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Government's Cash Transfers And School Dropout In Rural Areas

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Abstract:

Indonesia is committed to education but the Government of Indonesia still struggle with dropout problem at upper secondary school level, especially students from rural areas who dropping out of school before graduating. The dropout events can be explained through the demand for education. In 2008 Government of Indonesia introduced *Bantuan Siswa Miskin* program, the Cash Transfers for Poor Students (recently is known as *Kartu Indonesia Pintar)*, in order to reduce numbers of dropouts. The program is mainly to cover students' indirect costs and is implicitly used to increase students' demand for education. The objective of this study is to get better understanding on the impact of government's cash transfers on rural students' dropout at upper secondary schools in Central Java Province. Primary data was collected from rural areas in all regencies and cities. The likelihood to drop out is estimated using Probit regressions. There are two main findings in this study. First, the result shows that higher education expenditure is significantly increasing the probability of rural students to drop out. Second, it is evidence that government's cash transfers significantly diminish the rural students' likelihood of dropping out. Based on the findings, it is suggested the Government of Indonesia must reduce education costs and the government also should expand the number of cash transfers for poor rural students.

Keywords: Government's Cash Transfer, Dropout, Rural Area, Probit

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INTRODUCTION

Although the data show that there are declining trends of poverty rates in the last 20 years, the Government of Indonesia is still continuously fighting poverty, mainly in rural areas. In 1998, there were about 25.72% poor people in the rural areas and 21.92% poor people in urban areas of Indonesia and decreased to about 19% in the rural areas and in urban areas 11.6% of the population in 2008. The latest information shows that for September 2017, poor people were about 13.5% in rural areas and 7.3% in urban areas (Indonesian Central Statistics Agency, 2018). It is believed that one of the best ways to reduce poverty is more investment in education. Yet, one of the major challenges to improve educational sector is the problem of students from rural areas dropping out of school before graduating.

World Bank (2013) indicates that one of the enrolment problems for rural students is due to the distance from students' homes to their schools. The effect of low enrolment can be seen from Table 1. The average years of schooling for rural persons in Indonesia during 2011 to 2016 are always below the average years of schooling for urban persons. The data indicate that low enrolment and dropout may be the main contribution to the low average years of schooling in rural areas. However, the increase of average years of schooling in rural areas from 2011 to 2016 is about 10.8%, almost double increase in comparison to urban areas in a same period (5.5%).

In addition, World Bank (2013) reports that dropout students are mainly from rural areas. As seen in Table 2, in 2014 about 1.8% primary school students, 2.7% lower secondary school students and 2.1% upper secondary school students located in rural areas dropped out. In contrast, only about 0.9% primary school students, 1.8% lower secondary school students and 1.5% upper secondary school students located in urban areas dropped out (Ministry of Women Empowerment and Child Protection & Indonesian Central Statistics Agency, 2015).

Even though the data from Table 2 show that the highest dropout rate occurs at lower secondary level, other data from Ministry of Primary and *Secondary Education* and Culture of the Republic of Indonesia (2017) show that the highest dropout rate occurs at upper secondary school level. For example, in 2014/2015 Academic Year, the dropout rates from each level of school were 0.68% (primary school), 0.86% (lower secondary school), 1.61% (general upper secondary school) and 2.05% (Vocational Upper Secondary School) (see Table 3). It can be seen that dropout rates in upper secondary school in Indonesia (both in general and vocational) are higher than in primary school and in lower secondary school. So, it becomes clear that it is important for the Government of Indonesia to reduce the dropouts at the upper secondary school level.

Table 1. Average Years of Schooling for Population 15 Years of Age and Over by Location

Location	2011	2012	2013	2014	2015	2016
Urban	9.1	9.3	9.3	9.5	9.6	9.6
Rural	6.5	6.7	6.8	6.9	7.0	7.2

Source: Indonesian Central Statistics Agency (2016a)

Table 2. The Student Dropout Rate by Location in Indonesia, 2014

Type of Location	Gender	Level of School		
		Primary School and equivalent	Lower Secondary School and equivalent	Upper Secondary School and equivalent
Urban	Male	1.12	2.53	1.62
	Female	0.75	0.98	1.34
	Male + Female	0.95	1.76	1.48
Rural	Male	2.41	3.35	2.42
	Female	1.16	1.98	1.74
	Male + Female	1.81	2.68	2.08
Urban + Rural	Male	1.82	2.96	1.98
	Female	0.97	1.49	1.51
	Male + Female	1.41	2.24	1.74

Source: Ministry of Women Empowerment and Child Protection & Indonesian Central Statistics Agency (2015)

Table 3. Dropout Rates in Indonesia by Level and Type of School

Level and Type of School	Academic Year					
	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Primary School	0,90	1,32	1,11	0,68	0,26	0,15
Lower Secondary School	1,56	1,40	1,41	0,86	0,51	0,38
General Upper Secondary School	1,14	0,99	0,98	1,61	0,94	0,78
Vocational Upper Secondary School	3,10	2,98	3,07	2,05	1,80	1,55

Source: Ministry of Primary and *Secondary Education* and Culture of the Republic of Indonesia (2017)

One theory relating to the school dropout is the demand for education. Belfield (2000) argues that the discussion about the demand for education is in line with the discussion about demand for consumption goods. The demand for education can also be regarded as a relationship between the price of education (i.e. tuition fees, transportation cost, uniform costs, books costs, etc.) and the willingness to enrol in education. Family low financial resource is mentioned as a one of the important factors that influence low demand for education. The demand for education reduces substantially for poor people as mostly they are unable to "buy" education due to the high price of education.

Due to limited financial resources, poor parents face trade-off between consumption and investment in education. Poor parents face higher financial allocation to education and if they increase the demand for education, it decreases family consumption. Parents with low financial resources sometimes do not have enough money to pay education expenditures. Indeed, poverty has an immense impact on the demand for education because there are high education expenses, which is not only about tuition fees, but also other direct expenses such as extracurricular costs, transportation and school supplies. In the end, poor parents have no choice but to stop sending their children to school. These expenses makes

poor children (and their parents) reduce their access to education, even if they recognise the benefits of schooling, and at the end created school absence, dropout and entry to child labour (Human Rights Watch, 2005).

The low demand for education for poor students also occurs if they have a big family's members. If a student is the oldest sibling in a family, there is a probability that older siblings drop out of school to give an opportunity to their younger siblings to enter education. In this case, demand for education for older sibling in a poor family is lower and for younger sibling is higher.

In order to increase the demand for education for poor people, the government created financial supports to poor students. The Indonesian government launched the grant known as the Cash Transfers for Poor Students (in Indonesian: *Bantuan Siswa Miskin*—BSM, know is known as *Kartu Indonesia Pintar* - KIP) Program In 2008. This program supports all education levels (from primary school level up to university level). This program is mainly aimed to overcome supply side and demand side barriers to education by subsidized students' indirect educational expenditure (for example transportation costs). Overall, it is important to improve education level for poor people (Sriyana, 2018).

There are many success stories about cash transfers in developing countries. For example, In Latin America, a study by Glewwe and Kassouf (2012) shows that a program in Brazil named *Bolsa Escola/Familia* successfully increased enrolment rates and grade promotion rates. Another program in Mexico named *Programa Nacional de Educacion, Salud y Alimentacion* or *PROGRESA* (now known as *Oportunidades*) improved the enrolment rate among poor children (Schultz, 2004). A study by Garcia and Hill (2010) concludes that a cash transfer program in Colombia, *Familias en Acción,* has improved school attainment for 7 to 12 years' students in rural areas of Colombia. Another study by Glewwe and Olinto (2004) shows that *The Programa de Asignacion Familiar* (PRAF) II, a cash transfer program, has decreases the dropout rate in Honduras.

The purpose of this study is to examine the impact of government's cash transfers for poor students, on the probability of a rural student to complete or drop out of upper secondary school in Central Java Province. The main reason to choose this location was because the low rate of average years of schooling in this area (see table 4). Historically, the average years of schooling in Central Java Province is the lowest one than other provinces on Java Island. Therefore, it is important to conduct a research about school dropout in Central Java Province. Studying dropout in Central Java Province has two main aims: (1) this study aims to save students from being dropout students, and (2) in long run, this study is expected to have additional impact on the increase of the average years of schooling in Central Java Province. When society has higher years of schooling, there will be some economic impact. The probability go get better job is also higher and in the end, the society will have better life and improve society's welfare.s

Many previous studies have examined the impact of government's cash transfers on the likelihood of a student to drop out but only few researches have been carried out to investigate whether government's cash transfers have significantly reduce the

Table 4. Average Years of Schooling for Population 15 Years of Age and Over in Java Island, 2011-2016*)

Province	2011	2012	2013	2015	2016
Capital Special Region of Jakarta	10.4	10.6	11.0	10.9	10.9
West Java	7.9	8.1	8.1	8.3	8.4
Central Java	**7.2**	**7.4**	**7.4**	**7.6**	**7.7**
Special Region of Yogyakarta	9.1	9.2	9.3	9.6	9.6
East Java	7.3	7.5	7.5	7.7	7.8
Banten	8.4	8.6	8.6	8.7	8.8
Indonesia	7.9	8.1	8.1	8.3	8.4

Note: *) Except 2014
Source: Compiled from Indonesian Central Statistics Agency (2011, 2013a, 2013b, 2016b)

probability of rural students to drop out or not. The finding of the research indicates that government's cash transfer has successfully reduced the probability of rural students in Central Java Province to drop out. The paper is organised as follows. Section 2 briefly reviews the research methods used in this study. Section 3 presents the results and discussion and Section 4 contains conclusion.

RESEARCH METHOD

Primary data was collected from all regencies and cities in Central Java Province. Two differents questionnaires were distributed to former upper secondary school students (both who dropped out of school and graduated from school) who live in rural areas and their parents/guardians. In this study, the respondents participated voluntarily and no one was forced to fill the questionnaires. Respondents' responses to the questionnaires were tabulated and coded and then inserted into the Stata Software. 229 former upper secondary school students who live in rural areas and 458 parents/guardians participated in the study. The likelihood to drop out is estimated using Probit regressions. Initially, 38 independent variables are used in this study, including our focus of study, i.e. government's cash transfers variable (see appendix for list of variables).

The model specification in an empirical model as follow:

$$D_i = \alpha_0 + \alpha_1 X_{1i} + \alpha_2 X_{2i} + \alpha_3 X_{4i} + \ldots + \alpha_{38} X_{38i} + e_i \quad (1)$$

Where:

D_i = 1 if individual i is a dropout, and 0 otherwise (the dependent variable).
α_1; α_2; α_3 up to α_{38} = Parameters to be estimated.
e_i = Error term.
i = 1, 2, ..., N.

Probit regression result indicates that there are violations in Goodness-of-fit (GOF) tests, and therefore two interaction effects are added in this study. So, the model specification is modified as follow:

$$D_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{4i} + \ldots + \beta_{38} X_{38i} + \beta_{39} X_{1i} X_{16i} + \beta_{40} X_{1i} X_{17i} + \mu_i \quad (2)$$

Where:

D_i = 1 if individual i is a dropout, and 0 otherwise (the dependent variable).
β_1; β_2; β_3 up to β_{40} = Parameters to be estimated.

$X_{1i}X_{16i}$ = interaction between *Female* and *Sibling rank*
$X_{1i}X_{17i}$ = interaction between *Female* and *Non-working mother*
μ_i = Error term.
i = 1, 2, ..., N.

Robust standard errors are employed in the Probit regression models 1 and 2 to reduce heteroscedasticity problems. It is important to note that the interpretation of Probit coefficients is not as straightforward as in the case of ordinary least square (OLS) regression coefficients. Therefore this study employs average marginal effects for correct interpretation of the Probit models[1].

After getting the Probit output, it is important to check the overall significance of the estimated coefficients of the independent variables in the model, similar to F-test of OLS Regression. Two tests are conducted in this study. This study conducts Likelihood Ratio (LR) tests and Wald Test. In this study, Goodness-of-fit (GOF) tests are an important part to evaluate Probit regressions. It evaluates whether the models fit the data or not. This study uses McFadden's R^2, Pearson GOF test, Hosmer-Lemeshow GOF test, Classification table, Area under Receiver Operating Characteristic (ROC) Curve, Link Test, Akaike's Infomation Criterion (AIC) and Bayesian Information Criterion (BIC). Method

RESULT AND DISCUSSION

Before discussing the results, it is important to check the overall significance of the models. For the equation 1, LR test and Wald test are statistically significant at the 1% level, which indicates that at least one or more coefficients of independent variables are different from zero. GOF tests are employed to check whether the models fit the data or not. McFadden's R^2 *is* 0.55, a good indicator of the model fit. Pearson GOF test provides small *p*-values and is statistically significant at 1%. The result indicates that the model does not fit the data well. Hosmes-Lemeshow GOF test provide large *p*-values so it is not statistically significant. The overall rate of correct classification is 90.8%. The area under the ROC Curve is 0.94 and the model is considered to have an outstanding discrimination if ROC ≥ 0.90 (Hosmer, Lemeshow, and Sturdivant, 2013). One measure of GOF (Pearson GOF test) indicates that the model does not fit the data well and it cannot be used for next step.

The Link test is a test to check whether or not there is a specification error. There are two conditions in the link test. The first condition is that the linear predicted value (*_hat*) in the model must be statistically significant and the second condition is the linear predicted value squared (*_hatsq*) must be not statistically significant. If *_hatsq* is statistically significant, so there is a specification error in the model. It is an indicator that the independent variables are specified inaccurately (StataCorp, 2015). The Link test shows that both linear predicted value (*_hat*) and the linear predicted values squared (*_hatsq*) are statistically significant for equation 1. Therefore, the model has specification error problem and it cannot be used for next step.

As indicated by the Link test, there is a specification error in the model for equation 1. So, the model is added with two interaction effects as seen in equation 2. The first interaction effect is the interaction

[1] Marginal effect is a technique to calculate the effect on the conditional means of *y* of a change in one of the independent variables, x_j. Please see Williams (2012) for the information about the calculation of average marginal effects.

between *female* and *sibling rank* and the second interaction effect is the interaction between *female* and *non-working mother*. The background of using gender variable in the interaction effect is because the gender issues in Indonesia. These interaction effects may explain why there is a barrier for female students in rural areas to access education.

Two interaction effects are added in the model and as a result, the regression model produces better result now, indicating that the interaction effects have successfully captures the omitted variable bias (see Table 5). Table 5 shows that the LR test provides small *p*-values and is statistically significant at the 1% level, and the result is supported by Wald test. Wald test also indicates that model is statistically significant at the 1% level. This concludes that at least one or more coefficients of independent variables are different from zero.

Table 5 also provides McFadden's R^2. We can compare McFadden's R^2*s* with and without interaction effects. McFadden's R^2 without interaction effects is about 0.51. With additional two interaction effects in Table 5, the McFadden's R^2 is 0.61. It is concluded that when two interaction effects are added to the model, McFadden's R^2 increases. Pearson GOF test shows that the *p*-value is greater than 0.10, which indicates the model fits the data well. The overall rate of correct classification is 92.6%, increase from previous model without interaction effects. The area under the ROC Curve is 0.92 in model without interaction effects and slightly increases to 0.94 in model with interaction effects. But still, the model with interaction effects is classified into outstanding discrimination because ROC is greater than 0.90. All tests of GOF suggest that the Probit model explain the data well.

As expected, Link test shows that the linear predicted value (*_hat*) in the model is statistically significant and the linear predicted value squared (*_hatsq*) is not statistically significant. The results of the Link tests indicate that model with interaction effects has no specification error problems. In comparison with model without interaction effects, model with interaction effects is also a preferred model because it has the smallest AIC and BIC value in comparison to Model 1 without interaction effects. Overall, the additional interaction effects provide better result, showing that the additional independent variables in a form of interaction effects are effective.

Table 5. Coefficients of the Probit Regression with Interaction Effects

Variables	Coefficients
Constant	51.73**
Gender (Female = 1, Male = 0)	0.97
Age at first entry	0.53***
Working experiences (Yes = 1, No = 0)	0.17
Perception of education (Good = 1, Bad = 0)	-3.32***
Repeat a grade (Ever repeated a grade = 1, No = 0)	-0.32
Lower Secondary School's national final examination grade:	
Low (Between 5.01 – 7.00)	0.38
Average (Between 7.01 – 8.50)	Reference
High (Above 8.50)	-2.06***

Variables	Coefficients
Number of changing school since primary school	0.57**
Deviant behaviour (no deviant behaviour = 0, up to six deviant behaviours = 6)	1.18***
Health (poor health = 0, up to excellent health = 4)	0.24
Lowest socioeconomic status (Yes = 1, No = 0)	0.47
Household head with at least university education (Yes = 1, No = 0)	-2.35**
Father's/male guardian's academic supports (No support = 0, Max support = 15)	0.11*
Mother's/female guardian's academic supports (No support = 0, Max support = 15)	-0.11
Family size	0.12
Sibling rank in family (1 = first born, 2 = second born, … 10 = 10th born)	-0.24
Nonworking mother (Not working =1, Working = 0)	-2.74***
Parents are divorced (Yes = 1, No = 0)	-0.10
Number of siblings dropping out	1.15***
Helping family with household chores (Yes = 1, No = 0)	0.38
Helping family with daily business/work (Yes = 1, No = 0)	-1.14**
Father's participation in household decision making (No participation = 0, Max participation = 20)	-0.11***
Mother's participation in household decision making (No participation = 0, Max participation = 20)	-0.04
School location (Urban = 1, Rural = 0)	0.29
Relation with teacher:	
Not good	-0.56
Neutral	Reference
Good	-0.61
Bullied by peers and/or teachers (Yes = 1, No = 0)	0.61
School's curriculum:	
General	Reference
Vocational	0.003
Madrasah (Islamic Religious School)	0.93*
School's type (Private school = 1, Public school = 0)	-0.43
School distance more than 10 km (Yes = 1, No = 0)	-0.32
Log school's expenditures	0.48**
Teachers' quality (Good = 1, Not good = 0)	-1.02**
Receive government's cash transfer to poor students (Yes = 1, No = 0)	-1.96***
Part of Central Java Province:	
North	Reference
Central	-0.99***
South	-2.05***
Log real minimum wages	-6.76**
Unemployment rate	-0.42***
Interaction Effects	
Gender (Female = 1) * Sibling rank	-0.41
Gender (Female = 1) * Non-working mother	3.25***

Variables	Coefficients
Number of observation	229
Likelihood Ratio (LR)	146.07***
Wald χ^2	114.20***
McFadden's R^2	0.61
Pearson goodness-of-fit χ^2	130.12
Hosmer-Lemeshow goodness-of-fit χ^2, group (10)	9.48
Percentage of Correctly Classified	92.58%
Area under ROC Curve	0.96
Link test:	
_hat	1.11***
_hatsq	0.09
Log Pseudolikelihood	-47.15
Akaike Information Criterion	176.29
Bayesian Information Criterion	317.07

Notes: Dependent Variable = Student dropout from Upper Secondary School (Dropout = 1, Graduated = 0); ***$p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$.

Table 5 presents the estimated coefficients from the Probit model. As mentioned before, the interpretation of Probit coefficients is not as straightforward as in the case of OLS regression coefficients. The discussion about the interpretation of interacted variables' coefficients is presented in the next part. This part only discusses the positive or negative signs of the coefficients of Probit regressions.

First, Table 6 shows that *gender* variable is not statistically significant. It can be inferred that there is no different being a female student than being a male student on the odds of dropping out. However, since the *gender* variable interacts with other variables, the insignificant variable may be due to the interaction with two other variables. From Probit regression there is evidence that rural students' higher age at first entry to upper secondary school is also significantly more likely to drop out. This result is consistent with previous studies (for example Terry, 2008 and Bergeron, Chouinard, and Janosz, 2011). In rural areas, some parents did not send their children to school when they reached 7 years old (the official age to enter primary school). Therefore, some students have older age than other students and they sometimes cannot engage with younger students in the classroom. Rural students' good perceptions about education are statistically significant reducing the odds to drop out, supporting study by Bergeron et al. (2011). In addition, rural students who getting high grades at the previous level of schooling also contributes to lower log odds of dropping out, compared to students who get average grades. Rural students with more deviant behaviour significantly increased the log odds of dropping out.

Not surprisingly, this study does not find any evidence that socioeconomic status (SES) is related to dropout decision. In this study, SES is used as a proxy for poverty. This result is not supporting previous studies (for example: Rumberger & Thomas, 2000; and Traag & van der Velden, 2011). The reason mainly because the respondents of the study in rural areas have similar economic status, i.e. low economic status. There is evidence that household heads with at least university degree-level education are lowering the probability of rural students to drop out. This study supports previous study by Terry (2008) and Traag and van der Velden (2011).

Educated parents believe that investment in education is important for their children therefore they will not allow children to drop out. As the estimates indicate, having more siblings who dropped out of school can contribute to dropout. Rural students who have dropped out siblings are likely seeing them as a role model and they may think that it is okay to leave school as well. This study does not find any evidence that *family size* variable and *divorced parents* variable is associated with the log odds of dropping out.

Surprisingly, this study found that rural students who study in Islamic religious schools have higher probability to drop out in comparison to their counterparts who study in general schools. One of the reasons because religious schools, especially schools with boarding house, have stricter regulations than general schools. This may create uncomforted environment for new students who are not ready to face the new environment. There is also evidence that higher school's expenditures have a higher impact on dropout. The result is not surprising at all because as it is mentioned in introduction section that education costs are the main problem for poor families to send and to keep their children in schools. This finding indicates that it is important to reduce the education costs for rural students. This study does not find any evidence that *bullied by peers and/or teachers experience* variable and *distance* variable is associated with the log odds of dropping out.

As the main focus of the research, finding indicates that government's cash transfers to poor students significantly reduce the probability to drop out as seen in Table 5. This result does not support previous study about government's financial assistance for students in Indonesia by Sparrow (2007). The result is different because Sparrow's study examined the impact of government's financial assistance during the 1998 economic crisis and he his study shows that that there is no evidence that government's financial assistance successfully reduce student dropout at the upper secondary school level. Sparrow (2007) concludes that the insignificant result occurs because the distribution of the government's financial assistance at upper secondary school during the 1998 crisis was not totally intended to poor students only. It was distributed among all households. This study also improves the previous study by Cameron (2007). In her study, Cameron (2007) can not find any effect of government's financial assistance during the 1998 economic crisis on student dropout at the upper secondary school level because small sample size to create fixed effects. This result shows the importance of government's financial assistance for poor students to reduce the numbers of dropout in rural areas. The next part is discussing the magnitude of government's financial assistance. This study does not find any evidence that *bullied by peers and/or teachers experience* variable and *distance* variable is associated with the log odds of dropping out.

As mentioned before, the interpretation of Probit coefficients is not as straightforward as in OLS regression coefficients. Therefore, average marginal effects are employed for correct interpretation of the Probit models. First, with interaction effects now added in the model, the gender variable is statistically significant, indicating that the interaction effects capture the omitted variable bias, but still, we cannot interpret the result as the variable interacts with other variables.

Table 6. Average Marginal Effects from Probit Regressions

Variables	Coefficients
Gender (Female = 1, Male = 0)	0.08**
Age at first entry	0.06
Working experiences (Yes = 1, No = 0)	0.02
Perception of education (Good = 1, Bad = 0)	-0.46***
Repeat a grade (Ever repeated a grade = 1, No = 0)	-0.03
Lower Secondary School's national final examination grade:	
Low (Between 5.01 – 7.00)	0.04
Average (Between 7.01 – 8.50)	Reference
High (Above 8.50)	-0.15***
Number of changing school since primary school	0.07**
Deviant behaviour (no deviant behaviour = 0, up to six deviant behaviours = 6)	0.14***
Health (poor health = 0, up to excellent health = 4)	0.03
Lowest socioeconomic status (Yes = 1, No = 0)	0.06
Household head with at least university education (Yes = 1, No = 0)	-0.17***
Father's/male guardian's academic supports (No support = 0, Max support = 15)	0.01*
Mother's/female guardian's academic supports (No support = 0, Max support = 15)	-0.01
Family size	0.01
Sibling rank in family (1 = first born, 2 = second born, … 10 = 10th born)	-0.06***
Nonworking mother (Not working =1, Working = 0)	-0.05*
Parents are divorced (Yes = 1, No = 0)	-0.01
Number of siblings dropping out	0.13***
Helping family with household chores (Yes = 1, No = 0)	0.04
Helping family with daily business/work (Yes = 1, No = 0)	-0.15**
Father's participation in household decision making (No participation = 0, Max participation = 20)	-0.01***
Mother's participation in household decision making (No participation = 0, Max participation = 20)	-0.01
School location (Urban = 1, Rural = 0)	0.03
Relation with teacher:	
Not good	-0.06
Neutral	Reference
Good	-0.07
Bullied by peers and/or teachers (Yes = 1, No = 0)	0.08
School's curriculum:	
General	Reference
Vocational	0.0003
Madrasah (Islamic Religious School)	0.12*
School's type (Private school = 1, Public school = 0)	-0.05
School distance more than 10 km (Yes = 1, No = 0)	-0.04
Log school's expenditures	0.05**
Teachers' quality (Good = 1, Not good = 0)	-0.12***
Receive government's cash transfer to poor students (Yes = 1, No = 0)	-0.20***

Variables	Coefficients
Part of Central Java Province:	
North	Reference
Central	-0.11***
South	-0.16***
Log real minimum wages	-0.78***
Unemployment rate	-0.05***

It can be seen from Table 6 that, on average, rural students who have a good perception of education about 46 percentage points less likely to drop out than rural students who have not good perception of education. Rural students who have a high academic record at lower secondary school are 15 percentage points less likely to drop out than rural students who have an average academic record at lower secondary school. Finally, the risk of dropout for rural students increases 14 percentage points for every time they involve with new deviant behaviour.

Rural students who have household heads that hold at least a university education is associated with lower probability to drop out by about 17 percentage points compared to students who have household heads who do not hold a university degree. It can be seen from the average marginal effect that the probability of dropping out for rural students rises about 13 percentage points for every additional sibling who dropped out of school. From school characteristics, it can be seen that rural students are about 12 percentage points more likely to drop out in comparison to rural students from general schools. The risk of dropout for rural students increases about five percentage points for every one percentage increase in school's expenditure.

Lastly, for our focus of the study shows that rural students who received government's cash transfers for poor students are about a 20 percentage point lower probability of dropping out in comparison to rural students who did not receive government's cash transfers. The 20 percentage different indicates that the cash transfers are important for poor rural students. Poor rural students who receive financial support can focus more on their study and their parents have little worry about paying the education expenditures. Overall, it can be said that the government policy has successfully reduced dropout. Therefore, based on the result, it is suggested that the government should increase the recipients of the cash transfers. However, there are still some problems about government's cash transfer. Firstly, the cash transfers program cannot cover all students from poor families because government's budget limitation. A survey by Larasati and Howell (2014) indicates that the program only covered 60 per cent of poor students in 2014. Secondly, poor students still cannot rely 100% on the cash transfer because it is unable to cover all the education expenses. Thirdly, cash transfer recipients are more likely to come from non poor families. The limited number of cash transfers' recipients, and the limited amount of cash transfers and the problem of selecting recipients reduce the success story of the government's cash transfers program. Therefore, it is important for government to protect poor rural students from dropout by not only to increase the recipients of the benefit from rural students but also increase the amount of cash transfers.

CONCLUSION

There are two important findings from this study relating to poor rural students. Firstly, the result shows that higher school's expenditures push rural students to drop out. Secondly, research finding from Probit regressions suggest that government's cash transfers significantly reduce the probability of dropout in rural areas. These two results are statistically significant and they are also correlating each other. Government of Indonesia must see the high education costs are the main problem for rural students and their parents and one of the best ways to reduce education costs is by subsidize it with the government's cash transfer to poor rural students.

So, based on these two research findings, it is important for the Government of Indonesia to reduce education costs and improve the cash transfer program to guarantee that no rural poor students are left behind. The main aim of this study is to make sure that no rural students at upper secondary school dropping out school, so they can fully prepare themselves to face the real world and by having a better education, they will have a better life in the end. It is believed that having a better education is the best way to educe poverty in the long run. Furthermore, the correct strategies and policies based on the findings will create significant economic impact. For individuals, it will improve individuals' welfare and then reduce poor families. In macroeconomic level, education is now seen as the important policy to increase growth in both developed and less developed countries (Dearden, Emmerson, Frayne, & Meghir, 2009). For nations, better education is important because it will increase the nation's growth and development in the long run. Aside the limitations of the study, the empirical result in this study still provide a new understanding of upper secondary school dropout in Central Java Province, especially in rural areas.

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Appendix 1.

List of independent variables

X_1 = Gender (Female = 1, Male = 0)

X_2 = Age at first entry

X_3 = Working experiences (Yes = 1, No = 0)

X_4 = Perception of education (Good = 1, Bad = 0)

X_5 = Repeat a grade (Ever repeated a grade = 1, No = 0)

X_6 = Low lower Secondary School's national final examination grade (Between 5.01 – 7.00)

X_7 = High lower Secondary School's national final examination grade (Above 8.50)

X_8 = Number of changing school since primary school

X_9 = Deviant behaviour (no deviant behaviour = 0, up to six deviant behaviours = 6)

X_{10} = Health (poor health = 0, up to excellent health = 4)

X_{10} = Lowest socioeconomic status (Yes = 1, No = 0)

X_{12} = Household head with at least university education (Yes = 1, No = 0)

X_{13} = Father's/male guardian's academic supports (No support = 0, Max support = 15)

X_{14} = Mother's/female guardian's academic supports (No support = 0, Max support = 15)

X_{15} = Family size

X_{16} = Sibling rank in family (1 = first born, 2 = second born, … 10 = 10th born)

X_{17} = Nonworking mother (Not working =1, Working = 0)

X_{18} = Parents are divorced (Yes = 1, No = 0)

X_{19} = Number of siblings dropping out

X_{20} = Helping family with household chores (Yes = 1, No = 0)

X_{21} = Helping family with daily business/work (Yes = 1, No = 0)

X_{22} = Father's participation in household decision making (No participation = 0, Max participation = 20)

X_{23} = Mother's participation in household decision making (No participation = 0, Max participation = 20)

X_{24} = School location (Urban = 1, Rural = 0)

X_{25} = Not good Relation with teacher

X_{26} = Good Relation with teacher

X_{27} = Bullied by peers and/or teachers (Yes = 1, No = 0)

X_{28} = School's curriculum: Vocational

X_{29} = School's curriculum: Madrasah (Islamic Religious School)

X_{30} = School's type (Private school = 1, Public school = 0)

X_{31} = School distance more than 10 km (Yes = 1, No = 0)

X_{32} = Log school's expenditures

X_{33} = Teachers' quality (Good = 1, Not good = 0)

X_{34} = Receive government's cash transfer to poor students (Yes = 1, No = 0)

X_{35} = Part of Central Java Province: Central

X_{36} = Part of Central Java Province: South

X_{37} = Log real minimum wages

X_{38} = Unemployment rate

X_{39} = Gender (Female = 1) * Sibling rank

X_{40} = Gender (Female = 1) * Non-working mother