

THE IMPACT OF GENDER INEQUALITY IN EDUCATION ON POVERTY AND ECONOMIC GROWTH: INDONESIAN CASE

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Gender inequality is the one of basic problem in development, gender equality will strengthen the country's ability to improve economy capacity. This study investigates the impact of gender inequality in education on poverty and economic growth.

By using econometric model, analysis of the impact of gender inequality in education on poverty and economic growth uses Two Stage Least Square (TSLS) model. Data is collected by secondary data set 2001-2011 from Jakarta Statistic Bureau. Endogeneous variables are economic growth and poverty rate, as exogeneous variables are gender inequality in education, the share of agricultural sector on economy, the share of industrial sector on economy, inflation rate and unemployment rate. As the instrumental variables are investment, openness and labor force.

The results indicate that gender inequality in education has strong negative impact on economic growth and has positive impact on poverty in Indonesia.

Keywords: *Gender Inequality, Education, Poverty, Economic Growth*

I. INTRODUCTION

The idea that education generates positive externalities is by no means new, many studies have been done by researcher in respect to importance of education for development. They have been optimistic about the contribution of education to economic development (*de la Fuente Angel, 2006; 9*). Education has shown positive externalities, like the externalities of physical investment, the externalities of education which can help economy overcome diminishing returns and therefore generate permanent economic growth (*Van Den Berg Hendrik, 2001; 372*). Education is one of investing in human capital, not only has positive impact on economic growth but also allows the poor people to escape from poverty.

Education is one of important instrument on which people can improve their lives in other ways. For example, more education, particularly of women, is strongly associated with better family health and improved their capacity to plan and time of births. Education also enhances the capacity of poor people to participate in the political process, to organize for other social and political rights and to demand government which is more

representative and accountable (*Britsall Nancy, 2005;24*).

Gender equality is an important aspect of development, reflecting internationally agreed upon principles of human right and equity, which has the capacity to contribute to a number of broader development goals. Educated women have externalities, the benefits of women's education can be seen both in terms of their own human capital and ability to contribute to the economy as well as that to the next generation. Evidence indicates that female education improves infant survival rates and nutrition directly through the quality of care that women provide. They are also more likely to gain better remunerated jobs. Women with more education are also better equipped to mitigate economic shocks such as price changes that impact food consumption. As a result, in households in which mothers have some primary school education, the infant mortality rate of children under five is lower (*USAID, 2006;13*)

In Indonesia, the gender gap in opportunity and control over resources, economy power, and political participation is still running good level, village, district, provincial and central level. Although the female population is almost 52% of the population, the number of women representation in the executive and legislative areas reach only 11%. At the village level, only a few women who hold positions as heads of villages or the official of government (*Asian Development Bank, 2006:13*)

Various forms of gender inequality will result in a decrease in one's talent (the pool of talented people) that are considered as one source of ideas. In turn, with an increase in the average quality of ideas will encourage technological progress and economic growth. Thus the existence of discrimination is based on gender, for example in the form of discrimination in education, wages will reduce the human capital resulting in lower economic growth (*Mikkola, 2005:26*).

Many studies have been conducted by previous researchers showed that gender equality has positive impact on development and poverty reduction efforts. This article aims to examine further the impact of gender inequality in education on Indonesian economic growth and poverty.

II. LITERATURE REVIEW

2.1. Poverty Alleviation In Indonesia

Base on economic aspect, poverty is defined as a lack of resources that can be used to improve the welfare of a group of people, both financially and all kinds of wealth that can improve the welfare of society. Inadequate income and assets to attain the basic needs of households such as food, shelter, clothing, and acceptable levels of health and education are indicators of poverty (*Latigo Alfred, 2004:6*). Therefore as poor when a person or family can not achieve the minimum basic needs, such as: clothing, food, shelter, health, and education (*Suryawati Chriswardani, 2005*).

Poverty is one of the important issues in almost all developing countries, including Indonesia. In a few decades of development in Indonesia, one of the goals of economic development priorities is poverty reduction. The economic crisis in 1998 gave a major impact on the Indonesian economy. There was an increasing number of poor people from 34.1 million (17.47%) in 1996 to 49.50 million, or approximately 24.23% in 1998. Therefore poverty alleviation is a priority goal of national development in Indonesia. Even Indonesia is a country that joined the 189 other countries which declare "Millennium Development Goals", consisting of 8 goals. First, eradicate extreme poverty and hunger (MDG Target Acquisition Acceleration Strategy 2015). Indonesian commitment to achieve the MDGs reflects the state's commitment to the society welfare.

Indonesian government commits in poverty reduction that is implemented with the establishment of the institution directly under the responsibility of Vice President, namely National Team Of Poverty Reduction Programs (TNP2K). TNP2K assigns four (4) basic strategies to accelerate poverty reduction in enhancing social protection, to improve access of the poor to basic services, community empowerment and inclusive development.

In the implementation of poverty reduction programs, Indonesian government has set some instruments which are divided into 4 clusters, cluster 1 is integrated social assistance programs based on family, cluster 2 is poverty reduction programs based on community empowerment, cluster 3 is poverty reduction based on programs of economic empowerment of micro and small enterprises, clusters 4 is poverty reduction programs with improvement and expansion of pro- people programs. Poverty reduction in Indonesia showed significant progress, according to the MDGs targets as indicated by the declining proportion of the population living below the national poverty line of 15.10 % (1990) to 12.49 % (2011) and Poverty Gap Index of 2,70 to 2.08 in the same period.

2.2. Gender Inequality in Education in Indonesia

Gender can be defined as socially constructed roles and behaviors that are embedded through socialization processes associated with men and women. The Differences are in interpreting the biological not cultural differences into a set of social demands of decency in behavior, and in turn the rights, resources and power. Despite these various demands in every society, there is a striking resemblance, for example, almost all groups of people handed over responsibility for children care for women, and gave authority to the military for men (*World Bank, 2001:14*)

Gender equality is an often-used but infrequently defined term, gender equality means that males and females have equal opportunities to realize their full human rights and contribute to benefit from economic, social, cultural, and political development. Parity and equity are the building blocks of equality in education (*USAID, 2005:5*).

Basically, the component of gender inequality covers 3 aspects: the capability (capabilities), access to resources (access to resources) and opportunity (opportunities), and that the three aspects are related to one another. Capabilities with respect to basic human abilities, as measured by education, health and nutrition, this is the third most important element in achieving equality in the two other aspects. Access to resources and opportunities with regard the ability to access economic assets such as lands and houses as well as other resources (*Hanim Wasifah, 2011*).

Promoting gender equality in education has largely been achieving the MDGs targets by 2015. In 2011, ratio of women to men in the primary level is 98.80; at the junior level is 103.45; and at the higher education level is 97.82. In the same year, ratio of literate women to men in the age group 15-24 has reached 99.95 %, in line with the MDGs target for the ratio of school enrollment women to men in high school had reached 101.40 in 2011 (*Bappenas, 2012*).

2.3. Gender Inequality In Education On Growth And Poverty

Theoretically, gender as a derivative (breakdown) of human capital has been developed in an expanded Solow model (Solow Augmented Model), known as endogenous theory which asserts that human capital will ensure long-term economic growth (*Hanim Wasifah, 2011*.)

Gender inequality is complex in terms of its causes and consequences, both are social, cultural and economic (*Cavalcanti Tiago V. de V, Tavares, 2007;3*). Gender inequalities in access to resources raise the cost, not only women bear the cost of inequality but also weigh on the entire community. Therefore, gender inequality is one of the most important topics for the development of many countries, especially in developing and underdeveloped countries.

Education is one of the aspects of measuring gender inequality, the lower of gender inequality in education, the higher education achieved by women. Increasing in education for women will increase employment opportunities of women that will increase household income thus increasing the satisfaction of basic needs and improve living standards. Increasing women's education have an indirect effect of helping to fulfill basic needs such as water and sanitation, health care utilization and housing etc. (*Jeffery dan Basu, 1996*).

Education in one of investment in human capital has a huge impact on the ability of individuals—whether men or women—to function and reach their potential in society (*World Development Report 2012; 102*). Besides that, human capital is considered as a weapon against poverty reduction. Therefore the idea that education is a determining factor for poverty reduction, occupies a lot of attention in recent years (*Sarwar Awan Masood et all, Nasir Iqbal, Muhammad Waqas, 2011*).

Education investments in women are also special in three ways. *First*, in their roles as mothers,, educated women pass on the benefits of higher education to their children. Children who are born by highly educated mothers are less likely to die in infancy and more likely to have higher birth weights and be immunized. *Second*, women face particular risks during pregnancy and childbirth, these are maternal mortality rate and morbidity rate. *Third*, overt discrimination that leads to male-biased sex ratios at birth can have long term implications for society. If more boys than girls are born, eventually many men will be unable to find wives (*World Development Report 2012; 102*). Therefore educated women have an important role in the development process, in turn, it will provide external influences not only for woman herself, but also for the family and for a wider scope.

Some of the external benefits are provided by educated women. *First*, educated woman will contribute directly in improving the capacity of a country's economy, because educated women tend to be involved in the labor market. In turn will increase the family income, means an increase in welfare or poverty reduction. *Second*, educated women will encourage their children to achieve higher education that will enhance human capital to the next generation. *Third*, educated woman who can take the best decision for themselves which can determine the number of children that would be born, may decide to choose between quantity and quality of children, so that educated women have a tendency to fewer number of children. The decision will have an impact on the increase in per capita income and increasing family and social welfare as a whole. Contribution of women in deciding the number of children that would be born with a number of closely related family members. The greater the number of members, the higher probability of poverty (*Chaudhry, Imran Sharif and Saeed ur Rahman, 2009*). Klasen (2003) states that promoting woman education is known to reduce fertility levels and to reduce child mortality levels

Gender inequality in education has strong impact on economic growth. Indirect effects of gender equality on growth that are transmitted via the impact of gender equality on poverty alleviation. enumerated the channels which impedes growth. Some of these channels with

important gender elements include (Morrison Andrew et al., 2007):

- Poor people often have limited access to financial markets or other necessary complements to private investment (such as property rights and infrastructure) which is essential to the accumulation of physical and knowledge capital and participation in the growth process.
- Poor people are often in poor health, which reduce their productivity.
- Poor people attend low-quality schools and late returns to education and diminished prospects for mobility deter the accumulation of human capital essence for growth.
- Poor people may face more labor market risk, or may be less able to hedge against it.

Therefore the lower gender disparity in education is an important strategy in achieving national development goals for promoting economic growth and reducing poverty rate.

Various studies on the effects of gender inequality in education on economic growth and poverty are mostly done by previous researcher.

Imran Chaudhry Sharif and Saeed ur Rahman

(2009) analyzed the impact of gender inequality in education on rural poverty in Pakistan by using

cross-sectional analysis of data and logit regression. The main findings of the empirical

analysis of the data are cross-sectional Gender Inequality in education has significant impact on rural poverty. Female-male enrollment ratio, male female literacy ratio, female-male ratio of total years of schooling of population, education of household head, female-male ratio of earners, age of household head, holding assets and land holdings are significant variables in having negative impact on the probability of being rural poor.

Klasen and Lammanna (1999, 2003, 2008, 2009) investigated the effect of gender inequality in education on economic growth. The study was conducted in 119 countries both developing and developed countries. Research results show that gender inequality in education has positive impact and significant on economic growth.

Seguino (2000) investigated the effect of gender inequality in wages to economic growth. In his analysis seguino incorporate human capital as exogenous variables with separate male human capital with human capital of women. Human capital is a measurement as the growth rate of the

educational attainment of persons 15 and over. Research results indicate that human capital of women significantly increases economic growth.

III. DATA AND METHODOLOGY

Data is collected by secondary data set 2001-2011 (T=10) from Central Bureau of Statistics Jakarta. Data is collected including such as labor force, men years schooling of man, women years schooling, investment, export, import, GDP, unemployment rate, inflation rate and others. GDP is measured in 2000 prices. A measure of gender inequality in education is used, that is the ratio between woman mean years schooling to man mean years schooling.

The analysis of the impact of gender inequality on poverty uses Two Stage Least Square (TSLS) model. This model as follow:

$$a. \text{POV}_t = \beta_0 + \beta_1 \text{UNEMP}_{t-1} + \beta_2 \text{GED}_t + \beta_3 \text{AGR}$$

$$+ \beta_4 \text{IND}_t + \beta_5 \text{INF}_{t-1} + \beta_6 \text{GRT}_t + u_t \dots \dots \dots (1)$$

$$b. \text{GRT}_t = \alpha_0 + \alpha_1 \text{GINV}_t + \alpha_2 \text{GOPN}_t + \alpha_3 \text{GED}_t +$$

$$\alpha_4 \text{GLFG}_t + u_t \dots \dots \dots (2)$$

Note:

- α_0, β_0 : Constant
- $\beta_1 - \beta_6$: Regression Coefficient
- $\alpha_1 - \alpha_4$: Regression Coefficient
- u_t : Stochastic Disturbance
- POV_t : Poverty Rate at year t
- GRT_t : Economic Growth at year t
- INF_{t-1} : Inflation Rate at year t-1
- GINV_t : Growth Rate of Investment at year t
- UNEMP_{t-1} : Unemployment rate at year t-1
- GOPN_t : Growth rate of Openness at year t
- GED_t : Female-male ratio in education at year t
- GLFG_t : Growth rate of labor force at year t
- AGR_t : Share of Agriculture Sector at year t
- IND_t : Share of Industry sector at year t

To identify the simultaneous equation model used order condition and rank condition, the order condition of two equations is over identified and the rank condition of both are $\neq 0$. Means the model is satisfied by using Two Stage Least Square (TSLS) model.

IV. ECONOMETRIC ANALYSIS AND DISCUSSION

To analyze the impact of gender inequality in education on poverty, the author tries to do some simulations with 2 models, those are Two Stage

Least Square Model (TSLs) and Ordinary Least Square (OLS). Meanwhile to determine the impact of gender equality on economic growth, it uses Ordinary Least Square (OLS) model.

To Analyze the impact of gender inequality in education on poverty the author simulate the three (3) equation. The first equation, all of exogeneous variable, these are UNEMPt-1, INFt-1, GRT , GED, AGR and IND are regressed together against poverty. The second regression, a independent variable share of agricultural sector to GDP (AGR) was excluded from the model, the third regression independent variable share of agricultural sector to GDP (IND) was excluded from the model. Based on Data Processed by Stata 12, the author got some equation as follow.

Table 1. Estimation Results The impact of Gender Equality in Education On Poverty And Economic Growth

	TSLs			OLS	OLS
	POV	POV	POV	POV	LNGDP
Cons	131,099	14,956	14,119	115,323	2,973
<i>t-Stat.</i>	5,13*	4,41*	14,07*	4,04*	2.14***
UNEMPt-1	0,268	0,538	0,295	0,259	-
<i>t-Stat.</i>	2.65 *	6,25*	3,30*	1,900	-
AGR	(0,604)	-	(0,536)	(0,591)	-
<i>t-Stat.</i>	-3.45*	-	-3,48*	-2,5***	-
IND	0,132	-0,243	-	0,230	-
<i>t-Stat.</i>	0.55	(0,840)	-	0,760	-
INFt-1	0,067	0,084	0,070	0,075	-
<i>t-Stat.</i>	2.79 *	2,62*	2,93*	2,45***	-
GRT	0,132	0,112	0,124	0,084	-
<i>t-Stat.</i>	2,60*	2,41*	2,41*	2,47***	-
GED	(127,682)	-151,350	(13,700)	(112,273)	12,883
<i>t-Stat.</i>	-5.25*	-4,79*	-13,74*	-4,18*	8.23 *
GLFG	-	-	-	-	0,058
<i>t-Stat.</i>	-	-	-	-	2.03 ***
GOPN	-	-	-	-	(0,000)
<i>t-Stat.</i>	-	-	-	-	-0.24
GINV	-	-	-	-	(0,010)
<i>t-Stat.</i>	-	-	-	-	-1.72
<i>Jml Obs</i>	11	11	11	11	11
R ²	0.98	0.96	0.98	0.98	0.89
F - hit	601,5*	317,24*	115,644*	54,89*	22,86*

Description: *: Significant 1%, **: Significant 5% and ***: Significant at 10 *

Source Data:Statistic Berau, Processed

Based on the estimation results, three equations obtained coefficients consistently. The independent variable UNEMPt-1, INFt-1, GRT and GED in the 3 (three) equation obtained consistent coefficients in the same sign and significantly. Regression coefficients of the share of agricultural sector to GDP have negative impact significantly on poverty, while the regression coefficient of the share of industrial sector to GDP is not significant. It means that the increasing of proportion of the agricultural sector will decrease the poverty rate. The results of this study is in line with the results of the study Siregar Herman and Dwi Wahyuniarti (2007). Their research used variable share of agricultural sector, share of industrial sector and level of education. The study showed that three variables result gave negatif impact significantly on poverty rate.

Gender equality in education has a significant negative effect, that mean the higher levels of female education will reduce for the level of poverty rate. The results of this study are consistent with studies were conducted by previous researchers Andrew Morrison, Dhushyanth Nistha Raju and Sinha (2007), Chaudhry Imran Sharif and Saeed ur Rahman (2009). The conclusion of their study showed that gender inequality in education has an adverse impact on rural poverty.

Woman's education is strongly associated with better welfare at the individual, family, and social levels. It is a central meaning to break the intergenerational transmission of poverty. Furthermore, highly educated mothers are more likely to send their children to school, a key to break the cycle of intergenerational poverty. Therefore private returns to education are not confined to higher wages and incomes. Independent of their household income, mothers with primary education have better access to the information they need to help in keeping their children healthy. Education, particularly girls' education, has social returns to society at large as well, since society capture some of the benefits of improved health, lower fertility, and the at-home education in which highly educated mothers can transfer education to their children (Britsall Nancy, 2005;26).

The impact of gender inequality in education on poverty reduction was analyzed by using OLS regression. This study obtained that consistent

coefficients were as well as using TSLS method. The impact of gender equality in education on economic growth as described in the column 5th. Author used economic growth which was represented by LNGDP. Based on the estimation results indicated that gender inequality in education has significant negative impact on economic growth (LNGDP). The results of this study are consistent with results of previous studies (Hanim Wasifah, 2011).

V. Concluding Remarks

The quality of economic growth provides a major contribution on poverty reduction. Quality of economic growth means an increase in the economy capacity accompanied by a more equitable distribution of income. In such conditions, the increase of economy capacity will be accompanied by an increase in employment and low inflation rate.

Economic growth is a necessary condition, therefore, economic growth is accompanied by an increase in the capacity of human resources becoming a sufficient condition for poverty reduction. Further improving the quality of human resources will encourage increasing economy productivity. Improving the quality of human resources, especially in the agricultural sector which contributes for poverty reduction.

Improvement in women's education is one of the efforts to increase the quality of human resources. Increasing female education would increase the labor force participation of women, which in turn will increase the family income will further improve the welfare of society. So the promotion of gender equality in education will provide such dual effect in development, not only improving the well-being of women but also increasing the quality of human resources for next generation, declining birth rates and reducing poverty rate.

Therefore, the development of policy which aims to improve education of women should be a priority in development a whole. The programs associated with increased empowerment of women need to be increased, because the quality of human resources in future generations will depend on the quality of human resources of women today. Besides, the proportion of women who are more than 50% of the population, then the quality of Indonesian human resources as a whole has strongly impact of the quality of human resources

of women. Associated with poverty reduction programs, improving the quality of human resources of women, especially in the field of education will be believed as one of effective poverty reduction strategies to be implemented in Indonesia.

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