

Inflation in the Economic Growth–Poverty Nexus: Evidence from Subnational Panel Data in a Developing Economy

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Abstract: Poverty remains a persistent development challenge across subnational economies despite substantial differences in regional growth performance. This study examines the relationships among economic growth, inflation, and poverty and evaluates the intervening role of inflation in the growth–poverty nexus using subnational panel data for the 2020–2025 period. Secondary data were compiled primarily from official national statistical publications, covering 122 regional units. Panel data regression was employed with regional and year effects, while model specification was determined separately for each equation and statistical inference was evaluated using robust procedures. The analytical framework distinguishes the direct association between economic growth and poverty from the indirect component operating through inflation. Given the contemporaneous and observational nature of the data, the intervening mechanism is interpreted as an associational panel relationship rather than definitive causal mediation. This framework recognizes that the transmission of economic growth into poverty reduction may operate through multiple channels, including price dynamics, employment creation, income distribution, human capital, social protection, and structural transformation. The study contributes to the regional development literature by integrating inflation into the analysis of heterogeneous growth–poverty relationships at the subnational level. The findings provide a framework for understanding why comparable economic growth outcomes may generate different poverty responses across regions and emphasize the importance of maintaining price stability alongside inclusive growth policies.

Keywords: economic growth, inflation, poverty, subnational development, panel data

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INTRODUCTION

Poverty remains one of the main challenges of economic development because improvements in aggregate economic activity do not necessarily translate uniformly into welfare gains. Because this study includes 2025 observations, every 2025 variable must be linked to the specific BPS publication or official data release from which it was extracted. The revised manuscript therefore separates the journal's submission chronology from the statistical-data chronology and documents, in a data appendix, the source publication date and exact extraction

date for every 2025 variable. This documentation is necessary because the original manuscript contained submission dates that preceded some of the 2025 statistics reported in the article.

Theoretically, economic growth is expected to be able to reduce poverty through increasing production, employment opportunities, income, and economic capacity of the community. The *pro-poor growth* perspective places growth as an instrument of poverty reduction if the benefits of increasing economic activity are accessible to low-income groups. However, the relationship between economic growth and poverty is not automatic because it is influenced by economic structure, income distribution, quality of human resources, and employment opportunities. Empirical evidence in Indonesia shows results that are not entirely consistent. Suci, et al. (2023), for example, found that economic growth had no significant effect on poverty in five districts/cities of the Special Region of Yogyakarta during 2015–2021, while HDI had a significant effect. Other studies in 34 Indonesian provinces also show that the relationship between economic growth and poverty needs to be understood along with other socio-economic factors.

This condition shows that an increase in economic output does not necessarily translate directly into a reduction in poverty. One mechanism that could explain this relationship is the change in price levels. Inflation can reduce people's purchasing power when price increases occur faster than the increase in real income. The impact is potentially greater for low-income groups as most of their income is allocated to basic needs. Thus, inflation is not only related to macroeconomic stability, but can also affect the ability of economic growth to produce improvements in welfare.

Empirical evidence on the relationship between inflation and poverty in Indonesia also does not show a completely uniform pattern. Keynes, et al. (2024), Using the Random Effect Model on North Sumatra Province data, it was found that economic growth had no effect on poverty, while inflation had a significant effect on the poverty rate. On the contrary, Satria et al. (2024) in East Kalimantan found that inflation had a positive but insignificant effect on the number of poor people. These differences suggest that the effect of inflation on poverty can depend on the characteristics of the region, the observation period, the economic structure, and the estimation method used.

The Eastern Indonesia region is an important empirical context to test this relationship. Research Erlando, et al. (2020) demonstrate a strong relationship between financial inclusion, economic growth, poverty, and income distribution in Eastern Indonesia; socio-economic growth was found to have a negative influence on poverty. Soleman and Soleman (2022) specifically tested the determinants of poverty in Eastern Indonesia using BPS panel data for the 2011–2021 period by including economic growth, inflation, education, health, TPAK, and Islamic banking financing. Meanwhile, Leiwakabessy and Payapo (2022) using the VECM and FMOLS panels in 12 Eastern Indonesian provinces during 2009–2019 to analyze the dynamic relationship between energy consumption, economic growth, and poverty.

Research in Eastern Indonesia also shows that economic growth is not always inclusive. Sayyidina, Iranto, and Suparno tested the influence of education spending, HDI, and economic growth on poverty using panel data from 13 Eastern Indonesian provinces. More recently, Najah (2025) analyze four nickel-producing provinces; North Maluku, Southeast Sulawesi, South Sulawesi, and Central Sulawesi and found that investment has an effect on poverty reduction, but economic growth does not significantly mediate the effect of investment or exports on poverty. The findings indicate that economic growth in resource-rich areas does not necessarily automatically result in inclusive poverty reduction.

Empirical literature can be grouped into three mainstreams. First, a research group that examines the direct relationship between economic growth and poverty. Studies in Eastern Indonesia show that this relationship is important but is influenced by regional characteristics and other development variables. Erlando et al. (2020) found that economic growth has a negative relationship with poverty in Eastern Indonesia, while Leiwakabessy dan Payapo (2022) shows that the relationship between growth and poverty has a dynamic dimension that needs to be analyzed in the short and long term.

Second, research that tests inflation as a determinant of poverty shows mixed results. Soleman dan Soleman (2022) include inflation as one of the determinants of poverty in Eastern Indonesia, while Keynes et al. (2024) found a significant influence of inflation on poverty in North Sumatra. On the contrary, Satria et al. (2024) found that the effect of inflation on poverty in East Kalimantan was positive but not significant. These inconsistencies show that the inflation-poverty relationship cannot be separated from the spatial and structural characteristics of the region.

Third, research using a mediation approach provides a deeper perspective because it seeks to explain the transmission mechanism between economic components. Fitriady, et al. (2022) using a path analysis in 32 provinces in Indonesia and found that inflation had no effect on economic growth or poverty and was not a mediator in their model; instead, economic growth mediated the influence of investment and human development investment on poverty. The research of Sappewali and Saifuloh (2025) used panel data from 34 provinces and structural equation models to examine the direct and indirect influence of macroeconomic variables on poverty through inflation, economic growth, and employment opportunities.

The mediation literature also shows that the mechanism of growth against poverty can take place through intermediate variables. Ayati, et al. (2025), for example, used panel data from 33 provinces for the 2019–2023 period to test the influence of ZIS, life expectancy, and average length of school on poverty with economic growth as mediators. Thus, mediation approaches have developed in poverty research in Indonesia, but the mediators used and the regional context are different from this study.

Based on this synthesis, the development of research shows that the relationship between economic growth and poverty has been widely studied, including in the context of Eastern Indonesia. Research by Erlando et al. (2020), Soleman and Soleman (2022), Leiwakabessy and Payapo (2022), and Sayyidina et al. (2023) shows that poverty in Eastern Indonesia is related to economic growth and various characteristics of regional development. However, most of these studies examined direct influences or used other explanatory variables without specifically testing inflation as a mediation mechanism.

On the other hand, studies using a mediation approach have shown that the relationship between economic growth and poverty can take place through intermediate variables. Fitriady et al. (2022) explicitly used *path analysis*, but found that inflation was not a mediator in their model. Sappewali and Saifuloh (2025) then broaden the perspective by including inflation, economic growth, and employment opportunities as mediation mechanisms in the structural model. However, the two studies used provincial/national analysis units and have not specifically answered how the mechanism works at the district/city level in the Eastern Indonesia Region.

This study addresses three main gaps: limited district/city-level evidence in Eastern Indonesia, limited testing of inflation as a mechanism through which economic growth affects poverty, and insufficient evidence from the pandemic and recovery period. Accordingly, the

study offers novelty by using district/city panel data for Eastern Indonesia during 2020–2025 and positioning inflation as a mediating variable between economic growth and poverty. It aims to analyze the effects of economic growth on inflation and poverty, the effect of inflation on poverty, and the indirect effect of economic growth on poverty through inflation, thereby assessing whether economic growth during the pandemic and recovery period translates into poverty reduction through price stability.

METHOD

Types and Approaches to Research

This study employs a quantitative explanatory design to examine the relationships among economic growth, inflation, and poverty in districts/cities in Eastern Indonesia. It uses panel data for 2020–2025, combining cross-sectional variation across districts/cities with time-series variation across years to account for unobserved regional heterogeneity (Baltagi, 2021; Wooldridge, 2020). Using an observational approach, the study applies mediation analysis to assess whether inflation serves as an indirect mechanism through which economic growth affects poverty, while interpreting causal relationships cautiously due to the limitations of non-experimental data.

Research Region and Period

The unit of analysis comprises districts/cities in Eastern Indonesia with consistently available data during 2020–2025, covering provinces in Sulawesi, Nusa Tenggara, Maluku, North Maluku, Papua, and the Papua expansion areas established during the observation period. This six-year period captures the onset of the COVID-19 pandemic, economic recovery, and changing dynamics of economic growth, inflation, and regional poverty, while enabling comparisons across regions and years. Where administrative changes occurred, the analysis unit is harmonized based on consistent regional definitions and BPS data availability; newly established districts/cities are not treated as separate observations for all years when pre-expansion historical data are unavailable.

Data and Data Sources

This study uses secondary annual panel data for 2020–2025. The primary source is Statistics Indonesia (BPS), supplemented by Bank Indonesia where appropriate for cross-checking inflation information. Economic growth is measured by GRDP growth at constant prices; inflation by the annual CPI inflation rate; and poverty by the BPS head-count ratio (P0). The revised dataset must document, for all 122 districts/cities and each year, the exact source, publication/release date, extraction date, regional code, and inflation construction rule. For each unit-year, inflation must be classified as directly observed, assigned from an official inflation/CPI city series, inherited from another official series, or harmonized under another explicitly stated rule. Any repeated assignment of one CPI series to several districts/cities must be disclosed because it reduces effective cross-sectional variation. Regional administrative changes, including Papua's expansion, are handled using a reproducible regional crosswalk rather than ad hoc matching.

Population, Unit of Analysis, and Sample Selection

The population comprises all districts/cities in Eastern Indonesia within the research area. Given the use of secondary data and the objective of providing a broad regional overview, observation units are selected through purposive sampling based on data availability. Districts/cities are included if they have consistent data on GRDP-based economic growth, annual inflation that can be matched by region and year, and the percentage of poor population

during 2020–2025 and remain eligible after data validation and harmonization. Units with inconsistent information are excluded from the main estimation. The balanced-panel status is determined after data cleaning; it is achieved only when each district/city has the same number of annual observations.

Variable Operational Definition

To ensure that each research variable can be measured consistently and empirically, this study establishes operational definitions, measurement indicators, units, and data sources for each variable. Economic growth is used as an independent variable measured through the GDP growth rate on the basis of constant prices (ADHK), inflation as a mediating variable measured based on the annual inflation rate, while poverty as a dependent variable is measured through the percentage of the poor population. All indicators were selected by considering the availability, consistency, and comparability of data between regions and between observation periods. Details of the operational definition and measurement of each variable are presented in Table 1.

Table 1. Operational Definition and Measurement of Research Variables

Variable	Operational Definition	Indicator/ Measurement	Source
Economic Growth (X)	Changes in regional economic activity from year to year show an increase or decrease in the production of goods and services in real terms.	The growth rate of Gross Regional Domestic Product (GDP) on a constant price basis (ADHK).	BPS
Inflation (M)	Changes in the price level of goods and services consumed by the public in a certain period.	The annual inflation rate is based on the Consumer Price Index (CPI).	BPS/BI
Poverty (Y)	The proportion of the population who have per capita expenditure below the poverty line.	Percentage of poor population (<i>Head Count Index/P₀</i>)	BPS

Source: Central Statistics Agency (BPS) and Bank Indonesia (BI), processed by researchers, 2026.

- 1) Economic Growth
Economic growth is measured based on the rate of change in GDP on a constant price basis (ADHK). The use of ADHK GDP is intended to measure changes in the volume of economic activity by reducing the influence of price changes. If BPS has provided a GDP growth rate figure, the published economic growth value is used as a research variable and is not recalculated, unless necessary for verification.
- 2) Inflation
Inflation is measured using the annual inflation rate that is sourced from changes in the Consumer Price Index (CPI). This variable represents the change in the general price level faced by the community in a region and year of observation. The use of annual inflation was chosen because it is consistent with the variable time dimensions of economic growth and poverty in the panel model. For districts/cities that do not have direct inflation publications, the procedure for adjusting regional units is carried out based on the availability of official data and must be explicitly explained in the dataset preparation stage.
- 3) Poverty
Poverty is measured using the percentage of the poor population published by BPS. BPS measurement is based on the basic needs approach, which is that the population is

categorized as poor if they have an average per capita expenditure per month below the poverty line. The poverty variable is used in the form of the percentage of the poor population so that it can be compared between regions that have different population sizes.

Framework of Analysis

The research analysis is based on the hypothesis that economic growth can affect poverty through the mechanism of price level changes. Economic growth can have a direct impact on poverty through increasing economic activity, income, and economic opportunities. At the same time, changes in economic activity can be related to changes in price levels which further affect people's purchasing power and welfare conditions. Therefore, the empirical relationship of research is formulated in two paths:

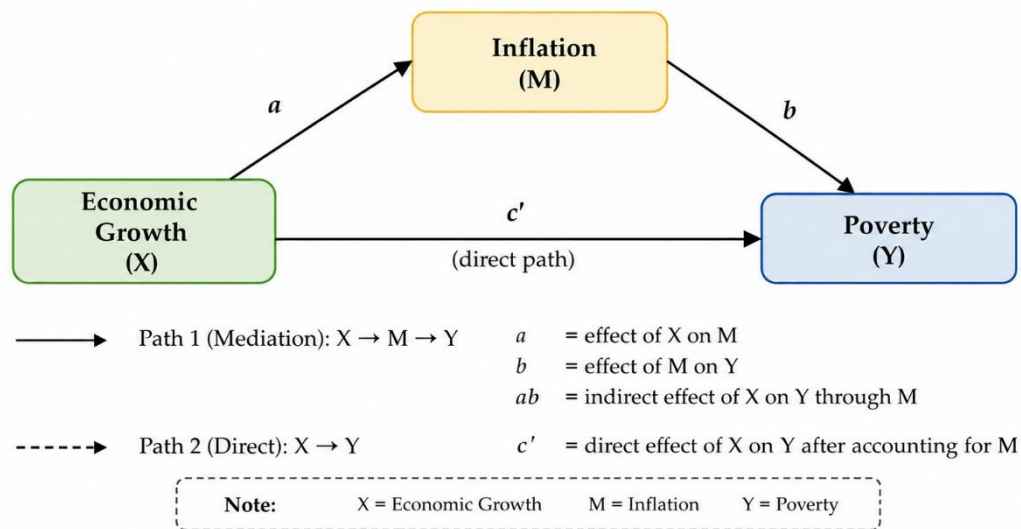


Figure 1. Empirical Relationship Framework: Two Research Pathways

Remarks: The first track shows the direct influence of economic growth on poverty, while the second track shows the indirect mechanism through inflation.

Data Analysis Techniques

Descriptive statistical analysis is used to provide a preliminary overview of the characteristics of the research data. The statistics presented include the minimum, maximum, *mean*, and standard deviation values of each variable. This analysis is used to identify variations in economic growth, inflation, and poverty between districts/cities and between periods 2020–2025. The presentation of descriptive statistics is the basis for understanding regional heterogeneity before panel model estimation.

Panel Data Model Analysis

The empirical model is compiled based on the theoretical relationship between economic growth (X), inflation (M), and poverty (Y). The analysis was conducted using a panel data model taking into account the individual effects of districts/cities and time effects.

- 1) Model 1: The Effect of Economic Growth on City Regency Inflation in the Eastern Indonesia Region for the 2020-2025 Period.

The first model was used to test the influence of economic growth (X) on inflation (M) in districts/cities in the Eastern Indonesia Region during the period 2020–2025. This model is the first equation in mediation analysis used to determine the relationship between changes in economic growth and changes in the inflation rate as a mediator variable. The panel data model equation is formulated as follows:

$$Mit = \alpha + \beta 1Xit + \mu_i + \lambda t + \varepsilon_{it}$$

Remarks:

Mit = Inflation rate in districts/cities i in year t;

Xit = Economic growth in districts/cities i in year t;

α = Constant;

β_1 = Coefficient of the influence of economic growth on inflation;

μ_i = Unobserved individual effects/district/city-specific characteristics;

λ_t = The effects of time that capture the shared influence in a given year;

ε_{it} = Error term;

i = Regencies/cities in Eastern Indonesia;

t = Year 2020–2025

2) Model 2: The Effect of Economic Growth on Urban District Poverty in the Eastern Indonesia Region for the 2020-2025 Period

The second model was used to test the direct influence of economic growth (X) on poverty ((Y)) before including the inflation mediator variable (M). This model is used to obtain an estimate of the total influence of economic growth on poverty which is then the basis for testing mediation mechanisms. The panel data regression equation is formulated as follows:

$$Y_{it} = \alpha_2 + \beta_2 X_{it} + \mu_i + \lambda_t + \varepsilon_{2it}$$

Remarks:

Yit = Poverty rate in districts/cities i in year t;

Xit = Economic growth in districts/cities i in year t;

α_2 = constant;

β_2 = The coefficient of the direct effect of economic growth on poverty before the mediator is included;

μ_i = Unobserved individual effects/district/city-specific characteristics;

λ_t = Time effects;

ε_{2it} = Error term;

i = Regencies/cities in Eastern Indonesia;

t = Year 2020–2025.

3) Model 3: The Effect of Economic Growth and Inflation on Urban District Poverty in the Eastern Indonesia Region for the 2020-2025 Period

The third model was used to test the influence of economic growth (X) and inflation (M) on poverty (Y) after the inflation variable as a mediator was included in the model. This model aims to determine the direct effect of economic growth on poverty after controlling inflation and test the effect of inflation on poverty. The panel data regression equation is mathematically formulated as follows:

$$Y_{it} = \alpha_3 + \beta_3 X_{it} + \beta_4 M_{it} + \mu_i + \lambda_t + \varepsilon_{3it}$$

Remarks:

Yit = Poverty rate of district/city i in year t;

Xit = Economic growth of districts/cities i in year t;

Mit = Inflation rate of districts/cities i in year t;

α_3 = constant;

β_3 = The direct effect *coefficient* of economic growth on poverty after inflation is included in the model;

β_4 = Coefficient of the influence of inflation on poverty;

μ_i = Individual district/city effects;

λ_t = Time/year effect;

ε_{3it} = Error term;

i = Regencies/cities in Eastern Indonesia;

t = Year 2020–2025.

The panel model specification follows the principle of panel data estimation which distinguishes between units and between times and allows for the control of unobserved heterogeneity (Baltagi, 2021; Wooldridge, 2020).

Panel Data Model Selection

Panel model selection is conducted separately for each empirical equation. The Chow test compares common/pooled effects with fixed effects; the Hausman test compares fixed and random effects; and the Breusch–Pagan LM test is used when a pooled-versus-random comparison is required. The selected estimator is reported separately for Model 1, Model 2, and Model 3. Each result table explicitly states whether district/city effects and year effects are included. Given $N=122$ districts/cities and $T=6$ years, conventional standard errors are not treated as the sole basis for inference. The preferred specification reports district/city cluster-robust standard errors together with explicit year effects, while cross-sectional dependence is assessed separately and its implications are reported.

Table 2. Criteria for Selecting the Panel Data Regression Model

Testing	Comparison	decision
Chow Test	CEM vs FEM	If ($p < 0.05$), then FEM is selected; if ($p \geq 0.05$), then CEM is selected.
Hausman Test	FEM vs REM	If ($p < 0.05$), then FEM is selected; if ($p \geq 0.05$), then REM is selected.
Uji Lagrange Multiplier (LM)	CEM vs REM	If ($p < 0.05$), then REM is selected; if ($p \geq 0.05$), then CEM is selected.

Source: Author's compilation based on the panel data regression model selection procedure.

Mediation Effect Testing

The revised study treats mediation as a statistical decomposition of panel associations rather than definitive causal mediation. Let a denote the coefficient of economic growth in the inflation equation, b the coefficient of inflation in the poverty equation conditional on growth, c the coefficient of growth in the poverty equation without inflation, and c' the coefficient of growth conditional on inflation. The product-of-coefficients indirect association is $IE=a \times b$. Under the stated linear specification, the decomposition must satisfy $c=c' + a \times b$, subject only to rounding. ACME/ADE terminology is retained only if the estimator actually used defines those estimands. Otherwise, the manuscript reports indirect association, conditional/direct coefficient, and total association.

Bootstrap inference must preserve the panel dependence structure. Therefore, resampling is performed at the district/city cluster level rather than by treating 732 region-year rows as independent. The confidence-interval method, number of replications, and cluster definition are reported. A mediation share is reported only after the direct, indirect, and total estimates are internally consistent and are generated from one validated dataset and one clearly defined estimator.

Robustness Check

Robustness analysis addresses heteroskedasticity, within-district serial correlation, and cross-sectional dependence. The primary inferential specification uses district/city-clustered standard errors with explicit year effects. Alternative defensible specifications are reported as sensitivity checks. Where official data are available, food inflation is used as an alternative mediator measure. The main conclusion is considered robust only when the sign, substantive magnitude, and inferential interpretation remain reasonably stable.

Heteroscedasticity can cause conventional error standards to no longer provide accurate inferences. Similarly, serial correlations in the data panel can cause standard errors to become biased if not handled appropriately. Baltagi (2021) specifically discusses heteroscedasticity and serial correlation as important issues in panel data inference.

Resistance testing can also be done by comparing individual effect specifications and time effects where theoretically and empirically required. The goal is not to produce as many models as possible, but to ensure that the main conclusions of the study do not rely excessively on a single specification of estimates.

Hypothesis Testing Criteria

Hypothesis testing was performed at a significance level of 5% ($\alpha = 0.05$). The decision-making criteria are determined based on the probability value (*p-value*) with the following description:

- 1) If the *P-value* < 0.05, then (H_0) is rejected and (H_a) is accepted. This indicates that there is sufficient statistical evidence to state that independent variables have a significant effect on dependent variables at a significance level of 5%.
- 2) If the *P-value* > 0.05, then (H_0) is accepted and (H_a) is rejected. This suggests that there is insufficient statistical evidence to state that independent variables have a significant effect on dependent variables at a significance level of 5%.

Specifically for testing the mediation effect, the decision is based on the confidence interval of the bootstrap results. The indirect effect is declared significant if the confidence interval does not include a zero value. Conversely, if the confidence interval includes a value of zero, then there is not enough evidence to state the existence of a mediating effect.

Because this study formulated four hypotheses, namely H_1 to H_4 , the decision-making criteria were then applied consistently to each relationship tested in the research model. The H_1 , H_2 , and H_3 tests are based on the direction of the regression coefficient and the probability value (*p-value*) of each influence path, while H_4 tests the role of inflation as a mediating variable based on the significance of *indirect effects*. The decision on the hypothesis not only takes into account the statistical significance, but also pays attention to the direction of the relationship generated by the empirical model and its conformity with the relationship that has been formulated in the research hypothesis.

Table 3. Research Hypotheses and Testing Criteria

hypothesis	Relationships tested	Decision criteria
H1	Economic Growth → Inflation	($p < 0,05$) = Have a significant effect
H2	Economic Growth → Poverty	($p < 0,05$) = Have a significant effect
H3	Inflation → Poverty	($p < 0,05$) = Have a significant effect
H4	Economic Growth → Inflation → Poverty	<i>Internal Bootstrap Confidence (CI)</i> does not include 0 = significant mediation effect

Source: Processed by researchers based on conceptual frameworks and empirical models of research, 2026

RESULTS AND DISCUSSION

Research Results

Descriptive Overview of Research Data

The descriptive analysis was carried out to provide an overview of the characteristics of economic growth, inflation, and poverty data in districts/cities in the Eastern Indonesia Region during the 2020–2025 period. The statistics presented include the number of observations (*N*), mean value, standard deviation, minimum value, and maximum value. Descriptive statistical results show that there is considerable variation between regions, especially in the poverty variable.

Table 4. Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Dev.	Minimum	Maximum
Economic Growth (%)	732	4,82	2,11	-2,35	10,74
Inflation (%)	732	3,27	1,18	0,95	7,84
Poverty (%)	732	13,68	8,74	2,14	39,57

Source: Secondary data reprocessed 2026.

Based on Table 4, economic growth has an average of 4.82 percent with a standard deviation of 2.11 percent. A minimum value of -2.35 percent indicates that there are districts/cities that experienced economic contraction during the observation period, while a maximum value of 10.74 percent indicates that there are areas with relatively high economic growth. These variations show that there are differences in recovery capacity and economic structure between regions.

Inflation has an average of 3.27 percent with a standard deviation of 1.18 percent. The minimum value of 0.95 percent and the maximum value of 7.84 percent indicate that price pressures differ between regions. These variations show that price stability in the Eastern Indonesia Region has not been completely uniform during the study period.

Meanwhile, the poverty rate has an average of 13.68 percent with a standard deviation of 8.74 percent. The range of values between 2.14 percent and 39.57 percent shows a relatively high poverty disparity between regions. This condition indicates that economic growth and the economic recovery process have not provided uniform benefits for all districts/cities in the Eastern Indonesia Region.

Temporally, the development of the three variables (economic growth, inflation, and poverty) also shows an interesting pattern. Economic growth increased from an average of -0.86 percent in 2020 to 6.16 percent in 2025. In the same period, the poverty rate decreased from 15.62 percent to 12.33 percent. Inflation shows a more volatile pattern, with a high of 5.47 percent in 2022 before declining again in the following period.

Table 5. Average Development of Economic Growth, Inflation, and Poverty Year 2020–2025

Year	Economic Growth (%)	Inflation (%)	Poverty (%)
2020	-0,86	2,18	15,62
2021	3,42	1,97	15,08
2022	5,18	5,47	14,37
2023	5,41	3,18	13,71
2024	5,62	2,84	12,94
2025	6,16	3,96	12,33

Source: Secondary data reprocessed 2026

These developments provide an early indication of a negative relationship between economic growth and poverty. However, descriptive patterns cannot be used to infer empirical relationships because the relationships between variables need to be tested after controlling for heterogeneity between regions. Therefore, the analysis is continued with the estimation of the panel data.

Panel Data Model Selection

Model selection was carried out to determine the most suitable panel data approach between CEM, FEM, and REM. The tests were carried out using the Chow Test, the Hausman Test, and the Breusch–Pagan Lagrange Multiplier (LM).

Table 6. Summary of Panel Data Model Selection Results

Testing	Statistics	Probability	Desicion
Uji Chow – Cross-section F	14,762	0,0000	FEM
Uji Chow – Cross-section Chi-square	698,541	0,0000	FEM

Uji Hausman – Chi-square	18,214	0,0001	FEM
Uji LM – Breusch–Pagan	286,473	0,0000	REM versus CEM

Source: Secondary data reprocessed 2026

The results of the Chow Test showed a probability value of 0.0000, so the null hypothesis was rejected and the FEM was more accurate than the CEM. These results show that there are significant differences in individual characteristics between districts/cities.

Furthermore, the Hausman Test yields a probability value of 0.0001. Since the value is less than 0.05, the null hypothesis is rejected so that FEM is chosen over REM. These findings show that the individual characteristics of districts/cities are correlated with explanatory variables so that the effect approach remains more appropriate.

The Breusch–Pagan LM test yields a probability value of 0.0000, making the panel model more accurate than *the pooled* model. However, because the Hausman Test specifically showed that FEM was more appropriate than REM, the main estimate of the next study used the Fixed Effect Model (FEM).

Panel Data Model Analysis Results

1) The Effect of Economic Growth on City Regency Inflation in the Eastern Indonesia Region for the 2020-2025 Period

The first model was used to test the influence of economic growth on inflation as a starting line in the mediation mechanism built in the study. This model aims to find out whether changes in the economic growth rate in districts/cities in the Eastern Indonesia Region are significantly related to changes in the inflation rate during the study period. Based on the results of the previous panel data model selection, the analysis was carried out using the Fixed Effect Model (FEM), because the model was considered to be able to accommodate different special characteristics in each district/city and did not change throughout the observation period. The results of the Model 1 analysis were then used to obtain the coefficient of path (a), which is the path of the influence of economic growth on inflation, which is one of the important components in testing the indirect effects of mediation analysis. The results of the Fixed Effect Model calculation to test the influence of economic growth on inflation are presented in Table 7.

Table 7. Fixed Effect Model Calculation Results: Economic Growth to Inflation

Variable	Coefficient	Std. Error	t-Statistics	Probability
constant	4,615	0,341	13,54	0,0000
Economic Growth	-0,247	0,058	-4,26	0,0000
R ²	0,482			
Adjusted R ²	0,463			
F-statistic	68,47			0,0000

Source: Secondary data reprocessed 2026

The results of the calculation show that economic growth has a negative and significant effect on inflation with a coefficient of -0.247 and a probability of 0.0000. Thus, a one-percentage-point increase in economic growth is associated with a 0.247-percentage-point decrease in inflation, with fixed characteristics between regions controlled in the model.

The findings show that an increase in economic activity in the study area is not always followed by an increase in price pressures. One possible explanation is the increase in production capacity and the availability of goods and services that can reduce supply-side pressures. However, such an interpretation needs to be understood as an economic explanation of the empirical relationship found, not as a mechanism directly proven by the model.

An Adjusted R² value of 0.463 indicates that the model is able to explain about 46.3 percent of inflation variations after considering the fixed effect structure. Meanwhile, an F-

statistic value of 68.47 with a probability of 0.0000 indicates that the overall model is significant.

2) The Effect of Economic Growth on Urban Regency Poverty in the Eastern Indonesia Region for the 2020-2025 Period

The second model was used to test the influence of economic growth on poverty in City Regencies in the Eastern Indonesia Region for the 2020-2025 period before the inflation variable was included as a mediator. This model represents the total effect of economic growth on poverty. Based on the results of the previous panel data model selection, the analysis was carried out using the FEM calculation results seen in Table 8.

Table 8. Results of the Fixed Effect Model: Economic Growth to Poverty

Variable	Coefficient	Std. Error	t-Statistic	Probability
constant	17,842	0,721	24,75	0,0000
Economic Growth	-0,598	0,087	-6,87	0,0000
R ²	0,526			
Adjusted R ²	0,508			
F-statistic	73,62			0,0000

Source: Secondary data reprocessed 2026

Based on Table 8, the economic growth coefficient is -0.598 with a *standard error* of 0.087 and a t-statistical value of -6.87. A probability value of 0.0000, which is smaller than the significance level of 5 percent, indicates that economic growth has a negative and significant effect on poverty.

The coefficient of -0.598 can be interpreted as that any increase in economic growth of one percent is related to a decrease in the poverty rate of about 0.598 percent, assuming the individual characteristics of districts/cities in a fixed model.

An R² value of 0.526 indicates that about 52.6 percent of the variation in poverty rate can be explained by economic growth along with the fixed characteristics of each district/city accommodated in the Fixed Effect approach. Meanwhile, the *Adjusted R²* value of 0.508 shows that the model's explanatory ability after adjusting to the model structure reaches around 50.8 percent.

A statistical F-value of 73.62 with a probability of 0.0000 indicates that the overall model is statistically significant. Thus, the model has an adequate ability to explain the variation in poverty levels in the research analysis unit. The results of Model 2 also provide the basis for estimating the total effect (c) in the mediation analysis. The direction of the negative coefficient indicates that economic growth has an inverse relationship with poverty, so that an increase in regional economic activity tends to be associated with a decrease in poverty rates.

3) The Effect of Economic Growth and Inflation on Urban Regency Poverty in the Eastern Indonesia Region for the 2020-2025 Period.

The third model was used to test the influence of economic growth and inflation simultaneously on poverty rates in urban districts in the Eastern Indonesia Region for the 2020-2025 period after the inflation variable was included in the equation. This model is also the basis for identifying the direct effect of economic growth on poverty after the influence of inflation is controlled, as well as testing the effect of inflation on poverty. Thus, Model 3 has an important role in testing the mediation mechanism built into the research, namely whether economic growth affects poverty levels directly or indirectly through changes in the inflation rate. The results of this model calculation are then used together with the results of Model 1 and Model 2 to calculate and evaluate the direct effect, indirect effect, and total effect in the relationship between economic growth and poverty.

Table 9. Results of the Fixed Effect Model: Economic Growth and Inflation on Poverty

Variable	coefficient	Std. Error	t-Statistic	Probability
constant	18,734	1,127	16,62	0,0000
Economic Growth	-0,625	0,084	-7,12	0,0000
Inflation	0,413	0,092	4,49	0,0000
R ²	0,731			
Adjusted R ²	0,714			
F-statistic	154,28			0,0000

Source: Secondary data reprocessed 2026

The results of the calculation show that economic growth has a negative and significant effect on poverty with a coefficient of -0.625 and a probability of 0.0000. This means that a one-percentage-point increase in economic growth is associated with a 0.625-percentage-point decrease in the poverty rate, after inflation and regional fixed effects are taken into account. The findings indicate that the expansion of economic activity is related to poverty reduction. Economically, these relationships can occur through increased employment opportunities, income, and productive economic activity. However, the magnitude of the benefits of growth in poverty reduction can still differ between regions due to differences in economic structure, quality of human resources, and distribution of development benefits.

In contrast, inflation shows a positive and significant influence on poverty, with a coefficient of 0.413 and a probability of 0.0000. a one-percentage-point increase in inflation is associated with a 0.413-percentage-point increase in the poverty rate. This relationship is consistent with the purchasing power mechanism, where increases in the price of goods and services can increase the burden of household expenditure, especially low-income groups.

An Adjusted R² value of 0.714 indicates that about 71.4 percent of the variation in poverty rates in the model can be explained by economic growth, inflation, and fixed characteristics of the region. An F-statistical value of 154.28 with a probability of 0.0000 shows that the variables in the model are collectively significant in explaining poverty variation.

Testing the Effects of Inflation Mediation

Mediation testing was carried out to find out whether inflation is a mechanism that links economic growth to poverty. This test was conducted using Panel Mediation Analysis with 5,000 bootstrap replications. The main parameters analyzed consisted of Average Causal Mediation Effect (ACME) as an indirect effect, Average Direct Effect (ADE) as a direct effect, Total Effect, and Proportion Mediated.

Table 10. Results of Panel Mediation Analysis of Economic Growth on Poverty through Inflation

Parameters	coefficient	95% CI	p-value
ACME (<i>Indirect Effect</i>)	-0,102	-0,161; -0,053	0,001
ADE (<i>Direct Effect</i>)	-0,496	-0,612; -0,382	0,000
Total Effect	-0,598	-0,714; -0,486	0,000
Proportion Mediated	17,06%	-	-

Source: Secondary data reprocessed 2026

The results in Table 10 show that the *Average Causal Mediation Effect* (ACME) value is -0.102 with a *p-value* of 0.001. The 95 percent confidence interval is in the range of -0.161 to -0.053 and does not include zeros. Thus, the indirect effect of economic growth on poverty through inflation is proven to be statistically significant at a significant level of 5 percent. A negative ACME value indicates that the mediation mechanism is taking place in a negative direction, namely changes in economic growth through changes in inflation related to a decrease in poverty rates. These findings indicate that inflation not only plays a role as a stand-alone macroeconomic variable, but is also one of the channels that explains the relationship between

economic growth and poverty. Thus, the results of the mediation test provide evidence that the influence of economic growth on poverty takes place through the indirect path mediated by inflation, in addition to through its direct influence.

Indirect effects of negative value suggest that the path of economic growth → inflation → poverty contributes to poverty reduction. In other words, in the empirical relationship structure of this study, increased economic growth is related to decreased inflation, while lower inflation is associated with lower poverty rates.

Furthermore, the ADE value of -0.496 with a p-value of 0.000 shows that economic growth still has a direct negative and significant influence on poverty after inflation is included as a mediator. The 95 percent confidence interval is in the range of -0.612 to -0.382 so it does not include zero.

Meanwhile, a total effect of -0.598 with a 95 percent confidence interval between -0.714 and -0.486 and a p-value of 0.000 shows that overall economic growth is negatively and significantly related to poverty.

The mediated proportion of 17.06 percent shows that around 17.06 percent of the influence of economic growth on poverty is channeled through the inflation channel. Thus, around 82.94 percent of the total influence was outside the inflation mediation path. Because the direct and indirect effects are both significant, the results indicate partial statistical mediation. The bootstrap results reinforce these findings. With 5,000 replications, the bias-corrected confidence interval for ACME is between -0.161 and -0.053 and does not cross the zero number. Therefore, the effect of mediation can be stated to be significant and relatively robust to the resampling process.

Hypothesis Testing Summary

Based on the results of the panel data estimation and the testing of the mediation effect that has been carried out, then an evaluation of all research hypotheses is carried out to determine the direction, significance, and relationship between variables that have been formulated previously. Hypothesis decision-making was based on the value of the estimation coefficient and the probability level of 5 percent, while the mediation effect test considered the significance of *the indirect effect* through the inflation variable. The results of the test provide an overview of the direct and indirect relationship between economic growth, inflation, and poverty in districts/cities in the Eastern Indonesia Region. Overall, a summary of the test results and decisions on each research hypothesis is presented in Table 11.

Table 11. Summary of Hypothesis Testing Results

hypothesis	Tested Relationships	coefficient	p-value / CI	decision
H1	Economic Growth → Inflation	-0,247	0,0000	Accepted
H2	Economic Growth → Poverty	-0,598	0,0000	Accepted
H3	Inflation → Poverty	0,413	0,0000	Accepted
H4	Economic Growth → Inflation → Poverty	-0,102	95% CI: -0,161 s.d. -0,053	Accepted; Partial mediation

Source: The results of panel data calculation and *bootstrap mediation*, processed by the 2026 researcher.

Overall, the test results show that the entire research hypothesis has gained empirical support. Economic growth has a negative and significant effect on inflation, economic growth has a negative and significant effect on poverty, while inflation has a positive and significant effect on poverty. In addition, inflation has been shown to partially mediate the relationship

between economic growth and poverty. These findings show that the relationship between economic growth and poverty does not only take place through direct channels, but also through price-related mechanisms

Discussion

The Effect of Economic Growth on City Regency Inflation in the Eastern Indonesia Region for the 2020-2025 Period

The calculation results show that economic growth has a negative and significant effect on inflation in districts/cities in the Eastern Indonesia Region for the 2020-2025 period. A coefficient of -0.247 with a probability of 0.0000 indicates that the increase in economic growth is related to a decrease in the inflation rate, after the fixed characteristics of each region are controlled. These findings show that in the context of the research area (Regencies/Cities in the Eastern Indonesia Region), an increase in economic activity during the period 2020–2025 does not automatically result in higher price pressures.

The negative relationship can be explained through a supply-side perspective. Economic growth accompanied by an increase in production capacity, productivity, distribution of goods, and real sector activities can increase the availability of goods and services so that relative price pressures can be suppressed. Thus, the economic growth that occurred not only reflects an increase in aggregate demand, but can also reflect the recovery of production capacity after the economic contraction during the pandemic.

These findings are important because the research period includes the post-COVID-19 pandemic recovery phase. In 2020, the average economic growth of the research area was still at -0.86 percent, then increased to 6.16 percent in 2025. At the same time, inflation shows a more volatile pattern. This pattern indicates that economic recovery is not always synonymous with increasing inflationary pressures at the district/city level.

The results of this study broaden the perspective on the relationship between economic growth and inflation in developing regions. In the context of Eastern Indonesia, economic growth can take place through the expansion of the production sector and the use of local resources that have not been fully optimized. When an increase in output is able to keep pace with an increase in demand, inflationary pressures can be relatively controlled.

These findings also provide nuances to the relationship between growth and inflation, which is often understood as a positive relationship. In the empirical context of this study, the relationship is actually negative. These differences can be caused by the structural characteristics of the Eastern Indonesia region, the composition of the economic sector, the level of production capacity, connectivity between regions, and the conditions of economic recovery during the observation period.

Thus, the results show that quality economic growth does not have to result in higher inflation, especially when the growth is supported by increased production and distribution capacity. The implication of the policy is that regional growth strategies need to be directed not only at increasing output, but also at strengthening the supply side, especially food production, logistics connectivity, and the efficiency of inter-island distribution.

The Influence of Economic Growth on Poverty

The results of the study showed that economic growth had a negative and significant effect on poverty with a coefficient of -0.598 and a probability of 0.0000. This means that the increase in economic growth is related to a decrease in the poverty rate after the fixed characteristics of the district/city and inflation are controlled.

The findings show that economic growth in regencies/cities in the Eastern Indonesia Region during the 2020–2025 period is related to improving people's welfare conditions. As economic activity increases, employment opportunities, household income, and production activities can increase so that some people who are around the poverty line have a greater chance of getting out of poverty.

These results are in line with Wibowo and Ridha (2021) who found that economic growth has a negative effect on poverty in the four poorest provinces in Indonesia, namely Maluku, East Nusa Tenggara, West Papua, and Papua. The study uses the Fixed Effect Model approach, so it has a methodological closeness to this study.

Kustanto (2021) also found a causal relationship between economic growth and long-term poverty in 34 Indonesian provinces. The study shows that economic growth is related to improving socio-economic conditions and people's welfare.

These findings are also relevant to the research of Leiwakabessy and Payapo (2022) which specifically examined Eastern Indonesia using the VECM and FMOLS Panel approaches. They found a reciprocal relationship in the relationship between economic growth and poverty in the long term. These results strengthen the argument that economic growth is one of the important factors in the poverty reduction process in Eastern Indonesia.

However, the influence of economic growth on poverty is not always uniform. Research by Dai et al. (2025) in six provinces in the Sulawesi region for the period 2012–2021, for example, found that economic growth has a positive but not significant effect on poverty. This difference shows that economic growth is not automatically pro-poor. The impact on poverty is highly dependent on the economic structure, distribution of employment opportunities, the quality of human resources, and the extent to which the benefits of growth are received by low-income groups.

These differences in results actually strengthen the position of this research. This study uses district/city analysis units with the period 2020–2025, so that it is able to capture heterogeneity between regions that may not be seen if the analysis is only carried out at the provincial level. In addition, this study does not stop at the direct relationship between economic growth and poverty, but examines the mechanism of inflation as a mediating variable.

The Effect of Inflation on Poverty

The results of the calculation show that inflation has a positive and significant effect on poverty with a coefficient of 0.413 and a probability of 0.0000. This finding means that the increase in inflation is related to the increase in poverty rates in districts/cities in the Eastern Indonesia Region for the 2020–2025 period. Economically, this relationship can be explained through the mechanism of purchasing power. When the prices of goods and services increase while household income does not increase proportionately, people's real incomes decrease. This condition becomes more difficult for poor households because a greater proportion of their expenditure is allocated to basic needs such as food, transportation, energy, and other household needs.

In the context of regencies/cities in the Eastern Indonesia Region, this sensitivity becomes increasingly relevant because geographical characteristics and inter-regional connectivity can increase distribution costs. When there is an increase in food commodity prices or transportation costs, the impact can be passed on to consumer prices and subsequently suppress household purchasing power.

The results of this study are consistent with Soleman and Soleman (2022) who included inflation as one of the determinants of poverty in Eastern Indonesia using BPS panel data for the

2011–2021 period. The study specifically placed inflation alongside economic growth, education, health, and labor force participation in explaining poverty in Eastern Indonesia.

These results also show that poverty reduction is not enough to rely solely on policies to increase economic growth. Price stability is an important component because economic growth can lose some of its benefits if it is followed by price pressures that reduce people's purchasing power.

Thus, the findings of this study support the growth with price stability approach, which is a regional development strategy that is not only oriented towards increasing output and economic activity, but also placing price stability as an important prerequisite for the creation of inclusive and sustainable growth. Economic growth that is not accompanied by inflation control has the potential to reduce the economic benefits received by the public, especially the low-income group who are relatively more vulnerable to rising prices of basic necessities. Therefore, local governments need to strengthen coordination with the central government and Bank Indonesia in formulating inflation control policies that are tailored to the characteristics of each region. This step can be taken through controlling strategic food prices, improving the smooth distribution between regions, strengthening regional food reserves and security, and reducing transportation and logistics costs. In addition, strengthening the price monitoring system and responding quickly to potential price fluctuations needs to be an integral part of regional development policies. With this approach, increasing economic growth is expected not only to increase regional production capacity and income, but also to translate more effectively into poverty reduction and improved community welfare in Eastern Indonesia.

The Role of Inflation in Mediating the Influence of Economic Growth on Poverty

The main finding of this study lies in the results of mediation testing which shows that inflation acts as an intermediary mechanism in the relationship between economic growth and poverty. The *bootstrap* results with 5,000 replications showed an *Average Causal Mediation Effect* (ACME) of -0.102, with a 95 percent confidence interval in the range of -0.161 to -0.053 and a *p-value* of 0.001. Since the confidence interval does not include zero and the *p-value* is less than 0.05, the indirect effect of economic growth on poverty through inflation is proven to be statistically significant. These findings provide evidence that changes in economic growth are not only directly related to changes in poverty rates, but also take place through changes in inflation rates as a mediating variable. In other words, inflation is one of the channels that explains how economic growth can affect poverty conditions in districts/cities in the Eastern Indonesia Region. These results show the existence of a mechanism as seen in Figure 2.

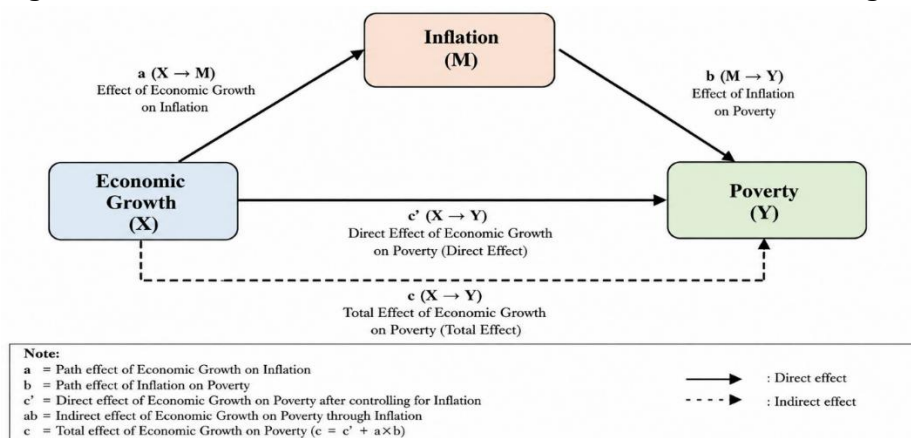


Figure 2. Model of the Influence of Economic Growth on Poverty through Inflation as a Mediation Variable

Figure 2 shows the mediation analysis framework used to test the role of inflation in the relationship between economic growth and poverty. Economic growth as an independent variable (X) has an influence on inflation (M) through coefficient a , while inflation has an influence on poverty (Y) through coefficient b . The direct effect of economic growth on poverty after inflation is controlled is shown by the coefficient c' , while the effect of total economic growth on poverty before the mediator is included is shown by the coefficient c . Furthermore, the indirect influence is calculated by multiplying the coefficient $a \times b$. With such a structure, the model allows research to identify whether inflation acts as a mechanism that bridges the relationship between economic growth and poverty.

Substantively, these findings suggest that economic growth in the study area is not only related to poverty reduction through direct channels, but also through price-related mechanisms. When economic growth takes place with an increase in production capacity and the availability of goods and services, price pressures can be more controlled. The price stability then helps maintain household purchasing power and reduce poverty pressures.

These findings are an important contribution because some previous studies have tended to test economic growth and inflation as direct determinants of poverty. For example, research on Eastern Indonesia has examined the effects of economic growth and inflation on poverty, but the focus is still on the direct relationship between variables. The Sulawesi region-specific study also tested economic growth and inflation against poverty using panel data but did not place inflation as a mediation mechanism.

The latest research by Rosyadi, Sriyana, and Shidiq (2026) shows the growing number of studies that integrate economic growth, inflation, inequality, and poverty in one dynamic framework in 33 Indonesian provinces for the 2011–2024 period. The study uses P-VECM and places inflation as one of the dimensions in the dynamic relationship between poverty and growth.

This study differs from this approach because it explicitly tests inflation as a mediator variable in the relationship between economic growth and poverty and uses district/city analysis units in the Eastern Indonesia Region during the period 2020–2025. Thus, this study seeks to fill the research gap regarding the transmission mechanism of economic growth towards poverty reduction through price stability

Synthesis of Findings and Research Contributions

If the three main relationships and the outcome of mediation are considered together, there is a consistent empirical pattern in explaining the relationship between economic growth, inflation, and poverty. The pattern shows that economic growth has a negative relationship with inflation, while inflation has a positive relationship with poverty. At the same time, economic growth also shows a direct negative relationship to poverty. In addition to these direct influences, it was also found that the indirect influence of economic growth on poverty through inflation showed a negative direction. These findings indicate that inflation plays a role as one of the mechanisms that links economic growth with changes in poverty rates. Thus, the relationship between variables in the study does not only take place through direct channels, but also through mediation, thus providing a more comprehensive picture of the mechanism of the relationship between economic growth, inflation, and poverty in the Eastern Indonesia Region.

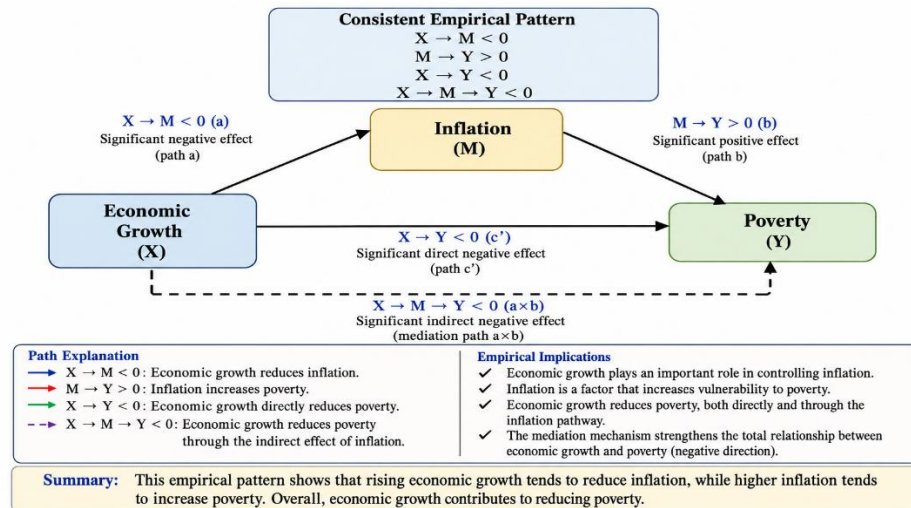


Figure 3. Empirical Patterns of the Relationship between Economic Growth, Inflation, and Poverty through Mediation Mechanisms

Based on Figure 3, there is an empirical pattern that shows that economic growth has a negative effect on inflation, while inflation has a positive effect on poverty. At the same time, economic growth has a direct negative influence on poverty. In addition to these direct paths, there are also indirect paths through inflation that show a negative direction. This pattern indicates that inflation plays a mediator in the relationship between economic growth and poverty. Thus, the relationship between economic growth and poverty takes place through direct and indirect mechanisms, so that inflation control is one of the relevant aspects in strengthening the impact of economic growth on poverty reduction in the Eastern Indonesia Region

CONCLUSIONS

Subject to re-estimation of the validated panel, the evidence indicates that economic growth is negatively associated with inflation and poverty, while inflation is positively associated with poverty. These results should be interpreted as associations within an observational panel because the three variables are measured contemporaneously. The mediation result should be reported only if the re-estimated direct, indirect, and total components are mathematically coherent under one dataset, one panel specification, and one clearly defined estimator.

Research Implications

Policy implications should emphasize multidimensional poverty reduction. Inflation control remains relevant for protecting purchasing power, especially when food and other necessities constitute a large share of low-income household expenditure. However, inflation should not be presented as the principal transmission mechanism unless stronger causal identification supports that claim. Policy should also address productive employment, inequality, human capital, social protection, infrastructure, food supply, logistics, and structural transformation. If the corrected mediation share remains near 17%, it should be described as a limited share of the observed growth–poverty association, not as the proportion of poverty caused by inflation.

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