

Education as the Key to Escaping Poverty in Middle-Income Countries

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ABSTRACT

This research aims to examine and prove the determinant variables that can reduce poverty problems in middle-income countries in the long term. The main reason poverty problems are essential to solve is that the poor should be cared for by the state. After all, every citizen has the right to work and a decent standard of living. This research method is quantitative, conducted using generalized least squares regression in 54 middle-income countries from 1999 to 2022, and supported by classical assumption diagnostic tests. The study's main findings prove that tertiary education can reduce the poverty gap. Increasing income per capita, expanding the coverage of social insurance program policies, and reducing the rural population can also reduce the poverty gap. The implications of these findings for policymakers should support tertiary education to reduce poverty in the long term.

Keywords: *Poverty Gap, Tertiary Education, Income per Capita, Social Insurance Program, Rural Growth*

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INTRODUCTION

Poverty is a significant problem that needs to be solved to improve living standards in our respective countries. The stagnation of poverty should be unacceptable and eradicated (Agboola & Balcilar, 2012). Households with average incomes lower than the poverty line were identified as chronically poor (Limanlı, 2015). Material deficiencies are a significant source of poverty and economic inefficiency. People living in conditions of material deprivation cannot develop the abilities and skills that make them productive human resources (Bodea & Herman, 2014). Poverty is when a person cannot sustain themselves according to the group's standard of living and cannot take advantage of a group (Wekke & Cahaya, 2015).

Monetary impoverishment is a state of poverty where one has little money, which should be reduced to improve the welfare of society. The individual who is the subject of poverty will be overwhelmed by the monetary poverty they face and marginalized by society. Relevant indicators in the study of poverty and social exclusion are quantitative poverty, namely the poverty headcount ratio (Anghelache et al., 2006). Poverty is quantitatively classified into monetary poverty or monetary poverty threshold. Monetary impoverishment is an excellent tool for targeting the poorest population groups. According to the hypothesis, poverty is monetary poverty for the

poorest people and countries (Ferrer-i-Carbonell, 2002). Monetary poverty alleviation aims to improve welfare (Doudich, 2009).

Poverty means that people have limited access to education to increase their productivity. Poverty occurs when people cannot meet the minimum requirements for a decent life (Daher & Haz, 2011). Families living in poverty have limited access to material resources (cost of living, food costs, cognitively stimulating toys, and books) and limited access to immaterial resources (e.g., education, access to information, and developing one's experience and skills). Low-income families cannot invest enough human capital into their children (Banovcinova et al., 2014). Because education directly impacts a person's productivity, it is one of the most critical factors in breaking the cycle of intergenerational poverty (Mihai et al., 2015). Impoverishment due to a lack of education will make children born into poverty fall into a cycle of poverty that cannot be avoided. Most children born into poverty have a low chance of educational success. Because of the lack of education, their chances of adult success are so low that they experience social exclusion (Sy, 2013).

Increasing tertiary education levels can reduce poverty in the long term. At the current global economic level, completing tertiary education could make the difference between living in poverty and being established in a future economy. Most families living in conditions of extreme poverty will not be able to send their children to school. In conclusion, a lack of education will result in poverty and limit access to education (Mihai et al., 2015). Then, education is directly related to poverty (Awan et al., 2011). Increasing education and access to learning for low-skilled communities will reduce medium- and long-term poverty (Misir, 2011).

So tertiary education has been proven to bring positive externalities to the economy and social welfare. Because it is believed that higher education can help reduce poverty by sharing knowledge and research between communities (Goralski & Tan, 2022). One of the dominant factors that influences poverty is education (Rahayu et al., 2021). High levels of education in the workforce are an important factor in contributing to economic growth (Shapiro & Tambashe, 2001) (Mankiw et al., 1992). Because empirical findings confirmed the existence of a relationship between education level and income (Caselli, 2005) (Cazzavillan et al., 2013) (Hall & Jones, 1999). So economic growth has been proven to have a role in reducing poverty (Sipahutar, 2016) (Sumargo & Haida, 2020).

At the national level, high levels of education correlate with high levels of social welfare in the country. Vocational education can reduce implicit poverty by preventing later generations from becoming poorer (Herman & Georgescu, 2012). People living in poverty realize that sending their children to school will give them opportunities for their children. Education does affect the reduction of social exclusion (Mihai et al., 2015). Education and well-being levels have been closely correlated positively nationally and globally in recent years.

Government policies that support education are critical to the country's productivity. There was a substantial decrease in social exclusion as the level of education increased. The level of education is closely related to productivity. The higher the level of education a person has, the higher their productivity at work (Mihai et al., 2015). The lower the education, the lower the productivity at work. Because the level of

productivity can affect a person's income (Wekke & Cahaya, 2015). Household education level increases the standard of living significantly; conversely, a better standard of living increases the education level. So, to reduce poverty, social policies such as policies for education (Sy, 2013).

Then, the government policy for social insurance programs is also effective as a safety net to reduce the risk of vulnerability for poor people. Because the government should be active in reducing poverty through effective programs to help people living in poverty (Meydianawathi & Setyari, 2018). Ineffective policies against poverty are a significant obstacle for the poor to raise their standard of living positively. The state plays a vital role in tackling poverty through the economic and social policies it develops. The social inclusion program covers poverty risk reduction and social exclusion measures. Households support poverty alleviation and alleviation policies as state policy priorities. So, poor households need to be prioritized first by the state. Effective poverty reduction policies must be a top priority for the poor to improve their living standards (Sy, 2013). To meet the needs of the poorest people, it is necessary to maximize the implementation of effective poverty reduction programs (Mbaye & Drabo, 2017).

Next, the government must also pay attention to household per capita income as a symbol of economic well-being. Low household income levels cause low household living standards. Household income is positively correlated with the well-being of established households and negatively correlated with that of poor households. (Sy, 2013). Theoretically, increasing the economic growth of a country will reduce absolute poverty (Sofer, 2013). Economic growth is fundamental in reducing poverty and social exclusion. The decline of economic development with poverty and income inequality is evidenced by data at the provincial level between 1992 and 1999. Results found that income growth strongly affects poverty and income inequality reduction (Deolalikar, 2002).

After that, developing countries need to transform rural household areas into urban household areas. The household's residence in an urban or rural district is also a determining factor in household welfare. Rural households are generally poor and often not a priority for the state. This is an obstacle to improving their welfare. Because rural households typically experience the most income gaps in their standard of living, it is natural for them to ask for greater social justice (Sy, 2013).

METHOD

This study analyses data from 54 middle-income countries from 1999 to 2022, aiming to examine the dynamics of poverty and its potential determinants over time. The countries included in the sample are Albania, Algeria, Argentina, Armenia, Azerbaijan, Belarus, Belize, Bosnia and Herzegovina, Botswana, Brazil, China, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Equatorial Guinea, Fiji, Gabon, Georgia, Grenada, Guatemala, Indonesia, Iran (Islamic Republic), Iraq, Jamaica, Kazakhstan, Kosovo, Libya, Malaysia, Maldives, Marshall Islands, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Namibia, North Macedonia, Paraguay, Peru, Serbia, South Africa, St. Lucia, St. Vincent and the Grenadines, Suriname, Thailand, Tonga, Türkiye, Turkmenistan, Tuvalu, and Ukraine.

The primary objective is to assess poverty trends and the role of tertiary education and other socioeconomic factors in shaping poverty outcomes. The dependent variable is the poverty gap. It is defined as the average shortfall in income or

consumption from the poverty line of US\$6.85 per day, expressed as a percentage of that poverty line. This indicator reflects the *depth* of poverty, considering both poor and non-poor individuals.

Independent variables, tertiary education measured by the gross enrolment ratio—i.e., the total number of students enrolled in tertiary education, regardless of age, expressed as a percentage of the population of the official age group corresponding to that level. Rural population growth reflects the annual growth of the rural population, as defined by each country's national statistical agency. Social insurance programs are the percentage of the population receiving benefits from programs, including old-age pensions, social security, health insurance (e.g., workplace accidents, paid sick leave, maternity), and other social insurance schemes. Income per capita is measured as gross domestic product (GDP) per capita in current US dollars, calculated as GDP divided by the mid-year population.

The dataset is sourced from World Bank indicators covering 1999–2022. The analysis applies a quantitative research methodology using an econometric approach. Specifically, the study employs the Generalized Least Squares (GLS) estimation technique to address potential issues such as heteroskedasticity and autocorrelation in panel data. The analytical model used in this study is adapted from Sy (2013), with modifications to suit the current context and variables. The model is specified as follows:

$$\text{PovertyGap}_{it} = \alpha_0 + \beta_1 \text{TertiaryEducation}_{it} + \beta_2 \text{IncomePerCapita}_{it} + \beta_3 \text{SocialInsurance}_{it} + \beta_4 \text{RuralGrowth}_{it} + \varepsilon_{it}$$

Where i refers to country, t refers to year, and ε_{it} is the error term.

FINDING AND DISCUSSION

RESEARCH RESULT

Table 1. Generalized Least Squares Estimation Results

Dependent Variable: Poverty Gap	Coefficients (Standard errors)
Independent Variables	
Tertiary Education (β_1)	-0.1582865* (0.0250934)
Income per Capita (β_2)	-0.0007557* (0.0001533)
Social Insurance Program (β_3)	-0.0882711* (0.0281402)
Rural Growth (β_4)	0.8055499* (0.3234613)
R ²	0.5344
Wald chi	175.69*
Number of observations	168

* P-Value < 0.05 Probability is significant at the 0.05 level

R² 0.5344 indicates that the independent variables (tertiary education, income per capita, social insurance, and rural growth) in the regression model explain 53.44% of the variation in the dependent variable (poverty gap). Then, based on the Wald test,

it was proven that the explanatory variables in the model were simultaneously significant. This model has 168 observation data, sufficient for panel data studies.

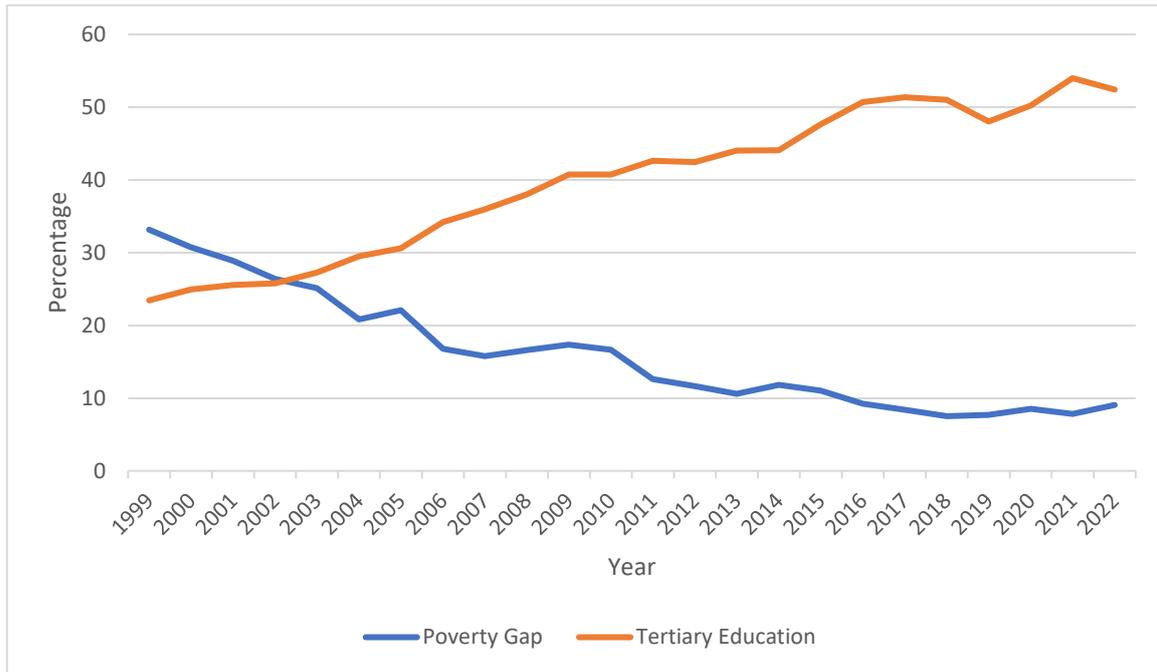
Variable tertiary education, income per capita, and social contribution are estimated to have a negative relationship with the variable poverty gap, which is statistically significant at the 5% level. If tertiary education increases by 1%, the variable poverty gap decreases by -0.1582865%. Next, if income per capita increases by US\$ 1, the variable poverty gap decreases by -0.0007557%. After that, if the social insurance program increases by 1%, then the variable poverty gap decreases by -0.0882711%. Meanwhile, variable rural growth does have a positive effect on the variable poverty gap. If rural growth increases by 1%, the variable poverty gap increases by 0.8055499%.

Table 2. Diagnostic Test

Test Name	Value	OLS Result	Correction	GLS Result
Wooldridge Test For Autocorrelation (F)	61.361*	Autocorrelation	Generalized Least Squares	Non-autocorrelation
Breusch Pagan / Cook Weisberg Test for Heteroscedasticity (chi2)	36.86*	Heteroscedastic	Generalized Least Squares	Homoscedastic
Mean Multicollinearity One-Sample Kolmogorov-Smirnov Test against Theoretical Distribution Normal (Combined K-S)	VIF 1.37 0.508	Non-multicollinearity Normal	- -	Non-multicollinearity Normal

* P-Value < 0.05 Probability is significant at the 0.05 level

This model has passed the classical assumption tests for normality, homoscedasticity, non-autocorrelation, and non-multicollinearity. It meets the normality assumption if the combined K-S value of 0.508 exceeds the significance value of 0.05. Then, if no VIF value is greater than 5, the model can meet the non-multicollinearity assumption. Next, the GLS model is efficient against heteroscedasticity or autocorrelation problems.



Source: World Bank Database

Figure 1. Poverty Gap and Tertiary Education in 54 Middle-Income Countries

Based on the figure above, it is shown that along with the increasing percentage of education level represented by tertiary school enrollment, the poverty gap of \$6.85 is decreasing from 1999 to 2022 in 54 middle-income countries. This proves that the poverty gap and tertiary education have a negative correlation. When tertiary education increases, the poverty gap will decrease.

DISCUSSION

The negative correlation between education and poverty is in line with previous research by Mihai et al. (2015), Wekke & Cahaya (2015), Bodea & Herman (2014), Awan et al. (2011), Sy (2013), Misir (2011), Goralski & Tan (2022), and Banovcinova et al. (2014). It confirms that the more highly educated people, the fewer people below the poverty threshold. With higher education, people will have the opportunity to get jobs with high wages. Then, people with tertiary education can work in industries that provide higher wages, such as the technology, finance, and management sectors. Tertiary education will also open up opportunities for stable and established jobs and reduce the risk of taking unstable and low-paying jobs that cause poverty.

After that, tertiary education can open up opportunities to improve the standard of living of poor families so that the next generation has a better standard of living in education and the economy. Because opportunities for higher education are likely to be limited for children from poor families (Lloyd & Blanc, 1996) (Colclough & Lewin, 1993). Not only that, tertiary education can generate innovative business ideas to support economic growth that can open up job opportunities, for example, an online transportation business idea, which can reduce poverty. Finally, tertiary education can provide positive externalities through research, for example, financial inclusion for the

poor. Because financial inclusion is realized from a monetary system that poor people can access to encourage economic growth and poverty reduction (Zia & Prasetyo, 2018).

Other independent variables, such as income per capita, negatively correlate with poverty. This is also in line with previous research by Sofer (2013), Sy (2013), and Deolalikar (2002). If the income per capita is high, the population living below the poverty line will decrease. Then, the social insurance program also has a negative correlation with poverty, which is also in line with previous research by Mbaye & Drabo (2017) and Sy (2013). Because of the existence of social insurance program policies, such as old-age insurance and health insurance from the government, it will become a safety net to reduce the risk of the vulnerability of people falling into poverty. After that, rural growth was positively related to poverty, which is also in line with research by Sy (2013). Poor people generally occupy rural areas because they are characterized by many slums or poor public infrastructure, indicating low economic income.

CONCLUSION

In this study, we discuss monetary poverty as measured by the poverty threshold standard from the World Bank. Then, we look for factors that can free people from poverty in middle-income countries in the long term. Then, according to the regression results, poverty is highly dependent on higher education issues, per capita income, government social security program policies, and rural areas in the country. In other words, an increase in tertiary education, an increase in income per capita, an increase in social security programs, and a decrease in rural areas can solve the poverty problem. Suggestions for policymakers or governments in middle-income countries for the long term are to increase the state budget to make tertiary education affordable for the people without reducing its quality, increase income per capita by providing incentives for low-income people, expand coverage of social insurance programs (health insurance and old-age security), and reduce rural areas by adding public infrastructure and people's housing program.

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