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Local Governance Strengthens Social Assistance's Impact on Sumatra's Poor Households' Welfare

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ABSTRACT

Purpose – This study examines the association between social assistance programs,, namely the Family Hope Program (PKH) and Non-Cash Food Assistance (BPNT,), and household consumption expenditure among the poor, while accounting for the role of regional financial management quality.
Design/methodology/approach – The dependent variable is household consumption expenditure of the poor at the provincial aggregate level, measured in annual real terms. This study employs panel data from 10 provinces in Sumatra, Indonesia, for the period 2020–2025. Estimation is conducted using Ordinary Least Squares (OLS) and Moderated Regression Analysis (MRA) within a fixed-effects framework to assess interaction effects between social assistance variables and financial governance quality.
Findings – The results show that the realization of PKH and BPNT beneficiaries is positively associated with household consumption expenditure among the poor. This association is stronger in provinces with higher-quality regional financial management. Budget realization is also positively associated with consumption expenditure. In addition, the Regional Financial Management Index (IPKD) strengthens the association between social assistance and household expenditure. These findings are associative in nature and based on aggregated provincial-level panel data.
Originality/value – This study underscores the importance of financial governance quality in shaping the effectiveness of social assistance programs. It offers an integrated policy perspective by emphasizing the complementary roles of targeting accuracy, budget execution, and institutional capacity in improving economic conditions among poor households.

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1. Introduction

The Indonesian government has implemented various poverty alleviation programs, such as the Family Hope Program (PKH), Direct Cash Assistance (BLT), Social Security Program (KIS), and the establishment of the Regional Minimum Wage (UMR). While some programs have positively impacted some regions, their effectiveness nationally remains limited. The main obstacle is the differences in the causes of poverty between regions, which are influenced by local economic conditions, regional fiscal capacity, and geographic and demographic factors (Salsabila et al., 2024; Luh et al., 2025).

Social assistance programs have become a key instrument in Indonesia's poverty alleviation strategy, particularly through the Family Hope Program (PKH) and Non-Cash Food Assistance (BPNT). Both programs are designed to increase the consumption capacity of poor households through conditional transfers and food assistance, which are expected to improve welfare in the short- and long-term. Various studies have shown that social assistance contributes to consumption stabilization and reduces economic vulnerability, particularly for poor and vulnerable groups (World Bank, 2020; Bappenas, 2021). However, the effectiveness of these programs depends heavily on implementation at the regional level, including accurate recipient targeting and consistent budget realization.

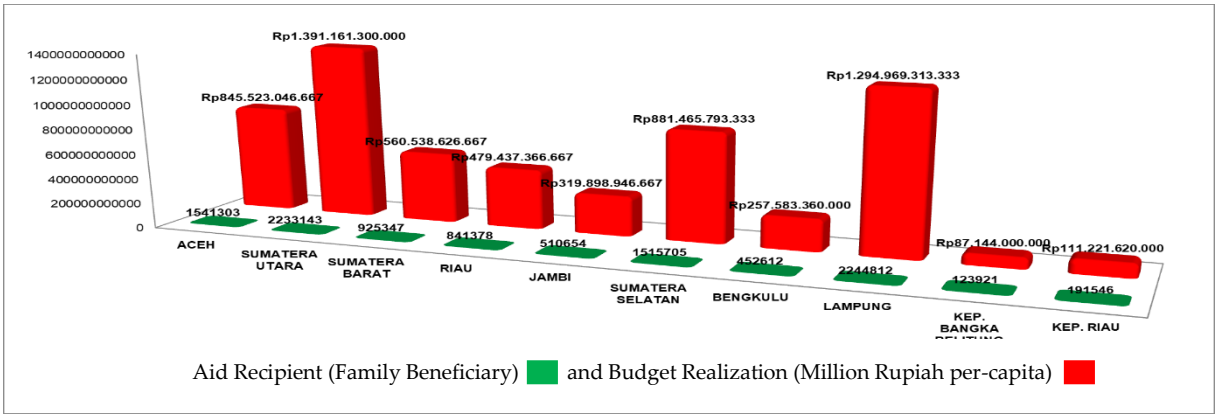
In practice, there is a significant variation in the implementation of social assistance programs across regions in Indonesia. These differences reflect the fiscal capacity, quality of governance, and institutional readiness of each region (OECD, 2022; Ministry of Finance, 2023). Some provinces have been able to optimize aid distribution in a timely and targeted manner, while others still face challenges in recipient data validation, inter-agency coordination, and budget discipline. This variation indicates that regional financial governance factors play an important role in determining the extent to which social assistance programs achieve their intended goals.

Consumption as a measure of poverty and found that the Family Hope Program (PKH) significantly impacted individual consumption. Therefore, the government should be more generous to households with the lowest wealth and manage the program carefully based on the needs of CCT beneficiaries (Hadna & Askar, 2022). The Family Hope Program (PKH) has significant potential to reduce poverty in Indonesia, but its implementation faces several obstacles. A lack of public understanding of PKH has led to negative responses, leading to the distribution of aid being perceived as discriminatory (Parawangi & Wahid, 2023). The PKH social assistance program has a significant positive impact on increasing the income and expenditure of poor households in Indonesia. Factors influencing the economic improvement of poor households through PKH include education level, number of family members, and participation in training activities provided by the program (Mustaqim & Makarrim, 2023). The BPNT program is considered effective, with a coverage rate of 66.57% and a reduction in the expenditure burden on poor families of up to 55%. However, the inaccuracy of KPM data remains a major obstacle, while the food aid received tends to be diverse, but the amount continues to decline (Maidalena, 2020). While food aid provides short-term protection and can increase productivity, non-cash assistance has not been successful in encouraging savings habits. The resulting financial inclusion is also superficial and has not significantly contributed to poverty reduction (Ameliany et al., 2022).

Sumatra was selected as a case study in this research based on its unique characteristics compared to other regions in Indonesia. Sumatra has a relatively higher poverty rate than Java, but its economic structure is more dependent on the primary sector and natural resources (BPS, 2024). Furthermore, compared to Eastern Indonesia, Sumatra has a relatively more developed fiscal capacity and infrastructure, providing an interesting context for examining variations in the effectiveness of social programs within a regional governance framework. Therefore, analyses in this region can provide a more contextualized understanding than national aggregate studies. In this study, the welfare of poor households is represented by the variable household consumption expenditure in real terms per capita per year at the aggregate provincial level. This variable is chosen based on the development economics literature that positions consumption as a primary proxy for welfare, particularly in developing countries, because it is more stable than income and better reflects the ability to meet basic needs (Deaton & Zaidi, 2002; Ravallion, 2016). However, the use of this variable is not directly interpreted as a causal increase in welfare, but rather as an indicator associated with the economic conditions of poor households.

In this study, research on PKH, BPNT, and governance in the provinces of Sumatra is important because the effectiveness of both programs is strongly influenced by local conditions, such as data accuracy, distribution quality, and regional bureaucratic capacity. Ministry of Social Affairs, (2021) shows that inclusion and exclusion errors persist in aid distribution, resulting in varying program effectiveness across regions. Evaluations in Java also found that although PKH and BPNT assist with basic needs, the programs have not yet optimally increased income and reduced poverty sustainably. Research in North Sumatra found that distribution governance, particularly data accuracy and distribution mechanisms, significantly impacted the quality of BPNT implementation (UHN Repository, 2022). Therefore, research in the Sumatra region is needed to ensure that social assistance is distributed appropriately and in accordance with the regional socio-economic characteristics. The following is a general overview of the state of social assistance in Sumatra:

Figure 1. Average Aid Recipient and Budget Realization for 10 Provinces in Sumatra Island, 2020-2025



authors (2025)

The three provinces with the highest aid disbursements were North Sumatra, Lampung, and Aceh. North Sumatra recorded the highest number of aid recipients, with 2,233,143 families receiving aid with a budget realization of Rp1.39 trillion, reflecting a high need and strong budget absorption capacity. Lampung ranked second with 2,244,812 recipients and a budget

of Rp1.29 trillion, indicating a large poor population structure and effective program implementation. Aceh ranked third, with 1,541,303 recipients and a budget of Rp845.52 billion, reflecting high levels of poverty and dependence on social assistance. Conversely, the three provinces with the lowest disbursement were Bangka Belitung Islands, Riau Islands, and Bengkulu. Bangka Belitung had only 123,921 recipients with a budget of Rp87.14 billion, the lowest in Sumatra due to its relatively low poverty rate. The Riau Islands followed with 191,546 recipients and Rp111.22 billion, reflecting the region's strong economic conditions. Bengkulu ranked slightly higher, with 452,612 recipients and Rp257.58 billion, but still ranked low compared to other large provinces. This variation in figures highlights that aid distribution in Sumatra is heavily influenced by regional poverty levels and the effectiveness of governance in each provincial government.

Social assistance, particularly capital cash transfers, plays a crucial role in preventing households from experiencing extreme poverty. When household capital falls below a certain threshold, social assistance becomes a key source of capital growth and helps households escape poverty traps. Thus, social assistance can reduce the risk of poverty trapping and minimize the likelihood of extreme poverty (Flores-contró & Arnold, 2024). The Indonesian Family Life Survey (IFLS) as longitudinal data, controlling for characteristics, shows that, in general, there has been a decrease in food expenditure followed by changes in the consumption behavior of the Indonesian people, and the cash transfer program has contributed significantly to this change. The findings also note that the objectives of the cash transfer program have not been achieved as expected, but have succeeded in fluctuating the expenditure of the poor (Inayati Nuraini Dwiputri, Muhammad Syam Kusufi, 2023).

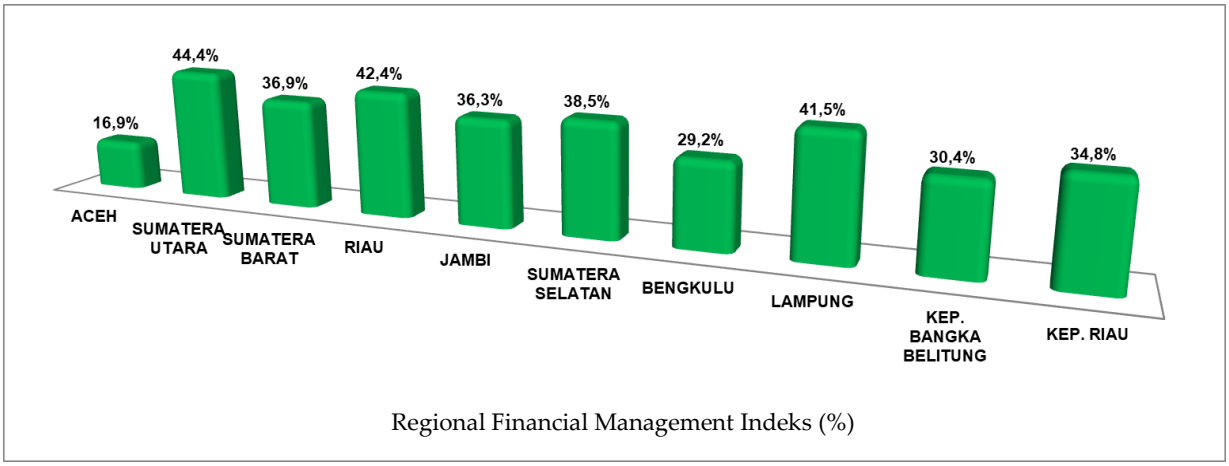
Specifically, the quality of regional financial management, as measured by the Regional Financial Management Index (IPKD), is an important indicator for assessing the effectiveness of public spending. Theoretically, good financial governance—characterized by transparency, accountability, efficiency, and accuracy of budget allocation—can enhance the effectiveness of social programs by reducing leakage, improving targeting accuracy, and accelerating budget realization (Musgrave & Musgrave, 1989; Shah, 2007). Within this framework, the IPKD is expected to act as a moderating variable that strengthens the relationship between social assistance (PKH and BPNT) and the welfare of poor households, as regions with better governance tend to manage programs more effectively.

Although the literature has extensively discussed the impact of social assistance on poverty and household consumption, most studies have focused on national-level or micro-household analyses, with limited explicit integration of regional governance dimensions (TNP2K, 2020; World Bank, 2022). Furthermore, studies examining the role of regional financial management quality as a moderating factor in this relationship are still relatively limited, particularly in the context of inter-provincial panel data. This creates an empirical gap that is important for future studies.

Regional financial management is crucial for reducing poverty. Provincial and district/city governments must review mandatory spending policies to ensure that they are not universally applied, given the varying needs of each region. Second, the Ministry of Home Affairs should encourage the optimization of budget allocations based on regional proposals and needs. This will assist in the distribution of social assistance (Prabowo et al., 2025). Good regional financial management can strengthen the effectiveness of social assistance in reducing poverty. The greater the fiscal independence and quality of government spending,

the greater the positive impact of social assistance on poverty reduction (Nabillia et al., 2023). The following are the conditions of regional financial management in Sumatra.

Figure 2. Average Regional Financial Management of 10 Provinces in Sumatra Island, 2020-2025



Source: Statistics Indonesia and related government institutions, raw data processed by the authors (2025)

The Regional Financial Management Index (IPKD) in Sumatra shows a wide governance gap among provinces. North Sumatra (44.4%), Riau (42.4%), and Lampung (41.5%) hold the highest positions, reflecting better fiscal governance capacity, more orderly planning and budgeting, and relatively high effectiveness in social assistance distribution. These provinces tend to maximize budget realization and recipients, thus optimizing the impact of the expenditure of the poor. Conversely, the three provinces with the lowest IPKD are Aceh (16.9%), Bengkulu (29.2%), and Bangka Belitung Islands (30.4%). Low IPKD scores indicate weak fiscal governance, budget planning, coordination of regional government agencies (OPD), and recipient data accuracy. This situation has the potential to hamper the effectiveness of the Family Hope Program (PKH) and the Non-Cash Food Assistance Program (BPNT) because distribution tends to be less timely, targeted, and responsive to the needs of poor households. Overall, these variations in the IPKD explain the differences in the effectiveness of social protection programs in Sumatra, with areas with better governance generating stronger welfare gains than areas with lower IPKD.

Another study by Rahmawati et al. (2022) found that transparency and accountability influence budget performance, with organizational commitment acting as a moderating variable. These findings indicate that regional financial governance plays an important role in improving the effectiveness of public budget utilization, including social assistance programs. Furthermore Fadillah, (2023) emphasized that the capacity of human resources and regional fiscal governance is essential in supporting regional financial transparency in the era of fiscal decentralization. In this context, regional financial management can moderate the relationship between social assistance and the welfare of poor communities, where effective financial management contributes to the smoother implementation of government programs in a more efficient and targeted manner.

Based on the above description, this study aims to analyze the relationship between social assistance programs (PKH and BPNT) and poor household consumption expenditure, and to

examine the role of regional financial management quality (IPKD) as a moderating variable in this relationship. Using inter-provincial panel data in Sumatra for the 2020–2025 period, this study is expected to provide an empirical contribution to understanding how regional financial governance influences the effectiveness of social assistance programs in the context of fiscal decentralization in Indonesia.

2. Literature Review and Hypothesis Development

2.1. Regional Financial Management

Effective regional financial management is a key factor in determining the level of distribution, disbursement, and smoothness of regional government budget expenditures. The quality of regional financial management will influence the extent to which the budget can be allocated in a timely, targeted, and sustainable manner to finance operational and development programs. Conversely, weak regional financial management has the potential to lead to delays in budget distribution, inaccurate targeting, and poor quality public services, ultimately hampering efforts to improve public welfare (Khairina et al., 2025). Poverty levels are influenced by the quality of regional financial management. This high fiscal dependence limits the ability of local governments to provide public services and poverty alleviation programs sustainably. As a result, when changes in the strategic environment occur, such as economic fluctuations or increases in the price of basic necessities, people's purchasing power is quickly suppressed, thus increasing the risk of poverty (Mahpudin, 2020). This vicious cycle of poverty is caused by low productivity due to underdevelopment, imperfect markets, and a lack of capital. Increasing productivity is one element of increasing productivity through regional independence. Managing regional finances and capital to increase local productivity will encourage improvements in other factors that can reduce the likelihood of poverty (Asyafiah & Simanjuntak, 2023). Local government financial performance has a significant impact on social assistance but does not fully determine poverty dynamics. This underscores the need to consider other factors in reducing poverty. Local governments need to expand their focus from simply improving financial performance to other aspects that influence poverty (Apriyadi, Alfitri, Sriati, 2024). Poverty is a major determinant of low financial inclusion in various provinces, which has negative impacts. Regional financial management by local governments impacts the distribution of social assistance to the poor (Fauzan & , Muhammad Firdaus, 2020).

2.2 Social Assistance for Poverty

Social assistance is expenditure in the form of transfers of money, goods or services provided by the central/regional government to the community to protect the community from potential social risks, increase economic capacity and community welfare (Rizka Putri & , Edi Abral1, 2025). The provision of assistance (cash transfers) has a significant impact on poverty, both in terms of beneficiaries and non-beneficiaries, or in terms of the total of both groups (beneficiaries and non-beneficiaries). It was found that providing assistance to target communities has been shown to improve the welfare of beneficiaries, but has not been able to surpass the group that does not receive assistance (Kurniawan & Susanti, 2018) . The increase in cash assistance contributed to an increase in overall household expenditure, including tertiary consumption. The significant positive relationship between cash assistance and tertiary consumption expenditure indicates a potential moral hazard problem among certain households in Indonesia (Wibowo et al., 2025).

The Family Hope Program (PKH) contributes to poverty alleviation in Indonesia. The PKH program helps households receive cash assistance. PKH has a direct impact on coping strategies and an indirect impact on livelihood capital. Furthermore, the results reveal key factors supporting coping strategies, which PKH contributes to through counseling or mentoring sessions and providing access to assistance and other support (Sondang & Matsuyuki, 2023). The BPNT program had a limited impact on household expenditure, nutrition, and food security. Beneficiary households spent slightly more on food and non-food items, showed a slight increase in nutritional intake, and were less likely to experience food insecurity, although concerns about food sufficiency persisted. The BPNT remains an important pillar (Rizki Tri Anggara & BPS-Statistics, 2025).

H_1: Based on income transfer theory, the greater the number of social assistance recipients, the broader the scope of social protection, which can increase the consumption of poor households. Therefore, the realization of PKH and BPNT assistance recipients (X1) has a positive effect on the expenditure of the poor.

H_2: Based on social protection theory, the realization of the social assistance budget increases the purchasing power of poor households, thus potentially increasing their spending. Therefore, Realization of the Pkh and BPNT Assistance Budget (X2) has a positive effect on the expenditure of the poor.

2.3 Fiscal Decentralization for Poverty

Fiscal decentralization theory explains that the delegation of fiscal authority to local governments can improve the effectiveness of public services and social protection programs, as local governments are considered to have a better understanding of local community needs and regional socio-economic conditions (Akai & Sakata, 2002; Faguet, 2014). From the perspective of fiscal decentralization, the effectiveness of social policies is influenced not only by the size of budget transfers, but also by the ability of local governments to manage fiscal resources efficiently, transparently, and responsively to community needs (Bahl & Bird, 2008). In the context of social protection, the effectiveness of social assistance programs such as PKH and BPNT is also affected by the institutional capacity of local governments in managing, targeting, and distributing assistance accurately. The implementation capacity of local governments, which includes transparency, accountability, governance quality, and the effectiveness of regional financial management, becomes an important factor in determining the success of social assistance programs in supporting the welfare of poor communities (Smoke, 2015). In addition, the literature on social protection delivery emphasizes that the quality of administrative systems, the accuracy of beneficiary data, institutional coordination, and budget oversight are closely related to the successful implementation of social policies and the effective distribution of assistance to target groups (World Bank, 2018).

Effective regional financial management is also associated with improvements in public service quality, transparency, and local government accountability, thereby supporting the effectiveness of social protection programs and strengthening the relationship between the realization of social assistance and the welfare of poor communities (Sofyani et al., 2020). Studies examining regional financial management as a moderating variable in the effectiveness of social assistance remain relatively limited and generally have not developed the underlying theoretical mechanisms in depth. Several studies have mainly focused on the relationship between regional financial governance, transparency, and accountability in

relation to the success of social assistance programs Putra et al. (2024) explained that the effectiveness of budget absorption and the Government Internal Control System (SPIP) influence the accountability of regional financial reporting, with government performance acting as a moderating variable. Meanwhile, Mulyani and Hendriyani (2016) found that fiscal decentralization and local government performance affect the accountability of regional financial management, indicating that the quality of regional fiscal governance can strengthen the implementation of government programs.

H_3: Based on public governance theory, good regional financial management can increase the effectiveness of aid distribution to beneficiaries. Therefore, the Regional Financial Performance Index (IPKD) (X5) can be associated with the relationship between the realization of social assistance recipients and the expenditure of the poor.

H_4: Based on public governance theory, the quality of regional financial management can influence the effectiveness of social assistance budget utilization. Therefore, the IPKD (X5) can be associated with the relationship between the realization of the social assistance budget and the expenditure of the poor.

3. Methodology

3.1 Type of research and data sources

This study employs an exploratory panel data analysis design aimed at identifying the associative relationship between social assistance programs and the consumption expenditure of poor households, without claiming a direct causal relationship. This approach was chosen due to the limitations of aggregated provincial-level data and the absence of causal identification strategies such as natural experiments, instrumental variables, or other quasi-experimental approaches. Therefore, the study focuses on examining statistical relationships among variables using a fixed effect panel regression model with moderation, meaning that the findings are interpreted as associative relationships rather than causal impact evaluations. The study uses panel data that combine time series and cross-sectional dimensions, covering 10 provinces in Sumatra during the 2020–2025 period. Secondary data were obtained from Statistics Indonesia (BPS). The dependent variable is poor household consumption expenditure, measured in real per capita values at the provincial aggregate level. The main independent variables include the number of beneficiaries of the Family Hope Program (PKH) and Non-Cash Food Assistance (BPNT), as well as the realization of social assistance budgets. Meanwhile, the quality of regional financial management is measured using the Regional Financial Management Index (IPKD) and treated as a moderating variable to identify whether the quality of regional fiscal governance is associated with differences in the strength of the relationship between social assistance and poor household expenditure.In this study, the following variables, symbols, units, and operational descriptions are used:

Table 1. Variables, Symbols, Units and Operational Descriptions

No	Variables	Symbols	Unit	Operational Descriptions
1	Expenditure of the Poor	LnPPM	Million Rupiah Per-capita (Rp)	Poor household expenditure refers to the total household consumption spending incurred by poor households to meet their daily needs, including

				both food and non-food consumption, within a certain period. This variable reflects the level of welfare and purchasing power of poor households, where higher consumption expenditure indicates better economic capacity. Household consumption expenditure is considered a key indicator of welfare because it represents the economic ability of households to cope with changes in the prices of basic necessities. In this study, the poor household expenditure variable is transformed into its natural logarithm form (ln) to reduce heteroscedasticity, stabilize data variance, and improve the robustness of the estimation model.
2	Gross Domestic Regional Product	LnGDRP	Million Rupiah Per-capita (Rp)	Gross Domestic Regional Product (GDRP) per capita is an indicator that reflects the average economic output generated per resident within a region. This variable is used to capture the level of regional prosperity and economic capacity that may influence household welfare. In this study, GDRP per capita is measured using Gross Domestic Regional Product per capita at constant prices (ADHK) to eliminate the effects of inflation across periods. The data are expressed in million rupiah per capita and obtained from official publications of Badan Pusat Statistik. To improve data normality, reduce heteroscedasticity, and facilitate coefficient interpretation, the variable is transformed into its natural logarithm form [Ln(GDRP per capita)] prior to estimation. Under this specification, the estimated coefficients can be interpreted as approximate percentage changes in household welfare associated with a one-percent change in GDRP per capita.

3	Inflation	Inf	Percent (%)	Inflation refers to the percentage change in the general price level of goods and services over a specific period. This variable is included to control for changes in purchasing power that may affect the welfare of poor households. Higher inflation can reduce the real value of household income and expenditure, thereby influencing household welfare outcomes. In this study, inflation is measured using the general inflation rate (year-on-year/Y-to-Y) at the provincial level and is expressed as a percentage (%). The general inflation rate represents the percentage change in the Consumer Price Index (CPI) compared with the same month in the previous year and is obtained from data published by Badan Pusat Statistik.
4	Realization of Pkh and BPNT Assistance Recipients	LnRPMN	The Soul of the Head of the Family /Family Beneficiary	The number of PKH and BPNT beneficiaries represents the total number of beneficiary families (*Keluarga Penerima Manfaat/KPM*) that actually received social assistance compared to the targeted recipients of the program. This variable is used to assess the effectiveness of social protection program implementation for poor communities. Based on data from the Indonesian Ministry of Social Affairs (2024) through the data.go.id portal, beneficiary realization is considered an important indicator of the success of social assistance distribution, where an increase in the number of realized beneficiaries reflects broader program coverage and improved targeting accuracy. In this study, the variable representing the number of PKH and BPNT beneficiaries is also transformed into its natural logarithm

				form (ln) to reduce scale differences in the data, minimize the influence of outliers, and produce more statistically stable estimates.
5	Realization of the Pkh and BPNT Assistance Budget	LnRANG	Million Rupiah (Rp) /Family Beneficiary	The realization of PKH and BPNT social assistance budgets refers to the amount of funds that were actually disbursed for these programs compared to the total budget allocated in the national and regional government budgets (APBN and APBD). This variable reflects the level of budget absorption and the government's fiscal effectiveness in implementing social assistance programs. In this study, the realization of PKH and BPNT budget variable is transformed into its natural logarithm form (ln) because it contains large nominal values and a data distribution that tends to be non-symmetrical. Therefore, the logarithmic transformation is applied to improve data distribution and enhance the quality of the regression model estimation.
6	Regional Financial Management	IPKD	Percentage (%)	Regional financial management is the entire process of regulating and using regional finances, starting from planning, implementation, administration, reporting, to accountability, as regulated in Home Affairs Ministerial Regulation No. 13 of 2006. This variable measures how efficient and effective the regional government is in managing public financial resources.

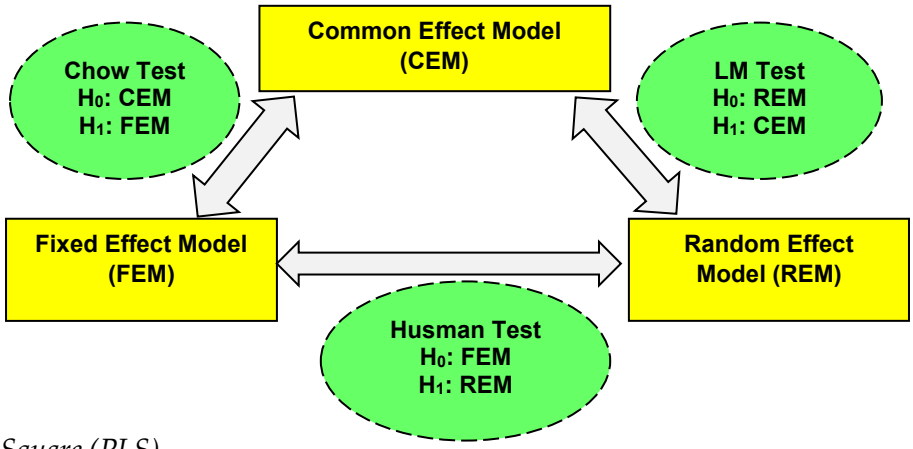
In econometric analysis, variables with nominal units and very large data scales, such as Expenditure of the Poor, the Realization of PKH and BPNT Assistance Recipients, and the Realization of the PKH and BPNT Assistance Budget, are commonly transformed into their natural logarithm (ln) form to improve the quality of model estimation. The natural logarithm transformation is applied because it can reduce heteroscedasticity, stabilize data variance, minimize the influence of outliers, and improve data distributions that tend to be

non-normal, thereby producing more robust and efficient estimation results (Gujarati & Porter, 2009). In addition, logarithmic transformation helps reduce skewness problems commonly found in economic data and allows regression coefficients to be interpreted in terms of elasticity or percentage changes, which are more relevant in public economic and social policy analysis (Wooldridge, 2019). Therefore, all variables expressed in nominal form rather than percentages, namely Expenditure of the Poor, the Realization of PKH and BPNT Assistance Recipients, and the Realization of the PKH and BPNT Assistance Budget, are transformed into natural logarithms. Meanwhile, the Regional Financial Management (%) variable is not transformed because it is already expressed as a ratio or percentage, which statistically has a relatively stable scale and is more appropriately interpreted in its original form (Kennedy, 2008). This transformation approach is also applied as part of efforts to improve model robustness and minimize potential estimation bias arising from differences in variable scales.

3.2 Panel Data Analysis Method

There are four models used in panel data analysis: pooled least squares, pooling independent cross-sections over time, least squares dummy variable (fixed effects), and random effects. These three models can be explained in the following figure:

Figure 3. Panel Data Model Selection



3.3 Pooled Least Square (PLS)

In this model, it is assumed that all coefficients are constant across all locations and time points. The general form of this model is as follows:

$$y_{it} = a + X_{it}\beta + U_{it} \qquad \text{i=1,...,N t=1,...,T,}$$

where i is the country or company, and t is time. The assumption of the above model is that all intercepts are the same, and the slope coefficient of the X variable is identical for all locations. Pooling Cross Sections over Time. This model is a pooled least squares model with the addition of a dummy variable. The model is as follows:

$$y_{it} = a + X_{it}\beta + D_{time}U_{it} \qquad \text{i=1,...,N t=1,...,T,}$$

D time shows the dummy time variable which usually starts from the second time sequence, for example, the second year and the first year as a basis, (α).

3.4 Chow Test / Fixed Effect

The Chow test is employed to determine whether the Fixed Effects (FE) model is more appropriate than the Common Effects (CE) model in panel data regression analysis. The test evaluates the differences in the residual sum of squares between the two models to assess the presence of individual-specific effects. The Fixed Effects approach serves as an alternative to the Least Squares Dummy Variable (LSDV) method, particularly when the number of cross-sectional units is large, as it avoids a substantial loss of degrees of freedom. Under this approach, each cross-sectional unit is allowed to have its own intercept, reflecting individual heterogeneity, whereas the intercept for a given unit remains constant over time. This approach is expressed by the following equation:

$$Y_{it} = \beta_{0i} + \beta_1 X_{1it} + \beta_2 X_{2it} + \cdots + \beta_n X_{nit} + \mu_{it}$$

Where β_{0i} is the intercept and β_1, β_2 are the slopes. The difference in intercepts in each cross-section unit is achieved by adding subscript i. Although the intercepts differ between countries, the intercepts of each country do not differ over time, which is called time invariance. To determine the better approach between Pooled Least Squared/PLS and Fixed Effect Model (FEM), the Chow Test is used with the following hypothesis:

1) H_0 : *Pooled Least Square* (PLS)
2) H_1 : *Fixed Effect Model* (FEM)

The decision to reject or accept the null hypothesis is based on a comparison between the calculated F-statistic and the critical value from the F-table. If the calculated F-statistic exceeds the F-table value, the null hypothesis (H_0) is rejected, indicating that the Fixed Effects Model (FEM) is more suitable for the analysis. Conversely, if the calculated F-statistic is lower than the F-table value, H_0 is accepted, suggesting that the Pooled Least Squares (PLS) model is the appropriate choice. The F-statistic used in this comparison is derived from the Chow Test calculation using the following formula (Gujarati, 1972):

$$\text{F-Count} = \frac{\frac{SSE_1 - SSE_2}{(n-1)}}{\frac{SSE_2}{(nt-n-k)}} \sim F_{\alpha\,(\text{N-1, NT – N – K})}$$

Where SSE_1 is the Sum Square Error of the Pooled Least Squared model, SSE_2 is the Sum Square Error of the Fixed Effect Model, n is the number of country cross sections), nt is the number of cross sections multiplied by the number of time series, k is the number of independent variables. While the F table is obtained from:

$$\text{F-table} = \{ : df(n-1, nt-n-k)\}$$

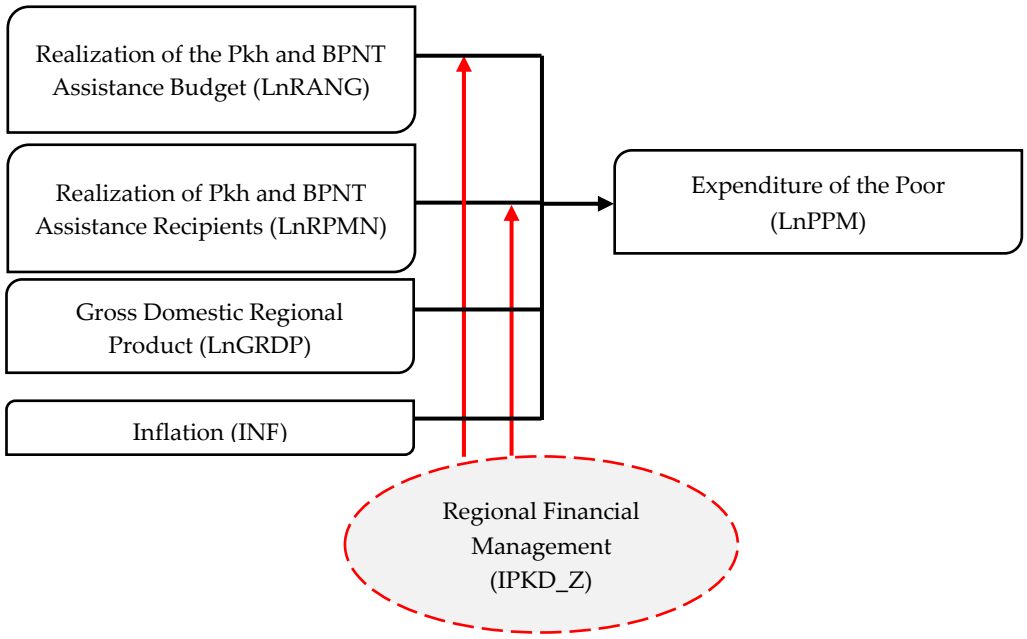
Where $\boldsymbol{\alpha}$ is the level of significance used (alpha), n is the number of countries (cross sections), nt is the number of cross sections multiplied by the number of time series, k is the number of independent variables.

3.5 Moderated Regression Analysis (MRA) Research Model

The analysis was conducted using Moderated Regression Analysis (MRA), which expands the conventional multiple linear regression model by introducing interaction terms derived

from the independent and moderating variables to assess moderation effects. This method maintains sample integrity and controls for the influence of moderating variables on the relationship between the independent and dependent variables (Gujarati, 1972). In this study, the interaction was tested through the product of the independent and moderating variables to determine the extent to which the moderating variable strengthens or weakens the relationship between the independent and dependent variables. The MRA flowchart is as follows:

Figure 4. Regression relationship model with moderating variable MRA



Moderated Regression Analysis (MRA) is a specialized form of multiple linear regression analysis in which the regression equation includes interaction terms to examine the moderating effect of a particular variable. In this study, the interaction terms were constructed by multiplying each independent variable, namely, the realization of social assistance beneficiaries and the realization of social assistance budgets with the moderating variable, the Regional Financial Management Index (IPKD_z). Z denotes the moderating variable in the model, namely, the Regional Financial Management Index (IPKD). The interaction terms were constructed by multiplying the independent variables with the moderator (X1×Z and X2×Z). In addition, Gross Domestic Regional Product (GDRP) per capita and inflation are incorporated as control variables to account for regional economic conditions and macroeconomic factors that may influence poor households' welfare. Including these control variables helps to isolate the association between social assistance, local governance, and welfare outcomes. MRA is a specific form of multiple linear regression designed to evaluate interaction effects by including product terms derived from two or more explanatory variables in the regression equations. The mathematical specification of the model is presented as follows:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

In the equation, variable X5 is a variable that can moderate/intervene the influence of X1 and X2, so that variable X5 is a variable that moderates or will be multiplied by X1 and X2, meaning that when X1 and X2 have been multiplied or moderated by X5, their influence on Y will be more associated. The following shows the equation:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \beta_6 (X1 * X5_{it}) + \beta_7 (X2 * X5_{it}) + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Hypothesis:

1. X1 has a direct effect on Y
2. X2 has a direct effect on Y
3. X3 is a control variable
4. X4 is a control variable
5. X1's effect on Y is moderated by X5
6. X2's effect on Y is moderated by X5

Moderation regression analysis processing is carried out on panel data. The econometric model used to analyze the influence of the Multiple Linear Regression (OLS) Model and Analysis Tools with panel data is used. The analysis method used is time series data from 2020-2025 and observational data (Cross section) consisting of 10 provinces on the island of Sumatra. The higher X1 and X2 will affect the higher Y. To test whether B is a moderating variable, the regression equation, If variable X5 is a moderating variable, then the coefficient b must be significant at the specified significance level (Lie Liana, 2009). linear regression equation by entering the moderator/moderation variable Regional Financial Management Index (IPKD_Z), Multiple Linear Regression (OLS) mathematical equation, and Moderated Regression Analysis (MRA) as follows:

$$LnPPM_{it} = \beta_0 + \beta_1 LnRPMN_{it} + \beta_2 LnRANG_{it} + \beta_3 LnGDRP_{it} + \beta_4 Inf_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$LnPPM_{it} = \beta_0 + \beta_1 LnRPMN_{it} + \beta_2 LnRANG_{it} + \beta_3 LnGDRP_{it} + \beta_4 Inf_{it} + \beta_5 IPKD\_Z_{it} + \varepsilon_{it} \ldots\ldots\ldots (2)$$

$$LnPPM_{it} = \beta_0 + \beta_1 LnRPMN_{it} + \beta_2 LnRANG_{it} + \beta_3 LnGDRP_{it} + \beta_4 Inf_{it} + \beta_5 IPKD\_Z_{it} + \beta_6 (\beta_1 LnRPMN_{it} * \beta_5 IPKD\_Z_{it}) + \beta_7 (\beta_2 LnRANG_{it} * \beta_5 IPKD\_Z_{it}) + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots (3)$$

Description:

LnPPM	=	Log Natural Expenditure of the Poor
LnRPMN	=	Log Natural Realization of Pkh and BPNT Assistance Recipients
LnRANG	=	Log Natural Realization of the Pkh and BPNT Assistance Budget
LnGDRP	=	Log Natural Gross Domestic Regional Product
Inf	=	Inflation
IPKD _ Z	=	Moderation Regional Financial Management
Ln	=	Logaritma Natural
i	=	Observations of 10 Provinces on the Island of Sumatra (Cross-section)
t	=	Research Period 2020-2025 (Time Series)
β_0	=	Intercept Constant Coefficient, a scalar

β1.β2. β3. β4. = Regression coefficient or slope of each variable
β5. β6. β7.
et = Standard error in the mathematical model (Error Term)

3.6 Classical Assumption Test

3.6.1 Multicollinearity Test

Multicollinearity was assessed using the Variance Inflation Factor (VIF) derived from the regression model. As stated by Widarjono (2013), a VIF value greater than 10 suggests a significant multicollinearity problem. The VIF serves as an indicator of how much the variance or covariance of an estimated coefficient increases owing to correlations among independent variables and is expressed by the following formula:

$$VIF = \frac{1}{(1 - R^2)}$$

As R^2 approaches 1, the VIF approaches infinity. This shows that as the range of collinearity increases, the variance of an estimator also increases, and at a limit value, it can become infinite (Gujarati, 2010). H0: VIF > 10, there is multicollinearity between independent variables, Ha: VIF < 10, there is no multicollinearity between independent variables.

3.6.2 Heteroscedasticity Test

According to Widarjono (2013), a regression model satisfies the homoscedasticity assumption when the error variance remains stable across all observations. To assess this assumption, researchers may employ the White test, in which heteroscedasticity is identified if the White test statistic ($n \times R^2$) exceeds the critical chi-square value. Another commonly used approach is the GLS Cross-Section Weights technique in EViews, which not only detects but also helps mitigate heteroscedasticity. The evaluation is based on a comparison between Weighted SSR and the Unweighted SSR. A model is considered free from heteroscedasticity when the Weighted SSR is smaller than the Unweighted SSR.

3.6.3 Autocorrelation Test

According to Widarjono (2013), one of the key assumptions of the Ordinary Least Squares (OLS) method is that the disturbance terms are independent of one another, meaning that no correlation exists between the error terms across observations. Autocorrelation occurs when the error term in one observation is correlated with the error term in another observation, particularly across different periods. When autocorrelation is present, the OLS estimator remains linear and unbiased but no longer satisfies the Best Linear Unbiased Estimator (BLUE) property, resulting in a Linear Unbiased Estimator (LUE). Several diagnostic tests

can be employed to identify autocorrelation problems, including the Durbin–Watson and Breusch–Godfrey tests.

4. Result and Discussion

4.1 Panel Data Test Results

Panel data procedures were performed to determine the best model to use in the analysis, whether using the Pooled Least Squares (PLS), fixed effects, or Random Effects Model (REM). The Chow and Hausman tests were used for testing. The following is a summary of the best models in panel data regression in 10 provinces over the 2020-2025 time series:

Table 2. Panel Data Model Estimation Testing

Ordinary Least Square (OLS)					
No	**Test Summary**	**Chi-Sq. Statistic**	**Chi-Sq. df**	**Prob.**	**Conclusion**
1	Fix Effect Model	63.3624	(9,45)	0.0000	H_0 rejected
2	Random Effect Model	99.4577	5	0.0000	H_0 rejected
Moderated Regression Analysis (MRA)					
3	Fix Effect Model	79.5335	(9,43)	0.0000	H_0 rejected
4	Random Effect Model	266.6993	7	0.0000	H_0 rejected

Source: Eviews, Data processed 2025
Note: Critical Value at 0.05.

1. Based on the results of the Fixed Effect Test on the Ordinary Least Square (OLS) model, the Chi-square statistic value (63.3624) > Chi-square table (16.919) at df = 9.47 with a probability level of 0.0000 < 0.05, causing Ho to be rejected. The results of the Random Effect Test obtained the Chi-square statistic value (99.4577) > Chi-square table (11.070) at df = 5 with a probability level of 0.0000 < 0.05, causing Ho to be rejected.
2. Based on the results of the Fixed Effect Test on the Ordinary Least Square (OLS) model, the Chi-square statistic value (79.5335) > Chi-square table (16.919) at df = 9.45 with a probability level of 0.0000 < 0.05, causing Ho to be rejected. The results of the Random Effect Test obtained the Chi-square statistic value (266.6993) > Chi-square table (14.067) at df = 7 with a probability level of 0.0000 < 0.05, causing Ho to be rejected.

4.2 Ordinary Least Square (OLS) and Moderated Regression Analysis (MRA) Estimation Results on Panel Data

Based on the results of the model selection tests and the evaluation of the goodness-of-fit criteria, the Fixed Effect Model (FEM) was identified as the most appropriate panel data regression approach. The analysis was conducted using both Ordinary Least Squares (OLS) and Moderated Regression Analysis (MRA) techniques. OLS estimation was employed to examine the direction and magnitude of the relationship between the independent and dependent variables, as reflected in the estimated regression coefficients. Furthermore, the

MRA approach was used to investigate the moderating role of the Regional Financial Management Index (IPKD). In this framework, IPKD functions as a moderating variable that may influence the strength of the relationship between the realization of PKH and BPNT beneficiaries (households), the realization of PKH and BPNT budget allocations, and poor households' expenditure. Through this analysis, it is possible to assess how the quality of regional financial management enhances or weakens the effectiveness of social assistance programs in alleviating the poor's expenditure. The following are the results of 2 models:

Tabel 3. Fix Effect Model Ordinary Least Square (OLS) and *Moderated Regression Analysis (MRA)*

Ordinary Least Square (OLS)				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LnRPNM	0.047871	0.016102	2.972889	0.0047*
LnRANG	0.031613	0.011603	2.724591	0.0091*
LnGRDP	0.832714	0.140202	5.939371	0.0000*
Inf	-0.064681	0.017171	-3.766893	0.0003*
IPKD_Z	0.138383	0.065259	2.120521	0.0395*
C	2.497323	1.272524	1.962496	0.0559
R^2	0.946210	**Prob(F-statistic)**	0.000000	
F-stat	56.54228	**Durbin-Watson stat**	2.178119	
Moderated Regression Analysis (MRA)* Model *Fixed Effect				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LnRPNM	0.981460	0.075379	13.02033	0.0000*
LnRANG	0.156131	0.025333	6.163132	0.0000*
LnGRDP	0.718296	0.044479	16.14916	0.0000*
Inf	-0.034844	0.007234	-4.816717	0.0000*
IPKD_Z	0.678111	0.164051	4.133535	0.0002*
LnRPNM*IPKD_Z	0.018459	0.008017	2.302458	0.0262*
LnRANG*IPKD_Z	0.150057	0.026731	5.613478	0.0000*
C	1.735430	0.835918	2.076075	0.0439
R^2	0.961962	**Prob(F-statistic)**	0.000000	
F-stat	67.96521	**Durbin-Watson stat**	2.279857	

Source: Eviews, Data processed 2025

Note: Critical Value at 95% confidence level (α=5%)/0.05*

[ ]: t-Statistic

The regression estimates obtained from the Ordinary Least Squares (OLS) and Moderated Regression Analysis (MRA) procedures were converted into mathematical equations by incorporating the estimated parameter values. Consequently, the empirical models, including the moderating effects, can be specified as follows:

$$\text{LnPPM}_{it} = 2.497323 + 0.047871\text{LnRPMN}_{it} + 0.031613\text{LnRANG}_{it} + 0.832714\text{LnGDRP}_{it} - 0.064681\text{Inf}_{it} + 0.138383\text{IPKD\_Z}_{it} + \varepsilon_{it} \ldots\ldots\ldots(1)$$

[1.962496] [2.972889] [2.724591] [5.939371] [-3.766893] [2.120521]

$$\begin{aligned}\mathrm{LnPPM_{it}} = 1.735430 + \ & 0.981460\mathrm{LnRPMN_{it}} + 0.156131\mathrm{LnRANG_{it}} + 0.718296\mathrm{LnGDRP_{it}} - \\ & 0.034844\mathrm{Inf_{it}} + 0.678111\mathrm{IPKD\_Z_{it}} + 0.018459(\beta_1\mathrm{LnRPMN_{it}} * \beta_5\mathrm{IPKD\_Z_{it}}) + \\ & 0.150057(\beta_2\mathrm{LnRANG_{it}} * \beta_5\mathrm{IPKD\_Z_{it}}) + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots (2)\end{aligned}$$

[2.076075] [13.02033] [6.163132] [16.14916] [-4.816717] [4.133535] [2.302458] [5.613478]

Based on the results of Ordinary Least Square (OLS) and Moderated Regression Analysis (MRA) estimations, both models performed very well. In the OLS model, the R-squared value of 0.946210 indicates that 94% of the variation in the Expenditure of the Poor (PPM) can be explained by independent variables, while the remaining 6% is influenced by other factors outside the model. In the MRA model, the R-squared value is 0.961962, meaning that 96 % of the variation in PPM is explained by the variables in the model. The Durbin-Watson (DW) values in both models are 2.178119 for OLS and 2.279857 for MRA, both of which are close to 2, thus indicating no significant autocorrelation in the residuals. In addition, the F-statistic value in both OLS (56.54228) and MRA (67.96521) and its probability of 0.000000 indicate that both models are statistically significant and suitable for explaining the relationship between variables in the study.

The final fixed-effects model was estimated using White cross-section standard errors and covariance (d.f. corrected), thereby providing robust estimates and reliable statistical inference despite the presence of autocorrelation and heteroskedasticity in the preliminary model diagnostics.

3.6 Classical Assumption Result

3.6.1 Multicollinearity Result

A regression model is considered to suffer from multicollinearity when a perfect or very strong linear relationship exists among some or all independent variables. One common method for detecting multicollinearity is by examining the Variance Inflation Factor (VIF) values. If the VIF value for each independent variable is less than 10, it can be concluded that the regression model does not exhibit multicollinearity problems. The test results are as follows:

Table 4. Multicollinearity Test Results

Ordinary Least Square (OLS)			
NO	Variable	VIF	Conclusion
1	Realization of Pkh and BPNT Assistance Recipients (LnRPNM)	1.0341	In the Level of Tolerance
2	Realization of the Pkh and BPNT Assistance Budget (LnRANG)	1.0477	In the Level of Tolerance
3	Gross Domestic Regional Product (LnGRDP)	3.300	In the Level of Tolerance
4	Inflation (INF)	1.3194	In the Level of Tolerance
5	Regional Financial Management (IPKD_Z)	1.7271	In the Level of Tolerance
Moderated Regression Analysis (MRA)			
1	Realization of Pkh and BPNT Assistance Recipients (LnRPNM_Z)	1.0697	In the Level of Tolerance
2	Realization of the Pkh and BPNT Assistance Budget (LnRANG_Z)	3.9370	In the Level of Tolerance

3	Gross Domestic Regional Product (LnGRDP)	3.300	In the Level of Tolerance
4	Inflation (INF)	1.3194	In the Level of Tolerance
5	Regional Financial Management (IPKD_Z)	1.7271	In the Level of Tolerance

Source: Eviews, data processed 2025

The results of the Multicollinearity level test show that the Variance Inflation Factor (VIF) value of all independent variables has a value of <10, this explains that all variables have values within the tolerance level.

3.6.2 Heteroscedasticity Result

The White heteroscedasticity test, conducted by regressing the squared residuals, is used to determine whether the variance of the residuals remains constant across the observations. Specifically, the test examines the presence of heteroscedasticity in the regression model by assessing whether the error variance differs from one observation to another. If the residual variance is not constant, the model is considered to exhibit heteroscedasticity.

1. Ordinary Least Square (OLS) with Chisquare Calculation = Total n * Rsquare (60*0.1227= 7.362), In the Chi-Square table count (7,362) < Chi Square Table (11.070) in df of the independent variable = 5 with level significance of 5 percent, Therefore, the null hypothesis cannot be rejected, indicating that the model does not suffer from heteroskedasticity.
2. Moderated Regression Analysis (MRA) with Chisquare Calculation = Total n * Rsquare (60*0.1253= 7.518), In the Chi-Square table count (7.518) < Chi Square Table (11.070) in df of the independent variable = 5 with level significance of 5 percent, Therefore, the null hypothesis cannot be rejected, indicating that the model does not suffer from heteroskedasticity.

Table 5. Heteroscedasticity Test Results

Ordinary Least Square (OLS)					
No	Independent Variable	Chi-Square Calculate	Chi-Square Table	Result	Conclusion
1	5	7,362	11.070	fail to reject H_0	Corrected For Heteroscedasticity
Moderated Regression Analysis (MRA)					
2	5	7.518	11.070	fail to reject H_0	Corrected For Heteroscedasticity

Source: Eviews, data processed 2025

Description: Critical Value at 0.05.

The results confirm that both the OLS and MRA specifications do not suffer from heteroskedasticity. Hence, the estimated coefficients, standard errors, and statistical inferences reported in this study can be considered robust and reliable for explaining the relationships among the variables under investigation.

3.6.3 Autocorrelation *Result*

The Breusch Godfrey LM test for autocorrelation was conducted by regressing the residuals obtained from the main regression equation on the original independent variables and the lagged residual term. The coefficient of determination (R^2) obtained from this auxiliary regression was multiplied by the number of observations to calculate the LM statistic (nR^2). Given that the dataset consists of 10 provinces (N = 10) observed over 6 years (T = 6), a first-order autocorrelation specification [AR(1)] is employed. Accordingly, the critical Chi-square value at the 5% significance level with one degree of freedom was 3.84. The R^2 value used in the calculation was obtained from the auxiliary regression associated with the Breusch–Godfrey LM test. The number of observations decreased from 60 to 50 during the autocorrelation test because the AR(1) specification requires one lagged residual for each cross-sectional unit to be included. Consequently, the first observation for each province could not be included in the estimation, leading to the loss of one observation per province. The results of the autocorrelation test are presented below:

1. Ordinary Least Squares (OLS): The Chi-square statistic was calculated as $n \times R^2 = 50 \times 0.1227 = 6.135$. Since the calculated Chi-square value (6.135) exceeds the critical Chi-square value for AR(1) at the 5% significance level (3.841), the null hypothesis of no autocorrelation is rejected. This result indicates the presence of autocorrelation in the residuals of the OLS model.
2. Moderated Regression Analysis (MRA): The Chi-square statistic was calculated as $n \times R^2 = 50 \times 0.1277 = 6.385$. Since the calculated Chi-square value (6.385) exceeds the critical Chi-square value for AR(1) at the 5% significance level (3.841), the null hypothesis of no autocorrelation is rejected. Therefore, the residuals of the MRA model exhibit autocorrelation.

Table 6. Autocorrelation Test Results

Ordinary Least Square (OLS)					
No	Lag	Chi-Square Calculate	Chi-Square Table	Result	Conclusion
1	(AR(1))	6.135	3.841	Reject H_0	Corrected For Autocorrelation
Moderated Regression Analysis (MRA)					
2	(AR(1))	6.385	3.841	Reject H_0	Corrected For Autocorrelation

Source: Eviews, data processed 2025

Description: Critical Value at 0.05.

To address the autocorrelation detected in the preliminary diagnostics, the final Fixed Effect estimation was performed using White cross-section standard errors and covariance (d.f. corrected). This approach yields robust standard errors and ensures the validity of the statistical inference. Consequently, the final results presented in Table 3 are considered robust to autocorrelation and heteroskedasticity(Widarjono, 2013).

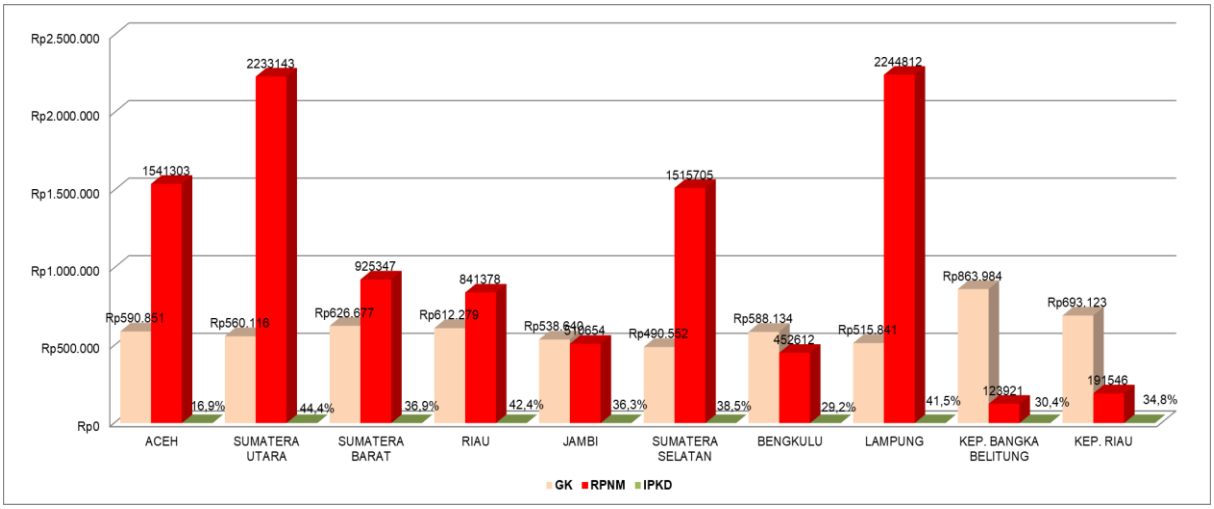
4.3 Results & Discussion

4.3.1 Realization of PKH and BPNT Assistance Recipients (LnRPNM)

The Realization of PKH and BPNT Assistance Recipients (LnRPNM) represents an indicator reflecting the achievement of government social protection programs in reaching targeted households. This realization illustrates the distribution of social assistance to poor communities as part of efforts to reduce their social and economic vulnerability. The statistical analysis using the Ordinary Least Square (OLS) model shows that the Realization of PKH and BPNT Assistance Recipients (RPNM) variable has a positive and significant relationship with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.047871. This finding indicates that an increase in the number of PKH and BPNT beneficiaries tends to be associated with an increase in the Expenditure of Poor Communities (LnPPM) by 0.047%. Furthermore, in the analysis incorporating regional financial management as a moderating variable through Moderated Regression Analysis (MRA), the Realization of PKH and BPNT Assistance Recipients (RPNM) variable remains positively and significantly associated with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.01845. These results suggest that regional financial management is associated with a stronger relationship between the realization of PKH and BPNT assistance and the Expenditure of Poor Communities (LnPPM). In other words, an increase in the number of PKH and BPNT beneficiaries, within the context of better regional financial management, tends to be associated with an increase in the Expenditure of Poor Communities (LnPPM) by 0.018% across 10 provinces in Sumatra, assuming other variables remain constant (ceteris paribus).

PKH and BPNT are family based social protection models. Conceptually, PKH falls under the category of social assistance, a social security program in the form of cash, in-kind, or welfare services generally provided to vulnerable families who lack a decent income. This social assistance also significantly helps the consumption of poor families (Gultom et al., 2020). The BPNT and PKH have had a significant impact on poverty alleviation efforts. The increasing number of recipients has enabled these two programs to assist the poor in meeting their needs for food, education, and health. However, several challenges remain to be addressed to increase program effectiveness, such as improving distribution mechanisms, validating beneficiary data, and strengthening program outreach to the community (Edy Suhartono, Azhari, 2025). The effectiveness of the Family Hope Program and the BPNT (Non-Cash Food Assistance Program) is quite good, although there are still indicators that need improvement. Accurate targeting of PKH recipients has been proven to have a positive and significant impact on increasing expenditure by poor households, thereby helping to reduce the Expenditure of the Poor . When recipients are appropriate and aligned with real-world conditions, program benefits can be optimally received, encouraging increased consumption capacity and strengthening the welfare of the poor. Therefore, accurate data collection and more intensive mentoring are essential to increase PKH effectiveness and achieve poverty alleviation goals (Rif'atul Mahmudah & Ahmad Baihaqi, 2025). The following is the development of the influence of variables:

Figure 5. Expenditure of the Poor , Realization of Recipients, and Regional Financial Management in 10 Provinces on Sumatra Island, 2020-2025



Source: Statistics Indonesia, raw data processed by the authors, 2025

Provincial data from Sumatra indicate varying relationships between the realization of social assistance beneficiaries (RPNM), the quality of regional financial management (IPKD), and the expenditure of poor communities (PPM). The moderation interaction results show that the relationship between RPNM and PPM tends to differ across varying levels of IPKD. In other words, the association between social assistance and poor community expenditure is conditional on the quality of regional financial management. For example, Aceh recorded a PPM of Rp590,851, an RPNM of Rp1,541,303, and a relatively low IPKD of 16.9%, suggesting that the relationship between social assistance and poor community expenditure appears weaker than in provinces with higher IPKD levels. In contrast, North Sumatra showed a combination of high RPNM at Rp2,233,143 and an IPKD of 44.4%, which was associated with a stronger relationship with PPM of Rp560,116. Similar patterns were observed in West Sumatra, Riau, and Lampung, where relatively large social assistance realization combined with higher IPKD levels was associated with higher poor community expenditure. Meanwhile, Jambi and South Sumatra demonstrated a relatively moderate relationship between social assistance and poor-community expenditure. Bengkulu, with a lower IPKD of 29.2%, exhibited a relatively weaker relationship despite the continued realization of social assistance. On the other hand, Bangka Belitung Islands and Riau Islands showed that although the number of beneficiaries was relatively smaller, relatively better IPKD levels were still associated with higher poor community expenditure compared to several regions with weaker fiscal governance.

Overall, these findings suggest that the relationship between the realization of social assistance and poor community expenditure tends to be stronger in provinces with better regional financial management quality. However, these findings should not be interpreted as evidence of a direct causal relationship, as other factors such as regional inflation, initial poverty levels, targeting accuracy, and local economic characteristics may also influence the observed relationships and are not fully captured within the model. These results indicate that increasing the number of social assistance beneficiaries is associated with improved consumption capacity and purchasing power among poor communities. Additionally, the quality of regional financial management, as measured by the Regional Financial

Management Index (IPKD), strengthens this relationship, implying that the effectiveness of social assistance tends to be higher in regions with better fiscal governance. Mechanistically, effective regional financial management is associated with improved targeting accuracy, efficient budget absorption, timely disbursement of assistance, stronger coordination, and program accountability. Therefore, poverty alleviation policies require not only an expansion in social assistance coverage but also strengthened regional financial governance capacity to ensure that social assistance programs can effectively improve the welfare of poor communities.

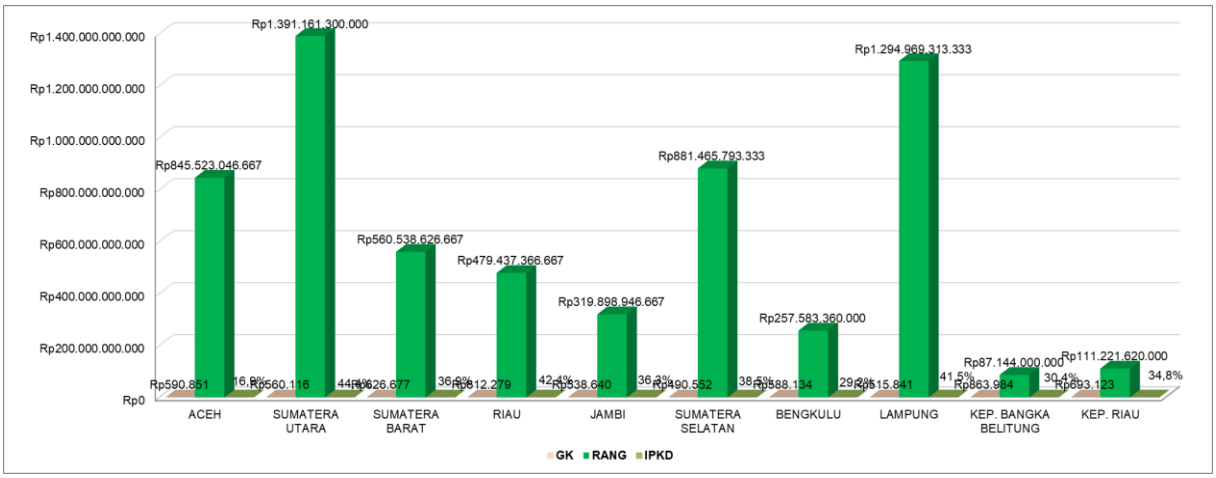
This study is in line with several findings Utomo et al. (2023) that BPNT and PKH affect productivity, which means that BPNT and PKH assistance can help meet the temporary needs of the community. The policies of the Ministry of Social Affairs and the Social Service pay close attention to the distribution of BPNT as non-cash assistance, and PKH as cash assistance must be distributed appropriately to recipient families so that it has a positive and significant impact on poverty alleviation. PKH and BPNT have a negative effect on poverty, significantly reducing poverty, but have a positive impact on the poverty/expenditure line and increase household consumption. In addition, the government's financial inclusion variable plays an important role in the smooth social assistance process. improving digital financial services, and expanding the scope of social protection programs as a sustainable strategy to strengthen its impact on poverty alleviation and economic development (Jaenal Effendi, 2025).

4.3.2 Realization of PKH and BPNT assistance budget (LnRANG)

The Realization of the PKH and BPNT Assistance Budget (LnRANG) represents the level of government budget distribution in the implementation of social assistance programs, making it an important indicator for assessing the effectiveness of fiscal allocation and the government's consistency in carrying out its social protection commitments for poor households. The statistical analysis using the Ordinary Least Square (OLS) model shows that the Realization of the PKH and BPNT Assistance Budget (LnRANG) variable has a positive and significant relationship with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.03161. This finding indicates that an increase in the realization of PKH and BPNT assistance budgets tends to be associated with an increase in the Expenditure of Poor Communities (LnPPM) by 0.03%. Furthermore, in the analysis incorporating regional financial management as a moderating variable through Moderated Regression Analysis (MRA), the Realization of the PKH and BPNT Assistance Budget (LnRANG) variable remains positively and significantly associated with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.1500. These results suggest that regional financial management is associated with a stronger relationship between the realization of PKH and BPNT assistance budgets and the Expenditure of Poor Communities (LnPPM). In other words, an increase in the realization of PKH and BPNT assistance budgets, within the context of better regional financial management, tends to be associated with an increase in the Expenditure of Poor Communities (LnPPM) by 0.15% across 10 provinces in Sumatra, assuming other variables remain constant (ceteris paribus).

The impact of the PEN program on poverty levels in the social protection cluster. All PEN programs in the social protection cluster, namely the Family Hope Program (PKH), staple food assistance (sembako), pre-employment assistance (Public Assistance), Cash Transfer (BST), and Cash Transfer (BLT), have had a significant simultaneous impact on poverty levels. The budget also stimulates spending and income among the poor. This indicates that the distribution of the PEN program, especially in the social protection cluster, has been quite effective and on-target, thus reducing poverty rates (Sinaga et al., 2022). The Family Hope Program (PKH) and Non-Cash Food Assistance (BPNT) budgets have a positive and significant impact on community consumption patterns. The PKH and BPNT variables have been shown to significantly increased the consumption patterns of poor households. This means that the greater the realization of PKH and BPNT assistance, the greater the consumption capacity of the poor households. This assistance is conditional; therefore, poor households need to optimize the use of PKH and BPNT according to the provisions to maximize benefits for basic needs (Muharir, 2022). The social assistance budgets of the BPNT and PKH programs have positively impacted those in need, as evidenced by the increase in the number of recipients. However, the program's effectiveness still needs to be improved. Evaluating the 6T indicators (targeting, quantity, price, time, quality, and administration) revealed several challenges. Data inaccuracy and suboptimal verification affect targeting accuracy. A uniform amount of assistance may not necessarily meet the needs of every family, and price fluctuations affect the purchasing power (Sukma, 2025). The following is the development between the influence of variables:

Figure 6. Expenditure of the Poor , Budget Realization, and Regional Financial Management in 10 Provinces on Sumatra Island, 2020-2025



Source: Statistics Indonesia, raw data processed by the authors, 2025.

In Aceh, the realization of the PKH and BPNT budget amounted to Rp845.52 billion, with PPM recorded at Rp590,851 and a relatively low IPKD of 16.9%, indicating that the relationship between the size of social assistance and poor community expenditure tends to be weaker compared to regions with better fiscal governance quality. In contrast, North Sumatra, with a budget realization of Rp1.39 trillion, PPM of Rp560,116, and an IPKD of 44.4%, demonstrates a stronger relationship between social assistance and poor community expenditure in areas with higher-quality financial management. A similar pattern can be

observed in West Sumatra, where a budget realization of Rp560.53 billion, PPM of Rp626,677, and an IPKD of 36.9% suggest that better fiscal governance quality is associated with a stronger relationship between social assistance and poor household consumption. Riau also exhibits a relatively consistent pattern, with a budget realization of Rp479.43 billion, PPM of Rp612,279, and an IPKD of 42.4%, indicating that the quality of regional financial management may be associated with a stronger relationship between social assistance and poor community expenditure, despite the relatively smaller budget value compared to several other provinces. Jambi, with a budget realization of Rp319.89 billion, PPM of Rp538,640, and an IPKD of 36.3%, shows a moderate relationship, while South Sumatra, with a budget realization of Rp881.46 billion, PPM of Rp490,552, and an IPKD of 38.5%, demonstrates a relatively stable association between social assistance and poor community expenditure.

In Bengkulu, the realization of the social assistance budget reached Rp257.58 billion, with PPM of Rp588,134 and an IPKD of 29.2%, indicating that the relationship between social assistance and poor community expenditure tends to be weaker compared to provinces with higher governance quality. Meanwhile, Lampung, with a budget realization of Rp1.29 trillion, PPM of Rp515,841, and an IPKD of 41.5%, shows a relatively stronger relationship between social assistance and poor community expenditure. In the Bangka Belitung Islands, although the budget realization was relatively small at Rp87.14 billion, PPM was relatively high at Rp863,984 with an IPKD of 30.4%, suggesting the possible influence of local economic factors and regional cost-of-living characteristics. A nearly similar pattern was also found in the Riau Islands, with a budget realization of Rp111.22 billion, PPM of Rp693,123, and an IPKD of 34.8%.

The findings indicate that the realization of PKH and BPNT social assistance budgets is positively and significantly associated with poor community expenditure across Sumatra. This suggests that higher realized social assistance budgets are associated with greater consumption capacity among poor households. The relationship becomes stronger when supported by better regional financial management quality. This is reflected in the moderating role of the Regional Financial Management Index (IPKD), where regions with more effective fiscal governance tend to exhibit a stronger relationship between the realization of social assistance budgets and increased poor community expenditure. From a policy mechanism perspective, effective regional financial management enables more efficient social assistance distribution through accurate budget planning, smoother fund disbursement, stronger budget oversight, and improved inter-agency coordination. As a result, social assistance is not only administratively absorbed but also more capable of increasing the consumption activities of beneficiary communities. Therefore, the effectiveness of social assistance programs is determined not only by the size of the allocated budget but also by the capacity of local governments to manage public finances in a transparent, targeted, and accountable manner.

The research is in line with several findings,(Nur Triany Rais1*, Andi Chairil Furqan2, Betty3, 2025) , The social budget and Regional Government Expenditure (APBD) have a significant impact on poverty reduction. Findings indicate that increasing social budget allocations and optimizing regional wealth management can strengthen the effectiveness of poverty alleviation programs and accelerate the achievement of the Sustainable Development Goals (SDGs). The importance of a more targeted social budgeting strategy and the formulation of sustainability-based policies to support comprehensive poverty

alleviation. Social assistance has a positive impact of 27.0% on welfare, while the Family Hope Program (PKH) contributes 21.6%. Together, the two contribute 48.6% to improving welfare. Barriers include inaccurate targeting, budget limitations, infrastructure challenges, and socio-cultural constraints. Supporting factors include strong government policies, adequate funding, institutional cooperation, and active community participation (Mega Sari Wangloan, J. Ary Mollet, 2025).

4.3.3 Gross Domestic Regional Product (GRDP) and Inflation (Inf)

As control variables, Gross Regional Domestic Product (GRDP) and inflation were included in the model to capture regional macroeconomic conditions that may affect poor household expenditure beyond the influence of social assistance programs. The estimation results indicate that GRDP has a positive and statistically significant association with poor household expenditure in both the OLS and MRA models ($p < 0.05$). The coefficient of LnGRDP is 0.8327 in the OLS model and 0.7182 in the MRA model. Since both GRDP and poor household expenditure are expressed in logarithmic form, the coefficients can be interpreted as elasticities. Specifically, a 1% increase in GRDP is associated with an approximately 0.83% increase in poor household expenditure in the OLS model and a 0.72% increase in the MRA model, ceteris paribus. This finding suggests that stronger regional economic performance contributes to improving the consumption capacity of poor households.

Inflation also shows a statistically significant association with poor household expenditure ($p < 0.05$), but with a negative coefficient. The inflation coefficient is −0.06468 in the OLS model and −0.0348 in the MRA model. As inflation is measured in percentage terms while the dependent variable is expressed in logarithmic form, the coefficients represent semi-elasticities. This implies that a one-percentage-point increase in inflation is associated with an approximately 6.47% decrease in poor household expenditure in the OLS model and a 3.48% decrease in the MRA model, holding other variables constant. These results indicate that rising prices reduce the real purchasing power of poor households, thereby constraining their expenditure levels. Overall, the significant coefficients of GRDP and inflation confirm that regional economic growth and price stability are important macroeconomic factors influencing poor household expenditure. Their inclusion as control variables ensures that the estimated effects of social assistance programs are not confounded by broader economic conditions.

4.3.4 Regional Financial Management (IPKD)

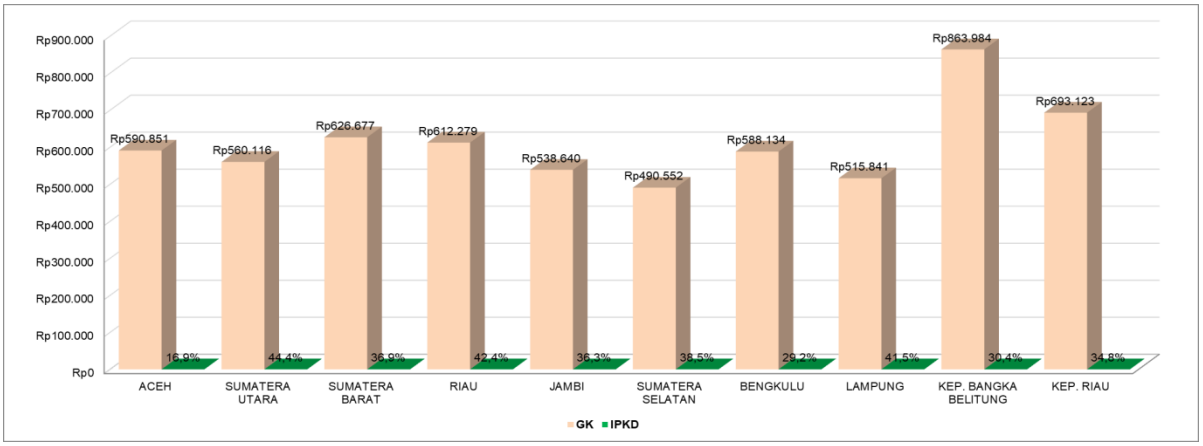
The Regional Financial Management Index (IPKD) is an indicator that reflects the capacity of local governments to manage budgets effectively, transparently, and accountably. This indicator is important for assessing the quality of regional fiscal governance and the extent to which governments are able to optimize financial resources to support development and public services. The statistical analysis using the Ordinary Least Square (OLS) model shows that the Regional Financial Management (IPKD) variable has a positive and significant relationship with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.1383. This finding indicates that an increase in the IPKD score tends to be associated with an increase in the Expenditure of Poor Communities (PPM) by 0.13%. Furthermore, in the analysis incorporating Regional Financial Management as a moderating variable through Moderated Regression Analysis (MRA), the IPKD variable remains positively and significantly associated with the Expenditure of Poor Communities (LnPPM), with a coefficient value of 0.67811. These results suggest that regional financial management is associated with a stronger relationship between the study variables and poor community expenditure (PPM). In other words, improvements in the quality of regional financial management tend to be associated with an increase

in the Expenditure of Poor Communities (PPM) by 0.67% across 10 provinces in Sumatra, assuming other variables remain constant (ceteris paribus).

Regional financial management plays a crucial role in determining the effectiveness of social assistance programs. As the quality of regional financial governance, as reflected in the Regional Financial Performance Index (IPKD), improves, the local government's ability to implement the BPNT and PKH programs also increases. A high IPKD indicates strong fiscal capacity, more accurate budget planning, and the region's ability to distribute aid in a timely and targeted manner (Ani and Dwirandra, 2014). Conversely, regions with a low IPKD tend to face obstacles in implementing the BPNT and PKH budgets, such as low effectiveness, efficiency, and data accuracy. This condition results in delays in aid distribution and suboptimal fiscal support for poor households. Therefore, the IPKD is a determining factor in whether the implementation of BPNT and PKH assistance can run optimally and have a significant impact on the spending patterns of poor households. When the IPKD is high, aid realization is more effective, increasing consumption among the poor.

However, when the IPKD is low, the impact of aid on poor household spending is less significant. This shows that good regional financial management is an important prerequisite to ensure that the BPNT and PKH programs are truly capable of encouraging improvements in the welfare of poor families (Permatasari and Dwirandra, 2016 ; Simatupang and Dermoredjo, 2003). Other supporting factors include access to health services, improving the quality of education, appropriate aid amounts, and accurate distribution. The Direct Cash Assistance (BLT) program has proven more effective in improving welfare than the BPNT and PKH (Family Hope Program). The importance of the role of government and regional financial management, an economic empowerment approach as a key component in poverty alleviation programs, while emphasizing the need for intersectoral coordination to strengthen impact (Armin Rahmansyah Nasution, 2025). The following is the development of the influence of variables:

Figure 7. Expenditure of the Poor and Regional Financial Management in 10 Provinces on Sumatra Island, 2020-2025



Source: Statistics Indonesia, raw data processed by the authors, 2025

In Aceh, PPM of Rp590,851 combined with a relatively low IPKD of 16.9% indicates that the relationship between fiscal governance quality and poor household expenditure tends to be weaker compared to regions with better financial management capacity. In contrast, North Sumatra, with the highest IPKD of 44.4% and PPM of Rp560,116, reflects a stronger association between higher governance quality and improved outcomes in poor household

expenditure. A relatively similar pattern is observed in West Sumatra, where PPM of Rp626,677 and IPKD of 36.9% suggest that better fiscal governance is associated with more stable consumption capacity among poor households. In Riau, a relatively high IPKD of 42.4% alongside PPM of Rp612,279 indicates that stronger regional financial management is associated with better outcomes in poor household expenditure. Jambi, with PPM of Rp538,640 and IPKD of 36.3%, shows a moderate relationship, while South Sumatra, with PPM of Rp490,552 and IPKD of 38.5%, also reflects a relatively stable association between fiscal governance quality and poor household expenditure. Conversely, Bengkulu, with a lower IPKD of 29.2% and PPM of Rp588,134, suggests that the relationship between fiscal governance and poor household expenditure is less optimal compared to provinces with higher IPKD. Lampung, with an IPKD of 41.5% and PPM of Rp515,841, indicates a relatively stronger relationship between governance quality and poor household expenditure. In the Bangka Belitung Islands, PPM is notably high at Rp863,984 despite a relatively low IPKD of 30.4%, suggesting the possible influence of local economic conditions, price levels, and regional cost-of-living differences. Meanwhile, the Riau Islands, with PPM of Rp693,123 and IPKD of 34.8%, indicate that relatively better fiscal governance is associated with higher levels of poor household expenditure compared to several other provinces.

Overall, the findings show a strong association between the quality of regional financial management (IPKD) and poor household expenditure in Sumatra. Better fiscal governance appears to increase the likelihood of more effective social programs and improved consumption stability among poor households. The moderating effect further suggests that IPKD is not merely an administrative indicator but also influences the extent to which social assistance policies operate effectively at the regional level. From a policy implementation perspective, sound regional financial governance enables more effective budgeting processes, including planning, execution, and monitoring. This supports smoother distribution of social assistance, reduces delays in disbursement, and enhances the efficiency of public spending. Consequently, regions with stronger fiscal management capacity are better positioned to support the purchasing power of poor households through more effective social protection programs. In contrast, weaknesses in fiscal governance may limit the effectiveness of social assistance programs, even when budget allocations are substantial.

The research is in line with several findings (Haliim & Muhammad, 2025). This study shows that regional financial management plays a crucial role in moderating the effectiveness of social assistance in poverty reduction. Better regional financial governance has the potential to strengthen the function of social assistance to make it more targeted, timely, and sustainable. Social assistance, including social assistance, can have a more tangible positive impact in reducing poverty rates. Effective public financial management and social welfare policies are fundamental to poverty reduction efforts, especially through family assistance programs that provide support for childcare, food security, and housing needs. Such interventions help strengthen economic resilience and improve living standards among disadvantaged households. The study highlights that comprehensive support mechanisms for families are key instruments in addressing poverty and fostering social justice. In addition, the government serves an important function in managing and delivering social assistance programs to ensure that benefits reach targeted populations (Saleh & Khalil, 2024).

4.3.4 Individual regional effects

The individual effects from the fixed effects panel model indicate the presence of province-specific characteristics that are not directly observed but influence the level of Poor Household Expenditure (LnPPM), after controlling for the realization of PKH and BPNT beneficiaries, social assistance budget realization, and regional financial management quality (IPKD). These unobserved heterogeneities capture time-invariant regional factors such as structural economic conditions, institutional capacity, demographic composition, and local cost-of-living differences that may affect consumption behavior across provinces. The following presents the estimated individual effects:

Table 7. *Individual regional effects*

No	Crossid	Cross-Section Effect	$\propto/\beta_0$	Individual Effect
1	Aceh	0.2400	1.7354	1.9754
2	Sumatera Utara	-0.1207	1.7354	1.6147
3	Sumatera Barat	0.1840	1.7354	1.9194
4	Riau	-0.4917	1.7354	1.2437
5	Jambi	-0.1597	1.7354	1.5757
6	Sumatera Selatan	-0.2657	1.7354	1.4697
7	Bengkulu	0.4073	1.7354	2.1427
8	Lampung	0.0181	1.7354	1.7535
9	Kepulauan Bangka Belitung	0.5268	1.7354	2.2622
10	Kepulauan Riau	-0.3383	1.7354	1.3971

Source: Eviews, data processed 2025

Description: Critical Value at 0.05.

The Fixed Effect estimation reveals substantial variation in individual effects across provinces, indicating the presence of province-specific characteristics that are not fully captured by the explanatory variables included in the model. Since GRDP and inflation have been incorporated as control variables and IPKD has been included as a moderating variable, the remaining individual effects may reflect other unobserved structural factors, such as differences in demographic composition, labor market conditions, social infrastructure, administrative capacity, poverty characteristics, geographic accessibility, and local institutional environments.

The results show that Kepulauan Bangka Belitung (2.2622), Bengkulu (2.1427), Aceh (1.9754), and Sumatera Barat (1.9194) exhibit relatively high individual effects, suggesting that these provinces possess structural characteristics associated with higher poor household expenditure after controlling for social assistance realization, GRDP, inflation, and regional financial management quality. Conversely, Riau (1.2437), Kepulauan Riau (1.3971), and Sumatera Selatan (1.4697) display lower individual effects, indicating the presence of province-specific factors associated with lower expenditure levels relative to the sample average.

However, these individual effects should not be interpreted as direct measures of welfare performance or policy effectiveness. Rather, they represent unobserved time-invariant provincial heterogeneity that remains after accounting for the observed explanatory variables in the model. Therefore, the findings should be viewed as evidence of structural differences across provinces rather than conclusive indicators of better or worse welfare

outcomes. These findings highlight that differences in poor household expenditure are influenced not only by social assistance programs and macroeconomic conditions, but also by persistent provincial characteristics that are difficult to observe directly within the empirical model.

5. Conclusion

1. The results show a positive association between the realization of aid recipients (LnRPNM) and poor household expenditure (LnPPM), but this does not constitute definitive causal evidence. OLS estimates indicate that an increase in the number of PKH and BPNT recipients tends to be associated with increased consumption by vulnerable groups. MRA analysis also shows that the quality of regional financial governance (IPKD) strengthens this relationship. However, variations between provinces, such as North Sumatra, Lampung, and Riau, compared to Aceh and Bengkulu, indicate that this relationship is strongly influenced by the governance context.
2. Budget realization shows a positive association with increased expenditure by poor households, with larger budgets tending to be accompanied by higher LnPPM. However, these results cannot be interpreted as a direct causal relationship. Findings in the Bangka Belitung Islands and Riau Islands indicate that LnPPM remains high despite relatively small budgets, indicating the role of other factors such as local economic conditions, inflation, and market structure.
3. Governance quality (IPKD) shows a significant association with variations in LnPPM across provinces. A higher IPKD tends to be associated with better program management, such as disbursement accuracy, budget efficiency, and accountability. However, these findings still need to be interpreted with caution as they do not fully isolate the influence of other potentially relevant variables.
4. Overall, this study has several limitations, including the use of aggregate provincial-level data, a relatively small sample size, potential endogeneity, possible omitted variable bias, and limitations in measuring welfare using only expenditure indicators (PPM). Therefore, future research is recommended to use household-level microdata or data on program beneficiaries, as well as more robust methodological approaches such as quasi-experimental designs, difference-in-differences, propensity score matching, or the use of administrative data to more accurately identify the welfare impacts of the PKH and BPNT programs.

5.1 Suggestion

1. Strengthening Social Assistance Targeting: Updating and verifying the Integrated Social Welfare Data (DTKS) is essential to reduce mistargeting and ensure that social assistance effectively increases poor household expenditure. The digitalization of beneficiary administration based on the National Identification Number (NIK) should be strengthened to improve distribution efficiency, enhance data accuracy, and minimize leakage. Stronger coordination between central and regional governments is also

necessary, particularly in provinces with lower levels of regional financial management performance, to ensure a more equitable effectiveness of social assistance programs.

2. Optimizing Budget Realization: Regional governments should improve the timeliness and discipline of budget realization to ensure that social assistance benefits are received promptly rather than being concentrated at the end of the fiscal year. Expanding real-time budget transparency through open budgeting initiatives can strengthen accountability and public trust. In addition, coordination among regional government agencies (OPDs) should be enhanced to ensure that social spending is aligned with the actual needs of low-income households.
3. Improving Regional Financial Management Performance: Strengthening human resource capacity through training in SIPD, e-planning, and e-budgeting systems is necessary to improve the quality of fiscal governance. Performance-based planning should be reinforced to enhance the effectiveness of social assistance programs. Furthermore, stronger internal oversight mechanisms, including regular audits and early-warning systems, are particularly important in regions with lower Regional Financial Management Index (IPKD) scores to improve accountability and spending effectiveness.
4. Limitations and Future Research: This study has several limitations, particularly the use of aggregated provincial-level data and a relatively limited sample size. Therefore, the findings primarily reflect associative relationships rather than definitive causal effects. Moreover, other unobserved factors not included in the model may influence the results. Nevertheless, this study provides important empirical evidence on the relationship between social assistance, regional financial management, and poor household expenditure. Future studies are encouraged to employ more disaggregated data, longer observation periods, and advanced causal inference methods to obtain a deeper understanding of the effectiveness of social assistance policies.

Reference

Agus Widarjono. (2013). *Ekonometrika: Pengantar dan Aplikasinya* (Edisi 4). Yogyakarta: UPP STIM YKPN.

Akai, N., & Sakata, M. (2002). Fiscal decentralization contributes to economic growth: Evidence from state-level cross-section data for the United States. Journal of Urban Economics, 52(1), 93–108. https://doi.org/10.1016/S0094-1190(02)00018-9

Ameliany, N., Iryani, L., & Malik, I. (2022). How Non-Cash Assistance Accelerates Financial Inclusion (A Study of PKH Program Beneficiaries in Aceh). *International Conference on Social Science, Political Science, and Humanities (ICoSPOLHUM*, 2(1), 12. https://doi.org/10.29103/icospolhum.v3i.68

Ani, N. L. N. P., & Dwirandra, A. A. N. B. (2014). Pengaruh Kinerja Keuangan Daerah Pada Pertumbuhan Ekonomi, Pengangguran, dan Kemiskinan Kabupaten dan Kota. *E-Jurnal Akuntansi, 6(3), 481–497. https://doi.org/10.29103/icospolhum.v3i.68*

Apriyadi, Alfitri, Sriati, H. T. (2024). Analysis of Regional Government Financial Performance and Its Impact on Poverty in South Sumatra. *Jurnal Ilmu Administrasi*, *21*(1), 20–32. https://doi.org/10.31113/jia.v21i1.1090

Asyafiah, P., & Simanjuntak, B. H. (2023). The Moderating Role Of The Government Internal Control System On Factors Influencing The Quality. *Akurasi, Akuntansi Dan Keuangan*, *6*(1), 181–198. https://doi.org/10.29303/akurasi.v6i1.356

Bahl, R., & Bird, R. M. (2008). Subnational taxes in developing countries: The way forward. Public Budgeting & Finance, 28(4), 1–25. https://doi.org/10.1111/j.1540-5850.2008.00914.x

Bappenas. (2021). *Rencana Pembangunan Jangka Menengah Nasional (RPJMN)*.

BPS. (2024). kemiskinan Pedesaan dan Perkotaan Indonesia *Statistik Indonesia,Badan Pusat Statistik Indonesia*.

Damodar N. Gujarati & Dawn C. Porter. (2010). *D*asar-dasar Ekonometrika (Basic Econometrics) *(Edisi 5). Jakarta: Salemba Empat*

Deaton, A., & Zaidi, S. (2002). *Guidelines for Constructing Consumption Aggregates*. World Bank.

Edy Suhartono, Azhari, A. S. (2025). Pengaruh Bantuan Sosial Bpnt Dan Pkh Terhadap Efektivitas Penanggulangan Kemiskinan Di Kecamatan Sumberejo Bojonegoro. *Open Journal Systems,MBI*, *19*(1978), 6397–6400.

Fadillah, A. (2023). Transparansi keuangan daerah dalam era desentralisasi fiskal. PREDIKSI: Jurnal Administrasi dan Kebijakan, 22(1), 45–56. https://ejurnal.untag-smd.ac.id/index.php/PD/article/view/8272

Faguet, J. P. (2014). Decentralization and governance. World Development, 53, 2–13. https://doi.org/10.1016/j.worlddev.2013.01.002

Fauzan, I. F., & , Muhammad Firdaus, S. (2020). Regional financial inclusion and poverty: Evidence from Indonesia Iwan. *Economic Journal of Emerging Markets*, *12*(1), 25–38. https://doi.org/10.20885/ejem.vol12.iss1.art3

Flores-contró, J. M., & Arnold, S. (2024). The Role of Direct Capital Cash Transfers Towards Poverty and Extreme Poverty Alleviation - An Omega Risk Process. *Econometric Analysis of Count Data*, *1*(3), 1.

Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics (5th ed.). McGraw-Hill Education.

Gujarati, D. N. (1972). Basic Econometrics. In *The Economic Journal* (Vol. 82, Issue 326). https://doi.org/10.2307/2230043

Gultom, H., Kindangen, P., & Kawung, G. M. V. (2020). Analisis Pengaruh Program Bantuan Pangan Non Tunai (BPNT) DAN Program Keluarga Harapan (PKH) Terhadap Kemiskinan di Kabupaten Minahasa Tenggara. *Jurnal Pembangunan Ekonomi Dan Keuangan Daerah*, *21*(1), 39–53.

Hadna, A. H., & Askar, M. W. (2022). The Impact of Conditional Cash Transfers on Low-Income Individuals in Indonesia. *Austrian Journal of South-East Asian Studies*, *15*(1), 23–42. https://doi.org/10.14764/10.ASEAS-0067

Haliim, W., & Muhammad, J. (2025). Inefficiency of Social Assistance in Reducing Poverty Rates : Recommenda- tions for Alternative Social Policies for Poverty Alleviation in Indonesia. *JKAP (Jurnal Kebijakan Dan Administrasi Publik)*, *29*(May), 89–109. https://doi.org/10.22146/jkap.104396

Inayati Nuraini Dwiputri, Muhammad Syam Kusufi, I. I. (2023). Cash Assistance Program and Consumption Pattern Among Indonesians. *Jekt, Jurnal Ekonomi Kuantitatif Terapan Vol.*, *16*(2), 216–224. https://doi.org/10.24843/JEKT.2023.v16.i02.p02

Jaenal Effendi. (2025). Social Securities Scheme , Financial Inclusion , And Its Impact On Poverty Alleviation In Indonesia : Case Of Zakat Recipients. *Journal of Business & Society*, *26*(2), 690–703. https://doi.org/10.33736/ijbs.8887.2025

Kennedy, P. (2008). A guide to econometrics (6th ed.). Blackwell Publishing.

Khairina, N., Fitri, A., Rahayu, S., & Hidayat, R. (2025). The Effect Of Local Government Expenditure On Poverty And Unemployment In Bireuen District. *Journal Informatic, Education And Management (Jiem)*, *7*(2), 493–502. https://doi.org/10.61992/jiem.v7i2.165

Kementerian Sosial RI. (2021). Peningkatan Kualitas Penyaluran PKH dan BPNT. *Jurnal Pembangunan Kesejahteraan Sosial*.

Kementerian Keuangan. (2023). *Laporan Keuangan Pemerintah Daerah*.

Kurniawan, D. F., & Susanti, H. (2018). Impact Of Cash Transfer On Poverty. *Afebi Economic and Finance Review (AEFR)*, *3*(2), 18–34. https://doi.org/10.47312/aefr.v3i02.203

Kurniawan, A. (2022). Efektivitas Penyaluran Bantuan Sosial PKH dan BPNT. *Repository UIN Sumatera Utara.*

Luh, N., Ari, P., Novelia, F., Zacky, M., & Pratama, A. (2025). Dinamika Spasio-Temporal Kemiskinan Di Pulau Jawa 2020-2023: Pendekatan Geographically And Temporally Weighted Regression. *Jurnal Info Artha*, *9*(2), 123–133. https://doi.org/10.31092/jia.v9i2.3501

Mahpudin, E. (2020). Poverty Reduction through Local Financial Performance : Case Study in East Nusa Tenggara Province , Indonesia. *Ekuilibrium: Jurnal Ilmiah Bidang Ilmu Ekonomi*, *15*(2), 151–160. https://doi.org/10.24269/ekuilibrium.v15i2.2020.pp151-160

Maidalena, A. N. D. D. R. (2020). Implementation of Distribution Non-Cash Food Aid (BPNT) in Reducing The Expenditure Burden of Poor Families Based on an Islamic Perspective (Case Study of Aek Hamlet West Torop, Asam Jawa Village, District. Torgamba, District. South Labuhan Batu. *Journal Management, Business, and Accounting p-ISSN 2086-5090, e-ISSN:*, *2*(1), 1306–1319. www.ajas.uoanbar.edu.iq

Mega Sari Wangloan, J. Ary Mollet, H. Z. K. (2025). The Impact of Social Assistance on the Social Welfare of PKH Beneficiary Families in Sentani District , Jayapura District. *Riset Akuntansi Dan Bisnis Indonesia (RABI)*, *1*(2), 81–96. https://doi.org/10.61401/rabi.v1i2.235

Mulyani, S., & Hendriyani, R. (2016). Pengaruh desentralisasi fiskal dan kinerja terhadap akuntabilitas pelaporan keuangan pemerintah daerah di Indonesia: Efek moderasi dari kinerja. Journal of Accounting and Investment, 17(2), 176–185. https://doi.org/10.18196/jai.2016.0053.176-185

Muharir. (2022). Pengaruh Bantuan Program Keluarga Harapan (Pkh) Dan Bantuan Pangan Non Tunai (Bpnt) Terhadap Tingkat Kesejahteraan Masyarakat (Studi Pada Kelompok Penerima Manfaat (Kpm) Di Desa Tirta Makmur Kecamatan Air Kumbang. *Ekonomica Sharia: Jurnal Pemikiran Dan Pengembangan Ekonomi Syariah*, *8*(1), 145–174. https://doi.org/10.35908/ijmpro.v2i1.85

Mustaqim, D. Al, & Makarrim, A. (2023). Dampak Program Keluarga Harapan (PKH) Terhadap Peningkatan Ekonomi Rumah Tangga Miskin di Indonesia. *TAMTIN: The Journal of Community Empowerement Service*, *1*(1), 8–27.

Musgrave, R. A., & Musgrave, P. B. (1989). *Public Finance in Theory and Practice*.

Nabillia, N., Kurniawati, S., & Yacoub, Y. (2023). The Influence of Regional Financial Independence and Government Spending on Economic Growth and Poverty. *Journal of*

Economics, Management and Trade Volume, *29*(10), 130–141. https://doi.org/10.9734/JEMT/2023/v29i101150

Nur Triany Rais1*, Andi Chairil Furqan2, Betty3, E. U. (2025). Empirical Study of Social Budget And Regional Wealth In Achieving SDG 1 (No Poverty) in Indonesia. *Owner: Riset & Jurnal Akuntansi*, *9*(4), 3246–3257. https://doi.org/10.33395/owner.v9i4.2789

OECD. (2022). Subnational Government Finance and Investment in Indonesia.

Parawangi, A., & Wahid, N. (2023). Poverty Alleviation in the Hope Family Program in Makassar. *Journal of Local Government Issues (LOGOS)*, *6*(1), 49–62. https://doi.org/10.22219/logos.v6i1.21627

Prabowo, H., Akbar, B., & Daraba, D. (2025). The In'luence of Regional Financial Performance on Poverty Levels in Central Java Province. *Journal of Governance*, *10*(1). https://doi.org/10.31506/jog.v10i1.30797

Permatasari, N. K. A., & Dwirandra, A. A. N. B. (2016). Kemampuan Pertumbuhan Ekonomi Memoderasi Pengaruh Kinerja Keuangan Terhadap Tingkat Kemiskinan. *E-Jurnal Akuntansi, 15(1), 55–81*

Putra, R., Wijayanti, N., & Lestari, D. (2024). Desentralisasi fiskal, efektivitas penyerapan anggaran, belanja modal, dan SPIP terhadap akuntabilitas pelaporan keuangan pemerintah daerah: Kinerja pemerintah sebagai variabel moderasi. Diponegoro Journal of Accounting, 13(1), 1–15. https://ejournal3.undip.ac.id/index.php/accounting/article/view/41597

Rahmawati, I., Sari, N., & Hidayat, T. (2022). Akuntabilitas dan transparansi terhadap kinerja anggaran berkonsep value for money: Komitmen organisasi sebagai variabel moderasi. Ekonomis: Journal of Economics and Business, 6(2), 510–518. https://doi.org/10.33087/ekonomis.v6i2.569

Rahmawati, D. (2021). Pengaruh Pengelolaan Keuangan Daerah terhadap Kinerja Pemerintah Daerah. Jurnal Akuntansi Pemerintah Daerah, Politeknik Negeri Bandung.

Ravallion, M. (2016). *The Economics of Poverty*. Oxford University Press.

Repository Unhas. (2023). Evaluasi Kebijakan PKH dan BPNT di Sulawesi Barat. *Journal Universitas Hasanuddin.*

Repository UHN. (2022). Evaluasi Implementasi Rastra–BPNT di Tapanuli Utara. Journal *Universitas HKBP Nommensen.*

Rif'atul Mahmudah, Ahmad Baihaqi, J. (2025). Efektivitas Program Keluarga Harapan (Pkh) Dalam Mengurangi Tingkat Kemiskinan Di Desa Mihu. *Jurnal Kebijakan Publik*, *2*(1), 411–422.

Rizka Putri, & , Edi Abral1, M. A. (2025). The impact of social assistance and capital expenditure on poverty levels in Aceh Province. *Jurnal Teknik Industri Terintegrasi*, *8*(1). https://doi.org/10.31004/jutin.v8i1.40258

Rizki Tri Anggara, E. G. A., & BPS-Statistics. (2025). Non-cash food assistance and household food security : Evidence from remote Indonesia. *Economic Journal of Emerging Markets*, *17*(2), 143–156. https://doi.org/10.20885/ejem.vol17.iss2.art3

Sari, R. (2023). Analisis Pengeluaran Rumah Tangga Miskin. *Jurnal Sosial dan Riset Ekonomi.* Kementerian Sosial RI. (2024). Data Realisasi Penyaluran PKH dan BPNT. data.go.id

Saleh, L., & Khalil, A. (2024). Social Welfare Policies and Poverty Reduction : The Role of Family Support Programs. *International Journal of Social Welfare and Family Law*, *1*(1).

Salsabila, N., Muna, N., Pradana, V. H., & Nurcahya, W. F. (2024). Analisis Efektivitas Bantuan Sosial (Bansos) dalam mengatasi Kemiskinan di Indonesia. *Journal of Macroeconomics and Social Development*, *1*(4), 1–13. https://doi.org/10.47134/jmsd.v1i4.317

Shah, A. (2007). *Budgeting and Budgetary Institutions*. World Bank.

Sinaga, E., Lubis, T. A., Andy, E., Situmorang, O., Harahap, A. S., Perbendaharaan, D. J., & Keuangan, K. (2022). Dampak Program Perlindungan Sosial Terhadap Kemiskinan Di Sumatra Utara. *Jurnal Manajemen Perbendaharaan*, *3*, 116–131. https://doi.org/10.33105/jmp.v3i2.416

Simatupang, P., & Dermoredjo, S. K. (2003). Produksi Domestik Bruto, Harga dan Kemiskinan : Hipotesis " Trickle Down " Dikaji Ulang. *Jurnal Ekonomi Dan Keuangan Indonesia, 51(3), 291– 324.*

Smoke, P. (2015). Rethinking decentralization: Assessing challenges to a popular public sector reform. Public Administration and Development, 35(2), 97–112. https://doi.org/10.1002/pad.1703

Sondang, I., & Matsuyuki, M. (2023). Progress in Disaster Science Social protection for climate-disasters : A case study of the program Keluarga Harapan cash transfer program for smallholder farm household in Indonesia. *Progress in Disaster Science*, *17*(August 2022), 100278. https://doi.org/10.1016/j.pdisas.2023.100278

Sukma. (2025). Analisis Penyaluran Bantuan Pangan Non Tunai Kesejahteraan Masyarakat Kelurahan Layana Indah Terhadap Analysis of Non-Cash Food Assistance Distribution on the Welfare of the Layana Indah Village Community. *Jurnal Kolaboratuf Sains*, *8*(5), 2477–2485. https://doi.org/10.56338/jks.v8i5.7588

Sofyani, H., Riyadh, H. A., & Fahlevi, H. (2020). Improving service quality, accountability and transparency of local government: The intervening role of information technology governance. Cogent Business & Management, 7(1), 1735690. https://doi.org/10.1080/23311975.2020.1735690

TNP2K. (2020). *Evaluasi Program Bantuan Sosial di Indonesia*.

Utomo, K. P., Fadly, R., & Wardhana, A. K. (2023). The Impact of Social Assistance (BPNT and PKH) Boosts Productivity in Bekasi City. *JURISMA: Jurnal Riset Bisnis Dan Manajemen*, *XIII*(April), 39–48. https://doi.org/10.34010/jurisma.v13i1.8993

Wibowo, B. S., Fauzi, A. S., Suseno, D. A., & Oktavilia, S. (2025). Estimating the Impact of Cash Transfer on Spending Behaviour : Utilizing IFLS. *EKOMA : Jurnal Ekonomi, Manajemen, Akuntansi*, *4*(5), 7517–7523. https://doi.org/10.56799/ekoma.v4i5.9365

World Bank. (2018). The state of social safety nets 2018. World Bank Publications. https://openknowledge.worldbank.org/entities/publication/7d77f8d4-0c7f-5e4a-8a5f-0f4d9d7e4d4d

World Bank. (2020; 2022). *Indonesia Economic Prospects*.

Wooldridge, J. M. (2019). Introductory econometrics: A modern approach (7th ed.). Cengage Learning.