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Unraveling the impact of social assistance and capital expenditure on poverty rates in Papua's Region

Nurfatma Restu Mahanani*, Geger Adelia
The Audit Board of the Republic of Indonesia, DKI Jakarta, Indonesia

ABSTRACT

The Indonesian government has made various efforts to reduce poverty, including through policies in government spending. The spending realized by the government is expected to be able to encourage an increase in people's welfare and reduce poverty. This study aims to analyze the effect of government spending, especially social assistance expenditure and five types of capital expenditure, on the poverty rate, using data at the regional/city level in the Papua province from 2011 to 2019. This study also uses other supporting variables, namely the Gini ratio, Gross per capita Regional Domestic Product (GRDP), school participation rate, and ratio of community health centers. The data used is secondary data obtained from Statistics, The Audit Board of The Republic of Indonesia (Badan Pemeriksa Keuangan, BPK), and the Ministry of Health. The data analysis technique used in this study is panel data regression analysis with a fixed effect model. The analysis showed that out of the six types of government expenditure studied, only capital expenditure for roads, networks, and irrigation significantly reduces the poverty rate.

KEYWORDS:
Poverty rate; social assistance expenditure; capital expenditure; fixed effect

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*Corresponding author
Email: restu_mahanani@yahoo.com

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INTRODUCTION

Poverty is a major issue that many countries face today. The importance of poverty problems faced by the world is reflected in the commitment of countries in the world, making the goal to eliminate poverty, the first of 17 goals to be achieved in the Sustainable Development Goals. In Indonesia, handling the problem of poverty is also a major concern of the central and local governments as part of efforts to realize the government's objectives in the Preamble of the 1945 Constitution, which mandates the promotion of the general welfare and social justice for all Indonesian people.

Statistics Indonesia (Badan Pusat Statistik, BPS) data shows that Papua province has always has the highest poverty rate in Indonesia for many years compared to other regions (Figure 1). Analysis of areas with high poverty in 2018 by the Ministry of National Development Planning (Kementerian Perencanaan Pembangunan Nasional Republik Indonesia/ Badan Perencanaan Pembangunan Nasional, Bappenas) states factors that influence poverty in Papua, including accessibility which tends to be difficult due to the topographic conditions of the region. This hampers population mobility, distribution of goods, and provision of basic services to the community. Apart from that, low investment and productivity because most poor people work as farmers and fishermen who only fulfill their daily food needs are also the main poverty profile in Papua province.

Various efforts have been made to reduce poverty, including through government spending. Although, according to Anderson et al. (2018), there is no clear evidence that higher government spending has significantly reduced income poverty in low and middle-income countries, Anitasari and Soleh (2015) state that government spending is part of fiscal policy to prepare budget instruments to regulate the economy. All types of spending are expected to improve the economy and community welfare. Research by Liu et al. (2020) in Pakistan proves that government spending significantly affects poverty alleviation in rural Pakistan. These results align with the research results of Efrianti et al. (2018) also Silva and Sumarto (2015) in Indonesia.

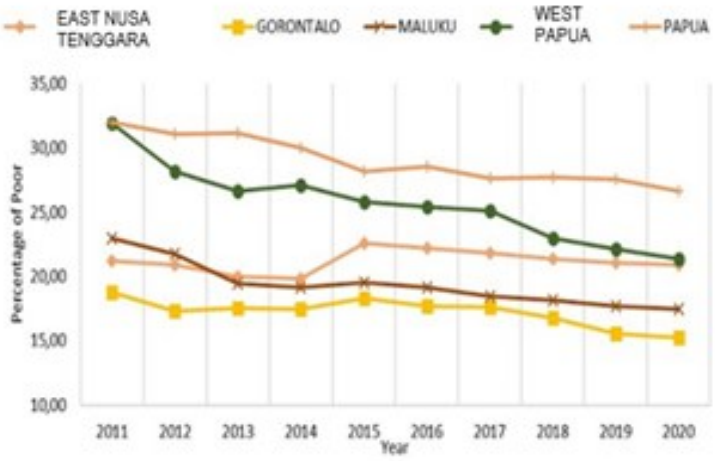

Figure 1. Poverty Rate (Percent) in 2011-2020
Source: BPS Provinsi Papua (2021)

Implementing regional autonomy gives regency/city governments broader rights and obligations to manage government affairs more independently. This condition allows local governments to be more active in dealing with poverty problems by planning, formulating, and implementing policies according to their respective needs. Local governments can integrate poverty alleviation efforts into regional development policies and activities, including through spending policies. The government needs to ensure that the expenditure allocation is appropriate to support poverty alleviation with optimal results, minimizing administrative and unproductive activities (Nursini & Tawakkal, 2019). The reallocation of government spending from less productive sectors, such as public administration, to other sectors, such as agriculture, energy, water, and health, leads to higher Gross Domestic Product (GDP) growth rates, thereby accelerating poverty alleviation (Sennoga & Matovu, 2013).

In a region, Gross Regional Domestic Product (GRDP) is a key indicator of the economic performance and overall wealth generation within a specific region. Higher GRDP implies increased economic activities, job opportunities, and income levels, which, in turn, can contribute to poverty reduction. The positive correlation between economic growth, as GRDP measures and poverty reduction is well-established in economic literature (Barro, 2000; Dollar & Kraay, 2002). As regions experience economic expansion, there is a likelihood of improvements in living standards, access to education, healthcare, and other essential services, ultimately leading to a decline in poverty rates (Bourguignon, 2004; Ravallion, 2001). However, it is important to note that the impact of GRDP on poverty is complex, influenced by various factors such as income inequality, government policies, and the effectiveness of social programs (Ravallion, 2005).

The types of local government spending in Indonesia closely related to poverty are social assistance and capital expenditure. Social assistance is government expenditure in the form of money, goods, and services provided selectively and not continuously to improve community welfare (Rarun et al., 2018). Social assistance spending can be handed over to individuals, families, and community groups with unstable economic conditions to meet minimum basic needs. Meanwhile, capital expenditure is aimed at acquiring fixed assets and other assets. The assets acquired are expected to provide benefits beyond one accounting period, such as capital expenditure to acquire land, buildings, and equipment. The allocation of capital expenditure for infrastructure is expected to facilitate public access to goods or services to encourage the creation of economic activities that are expected to increase economic growth. Government capital expenditure and economic growth together influence public welfare (Masnila et al., 2018).

Data on the realization of government spending in 2019 from the Directorate General of Regional Financial Balance (Direktorat Jenderal Perimbangan Keuangan, DJPK) of the Ministry of Finance showed that regencies/cities in Papua Province have a large proportion of social assistance and capital expenditure when compared to other regions in Indonesia as seen in Figure 2. Nevertheless, Papua province still has the highest poverty rate in Indonesia.

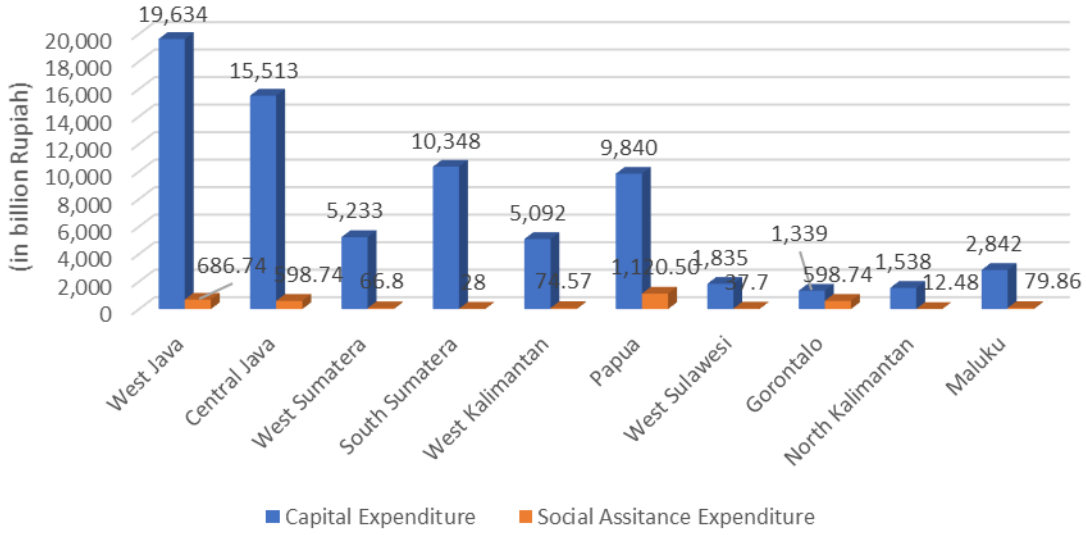

Figure 2. Social Assistance and Capital Expenditure in 2019
Source: DJPK (2020b)

According to Keynes' theory, one component of economic growth is government spending. Government spending is expected to create higher social welfare, including reducing public poverty. Several research studies showing that government spending influences poverty levels carried out by Silva and Sumarto (2015), who find that government spending in Indonesia significantly influenced poverty alleviation; Liu et al. (2020) that there is a negative and significant relationship between government spending with poverty levels in both the short and long term in Pakistan, also Efrianti et al. (2018) that economic growth, government expenditure, private investment, population, and unemployment have a significant effect on poverty in regencies/cities of South Sumatra Province. On the other hand, research on economic growth and poverty in 33 provinces in Indonesia by Sumiyarti (2022) and Sendouw et al. (2017) in Manado City shows contradictory results that the government capital expenditure effect is insignificant in reducing the poverty rate. Another research by Samsal and Samsal (2016) shows that all components of government spending studied have a negative coefficient on the poverty rate in India. However, only government spending on infrastructure has a significant effect on reducing poverty. This is aligned with research in Brazil by Marinho et al. (2017), which finds that government spending on infrastructure has a negative and significant effect on poverty.

Given the wide range of government spending components, more specific research is needed to determine which components significantly influence efforts to reduce poverty. Research results from Nigeria by Babatunde (2018) indicate that government spending on transport and communication, education, also health infrastructure significantly affects economic growth; spending on agriculture and natural resources infrastructure recorded a significant inverse effect on economic growth. Economic growth can be a catalyst for poverty reduction by creating employment opportunities and boosting incomes (Dollar & Kraay, 2002). More detailed research to determine which capital expenditures influence the poverty rate is still rare in Indonesia. One of the studies that focused on the influence of the type of government

capital expenditure on poverty was carried out by Krismaningtyas (2019), which used the Less Square-Structural Equation modeling (PLS-SEM) method to determine the influence of each type of capital expenditure on poverty in East Java. This study shows that capital expenditures for buildings and other expenditures negatively and significantly influence poverty. In contrast, capital expenditures on roads, irrigation, and networks positively influence poverty.

Wagle's (2016) research in 33 Asian countries also Silva and Sumarto (2015) in Indonesia conclude that government spending on social protection significantly affects poverty reduction and inequality. Sasmal and Sasmal research (2016) shows that although all types of government spending have a negative coefficient on poverty, only government spending on infrastructure significantly influences the poverty rate. Sumiyarti's research (2022) results show that social assistance expenditure positively and significantly influences poverty. Meanwhile, Sendouw et al. (2017) showed that spending on social assistance had a positive but insignificant effect on the poverty rate. Todaro and Smith (2014) mention that direct transfers or subsidies are very effective when those in need receive them. In addition, recipients also do not depend on the provision of assistance. However, they are instead motivated to build assets such as education, which is expected to prevent people from falling into poverty. The local governments need to ensure that social assistance spending is realized on target to encourage the achievement of its objectives in helping to alleviate poverty.

Considering various previous studies, this study was conducted to obtain empirical evidence regarding the influence of government spending on poverty levels in regencies/cities in Papua province. The study's results will likely provide information regarding the relationship between government spending, especially social assistance, and capital expenditure on poverty so that local governments can consider it in budgeting. This study builds the hypothesis that social assistance expenditure and each type of capital expenditure realized by the local government affect poverty reduction in Papua. This study differs from the previous research in using regencies/cities in Papua as the object and using more specific capital expenditure variables according to the classification of the type of capital expenditure used by the regency/city government in Indonesia. From several types of government spending, social assistance, and capital expenditure are selected as variables to be studied because both types of variables have a direct relationship with poverty compared to other types of government spending such as salary, official travel, office supplies, rental and others.

RESEARCH METHOD

This study uses quantitative methods with secondary data from BPS, BPK, and the Ministry of Health. The panel data covers all regencies in the Papua province (28 regencies and one city) for nine years from 2011 to 2019. Social assistance and capital expenditure are selected as variables to be studied. The capital expenditure includes land, equipment and machinery, buildings, roads, irrigation, and networks, as well as other capital expenditures. The control variables used in this study are the Gini ratio (describes the condition of societal inequality),

GRDP per capita, school enrollment rate, and the ratio of community health centers per 1000 population. These variables accommodate the multidimensional poverty concept that measures poverty in monetary terms and involves dimensions of health, education, and living standards (Bourguignon & Chakravarty, 2003). The standard of living is represented by per capita GRDP, the school enrollment rate represents education, and the ratio of health centers per 1000 population represents health. The annual poverty rate data released by BPS is from the implementation of the National Socioeconomic Survey (Survei Sosial Ekonomi Nasional, SUSENAS) in March, so this study uses the poverty rate of n+1 (the following year) to be compared with social assistance and capital expenditure, whose value is a cumulative realization up to December. The model used in this study is as follows:

$$PR_{ij} = \beta_0 + \beta_1 SA_{ij} + \beta_2 LE_{ij} + \beta_3 EME_{ij} + \beta_4 BE_{ij} + \beta_5 RIN_{ij} + \beta_6 OE_{ij} + \beta_7 GR_{ij} + \beta_8 GRDP_{ij} + \beta_9 SPR_{ij} + \beta_{10} HC_{ij} + u \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Whereas PR is poverty rate n+1, SA is social assistance expenditures, LE is land capital expenditures, EME is capital expenditures for equipment and machinery, BE is building capital expenditures, RIN is capital expenditures for roads, irrigation, and networks, OE is other capital expenditures, GR is Gini Ratio n+1, GRDP is per capita GRDP, SPR is school participation rate, and HC is ratio of health center per 1000 population. Table 1 summarizes the variables and indicators used in this study. The analysis techniques used in this study are descriptive analysis and panel data regression. The descriptive analysis aimed to obtain a picture of pov-

Table 1. Summary of variables

Variable	Indicators	Unit
Poverty rate	Percentage of the number of poor people in 28 regencies and one city in Papua in 2012-2020	Percent
Social assistance expenditures	Realization of social assistance expenditures in 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Land capital expenditures	Realization of land capital expenditures for 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Capital expenditures for equipment and machinery	Realization of capital expenditures for equipment and machinery in 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Building capital expenditures	Realization of building capital expenditures for 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Capital expenditures for roads, irrigation, and networks	Realization of capital expenditures for roads, irrigation, and networks of 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Other capital expenditures	Realization of other capital expenditures in 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
Gini Ratio	Gini ratio in 28 regencies and one city in Papua in 2012-2020	-
Per capita GRDP	GRDP value divided by the total population of 28 regencies and one city in Papua in 2011-2019	Billion Rupiah
School participation rate	School enrollment rate in 28 regencies and one city in Papua in 2011-2019	Percent
Ratio of health centers per 1000 population	Number of health centers divided by population in 28 regencies and one city in Papua in 2011-2019	-

erty, the realization of social assistance and capital expenditures, and other supporting variables in regencies/cities in Papua. Table 2 summarizes the descriptive statistics of the variables used.

All variables consist of 261 observations. The poverty rate has an average value of 30.09 and a standard deviation of 9.81. The highest poverty rate in Deiyai regency in 2011 was 47.52, while the lowest was in Merauke regency in 2014 at 10.20. This value was much higher than the national poverty rate for that period, which was 9.41 to 12.49. The correlation of each dependent variable to the independent variable was an initial effort to detect the extent of the relationship between the independent and dependent variables. Table 2 shows that social assistance expenditures positively correlate (0.0783) with the poverty rate. This implies that the poverty rate increases as social assistance expenditures increase, although the correlation is relatively weak. Land capital expenditures, building capital expenditures, capital expenditures for roads, irrigation, and networks, per capita GRDP, school participation rate, and Gini Ratio show negative correlations with the poverty rate. This suggests that the poverty rate tends to decrease as these variables increase. The school participation rate, per capita GRDP, and Gini Ratio have relatively strong negative correlations. Capital expenditures for equipment and machinery, other capital expenditures, and the ratio of health centers per 1000 population have weak or no significant correlation with the poverty rate.

The regression analysis of panel data undergoes several stages. Initially, the optimal model (common effect, fixed effect, or random effect) is selected using the Breusch and Pagan Lagrange Multiplier test, the Hausman Test, and the Chow test. This study adopts a fixed effect model, guided by considerations such as the assumed correlation between the independent variables utilized and other variables not incorporated in the model, like geographical conditions. Wooldridge (2016) supports the preference for fixed effects when analyzing policies employing aggregated data. Once the best model is determined, a classic assumption test follows to ensure the absence of violations that might compromise the estimator's status as the best linear unbiased estimator. The tests cover multicollinearity, heteroskedasticity, and au-

Table 2. Descriptive Statistics

Variables	Mean	Std Dev	Min	Max	Correlation
Poverty rate	30.09	9.81	10.03	47.52	1.000
Social assistance expenditures	36.90	33.54	0.00	181.97	0.0783
Land capital expenditures	9.59	9.05	0.00	56.14	-0.2797*
Building capital expenditures	38.67	19.16	3.39	159.64	-0.2791*
Capital expenditures for equipment and machinery	101.21	53.14	9.01	289.32	0.1673
Capital expenditures for roads, irrigation, and networks	123.73	71.17	10.34	435.57	-0.2847*
Other capital expenditures	3.20	4.40	0	40.59	-0.0170
Gini Ratio	0.32	0.07	0.14	0.47	-0.4292*
Per capita GRDP	32.03	50.95	4.21	344.56	-0.4906*
School participation rate	71.27	19.28	9.85	96.75	-0.5953*
Ratio of health centers per 1000 population	0.16	0.10	0.04	0.47	-0.0501

tocorrelation. Subsequently, hypothesis testing is conducted to ascertain the influence of independent variables on dependent variables, both individually and collectively. The suite of hypothesis tests includes t-tests, F tests, and coefficient of determination tests.

RESULT AND DISCUSSION

The first stage of panel data regression is selecting the best model. The results of the Breusch and Pagan Lagrange Multiplier test, the Hausman test, and the Chow test suggest the best model. Furthermore, classical assumption testing is carried out to ensure that the model can produce the best linear unbiased estimator. The classical assumption test result is presented in Table 3. From the result, it can be inferred that the model does not have a multicollinearity problem because no value exceeds 0.8. The results of the Wald test and Wooldridge test (Table 4) show a value less than 0.05, indicating heteroscedasticity and autocorrelation problems in the model. To overcome this problem, a regression of the fixed effect model with the Driscoll-Kraay robust standard error is carried out so that the model can produce a consistent standard error for heteroskedasticity and autocorrelation problems. The estimation results using fixed effect regression with robust Driscoll-Kraay can be seen in Appendix 1.

Models 2 to 7 in Appendix 1 show regression results of government spending with variable controls on poverty rate. Based on the results of the regression, it can be seen that the government spending variables that significantly influence the poverty rate are road, irrigation, and network capital expenditures. This aligns with the results obtained from model 1, which shows regression results against all government spending variables. The coefficient of determination also shows that model 1 becomes the most reliable model to see the influence of government spending variables on the poverty rate. Model 1 shows that five variables significantly affect the poverty rate: road, irrigation, and network expenditure; Gini ratio; per capita GRDP;

Table 3. Classical Assumption Test: Multicollinearity Test Result

	SA	LE	EME	BE	RIN	OE	GR	GRDP	SPR
LE	-0.1096	1							
EME	0.0800	0.3581	1						
BE	0.1613	0.1853	0.3627	1					
RIN	0.1543	0.2728	0.4918	0.4687	1				
OE	-0.0834	0.0182	0.0107	0.0798	0.0572	1			
GR	-0.0875	0.026	0.1014	-0.2376	-0.0126	-0.1242	1		
GRDP	0.1363	0.3605	0.3749	0.2254	0.3513	0.0736	0.0942	1	
SPR	-0.1854	0.1741	0.1721	0.2984	0.1101	-0.0007	0.4074	0.3655	1
HC	-0.0228	-0.1447	-0.076	-0.2251	0.0922	0.2255	0.058	-0.0639	0.1306

Table 4. Classical Assumption Test: Heteroscedasticity and Autocorrelation

Test	Result	Conclusion
Wald	Prob>chi2 = 0.0211	heteroskedasticity
Wooldridge	Prob F = 0.0000	autocorrelation

school participation figures; and the ratio of health centers per 1000 population. The degree of significance of the influence of each independent variable on the dependent variable can be seen from the p-value with the t-test, while the direction of the relationship of the independent and dependent variables is seen from the positive or negative signs on the coefficients of each variable. The school participation rate has a significant effect on the confidence level of 99%, the Gini ratio and the ratio of health centers have a significant effect on the confidence level of 95%, while the capital expenditure on roads, irrigation, and networks as well as per capita GRDP have a significant effect on the confidence level of 90%.

The statistical F probability value shows a figure of 0.0000 or less than the value of α = 5%, then the decision taken is to reject H0, so it can be interpreted that with a confidence level of 95%, the independent variables used in the study together have a significant influence on the dependent variable. The coefficient of determination of 0.3700 indicated that all independent variables used in this study were able to explain the dependent variable by 37%, while the remaining 63% was explained by other variables that were not included in this study. The regression results show that of the six government expenditures studied, only road, irrigation, and network capital expenditures significantly affect the poverty rate. The variable coefficient of -0.0066 means that when all factors are held constant, an increase in capital expenditure for roads, irrigation, and networks, realized by the local government of 1 billion Rupiah, can reduce the poverty rate by 0.0066%. The results obtained from this study are in accordance with several previous studies, such as the research of Marinho et al. (2017), which shows that infrastructure development in Brazil plays an important role in reducing the poverty rate. Similarly, the results of Samsal and Samsal's research (2016) on 15 states in India show that countries with a high ratio of government spending on infrastructure development, such as roads, irrigation, and communications, have high per capita incomes while low poverty rates. The study also shows that although all types of government spending under study have a negative coefficient on the poverty rate, only government spending on infrastructure significantly affects the poverty rate.

Papua Province has an area that tends to have very limited accessibility because it has a large area with topography separated by mountains and valleys. An analysis of areas with high poverty conducted by Bappenas (2018) states that 63% of villages in the Papua region are located in valleys and mountain slopes. The average distance from the regency/city capital in Papua province to the provincial capital in Jayapura is approximately 367 km. Hard-to-reach areas such as Puncak, Puncak Jaya, Lanny Jaya, Intan Jaya, and Paniai regencies contribute to the relatively high poverty rate in the Papua region. Data from Bappenas (2018) also states that only 34% of roads in Papua can be passed by 4-wheeled vehicles or more. In addition, 77% of villages in Papua can be connected by land routes. However, only 29% of these roads have been built with asphalt, and only 32% of villages are traversed by public transport routes (lowest compared to other regions in Indonesia). These conditions restrict population mobility, distribution of goods and services, also the implementation and access of services to the

community, which impact efforts to equalize the results of development and economic growth.

Infrastructure development, such as the construction of roads, is expected to open the isolation of areas in Papua, encourage open access to goods and services, also attract private investment, which is expected to be able to leverage economic movement and break the existing cycle of poverty. Through Law Number 15 of 2017 concerning the state budget for the 2018 Fiscal Year, the central government's policies reflect the importance of providing infrastructure for the community: a minimum 25% transfer of General Allocation Funds and Revenue Sharing Funds obtained by local governments allocated for infrastructure development. Thus, it can accelerate the development of public and economic service facilities in order to increase job opportunities, reduce poverty, and reduce the gap in the provision of public services between regions.

In 2019, Papua became one of the provinces that has not been able to realize the fulfillment of mandatory spending provisions related to infrastructure set by the government (Sofi, 2017). The trend of capital expenditure and capital expenditure on network roads and irrigation realized by the local governments of regencies/cities in Papua has also decreased from year to year compared to the total expenditure. This condition shows that capital expenditure realized by the regency/city government in Papua tends to be low, so they still have the opportunity to increase their capital expenditures in order to meet the mandatory spending set by the central government. The increase in capital expenditure must also be balanced with a higher allocation for road, network, and irrigation capital expenditures that have empirically proven to be able to support poverty reduction efforts in the Papua region

Another variable that affects the poverty rate is the per capita GRDP. The per capita GRDP coefficient of -0.0519 indicates that an increase in per capita GRDP of 1 million Rupiah will reduce the poverty rate by 0.0519% (ceteris paribus). The per capita GRDP in this study represents the community's economic condition, which represents the community's income. The

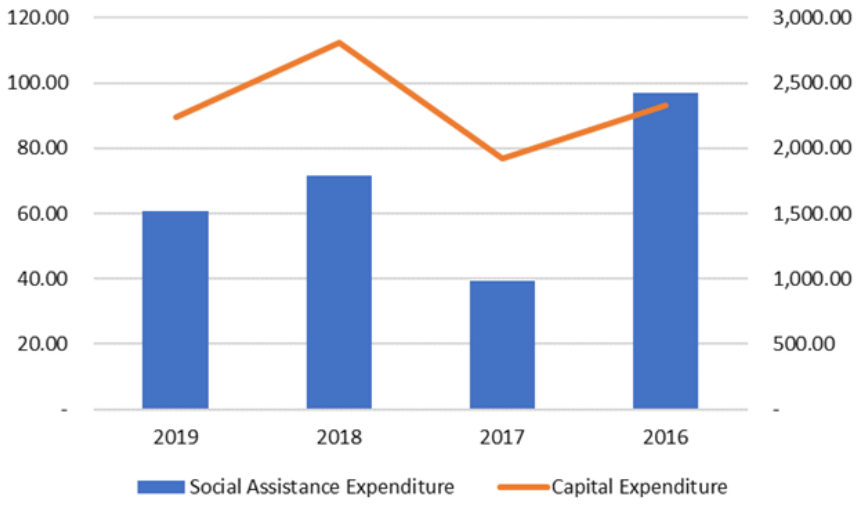

Figure 3. The Trend of Social Assistance and Capital Expenditure in the Papua Region (in billion Rupiah)
Source: DJPK (2017, 2018,2019, 2020a)

higher the income received by the community, the greater the opportunity for people to meet their living needs, thereby reducing the possibility of falling into poverty. Figure 4 shows that regencies/cities with high per capita GRDP levels, such as Mimika and Kota Jayapura, have relatively low poverty rates. On the contrary, regencies/cities with low per capita GRDP such as Supiori and Lanny Jaya have relatively high poverty rates.

The results of previous studies have proven a very close relationship between per capita GRDP and poverty, including the research of Marinho et al. (2017) in Brazil also Barros and Gupta (2017) in South Africa. Both studies conclude that GRDP per household negatively affects the poverty rate. Other research in Indonesia by Aji (2022) also proves that GRDP affects poverty in regencies/cities in Indonesia, although Qurrata and Ramadhani (2021) in their research concludes that GRDP does not have a partially significant effect on poverty in East Java, Indonesia.

Furthermore, the education and public health condition, which in this study is represented by the variable school participation rate and the ratio of health centers per 1000 population, also significantly affect the poverty rate in Papua. The variable coefficient of the school participation rate of -0.0737 indicates that if there is an increase in the school participation rate of 1% it will be able to reduce the poverty rate by 0.0737% (ceteris paribus), while the ratio coefficient of the health center per 1000 population of -7.5660 means that if the ratio of health center per 1000 population increases by 1%, then the poverty rate will decrease by 7.5660% (ceteris paribus). These results align with a study in Pakistan by Sheikh et al. (2020), which shows that households with higher education are less likely to fall into the cycle of poverty because education boosts the productivity of the poor and increases the opportunity to earn higher incomes.

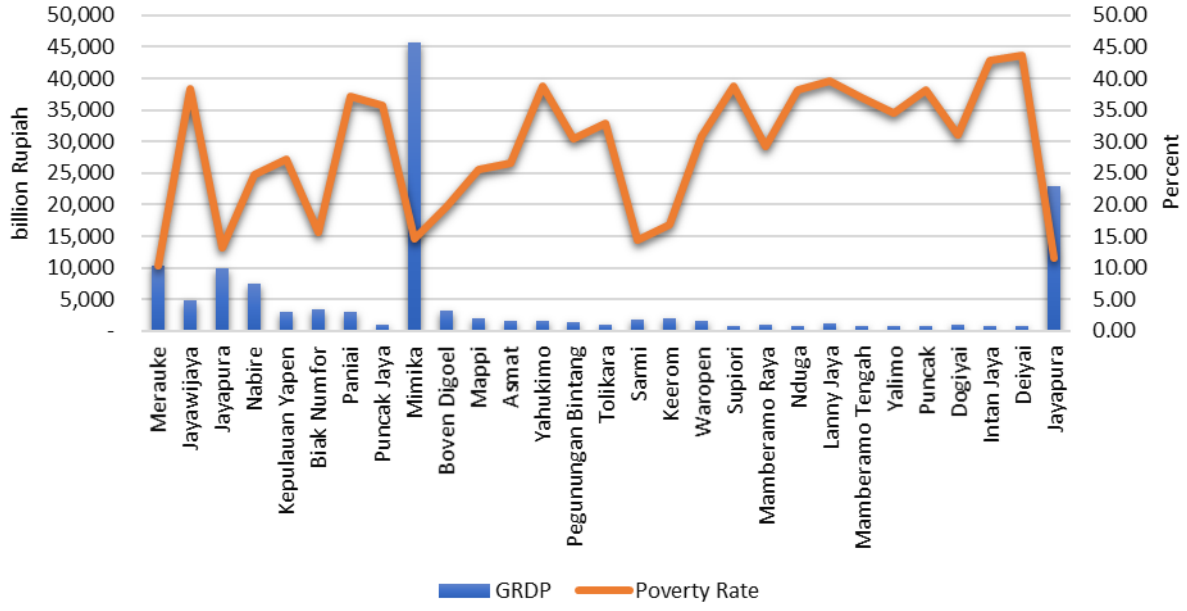

Figure 4. GRDP and Poverty Rate of Papua Region in 2019
Source: BPS Provinsi Papua (2020)

Silva and Sumanto (2015) emphasize the crucial role of good health and education conditions in significantly reducing poverty in Indonesia. Unfortunately, the Papua region faces substantial challenges compared to other Indonesian regions. Bappenas (2018) highlights vulnerability factors leading to easy impoverishment in eastern Indonesia, including Papua, education, and health disparities. The limited accessibility to secondary and higher education facilities, with many villages lacking such amenities, contributes to Papua's low enrollment rates (Figure 5), positioning the province as having the nation's lowest enrollment rates. Similarly, the scarcity of health facilities, with only 5% of villages having easy access, exacerbates the challenges faced by Papua's population. This situation underscores the urgent need for targeted interventions and increased investments in education and public health infrastructure to bridge the existing disparities and uplift Papua's socio-economic conditions.

Education plays a fundamental role in breaking the cycle of poverty by enhancing individuals' skills, employability, and income-earning potential (Psacharopoulos & Patrinos, 2018). Higher school enrollment rates and improved education quality contribute to human capital development, fostering economic growth and reducing poverty (World Bank, 2018). Additionally, an adequate number of public health centers positively correlate with poverty reduction by promoting community health and productivity. Accessible healthcare facilities contribute to a healthier workforce, reducing absenteeism and improving overall well-being, which, in turn, can alleviate poverty (Bloom et al., 2003).

The Gini ratio is a noteworthy variable influencing poverty levels in this study. Contrary to the anticipated positive relationship based on prior research, the robust Driscoll-Kraay analysis reveals a negative and significant effect of the Gini ratio on poverty at a 95% significance level. The unexpected negative coefficient of 8.35 suggests that an increase in the Gini ratio is associated with decreased poverty. This finding contradicts studies in Brazil (Marinho et al., 2017), Indonesia (Sihombing & Arsani, 2021), and South Africa (Barros & Gupta, 2017) that reported a positive and significant impact of the Gini ratio on poverty rates. However, another study in Indonesia by Afandi et al. (2017) found that the Gini ratio did not significantly affect poverty levels. Notably, the Gini ratio, serving as a proxy for inequality, showcases its relevance in predicting poverty outcomes in regencies/cities. The study underscores the complexity of poverty dynamics, where a more equitable income distribution may paradoxically lead to a higher poverty rate, especially in regions where income is concentrated around the poverty line.

Another finding from this study is that social assistance spending has a positive but insignificant effect on poverty rates. These results align with the research conducted by Sendouw et al. (2017) and Sumiyarti (2022). This illustrates that social assistance spending realized by local governments has yet to be able to support the goal of improving living standards, which is reflected in the reduction in poverty rates. Social assistance spending can support poverty alleviation if the implementation scheme is carried out well and on target so that program benefits can reach the target group. The findings of the BPK audit of the financial reports of

regency/city governments in Papua show that there are many problems related to the implementation of social assistance spending in regencies/cities in the Papua region, such as the absence of accountability reports for the realization of social assistance, the use of social assistance not being on target, the realization of social assistance exceeding the proposed value, and the provision of social assistance without going through a verification process (BPK RI, 2020). This condition causes the possibility of increasing inappropriate social assistance spending, which cannot support the main objective of providing social assistance to reduce poverty.

Types of capital expenditure that do not significantly influence poverty levels are land, equipment and machinery, building, also other capital expenditures. Capital expenditures for land, equipment, and machinery have negative coefficients, while capital expenditures for buildings and others have positive coefficients. This result is counterintuitive because literature related to government spending generally shows a relationship between government spending and poverty levels, where high government spending will encourage economic growth, which can ultimately reduce poverty rates. These results also differ from Krismaningtyas (2019) also Sasmal and Sasmal (2016). What is possible is that capital expenditure does not have a significant influence because it is not directly related to poverty. For example, purchasing land that generally cannot be used immediately because it must be processed or buildings added before it can be used. Building spending for the construction of government office buildings, for example, also does not have a direct impact on alleviating poverty.

CONCLUSION

Firstly, capital expenditures for roads, irrigation, and networks, per capita GRDP, school enrollment rates, and the ratio of health centers exhibit a statistically significant negative relationship with the poverty rate. Increased investments in infrastructure, higher economic output per capita, enhanced education, and public health conditions are associated with a reduction in poverty rates. Conversely, a decrease in the Gini ratio, indicating reduced inequality, is paradoxically linked to an increase in the poverty rate. The relationship between the Gini ratio and the poverty rate can be contradictory in countries where most of the population lives around the poverty line, so income redistribution can increase the number of poor people.

To enhance the effectiveness of government spending in alleviating poverty in Papua, it is recommended that local governments allocate a larger share of capital expenditure to proven poverty-reducing areas such as road, irrigation, and network infrastructure. Simultaneously, efforts should be directed toward optimizing social assistance expenditures to ensure they reach the intended targets.

Furthermore, regency/city governments also need to focus on encouraging improvements in the quality of education and public health, which have a significant impact on reducing poverty. Improving the quality of education and health can be achieved through increased ac-

cessibility by building roads and additional schools also health facilities. Lastly, there are limitations in this study, and the author suggests avenues for future research, such as incorporating more comprehensive variables, including social assistance and capital expenditures from higher levels of government over an extended timeframe.

REFERENCES

Aji, Y. I. T. (2022). The effect of village income and gross regional domestic product on poverty in Indonesia. *Jurnal Bina Praja: Journal of Home Affairs Governance, 14*(2), 315–328. https://doi.org/10.21787/jbp.14.2022.315-328

Afandi, A., Wahyuni, D., & Sriyana J. (2017). Policies to eliminate poverty rate in Indonesia. *International Journal of Economics and Financial Issues, 7*(1), 435-441. https://www.econjournals.com/index.php/ijefi/article/view/3299.

Anderson, E., d'Orey, M. A. J., Duvendack, M., & Esposito, L. (2018). Does government spending affect income poverty? A meta-regression analysis. *World Development, 103, Marc*h, 60-71. https://doi.org/10.1016/j.worlddev.2017.10.006

Anitasari, M., & Soleh, A. (2015). Pengaruh pengeluaran pemerintah terhadap pertumbuhan ekonomi di Provinsi Bengkulu. *Ekombis Review*. *3*(2). https://doi.org/10.37676/ekombis.v3i2.139.

Babatunde, S. A. (2018). Government spending on infrastructure and economic growth in Nigeria. *Economic Research-Ekonomska Istraživanja, 31*(1), 997–1014. https://doi.org/10.1080/1331677X.2018.1436453

Bappenas. (2018). *Analisis wilayah dengan kemiskinan tinggi*. Jakarta: Bappenas.

BPK RI. (2020). *Laporan Hasil Pemeriksaan BPK RI Atas Laporan Keuangan Pemerintah Daerah Provinsi Papua Tahun 2019*. Jakarta: Badan Pemeriksa Keuangan.

BPS Provinsi Papua. (2020). *Statistik kesejahteraan rakyat provinsi papua*. https://papua.bps.go.id/publication/2020/12/30/ffa47c170da5e49036f59814/statistik-kesejahteraan-rakyat-provinsi-papua-2020.html

BPS Provinsi Papua. (2021). *Data kemiskinan dan ketimpangan, angka partisipasi sekolah dan [Seri 2010] PDRB ADHK (Dengan Tambang) menurut Kabupaten/Kota (Juta Rupiah)*. https://papua.bps.go.id/indicator/52/382/1/-seri-2010-pdrb-adhk-dengan-tambang-menurut-kabupaten-kota.html

Barro, R. J. (2000). Inequality and growth in a panel of countries. *Journal of Economic Growth, 5*(1), 5-32. https://doi.org/10.1023/A:1009850119329

Barros, C. P., & Gupta, R. (2017). Development, poverty, and inequality. *The Journal of Developing Areas*, *51*(1), 19-32. https://www.jstor.org/stable/10.2307/26415693.

Bloom, D. E., Canning, D., & Sevilla, J. (2003). The effect of health on economic growth: A production function approach. *World Development, 32*(1), 1-13. https://doi.org/10.1016/j.worlddev.2003.07.002

Bourguignon, F. (2004). *The Poverty-Growth-Inequality Triangle*. The World Bank. https://documents1.worldbank.org/curated/en/449711468762020101/pdf/28102.pdf

Bourguignon, F., & Chakravarty, S. R. (2003). Pengukuran kemiskinan multidimensi. *Jurnal Ketimpangan Ekonomi*, *1*, 25-49. http://dx.doi.org/10.1023/A:1023913831342

Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (DJPK). (2017). *POSTUR APBD Tahun 2016*. Retrieved from https://djpk.kemenkeu.go.id/portal/data/apbd?tahun=2016&provinsi=26&pemda=10

Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (DJPK). (2018). *POSTUR APBD Tahun 2017*. Retrieved from https://djpk.kemenkeu.go.id/portal/data/apbd?tahun=2017&provinsi=26&pemda=10

Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (DJPK). (2019). *POSTUR APBD Tahun 2018*. Retrieved from https://djpk.kemenkeu.go.id/portal/data/apbd?tahun=2018&provinsi=26&pemda=10

Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (DJPK). (2020a). *POSTUR APBD Tahun 2019*. Retrieved from https://djpk.kemenkeu.go.id/portal/data/apbd?tahun=2019&provinsi=26&pemda=10

Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (DJPK). (2020b). *Ringkasan APBD 2019*. Retrieved from https://djpk.kemenkeu.go.id/?p=5412.

Dollar, D., & Kraay, A. (2002). Growth is good for the poor. *Journal of Economic Growth, 7* (3), 195–225. https://doi.org/10.1023/A:1020139631000

Efrianti, R., Marwa, T., Tarmizi, N., & Yuliana, S. (2018). Growth, unemployment, and its implication on poverty: Empirical study in districts/cities of South Sumatera Province. *Eurasia Journal of Economics and Finance, 6*(4). https://doi.org/10.15604/ejef.2018.06.04.003.

Krismaningtyas, Y. (2019). *Analisis pengaruh belanja modal pemerintah daerah terhadap pananggulangan kemiskinan di Jawa Timur* [Unpublished master's thesis]. Universitas Gadjah Mada, Yogyakarta.

Liu, Y., Amin, A., Rasool, S. A., & Zaman, Q. U. (2020). The role of agriculture and foreign remittances in mitigating rural poverty: Empirical evidence from Pakistan. *Risk Management and Healthcare Policy, 1*(3), 13-26. https://doi.org/10.2147/rmhp.s235580.

Marinho, E., Campelo, G., Franca, J., & Araujo, J. (2017). Impact of infrastructure expenses in strategic sectors for Brazilian poverty. *EconomiA*, *18*(2), 244-259. https://doi.org/10.1016/j.econ.2017.01.002.

Masnila, N., Lisnini., & Oktanisa, S. (2018). *The effect of government capital expenditure on economic growth and its impact on community welfare*. The 2nd Forum in Research, Science, and Technology (FIRST 2018). https://doi.org/10.5220/0009153400002500

Nursini, N., & Tawakkal. (2019). Poverty alleviation in the contex of fiscal decentralization in Indonesia. *Economics and Sociology, 12*(1), 270-285. https://doi.org/10.14254/2071-789X.2019/12-1/16.

Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. *Education Economics, 26*(5), 445-458. https://doi.org/10.1080/09645292.2018.1484426

Qurrata, V. A., & Ramadhani, N. (2021). The impact of HDI, minimum wages, investment, and GRDP on poverty in East Java in 2019. *KnE Social Sciences, 5*(8), 411–418. https://doi.org/10.18502/kss.v5i8.9393

Rarun, C. Ch. E., Kawung, G. M. V., & Niode, A. O. (2018). Analisis pengaruh belanja bantuan sosial dan investasi swasta terhadap kemiskinan di provinsi Sulawesi Utara. *Jurnal Berkala Ilmiah Efisiensi, 18*(01). https://ejournal.unsrat.ac.id/index.php/jbie/article/view/19824

Ravallion, M. (2001). Growth, inequality, and poverty: Looking beyond averages. *World Development, 29*(11), 1803-1815. https://doi.org/10.1016/S0305-750X(01)00072-9

Ravallion, M. (2005). *Inequality is bad for the poor*. The World Bank. https://doi.org/10.1596/1813-9450-3677

Sasmal, R., & Sasmal, J. (2016). Public expenditure, economic growth, and poverty alleviation. *International Journal of Social Economics, 43*(6), 604-618. https://doi.org/10.1108/IJSE-08-2014-0161.

Sendouw, A., Rumate, V. A., & Rotinsulu, D. C. (2017). Pengaruh belanja modal, belanja sosial, dan pertumbuhan ekonomi terhadap tingkat kemiskinan di Kota Manado. *Jurnal Pembangunan Ekonomi dan Keuangan Daerah, 18*(5). https://doi.org/10.35794/jpekd.15780.19.2.2017.

Sennoga, E. B., & Matovu, J. M. (2013). Public spending composition in Uganda and its implications for growth and poverty reduction. *Public Finance Review, 41*(2), 227-247. https://doi.org/10.1177/1091142112448412.

Sheikh, M. R., Akhtar, H. A., Asghar, M. M., & Abbas, A. (2020). Demographic and economic aspect of poverty: A case study of Multan District, Pakistan. *Pakistan Economic and Social Review, 58*(1), 131-160. https://pesr.econpu.edu.pk/website/journal/article/6055f4ed31f49/page.

Sihombing, P. R., & Arsani, A. M. (2021). *Static and dynamic panel models: Which is better? (Case study poverty data in Indonesia 2012-2019)*. IOP Conference Series: Earth and Environmental Science. https://doi.org/10.1088/1755-1315/739/1/012057.

Silva, I. D., & Sumarto, S. (2015). Dynamics of growth, poverty, and human capital: Evidence from Indonesian sub-national data. *Journal of Economic Development*, *40*(2), 1-33. http://www.jed.or.kr/full-text/40-2/1.pdf.

Sofi, I. (2020). *Pemenuhan anggaran infrastruktur di daerah dan tantangannya*. https://www.kemenkeu.go.id/publikasi/artikel-dan-opini/pemenuhan-anggaran-infrastruktur-di-daerah-dan-tantangannya/.

Sumiyarti, S. (2022). Pengaruh belaja modal dan belanja bantuan sosial terhadap pertumbuhan ekonomi dan kemiskinan. *Srikandi: Journal of Islamic Economics and Banking*, *1*(1), 28–43. https://doi.org/10.25217/srikandi.v1i1.1547

Todaro, M. S., & Smith S. C. (2014). *Economic development (12th ed)*. Pearson.

Wagle, U. R. (2017). How much do social protections matter to poverty and inequality? An insight from Asian experiences. *Global Social Policy, 17*(2), 137-167. https://doi.org/10.1177/1468018116675496.

Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th ed). Cengage Learning.

World Bank. (2018). *World development report 2018: Learning to realize education's promise*. https://www.worldbank.org/en/publication/wdr2018

APPENDIX

Estimation results with robust Driscoll-Kraay

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Social assistance expenditure	0.0017	0.0016					
	-0.0016	-0.0026					
Land capital expenditures	-0.0098		-0.0162				
	-0.009		-0.0126				
Capital expenditures of machine tools	-0.0033			-0.0114			
	-0.0037			-0.008			
Building capital expenditures	0.0014				-0.0026		
	-0.0019				-0.0024		
Capital expenditure roads, irrigation networks	-0.00656*					-0.00667*	
	-0.0032					-0.0035	
Other capital expenditures	0.0262						0.0243
	-0.0343						-0.0344
Gini ratio	-8.351**	-7.770**	-7.788**	-7.912**	-7.726**	-8.425**	-7.534*
	-2.936	-3.267	-3.211	-3.212	-3.074	-2.722,00	-3.304,00
Per capita GRDP	-0.0519*	-0.0517	-0.0528	-0.0521	-0.0511	-0.0521*	-0.0516
	-0.0263	-0.0331	-0.0318	-0.0303	-0.0326	-0.0276	-0.0334
School participation	-0.0737***	-0.0869***	-0.0846***	-0.0836***	-0.0844***	-0.0729***	-0.0873***
	-0.0124	-0.0191	-0.0179	-0.0177	-0.0172	-0.0124	-0.0177
Health center per 1000 population	-7.566**	-6.864**	-7.021**	-6.800**	-6.855**	-7.141**	-7.186**
	-2.465	-2.942	-2.887	-2.752	-2.928	-2.362	-2.852
Constant	41.6100***	41.4500***	41.5600***	41.7600***	41.5600***	41.6000***	41.4300***
	-2.55	-2.869	-2.941	-2.986	-2.923	-2.459	-2.881
Observation	261	261	261	261	261	261	261
R-squared	0.37	0.3289	0.3323	0.3375	0.3308	0.3635	0.3312

The degree of significance is indicated by the sign (*). Sign (*) means significant at 10%, (**) means significant at 5%, and (***) means significant at 1%