R.M. Abrigo, Kean Norbie F. Alicante, and Kris Ann M. Melad*



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DECEMBER 2022

DISCUSSION PAPER SERIES NO. 2022-45

### Conditional Cash Transfers in Resource-poor Environments: Evidence from the Philippine 4Ps

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This presentation is based on two recent PIDS Discussion Papers on 4Ps

# Main Message

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Program impacts vary across contexts.

# 4Ps Program Overview

The Pantawid Pamilyang Pilipino Program (4Ps) aims to **break the intergenerational cycle of poverty** by encouraging poor households to invest in the health and education of children

These adults become unemployed or get low paying jobs

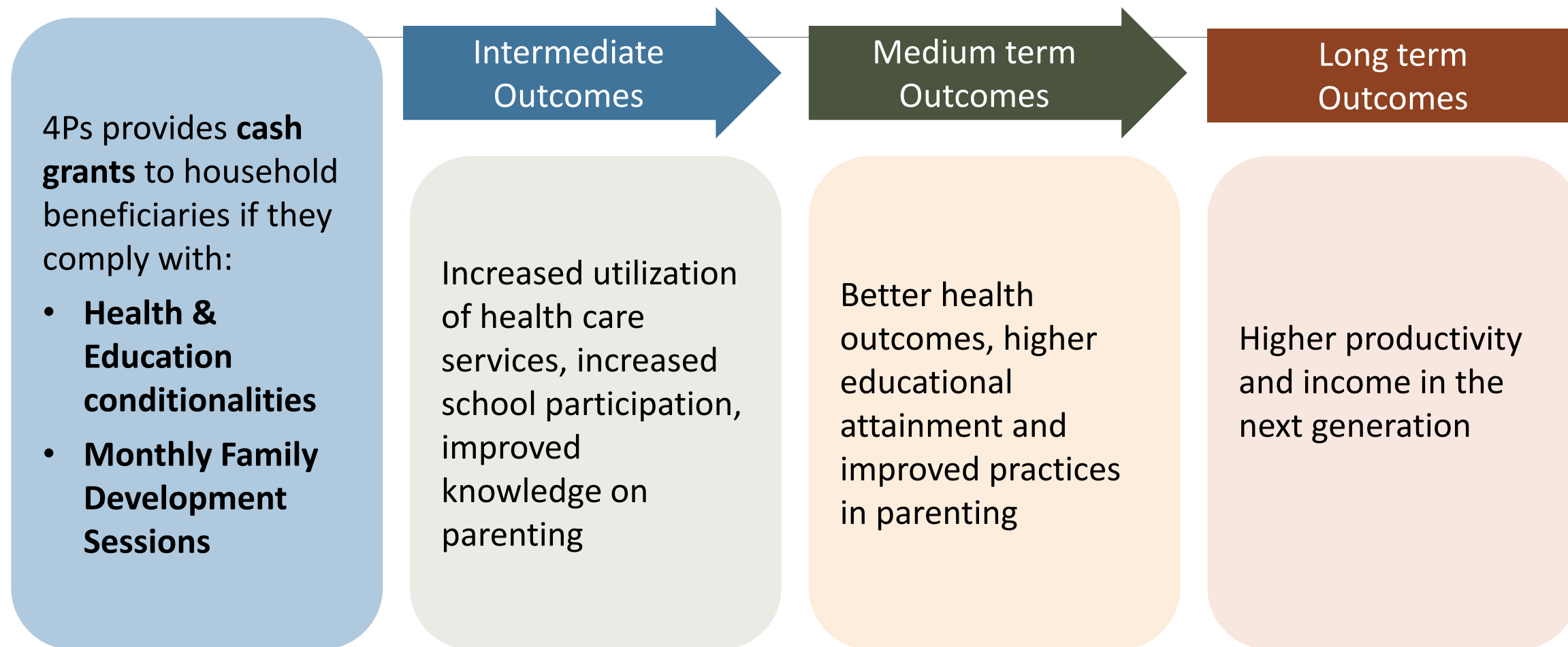
Families with low incomes

**POVERTY  
CYCLE**

Children turn into adults with low human and social capital

Children don't receive proper education and health services

# Pantawid Pamilya Program Theory



# Previous evaluations

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Evaluation	EVALUATION DESIGN OF MAIN STUDY	DATA COLLECTION PERIOD	SAMPLE SIZE
Impact Evaluation Wave 1 (IE1)	Randomized Control Trial (RCT)	October/November 2011	<b>1,418 households</b> (T=704; C=714) from 8 municipalities (4 provinces)
Impact Evaluation Wave 2 (IE2)	Regression Discontinuity Design (RDD)	October to December 2013	<b>5,041 households</b> (T=2,381; C=2,382) from 30 municipalities (26 provinces)
Impact Evaluation Wave 3 (IE3)	Regression Discontinuity Design (RDD)	November 2017 to Feb 2018	<b>6,775 households</b> (T=3,450; C=3,325) from 30 municipalities (24 provinces+ 2 NCR cities)

**General finding of evaluations:** The program is able to **achieve most of its short-term and medium-term desired outcomes in education and health of beneficiaries.**

## COMPARING FINDINGS OF THE IMPACT EVALUATIONS

### Results consistent across waves of evaluation



**Attendance to prenatal visits.** Mothers attend at least 4 prenatal visits in the duration of their pregnancy



**Positive impact on investment in education of children.** The evaluations noted significantly higher expenditures on education and clothing by beneficiary households.



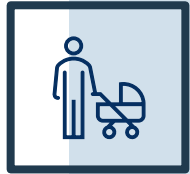
**Increased uptake of child health services.** Positive impact on uptake of child health services such as deworming, weight monitoring, and Vitamin A supplementation were noted. ***No impact was observed on child immunization for all three waves.***



**Positive impact on education outcomes.** Higher enrollment was observed among high school-aged children. Impact for elementary school-aged children is weaker in IE2 and IE3 but participation rates are already high for this age group.

# COMPARING FINDINGS OF THE IMPACT EVALUATIONS

## Results that **conflict** across waves of evaluation



### ATTENDANCE TO POSTNATAL VISITS.

**IE wave 1:** increase in postnatal visits/attendance  
**IE wave 3:** lower proportion of 4Ps beneficiaries attended postnatal visits compared to non-beneficiaries.



### LOWER EMPLOYMENT AMONG PROGRAM BENEFICIARIES OBSERVED IN IE3

**IE wave 1 and 2:** consistent results on labor market participation  
**IE wave 3:** beneficiaries have lower likelihood of being employed



### MIXED RESULTS ON CHILD ANTHROPOMETRIC INDICATORS.

**IE wave 1:** significant decrease in stunting prevalence among beneficiary children  
**IE wave 3:** results suggest increase in stunting prevalence



### CHILD LABOR DURATION.

**IE wave 2:** reduction in duration of child labor  
**IE wave 3:** no observed reduction in duration of child labor; also shows that 9 in 10 children engaged in child labor are enrolled in school



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This study takes one step back.



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Who are the 4Ps beneficiaries? In what contexts do program recipients benefit from the program?

# Data

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- 4Ps-3IE survey covers 6,775 4Ps and non-4Ps households who were selected based on the distance of the household's predicted per capita income in Listahanan 1
- Among 4Ps households, only those that had been enrolled in the program between **2008 and 2014** were included.
- The household survey was implemented between November 2017 and January 2018
- Marginal and joint distributions of household characteristics of Listahanan 1-poor and near-poor household included in the 4Ps-3IE are statistically indistinguishable from each other (Abrigo, Astilla-Magoncia, Tam and Yee 2022)

# Estimation

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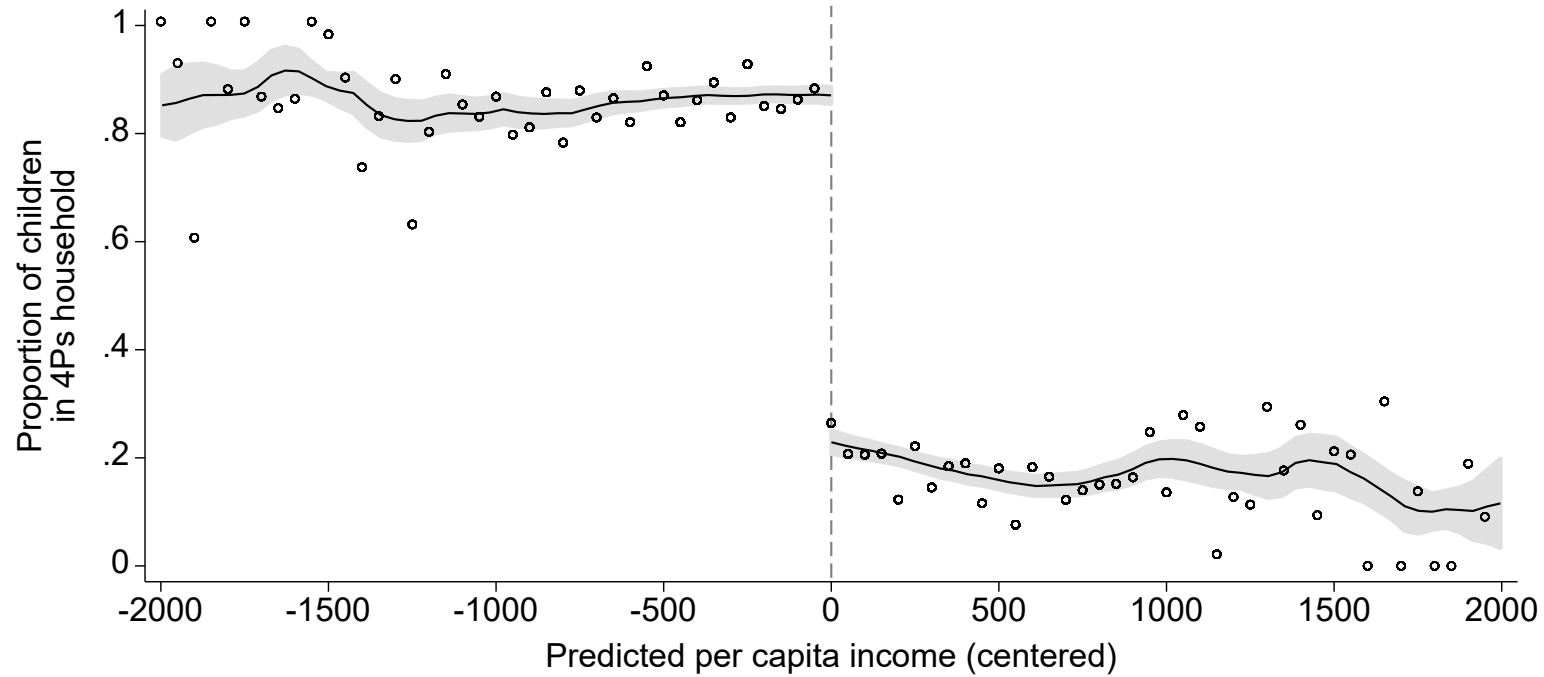
**Moderation effects:** Does 4Ps influence the level, direction or presence of relationship between variables (e.g. distance to school and school attendance)?

- Local randomization-based RDD with interaction effects
- Local average treatment effect only

**Marginal treatment effects:** Does 4Ps impact vary by compliance type?

- Extend traditional LATE estimation to allow impact estimation for different groups by compliance type: always treated (in 4Ps regardless), never treated (not in 4Ps even if eligible), compliers (follows 4Ps assignment rule)
- May be used to identify the average characteristics of groups by complier type

## 4Ps coverage and centered predicted per capita income



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These methods leverage on the non-trivial discontinuity in the probability of treatment assignment around the poverty threshold

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*Who are the 4Ps beneficiaries?*

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## **Observation #1**

4Ps beneficiaries typically live farther away from education and health facilities.

Compared with the average Filipino, 4Ps beneficiaries live farther away from education and health facilities.

			All	4Ps
Elementary school	Within barangay		89.3	90.7
	In other barangay	<2km	8.5	6.4
		≥2km	2.1	2.9
High school	Within barangay		50.2	40.7
	In other barangay	<2km	21.3	18.8
		≥2km	28.5	40.3
Health Centers	Within barangay		87.7	84.8
	In other barangay	<2km	5.8	4.7
		≥2km	6.4	10.5
Hospitals	Within barangay		15.2	7.7
	In other barangay	<2km	19.4	11.8
		≥2km	65.3	80.3

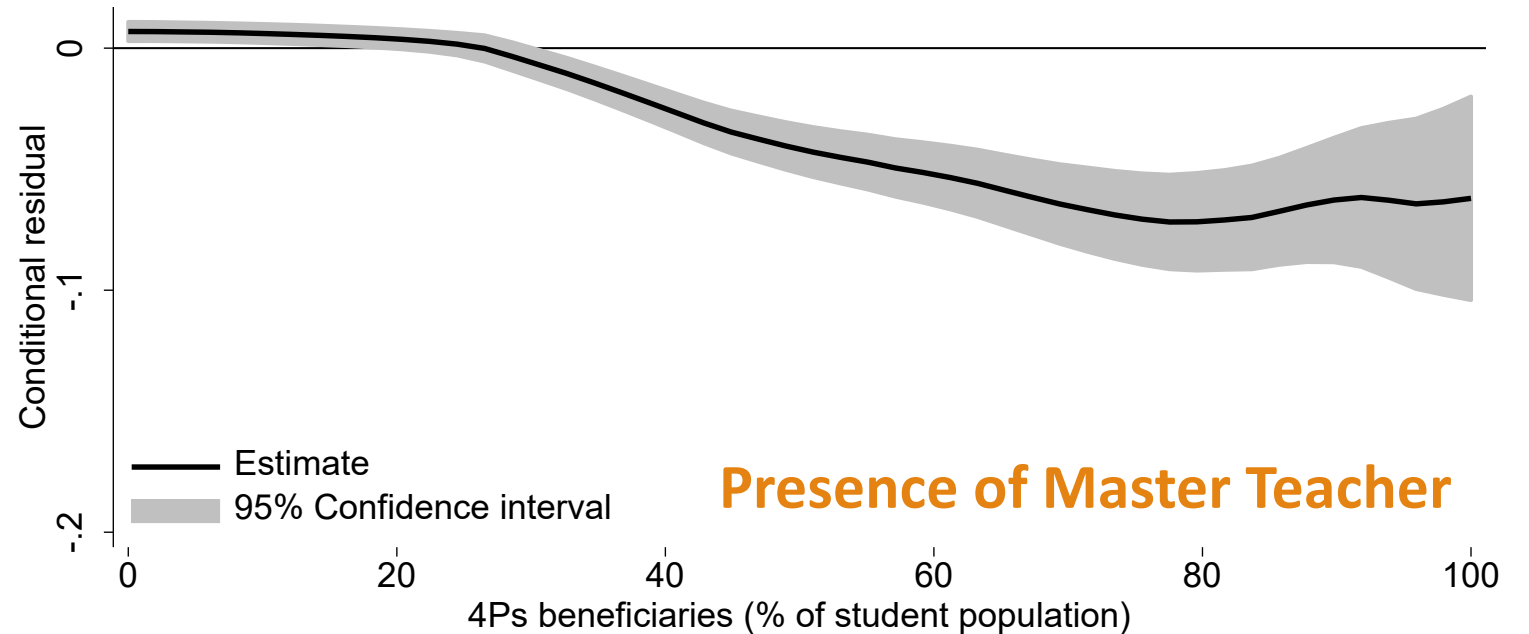
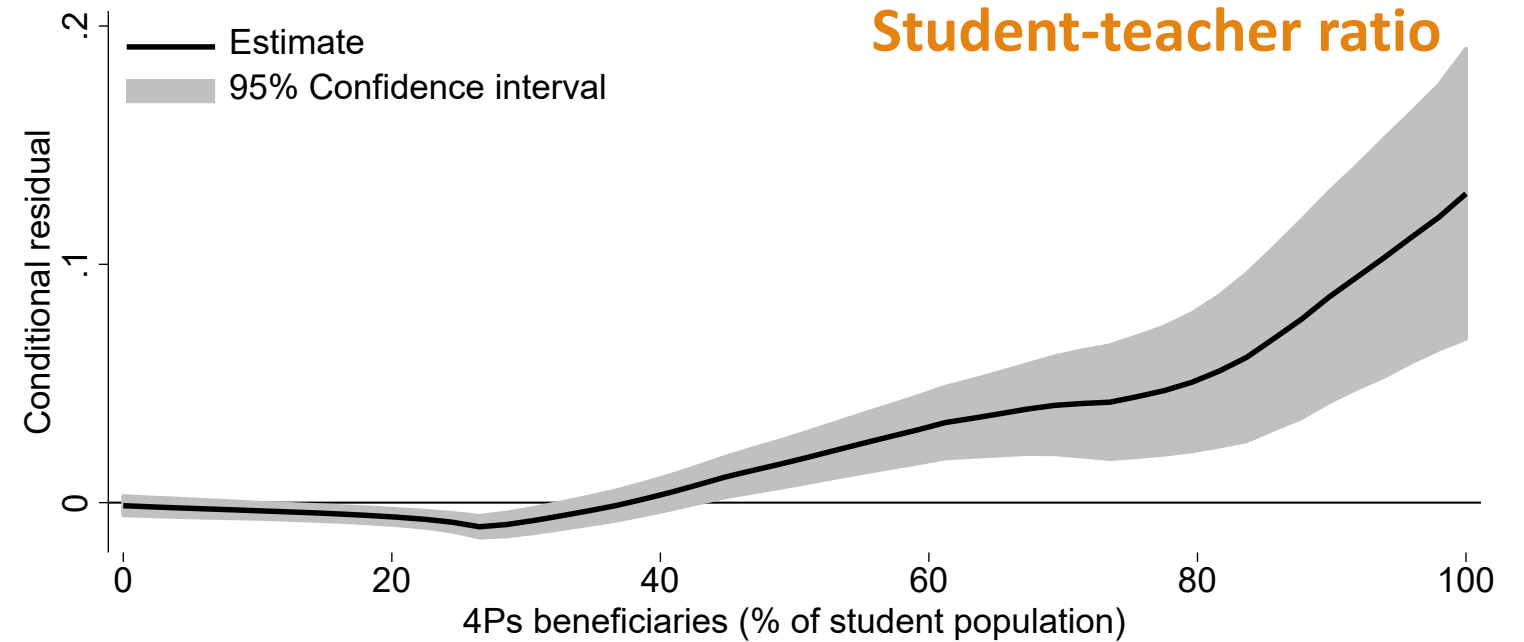


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## **Observation #2**

They do not only reside farther away from education facilities, but their children also likely attend poorer quality schools.

A higher share of 4Ps beneficiaries in a school is associated with higher student-teacher ratio (i.e., more students for every teacher) and lower chance of having a master teacher in the school (as proxy for teacher quality)



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## **Observation #3**

While many health facilities provide affirmative services, resources are often limited.

Public health facilities usually provide additional services for 4Ps beneficiaries, however health devices and resources remain limited in many locations

		All sample	By urbanicity	
			Urban	Rural
Affirmative action	Facilities with 4Ps compliance monitoring (%)	98	98	98
	With separate record for 4Ps compliance monitoring (%)	32	39	25
	With additional services provided as part of 4Ps monitoring (%)			
	Open a special desk/window for 4Ps beneficiaries	23	21	25
	Assign separate schedule for 4Ps beneficiaries	29	29	29
	Have longer office hours for 4Ps activities	46	47	45
	Increased personnel staff	17	16	18
	Increased supply of medicines, vaccine or equipment	28	30	25
	Visit households to check on beneficiaries	73	75	71
	At least one of specified services	77	79	74
	All specified services	6	4	7
Supply conditions	Service hours per week open for patients	41	43	39
	% with sufficient or very sufficient health resources			
	Medical equipment	46	57	35
	Medical supplies	60	63	56
	Medicines	43	48	37
	Vaccines	78	80	75
	Doctors	28	27	29
	Nurses	47	44	51
Midwives	60	53	68	
	BHW/BNS	71	64	78

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## **Observation #4**

Low-education households are likely to select early into 4Ps, i.e. are likely always takers.

The table shows the average characteristic of parents by household compliance type. Parents in always treated households have lower propensity of reaching high school or college compared with compliers and never treated households.

	Untreated		Treated		All sample
	Never treated	Untreated compliers	Treated compliers	Always treated	
Father, age (years)	43.61 (0.55)	43.20 (0.33)	42.98 (0.36)	42.67 (0.49)	43.10 (0.09)
Father, reached primary school (=1)	0.91 (0.02)	0.96 (0.01)	0.97 (0.01)	0.89 (0.02)	0.94 (0.00)
Father, reached high school (=1)	0.66 (0.03)	0.62 (0.02)	0.63 (0.02)	0.50 (0.03)	0.63 (0.01)
Father, reached college (=1)	0.19 (0.03)	0.11 (0.02)	0.13 (0.01)	0.05 (0.02)	0.12 (0.00)
Father, employed (=1)	0.86 (0.02)	0.90 (0.01)	0.90 (0.01)	0.88 (0.02)	0.89 (0.00)
Mother, age (years)	40.43 (0.49)	40.06 (0.30)	39.93 (0.33)	39.81 (0.45)	40.05 (0.08)
Mother, reached primary school (=1)	0.95 (0.01)	0.99 (0.01)	1.00 (0.01)	0.93 (0.02)	0.98 (0.00)
Mother, reached high school (=1)	0.73 (0.03)	0.76 (0.02)	0.75 (0.02)	0.63 (0.03)	0.75 (0.00)
Mother, reached college (=1)	0.29 (0.03)	0.16 (0.02)	0.18 (0.02)	0.10 (0.02)	0.18 (0.00)
Mother, employed (=1)	0.48 (0.03)	0.46 (0.02)	0.45 (0.02)	0.46 (0.03)	0.48 (0.00)
Number of children (count)	2.20 (0.07)	2.48 (0.05)	2.58 (0.06)	3.14 (0.09)	2.57 (0.01)
PMT score (PhP)	14,909 (91.1)	14,900 (66.8)	14,759 (83.0)	15,063 (135.0)	14,951 (18.6)

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## **Observation #5**

Monitored children are likely direct progenies of household head. They are slightly older relative to their siblings. Their sex appear to not matter in monitoring selection.

The table shows the average characteristic of (monitored) children by household compliance type. Monitored (treated) children are more likely children of the household head and born earlier compared with their siblings.

	Untreated		Treated		All sample
	Never treated	Untreated compliers	Treated compliers	Always treated	
Child, Birth order (rank)	2.03 (0.05)	2.06 (0.04)	1.82 (0.03)	1.95 (0.05)	1.92 (0.01)
Child, Age (years)	12.44 (0.16)	12.28 (0.10)	12.56 (0.10)	12.02 (0.15)	12.30 (0.04)
Child, Female (=1)	0.48 (0.02)	0.48 (0.01)	0.47 (0.01)	0.50 (0.02)	0.48 (0.00)
Child, Offspring of head (=1)	0.61 (0.02)	0.80 (0.02)	0.89 (0.01)	0.71 (0.03)	0.77 (0.00)
Number of children (count)	2.20 (0.07)	2.49 (0.06)	2.45 (0.05)	2.93 (0.09)	2.46 (0.01)
PMT score (PhP)	14,911 (92.1)	14,900 (71.1)	14,772 (75.4)	15,069 (139.7)	15,005 (20.7)



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## **Observation #6**

4Ps households may not be strategic when selecting children for monitoring.

We tested assignment rules and correlation with monitoring status of child: rule order (prioritize 6-14), birth order (prioritize older – proxy for cognitive skills), and payout order (prioritize higher lifetime payout).

These rules correlate poorly with monitoring status, especially when using more flexible functional forms, thus limiting its use in identifying program impact by monitoring status.

	Monitored child (4Ps households only)					
	1(Rule order $\leq$ 3)		1(Birth order $\leq$ 3)		1(Payout order $\leq$ 3)	
	(1)	(2)	(3)	(4)	(5)	(6)
p1 - p0	0.332 *** (0.026)	0.121 *** (0.047)	0.228 *** (0.024)	0.098 *** (0.041)	0.038 *** (0.019)	0.004 (0.029)
p0	0.430 *** (0.026)	0.475 *** (0.044)	0.531 *** (0.020)	0.630 *** (0.039)	0.708 *** (0.018)	0.779 *** (0.026)
Polynomial order	0	1	0	1	0	1
Observations	6,401	6,401	6,401	6,401	6,401	6,401
Adjusted R-sq.	0.034	0.053	0.019	0.021	0.001	0.003
Partial R-sq.	0.206	0.002	0.193	0.001	0.179	0.000
F	163	7	90	6	4	0
AIC	7,370	7,248	7,469	7,455	7,588	7,578

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*In what contexts do program recipients benefit from the program?*

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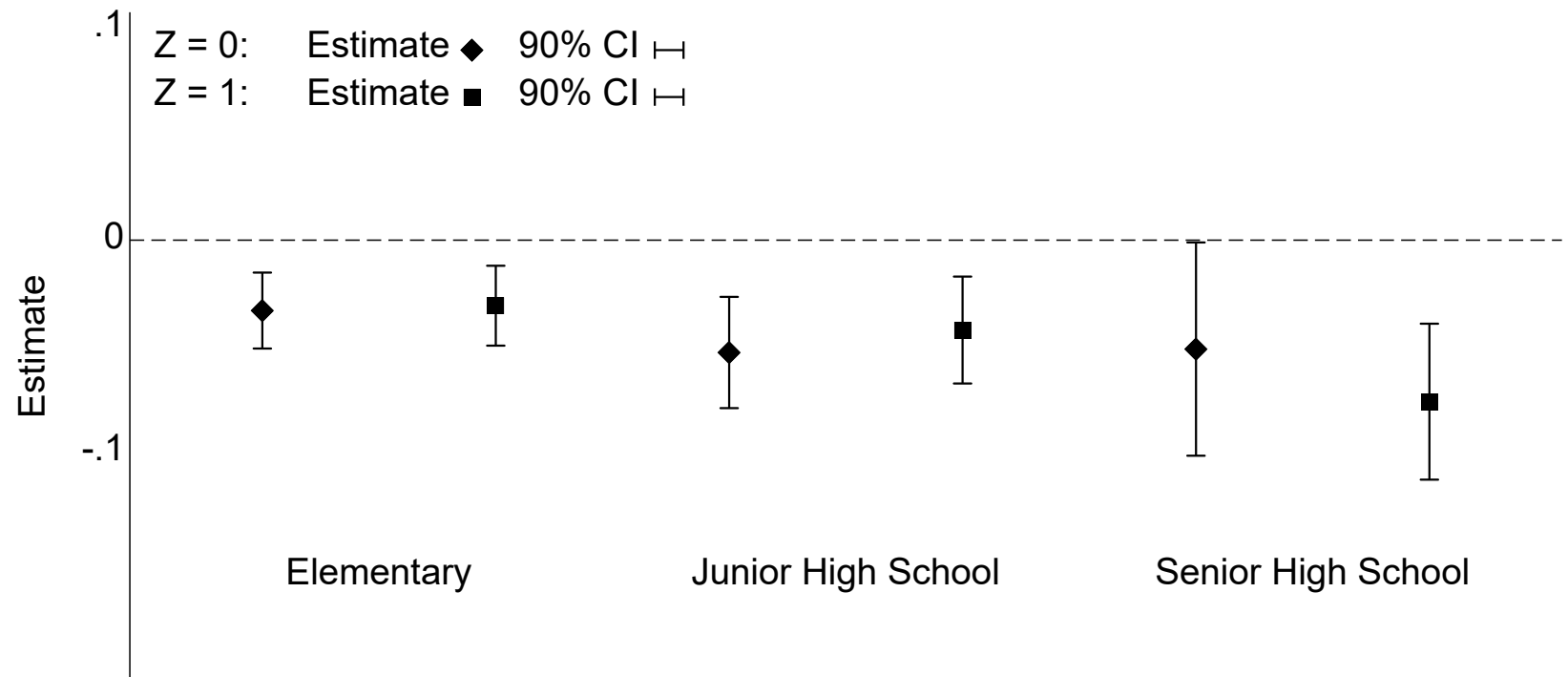
## **Observation #7**

Living farther away from school correlates with lower school attendance but not enrollment. 4Ps appear to not modify this association.

## School distance and school attendance

Living farther away from a school is associated with lower propensity of consistently attending school. Being a beneficiary of 4Ps appear to not modify this association.

For reference, about 60-70% of children in the sample consistently attend school.



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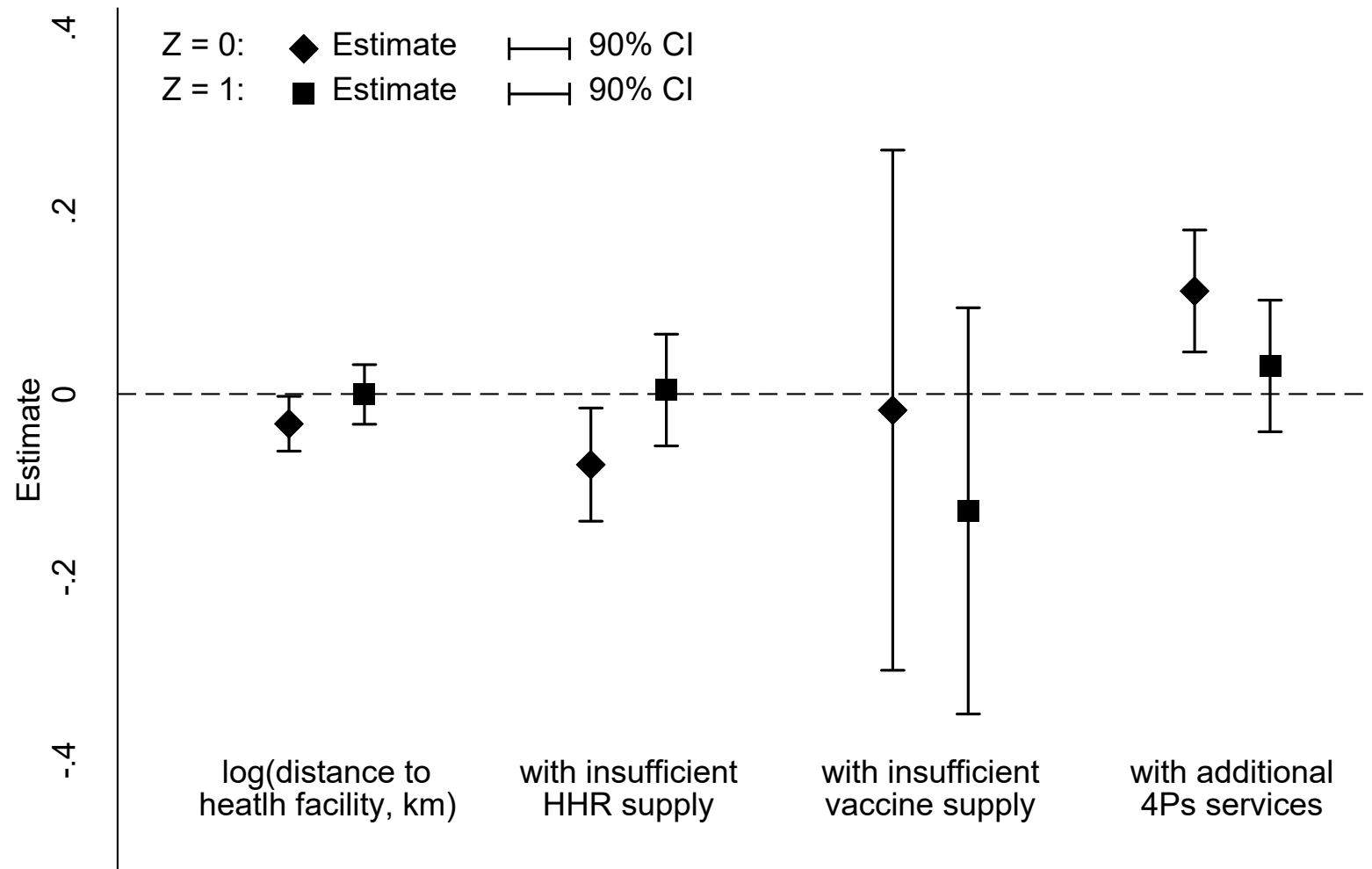
## **Observation #8**

Distance and resources for health are negatively correlated with having child immunization. 4Ps may mitigate and even nullify the negative effects of such poor supply conditions.

## Association with having basic immunization

Living farther away from a health facility, and having insufficient vaccine or health human resource supply are associated with lower chance of receiving immunization among children. But being 4Ps recipients nullify the impact of those supply side limitations.

For reference, about 40-50% of children in the sample have had all basic immunization. Less than 5% have had all age-appropriate vaccines.



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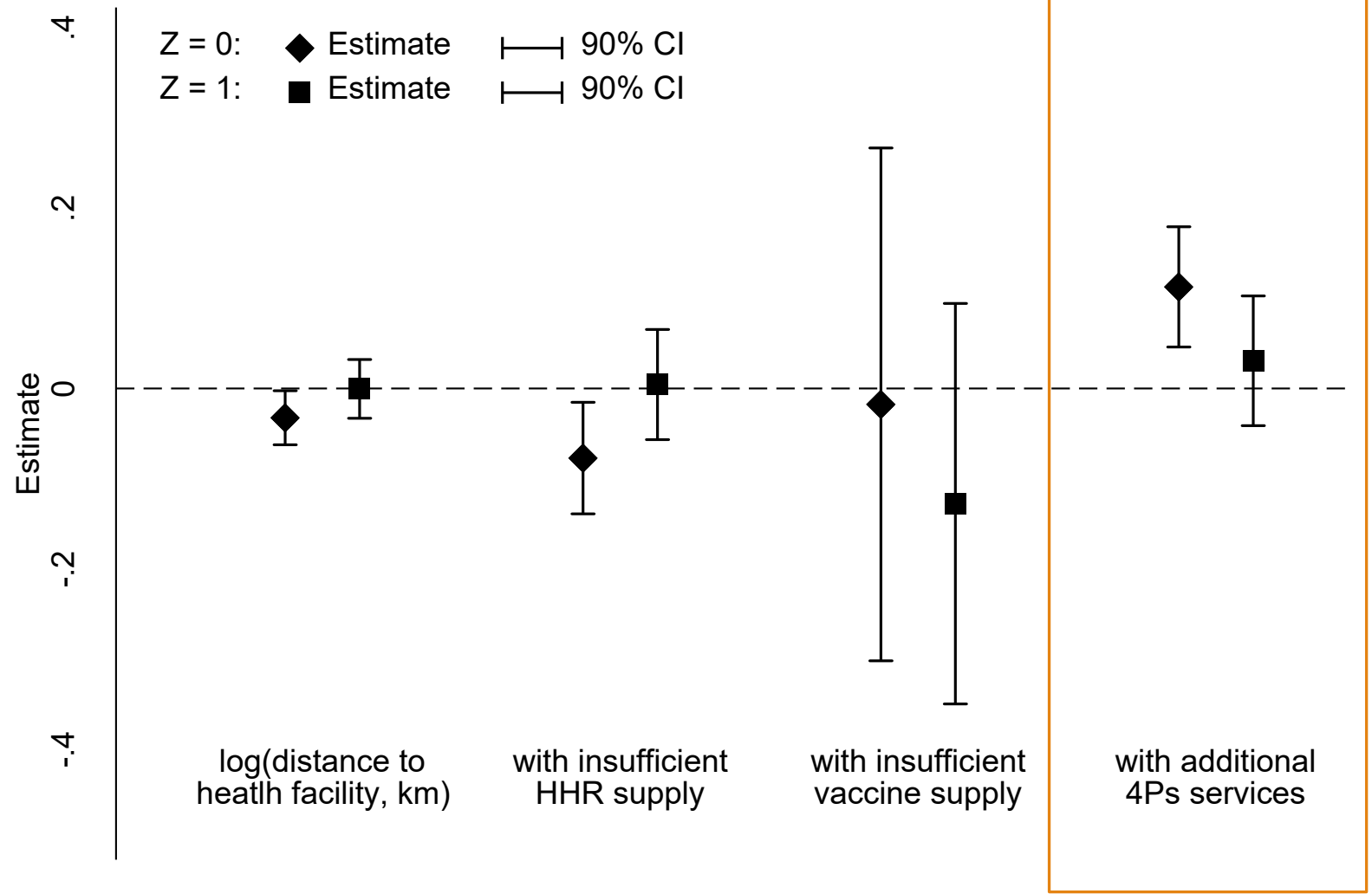
## **Observation #9**

Affirmative action towards 4Ps crowds-in health care demand and not crowd-out non-4Ps beneficiaries.



Having additional services geared towards 4Ps beneficiaries in public health facilities is associated with higher propensity of having basic immunization among children in non-beneficiary households.

## Association with having basic immunization



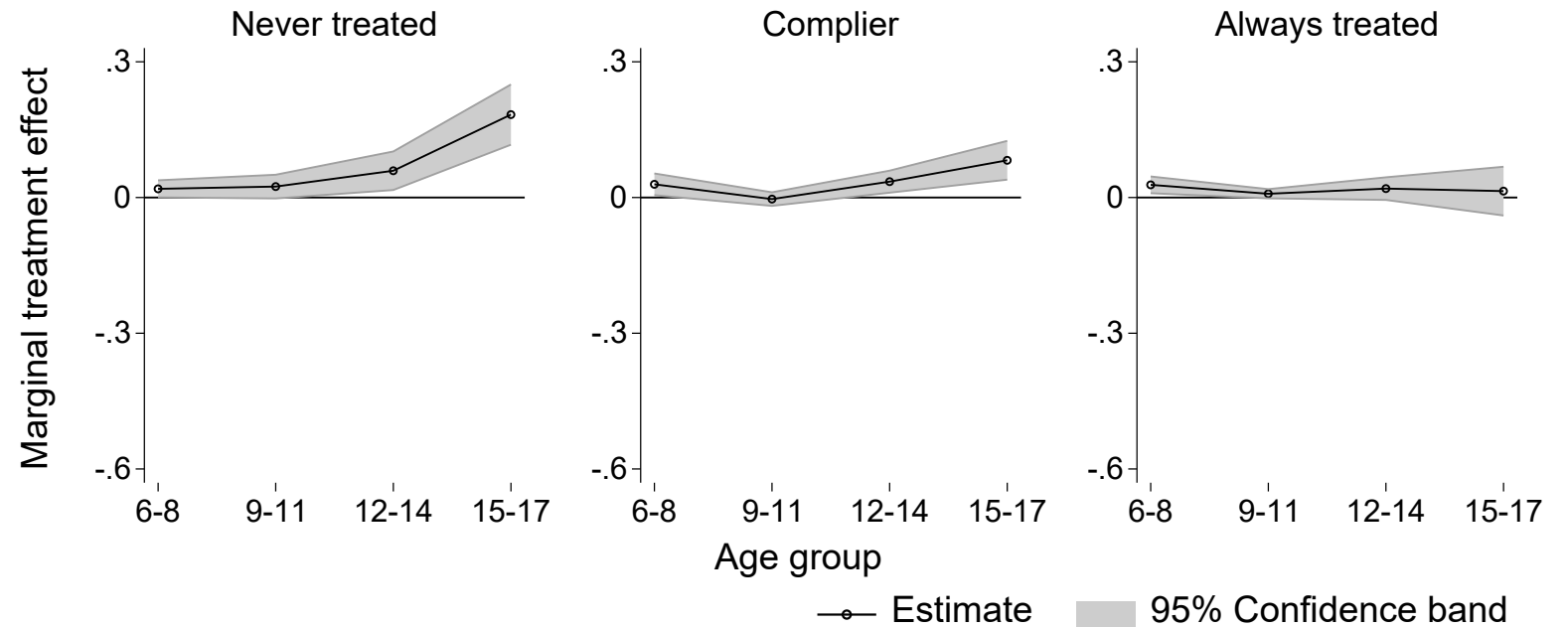
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## **Observation #10**

4Ps induce higher propensity of attending school among monitored children, especially older children and boys.

This observation is not new and has been documented elsewhere. Our results confirm these previous results. Limited impact among children and girls may be due to already high school attendance among these population subgroups.

## Impact on school attendance propensity: Index children

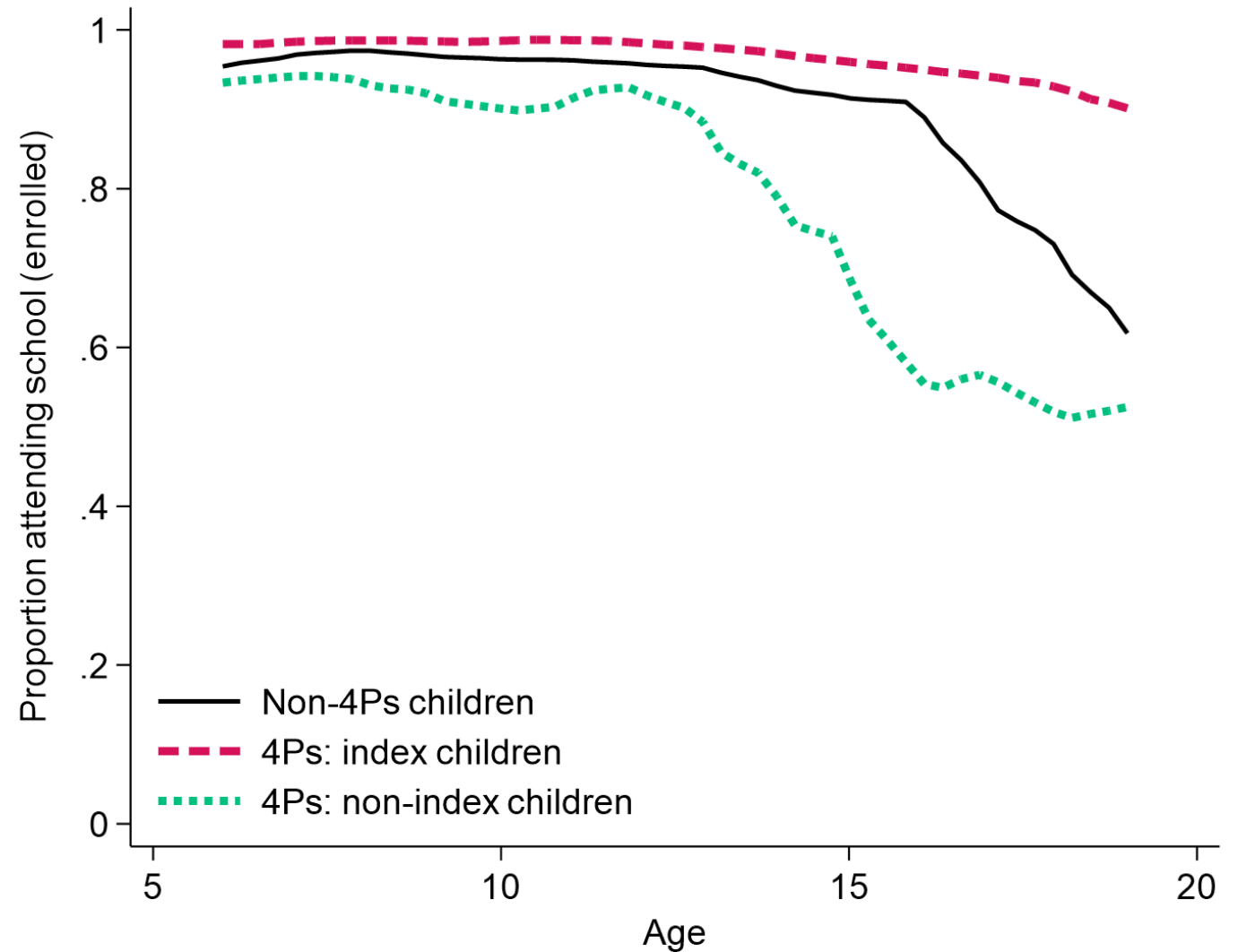


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## **Observation #11**

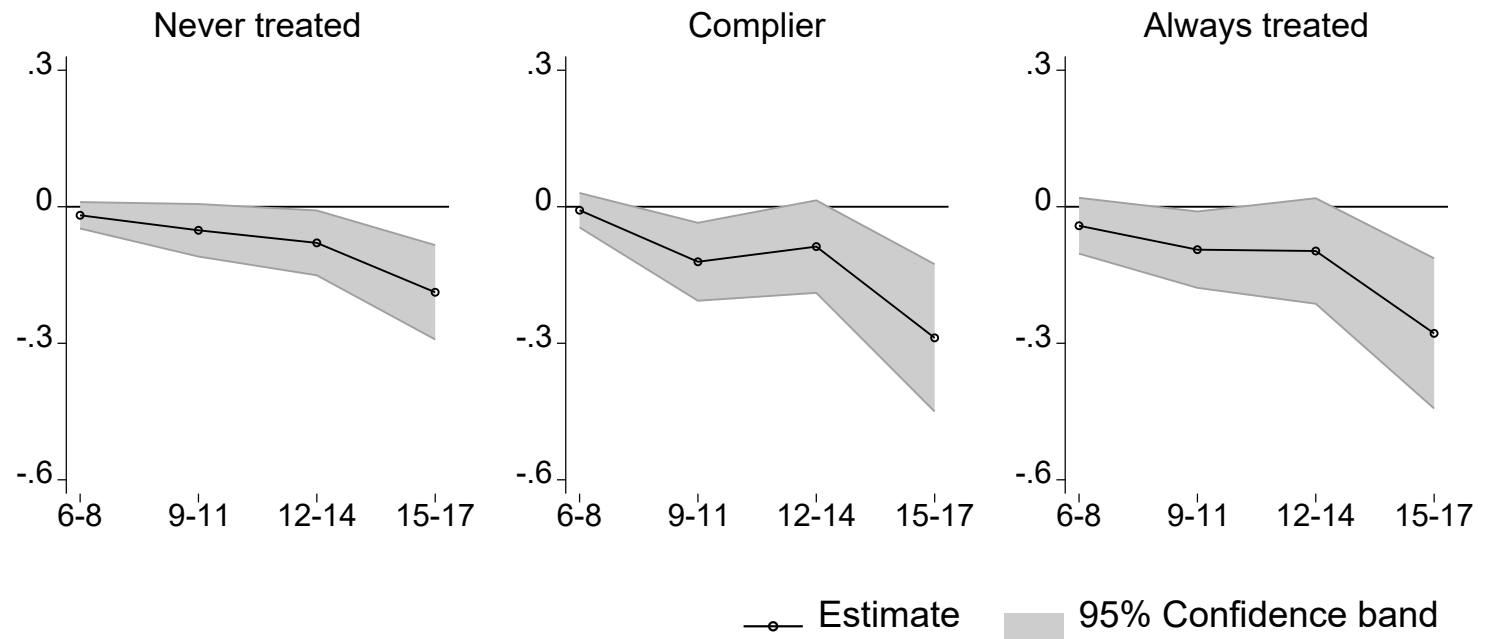
There is perverse impact on school attendance of non-monitored children, and it gets worse with age, is more severe for boys, and appears universal across household compliance types.

Again, this has been documented elsewhere using alternative estimation methods. Our results suggest that non-monitored children aged 15-17 in 4Ps households have about 30%-point lower propensity of attending school with likely more perverse impact among boys (45.5%-point-decline) compared with girls (16.9% point-decline)



Our results also show that the perverse impact on non-monitored children appears universal across household compliance types.

## Impact on school attendance propensity: Non-Index children



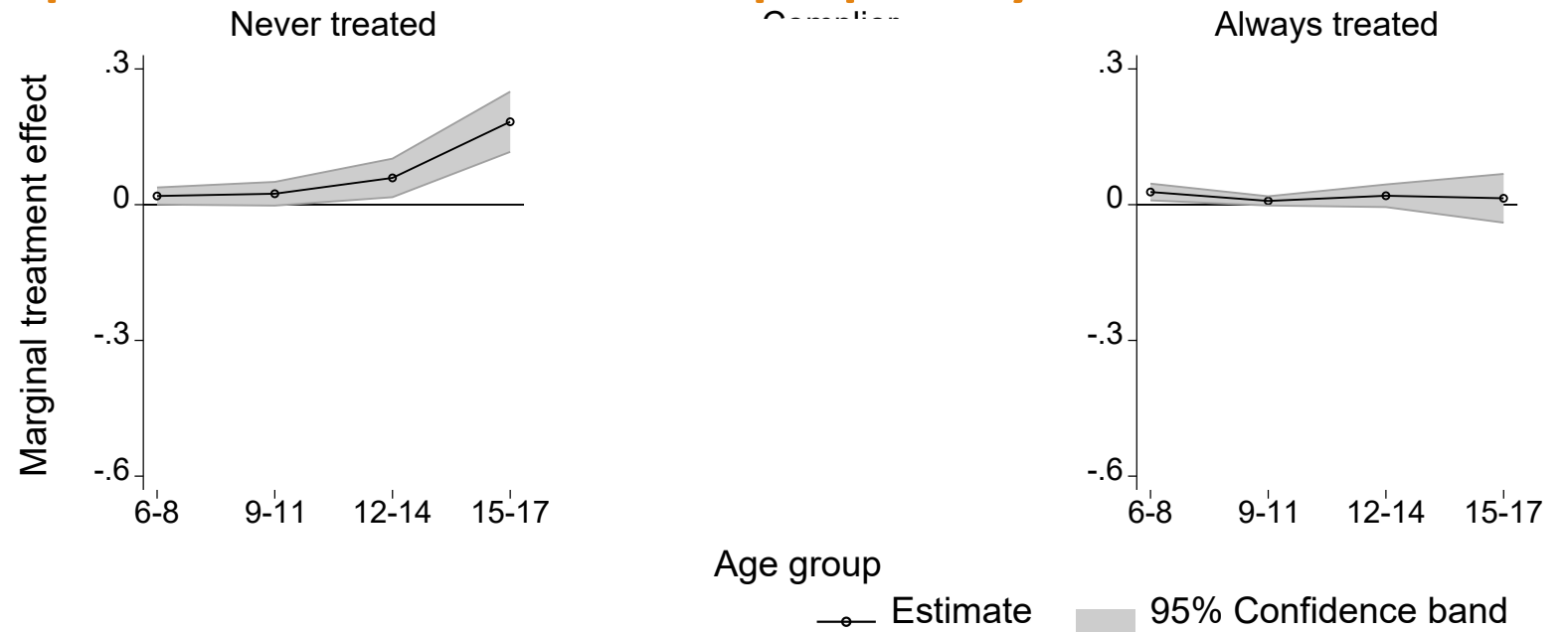
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## **Observation #12**

Children from households that always selects into 4Ps (always takers) are not necessarily better off from participating in the program, while children from households that always selects out of the program (never takers) are likely to benefit greatly from participation otherwise.

The expectation is that households who select into 4Ps (always treated) should have significant benefits from participation in the program, while those who select out of the program (never treated) have little benefit from program participation. But that appears not to be the case.

## Impact on school attendance propensity: Index children





# Main Message

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Program impacts vary across contexts.

# Key take-aways

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**4Ps may modify, attenuate and even nullify the perverse impact of supply-side limitations**

Support continued 4Ps implementation as demand-side intervention, but also need to improve supply-side conditions



**Affirmative action targeted towards 4Ps crowd-in demand, at least for healthcare**

Affirmative programs are good not only for 4Ps beneficiaries, but also to the larger community



**Households who select into the program are not necessarily winners; those who select out could be winners**

Need to understand why



**Non-monitored 4Ps children are worse off, at least in school attendance**

Violates cardinal rule: *primum non nocere* – first, do no harm  
Need to explore how to deliver benefits without harming others