INEQUALITY ANALYSIS OF EDUCATION AND ECONOMIC DEVELOPMENT: EDUCATION MANAGEMENT IN INDONESIA

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ABSTRACT

In the end of 2015 is the time for Indonesia to enter the ASEAN Economic Community (AEC) that will integrate with 10 Southeast Asia countries. AEC itself is expected can bring Indonesian economy to be better by expanding the market share. The applicability of AEC not only affects the free trade sectors, but also makes a various workers from ASEAN countries can compete to fill a variety sectors across the ASEAN countries. To be able to compete with other ASEAN countries, Indonesia must have qualified human resources. One of the ways that could be done is through the development of education in Indonesia in order to make high quality human resources. Meanwhile there are still a lot of inequality in Indonesia, both educational inequality and economic inequality itself. This study aims to determine the inequality of education and economic development within the framework of the preparation of AEC. The research methods used are descriptive statistics and statistical inference to know the relationships between the variables. The variables are Gross Enrolment Ratio (GER) and Net Enrolment Ratio (NER), Dropout Rate, Natioal Exam Score, and the Literacy Rate, on the other variables: School Operational Assistance, government expenditure in education sector, Specific Allocation Funds of education, deconcentration fund, GDRP per capita, School-Pupil Ratio, Teacher-Pupil Ratio, and the Teachers' Competency Test. The study was conducted in 33 provinces in Indonesia in 2012-2013. From the results of the estimation using Eviews 7 software, are known that GER inequality, Dropout and Literacy rate inequality variable influenced by economic inequality and education inequality in different directions.

Keywords : *education inequality . economic inequality. Grows enrollment ratio(GER), net enrollment ratio (NER), dropout rate(DR), National Exam scor (NES), Literacy Rate (LR)*

Indonesia is one of the members of ASEAN Economic Community (AEC), which will be implemented by the end of 2015. The impacts of the enactment of AEC are the creation of a free market in the field of capital, goods and services, and labour. Thus, Indonesia will not only compete with domestic labour, but also to from Southeast Asia countries. When the AEC applied, the Indonesian people are also required to be creative and has a high quality in order to 'survive' and able to compete with ASEAN countries. However, in reality, Indonesia still not ready to face the AEC, which will be implemented within a few months. Many workers in Indonesia need to be equipped with education and training to improve their skills and their quality. Given the importance of the role of education to produce qualified human resources, the government needs to put the development of the education sector as a priority. Various efforts have been done by the government in order to support educational development such as construction of primary schools up to the inland, compulsory education program, provide assistance in the form of BOS and BOP, increase the rate of graduation requirements, and tighten the accreditation of schools to improve the qualification of human resources. However, it appears that such efforts have not shown satisfactory results yet.

The real problem faced by Indonesia is unequal education to the entire archipelago. In the era of development that is being intensely, educational inequality still found by various regions of Indonesia. Many school-age children cannot get an education thus resulting high dropout rate. Meanwhile, the Ministry of Education and Culture reports revealed that every minute there are four children who are forced to drop out from the school. The education budget has reached Rp 345.3 trillion in 2013 seems have not been able to solve the problems of education in Indonesia. Ironically, the government through Kemendikbud declares the quality of education in Indonesia is very far behind the developing countries in the scope of ASEAN. The survey is based Political and Economic Risk Consultant (PERC), the quality of education in Indonesia was ranked 12th of 12 countries in Asia, and is under Vietnam.

The low quality of education in Indonesia cannot be separated from the low quality of infrastructure and facilities of the school. Many buildings were damaged, do not support the instructional media, lack of library collections, inadequate information technology, also the quality of teachers is still low. As an educator, teacher is the key to improve the quality of education. Overall,

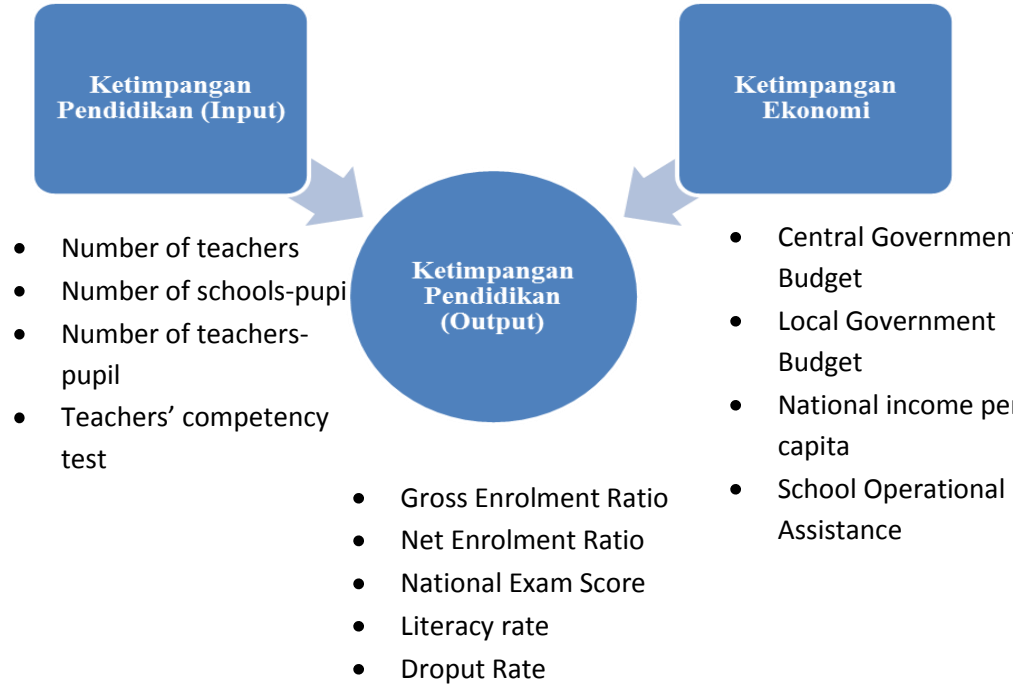
the quality of education starting from the quality of learning which teachers did. According to data from Ministry of National Education in 2010, there were more than 54% of teachers having standards of qualification that need to be improved and 13.19% of school buildings need to be repaired.

National education should be able to ensure equalisation to improve the quality of Indonesian people in order to have a competitive edge in facing the challenges of globalisation, which will be the start of an era marked by the AEC. Many things need to be fixed by Indonesia to support the quality improvement and quality of education in order to be able to produce competent human resources. This study aims to analyse the educational inequality and economic development inequality of Indonesia in 2012-2013. Inequality in Indonesia can be seen from several indicators, such as the Gross Enrolment Ratio (GER), Net Enrolment Ratio (NER), dropout rate, National Exam score, literacy rate, the number of schools/teachers, the ratio teacher/student, the value of teachers' competency test. Along with it, inequality also occurs in the economic indicators of Local Government Budget, Central Government Budget, national income per capita, School Operational Assistance, and the incurred costs by the household for education.

An increased of education expenditure in every year was not offset by the results achieved of education yet. The achievements of the results in the education sector are using measurement through Gross Enrolment Ratio (GER), Net Enrolment Ratio (NER), dropout rate, and National Exam score.

Various studies have been conducted in various countries including Indonesia and providing different results. Based on research conducted by Ono Wiharna (2007), Abdelbaki (2012), Lin (2006), Bustomi (2012), Grace Adhierianto (2014), Maghfiroh Yenny (2008) and saifudin (2014) has inspired the author to analyse the educational inequality and inequality of economic development of Indonesia in 2012-2013. This study differs from previous studies in which researchers would like to see in terms of inequality of each variable to be observed.

Figure 1
The Theoretical Framework



Based on theories and previous research studies, the hypothesis in this study are:

1. Inequality variables of
2. GER, NER, dropout rate, and literacy rate influenced by economic inequality, school-teachers ratio inequality, and teacher-pupil ratio inequality.
3. Inequality variables of National Exam score influenced by economic inequality and teachers' competency test score in Indonesia.

METHOD

This study uses educational inequality variables (output) as the dependent variable (Y), where educational inequality uses data GER, NER, National Exam score, literacy rate, dropout rate. GDRP per capita, and government expenditure in education sector, Specific Allocation Funds of education, deconcentration fund, and School Operational Assistance as the independent variable (X), and education inequality (as input) namely: School-pupil ratio, teacher-pupil ratio, grades teachers' competency test score. The data in this study came from the Ministry of Finance, Ministry of Education and Culture, the Central Bureau of Statistics, and several other sources that can support the writing of this study.

Hypothesis testing do by the panel data regression through analytical techniques common effect, fixed effect model (FEM) and the random effects model (REM). To choose the right model, Widarjono (in Zulyanto 2010) advise some tests that need to be done. First, redundant fixed effects tests to determine whether the panel data regression with fixed effect had better than the OLS regression model. Second, Hausman test to determine the best technique of analysis between FEM and REM in the regression model. The model used in this study as follows:

$GP = \beta_0 + \beta_1 LnX1 +$

GP = Educational inequality (APM, APK, APTS, AMH, UN)
X1X2… = Independent variables (BOS, GE, DAK, Dekon,YC, RSS, RMG)
Intercept
$\beta_1\beta_2$ ... = Partial Regression coefficients for independent variables
... ε = Error/disturbance (confounding variables)
Ln = Natural logarithm

DISCUSSION

1. The Results of Equation Dropout Rate Inequality

The regression equation with the dependent variable of Dropout Rate (APTS) inequality against BOS inequality variable, GE inequality, DAK inequality, Dekon inequality, YC inequality, RSS and RMG inequality has a coefficient of determination (R2) of 0.999798. It means, the seventh variable in the equation model was able to explain the diversity in the APTS variable of 99.9798 percent. Besides the values obtained Fcount 8203.520 while the Ftable value is 2.172141. These results indicate that Fcount (8203.520) > Ftable (2.172141). So H0 is rejected, then all of the independent variables significantly influence the dependent variables simultaneously. The magnitude of the estimated regression coefficients

Table 1
The Results of Equation Dropout Rate Inequality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.502508	0.244562	-2.054724	0.0505
SOA?	-0.403605	0.195326	-2.066312	0.0493
GE?	-0.284331	0.220371	-1.290235	0.2088
SAF?	-0.017675	0.139446	-0.126751	0.9002
DF?	0.915925	0.216324	4.234051	0.0003
YC?	4.224715	1.780502	2.372767	0.0257
SPR?	0.039603	0.069725	0.567989	0.5751
TPR?	-0.046029	0.045166	-1.019110	0.3179
R-squared	0.999920	Mean dependent var		0.142125
Adjusted R-squared	0.999798	S.D. dependent var		0.075979

S.E. of regression	0.001080	Akaike info criterion	-10.54482
Sum squared resid	2.92E-05	Schwarz criterion	-9.229251
Log likelihood	376.4343	Hannan-Quinn criter.	-10.02655
F-statistic	8203.520	Durbin-Watson stat	3.878788
Prob(F-statistic)	0.000000		

Source: Data Processed by Eviews 7.0

in the equation APTS presented in Table 1:

Based on the results of multiple regressions can be obtained the equation as follows:

Y= -0.502508−0.403605BOS−0,4284311GE− 0,017675 DAK + 0,915925DEKONT4,224715YC+ 0,039603RSS-0,046029RMG

The results of the regression equation has a constants value of -0.502508 so that it can be interpreted that when BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality in a minimum conditions, then dropout rate inequality would show negative numbers of 0.502508 percent.

2. The Results of Equation Literacy Rate Inequality

The regression equation with the dependent variable literacy rate inequality to BOS inequality variable, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality has a coefficient of determination (R2) of 0.990021. It means, the seventh variable in the equation model was able to explain the diversity in literacy rate variables of 99.0021 percent. Besides the values obtained Fcount 165.4737 while the Ftable value is 2.172141. These results indicate that Fcount (165.4737) > Ftable (2.172141). So H0 is rejected, then all of the independent variables significantly influence the dependent variables simultaneously. The magnitude of the estimated regression coefficients in the equation of literacy rate are presented in Table 2:

Table 2
The Results of Equation Literacy Rate Inequality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.615713	0.089684	-6.865343	0.0000
SOA?	0.004355	0.071629	0.060798	0.9520
GE?	-0.231094	0.080813	-2.859611	0.0084
SAF?	-0.041320	0.051137	-0.808038	0.4267
DF?	0.101607	0.079329	1.280834	0.2120
YC?	4.437223	0.652933	6.795830	0.0000
SPR?	0.012389	0.025569	0.484518	0.6322
TPR?	-0.004471	0.016563	-0.269940	0.7894
R-squared	0.996040	Mean dependent var		0.005671
Adjusted R-squared	0.990021	S.D. dependent var		0.003965
S.E. of regression	0.000396	Akaike info criterion		-12.55117
Sum squared resid	3.92E-06	Schwarz criterion		-11.23560
Log likelihood	440.6375	Hannan-Quinn criter.		-12.03290
F-statistic	165.4737	Durbin-Watson stat		3.878788
Prob(F-statistic)	0.000000			

Source: Data Processed by Eviews 7.0

Based on the results of multiple regressions can be obtained the equation as follows:

Y = -0.615713 + 0.004355BOS - 0.231094GE - 0.041320DAK + 0.101607DEKON + 4,437223YC + 0,012389RSS - 0.004471RMG

The results of regression equation has a constant value of -0.615713 so that it can be interpreted that when BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality in a minimum conditions, then literacy rate inequality would show negative numbers of 0.615713 percent.

4. The Results of Equation Gross Enrolment Ratio Inequality

Table 3 shows the estimated regression equation with the dependent variable gross enrolment ratio inequality for independent variables BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality. From the data processing obtained the coefficient of determination (R2) of 0.925532. It means, the seventh independent variables in the equation model were able to explain the diversity in GER variables of 92.5532 percent. Besides the values obtained Fcount 21.60534 while the Ftable value is 2.172141. These results indicate that Fcount (21.60534) > Ftable (2.172141). So H0 is rejected, then all of the independent variables significantly influence the dependent variables simultaneously. The magnitude of the estimated regression coefficients in the equation of GER presented in Table 3.

Table 3
The Results of Equation Gross Enrolment Ratio Inequality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.060085	0.236920	0.253608	0.8019
SOA?	0.419146	0.188286	2.226113	0.0353
GE?	0.355064	0.212733	1.669056	0.1076
SAF?	0.058835	0.134445	0.437614	0.6654
DAF?	0.055377	0.208878	0.265118	0.7931
YC?	-1.248234	1.725593	-0.723365	0.4762
SPR?	-0.103788	0.067258	-1.543138	0.1354
TPR?	0.104999	0.043561	2.410384	0.0236
R-squared	0.970449	Mean dependent var		0.004609
Adjusted R-squared	0.925532	S.D. dependent var		0.003822
S.E. of regression	0.001043	Akaike info criterion		-10.61495
Sum squared resid	2.72E-05	Schwarz criterion		-9.299385
Log likelihood	378.6785	Hannan-Quinn criter.		-10.09669
F-statistic	21.60534	Durbin-Watson stat		3.878788
Prob(F-statistic)	0.000000			

Source: Data Processed by Eviews 7.0

Based on the results of multiple regressions can be obtained the equation as follows:

Y= 0,060085+0,419146BOS +0,355064GE+ 0,058835DAK+ 0,055377DEKON−

L248234YC −0,103788RSS+0,104999RMG

The results of regression equation has a constant value of 0.060085 so that it can be interpreted that when BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality is constant, then the gross enrolment ratio inequality is equal to 0.060085 percent.

5. The Results of Equation Net Enrolment Ratio Inequality

Table 4 shows the estimated regression equation with the dependent variable against net enrolment ratio inequality with for independent variable BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality. From the data processing obtained the coefficient of determination (R2) of 0.858821. It means, the seventh independent variables in the equation model were able to explain the diversity in the NER variable of 85.8821 percent. Besides the values obtained Fcount 11.08529 while the Ftable value of 2.172141. These results indicate that Fcount (11.08529) > Ftable (2.172141). So H0 is rejected, then all of the independent variables significantly influence the dependent variables simultaneously. The magnitude of the estimated regression coefficients in the equation NER presented in Table 4.

Table 4
The Results of Equation Net Enrolment Ratio Inequality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.073196	0.642116	-1.671343	0.1071
SOA?	0.353343	0.512843	0.688987	0.4972
GE?	-1.685154	0.578600	-2.912466	0.0074
SAF?	0.352603	0.366126	0.963066	0.3447
DF?	-0.111289	0.567973	-0.195941	0.8462
YC?	8.557765	4.674832	1.830604	0.0791
SPR?	-0.110453	0.183067	-0.603349	0.5517
TPR?	-0.047406	0.118586	-0.399757	0.6927
R-squared	0.943976	Mean dependent var		0.009214
Adjusted R-squared	0.858821	S.D. dependent var		0.007547
S.E. of regression	0.002836	Akaike info criterion		-8.614224
Sum squared resid	0.000201	Schwarz criterion		-7.298655
Log likelihood	314.6552	Hannan-Quinn criter.		-8.095955
F-statistic	11.08529	Durbin-Watson stat		3.878788
Prob(F-statistic)	0.000000			

Source: Data Processed by Eviews 7.0

Based on the results of multiple regressions can be obtained the equation as follows:

Y = -1,073196 + 0.353343BOS –1,685154GE + 0.352603DAK - 0.111289DEKON +8,557765YC - 0.110453RSS - 0.047406RMG

The results of regression equation has a constant value of -1.073196 so that it can be interpreted that when BOS inequality, GE inequality, DAK inequality, DEKON inequality, YC inequality, RSS and RMG inequality in a minimum conditions, then the net enrolment ratio would show a negative number of 1.073196 percent.

6. The Results of Equation National Exam Score Inequality

Table 5 shows the estimated regression equation with the dependent variable National Exam score inequality of the independent variable UKG inequality, BOS inequality, GE inequality, DAK inequality, DEKON and YC inequality. From the data processing obtained the coefficient of determination (R2) of 0.414188. It means, the sixth independent variables in the equation model were able to explain the diversity of the UN amounted to 41.4188 percent variable. Besides the values obtained Fcount 8.423844 while the Ftable value of 2.25678. These results indicate that Fcount (8.423844) > Ftable (2.25678). So H0 is rejected, then all of the independent variables significantly influence the dependent variables simultaneously. The magnitude of the estimated regression coefficients in the equation of national exam score presented in Table 5:

Table 5
The Results of Equation National Exam Score Inequality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000420	0.004190	0.100190	0.9205
TCT?	0.495685	0.121235	4.088626	0.0001
SOA?	-0.011500	0.348736	-0.032976	0.9738
GE?	0.153074	0.103014	1.485958	0.1428
SAF?	0.032815	0.155474	0.211065	0.8336
DF?	-0.041097	0.458219	-0.089688	0.9288
YC?	-0.107880	0.315257	-0.342198	0.7335

R-squared	0.469980	Mean dependent var	0.009748
Adjusted R-squared	0.414188	S.D. dependent var	0.011902
S.E. of regression	0.009110	Akaike info criterion	-6.456069
Sum squared resid	0.004730	Schwarz criterion	-6.219941
Log likelihood	213.5942	Hannan-Quinn criter.	-6.363047
F-statistic	8.423844	Durbin-Watson stat	2.257878
Prob(F-statistic)	0.000001		

Source: Data Processed by Eviews 7.0

Based on the results of multiple regressions can be obtained the equation as follows:

Y = 0.000420 + 0.495685UKG – 0.011500BOS + 0.153074GE + 0.032815DAK – 0.041097DEKON – 0.107880YC

The results of regression equation as a constant value of 0.000420 so that it can be interpreted that when UKG inequality, BOS inequality, GE inequality, DAK inequality, DEKON and YC inequality in a minimum condition, then the national exam score inequality would show a positive number of 0.000420 percent.

CONCLUSION

Based on the analysis of economic inequality and inequality of education in 33 provinces in Indonesia was concluded as follows :

- The effect of the economic inequality in terms of budget allocations for education that comes from BOS, GE, DEKON and income per capita in terms of the ability to access education has a different effect on dropout rate inequality. Where BOS and GE has a significant negative effect on dropout rate inequality. While DEKON and income per capita has a significant positive effect on dropout rate inequality. GE inequality has a significant negative effect on literacy rate inequality. While DEKON and income per capita has a significant positive effect on literacy rate inequality. The inequality of BOS, GE and RMG has a significant positive effect on Gross Enrolment Ratio inequality. While the income per capita and RSS has a significant negative impact on Gross Enrolment Ratio inequality. Income per capita inequality has a significant positive effect on Net Enrolment Ratio inequality. While GE has a significant negative effect on Gross Enrolment Ratio inequality. National Exam inequality is affected by the imbalances of UKG, BOS, GE, DAK, DEKON and income per capita. Where UKG and GE has a significant positive effect on National Exam score inequality.

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