Factors Affecting Inequality of Regional Economic Development in North Kalimantan Province 2019-2023

ATIKA DIAH MEYDARANI

Master of Economics, Faculty of Economics and Business, Mulawarman University, Indonesia

ENI ROCHAIDAH

Master of Economics, Faculty of Economics and Business, Mulawarman University, Indonesia

MUHAMMAD AWALUDDIN

Master of Economics, Faculty of Economics and Business, Mulawarman University, Indonesia

ABSTRACT: This research aims to examine factors that influence regional economic development inequality in districts and cities in North Kalimantan Province in 2019–2023 using quantitative research methods with the Williamson Index and Panel Data. The data used is secondary data obtained from the Central Statistics Agency. The results of the research show that the number of Labor Force Population and the Total Realization of Regency/City Government Expenditures in North Kalimantan Province have a negative and significant influence on the inequality of economic development in Regency/City areas in North Kalimantan Province, while the Realization of Regency/City Investment in North Kalimantan Province has a positive and significant influence on the inequality of economic development in Regency/City areas in North Kalimantan Province.

Keywords: Economic Development Inequality; Labor Force; Capital Investment; Government Expenditure; Williamson Index.

Date of Submission: 25-05-2025 Date of acceptance: 06-06-2025

I. INTRODUCTION

Indonesia is an archipelagic nation consisting of approximately 17,000 islands, among which five are considered major islands: Sumatra, Java, Sulawesi, Papua, and Kalimantan. Kalimantan, one of the largest islands in Indonesia, spans an area of around 743,330 square kilometers and is divided into five provinces: West Kalimantan, South Kalimantan, Central Kalimantan, East Kalimantan, and North Kalimantan. Kalimantan Island serves as a gateway for development in Eastern Indonesia. Nearly every province within Kalimantan boasts abundant natural resources such as mining products, palm oil, and timber, positioning Kalimantan as a major contributor to Indonesia's economic growth.

According to Todaro, as cited in Wahyu Dhyatmika & Dwi Atmanti (2013), the success of development can be evaluated through economic growth, economic structure, and the level of income disparity among individuals, sectors, and regions. The objectives of economic development include achieving optimal economic growth, reducing poverty, addressing income inequality, and lowering unemployment rates. Kalimantan Island is not immune to the issue of inequality. Efforts to improve economic development often clash with imbalances caused by the concentration of growth in certain regions deemed more economically promising, thereby neglecting equitable distribution. These disparities are further aggravated by differences in natural, social, economic, and resource characteristics across regions.

Economic activities tend to be concentrated in areas rich in natural resources, which further enhances growth in those regions. According to Todaro, as cited in Riyadi & Ghuzini (2022), inequality arises due to regional performance disparities, variations in natural resource potential, human capital quality, and geographic location. The Williamson Index analysis reveals significant regional disparities, with Central Kalimantan having the lowest index at 0.21, while North Kalimantan exhibits the highest at 0.78. Such disparities contribute to growing social tensions and economic gaps, leading to lower levels of welfare and increased migration from underdeveloped to more prosperous regions.

Despite its wealth in resources such as minerals, forests, and fisheries, North Kalimantan faces challenges in economic development, particularly due to inequitable growth. Strategic issues identified by the National Development Planning Agency (Bappenas) in Koran Kaltara (2022) highlight the province's low competitiveness and interregional disparities. North Kalimantan comprises four regencies and one city, with two being border areas. These areas face developmental challenges, including geographic isolation and limited access to transportation, information, and technology, often reachable only by air.

According to the Central Statistics Agency (BPS), the labor force includes all working-age individuals, whether employed, unemployed, or seeking employment. Indonesian law defines the working age population as those aged between 15 and 65. Equal distribution of the labor force based on educational qualifications is critical in reducing inequality. In rural areas, workers with lower educational attainment dominate due to smaller wage differentials compared to urban regions. Inequality persists as high-paying jobs are typically accessible only to highly educated workers. Addressing this requires collaboration with the private sector to improve education and human capital for low-skilled workers. Enhanced education and professional management can attract educated workers to rural areas.

Labor in North Kalimantan is concentrated in Nunukan Regency and Tarakan City, leading to limited job opportunities and regional production disparities. This concentration is influenced by the presence of the mining sector. Investment, a crucial development factor, significantly contributes to economic growth. There are two primary types of investment: public (domestic) and private (foreign). Private investment is market-driven and influenced by location advantages such as transportation costs, labor wage differentials, market concentration, competition levels, and land rent. Consequently, investment tends to favor urban over rural areas.

According to Myrdal, capital movement exacerbates regional inequalities, as not all provinces attract equal investment. This unequal distribution of investment further widens developmental gaps (Azim et al., 2022). North Kalimantan, despite its resource potential, remains highly unequal, as evidenced by its 2023 Williamson Index score of 0.78. This study aims to assess the impact of the labor force, investment realization, and government expenditure on regional inequality.

Tarakan City recorded the highest investment realization in the province, amounting to IDR 12.6 trillion. Government expenditure plays a vital role in promoting equitable development, often through central-to-local fund transfers. Under regional autonomy, such allocations focus on local needs, ideally reducing disparities. Effective management of these funds is essential for maximizing development impacts, especially in infrastructure, health, education, and social services. Malinau Regency recorded the highest government expenditure in 2023. Despite high investment inflows, especially in mining and agriculture, disparities remain significant.

Based on the background, the following research questions are formulated (1) Does the labor force influence regional inequality?; (2) Does investment realization affect regional inequality?; and (3) Does government expenditure influence regional inequality?

II. LITERATURE REVIEW

Economic Development

In general, various perspectives underpin regional economic development theories, each based on different assumptions. Development is understood as a multidimensional process encompassing fundamental changes in social structures, public attitudes, and institutions, alongside rapid economic growth, reduced income disparities, and poverty alleviation. Therefore, development should reflect comprehensive transformations within society or a complete adjustment of social systems, while considering the basic needs and desires of individuals and social groups, to achieve improved material and spiritual living conditions (Todaro & Smith, 2006). According to traditional neoclassical growth theory, output growth is influenced by three main factors: improvements in the quality and quantity of labor, capital accumulation, and technological innovation (Supartoyo et al., 2014). Mankiw, Romer, and Weil (MRW) modified the neoclassical growth model by incorporating human capital accumulation as a variable. Thus, the sources of economic growth include growth in capital, labor, and human capital. Sumitro Djojohadikusumo, as cited in Andrias et al. (2019), argued that economic growth is closely linked to increased production of goods and services in economic activities. However, economic development has a broader meaning, encompassing structural changes in the economic framework of society. Generally, development is accompanied by growth, but growth does not always indicate development. Initially, both typically progress simultaneously, and vice versa.

Regional Economic Theory

Regional economic theory is a branch of economics that studies the interactions of economic factors within a specific region. The primary focus of this theory is to understand how geographic location, resources, government policies, and social dynamics influence economic development across different regions. With this understanding, policymakers can formulate more effective strategies for sustainable and inclusive economic development. According to Supriadi (2021), economics is the study of the use of limited resources to meet unlimited human needs, in the form of goods and services. In Greek, the term "economy" derives from two words: "oikos," meaning household or human community, and "nomos," meaning rules or regulations. Janaranjana (2011) stated that regional economics encompasses various industrial potentials from different sectors that drive overall

economic growth. Economic growth is understood as a continuous process of change in the economic conditions of a region over a certain period. The term "region" refers to a specific area or space. The concept of regional economics emerged in the early 20th century and gained public interest in 1956.

Inequality

According to Sjafrizal (2008), the issue of interregional development inequality was first raised by Douglas C. North in his analysis of Neoclassical Growth Theory. This theory predicts a relationship between national economic development and interregional inequality, known as the Neoclassical Hypothesis. This hypothesis posits that at the early stages of development, regional inequality tends to increase until it peaks, after which continued development gradually reduces the inequality. Jhingan (2010) added that regional inequality is exacerbated in less developed countries due to a more dominant backwash effect compared to the spread effect. Capital movement can worsen these disparities, as increased demand in developed areas attracts investment, thereby boosting income and creating a sustainable investment cycle. Favorable investment conditions in development centers can result in a capital shortage in less developed regions. Interregional inequality is a common phenomenon in regional economic activity, caused by variations in natural resources and demographic conditions across areas. These differences affect the capacity of regions to drive development processes, leading to the classification of some regions as more developed (Developed Regions) and others as less developed (Underdeveloped Regions). This disparity impacts the welfare levels of people in different regions and has significant implications for development policies formulated by local governments (Sjafrizal, 2008).

Measure of Development Inequality between Regions Williamson Index

According to Sjafrizal (2008) the Williamson Index is a measuring tool used to measure regional inequality. The data required for this calculation is Gross Regional Domestic Product per capita. The first measure of inequality between regions was the Williamson Index, which was used in research by Jefrey G. Williamson in 1966. Unlike the Gini Ratio which is usually used to measure income distribution, the Williamson Index uses GDP per capita data as the basis for calculation. This is because this indicator focuses more on the level of development between regions, not on the level of welfare among community groups. Sjafrizal, (2008).

According to Syafrizal (1997), the criteria for development inequality based on the Williamson Index are as follows:

a. If the IW value is between 0.7 to 1, then development inequality is high.

- b. If the IW value is between 0.4 and 0.69, then development inequality is moderate.
- c. If the IW value is between 0 and 0.39, then development inequality is low.

Theil Index

Another index that is often used to measure development inequality between regions is the Theil Index. According to Kuncoro (2001), according to Kuncoro, the Theil Entropy concept of a distribution is basically the application of information theory to assess economic inequality and industrial concentration. The data required to calculate this index includes the Gross Regional Domestic Product per capita and the number of inhabitants in each region. If the value of the Theil Index is close to 1, this indicates a very high inequality, while a value close to 0 indicates a more even distribution. The Theil Index is used to measure the gross regional income inequality of the provinces. The Theil Index is able to measure inequality both individually within one region and between regions simultaneously, so that the analysis becomes more comprehensive. In addition, this index can also determine the contribution of each region to overall development inequality in the form of percentages, which has an important impact on policy-making.

Workforce

According to Mulyadi in Tobing et al., (2023), the labor force is part of the workforce that is active or trying to be active in the production of goods and services. Based on this definition, it can be concluded that the labor force includes the working-age population, namely those aged 15 years and above, both those who are working and those who are looking for work. The workforce includes individuals aged 15 years and older who in the past week have a job, both those who are working and those who are not working for some reason. It consists of two groups, namely the unemployed and those who work. Unemployed are people who are looking for a job, preparing for a business, not looking for a job because they feel it is impossible to get it, or who already have a job but have not started working. The measurement of labor force is carried out in units of soul.

Investment

Based on Law Number 25 of 2007 concerning Investment (Government Regulation of the Republic of Indonesia, 2007) what is meant by investment refers to various investment activities carried out by both domestic

and foreign investors to run a business in the territory of the Republic of Indonesia. This investment is measured in rupiah units. The term "investment" is a translation of the word "investment" in English. In Indonesian, "investment" is usually translated as "investment" or "investment". The word "investment" is more commonly used in the context of international relations, while "investment" is more commonly used in various laws and regulations. Nonetheless, these two terms have essentially the same meaning.

Government Spending

Government spending indicates the policies taken by the government. When governments decide to buy goods and services, those expenditures reflect the costs required to implement the policy. (Mangkoesoebroto in Azwar, 2006). According to Azwar (2016), government spending policy is one aspect of fiscal policy that reflects government intervention in the economy. With this policy, the government makes expenditures to get goods and services needed by the community through the process of procurement of goods and services. The role of procurement of goods/services by the government is very crucial in the implementation of the State Revenue and Expenditure Budget. Government expenditures listed in the State Revenue and Expenditure Budget are carried out through the procurement process of goods and services, which includes goods spending, capital spending, part social assistance spending, and grant spending. The allocation of goods expenditure is government expenditure for the procurement of non-investment goods and services that support government operational activities. This expenditure is expressed in rupiah units.

Relationships between Variables

The Relationship of Economic Development to the Workforce

As a driver in economic development, the labor force is needed in the production and contribution of goods and services. A qualified workforce will support economic development. To support the development process, a large number of workers are needed and have good quality. Residents who are actively working have an important role in producing goods and services efficiently. Arthus Okun (1926-1980) put forward a theory known as Okun's Law, which states that "the ratio of elasticity between actual potential output and changes in the amount of labor is threefold." This theory shows that there is a negative relationship between economic growth and unemployment rates, where the higher the unemployment rate, the lower the rate of economic growth and development. One of the causes of inequality between regions is the variation in demographic conditions, which include population growth rates, age structure, health, education levels, as well as employment conditions and work ethic of the community. These factors affect the productivity level of the region; Areas with good demographic conditions usually show higher productivity. In addition, the level of labor force participation also plays a role, where the more people who are actively working, the higher the productivity compared to areas with fewer workers. The difference in the number of workers between regions can increase development inequality. Equitable distribution of the labor force based on education categories is essential to overcome inequality. Improving the quality of education for the prospective workforce and developing the capacity of human resources can encourage more professional business management, which in turn can increase wages. Thus, it will attract highly educated workers to stay in rural areas.

The Relationship of Economic Development to Investment

Both the government and the private sector play a role in increasing investment to fund regional projects. This investment is tailored to sectors in need, so that it can accelerate development and economic growth. Investment or investment is one of the important elements in building the economy of a region. Increased investment can drive business sector growth and create jobs, which will ultimately stimulate the region's economic development. In addition, investment also contributes to increasing regional capacity to produce goods and services. One of the significant indicators in analyzing the economy of a region or country is its economic growth. This indicator reflects the level of output growth in the economy, which is related to economic activities that occur in a given period and generate income for the community. Economic activity involves the utilization of factors of production to produce goods and services, which also provides benefits to the owners of the factors of production. However, investment will not appear in an area without planning and support from the government. Various factors that influence investors' decisions in choosing an investment location include the availability of raw materials, proximity to the market, political and security conditions, and quality infrastructure and labor. Increased investment, both from within the country and abroad, will encourage labor absorption because the production process of goods and services increases. This allows workers to earn wages, thereby increasing their purchasing power. The greater the investment allocated to production activities, the more labor can be absorbed, which ultimately contributes to the equal distribution of per capita income (Sukirno, 1982).

The Relationship of Economic Development to Government Spending

The central government will distribute the regional budget to the local government, which will then be implemented by each district/city. The effective and targeted realization of the budget is expected to have a positive impact on economic development. The role of the government as reflected in government spending is a major factor in driving economic growth by increasing total demand. The greater the government's spending, the greater the impact on economic growth in a region. This expenditure can function as an economic stimulus through various programs or activities that aim to improve the efficiency of available resources, so that it can help reduce development inequality between regions.

Research Conceptual Framework

The conceptual framework of the research shows the relationship between various concepts related to the problem to be researched by the author. This framework is built based on scientific theories or concepts that are used as the basis for the research. Based on the background, problem formulation and literature review, it can be concluded that this study was conducted to analyze the influence, labor force, investment realization and realization of Government Expenditure on economic development inequality in North Kalimantan Province. In the conceptual framework, the influence between variables is described, namely 1 bound variable, namely the inequality of regional economic development in the Regency/City of North Kalimantan Province (Y), and 3 independent variables, namely the Number of Regency/City Labor Force Population in North Kalimantan Province (X1), Regency/City Investment in North Kalimantan Province (X2) and Total Realization of Regency/City Government Expenditure in North Kalimantan Province (X3).

Research Conceptual Framework



Research Hypothesis

- H1: The Labor Force has a negative and significant effect on the inequality of economic development in North Kalimantan Province
- H2: Investment has a negative and significant effect on economic development inequality in North Kalimantan Province
- H3: Regional Expenditure has a negative and significant effect on the inequality of economic development in North Kalimantan Province

III. RESEARCH METHOD

Operational Definition

1. Economic Development Inequality (Y)

Inequality Economic development was processed using the Williamson inequality index in 5 cities and districts in North Kalimantan province using data on the Gross Reginal Domestic Product per capita of districts/cities and the number of districts/cities in 2019-2023.

2. Workforce (X1)

The labor force is individuals aged 15 years and older who in the last week have a job, both those who are working and those who are not working temporarily for some reason. This group consists of two parts, namely the unemployed and the working population. Unemployed include those who are looking for work, who are preparing for a business, who are not looking for work because they feel there are no opportunities, and those who already have a job but have not started working and are not currently working. The labor force variable includes the number of people aged 15 years and above according to districts/cities working in North Kalimantan province in 2019-2023.

3. Investment Realization (X2)

The realization of investment consists of Domestic Investment and Foreign Investment which includes the primary sector (food crops, plantations, livestock, forestry, fisheries and mining), secondary sector (industrial products such as the food, wood, mineral and other industries industries) and the tertiary sector (service products such as electricity, gas, water, hotels, transportation and other services) in the districts/cities of North Kalimantan province in 2019-2023.

4. Realization of Government Expenditure (X3)

The realization of government expenditure includes various categories of expenditure, such as indirect expenditure which includes employee expenditure, interest, subsidies, grants, social assistance, profit sharing, financial assistance, and unexpected expenses. In addition, there is also direct expenditure consisting of employee expenditure, goods and services, and capital expenditure, including regional financing in districts/cities in North Kalimantan Province during the 2019-2023 period.

Analysis Method

Data analysis in this study uses panel data regression. According to Basuki & Prawoto, (2016), the data panel is a combination of time series data and cross-section data. Cross section data is data collected at one time against many individuals. Meanwhile, time series data is data collected from time to time on an individual. The selection of panel data is because in this study it uses time series data and cross section data. The use of time series data in this study is in a 5-year time period, from 2019-2023. Next Ini Regression equation model data panel, i.e. $Y_{it} = \alpha + \beta_1 X_{1it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}$

Where

- Yit : Inequality variable building economics
- α : Constant (intercept)
- β : The regression coefficient of each independent variable
- X1 : Variable Total population aDüsseldorf work
- X2 : Variable Investment Realization
- X3 : Variable Realization of Government Expenditure
- ε : Error term
- i : Company Data
- t : Time Period Data

IV. ANALYSIS & DISCUSSION

1. Panel Data Regression Model Selection

a. Chow Test

The Chow test is used to choose an approach between a Fixed Effect Model or a Pooled Effect Model. The following are the results of the chow test as shown in Table 1 below.

Table 1. Chow Test Results					
Effect Test	Statitistic	D.F.	Prob.		
Cross-section F	215864878273558400	(4,17)	0.0000		
Cross-section Chi Square	1479.744397	4	0.0000		
Source: Data processing results with Eviews 12.					

Based on the table of Chow test results, a probability value of P-value cross section F of 0.0000 was obtained which was smaller than 0.05. This shows that Hypothesis H0 is rejected and H1 is accepted, so the *Fixed Effect Model* model is considered more suitable for use.

b. Hausman Test

The Hausman test is used to compare random *effect models* and *fixed effect models*. The results of this test aim to determine which method is more appropriate to use. The following are the results of the Hausman test as shown in Table 2 below.

Table 2. Hausman Test Results			
Test Summary	Chi-Sq. Statistics	Chi-Sq. D.F.	Prob.
Period random	0.000000	3	1.0000
Source: Data processing results with Eviews 12.			

Based on the table of Hausman test results, a probability value of 1.0000 was obtained which was greater than 0.05. Therefore, the H1 hypothesis was rejected and H0 was accepted, so the Random Effect Model was considered more suitable for use.

c. Lagrange Multiplier Test

The Lagrange test is used to determine the most appropriate method between the common effect model and the random effect model. The following are the results of the multipler lagrange test shown in Table 3 below.

	Table 3. Lagrange Multipler Test Results				
		Cross-Section	Time	Both	
	Breusch-Pagan	20.33366 (0.0000)	0.826714 (0.3632)	21.16038 (0.0000)	
Source: Data processing results with Eviews 12.					

Based on the table of the results of the Lagrange Multiplier test, a Breusch-Pagan cross section value of 0.0000 was obtained which was smaller than 0.05. This shows that Hypothesis H0 is rejected and H1 is accepted, so that the Random Effect Model is considered more suitable for use. Based on the results of the Chow Test, Hausman Test and Lagrange Multipler Test, the best model in this study is the Random Effect Model.

2. Classical Assumption Test Results

Before analyzing the data, the data must first be examined through a classical assumption test. If problems are found in these assumptions, non-parametric statistical testing needs to be performed.

a. Multicollinearity Test

Multicollinearity is a linear correlation relationship between independent variables in a regression model. Multicollinearity testing was performed by measuring the correlation coefficient between independent variables. If the correlation value is less than 0.8, then it can be concluded that multicollinearity does not occur. On the other hand, if the correlation value is more than 0.8, it indicates an indication of multicollinearity. The following are the results of the multicollinearity test seen in Table 4 below.

Table 4. Multiconnearity rest Results				
	X1 (Workforce)	X2 (Investment Realization)	X3 (Realization of Government Expenditure)	
X1 (Workforce)	1.000000	0.365784	0.092610	
X2 (Investment Realization)	0.365784	1.000000	0.236330	
X3 (Realization of Government Expenditure)	0.092610	0.236330	1.000000	

Table 4. Multicollinearity Test Results

Source: Data processing results with Eviews 12.

From Table 4, the results of the Multicollinearity Test obtained a correlation of X1 and X2 of 0.365784 < 0.8, X1 and X3 of 0.092610 < 0.8, and X2 and X3 of 0.236330 < 0.8. So it can be concluded that it is free from multicollinearity or passes the multicollinearity test.

b. Heteroscedasticity test

The Heteroscedasticity test analyzes whether there is an inequality of variance from residual observations to other observations. The problem of heteroscedasticity can be carried out using the Glejser test. The following are the results of the heteroscedasticity test using the glaciation test as seen in Table 5 below.

Table 5. Heteroscedasticity Test Results

Variable	Prob.
X1 (Workforce)	1.0000
X2 (Investment Realization)	1.0000
X3 (Realization of Government Expenditure)	1.0000

Source: Data processing results with Eviews 12.

It can be seen from the Table of Heteroscedasticity Test Results above, X1, X2, and X3 p the probability > 0.05, then it is free from heteroscedasticity or passes the heteroscedasticity test.

2. Panel Data Regression Analysis

The analysis of panel data regression aims to test the influence of independent variables consisting of the Number of Regency/City Labor Force in North Kalimantan Province (X1), Regency/City Investment Realization in North Kalimantan Province (X2) and Total Regency/City Government Expenditure in North Kalimantan Province (X3). Table 5.6. The results of the Random Effect Model Analysis show the results of the panel data regression analysis used to analyze the t-test, the F test and the Determination Coefficient (R2) test. Random Effect Model as a regression estimation model assuming that the constant slope coefficient and intercept differ between individuals and between times. The following are the results of the regression test of the panel data as seen in Table 6 below.

Table 0. I aller Data Regression Results with Random Effect would					
Variable	Coefficient	Std. error	t-Statistic	Prob.	
С	7.47E-17	0.146180	5.11E-16	1.0000	
X1 (Workforce)	-0.689229	0.158306	-4.353788	0.0003	
X2 (Investment Realization)	0.473969	0.211297	2.243138	0.0358	
X3 (Realization of Government	-0.538391	0 202190	-2.662797	0.0146	
Expenditure)					

 Table 6. Panel Data Regression Results with Random Effect Model

Source: Data processing results with Eviews 12.

Based on the results of the influence test, it can be explained that the panel data regression hypothesis test was carried out as follows:

a. Analysis of the t test

The t-test is used to measure the influence of each independent variable, which includes the Total Population of the Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Investment in North Kalimantan Province (X2) and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3)

- The variable of the Number of Regency/City Labor Force in North Kalimantan Province (X1) has a t-statistical value of -4.353788 with a Prob value. (significance) of 0.0003 (<0.05) then it can be drawn that the variable Number of Population of Regency/City Labor Force in North Kalimantan Province (X1) has a significant effect on the variable of regional economic development inequality in Regencies/Cities in North Kalimantan Province (Y);
- 2) The realization of Regency/City Investment in North Kalimantan Province (X2) has a t-statistic value of 2.243138 with a Prob value. (significance) of 0.0358 (<0.05), then it can be drawn that the variable of the Realization of Investment in Regencies/Cities in North Kalimantan Province (X2) has a significant effect on the variable of regional economic development inequality in Regencies/Cities in North Kalimantan Province (Y);</p>
- 3) The variable of Total Realization of Regency/City Government Expenditure in North Kalimantan Province (X3) has a t-statistical value of -2.66797 with a Prob value. (significance) of 0.0146 (<0.05), then it can be drawn that the variable of the Realization of Total Expenditure of Regency/City Governments in North Kalimantan Province (X3) has a significant effect on the variable of regional economic development inequality in Regencies/Cities in North Kalimantan Province (Y).</p>
- b. Analysis of the F Test

The F-test aims to test the simultaneous influence of independent variables on dependent variables. Based on the results of the panel data regression table, a Statistical F value of 7.975197 with a Prob (F-statistic) of 0.000975 (<0.005). Thus, it can be concluded that independent variables, namely the Number of Regency/City Labor Force Population in North Kalimantan Province (X1), the Realization of Regency/City Investment in North Kalimantan Province (X2), and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3), together affect the dependent variable, namely the inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y).

c. Determination coefficient test analysis (R^2)

The value of the determination coefficient ranges from zero to one. The smaller the adjusted R2 value, the more limited the ability of independent variables, namely the Number of Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Investment in North Kalimantan Province (X2), and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3), in explaining the variation of dependent variables, namely the inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y). Conversely, the higher the adjusted R2 value, the more the model is able to explain the variation of these dependent variables. Based on the results of the panel data regression table, it is known that the Adjusted R Square value is 0.465783 or 46.57%. This shows that the contribution of Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Investment in North Kalimantan Province (X2), and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X2), and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3) together are able to explain the variation in regional economic development inequality in Regencies/Cities in North Kalimantan Province (Y) of 46.57%.

Regression Model

Y = 7.46513663703 - 0.689228880336X1 + 0.47396865071X2 - 0.538391430801X3The above regression equation can be explained as follows:

- a. The Constant Value is 7.46513663703, which means that if there is no change in the value of the Total Population of the Regency/City Labor Force in North Kalimantan Province (X1), the Realization of Regency/City Investment in North Kalimantan Province (X2) and the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3), then the variable inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y) will increase by 7.46513663703 percent Annually.
- b. The value of the regression coefficient of the variable Number of Regency/City Workforce in North Kalimantan Province (X1) is negative (-) of 0.689228880336. This states that if the variable of the Number of Regency/City Labor Force in North Kalimantan Province (X1) increases by Rp. 1 million population, then the inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y) will decrease by 0.689228880336. This shows that the increase in the number of variables in the number of Regency/City Labor Force in North Kalimantan Province (X1) which is balanced by high job opportunities can absorb the number of Regency/City Labor Force in North Kalimantan Province (X1) which is new in North Kalimantan. The absorption of the number of district/city labor force in North Kalimantan Province (X1) will increase people's income which will ultimately increase the purchasing power of the people so that the demand for goods and services increases, thereby encouraging producers to produce more goods and services. This will reduce the level of regional inequality between regions assuming that the variable is considered constant.
- c. The value of the regression coefficient of the Regency/City Investment Realization variable in North Kalimantan Province (X2) has a positive value (+) of 0.47396865071, This states that if the Regency/City Investment Realization variable in North Kalimantan Province (X2) increases by Rp. 1 billion, then the inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y) will increase by 0.47396865071. This shows that the increase and equitable distribution of Regency/City Investment Realization in North Kalimantan Province (X2) can increase the level of inequality between regions, assuming other variables remain constant.
- d. The value of the regression coefficient variable of the Realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3) is negative (-) of 0.538391430801, This states that if the variable of Total Realization of Regency/City Government Expenditure in North Kalimantan Province (X3) increases by Rp. 1 billion, then the inequality of regional economic development in Regencies/Cities in North Kalimantan Province (Y) will decrease by 0.538391430801. This shows that increasing and equalizing the realization of Total Regency/City Government Expenditure in North Kalimantan Province (X3) can reduce the level of inequality between regions, assuming other variables remain constant.

Discussion

1. The Influence of the Labor Force on Economic Development Inequality

The workforce is one of the important assets for a region in supporting economic development. The population involved in the work plays a role in creating productive goods and services. Based on the opinion of Todaro (2000:112), population growth and labor force are considered factors that drive economic growth. The greater the number of workers available, it will increase the level of production, and the high population growth also indicates that the domestic market is becoming wider. In this study, a labor force coefficient of -0.6892 was obtained, which indicates that any increase in the number of labor force will reduce the inequality rate by 6.89%. These findings are in line with Kilton's (2019) study on the Inequality Analysis of Economic Development in

Sumatra Province, which shows that the existence of the labor force has a significant influence on reducing inequality. Labor absorption can increase people's incomes, thereby increasing their purchasing power and boosting demand for goods and services. As a result, producers are encouraged to increase production, which ultimately helps to reduce the level of inequality in North Kalimantan Province. The equitable distribution of the labor force based on education categories is essential to control inequality. The wage gap between highly and low-educated workers in rural areas is smaller than in urban areas. This is suspected to have encouraged the highly educated workforce to move to urban areas, so that rural areas remain dominated by a low-educated workforce.

2. The Effect of Investment Realization on Economic Development Inequality

Investment, including the realization of investment, is an important factor in driving economic growth. This study shows that the variable of investment realization has a positive influence on the inequality of economic development in North Kalimantan Province. The coefficient of 0.474 shows that every one unit increase in investment realization will increase development inequality by 0.474. These findings are in line with the study by Dhyatmika and Atmanti (2013) on the Analysis of Development Inequality in Banten Province after expansion, which also found that the realization of investment contributes positively to the level of development inequality. The uneven distribution of investment realization in various regions is the main cause of development inequality. According to Jhingan (2010), capital displacement can exacerbate inequality between regions, where increased demand in more developed regions will encourage investment, which in turn increases incomes and creates a sustainable investment cycle. A more conducive investment environment in development centers can lead to capital shortages in less developed regions. The realization of investment tends to be concentrated in sectors that require large capital, so that the benefits are only felt by some people in certain areas. These findings show that the realization of investment is not the main factor that determines the level of development inequality in North Kalimantan Province.

3. The Effect of Total Government Expenditure Realization on Economic Development Inequality

Changes in the composition of the government budget and its level, both from tax and expenditure aspects, can affect the variables of aggregate demand, economic activity, resource distribution, and income distribution. Government spending is included in fiscal policy, which is the government's strategy in managing the economy through the determination of annual revenues and expenditures. Based on the results of the regression analysis, government expenditure shows a negative and significant influence of -0.5384 on development inequality in North Kalimantan Province. This means that every one unit increase in government spending will reduce the inequality rate by 0.5384. These findings indicate that government spending on development has a negative impact on development inequality in districts/cities in North Kalimantan. These results are in line with the study by Dhyatmika and Atmanti (2013) on the analysis of development inequality in Banten Province after expansion, which found that increased government spending on development was related to a decrease in the level of inequality in the region. The role of the government reflected through this expenditure is an important factor in driving economic growth through an increase in aggregate demand. Increasing government spending can have a positive impact on regional economic growth and function as an economic stimulus through programs or activities that increase resource productivity, thereby helping to reduce development inequality in a region. Optimizing and accelerating the absorption of government expenditure or expenditure budgets is expected to have a positive impact on economic growth in North Kalimantan Province. Government expenditure in the State Budget includes the total nominal which is divided into various categories of expenditure based on its function and allocation mechanism. With this expenditure, the government can design policies that aim to maximize funds to support economic development in the fields of education, health, social, and infrastructure. Adequate and affordable access, including in remote areas, can increase the production of goods and services.

CLOSING

Conclusion

- 1. In this study, the variable of the Number of Regency/City Labor Force in North Kalimantan Province has an effect on the variable of economic development inequality in Regency/City areas in North Kalimantan Province.
- 2. In this study, the variables of Regency/City Investment Realization in North Kalimantan Province have an effect on the variable of economic development inequality in Regency/City areas in North Kalimantan Province.
- 3. In this study, the variable of the Realization of Total Regency/City Government Expenditure in North Kalimantan Province affects the variable of economic development inequality in Regency/City areas in North Kalimantan Province.

- 4. The variable of the number of Regency/City Labor Force in North Kalimantan Province has a negative and significant influence on the variable of economic development inequality in Regency/City areas in North Kalimantan Province.
- 5. The variables of Regency/City Investment Realization in North Kalimantan Province have a positive and significant influence on the variable of economic development inequality in Regency/City areas in North Kalimantan Province.
- 6. The variable of the Realization of Total Expenditure of the Regency/City Government in North Kalimantan Province has a negative and significant effect on the variable of economic development inequality in the Regency/City area in North Kalimantan Province

Recommendation

- 1. For Local Governments
 - a. Accelerating infrastructure development in rural areas with a focus on road connectivity, transportation facilities, and energy access;
 - b. Increase the allocation of training budgets for workers in the regions;
- 2. For Academics and Researchers
 - a. Conduct follow-up research using primary data to obtain a more comprehensive picture.
 - b. Expand the scope of research by integrating social and environmental variables relevant to economic development inequality.
- 3. For the Private Sector
 - a. Invest in development in rural areas to support local economic activities.
 - b. Partnering with the government on corporate social responsibility (CSR) programs that focus on training in disadvantaged areas.

Limitation

- 1. The secondary data used may have limitations in terms of coverage, describing the factual conditions as a whole;
- 2. The analysis of this study is limited to the period 2019-2023, so the results may not reflect dynamic changes that occur outside of that period;
- 3. The quantitative approach used provides statistical insights but does not include in-depth qualitative analysis to understand local perspectives.

ACKNOLEDGEMENT

I am very grateful to Eni Rochaidah and Muhammad Awaluddin as supervising lecturers at Mulaarman University, Samarinda, East Kalimantan Province.

REFERENCES

- Andrias, M., Stmb, K., Smart, M., Rambe, J. P., & Labuhan, K. M. (n.d.). ANALYSIS OF ECONOMIC DEVELOPMENT INEQUALITY IN NORTH SUMATRA PROVINCE. http://stmb-multismart.ac.id/ejournal
- [2]. Anin Nabail Azim, H. S. (2022). Determinants of Inequality in Interprovincial Economic Development in Indonesia. JOURNAL OF ECONOMIC RESEARCH SCIENCES, 1-16.
- [3]. Azwar, A. (2016). The Role of Government Allocative through the Procurement of Goods/Services and Its Influence on the Indonesian Economy. *Economic and Financial Studies*, 20(2), 149–167. https://doi.org/10.31685/kek.v20i2.186
- [4]. Jhingan.2010, "Development Economics and Planning 13th Printing". Jakarta : Rajawali Press
- [5]. Mona Adriana. (2024). DETERMINATION OF INEQUALITY IN REGENCY/CITY AREAS OF CENTRAL JAVA PROVINCE (2010-2020). Journal of Economics Trisakti, 4(1), 805–818. https://doi.org/10.25105/jet.v4i1.17448
- [6]. Panggarti, U., Dwi Purnomo, S., Retnowati, D., & Adhitya, B. (2022). A comparative study of inter-island inequality in Indonesia. https://doi.org/10.29264/jfor.v24i2.10988
- [7]. Government Against Inequality in Regional Development in South Sulawesi Province, P., & Mansyur, K. (n.d.). Development Policy and Management Review (DPMR) Analysis of the Influence of Economic Growth, Investment and. https://journal.unhas.ac.id/index.php/DPMR/
- [8]. Government Regulations of the Republic of Indonesia. (2004). Government Regulation of the Republic of Indonesia concerning Roads (Law Number 38 Article 1 Paragraph 1 of 2004). Law of the Republic of Indonesia Number 38, 1(1), 3.
- [9]. North Kalimantan Province in 2024. North Kalimantan Central Statistics Agency.
- [10]. North Kalimantan Province in 2023 figures. North Kalimantan Central Statistics Agency.
- [11]. North Kalimantan Province in 2022 figures. North Kalimantan Central Statistics Agency.
- [12]. North Kalimantan Province in 2021 figures. North Kalimantan Central Statistics Agency.
- [13]. North Kalimantan Province in 2020 figures. North Kalimantan Central Statistics Agency.
- [14]. North Kalimantan Province in 2019 figures. North Kalimantan Central Statistics Agency.
- [15]. Riyadi, R., & Ghuzini, D. (2022). Inequality in education and income and its influence on economic growth in disadvantaged, frontier and outermost (3T) regions. Indonesian Journal of Population, 16(2), 139. https://doi.org/10.14203/jki.v16i2.593
- [16]. Roy Kristanto Lumban Tobing; Nathaline Br Tambunan; Darwin Sinaga; Inda Serfina Tarigan and Sophia Amanda. (2023). Analysis of the Influence of Human Capital, Labor Force, and Education on the Poor of North Sumatra in 2006-2022. Journal of Socio-Economic Management (Dynamics), 3(2), 16–28.
- [17]. Sjafrizal, 2008. Regional Economics, Theory and Applications. Baduose Media, First Printing. Field.

- Supartoyo, Y. H., Tatuh, J., & Sendouw, R. H. E. (2014). The Economic Growth and the Regional Characteristics : The Case of [18]. Indonesia. Bulletin of Monetary and Banking Economics, 16(1), 3-18. https://doi.org/10.21098/bemp.v16i1.435
- [19]. Tahun, R. I. (2007). Law of the Republic of Indonesia no.25 of 2004. National Development Planning System.
- [20]. Todaro P. Michael. 2000. Third World Economic Development Volume I, Jakarta Publisher : Erlangga
- [21]. [22]. Constitution of the Republic of Indonesia. (1945). Article 1 Paragraph 3. 4(1), 1-12.
- Wahyu Dhyatmika, K., & Dwi Atmanti, H. (2013). ANALYSIS OF THE INEQUALITY OF DEVELOPMENT OF BANTEN PROVINCE AFTER EXPANSION. DIPONEGORO JOURNAL OF ECONOMICS, 2(2), 1–8. http://ejournals1.undip.ac.id/index.php/jme
- [23]. Zulfaridatul, S. M., Greece, A., Nur, A., & Lambung Mangkurat University. (2018). The Influence of Budget, Infrastructure and Economic Growth on. Journal of Economic Studies, 9(1), 63-75.