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The Impact of Regional Infrastructure Sector Investment on Economic Growth and Regional Inequality in East Kalimantan Province, 2012–2023

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Abstract. *The study explores the impact of regional infrastructure investment on economic growth and regional inequality in East Kalimantan Province from 2012 to 2023. Motivated by the ongoing development disparities in Indonesia, especially outside Java and Sumatra, this research examines how infrastructure spending—particularly in public works, housing, and transportation—affects East Kalimantan's economic growth and regional inequality. Using a quantitative methodology, the analysis leverages secondary data obtained from local government agencies. The research employs SPSS 23 for path analysis to evaluate relationships among variables, focusing on East Kalimantan's fiscal allocations and their impacts on economic dynamics. The results indicate mixed impacts across sectors: while housing and transportation investments significantly promote economic growth, public works spending shows no significant effect.*

Keywords: *APBD Invesment in Public Works, APBD Invesment in Housing amd Settlemen, APBD Invesment in Transportation, Economic Growth, Regional Disparity*

1. INTRODUCTION

Regional development disparities in Indonesia present a significant challenge within the national development agenda, especially evident in the economic dominance of Java and Sumatra over other regions. This inequality stems from imbalances in economic growth, which is concentrated in specific areas, leaving some regions, including parts of Kalimantan, relatively underdeveloped. In Kalimantan, economic development varies across provinces; East Kalimantan shows greater economic homogeneity, with a moderate Williamson Index indicating a relatively even distribution. However, economic disparities in Kalimantan as a whole remain due to differences in the utilization of natural resources, which are key sectors across the region.

Economic growth and infrastructure investment efforts are essential elements in addressing this inequality. Increased infrastructure investment can create economic opportunities and enhance inter-regional connectivity. In East Kalimantan, infrastructure investments continue to grow, covering sectors like transportation, housing, and clean water. Nevertheless, disparities in access to basic services, such as sanitation and drinking water, remain a concern, along with challenges in addressing slum areas and providing adequate housing. Increased regional budget allocations for infrastructure development in East

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Kalimantan demonstrate the government's commitment to tackling these challenges, yet evaluation is needed to ensure these investments effectively reduce regional inequalities.

Indonesia's economic growth, reaching 5.3 percent in 2022, reflects positive potential, driven by strong household consumption and increased exports due to high commodity prices. In East Kalimantan, economic growth has improved, particularly in the mining and agriculture sectors, despite a temporary contraction during the COVID-19 pandemic. Strategic infrastructure development, including roads and irrigation, along with national projects in the region, supports economic growth on a regional scale. Targeted infrastructure investments are essential to maintain growth stability and reduce regional disparities, aligning with growth theories that highlight the close linkage between investment and sustainable economic development.

2. LITERATURE REVIEW

Regional Disparities

Regional disparities are a common phenomenon in the economic activities of various areas. These disparities arise due to differences in natural resources and demographic conditions across regions. Such differences result in varying capacities for each region to drive its own development processes. Consequently, each area typically has developed regions and underdeveloped regions (Sjafrizal, 2012). According to Kuncoro (2006), disparity refers to the relative standard of living across all communities, stemming from interregional gaps created by differences in initial endowment factors. These differences contribute to the varied development levels across regions, leading to welfare gaps among them (Sukimo, 2010).

Economic Growth

Economists and politicians from all nations—whether wealthy or poor and whether following socialist, capitalist, or mixed systems—all greatly aspire to achieve economic growth. Economic growth has become a fundamental aim for every country. Governments may either fall or remain stable depending on the level of economic growth within their nation (Todaro, 1995, 153).

Economic growth is defined as the long-term increase in a nation's capacity to produce a variety of goods and services for its people (Sicat and Arndt, 1991, 345). An economy is said to experience growth if there is an increase in the production of goods and services. In reality, measuring the total units of goods and services produced over a given period can be challenging due to the variety of products and the differing units of measurement. Therefore, monetary

values, reflected in Gross Domestic Product (GDP), are used to estimate changes in output. GDP represents the market value of all final goods and services produced within a country's economy in a given period (Mankiw, 2006, 11).

Neo-Classical Growth Theory

Neo-classical growth theory posits that economic growth results from the increase and development of factors influencing aggregate supply. This theory, initially introduced by economists Robert Solow and Trevor Swan, emphasizes that the development of production factors and technological advancements are key drivers of economic growth (Sukirno, 2005).

According to neo-classical theory, three types of inputs influence economic growth: the impact of capital, the influence of technology, and the role of the labor force in driving economic growth. Neo-classical theory approaches economic growth from a supply-side perspective, in contrast to classical theory.

Economic growth, therefore, relies on the production function, expressed as $Y = T\ K\ t\ \hat{}\alpha\ L\ t\ \hat{}(1-\alpha)$, where Y is output, K is capital, L is labor, and T is technology. Since the rate of technological progress is determined exogenously, the Solow model is also known as the exogenous growth model. The Solow model has some limitations, leading to the introduction of endogenous growth models, which include additional variables to explain growth more comprehensively. Endogenous growth models consider international trade as a significant factor influencing economic growth. The model for international trade is expressed as $Y = (A\ i, K\ i, L\ i)$, where Y is output, A is the productivity index, K is capital, L is the labor force, and i is the year. The productivity index (A) is a function of exports (X) and imports (M), represented as $A\ i = (X\ i, M\ i)$.

Investment

According to Sumanto (2006), investment is the commitment of funds over a period to obtain expected future income as compensation for the invested units. Investment is also defined as the goods purchased by individuals or companies to expand their capital stock (Mankiw, 2000). In economic theory, investment refers to the purchase (and production) of capital goods that are not consumed but are used for future production. Investment is a component of GDP and is categorized as either non-residential or residential. Investment functions depend on income and interest rates. Higher income encourages greater investment, while higher interest rates reduce investment due to increased borrowing costs.

Infrastructure

The World Bank categorizes infrastructure into three types: (1) economic infrastructure, which includes the physical infrastructure needed to support economic activities such as public utilities (telecommunications, water, sanitation, electricity, and gas), public works (roads, dams, canals, irrigation channels, and drainage), and the transportation sector (railroads, ports, airports, etc.); (2) social infrastructure, covering education, health, housing, and recreation; and (3) administrative infrastructure, including law enforcement, administrative control and coordination, and cultural facilities (World Bank, 1994, 12).

Economic infrastructure typically has a natural monopoly characteristic, as it is more economical for infrastructure services to be provided by a single entity rather than multiple firms (Amrullah, 2006, 21). Goods and services falling under natural monopolies often prompt substantial government intervention in their provision. Government roles and intervention—both through direct infrastructure procurement and indirect regulation—are crucial to supporting economic growth on both national and regional levels.

3. METHODOLOGY

This research employs a quantitative methodology. The analysis uses secondary data obtained from the Regional Development Planning Agency (BAPPEDA) of East Kalimantan Province, including general data on the province and Williamson Index calculations from 2012 to 2023. Additionally, data from the Regional Financial and Asset Management Agency (BPKAD) of East Kalimantan, covering the province's budget (APBD) allocations for the Public Works, Spatial Planning, and Public Housing Department and the Transportation Department from 2012 to 2023, as well as economic growth rates sourced from the East Kalimantan Statistics Agency (BPS), are used.

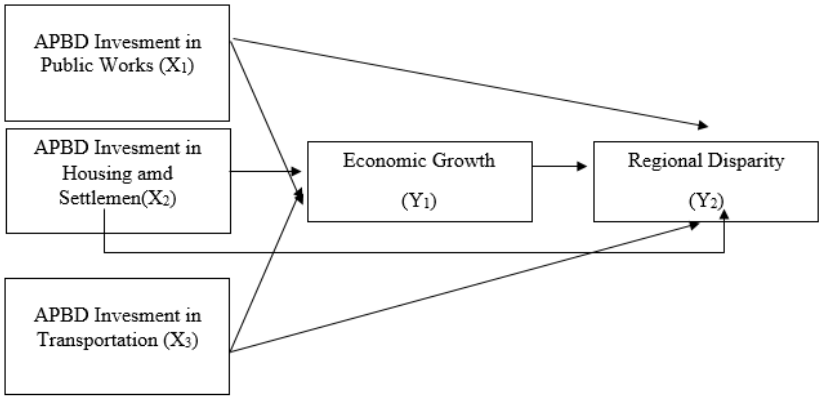

Figure 1. Conceptual Framework

Path Analysis elucidates and assesses the cause-and-effect relationships among variables. The Conceptual Framework depicted in Figure 1 can be articulated in the following manner:

Persamaan structural model jalur sub struktur 1:

YI = p yI%1 + p yIx2 + p yix3 + …..

Dimana:

XI = APBD Invesment in Public Works

X2 = APBD Invesment in Housing amd Settlemen

X3 = APBD Invesment in Transportation

YI = Economic Growth

Y2 = Regional Disparity

p = Koefisien Path

… = error/tingkat kesalahan

Persamaan structural model jalur sub struktur 2:

Y2 = p y2x1 + p Y2X2 + p y2%3 + p yry1 + e2

Dimana:

XI = APBD Invesment in Public Works

X2 = APBD Invesment in Housing amd Settlemen(X2)

X3 = APBD Invesment in Transportation

YI = Economic Growth

Y2 = Regional Disparity

p = Koefisien Path

… = error/tingkat kesalahan

4. RESULT AND DISCUSSION

Table 1 Model Summary 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973[a]	.947	.927	.08213
a. Predictors: (Constant), APBD Invesment in Transportation, APBD Invesment in Public Works, APBD Invesment in Housing and Settlemen				

From the SPSS output table above, the Summary of the Coefficient of Determination test shows an R square value of 0.947, or 0.947 x 100 = 94.7%. This means that the influence

of the independent variables (X1, X2, and X3) on the dependent variable (Y1) is 94.7%, while the remaining 5.3% is influenced by other factors not examined in this study.

Table 2 Model Summary 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992[a]	.984	.976	.01604
a. Predictors: (Constant), Economic Growth, APBD Invesment in Public Works, APBD Invesment in Transportation, APBD Invsment in Housing and Settlemen				

From the SPSS output table above, the Summary of the Coefficient of Determination test shows a coefficient of determination (R square) of 0.984, or 0.984 x 100 = 98.4%. This means that the influence of the independent variables (X1, X2, X3, and Y1) on the dependent variable (Y2) is 98.4%, while the remaining percentage is influenced by other factors not examined in this research.

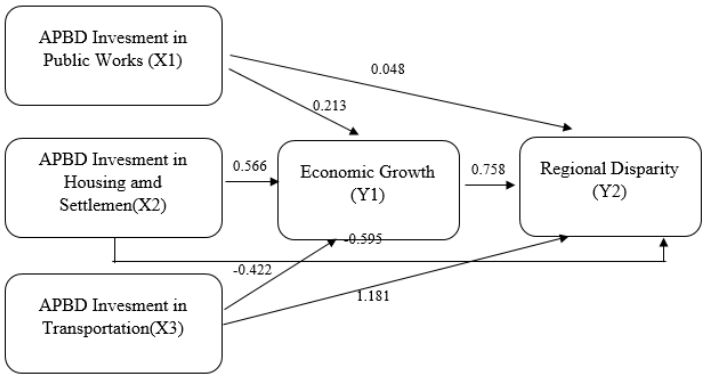

Figure 2. Path Analysis Calculation

The Impact of Local Government Budget for Public Works on Economic Growth

Based on the research findings, the Local Government Budget for Public Works (X1) has a positive but insignificant effect on Economic Growth (Y1), with a value of 0.213. This indicates that an increase in the Local Government Budget for Public Works does not significantly influence the value of Economic Growth.

The Impact of Local Government Budget for Public Housing on Economic Growth

The research findings indicate that the Local Government Budget for Public Housing in East Kalimantan (X2) has a significant positive effect on Economic Growth (Y1), with a value of 0.566. This means that if the Local Government Budget for Public Housing increases, Economic Growth is likely to increase as well.

The Impact of Local Government Budget for Transportation on Economic Growth

According to the research findings, the Local Government Budget for Transportation (X3) has a significant positive effect on Economic Growth (Y1), with a value of 0.422. This suggests that in some cases, the economy can continue to grow due to other more dominant factors.

The Impact of Economic Growth on Regional Disparity

The research findings reveal that the Economic Growth rate in East Kalimantan from 2012 to 2023 has a significant positive effect on Regional Disparity, with a value of 0.758. This indicates that if the Economic Growth rate increases, Regional Disparity is also likely to increase.

The Impact of Local Government Budget for Public Works on Regional Disparity Through Economic Growth

Based on the calculations, the indirect effect of the Local Government Budget for Public Works (X1) through Economic Growth (Y1) on Regional Disparity (Y2) is 0.048. This value is greater than the direct effect of the Local Government Budget for Public Works (X1) on Regional Disparity (Y2), indicating that the Local Government Budget for Public Works has a significant positive indirect effect on Regional Disparity.

The Impact of Local Government Budget for Public Housing on Regional Disparity Through Economic Growth

The calculations show that the indirect effect of the Local Government Budget for Public Housing (X2) through Economic Growth (Y1) on Regional Disparity (Y2) is -0.595, which is smaller than the direct effect of the Local Government Budget for Public Housing on Regional Disparity. This means that the Local Government Budget for Public Housing has a significant positive direct effect on Regional Disparity.

The Impact of Local Government Budget for Transportation on Regional Disparity Through Economic Growth

According to the calculations, the indirect effect of the Local Government Budget for Transportation (X3) through Economic Growth (Y1) on Regional Disparity (Y2) is 1.181, which is greater than the direct effect of the Local Government Budget for Transportation on

Regional Disparity. This indicates that the Local Government Budget for Transportation has a significant negative direct effect on Regional Disparity.

5. CONCLUSIONS

The research on the impact of the local government budget investments in the infrastructure sector on Economic Growth and Regional Disparity in East Kalimantan reveals several important findings. First, although investments in the public works sector do not have a significant impact on Economic Growth, investments in the public housing and transportation sectors show significant effects, with positive and negative relationships, respectively. This indicates that investments in public housing provide a tangible boost to Economic Growth, while the transportation sector tends to slow it down. Regarding Regional Disparity, investments in the public works sector also do not have a significant impact, whereas investments in the public housing and transportation sectors have significant effects, both with a positive relationship to Regional Disparity. This suggests that both sectors contribute to disparities between regions in East Kalimantan, with public housing acting as a factor that exacerbates the disparity and transportation showing a similar contribution.

Furthermore, the results of this study also indicate that Economic Growth has a significant impact on Regional Disparity, with a positive relationship, meaning that economic growth has the potential to widen regional disparities. Additionally, through the influence of Economic Growth, investments in the public works and public housing sectors positively impact Regional Disparity, while investments in the transportation sector show a negative impact on Regional Disparity. Overall, the findings suggest that investments in the infrastructure sector have varied effects on Economic Growth and regional disparities in East Kalimantan, with some sectors demonstrating the potential to widen disparities, posing a challenge in efforts to achieve equitable development in the province.

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