

THE EFFECT OF GROSS REGIONAL DOMESTIC PRODUCT (GRDP), CAPITAL EXPENDITURE, AND UNEMPLOYMENT RATE ON POVERTY IN TANAH DATAR REGENCY

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Abstract

Poverty remains one of the major development challenges faced by many regions, including Tanah Datar Regency. This study aims to analyze the effect of Gross Regional Domestic Product (GRDP), capital expenditure, and open unemployment rate on poverty in Tanah Datar Regency during the period 2010–2024. The study employs a quantitative approach using multiple linear regression analysis. The data used are secondary time-series data obtained from the Central Statistics Agency (BPS) of Tanah Datar Regency and West Sumatra Province. The results indicate that GRDP has a negative and significant effect on poverty, with a coefficient value of -0.000450 and a probability value of 0.0006 . This finding suggests that increased regional economic activity contributes to poverty reduction through higher income and improved welfare. Meanwhile, capital expenditure has a negative but insignificant effect on poverty, with a probability value of 0.7535 . Similarly, the open unemployment rate shows a negative but insignificant effect, with a probability value of 0.5044 . Overall, the study concludes that GRDP is the most influential factor in reducing poverty in Tanah Datar Regency, while capital expenditure and the open unemployment rate do not exhibit significant effects during the study period.

Keywords: Poverty; GRDP; Capital Expenditure, Unemployment

Abstrak

Kemiskinan merupakan salah satu permasalahan pembangunan yang masih menjadi tantangan utama di berbagai daerah, termasuk Kabupaten Tanah Datar. Penelitian ini bertujuan untuk menganalisis pengaruh Produk Domestik Regional Bruto (PDRB), belanja modal, dan tingkat pengangguran terbuka terhadap tingkat kemiskinan di Kabupaten Tanah Datar periode 2010–2024. Penelitian menggunakan metode kuantitatif dengan pendekatan regresi linier berganda. Data yang digunakan merupakan data sekunder berbentuk time series yang diperoleh dari Badan Pusat Statistik (BPS) Kabupaten Tanah Datar dan BPS Provinsi Sumatera Barat. Hasil penelitian menunjukkan bahwa PDRB berpengaruh negatif dan signifikan terhadap tingkat kemiskinan dengan nilai koefisien sebesar $-0,000450$ dan probabilitas $0,0006$. Temuan ini mengindikasikan bahwa peningkatan aktivitas ekonomi daerah mampu menurunkan tingkat kemiskinan melalui peningkatan pendapatan dan kesejahteraan masyarakat. Sementara itu, belanja modal memiliki pengaruh negatif namun tidak signifikan terhadap kemiskinan dengan nilai probabilitas sebesar $0,7535$. Tingkat pengangguran terbuka juga menunjukkan pengaruh negatif namun tidak signifikan dengan nilai probabilitas sebesar $0,5044$. Secara keseluruhan, penelitian ini menunjukkan bahwa PDRB merupakan faktor yang paling berperan dalam menurunkan tingkat kemiskinan di Kabupaten Tanah Datar, sedangkan belanja modal dan tingkat pengangguran terbuka belum menunjukkan pengaruh yang signifikan selama periode penelitian.

Kata Kunci : Kemiskinan;PDRB; Belanja Modal; Pengangguran



I. INTRODUCTION

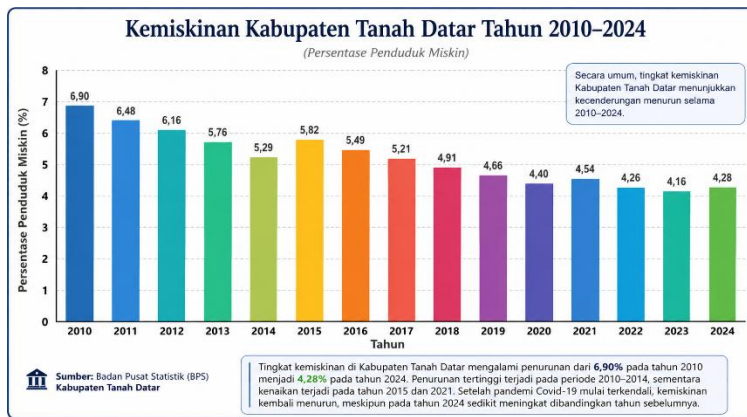
Poverty is one of the major issues in economic development that continues to receive serious attention at both the national and regional levels. Conceptually, poverty can be defined as the inability of individuals or households to meet their basic needs, including both food and non-food necessities. According to Triono and Sangaji (2023), poverty is closely associated with limited access to economic resources and low levels of social welfare. Therefore, poverty serves as an important indicator in assessing the success of regional development, as it is directly related to the well-being of the population.

At the national level, the number of people living in poverty in Indonesia remains relatively high, although it has shown a declining trend over the years. This condition indicates that various government programs aimed at poverty alleviation have produced fairly positive results; however, they have not yet been able to completely eliminate poverty. Furthermore, the unequal distribution of poverty across regions reflects disparities in development among different areas. Some regions have experienced high economic growth accompanied by significant reductions in poverty, while others continue to face various obstacles to economic development.

At the regional level, including Tanah Datar Regency, poverty remains an important issue that warrants further investigation. Tanah Datar Regency is one of the regencies in West Sumatra Province with an economic structure largely based on agriculture, trade, and the service sector. Despite its considerable economic potential, poverty continues to pose a challenge to regional development. This situation suggests that increased economic activity does not necessarily lead to improved welfare for all members of society unless it is accompanied by equitable income distribution and broad employment opportunities.

Figure 1
Percentage of Poor Population in Tanah Datar Regency ,2010 – 2024





Source: Badan Pusat Statistik (BPS)

Based on data from Statistics Indonesia (BPS), the poverty rate in Tanah Datar Regency has shown a declining trend in recent years. The percentage of the population living in poverty was recorded at 4.54 percent in 2021, decreasing to 4.26 percent in 2022, further declining to 4.16 percent in 2023, and reaching 3.59 percent in 2024. This trend indicates that the poverty alleviation efforts implemented by the local government have begun to yield positive results. Nevertheless, a portion of the population still lives below the poverty line, highlighting the need for further investigation into the factors influencing poverty levels in the region.

One of the factors believed to influence poverty is Gross Regional Domestic Product (GRDP), which reflects the level of economic activity within a region. In theory, an increase in GRDP indicates economic growth that can improve people's incomes and living standards. However, according to Gupta and Mitra (2004), although economic growth is necessary for poverty reduction, it is not the sole determinant. This suggests that uneven economic growth may not significantly reduce poverty. Furthermore, a study by Datt et al. (2020) found that economic growth can accelerate poverty reduction, although income inequality remains a major challenge. Similarly, Jalles (2011) argued that inclusive economic growth that benefits low-income groups can have a more substantial impact on reducing poverty.

Another factor affecting poverty is unemployment. A high unemployment rate reflects limited employment opportunities within a region. According to Abell and Abell (2004), the relationship between unemployment and poverty is empirically very strong. This finding is supported by Xue and Zhong (2003), who demonstrated that rising unemployment contributes to higher poverty levels, particularly in urban areas. In addition to GRDP and unemployment, local government capital expenditure also plays an important role in poverty reduction. Capital expenditure allocated to infrastructure development and public facilities can stimulate

economic activity and create new employment opportunities. In the context of regional development, government investment through capital expenditure serves as a crucial instrument for promoting more equitable economic growth.

Research conducted by Amar et al. (2022) found that unemployment and economic growth have a significant effect on poverty. These findings confirm that poverty is not an isolated phenomenon but is influenced by various interrelated economic factors. Another study by Larasati (2024) revealed that GRDP has a negative effect on poverty, indicating that increased economic output can expand employment opportunities, raise household incomes, and ultimately reduce the number of people living in poverty. Therefore, improving GRDP can serve as an important instrument in poverty alleviation efforts within a region.

Based on the discussion above, it can be concluded that poverty in Tanah Datar Regency is influenced by various economic factors, particularly GRDP, capital expenditure, and the unemployment rate. Therefore, this study is important to analyze the effects of these three variables on poverty levels in Tanah Datar Regency. The findings are expected to provide more targeted policy recommendations to support poverty alleviation efforts and enhance community welfare.

II. THEORITICAL STUDIES

1. Poverty

Poverty is one of the major social and economic issues that remains a primary concern in the development of both countries and regions. Poverty is not only associated with low income but also reflects individuals' inability to meet their basic needs and maintain an adequate standard of living (Safitri et al., 2023). Poverty can be defined as the inability to meet the minimum standard of basic needs, including both food and non-food necessities. Statistics Indonesia (BPS) has established a poverty line, which represents the minimum level of expenditure required by an individual to fulfill essential consumption needs, particularly food requirements.

According to the World Bank (2020), poverty is a condition in which individuals face limitations in meeting basic living needs and have restricted access to economic and social resources. Therefore, poverty should not be viewed solely as a problem of low income but rather as a multidimensional phenomenon encompassing various aspects of human well-being. Poor communities experience not only financial constraints but also limited access to education, healthcare services, decent employment opportunities, and other resources that can improve their quality of life. These conditions make it difficult for disadvantaged groups to

escape the cycle of poverty, as low productivity and limited access to development resources continue to hinder their socioeconomic advancement.

2. The Effect of Gross Regional Domestic Product (GRDP) on Poverty

Gross Regional Domestic Product (GRDP) is one of the key indicators used to measure the level of economic activity and a region's capacity to produce goods and services within a given period. In theory, an increase in GRDP reflects economic growth, which is expected to generate employment opportunities, raise household incomes, and ultimately reduce poverty levels. According to Muryani and Larasati (2024), an increase in GRDP indicates higher economic productivity within a region, thereby expanding employment opportunities and improving community income. The higher the GRDP of a region, the greater the opportunities for individuals to earn better incomes, which can contribute to a reduction in the number of people living in poverty.

A similar view is expressed by Safitri et al. (2023), who argue that economic growth, as reflected in rising GRDP, is an important instrument for improving social welfare. Strong economic growth can stimulate investment, increase production activities, and enhance labor absorption, leading to higher incomes and lower poverty rates. However, the benefits of increased GRDP may not be fully realized if economic growth is concentrated among certain groups within society. In such cases, the impact of economic growth on poverty reduction becomes less effective. Therefore, inclusive and equitable economic growth is essential to ensure that increases in GRDP translate into significant and sustainable reductions in poverty levels.

3. The Effect of Capital Expenditure on Poverty

Capital expenditure refers to government spending allocated for acquiring or increasing fixed assets, such as the construction of roads, bridges, irrigation systems, schools, hospitals, and other public infrastructure that provides long-term benefits. From the perspective of economic development, capital expenditure plays an important role in poverty reduction because it can improve infrastructure quality, facilitate economic activities, create employment opportunities, and enhance public access to education, healthcare, and other essential public services (Dimnwobi et al., 2023).

Joy et al. (2021) found that capital expenditure has a significant effect on poverty levels. This finding suggests that government capital spending can influence poverty reduction, although its effectiveness depends on how efficiently and appropriately the allocated funds are utilized. In some cases, the benefits of capital expenditure may not be fully realized due to challenges such as inefficient budget management, ineffective project implementation, and

misallocation of development priorities. Nevertheless, from a theoretical standpoint, capital expenditure remains an important instrument for poverty alleviation, as investments in infrastructure and public facilities can stimulate economic growth, improve productivity, expand employment opportunities, and ultimately enhance community welfare.

4. The Effect of Unemployment on Poverty

Unemployment refers to a condition in which individuals who are part of the labor force do not have a job but are actively seeking employment. In economic theory, unemployment and poverty are closely related because employment serves as the primary source of income that enables individuals and households to meet their basic needs. The unemployment rate is generally expected to have a positive effect on poverty levels, indicating that higher unemployment tends to be associated with higher levels of poverty. This occurs because unemployment reduces individuals' opportunities to earn income, thereby limiting their ability to fulfill essential living requirements (Larasati, 2024).

Safitri et al. (2023) explain that unemployment is one of the economic issues that requires serious attention because it can generate various social problems, including poverty. According to their findings, higher unemployment rates increase the likelihood of poverty due to declining household income and reduced economic productivity. Unemployment deprives individuals of access to sustainable sources of income, resulting in lower household welfare and a diminished capacity to meet basic needs. Consequently, prolonged unemployment can exacerbate poverty and hinder efforts to improve the overall standard of living within a community.

III. RESEARCH METHODS

This study employs a quantitative research method using a multiple linear regression analysis approach. The purpose of this study is to analyze the effects of Gross Regional Domestic Product (GRDP), capital expenditure, and unemployment rate on the poverty level in Tanah Datar Regency. The data used are secondary time-series data covering the period from 2010 to 2024, obtained from Statistics Indonesia (BPS) of Tanah Datar Regency and West Sumatra Province. The dependent variable in this study is the poverty rate, measured by the percentage of the population living below the poverty line. The independent variables consist of GRDP, local government capital expenditure, and the open unemployment rate. The use of time-series data allows for the examination of trends and relationships among economic variables over a specific period, thereby providing a more comprehensive understanding of the factors influencing poverty in Tanah Datar Regency.

The data analysis technique employed in this study is multiple linear regression analysis because the research involves more than one independent variable that is presumed to influence

the dependent variable. Multiple linear regression analysis is used to determine both the direction and magnitude of the effects of GRDP, capital expenditure, and unemployment on poverty, either partially or simultaneously. The multiple linear regression model applied in this study refers to development economics research utilizing multiple regression analysis and can be expressed as follows (Ramadhan et al., 2025):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where :

Y = Poverty Rate

α = Constant

$\beta_1, \beta_2, \beta_3$ = Regression Coefficients

X1 = Gross Regional Domestic Product (GRDP)

X2 = Capital Expenditure

X3 = Unemployment Rate

e = Error term

IV. Research Results

Based on the results of the multiple linear regression model, the following analysis presents the effects of Gross Regional Domestic Product (GRDP), Capital Expenditure (CE), and the Open Unemployment Rate (OUR) on poverty levels in Tanah Datar Regency over the period 2010–2024.

Table 1
Regression Linier Result

Variable	Coefficient	Std. Error	t-statistic	Prob
C	11.13843	4.644115	2.398397	0.0374
GRDP	-0.000450	9.11E-05	-4.944163	0.0006
CE	-0.085602	0.265184	-0.322804	0.7535
OUR	-0.094896	0.137036	-0.692485	0.5044

Sumber: Processed Data

The estimation results indicate that the constant term is 11.13843, with a probability value of 0.0374, which is lower than the significance level of 0.05. This finding suggests that the constant term is statistically significant. The constant value implies that if Gross Regional

Domestic Product (GRDP), Capital Expenditure, and the Open Unemployment Rate are assumed to be zero or remain constant, the poverty rate in Tanah Datar Regency is estimated to be 11.13843 percent. This constant term also reflects the influence of other factors not included in the research model that may affect poverty levels in Tanah Datar Regency.

1. The Effect of GRDP on Poverty in Tanah Datar Regency

Based on the results of the multiple linear regression analysis, the GRDP variable has a coefficient value of -0.000450, a t-statistic of -4.944163, and a probability value of 0.0006, which is lower than the significance level of 0.05. These results indicate that GRDP has a negative and statistically significant effect on the poverty rate in Tanah Datar Regency. The negative coefficient implies that every one-unit increase in GRDP is associated with a decrease in the poverty rate of 0.000450 percentage points, assuming that other variables remain constant (*ceteris paribus*). This finding suggests that increased regional economic activity, as reflected by higher GRDP, can enhance household income, expand employment opportunities, and improve social welfare, thereby reducing poverty levels.

The findings of this study are consistent with economic growth theory, which argues that higher economic growth leads to increased income and a reduction in the number of people living in poverty. Therefore, GRDP represents an important factor in poverty alleviation efforts in Tanah Datar Regency. The results are also in line with the study conducted by Larasati (2024), which found that GRDP has a negative effect on poverty levels in the regencies and municipalities of East Nusa Tenggara Province. The study concluded that higher GRDP reflects increased productivity and economic activity within a region, which can raise household incomes and reduce poverty. Consequently, enhancing GRDP can serve as an important instrument for poverty reduction, as it promotes economic growth that contributes to improved community welfare.

2. The Effect of Capital Expenditure on Poverty in Tanah Datar Regency

Based on the results of the multiple linear regression analysis, the Capital Expenditure variable (Log CE) has a coefficient value of -0.085602, a t-statistic of -0.322804, and a probability value of 0.7535, which is higher than the significance level of 0.05. These results indicate that capital expenditure has a negative but statistically insignificant effect on the poverty rate in Tanah Datar Regency. The negative coefficient suggests that an increase in capital expenditure tends to be associated with a decrease in the poverty rate of 0.085602 percentage points. However, this effect is not statistically strong enough to explain variations in poverty levels. This finding indicates that the allocation of capital expenditure by the local government during the study period has not had a direct and significant impact on poverty

reduction. One possible explanation is that a large portion of capital expenditure is allocated to long-term infrastructure development projects, the benefits of which may take a considerable amount of time to translate into improved welfare and reduced poverty. In addition, the effectiveness of program implementation and the accuracy of development targeting may also influence the extent to which capital expenditure contributes to poverty alleviation.

The findings of this study are consistent with the research conducted by Irawan, Junaidi, and Sultan (2023), which found that capital expenditure has a negative effect on poverty. Their study explained that increased capital expenditure through infrastructure development and the provision of public facilities can stimulate economic activity, improve access to basic services, and enhance community welfare, thereby contributing to poverty reduction. Similarly, Dimnwobi et al. (2023) found that government capital expenditure helps reduce poverty. Their study demonstrated that government investment in capital projects can improve access to productive resources and essential services, which ultimately contributes to a better quality of life and a reduction in various forms of poverty.

3. The Effect of Unemployment on Poverty in Tanah Datar Regency

Based on the results of the multiple linear regression analysis, the Open Unemployment Rate (OUR) variable has a coefficient value of -0.094896, a t-statistic of -0.692485, and a probability value of 0.5044, which is higher than the significance level of 0.05. These results indicate that the open unemployment rate has a negative but statistically insignificant effect on the poverty rate in Tanah Datar Regency. The negative coefficient suggests that a one-percent increase in the unemployment rate is associated with a decrease in the poverty rate of 0.094896 percentage points. However, this relationship is not statistically significant, indicating that changes in the unemployment rate do not have a meaningful impact on poverty levels during the study period.

The findings of this study are consistent with the research conducted by Safitri et al. (2023), which found that poverty did not have a significant effect on unemployment in their simultaneous model, suggesting that the relationship between unemployment and poverty is not always direct and may be influenced by various other economic factors. However, the results differ from those of Amar et al. (2022), who found that unemployment is one of the significant determinants of poverty in West Sumatra Province. Amar et al. (2022) argued that an increase in unemployment reduces individuals' ability to earn income, thereby increasing the likelihood of falling into poverty. The difference in findings suggests that the impact of unemployment on poverty may vary across regions, depending on factors such as economic

structure, labor market characteristics, and the availability of alternative sources of income outside the formal employment sector.

V. CONCLUSION

Based on the findings of this study, the Gross Regional Domestic Product (GRDP) variable has a negative and statistically significant effect on the poverty rate in Tanah Datar Regency during the 2010–2024 period. This result indicates that an increase in GRDP contributes to a reduction in poverty levels, as higher economic growth can increase household income, expand employment opportunities, and improve overall social welfare. Therefore, economic growth serves as one of the key factors in poverty alleviation efforts in Tanah Datar Regency.

The Capital Expenditure variable has a negative but statistically insignificant effect on the poverty rate. This finding suggests that an increase in capital expenditure tends to be associated with a decline in poverty; however, the effect is not strong enough to be considered statistically significant. This condition indicates that the benefits of capital expenditure allocated by the local government have not yet been fully experienced by the community, as many infrastructure development projects require time before their impacts on welfare and poverty reduction become evident.

Meanwhile, the Open Unemployment Rate (OUR) variable has a negative but statistically insignificant effect on poverty. This result indicates that changes in the unemployment rate have not had a significant impact on changes in poverty levels in Tanah Datar Regency. One possible explanation is the dominant role of the informal sector and family-based businesses, which continue to provide sources of income for many households despite not being classified as formal employment.

Overall, the study demonstrates that GRDP is the most influential variable in reducing poverty in Tanah Datar Regency, while Capital Expenditure and the Open Unemployment Rate have not shown statistically significant effects. Therefore, local governments should continue to promote inclusive economic growth, improve the effectiveness of capital expenditure programs, and expand employment opportunities in order to enhance the effectiveness and sustainability of poverty alleviation efforts.

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