

The role of government mandatory spending on poverty rates in Indonesia

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Abstract: This study aims to estimate the impact of mandatory government spending on poverty levels in 34 provinces in Indonesia during 2016–2022. This study uses a panel data model with three main variables, namely education spending, health spending, and social spending. The three control variables used in this study are the Human Development Index, Unemployment Rate, and GRDP per capita. The results of the study indicate that Social Spending (GOVSOC) and Human Development Index (HDI) have a significant effect on poverty levels. This confirms that government social spending and human development levels are the main factors in poverty alleviation efforts. Meanwhile, health spending (GOVH), education spending (GOVEDU), Gross Regional Domestic Product per capita (GDPCAP), and unemployment rate (UR) did not show a significant effect on poverty levels in this study. Further research is needed to identify other factors that potentially influence poverty and to explain the deeper relationships between the independent variables that were not significant in this study.

Keywords: GRDP per capita, Human development index, Poverty rate, Unemployment rate.

1. Introduction

Extreme poverty is a major chronic development problem, especially in developing countries (Elshahawany & Elazhary, 2024). The World Bank (2022) defines extreme poverty as people living on less than \$2.15 daily. In this condition, households cannot meet their basic needs for survival, chronic malnutrition, inability to access health services, lack adequate drinking water and sanitation facilities, cannot finance education, and have no shelter (Saidi et al., 2024).

The poverty rate in Indonesia is fifth in the ASEAN region at 9.5% in 2022. This condition is still much worse when compared to Thailand (6.8%), Malaysia (6.2%) and Vietnam (4.2%). Indonesia has a relatively high vulnerability to poverty at 30% (World Bank, 2020). Prosperous families can fall into poverty from one period to the next due to shocks such as disease, economic crisis, or crop failure (Purwono et al, 2021). The number of poor people in Indonesia reached 26.36 million people in 2022. The poor population in rural areas is larger than in urban areas, with 14.38 million people and 11.98 million people. Dartanto & Nurkholis (2013) concluded that several factors that can increase poverty rates are low educational attainment, many family dependents, health shocks, and lack of access to micro-credit programs.

The Indonesian government has attempted to address poverty rates by allocating some mandatory spending, such as education, health, and social spending. Public spending can help alleviate poverty by increasing disposable income for low-income households and indirectly improving their nutrition, health, and education (Anderson et al., 2018). Based on Peacock & Wiseman's theory, the more taxes the government receives, the more the government will allocate to health, education, and sanitation services to help households escape poverty (Mokoena & Mazenda, 2023).

Figure 1 shows that the progress of mandatory spending in Indonesia 2016–2022.

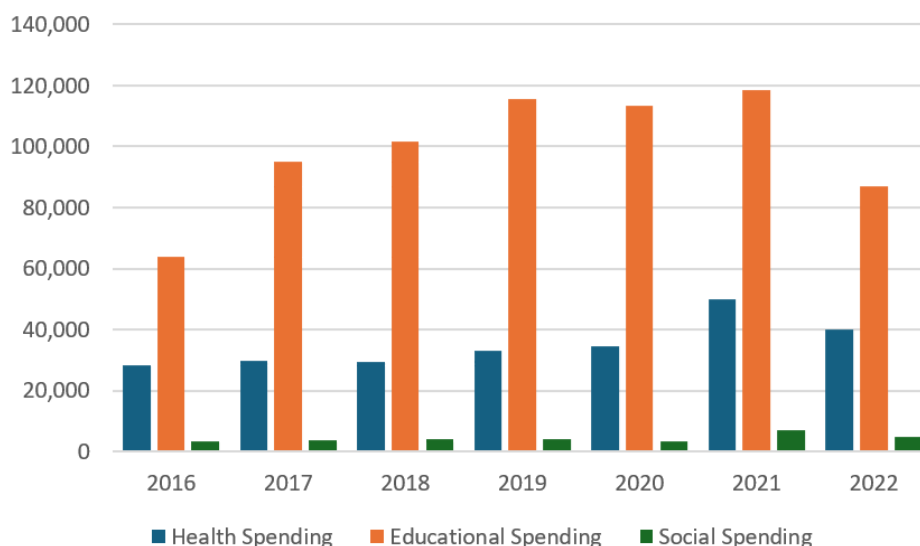


Figure 1.

The progress of mandatory spending in Indonesia 2016-2022 (in Billion Rupiah).

Source: Ministry of Finance.

Based on Figure 1, educational spending is the largest allocated to the Indonesian people, followed by health and social spending. The central and regional governments are required to allocate 20 percent of their budget to education. Health spending varies between 5-10%, and social spending has no rules for budget allocation but is encouraged to be the same as Health spending.

Educational spending is allocated for the development of physical school facilities from primary to higher education, payment of teacher and lecturer wages, provision of scholarships for poor students, and training to improve the competence of human resources for educators. Health spending is allocated for developing physical health facilities from the village level to the national level, as well as payment of health workers and training to improve the competence of human resources for health workers. Social spending is allocated to provide social assistance, such as the Family Hope program, cash and non-cash food assistance, and housing subsidy assistance,

Several studies in various countries have shown that mandatory spending can positively impact poverty reduction. Biltagy & Hamdi (2024) found evidence that public health spending in Egypt provided more health services over time between urban and rural areas and between the richest and poorest areas. Mokoena & Mazenda (2023) found that government spending on social protection and housing was negatively related to poverty rates in South Africa. However, health spending has a positive relationship with poverty levels. Government spending on the social sector significantly affects poverty reduction nationally (Elshahawany & Elazhary, 2024).

This study aims to estimate the impact of mandatory government spending on poverty levels in 34 provinces in Indonesia during 2016-2022. This study uses a panel data model with three main variables, namely education spending, health spending, and social spending. The three control variables used in this study are the Human Development Index, Unemployment Rate, and GRDP per capita.

In the context of fiscal policy evaluation, this study makes a significant contribution by providing information on the impact of mandatory government spending (Education, health, and social) on poverty alleviation efforts in Indonesia. This is important because the allocated funds is so large, but it is necessary to know its impact on reducing poverty rates in Indonesia.

This paper is structured as follows. Section 2 describes the methodology in the econometric modeling developed in this paper. Section 3 presents the main results of the study. Section 4 summarizes the research findings and considers some implications of the empirical analysis presented in this paper.

2. Methodology

2.1. Data

This study uses secondary data from 2016-2022 and 34 provinces. Health, education, and social spending data from the Directorate General of Fiscal Balance, Ministry of Finance. Data on poverty rates, Gross Regional Domestic Product (GRDP) per capita, Human Development Index and Unemployment Rates are sourced from the Indonesian Statistics.

Table 1.
Variables descriptions.

Variables	Descriptions	Data Source
Poverty Rate	Percentage of poor people to total population	Indonesian Statistics
Per capita Health Spending	Total realization of health spending in a region divided by the number of populations in that region	Ministry of Finance
Per capita Educational Spending	Total realization of educational spending in a region divided by the number of populations in that region	Ministry of Finance
Per capita Social Spending	Total realization of health spending in a region divided by the number of population in that region	Ministry of Finance
Per capita GRDP	GRDP in a region divided by the number of population in that region	Indonesian Statistics
Human Development Index	Average achievement in the main dimensions of human development: a long and healthy life, a well-rounded knowledge, and a decent standard of living.	Indonesian Statistics
Unemployment Rate	Percentage of population that is unemployed	Indonesian Statistics

2.2. Model

This study uses panel data to test three models: common effect, fixed effect and random effect. There are three tests to choose the best model, namely the Chow test, to choose between common effect & fixed effect. Hausman test, to choose between fixed effect & random effect. Lagrange Multiplier (LM) test to choose between common and random effects. The LM test is only performed when the Hausman test produces a fixed effect as the best model. After testing, the best model is the fixed effect. The model written as follows :

$$\log Pov_{it} = \beta_0 + \beta_1 \log GovHealth_{it} + \beta_2 \log GovEdu_{it} + \beta_3 \log GovSoc_{it} + \beta_4 \log GdpCap_{it} + \beta_5 \log HDI_{it} + \beta_6 \log UR_{it} + \varepsilon_{it}$$

whereas

Pov_{it}	Poverty rate in region i and year t
$GovHealth_{it}$	Health spending in region i and year t
$GovEdu_{it}$	Educational spending in region i and year t
$GovSoc_{it}$	Social spending in region i and year t
$GdpCap_{it}$	PDRB per capita in region i and year t
HDI_{it}	HDI in region i and year t
UR_{it}	Unemployment rate in region i and year t
ε_{it}	Error term

3. Results and Discussion

3.1. Descriptive

Table 2 shows descriptive statistics for all research variables. The average poverty rate is 10.79% with a minimum rate of 3.47% and a maximum rate of 28.45%. The average health spending is IDR 997.74 Billion with a minimum rate of IDR 220.2 Billion and a maximum 1DR rate of 1.772 Billion. The average educational spending is IDR 2,920.3 Billion, this figure exceeds the value of health spending and social spending. Educational spending is still a top priority for both the central and local governments. Per capita, GRDP has an average figure of IDR 315.2 Million, a minimum rate of IDR 21.6 Million, and a maximum rate of IDR 1,953.4 Million. The average HDI of Indonesia is 70.68, with the lowest figure of 58.05 and the highest of 81.65. This condition shows that the quality of human development has increased. The average unemployment rate is 4.86% with the lowest rate being 1.14% and the highest being 8.73%.

Table 2.
Descriptive analysis.

Variables	Mean	Standar dev.	Minimum	Maximum
Poverty rate	10.79 %	5.62 %	3.47 %	28.45 %
Health spending	IDR 997,74 Billion	IDR 1,638 Billion	IDR 220,2 Billion	1DR 1,772 Billion
Educational Spending	IDR 2,920.3 Billion	IDR 958,6 Billion	IDR 143,7 Billion	IDR 21.788 Billion
Social spending	IDR 129,63 Billion	IDR 323,18 Billion	IDR 8,29 Billion	IDR 3,897.5 Billion
Per capita GRDP	IDR 315.2 Million	IDR 445.2 Million	IDR 21.6 Million	IDR 1,953.4 Million
HDI	70.68	4.03	58.05	81.65
Unemployment rate	4.86 %	1.56 %	1.14 %	8.73 %

Table 3 shows the results of estimating the impact of mandatory spending and control variables on the poverty rate in Indonesia in 2016–2022.

Table 3.
Estimation results of the effect of mandatory spending and control variables on poverty rates in Indonesia in 2016–2022.

Independent variables	Coefficient	Significance
Health spending (GOVH)	0.024429	1.582534 (0.1151)
Educational spending (GOVEDU)	-0.009794	-0.863567 (0.3889)
Social spending (GOVSOC)	0.031758	2.644521 (0.0088)*
Per capita GRDP (GDPCAP)	-0.117498	-1.491897 (0.1373)
Human development index (IPM)	-0.027218	-3.758263 (0.0002)*
Unemployment rates (UR)	0.007874	1.595120 (0.1123)
R-squared	0.991315	
Adjusted R-squared	0.989604	
F-statistic	579.4682	
Prob(F-statistic)	0.000000	

Note: Keterangan : *** = signifikan pada α 1 %

Table 2 shows two variables significantly affecting the poverty rate: Social Spending (GOVSOC) and the Human Development Index (HDI). The other three independent variables, such as Health Spending (GOVH), Education Spending (GOVEDU), GRDP per capita (GDPCAP), and Unemployment Rate (UR), do not significantly affect the poverty rate. The determination coefficient or R-squared of 0.991315 indicates that the independent variables can explain the dependent variable by 99.13%, and other independent variables outside the model explain the remaining 0.87%.

Indonesia, as a developing country, faces persistent challenges in reducing poverty despite ongoing government efforts. The mandatory spending policy, as stipulated in national regulations, mandates a specific allocation of budgetary resources for sectors deemed crucial for public welfare. This study examines whether these expenditures significantly influence poverty alleviation across different provinces. Utilizing a panel data approach over a defined time period, the research analyzes the relationships between government spending in social welfare (GOVSOC), health (GOVH), and education (GOVEDU), along with other economic indicators such as Gross Regional Domestic Product per capita (GDPCAP), unemployment rate (UR), and the Human Development Index (HDI). The findings reveal that social welfare spending (GOVSOC) and HDI have a significant and direct impact on reducing poverty, underscoring their critical role in improving the well-being of disadvantaged populations. However, expenditures on health and education, as well as economic indicators like GRDP per capita and unemployment rate, do not show a statistically significant effect on poverty levels, suggesting that these factors may require a more strategic and targeted implementation to yield tangible outcomes. This research highlights the importance of prioritizing effective social spending policies and improving human development as key strategies to achieve inclusive economic growth and poverty reduction in Indonesia's diverse regions.

Social spending has a positive sign, meaning that a 1% increase in social spending will increase the poverty rate by 0.03%, assuming other factors are held constant. The results of this study contradict previous studies, such as Elshahawany & Elazhary (2024) and Biltagy & Hamdi (2024), that social spending can reduce poverty rates. This is thought to be caused by the inaccurate targeting of social assistance recipients, who are many people who can receive assistance. Then, social assistance is short-term only to overcome consumption problems in the short term. However, the problem of poverty is more about long-term treatment.

HDI has a negative effect on poverty rates. A 1 basis point increase in HDI reduces poverty rates by 0.02%. HDI consists of health, education, and living standards, crucial in poverty alleviation efforts. Increasing access to these three dimensions can significantly reduce poverty rates (Pardita et al., 2024) (Lestari et al., 2022). Human development increases productivity, increases income, and reduces poverty among the population.

Several reasons why mandatory spending, such as education and health spending, does not affect poverty are: first, the quality of spending is still lacking because it only focuses on the specified quantity; for example, education spending is at least 20%. Second, the focus of education spending is still on employee wages, but the productivity of education personnel is still below standard. Improvements in the quality of teachers and facilities in public schools are still far from those in private schools, so parents prefer to send their children to private schools.

Several reasons why health spending fails to impact poverty levels significantly are researched by Kolasa & Weychert (2024). Some causes include inequality of access, so quality health services are often not evenly distributed at all community income levels. Other causes, such as poor quality health services, lack of competent medical personnel, limited good medicines, and inadequate health facilities in remote areas, can reduce the effectiveness of preventive treatment. Another factor that needs to be considered is changing poor public health behaviors such as smoking, consuming unhealthy foods, and unhealthy lifestyles. Therefore, increasing government spending alone is not enough to improve public welfare because the ability to provide effective and quality services varies greatly among local governments.

4. Conclusion

The results of the study indicate that Social Spending (GOVSOC) and Human Development Index (HDI) have a significant effect on poverty levels. This confirms that government social spending and human development levels are the main factors in poverty alleviation efforts. Meanwhile, health spending (GOVH), education spending (GOVEDU), Gross Regional Domestic Product per capita (GDPCAP), and unemployment rate (UR) did not show a significant effect on poverty levels in this study. Further research is needed to identify other factors that potentially influence poverty and to explain the deeper relationships between the independent variables that were not significant in this study.

4.1. Policy Implications

This study has important implications for public policy. The government should prioritize increasing the allocation of social spending and strengthening human development indicators as the main strategy in poverty reduction. However, the insignificant influence of other variables indicates the need for further evaluation of the effectiveness of budget use in the health and education sectors, as well as efforts to increase GRDP per capita and control unemployment. The government needs to optimize social spending by ensuring targeted allocations and providing direct impacts on poor community groups. Efforts to increase HDI, such as access to quality education, equitable health services, and improving living standards, need to be continuously strengthened. It is recommended that the government evaluate programs in the health and education sectors and review the mechanism for increasing per capita income to make it more relevant to poverty reduction.

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