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Evaluation of poverty alleviation policy: Can conditional cash transfers improve the academic performance of poor students in Indonesia?

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Abstract: This paper aims to investigate the influence the *Program Keluarga Harapan* (PKH) in Indonesia, on the academic performance of poor students in elementary and junior high school. The design of this impact assessment was based on Randomized Control Trial (RCT). Data was drawn from panel surveys conducted in six provinces in 2007, 2009 and 2013, covering approximately 3,360 villages. Evaluation of the PKH found that it has been able to increase net enrolment rate by 7.1% and the gross participation rate for junior high school students by 7.6%. Nonetheless, PKH has yet to yield significant increases in enrolment and gross participation rate at the primary school level. PKH significantly improves student attendance at the elementary level but, contrarily, has not shown a significant impact on junior high school attendance. PKH delivers significant results in terms of school examination achievement at the junior high school level for Bahasa Indonesia, Mathematics and English, as well as national examinations for Mathematics. However, the basic education in Indonesia is still unable to address issues of the teacher absenteeism (in both elementary and junior high schools) and the lack of quality educational facilities.



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PUBLIC INTEREST STATEMENT

This paper report on the evaluation of the poverty alleviation program in Indonesia through education aid of *Program Keluarga Harapan* (PKH), the first conditional cash transfer program in Indonesia. The results show a correlation that PKH affect the academic performance of poor students. There is an increase in the net enrolment rate for junior high school student, the student's presence in class for elementary school, and the grades of three subjects in elementary school final examination. This is significant because poverty alleviation program in Indonesia is rising. This paper reports a comprehensive study which can represent the condition in Indonesia with a wide coverage in the nation. It may also be valid for other developing countries. Having a well educated young age group of that population will be a true benefit for the country surveillance.

Subjects: Social Sciences; Development Studies; Education

Keywords: poverty alleviation; conditional cash transfer; academic performance

1. Introduction

The issue of poverty draws the attention of academia, policy practitioners, and politicians around the globe. A plethora of poverty alleviation policies, programs, and activities have been initiated and implemented. Nonetheless, public issues related to poverty still abound, from high poverty rates; greater poverty severity and depth; wider income disparity between rural and urban areas; gender-related poverty; limited access to public services among the poor; sanitation; to clean water access. The 2015 Global Monitoring Report reveals that poverty levels remain unacceptably high, with an estimated 900 million people (12.8% of the global population) in 2012 living on less than \$1.90 a day—the new international poverty line; the projected number for 2015, under the new line, is 700 million people (9.6%). Poverty is becoming increasingly concentrated in Sub-Saharan Africa, where its depth and breadth remain an overriding challenge. The MDGs were successful in reducing income poverty, but they were less successful in ameliorating non-income deprivation, such as access to quality education or to basic health services (World Bank [WB], 2015). For example, poverty data in Indonesia shows that 28.59 million Indonesians live below the poverty line, a poverty rate of 11.22% (Statistics Indonesia, 2015). Generally, the condition of poor people has shown an improvement. However, poverty depth index was still at 1.75 in 2014, with the poverty severity index remaining at 0.44 in the same year. Regarding the poverty rates among urban and rural populations, the 2014 Indonesian National Socio-Economic Survey (Susenas, Statistics Indonesia, 2014) showed that there were still more poor people living in rural areas (14.17%) than in urban areas (8.34%).

Increasing human resources capability through education is one policy that many governments have implemented to alleviate poverty. Almost all poverty alleviation programmes have a component that entails helping poor families through scholarships that are awarded to beneficiaries' school-age children. Education has always played an important role, one that goes beyond individual benefits of schooling. The social and economic functions of education are related to the very origins of educational systems (Archer, 1984). Education plays a crucial role in poverty alleviation, and in fact in many aspects an emphasis on education is more successful in poverty alleviation programmes than programmes oriented solely toward increasing economic welfare. Tarabini (2010) contends that, given this situation, it has become clear that economic growth, which has traditionally been the dominant instrument in strategies for fighting poverty, is insufficient. Growth is not enough to improve living conditions in southern countries. Furthermore, from a social perspective, growth can have a negative effect if other policies are not enacted that explicitly aim to improve the population's standard of living and welfare (Tarabini, 2010).

The Government of Indonesia espouses the same principle: education is a key driving force in alleviating poverty. Data show that the highest education attained by persons aged 15 years and older in rural areas is generally still poor, much lower than that attained by urban populations. In rural areas, only 13.36% of the population has graduated high school, while in urban areas high school graduation rates reach 34.20% (Statistics Indonesia, 2011). These data show the importance of attending to the education needs of the poor, especially in rural Indonesia. Since the 2004 fiscal year, the budget for education has been increased to 20% of the government budget. Aid has been provided to poor students through a number of poverty alleviation programs.

One of these programs is the *Program Keluarga Harapan* (PKH), literally the Family of Hope Programme. This program has the goal of improving the welfare of Extremely Poor Households (RTSM) by providing them with quarterly Conditional Cash Transfers (CCT). This programme is designed to break the poverty cycle by empowering poor families to have better access to public services, which is expected to improve the health and education outcomes of their children over time. The programme targets households with pregnant women and/or children meeting specific health and education-related criteria. PKH assistance is given to Extremely Poor Households, as identified

by the 2011 Integrated Social Protection Programme Database (PPLS), that meet at least one of the following programme participation criteria:

- (1) Family has pregnant/postpartum mother and one or more toddlers;
- (2) Family has children aged 5–7 years who have not entered primary education (pre-school children);
- (3) Family has elementary (primary) school/Islamic elementary school/Package A/SDLB children (aged 7–12 years);
- (4) Family has junior high school (secondary)/Islamic junior high school/Package B/SMLB children (aged 12–15 years);
- (5) Family has children who are aged 15–18 years and have not completed basic education, including children with disabilities.

Extremely Poor Households that participate in PKH enjoy numerous benefits. These include, first, cash assistance, which is received by the family head at the nearest Post Office by showing a PKH participant card; nobody is allowed to represent the family head in collecting these funds. Secondly, families receive health care services (maternal and infant) in such health centres as the Posyandu and Polindes, in accordance with applicable regulations. Thirdly, families receive educational services for children that have reached the compulsory 9-year basic education level, in accordance with applicable regulations. This aid program was first rolled out in 2007, with the number of families accepted based on existing groups. The amount of financial assistance received by families varied. The data in Table 1, obtained from the WB (2011), shows the amount of aid received.

PKH aid for eligible families consists of fixed and variable cash transfers. Each family receives a fixed cash transfer of Rp 200,000.00. For variable cash transfer, a family is given Rp 800,000.00 if it has children under the age of 6 years, if the mother is pregnant or nursing, or if it has children who are in junior high school. A family with children in elementary school will be given Rp 400,000.00 in assistance. As such, the minimum amount of aid that can be received by each family per year is Rp 600,000.00, while the maximum is Rp 2,200,000.00. The central government transfers payment to Extremely Poor Families on a quarterly basis.

Creating a better understanding of this programme’s importance in reducing poverty, especially through education, lies at the core of this study, which determines whether PKH aid can improve students’ academic performance. Such research is urgently required, considering the fact that PKH is the first CCT programme in Indonesia and reaches an enormous number of Extremely Poor Families (3.2 million households). The results of this evaluation will determine the extent to which PKH, as a CCT programme, benefits and helps poor families in sending their children to school. The assumption as well as expectation that underpins the programme is that education affects poor families’ success and can lift them out of poverty. Thus, this paper will identify the extent to which the educational assistance programme in Indonesia, through PKH, impacts and improves the academic performance of poor students, especially at the elementary and junior high school level.

Table 1. PKH assistance	
Fixed cash transfer	Rp 200,000.00
Variable cash transfer per household with	
(a) Child aged less than 6 years	Rp 800,000.00
(b) Pregnant or lactating mother	Rp 800,000.00
(c) Child of primary school age	Rp 400,000.00
(d) Child of secondary school age	Rp 800,000.00
Minimum transfer per household	Rp 600,000.00
Maximum transfer per household	Rp 2,200,000.00

Source: World Bank (2011).

Whether or not there is any difference in these two schooling levels, and, if so, why this is true, are further questions which must be answered in regards to PKH. However, as a variety of factors affect poor students' academic performance, this paper will also develop some factors that are predicted impact poor students' academic performance.

2. Theoretical framework

Education can be viewed conceptually as both consumption and investment. Households are faced with two constraints: the scarcity of (financial) resources and costs of other competing basic needs such as food, water, health, clothing, and housing. It is expected that poor and extremely poor households face more difficulties dealing with these constraints and, as a result, spend less on education per child than non-poor households (Nkurunziza, Broekhuis, & Hooimeijer, 2015). Julie Strawn of the Center for Law and Social Policy concludes that education alone is much less successful in raising employment and earnings prospects than education combined with a strategy of focused job training (with an eye on local demand), "soft skills," and holding out for quality jobs (Bernstein, 2007).

According to *The State of Social Safety Nets 2015*, more than 1.9 billion people in 136 low and middle-income countries benefit from social safety net programmes. Another of the report's findings is that CCT programmes account for over 50 per cent of beneficiaries in social safety net programmes and are now present in 64 countries. CCT has also major positive spillover effects on target communities' local economies. Every dollar transferred to beneficiaries generates income in local communities that ranges from US\$1.34 to \$2.52 (the "multiplier effect"). Cash transfers boost school enrolment and attendance; increase live births in safer facilities; improve prenatal and postnatal care; promote the regular growth monitoring of children during critically important early ages; and enhance food security (Honorati, Gentilini, & Yemtsov, 2015).

Ponce and Bedi (2010) explain that, theoretically, such programmes are likely to influence students' cognitive achievements in several ways. On the one hand, there could be a *positive impact* because CCT programs increase attendance rates, and higher attendance is likely to lead to higher test scores. CCT-induced increases in household incomes may be expected to lead to increased food consumption and better nutrition, which in turn should translate into higher levels of cognitive achievement. On the other hand, these programs may also have a *negative effect* on average test scores. Increases in school enrolment may translate into congested classrooms, which in turn may negatively affect cognitive achievement. Furthermore, if programmes encourage less able students to enrol, then changes in student-body composition may lead to a decline in average test scores. Whether such programmes exert a net positive or negative effect, on average, is an empirical question.

Quoting the analyses of Schultz (2004), Behrman, Sengupta, and Todd (2005), de Janvry and Sadoulet (2006), and Fiszbein and Schady (2009) explain using a randomized evaluation method that, in Mexico, the impact of Oportunidades¹ program in rural areas is significant for children making the transition from primary to secondary school, a point to which they return below. Oportunidades also appears to have had positive spillover effects—school enrolment has increased, even among children above the cut-off point who were ineligible for transfers.

Saveedra and Garcia (2012) analysed CCT programmes in 15 countries from Latin America, Asian, and Africa, and found that the overall random-effects average primary enrolment effect size is 5.1% points, with a 95% confidence interval between 3.7 and 6.6% points. Relative to the mean baseline primary enrolment of 84%, this represents a 6% enrolment increase. All reference-level average effects are positive and most are statistically distinguishable from zero, with the exception of one reference reporting effect from the CCT programme in Turkey. There is ample variation in estimated effects across references, although mostly across programmes rather than within programmes and across references. Reference-level effects sizes for Nicaragua's CCT program are an exception, however, ranging from close to 8–29% points, and statistically positive. For the CCT programmes in Colombia and Brazil, reference-level effects are, on the other hand, consistently small and generally statistically positive.

Fiszbein and Schady (2009) also quote the analysis by Glewwe and Olinto (2004), which uses the randomized evaluation method in the Honduras. The Honduras' CCT programme, called *Programa de Asignacion Familiar* (PDAF), also had a positive effect on school enrolment, although the impact was much smaller—on the order of 3% points.

WB (2014a) Research into the CCT programme in the Philippines 2012 indicates that, overall, the programme is meeting its objective of helping to keep poor children in school by increasing enrolment among younger children (3–11 years old) and increasing attendance among children aged 6–17 years. The study found higher rates of school enrolment among children aged 3–11 years in the beneficiary households (by 10% points for 3–5 years old and by 4.5% points for 6–11 years old) compared to poor households that did not receive aid. Considering that this study group only includes poor children, this achievement is highly commendable. School attendance improved for all age groups across the beneficiary households, except for the youngest preschool/daycare age group. However, the findings suggest that the programme has not had a significant impact on increasing enrolment among older children aged 12–17 years old (WB, 2014a).

Fiszbein and Schady (2009) quote a research report from Chaudhury and Parajuli (2006) that considers the impact of the Punjab Education Sector Reform (PESR) Program in Pakistan. They use regression discontinuity and triple-differencing techniques and conclude that the programme increased enrolment by approximately 11% points. In Cambodia, Filmer and Schady (2008) evaluate the impact of the Japan Fund for Poverty Reduction (JFPR) programme, which is targeted at girls making the transition from elementary to lower-secondary school. Their differences-in-differences estimates suggest a very large program impact—approximately 31% points (Fiszbein & Schady, 2009).

Education is a future investment for poor families to lift them out of poverty. Pohan's study on poor households in Indonesia concludes that more educated individuals are likely to provide higher education to their offspring. Therefore, the government's role in providing basic education is extremely important. Making elementary and junior high schools reachable at a convenient distance will increase enrolment. Basic education is a prerequisite for higher educational attainment and ultimately higher income (Pohan, 2013). Indonesian society highly appreciates the position persons who have been successful in education, which is why education is considered an investment for the future. If the rate of return for education is high, that means that the pay off of education, in terms of improved opportunities (through better paid jobs and more successful private initiatives) is high. Households may choose to invest in education to increase their earning capacity and other benefits in the future (Tilak, 2002).

The academic performance of students who received PKH assistance will be measured through three parameters, namely student enrolment (participation), student attendance, and students' grades in class subjects. From the very beginning, PKH was intended to encourage student enrolment/participation (first parameter) and school attendance (second parameter) for children who previously showed lower performance in those parameters. Lack of activeness ultimately affects students' abilities, especially their grades in class subjects (third parameter). By promoting student participation and attendance through the incentives provided, PKH may drive them to study more diligently and ultimately affect the grades they attain. Students' parents are also expected to help encourage children to go to school and attend diligently. If, before, many parents viewed school as a burden because they had to pay much money for their children's education, the financial assistance available through PKH reduces the burden considerably. Every week, the intensity of students' attendance serves as an operational indicator to assess their activeness. Groups of students assessed were divided into elementary and junior high school groups. The purpose of studying the differences between these two groups is to show the extent to which PKH has had and is having an impact on households' behaviour, namely sending their children to either elementary or junior high school and encouraging them to attend school diligently. High student enrolment and school attendance affects the grades that students obtain after their family benefits from PKH assistance. Better grades are considered direct results of students' increased study intensity after obtaining PKH

aid. Grades in three subjects are surveyed: Bahasa Indonesia, English, and Mathematics. These three subjects are among the subjects assessed in national examinations. The assessment of these subjects distinguishes this report with similar reports in other countries that study the impact of CCTs on poor students' academic performances.

Moreover, this paper assesses households' perceptions about education problems in the region, namely teacher absenteeism and poor school facilities. Teacher absenteeism is an important factor that influences the failure of students in learning at school. However, in many cases in developing countries, including Indonesia, geographical conditions such as remoteness and underdeveloped infrastructure affect teachers' ability to fulfil their duties. Another education problem perceived in households is the availability of school facilities and infrastructure, covering adequate classrooms with adequate chairs and tables, libraries, and teaching aids, which in turn affects students' interest in attending lessons. The presence of supportive facilities is an important factor in determining students' success in learning. This is because the presence of a supportive and conducive learning environment helps students concentrate on the lessons they are learning. Household perceptions on teacher absenteeism and school facilities are positioned as factors that show households' commitment to the problems of education, with the expectation that, in the future, efforts should be made toward alleviating the problems as part of poverty alleviation programmes.

3. Research methods

PKH is the largest CCT programme ever implemented by the Indonesian government. The programme was first implemented in 2007, and thus has been active for long enough to qualify for an evaluation of its performance. The design of this impact assessment was based on Randomized Control Trial (RCT) or Randomized Evaluation or Randomized Experiments. RCT divides half of the potential population into recipients of the aid, who become the treatment group, and the other half into a control group. The RCT method is used to explain the condition of households or individuals who are recipients of programmed aid and the conditions that would be realized without becoming a beneficiary of the intervention program.

This research uses a quantitative method because, as a research intended to undertake an impact evaluation of the PKH programme, it was designed in the form of a panel survey, both with respect to time as well as respondents, since 2007, 2009 and 2013. In the initial design of this research, conducted in 2007,² a total of 360 districts (*kecamatan*) spread through six Indonesian provinces were used as a sample. These six provinces were the Jakarta Capital Region, West Java, East Java, East Nusa Tenggara, North Sulawesi, and Gorontalo. These 360 districts were divided into two groups: 180 districts served as treatment districts, and 180 districts served as control districts. In each district, a total of eight villages and forty households were taken as a sample; as such, interviews were conducted in approximately 14,400 households. Households in the 2009³ and 2013⁴ surveys were termed panel households. All of the panel households were tracked, revisited, and re-interviewed. In the event panel households were split to form more than one household, every split household that had an original member surveyed in 2007 and/or 2009 had to be tracked, visited and interviewed. In the case of panel households that moved outside of the sample district, a replacement household had to be selected.

The implementation of the RCT in 2013 underwent some change in design related to the areas covered, which was necessitated by the fact that several districts that had benefited from PKH in 2007 were no longer recipients of aid in 2013. Alternatively, some districts had been designated control districts in 2007 but, with time, became recipients of PKH aid. To overcome the decrease in the control group population, 90 districts were added to the control group in 2013. As such, in 2013 a total of 450 districts were included in the sample during the 2013 survey. With the addition of these 90 districts, the total number of households interviewed increased to approximately 18,000, excluding households that had split from panel households.

Although this panel research was conducted in three years, namely in 2007, 2009 and 2013, this article limits its measurements to data from two of these years, namely 2007 and 2013. This has been done for several reasons. First, data from 2007 was selected as basic data showing the underlying conditions of households before intervention. Second, data from 2013 was selected as final data or data from after intervention because of its relatively great temporal distance from the early conditions. It is hoped that this relatively long period of time will allow the effects of the programme to become more visible. Regarding the data collected in 2013, the additional 90 districts were not included in this analysis, as these 90 districts lack any initial (pre-intervention) data, and thus the programme's effects in these districts cannot be measured.

The impact evaluation method appropriate for analyzing PKH is the Instrumental Variable (IV) method. This method bridges the changes that occurred by 2013 with the Randomized Control Trial (RCT) designed in 2007 (before program intervention). The IV method is used when data is not exogenous, is likely to cause endogeneity in programme participation, or both. The IV method is also used if there is a possibility of selection bias in the panel data in the PKH survey. The IV method allows for endogeneity in individual participation, programme placement, or both, as well as panel data. The IV method can also allow for time-varying selection bias (Khandker, Koolwal, & Samad, 2010, p. 87).

The functions of IV method, in principle, give weight to the design of the initial RCT by extracting its randomness and using the extraction results to estimate programme impact. This approach involves identifying variables, denoted instruments, that are related to treatment but not to outcomes other than through their effects on treatment (Landrum & Ayanian, 2001, p. 222). The IV method is done by searching for variables or instruments that have correlation with programme participation but do not have correlation with programme outcome (do not influence programme outcome). Khandker et al. (2010, p. 87) emphasises that instruments should be selected carefully. The selection of weak instruments is likely to create a large bias. Instruments are considered to be weak if they have correlation with the outcome. In this case, the test for endogeneity is done to determine whether instruments are weak or otherwise. To perform the endogeneity test using the regression test variable membership status in the 2013 PKH survey, outcomes and instruments that can allegedly be used to apply the IV method are measured. As a result, the variables in the design of status groups (treatment and control areas) in 2007 qualified as instruments using the IV method. These variables correlate with the membership program, but have no correlation with the outcomes measured. Ultimately, the IV method has been used to analyse the level of impact that is attributable to PKH using the following statistic formula:

$$\text{ivreg 'v' period (or2_v' or_v' = L07 periodL07)}$$

where:

(1) ivreg

Data processing and analysis was conducted using STATA software. In STATA, "ivreg" is regression order using the IV method.

(2) 'v'

The symbol 'v' represents the collection of various outcomes as a result of PKH intervention, namely:

- (a) Net enrolment rate; (b) gross participation rate; (c) student attendance; (d) school final examination (UAS) Results, Bahasa Indonesia_minimum; (e) UAS results, Bahasa Indonesia_average; (f) UAS results, Bahasa Indonesia_maximum; (g) UAS results, mathematics_minimum; (h) UAS results, mathematics_average; (i) UAS Results, mathematics_maximum; (j) UAS results, English_minimum; (k) UAS results English_average; (l) UAS results, english_maximum;

(m) national examination (UN) results, mathematics_minimum; (n) UN results, mathematics_maximum; (o) teacher absenteeism as the first most important issue of education services; (p) teacher absenteeism as the second most important issue of education services; (q) teacher absenteeism as the third most important issue of education services; (r) households perceiving inadequate school facilities as the first most important issue in primary education service delivery; (s) households perceiving inadequate school facilities as the second most important issue in primary education service delivery.

(3) Period

“Period” represents a dummy variable for time, which in this case is a year before PKH intervention (2007) and a year after (2013). In this dummy variable “period”, the year 2007 is coded as “0” and the year 2013 is coded “1”.

(4) or2_‘v’

or2_‘v’ shows a dummy variable for PKH receiver group status in 2013, i.e.: “0” for the PKH control group and “1” for the PKH treatment group.

(5) or_‘v’

or_‘v’ is a variable showing interaction between the PKH receiver group status in 2013 and time (years 2007 and 2013). In other words, it is interaction between “period” and “or2_‘v’”. The interaction variable is required in the regression formula for impact evaluation.

(6) L07

L07 represents a dummy variable for status group design in 2007, i.e.: “0” for control group and “1” for treatment group.

(7) periodL07

periodL07 is a variable showing interaction between group status given in 2007 (0 = control group, 1 = treatment group) with time (year, 0 = 2007, 1 = 2013). The interaction variable is created to fulfil requirements for implementing impact evaluation using the IV method. The requirement is the availability of variables or instruments that correlate with PKH programme participation but have no correlation with outcome (no influence on outcome).

The regression results using method IV showed whether or not PKH caused a significant change towards each outcome (p). In case of significant changes, the regression results provide information of the changes’ percentage and the direction (increase or decrease) based on the coefficient value.

4. Results and discussion

4.1. Impact of PKH on the academic performance of poor students

4.1.1. PKH impact on enrolment/participation and school attendance of junior high school students

One of PKH recipients’ obligations in the field of education is that children in their households aged 7–15 years must be registered/enrolled in school. As such, PKH is expected to increase the number of school-age children who attend school. The PKH evaluation conducted between 2007 and 2013 found that the programme has been able to increase Net Enrolment Rate by 7.1% at the junior high school level (p : 0.046; with coef: 0.0711079). This means that, with a confidence level of 95% and a significance level below 0.05, this CCT programme has a real impact on the indicator measured.

The significant impact of PKH on Net Enrolment Rate at junior high school is also in line with the Gross Participation Rate for children aged 13–15 years. The Gross Participation Rate is the ratio of school children at any school level compared with the number of children in that age group. For six years in a row (2007–2013), PKH has succeeded in increasing the Gross Participation Rate among children aged 13–15 by 7.6% ($p: 0.011$; with coef: 0.0765301). Data indicates that CCT has succeeded in encouraging school participation among children by 7.6% regardless of the age relevance to school level. By linking the increased junior high school net enrolment rate with the Gross Participation Rate among children aged 13–15, the program has increased this age group's participation in schools, with the majority attending the appropriate school level, namely junior high school.

The magnitude of PKH's impact on poor student participation in secondary education in Indonesia is slightly different than that in Latin American and in other Asian countries. Fiszbein and Schady (2009) quote that, in Nicaragua, the CCT programme named *Atencion a Crisis* was capable of having a 6.6% impact, albeit among poor students aged 7–15. However, in the Honduras, PDAF had a 3% impact on poor students aged 6–13. On the other hand, in Pakistan, the PSER programme achieved an 11% impact on the participation of 10–14 year-old students in the primary education system.

4.1.2. PKH impact on the enrolment/participation and school attendance of elementary school students

The impact that PKH has had on students' participation at the junior high school level is apparently not shared at the elementary (primary) level. PKH has yet to yield significant results in increasing the Net Enrolment Rate of primary school-aged children (7–12 years) or the Gross Participation Rate of children in that age group.

This is not to say that CCT programmes have failed to improve the Net Enrolment Rate and Gross Participation Rate of elementary school-age students. Why? This is duly attributable to the relatively good performance in primary school-level enrolment among children aged 7–12 even before the CCT programme was implemented. Data from Statistics Indonesia showed that the enrolment rate of elementary school-age children was already 93.54% in 2006 and had risen to 95.59% in 2013. Meanwhile, the Net Enrolment Rate for junior high school-age children in 2006 was 66.52%, rising to 73.88% in 2013. The presence of primary school facilities in each village as well as the absence of education cost burdens for parents owing to the “BOS” (School Operational Assistance) programme have allowed almost all children aged 7–12 to attend primary school. However, sending children to attend junior high school requires more effort from parents. This is because, while BOS funds cover most of the costs of junior high school education, such schools are by and large limited in location to district capitals, and thus parents must pay for transportation. To that end, cash transfers from the PKH programme help parents cover such needs; this is why parents have no reason to not send their children to junior high school.

While PKH's impact with respect to participation in educational institutions is more pronounced at junior high schools, the opposite seems to be true with regards to student attendance. Results showed that positive changes in student attendance were more pronounced and significant at the elementary school level than at the junior high school level. With a confidence level below 5% (0.05), the information from the school showed that PKH delivers significant improvements (6.76% [$p: 0.001$; with coef: 0.0675682]) to student attendance at the elementary level. As such, PKH has contributed significantly to elementary students' attendance. Table 2 below gives a clearer description of the data presented above concerning the impact of PKH on students' participation and attendance at both the elementary and junior high school levels.

PKH has had a positive effect on elementary student attendance because extremely poor families, who have often complained of a lack of sufficient funds to ensure their children study diligently, can now overcome their difficulties through PKH. Some of these parents can now focus on their own work, without needing to be supported by their children, and thus they can support their children's school attendance. The education fees that were once a great burden, including school uniforms,

Table 2. Impact of PKH on elementary and junior high school students' enrolment/participation rate and school attendance

Participation and attendance	Coef	p-value
Net enrolment rate_elementary school	0.0112996	0.460*
Gross participation rate_elementary school	0.0006458	0.949*
Student attendance_elementary school	0.0675682	0.001
Net enrolment rate_junior high school	0.0711079	0.046
Gross participation rate_junior high school	0.0765301	0.011
Student attendance_junior high school	0.0511278	0.099*

Source: Primary data.

*p-values indicates a 95% confidence level; PKH has no significant influence on the indicator.

school books, writing utensils, and transportation costs can be met with PKH aid. A report from Understanding Children's Work's (2012) showed that 1.8 million children are engaged in child labour in Indonesia, or 3.0 per cent of the child population aged 5 to 17. While most working children still attend school, 20.7 per cent of working children under the age of 18 work for more than 40 h a week, mostly as compulsory overtime. Children's employment is associated with compromised education in Indonesia. Although most of children in employment (87 per cent) also attend school, working children nonetheless lag 9% points behind their non-working peers in terms of school attendance.

On the contrary, PKH intervention has not shown significant impact on student attendance at the junior high school level. Data, as described above, suggests that there are differences in the behavioural changes affected by PKH among elementary and junior school students. While the programme generates a significant impact on the Net Enrolment Rate and Gross Participation Rate of junior high school-age children (13–15 years), the same does not seem to occur for primary school-age children (7–12 years). Enrolment rates for primary school-age children in Indonesia has achieved relatively encouraging results because of access has already been spread evenly; even without CCT, households with primary school-age children have already enrolled their children in elementary schools. PKH gives a positive result in the form of encouragement for households to enrol their children to in junior high school and thus continue their educations. There is a significant change in PKH's impact, which has contributed to an increase in enrolment rates among junior high school-age children.

The significant changes in the attendance of elementary school students in the learning process at school since PKH was implemented attest to the fact that the programme serves as a catalyst for parents to encourage their children to study hard in school after they are officially registered in elementary schools. In other words, after children are enrolled, their parents encourage them to focus diligently on their schoolwork. It can also be interpreted that parents of junior high school-age children are still focusing on enrolment, and have hence yet to pay as much attention to encouraging them to go to school on a regular basis. Furthermore, the amount and even distribution of elementary schools in villages/sub-districts makes it simpler for students to access schooling. This can be compared to the number of state junior high schools, which are far fewer in number; generally there is only one per district, and thus in terms of distance such schools are difficult for poor students to access.⁵ Although junior high school students' participation levels have increased, this factor of distance has influenced the low attendance rates in junior high school, particularly compared to elementary schools, which tend to be closer to families' homes.

4.1.3. PKH impact on students' achievement

PKH cash aid in the field of education is actually new and is aimed at increasing student participation in educational institutions as well as school attendance. However, improvement, in terms of participation and attendance, also indirectly affects students' academic achievement. With an active presence in school, students are able to learn to the best of their abilities as well as understand materials better, which in turn is expected to lead to higher academic performance. Student performance

Table 3. Impact of PKH on junior high school students' performance on UASs and UNs^a

Results of UAS/UN	Coef	p-value
UAS results, Bahasa Indonesia_minimum	1.173143	0.000
UAS results, Bahasa Indonesia_average	1.251418	0.000
UAS results, Bahasa Indonesia_maximum	1.371638	0.000
UAS results, mathematics_minimum	1.570672	0.000
UAS results, mathematics_average	1.858373	0.000
UAS results, mathematics_maximum	2.279703	0.000
UAS results, English_minimum	1.190582	0.001
UAS results, English_average	1.297391	0.001
UAS results, English_maximum	1.326392	0.001
UN results, mathematics_minimum	0.5198581	0.020
UN results, mathematics_maximum	0.5660039	0.028

Source: Primary data.

^aUAS and UN results for elementary school are unavailable, as these variables were not included in the SPKP 2007 for elementary school.

(grades) on UASs and on UNs are the two indicators of change in students' academic achievement at the junior high school level (Table 3).⁶

The positive impact of PKH on academic performance is most visible in UAS results for junior high school. UAS results for the three subjects examined, namely Bahasa Indonesia, Mathematics, and English, all showed a very significant positive change after PKH was implemented. This is attested by *p*-values that indicate a level of significance below 0.05, which means that the change is very clearly attributable to PKH, be it for the UAS maximum, minimum and average value. With a confidence level below 5% (0.05), PKH delivers significant results to student examination achievement (subject grades) at the junior high school level for UAS Bahasa Indonesia_average (*p*: 0.000; coef: 1.251418); UAS Mathematics_average (*p*: 0.000; coef: 1.858373); UAS English_average (*p*: 0.001; coef: 1.297391). Also affected are the results of UN Mathematics_minimum (*p*: 0.020; coef: 0.5198581) and UN Mathematics_maximum (*p*: 0.028; coef: 0.5660039). However, UN results for Bahasa Indonesia and English do not show significant changes.

Children's literacy and numeracy are the basic skills that require improvement. This is supported by the fact that PKH has positive externalities that encourage school-going children to participate in and attend schools. Data from the National Team for the Acceleration of Poverty Reduction (TNP2K) collected in Papua Province (2015) found that mathematics lessons taught in Class V of SD YPPGI Pirime⁷ is equivalent to that which should be taught in Class II of elementary school. Similarly, Bahasa Indonesia lessons taught in the fourth grade are equivalent to those which should be taught in the first grade of elementary school. TNP2K findings in 31 primary schools in Kaimana Regency (West Papua Province), Keerom Regency (Papua Province), and Ketapang Regency (West Kalimantan Province) indicate that as many as 60% of Grade I, 34% of Grade II, and 20% of Grade III students are still illiterate. This fact is attributable to low levels of student attendance, which contributes to students' weak reading skills. PKH is expected to enhance students' active participation and allow them to receive normal lessons.

Regarding academic performance/grades obtained on the UN, the data in the table above shows that the only impact that PKH has had on UN has been limited to performance in mathematics. The programme's impact on students' performance in other UN subjects remains low compared to that in UAS. This leads to the conclusion that students in many regions of Indonesia find the UNs, which by and large have higher standards than UAS, far more difficult. Some areas are still struggling with

increasing student enrolment and attendance. Meanwhile, the quality of student performance is gauged by good teaching and learning processes, which have yet to become a priority.

4.2. Household perceptions of education issues

Some of the data described above indicates that PKH has lived up to expectations, especially if gauged by student participation and attendance rates as well as test scores. However, these achievements have not been able to produce a significant improvement in students' academic performance. Indonesia still has problems related to teacher absenteeism and a lack of quality school facilities. The following data shows that household perceptions attribute issues to two variables other than children's underachievement.

4.2.1. Teacher absenteeism

PKH's goal in education entails contributing to increased levels of school attendance and participation among school-age children. As such, the programme does not provide direct assistance to teachers, especially for tackling the prevalent problem of teacher absenteeism. Nevertheless, the problem of teacher absenteeism has become one issue frequently identified by households affecting educational service delivery. Data released by the Analytical and Capacity Development Partnership (2014) showed that the level of teacher absenteeism in remote areas in Indonesia was double that at the national level (20 vs. 9.4%). Incentives are unable to stifle this absenteeism; data from Social Monitoring and Early Response Unit (2010) shows that the rate of absenteeism among teachers who receive special allowance is 31.5%, higher than among teachers who do not receive special allowance (25.4%).⁸ There is no indication that the amount of special allowance has any correlation with the teacher presence in class. The WB Report (2014b) concludes that student learning results from teachers who receive special allowance are no different than those of students learning from teachers who do not receive special allowance.

PKH data (Table 4) shows an increase of about 0.43% in households perceiving the absence of elementary school teachers as a key problem facing educational service delivery (p : 0.048; with coef: 0.0043386). Moreover, households who perceived teacher absenteeism as the second most important issue facing education services increased by 0.50% (p : 0.016; coef: 0.0050069). Meanwhile, at junior high school, a significant increase (0.29% [p : 0.031; coef: 0.0029352]) occurred in the perception of households who considered teacher absenteeism the third most important issue in education services. Although PKH does not provide intervention to teachers, parents' enhanced capacity and awareness when sending their children to school influences their interest and awareness about the importance of teachers' presence in the classroom.

4.2.2. School facilities

As important as the problem of teacher absenteeism is the condition of school facilities. This is also not a major focus of PKH, but it is an issue regarding which households showed serious concern. Thus, improving children's participation and attendance in schools indirectly leads to demand for better educational facilities. This can be explained based on parents' perception about the problems that plague educational services in their neighbourhoods. Table 5 shows that the number of households perceiving inadequate school facilities as the most important problem in primary education

Table 4. Households perceiving schoolteacher absence as most important issue of education services

	Coef	p-value
Schoolteacher absence first most important issue of education services_elementary school	0.0043386	0.048
Schoolteacher absence second most important issue of education services_elementary school	0.0050069	0.016
Schoolteacher absence third most important issue of education services_junior high school	0.0029352	0.031

Source: Primary data.

Table 5. Households perceiving school facilities as the most important issue of education services

	Coef	p-value
School facilities first most important issue of education services_elementary school	0.0399913	0.001
School facilities second most important issue of education services_elementary school	0.0306222	0.000
School facilities first most important issue of education services_junior high school	0.0268913	0.023

Source: Primary data.

provision increased by approximately 3.9% (p : 0.001; coef: 0.0399913), while households perceiving inadequate school facilities as the second most important issue in primary education provision increased by approximately 3.0% (p : 0.000; coef: 0.0306222). With respect to parents who had children attending junior high school, perceptions about inadequate school facilities increased by 2.6% (p : 0.023; coef: 0.0268913). It can thus be concluded that households with children attending either elementary or junior high school expressed dissatisfaction with the quality of facilities available to support their children's learning process. According to parents, poor quality facilities in primary schools have undermined efforts to improve the quality of their children's academic performance.

5. Conclusion

The implementation of PKH has had a positive effect, especially in improving the academic performance of students from poor households, as measured by their enrolment (participation) rate, attendance, and subject grades attained. Since PKH aid was first implemented in 2007, there has been an increase in the junior high school student enrolment rate (13–15 years). However, at the elementary level, PKH has showed no significant relationship with the enrolment rate, which may be due to the fact that primary school enrolment was already high in Indonesia. With regards to attendance, PKH has been able to change the behaviour of elementary school students from poor households, who have become more diligent in attending school. Among junior high school students, PKH has shown no significant impact on school attendance because poor households are still in the stage of registering their children for school (i.e. enrolment). At the junior high school level, grades obtained in USAs in three subjects, namely Bahasa Indonesia, English, and Mathematics, show a significant increase that can be attributed to PKH. However, with respect to PKH's contribution to UN performance, the increase has been limited to mathematics.

Despite the above positive impacts, PKH has not helped alleviate some key problems that parents perceive as equally important in improving the quality of education service: high rates of teacher absenteeism and poor quality school facilities. These two factors are perceived as undermining the quality of students' academic performance. The public perceives these factors as causes for concern, and as such urgent resolution is required if the government is serious in its efforts to enhance students' academic performance.

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Notes

1. Oportunidades is a CCT program in Mexico. Fiszbein and Schady (2009, p. 3) explain that this programme started with approximately 300,000 beneficiary households in 1997, but now covers 5 million households. Previously called Progres, this programme was renamed Oportunidades in 2001.
2. Data is accessible from the Health Service and Education Survey (SPKP 1) 2007 collected by the Centre for Population and Policy Studies (CPPS) Universitas Gadjah Mada and financed by the World Bank.
<http://microdata.worldbank.org/index.php/catalog/1047>.
3. Data is accessible from the Health Service and Education Survey (SPKP 3) 2009 collected by the Centre for Population and Policy Studies (CPPS) Universitas Gadjah Mada and financed by the World Bank.
<http://microdata.worldbank.org/index.php/catalog/1049>.
4. Data is accessible from the Health Service and Education Survey (SPKP 4) 2013 collected by the Centre for Population and Policy Studies (CPPS) Universitas Gadjah Mada and financed by the National Team for the Acceleration of Poverty Reduction (TNP2K) (Centre for Population and Policy Studies, 2014).
5. Data from the Ministry of National Education (2012) indicates that there are 133,597 state elementary schools in Indonesia; meanwhile, there are 20,594 state junior high schools (Indonesia educational statistics in brief, 2011/2012).
6. Both indicators have been selected because they are able to describe students' level of knowledge achieved while studying at the school.
7. SD YPPGI Pirime is a name of elementary school in Keerom Regency, Papua Province.
8. The amount of special allowance is equal in amount to one month's salary.

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