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Article

Efficiency of public spending and welfare in Indonesia

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Abstract: Poverty is a major challenge caused by various situations as well as cultural, social, economic, and political interactions. Therefore, poverty alleviation programs and strategies require an integrated approach carried out in consistent and organized stages. It required the participation of all parties, both regional heads, Regional People's Representative Assembly (RPRA) members, entrepreneurs, and other elements of society. This study aimed to investigate the effect of local spending efficiency on public welfare in Indonesia, using a quantitative and explanatory method. The analysis method used in this study is the panel data regression model. The research population in all provinces in Indonesia was 34 provinces, and a purposive sampling method was used, where a total of 26 provinces were selected. The research period is 2017–2021. The efficiency of local spending (education, health, and infrastructure) is estimated using the Stochastic Frontier Analysis (SFA) cost function approach. The results showed that the higher the efficiency of education spending, the more it will increase public welfare in Indonesia. Meanwhile, the health spending efficiency and the infrastructure spending efficiency do not affect public welfare. The implications of this study for the development of science are that the efficient allocation of education spending will be able to improve the quality of education which is a long-term solution to overcome poverty in Indonesia and for policymakers to be able to optimize education spending to achieve the expected educational goals.

Keywords: welfare; education expenditure efficiency; health expenditure efficiency; infrastructure expenditure efficiency; stochastic frontier analysis

1. Introduction

Social welfare is a condition where the material, spiritual, and social needs of citizens are met, specifically ensuring that people live decently, indulge in self-development, and carry out social functions (Republik Indonesia, 2009). Poverty is among the causes of social welfare problems, reflecting in the inability to meet basic needs, conditions of isolation and alienation, dependency, as well as limitations on basic social services such as health, education, clean water, and transportation (Halkos and Aslanidis, 2023). Therefore, it is crucial to improve public welfare through efficient local spending allocation (Rambe et al., 2022). To achieve this objective, the government needs to be efficient in using public funds to face economic challenges and resource limitations (Hallaert and Primus, 2022). It is also crucial to improve the welfare of the people by providing regional autonomy and facilitating the management of various resources owned by each region.

The welfare of society still needs to be discussed due to the significant number of poor people in Indonesia in 2017, 2018, 2019, and 2020, which has increased by 26.58 million (10.12%), 25.67 million (9.66%), 24.79 million (9.22%), and 27.55

million (10.19%), respectively (BPS, 2017, 2018, 2019, 2020). When compared to the poverty rate target in the 2020–2024 Medium-Term Development Plan (as known RPJM) of 7%, the percentage of poor people during the 2017–2020 period was still high. Meanwhile, the average local spending increased during these periods by IDR. 1.95 billion, IDR. 2.02 billion, IDR. 2.19 billion, IDR. 2.07 billion, respectively. Therefore, there was inefficiency in the management of public spending by the Indonesian government.

A crucial topic often discussed is the government's efforts to improve people's welfare through efficient allocation of district spending (Borja-Vasquez et al., 2024). Efficient management of the District Revenue and Expenditure Budget (as known APBD) means using existing resources most optimally. Efficiency can be addressed by improving the procurement process of goods and services, reducing waste, increasing supervision, and managing the use of the government budget. Therefore, the government needs to make efficient use of public funds to face economic challenges and resource limitations (Hallaert and Primus, 2022). It is also crucial to improve the welfare of the people by providing regional autonomy and facilitating the management of various resources owned by each region.

The relationship between local spending efficiency and public welfare can be explained by agency theory. This theory, popularized by Jensen and Meckling (1976), states that there is a contractual working relationship between the agent and the principal. Agency theory is generally associated with two possible challenges in the principal-agent relationship, namely the conflict of interest between the principal and the agent, as well as how the principal can control the actions of the agent (Eisenhardt, 1989). In public sector organizations, the major challenge for the principal (community) is ensuring that the agent fulfills the interests of the community as a whole (Gauld, 2022). The work contract between the two parties includes budget planning, implementation, and reporting of the regional budget, which is accounted for by the principal each period.

The current study measured the efficiency of local spending using three types of spending, namely education, health, and infrastructure, all categorized as productive spending (Turnovsky and Erauskin, 2022). Monteiro and Turnovsky (2022) stated that productive government spending could increase economic growth and public welfare in the long term. Therefore, in measuring the efficiency of regional spending in each region in Indonesia, the output produced is expected to improve public welfare.

Public services are part of the government's task to improve welfare. Therefore, it is important to improve the quality of public services to achieve this objective. Since the 1980s, public sector reforms have been carried out in several countries (Christopher, 1991; Hood, 1995; James and Manning, 1996; Ward, 1993) to change the management of the public sector compared to the private sector (Christensen and Lægreid, 2007). This effort emphasizes the importance of performance measurement as a method of evaluating the success of an organization. One of the main issues in public finance is the efficiency of government spending. Government spending is grouped into productive spending, such as education, health, defense, infrastructure, and communication systems, while non-productive spending includes subsidies from the government.

The relationship between local spending efficiency and public welfare has been relatively discussed in previous studies, but the results vary. For instance, Fils et al. (2023) found that highly efficient spending in the productive sector, namely education spending, could increase employment opportunities and generate public welfare. Saraswati (2012) found that local spending efficiency for education functions could reduce poverty levels in Indonesian city/regency governments in 2008. According to, Value for Money in School Education (2022), education and health spending could improve the welfare of the poor. However, several other studies found that local spending efficiency did not affect public welfare (Saraswati, 2012; Yabbar et al., 2014). For instance, Trends (2024) found that health spending efficiency did not affect public welfare in Yordania. Based on these conclusions, the current study aimed to (1) measure the efficiency of local spending in local governments (provinces) in Indonesia, and (2) analyze the effect of local spending efficiency (education, health, and infrastructure) on public welfare in local governments (provinces) in Indonesia. The results were expected to provide direction for local governments in evaluating public policies in the fields of education, health, and infrastructure. To address these objectives, the Stochastic Frontier Analysis (SFA) cost function method was used to calculate the efficiency score of local spending in each province of Indonesia. Furthermore, the panel data regression equation was used to test the effect of local spending efficiency on public welfare. The study also made significant contributions, namely provided empirical evidence on the impact of regional autonomy on provincial government performance, offered a basis for decision-making on the amount of funds to be distributed and spent by the provincial government, and guided experts who considered regional spending output in the SFA model.

1.1. Impact of educational spending efficiency on welfare

Social welfare is a condition where the material, spiritual, and social needs of citizens are based on agency theory, the agent (public official) assigned by the principal (society) should fulfill the work contract that has been collectively agreed upon. The contract stipulates that agents can create public welfare (Moore and Vining, 2023). The government can manage funds (as known APBD) and build programs to improve public welfare such as infrastructure, health, and education.

Education, infrastructure, and health spending are some categories of productive regional spending. Investment in education shows that people could have better welfare in the future as education can improve community welfare (Fils et al., 2023). Health spending and infrastructure of various resources and facilities can also improve community welfare.

From the perspective of humans as capital, education is an investment for the future. The community tends to obtain better welfare when educational investment is provided (Spada et al., 2023). Furthermore, school-based education management should be improved, ensuring that available resources are utilized optimally to achieve educational objectives.

Previous studies have shown that public welfare is influenced by the efficiency of education spending. The more efficient education spending, the more jobs and public welfare in a country (Ambarkhane et al., 2020; Ananda et al., 2017; Chan et al.,

2017; Fils et al., 2023; Saraswati, 2012). However, some studies found that increasing the efficiency of education spending had no impact on increasing public welfare (Saraswati, 2012; Yabbar et al., 2014). This showed only non-poor people benefited from education spending efficiency. Based on these discussions, the following hypothesis was formulated.

H_1: Efficiency of education spending has a positive impact on public welfare.

1.2. Impact of health spending efficiency on welfare

The World Health Organization (WHO) emphasizes that health investment through health spending is essential to address poverty, increase productivity, and achieve sustainable economic growth in the long term. People with good health tend to be more active, enthusiastic, and productive in the workplace. This was supported by Atilgan et al. (2024), where health capital as measured by health spending per capita had a positive impact on economic growth in the long term. Health spending can also provide welfare for the community by having a healthy body (Azam and Awan, 2022; Ridhwan et al., 2022). Public organizations, especially local governments, are expected to reduce the inefficiency of the health service system to increase the average life expectancy each year (Khan et al., 2024). Previous studies have shown that the efficiency of health spending influences public welfare. Health spending can increase economic growth and the welfare of the poor (Banik et al., 2023; Nabeela, 2012). Based on these discussions, the following hypothesis was formulated.

H_2: Efficiency of health spending has a positive impact on public welfare.

1.3. Impact of infrastructure spending efficiency on welfare

Infrastructure spending also needs to be considered by the government. According to Aschauer (1989), infrastructure can drive economic growth in society and enable faster access to resources. Furthermore, it can increase competitiveness and strengthen connectivity between countries. Careful planning before starting a project is very important because infrastructure development requires greater costs. The government should consider the economic aspects, efficiency, and effectiveness of infrastructure development to improve people's welfare (Adegboye and Akinyele, 2022). In this context, efficiency means using minimal resources to achieve optimal results.

Studies have shown that the efficiency of infrastructure spending influences public welfare. For instance, infrastructure spending can reduce poverty (Foster et al., 2022). Public welfare increases along with the decline in poverty levels. Based on these discussions, the following hypothesis was formulated.

H_3: The efficiency of infrastructure spending has a positive impact on public welfare.

2. Materials and methods

This study used a quantitative method to test the formulated hypotheses. Furthermore, an explanatory method was used, specifically analyzing the relationship between the variables studied through hypothesis testing (Johannesson et al., 2023; Sekaran and Bougie, 2016). The study location was the local government (province) of Indonesia using data issued by the Central Statistics Agency, the Directorate of

Fiscal Balance of the Ministry of Finance, the Ministry of Home Affairs, and the Ministry of Public Works and Public Housing. Meanwhile, the population comprised all local governments (38 provinces) from 2017 to 2021. The period 2017 was chosen as the beginning because the Regional Financial Information System (RFIS), which is the source of data on local government infrastructure spending submitted to the Directorate General of Fiscal Balance (DGFB), was only implemented comprehensively starting in 2016. The samples were selected using the purposive sampling method, and adhering to the following criteria, namely (1) the samples were based on provinces registered with the Ministry of Home Affairs up to 2021, totaling 34 provinces, (2) there were input data on education spending, health spending, and infrastructure spending between 2017 and 2021, (3) there were output data on education spending (graduation rates and literacy rates), health spending (life expectancy, and prevalence of malnourished toddlers), and infrastructure spending (length of roads in good condition, and area of water service areas) during the study period. The research variable proxies are presented as follows. **Table 1** below explains the proxy of research variables.

Table 1. Research variable proxy.

No	Variables	Definition	Proxy of Variables	References
1	Education Spending Efficiency (Ef_ES)	Utilization of resources by provincial governments across Indonesia in the form of education spending, both direct and indirect, to maximize educational welfare.	Education spending efficiency scores of provinces in Indonesia	(Mandl et al., 2008; Saraswati, 2012; Yabbar, 2013)
2	Health Spending Efficiency (Ef_HS)	Utilization of resources by provincial governments across Indonesia in the form of health spending, both direct and indirect, to maximize health welfare	Health spending efficiency scores of provinces in Indonesia	(Mandl et al., 2008; Yabbar, 2013)
3	Infrastructure Spending Efficiency (Ef_IS)	Utilization of resources by provincial governments across Indonesia in the form of the APBD, both direct and indirect, to maximize infrastructure welfare.	Infrastructure spending efficiency scores of provinces in Indonesia	(Mandl et al., 2008; Yabbar, 2013)
4	Public welfare (PW)	The condition of people to fulfill the needs of food, clothing, shelter, clean drinking water, as well as access to education and decent work can improve quality of life and provide freedom from poverty.	The poor population is divided by the total population in each province in Indonesia.	(Rahayu et al., 2022; Saraswati, 2012; Sasmal and Sasmal, 2016; Shin et al., 2020)

The education spending efficiency proxy uses the results of educational spending efficiency estimates using the Stochastic Frontier Analysis (SFA) approach. The cost function aims to measure how efficient local governments are in using available resources to achieve certain results, such as the quality of education or student graduation rates. The health spending efficiency proxy uses the results of health spending efficiency estimates using the Stochastic Frontier Analysis (SFA) approach. The cost function aims to measure how health resources are used optimally to achieve maximum results with minimal costs, such as life expectancy and prevalence of malnourished toddlers. The infrastructure spending efficiency proxy uses the results of infrastructure spending efficiency estimates using the Stochastic Frontier Analysis (SFA) approach. The cost function aims to measure how efficient a region is in allocating resources to achieve optimal infrastructure results at minimum cost, such as construction and clean water facilities. The proxy for community welfare is the ratio of the number of people to the total population in an area. This ratio shows how large a proportion of the population lives below the poverty line and serves as an important

indicator in assessing the quality of life and the level of socio-economic welfare of a community.

The estimation model for district spending efficiency (education, health, and infrastructure) used the SFA cost function method, with input indicators (education spending, health spending, and infrastructure spending), education spending output (graduation rate, and literacy rate), health spending output (life expectancy and prevalence of malnourished toddlers), and infrastructure spending output (length of good roads and area of water service). Based on the Coelli (1996) stochastic frontier cost function, the following is an estimation model for education spending efficiency using the Translog xtfrontier cost function:

$$Ln\ Ci = Ln\beta_0 + \beta_1 LnX_{i1} + \beta_2 LnX_{i2} + v + u \quad (1)$$

Description:

Ci = input i (education spending per province 2017–2021)

X_{i1} = education performance (graduation rates of Elementary School (ES), Junior High School (JHS), and Senior High School (SHC))

X_{i2} = literacy rate

$b_1 - b_2$ = parameter

v = error statistic

u = inefficiency

The following is an estimation model for health spending efficiency using the Translog cost xtfrontier function:

$$Ln\ Cj = Ln\beta_0 + \beta_1 LnX_{j1} + \beta_2 LnX_{j2} + v + u \quad (2)$$

Description:

Cj = input j (health spending per province 2017–2021)

X_{j1} = life expectancy

X_{j2} = prevalence of malnutrition in toddlers

$b_1 - b_2$ = parameter

v = error statistic

u = inefficiency

The following is an estimation model for infrastructure spending efficiency using the Translog cost xtfrontier function:

$$Ln\ Ck = Ln\beta_0 + \beta_1 LnX_{k1} + \beta_2 LnX_{k2} + v + u \quad (3)$$

Description:

Ck = input k (infrastructure spending per province 2017–2021)

X_{k1} = length of good roads at a provincial level

X_{k2} = water service area

$b_1 - b_2$ = parameter

v = error statistic

u = inefficiency

To calculate the efficiency score of district spending, the input and output of each district spending should be known first. The following are the input and output indicators of local spending as explained in **Table 2**.

Table 2. Input and output indicators for public expenditure.

Input Indicator	Source	Output Indicator	Source
Total Education Expenditure (Ci)	Directorate General of Fiscal Balance (DGFB)	School graduation rate (X_{i1})	Central Bureau of Statistics
		Literacy rate (X_{i2})	Central Bureau of Statistics
Total Health Spending (Cj)	Directorate General of Fiscal Balance (DGFB)	Life expectancy (X_{j1})	Central Bureau of Statistics
		Prevalence of malnourished toddlers (X_{j2})	Director General of Regional Development, Ministry of Home Affairs
Total Infrastructure Spending (Ck)	Directorate General of Fiscal Balance (DGFB)	Length of good roads at the provincial level (X_{k1})	Central Statistics Agency and Ministry of Public Works and Public Housing
		Water service area (X_{k2})	Central Bureau of Statistics

This study used an econometric analysis method with a panel data regression equation (Ekananda, 2016) to examine the effect of local government spending efficiency on community welfare. The panel regression model is as follows (Model 2):

$$PW_{it} = \alpha_0 + \beta_1 Ef\_ES_{it} + \beta_2 Ef\_HS_{it} + \beta_3 Ef\_IS_{it} + w_{it} \quad (4)$$

Description:

PW_{it}: public welfare

Ef_ES_{it}: efficiency of education spending

Ef_HS_{it}: health spending efficiency

Ef_IS_{it}: infrastructure spending efficiency

α_0: Intercept

β: slope

w_{it}: Combined error (ε_{it}: cross-section error component and υ_{it}: combination of cross-section and time series error components)

u_{it}: the combination of cross-section and time series error components).

3. Results and discussion

Based on analysis, 26 provinces met the criteria for selecting samples during the 2017–2021 period. After conducting xtfrontier test using SFA, technical efficiency was predicted on the 2017–2021 panel data. An overview of the efficiency of education spending, efficiency of health spending, efficiency of infrastructure spending, and public welfare in Indonesia, can be summarized in the descriptive statistics shown in **Table 3** below.

Table 3. Descriptive statistics of research variables.

Variable Name	Observation	Mean	Minimum	Maximum	Deviation Standard
The Efficiency of Education Spending	130	0.203	0.035	0.860	0.197
The Efficiency of Health Spending	130	0.206	0.016	0.835	0.195
The Efficiency of Infrastructure Spending	130	0.193	0.078	0.556	0.113
Public Welfare	130	0.106	0.035	0.279	0.056

The minimum efficiency of education spending score was found in North Kalimantan province, while the maximum efficiency score was found in West Java province. The average efficiency of education spending score for 26 provinces in Indonesia in 2017–2021 was 0.203, meaning that the efficiency of education spending in Indonesia is small, this means that the input costs in the form of realized education spending are large but produce small output. In addition, governments that do not yet have high-efficiency education spending scores mean they are not yet able to manage finances by creating effective and efficient education programs for the community. The minimum efficiency of health spending score is found in the Special Region of Yogyakarta province, while the maximum efficiency score is found in East Java province. The average efficiency of health spending score is 0.206, meaning that health spending efficiency in Indonesia is small, which can be seen from the large health spending that has been spent by the government, but the health output is small. The minimum efficiency of infrastructure spending score is found in Gorontalo province, while the efficiency of infrastructure spending score is found in Aceh province. On average, the efficiency of infrastructure spending has not produced maximum output (such as the length of roads in good condition, water services area). The lowest value of public welfare (measured by the poverty rate) is in the province of Papua, with the highest value in the province of Bali. On average, the poverty rate is 0.106, meaning that the percentage of poor people is 10.6% of the total population in each province of Indonesia.

The test results, using panel data regression equations to answer hypotheses 1 to 3 based on the equation model can be seen in **Table 4**.

Table 4. Hypotheses testing result.

Testing Model:
$$\boldsymbol{PW_{it} = \alpha_0 + \beta_1 Ef\_ES_{it} + \beta_2 Ef\_HS_{it} + \beta_3 Ef\_IS_{it} + w_{it}}$$

Item	Expected direction	Coefficient	*P* value ($P > \lvert t \rvert$)	Decision
The efficiency of education spending	-	−0.063	0.008***	H_1 supported
The efficiency of health spending	-	0.062	0.018**	H_2 not supported
The efficiency of infrastructure spending	-	0.211	0.000***	H_3 not supported
Total observations (N)	130			
***Significant at 1% level **Significant at 5% level *Significant at 10% level				
F statistic = 16.650 R^2 = 0.283 Adj R^2 = 0.266 Root MSE = 0.082				

This study proxied the level of public welfare with the poverty level. The lower the poverty level will reflect a higher level of public welfare and vice versa. **Table 4** shows that β_1 has a negative value, meaning that the higher the efficiency of education spending, the lower the poverty level, which means the higher the level of public welfare. Therefore, H_1 which states that the efficiency of education spending has a positive effect on public welfare is supported. Then β_2 and β_3 from **Table 4** have positive values, meaning that the higher the level of health spending efficiency and

infrastructure spending efficiency, the higher the poverty level (the lower the level of public welfare). Therefore, H_2 health spending efficiency has a positive effect on public welfare and H_3 which states that infrastructure spending efficiency has a positive effect on public welfare is not supported.

4. Discussion

This study succeeded in finding evidence that the higher the efficiency of education spending, the higher the level of public welfare. These results were in line with Ambarkhane et al. (2020), Ananda et al. (2017), Chan et al. (2017), Elshahawany and Elazhary (2024), Saraswati (2012) who found that the rate of poverty reduction slowed further after increasing the efficiency of education spending. The results are inconsistent with Knight et al. (2022) and Yabbar (2014), who found that educational spending efficiency does not affect poverty. Therefore, implementing efficiency of education spending might not optimally address illiteracy and foster students to complete education at elementary school, junior high school, and senior high school levels. The provincial government was required to re-evaluate the policy of using education spending funds and focus on improving the quality of education spending output for the community. This could enable the community to live more prosperously above the poverty zone. Increasing output could be prioritized in provinces with smaller education performance output, such as Papua. The results of this study also follow the agency theory which that if government officials act not following the interests of the community, then the result is that resources that are intended to improve the quality of education are not allocated efficiently so that educational outcomes are getting worse, human resource development is limited, and poverty is increasingly sustainable. Inefficiency in education spending can be reduced through strict monitoring mechanisms and effective accountability so that it can improve educational outcomes and reduce poverty.

Contrary to expectations, this study found evidence that the higher the efficiency of health spending, the lower the level of public welfare. This suggests that policies that focus solely on health spending efficiency may exacerbate poverty by reducing the quality and accessibility of essential health services for disadvantaged populations. These results are in line with Arhin et al. (2023) who found that increasing health spending efficiency can worsen inequality and hinder poverty reduction in some regions, especially if the focus on efficiency sacrifices accessibility of services for the poor. The argument is that health spending in 2017–2021 was used to produce the most optimal health performance output. The government specifically used health spending for handling COVID-19 patients, providing COVID-19 vaccines for the community, patient care costs, procuring medical devices, incentives for health workers, and more. The community's Life Expectancy remained the same from 2017 to 2021, and the people still had a life expectancy of up to 70 years despite the COVID-19 pandemic in 2020–2021. They do not have access to sanitation, because they live in densely populated villages where houses are close together, they cannot access financial support because they work in the informal sector, and they also do not have internet facilities so they cannot move their work online, and they are also the last in line to get vaccinated (Gupta et al., 2021). Other obstacles such as weak governance,

limited public investment, ineffective cross-sectoral coordination, and budget allocations that are still not fully targeted also play a role in slowing down the achievement of expected results (reducing community poverty) (World Bank Group, 2024). These results were not in line with Banik (2023); Janjua and Kamal (2014) and Yabbar (2014), where the use of efficient health spending for health significantly reduced poverty in society. As a result of the COVID-19 pandemic, local governments have implemented efficiency in health spending, especially health spending aimed at handling COVID-19.

Contrary to expectations, this study found evidence that the higher the efficiency of infrastructure spending, the lower the level of public welfare. Disagreement in research suggests that infrastructure spending has a negative effect on national poverty (Sasmal and Sasmal, 2016). The results of this study are in line with Ramey (2021) who found that infrastructure projects that focus heavily on efficiency often experience delays in implementation and reduced short-term impacts, which can indirectly increase the burden on the poor. When these projects sacrifice social sustainability, the impact on poverty can be negative. According to Nwokoye et al. (2017), the government should intervene in infrastructure development in the community and contribute positively to the progress of the nation. The argument is that infrastructure spending that produces infrastructure performance output in 2017–2021 can increase community poverty. Therefore, the provincial government's attention to infrastructure development such as clean water facilities in various provincial areas contributed positively to community welfare. This is because infrastructure development is not on target, causing budget inefficiency and not on target in the community. In the long term, infrastructure spending funded by people's taxes will be even greater, which will ultimately increase community poverty.

A region with access to autonomous authority could actively and directly carry out poverty alleviation efforts. Therefore, various poverty alleviation plans, policies, and programs have been incorporated by the regional government based on the allocated and used budget. A budget policy could be considered to benefit the poor when formulated and implemented with the voices and interests of disadvantaged community groups. Due to the limitation of the regional government budget, the budget should be used effectively and directly related to poverty alleviation. Therefore, poor communities should substantially benefit from regional spending such as education, health, infrastructure, and more (Qiu et al., 2023). In practice, before making budget allocation decisions, it was essential to identify which community groups would receive the benefits. The budget, in this context, could be considered pro-poor should the benefits be predominantly enjoyed by the poor.

5. Conclusion

This study successfully found that the higher the efficiency of education spending, the lower the poverty rate, but this study failed to find evidence for health spending efficiency and infrastructure spending efficiency. Contrary to expectations, this study found evidence that the higher the efficiency of health spending and infrastructure spending efficiency, the lower the level of public welfare. Therefore, the provincial government should be more careful in allocating education spending to improve

performance, by reducing students who do not complete school and decreasing the illiteracy rate. In addition, the health spending efficiency and infrastructure spending efficiency policies carried out by the local government should be balanced with policies that consider the access and needs of vulnerable groups so as not to worsen the economic conditions of the community which can ultimately increase poverty. The government needs to map social and economic data to understand the specific needs of each region. If this is done, then the use of the budget can be focused on sectors that do not directly affect vulnerable groups. Local governments need to prioritize the development of basic infrastructure such as access to clean water and health facilities compared to large infrastructure projects that are not urgent. The enforcement of people to buy clean water at relatively high prices tended to reduce economic capacity and general community welfare.

Poverty is a major challenge caused by various situations as well as cultural, social, economic, and political interactions. Therefore, poverty alleviation programs and strategies require an integrated approach carried out in consistent and organized stages. It required the participation of all parties, both regional heads, Regional People's Representative Assembly (RPRA) members, entrepreneurs, and other elements of society. Planned, gradual, and continuous programs should be the basis for the right approach. In addition, software (institutions, organizations, and programs) and hardware (programs and budgets) were crucial in addressing poverty. In this context, poverty could be attributed to limited conditions of people, both in terms of accessibility to production factors, business opportunities, education, and other means of life.

This study unfortunately has limitations, namely education spending, health spending, and infrastructure spending only examine public spending, not including private spending. Private spending can only be obtained from primary data, while this study uses secondary data.

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