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Analysis of Inequality Structure and Its Correlation with Government Expenditure : A Study of Western Indonesia

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Abstract. *Efforts to reduce regional inequality are aimed at Accelerate equitable development. Implementing a healthy fiscal policy through government spending is a form of effort to reduce this inequality. Government spending can provide intervention in regional policies to boost the economy through regional government spending and revenue. This study examines the development of inter -regional inequality mapping through the Class typology method , measuring inequality with the Williamson index , and testing multiple linear regression to analyze regional government spending on inequality in the Western Region of Indonesia in 2019-2022. The results show that the average regional inequality index is at moderate inequalit, namely 0.465. In addition, the regression results show that efforts to reduce regional inequality aimed at Accelerate equitable development through fiscal policy trend to be ineffective. The contribution of government spending has not been significant impact on reduce inequality. Therefore, evaluation and improvement in government spending policies are needed so that they can be more effective in achieving the goal of alleviating regional inequality in the western region of Indonesia.*

Keywords: *Inequality Region, Government Spending , Western Region of Indonesia*

1. INTRODUCTION

In general, Indonesia has experienced an increase in economic growth, especially after the COVID-19 pandemic (Nopiah et al., 2023; Panggarti et al., 2022). However, several regions still show quite high inequality rates (Martinez-Vazquez et al., 2017). This is because economic growth rates cannot yet be an indicator of economic welfare in a region, so that strategies for alleviating poverty cannot be based solely on economic growth (Martinez-Vazquez et al., 2017; Anderson et al., 2018a). Regional inequality refers to differences in the level of development and welfare between regions in a country (Hidayat, 2014). The existence of uneven income distribution can lead to inequality between regions (Hidayadi & Niam, 2022; Islami & SBM, 2018; Nur Aini et al., 2016; Sri Hartati, 2022).

Various aspects that drive the emergence of inequality include income levels, access to public services, and the quality of human resources and skilled labor (Pratiwi & Kuncoro, 2016; Hasan et al., 2020). In addition, adequate regional infrastructure (Sukwika, 2018)and the region's geographical location (Panggarti et al., 2022; Rosmeli & Nurhayani, 2014)also trigger regional inequality . Regions that tend to be close to urban areas and real economic centers tend to have relatively low regional inequality, but regions that are far from urban areas and real economic centers tend to experience relatively high regional inequality (Panggarti et al., 2022).

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In addition, the allocation of development funds from the central government to regional governments is an important factor in reducing inequality between regions (Islami & SBM, 2018; Panggarti et al., 2022). Allocation of government spending funds is an instrument of fiscal policy so that efficiency and effectiveness of use will have an impact on economic development in a region to accelerate economic growth and reduce inequality (Alamanda, 2020; Mardhian et al., 2023; Nasution, 2020; Panggarti et al., 2022; Rambe, 2020). The composition of the government spending budget drives aggregate demand, resource distribution patterns, and income distribution (Nasution, 2020). Regional government spending can be an injection of the regional economy through the provision and programs that encourage resource productivity and reduce regional inequality (Panggarti et al., 2022).

However, government spending is considered not to have been implemented optimally to reduce poverty and inequality. The increase in government spending each year is not accompanied by a decrease in inequality even though economic growth has increased. The condition of income inequality increased by 0.787 percent from a Gini ratio of 0.381 in 2021 to 0.384 in 2022. This is because the allocation of government spending has not been on target so it has not been effective in reducing inequality (Nasution, 2020). Government spending tends to be allocated for routine funds that do not have a significant economic impact, such as employee spending and spending on goods that are relatively not yet needed, while capital spending has not yet dominated (Nasution, 2020). In addition, the fiscal space for government spending is still *mandatory spending*).

Government spending can affect regional inequality depending on the type of spending considered by the local government (Anderson et al., 2018a). The impact of government spending tends to differ from region to region on reducing inequality depending on the sector of spending and how well it is targeted and funded. In addition, the impact of government spending may vary depending on the time period of the analysis. This is because some types of government spending can have a direct impact in the short term and other spending has an indirect impact or requires a medium term.

The Western Region of Indonesia is a region that still dominates the structure of the Indonesian economy with a contribution to the Gross Regional Domestic Product (GRDP) of around 80 percent. However, the acceleration and contribution of economic growth in the Western Region of Indonesia are not followed by low inequality. The Western Region of Indonesia still has a higher level of inequality, namely with an average inequality index higher than the Eastern Region of Indonesia (Rosmeli & Nurhayani, 2014). Therefore, it is important

to examine the conditions of regional inequality in the Western Region of Indonesia (KBI) and its relationship to government spending.

In addition, although there have been many studies examining the relationship between government spending and regional inequality, there is still a literature gap between studies that need to be evaluated. Previous studies tend to use a *cross-sectional approach.* or *time-series* (Alamanda, 2020; Rahman et al., 2023) so this study uses a type of panel data that is still rarely done. The use of panel data allows for controlling heterogeneity between regions and capturing the dynamics of change over time (Pratiwi & Kuncoro, 2016). This study is expected to be an evaluation material for the government in allocating resources through the management of fiscal policy instruments that are oriented towards optimal regional development equality.

2. LITERATURE REVIEW

Regional Inequality and Its Measurement

Theoretically, regional inequality is based on the neo-classical growth theory of Douglas C. North (Nasution, 2020). This theory predicts the relationship between the level of national economic development of a country and the inequality of development between regions. The inequality of development between regions tends to increase at the beginning of a country's development process. At a certain point, inequality reaches a peak as the development process progresses. Gradually, inequality between regions will decrease. This shows that the curve of inequality of development between regions is in the form of an inverted U - *Shape . curve)* (Sjafrizal , 2014).

Inequality is a problem of national economic development that has differences and gaps between each member of society in economic activities between one region/area and another region/area (Mardhian et al., 2023). Inequality can be caused by several factors including differences in natural resource potential and differences in demographic conditions in each region so that the ability of a region to drive the development process will also be different (Hidayadi & Niam, 2022). Regional inequality can be calculated and represented by an index Williamson .

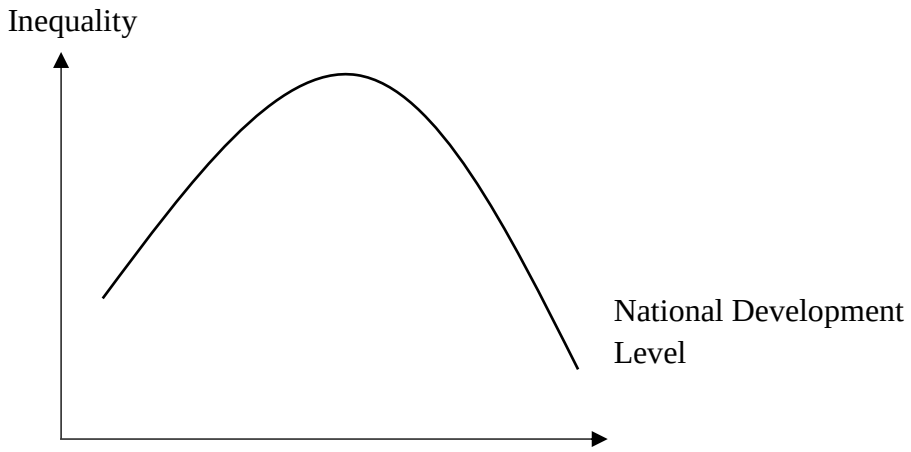

Figure 1. Kuznets Curve - Development Inequality

Williamson's measurement predicts the truth of the Neo-classical growth theory by measuring the inequality of development between regions. Measuring the regional inequality indicator with the Williamson index will obtain an index between 0 and 1. If the value approaches 0, it indicates that the inequality (disparity) between regions is getting smaller or that development equality between regions has been achieved. However, conversely, if the value approaches 1, the inequality (disparity) between regions is getting bigger or development equality between regions has not been achieved.

Literature Study

The structure of regional inequality and its relationship to government spending is relatively complex and varies due to many other factors. Government spending can affect regional inequality depending on the type of spending considered by the local government (Anderson et al., 2018a). Several studies related to government spending and poverty and inequality have mixed findings.

The results of the study of (Anderson et al., 2018a)and (Lee & Rogers, 2019)on the influence of government spending on income poverty and regional inequality found that fiscal policy plays a more limited (Lustig & Higgins, 2014)redistributive role in developing countries compared to OECD countries. Government spending tends not to have a significant effect on poverty alleviation. The study found that government spending on transfers and subsidies in developing countries has not reached poor households. This is because the recipients of assistance are not on target (imperfect). In Indonesia, more than 80 percent of the benefits of subsidized fuel oil (BBM) are still enjoyed by upper middle-class households (Lustig & Higgins, 2014). This also occurs in the management of government spending on health and education (Anderson et al., 2018a; Davoodi et al., 2010).

However, other studies show that government spending affects regional development inequality. The study (Azis et al., 2023)found that government spending on education and health affects reducing regional development inequality. However, education and health spending have an indirect impact by adding a moderating variable of the human development index. Meanwhile, infrastructure spending does not affect regional development inequality. The study (Gulo et al., 2017)found that direct spending affects regional inequality in North Sumatra and Bengkulu Provinces, while it does not affect Jambi Province. The study (Kwon & Kim, 2014)found that health spending has a negative and significant effect on poverty alleviation. The study (Anderson et al., 2018b)found that local government consumption spending affects income poverty, but its nature varies according to the sample and specifications used.

Fiscal decentralization has a negative and significant impact on poverty rates nationally, both rural and urban (Wibowo & Oktivalerina, 2022). This can be realized through strengthening regional financial capacity based on pro-poor, allocation of Transfer Funds to Regions that are *specific grant*, improving the quality of spending and regional financial governance and better performance monitoring-evaluation mechanisms. The study (Wardhana et al., 2013)also found that the General Allocation Fund (DAU), Special Allocation Fund (DAK), Road infrastructure, *hold rules harmless* and population significantly affects regional inequality. Inequality in poor areas is more even than in prosperous areas that use the median economic growth or gross regional domestic product (GRDP) per capita.

The study was conducted by(Erani & Maskie, 2015) found that government spending has a negative and significant effect on regional inequality in Indonesia. This means that increasing government spending can reduce inequality between regions. The study(Benos & Karagiannis, 2016) analyzed the effect of government spending composition on income inequality in European countries during the period 1995-2008. The results of the study show that government spending on education and social protection can reduce income inequality while spending on health and infrastructure has a smaller impact. This finding emphasizes the importance of targeted government spending allocation to address inequality issues.

The study (Kyriacou et al., 2017)examines the relationship between regional inequality, fiscal decentralization, and governance quality in European Union countries from 1996 to 2007. The results show that fiscal decentralization can reduce regional inequality, but its effect depends on governance quality. In countries with good governance quality, fiscal decentralization is more effective in reducing regional inequality. The study (Tselios et al., 2012)examines the factors that influence regional inequality in Europe using panel data from

1995 to 2000. The study finds that government spending on education and public investment can reduce regional inequality. However, this effect varies across countries depending on the level of economic development and regional characteristics.

3. METHODS

This study uses quantitative and explanatory descriptive. Quantitative research is a study that provides numerical data and is processed using statistical methods (Gujarati, 2015). Explanatory research is a research approach used to justify the level of depth of research data analysis so that an appropriate explanation is obtained. The sources of research data used are secondary data, namely publication data from the Central Statistics Agency and the annual publication of the Directorate General of Balance of the Ministry of Finance of the Republic of Indonesia Finance (DJPK KEMENKEU RI) for the 2019-2022 period. The type of research used is panel data. The *cross-section data analysis unit* used in this study covers the scope of the Western Indonesia Region (KBI), namely Sumatra Island, Java Island, and Kalimantan Island with details of the distribution per city district from 2019-2022. Based on this, the operational definition of the variables used in the study include:

a. The growth rate of GRDP, namely the gross regional domestic product based on current prices in a region in rupiah units;
b. Per capita income is the gross regional domestic product per population of a region in rupiah per capita;
c. Population is the total population of all people domiciled in a certain area for 1 year or more to settle in a single person;
d. Government spending is spending allocated by the central government to regional governments to build the regional economy in rupiah units.

The analysis methods used consist of two (2), namely the Williamson index method and the linear regression method. The first method is the calculation of the Williamson index, which is a measurement method to determine the inequality of a region based on the index value obtained and categorized based on the standard value of the Williamson index inequality. The Williamson index is calculated with basic data used in the form of gross domestic regional growth and population which will then obtain the index number. The calculation of the Williamson Index is written as follows (Ferreira et al., 2022; Nasution, 2020; Panggarti et al., 2022):

$$IW = \frac{\sqrt{\sum(Yi-Y)^2.fi/n}}{Y} \quad \text{.....(1)}$$

With the caption:

Yi = Gross regional domestic product (GRDP per capita of province i

Y = Gross regional domestic product (GRDP) per capita national average

fi = population of province i

n = national population

With the Williamson index number indicator, the value obtained is 0 to 1. If the index value approaches 0, then the inequality between regions is getting lower, conversely, if the index value approaches 1, then the regional inequality will be getting higher. The Williamson index number is interpreted as follows:

a. If the Williamson index <0.35 then the region is said to have low regional inequality.
b. If the Williamson index is 0.35 < IW < 0.5 then the region is said to have moderate regional inequality.
c. If the Williamson index > 0.35 then the region is said to have high regional inequality.

Furthermore, a linear regression method is used (Gujarati, 2015; Jeffrey M. Wooldridge, 2013)to analyze the influence and correlation of government spending on inequality in the Western Region of Indonesia. The dependent variable used is the result of the Williamson index per province and the independent variable (*interest)* is government spending per province in the Western Region of Indonesia during the period 2019-2022. The research regression model is as follows:

$Y_{it} = \beta_{0it} + \beta_1$ .....(2)

$IW_{it} = \beta_{0it} + \beta_1 BP_{1it} + \mu_{it}$ (without control variables) .....(3)

$IW_{it} = \beta_{0it} + \beta_1 BP_{1it} + \beta_n Z_{nit} + \mu_{it}$ (with control variables) .....(4)

With the caption:

IW is the Williamson index

BP is Government spending

Z is the control variable (human development index, poverty rate, investment and economic growth)

μ is *the error term*

4. RESULTS

Figure 2 illustrates the Percentage of Economic Growth and Poverty in 2022 in the Western Region of Indonesia. It can be seen in Figure 12 that economic growth and poverty in the Western Region of Indonesia in 2022 experienced a fluctuating trend. The province with the highest percentage of economic growth in the Western Region of Indonesia is Central Kalimantan with a percentage of 6.45%, while the lowest is Lampung Province with a percentage of 4.28%. In terms of the percentage of poverty levels, the area with the highest poverty rate in the Western Region of Indonesia is Aceh Province at 14.75%. Meanwhile, the areas with low poverty rates are the provinces of the Bangka Belitung Islands, DKI Jakarta, and South Kalimantan which have the same percentage figure of 4.61%.

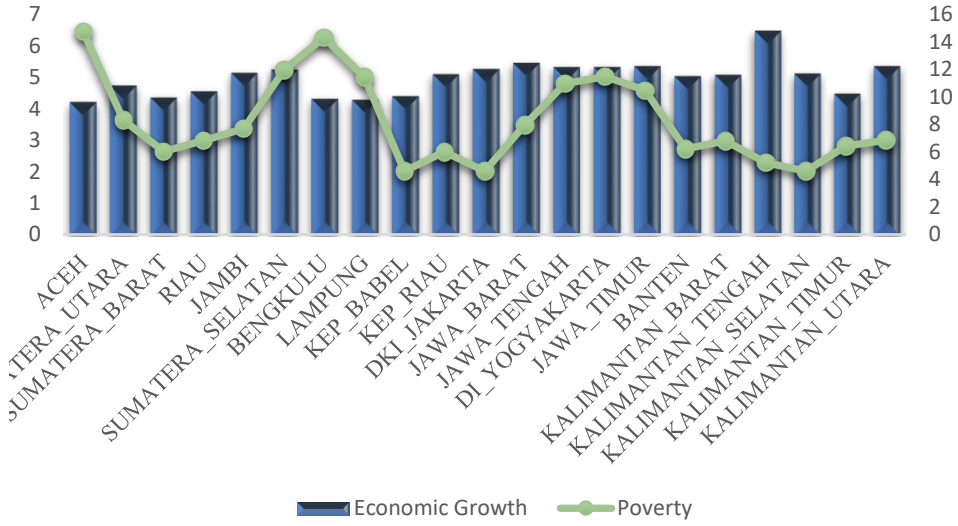

Figure 2. Percentage of Economic Growth and Poverty in 2022 in the Western Region of Indonesia

Source: data processed by the author, 2024

Inequality in the Western Region of Indonesia is calculated using the Williamson index in 2021-2022. Table 1 shows that high regional inequality is in the provinces of North Sumatra, South Sumatra, West Java, Central Java, Banten, East Java, and South Kalimantan. The provinces of Aceh, Jambi, Bengkulu, Riau Islands, Jakarta, Yogyakarta, and East Kalimantan are in the category with moderate regional inequality. Meanwhile, low regional inequality is in West Sumatra, Riau, Lampung, Bangka Belitung Islands, West Kalimantan, Central Kalimantan, and North Kalimantan.

Table 1. Regional Inequality in Western Indonesia by Province in 2021-2022 based on the Williamson Index

Province	Williamson Index		
	2021	2022	Classification of Regional Inequality
Aceh	0.41491378	0.46893133	Medium
North Sumatra	0.55646841	0.56032198	High
West Sumatra	0.30521415	0.30757079	Low
Riau	0.28348959	0.27469036	Low
Jambi	0.47380648	0.453898	Medium
South Sumatra	0.7381671	0.74350146	High
Bengkulu	0.40532854	0.41568727	Medium
Lampung	0.23793655	0.25290672	Low
Bangka Belitung Islands	0.18617366	0.17922543	Low
Riau Islands	0.43043951	0.41231083	Medium
Jakarta	0.48350718	0.48234794	Medium
West Java	0.86550724	0.86673952	High
Central Java	0.65376446	0.78298164	High
Yogyakarta	0.47135982	0.47000449	Medium
East Java	0.98204606	0.99394633	High
Banten	0.63423101	0.63283976	High
West Kalimantan	0.2787347	0.2808887	Low
Central Kalimantan	0.21799375	0.22109645	Low
South Kalimantan	0.43386878	0.53430556	High
East Kalimantan	0.45091298	0.44721901	Medium
North Kalimantan	0.16972337	0.1664305	Low

Williamson index (IW) indicators are IW < 0.35 “Low regional inequality”; 0.35 < IW < 0.5 “Moderate regional inequality”; IW > 0.5 “High regional inequality.

Source: data processed by the author, 2024

Figure 3 interprets similar results to table 1 in the form of a map distribution visualization . The distribution of blue shading indicates areas that have a classification of moderate regional inequality. The classification of areas with high inequality is visualized with orange shading and the dark gray shading area is low regional inequality. While the light gray shading is an *outlier area.* or areas that are not used as units of analysis in research, namely the Eastern Indonesia Region.

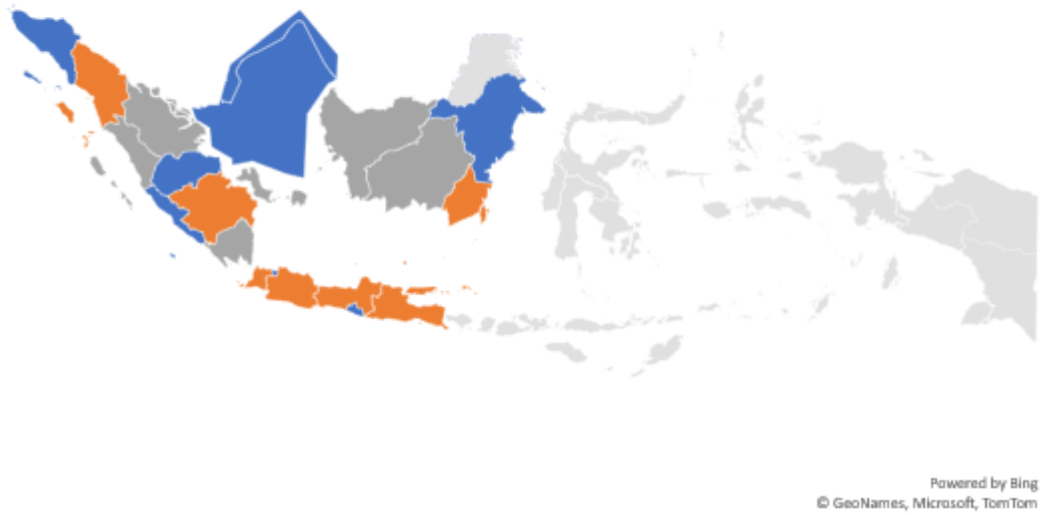

Figure 5.14 Classification of regional inequality based on the 2022 Williamson index in the Western Region of Indonesia

The factors that are suspected of influencing regional inequality in the Western Region of Indonesia in 2018-2022 are shown in Table 2.

Table 2. Statistical description of research data

Variables	Mean	Std. Deviation	Min	Max
Williamson Index	0.465	0.214	0.147	0.994
Protection Social Spending	5.52e+11	5.49e+11	7.16e+10	3.90e+12
Education Spending	1.23e+13	1.14e+13	1.57e+12	4.54e+13
Economy Spending	3.77e+12	3.83e+12	4.56e+11	2.19e+13
Health Spending	6.37e+12	5.82e+12	9.68e+11	2.54e+13
Public Services Spending	1.31e+13	1.14e+13	2.49e+12	4.58e+13
Housing and Public Facilities Spending	3.60e+12	3.13e+12	8.59e+10	1.33e+13
Tourist Spending	2.32e+11	3.61e+11	2.50e+10	3.37e+12
Dana Alokasi Umum Fisik	2.45e+11	1.36e+11	0	8.15e+11
Dana Alokasi Umum non Fisik	2.39e+12	4.06e+12	9.30e+10	3.61e+13
Investment	18131.31	18722.87	970	89223.6
Economic growth	3.377	2,790	-3.8	6.91
Total Population	1.08e+07	1.34e+07	682783	4.99e+07
Total Observation		105		

Source: data processed by the author, 2024

From the table, it can be seen that the average Williamson Index value is at 0.465, which means that the average Western Indonesia Region is in the moderate regional inequality category. The lowest regional inequality with an index value of 0.147. The highest regional inequality with an index value of 0.994. The average government spending consists of social protection spending of 5.5 trillion , education spending of 1.2 trillion , economic spending of 3.77 trillion , health spending of 6.37 trillion , public service spending of 1.3 trillion , housing and public facilities spending of 3.6 trillion and tourism spending of 2.32 trillion . While the average physical DAK is 2.45 trillion and for non-physical DAK the average is 2.39 trillion .

Table 3. Panel Data Regression Results

Variables	Fixed Effect	Random Effect
	[1]	[2]
Variables *Interest:* Spending Government		
Economy Spending	**7.31e-15*** (218e-15)**	**6.52e-15*** (2.30e-15)**
Health Spending	8.54e-16 (5.16e-15)	329e-15 (5.15e-15)
Education Spending	3.37e-16 (2.23e-18)	-9.78e-16 (2.25e-15)
Protection Social Spending	-2.24e-14 (1.37e-14)	-2.00e-14 (1.44e-14)
Public Services Spending	-1.44e-15 (2.06e-15)	-7.56e-16 (2.19e-15)
Housing & Public Facilities Spending	3.64e-15 (2.80e-15)	3.62e-15 (2.96e-15)
Tourist Spending	3.64e-15 (1.04e-14)	2.55e-15 (1.11e-14)
Variables Control		
Dana Alokasi Umum Fisik	-2.29e-17 (6.33e-14)	-2.86e-14 (629e-14)
Dana Alokasi Umum non Fisik	-3.36e-16 (9.07e-16)	-2.71e-16 (9.56e-16)
Investment	**-2.51e-06*** 5.74e-07**	**-2.17e-06*** (5.75e-07)**
Economic growth	-0.0014204 (0.0011977)	-0.0012914 (0.0012767)
Total Population	**2.06e-08** (9.64e-09)**	**1.41e-08*** (2.42e-09)**
F-Statistic	**0.0031*** **	-
Total observations	105	105
Total panel groups	21	21

Description: the dependent variable is the Williamson index as an indicator of regional inequality. Significance levels: 0.01 (1%)***; 0.05 (5%)**; and 0.1 (10%)*, estimation using robustness test . Source: data processed by the author, 2024

The highest government spending is spending on education and public services. Macroeconomic indicators in this study are investment, economic growth and population. The average economic growth in the Western Region of Indonesia is 3,377 percent with the lowest economic growth of -3.8 percent and the highest of 6.91 percent. The average investment is 18131.31 billion rupiah and the average population reaches 1.08 million people.

Table 3 shows the results of the research data regression using the panel regression method with *fixed effect* and *random effect*. The results show that government spending is mostly said to be ineffective in contributing to reducing regional inequality in Indonesia, especially in the Western Region of Indonesia. Based on the regression results, it was found that economic spending has a positive and significant relationship. This indicates that the greater the economic spending that is spent, the greater the regional inequality in the Western Region of Indonesia. Macroeconomic variables that affect regional inequality are investment and population. Investment has a negative relationship, meaning that the higher the investment, the lower the regional inequality. However, a high population results in greater regional inequality.

Next, table 4 shows the results of panel data regression per region, namely Sumatra Island and Non-Sumatra. This is done because there is an estimation of geographical factors that will also affect the estimation. Model [1] shows similar results to Table 5.3 by removing DKI Jakarta as an *outlier variable unit*. Model [2] shows the results of the regression with the analysis unit of Sumatra Island, the results show that Health spending contributes well to reducing regional inequality. The results show that an increase in Health spending by 1 percent will reduce regional inequality by 0.25 percent. However, it is different from Education spending. The results show that when Education spending increases by 1 percent, it will increase regional inequality by 2.21 percent. While the regression results for areas outside Sumatra Island do not have any independent variables that have a significant effect on regional inequality.

Table 4. Panel Data Regression Results per Region

Variables	Outliers: Jakarta	Sumatra Island	Outside Sumatra Island
	[1]	[2]	[3]
Variables *Interest:* Spending Government			
Economy Spending	**0.0341677** (0.0175738)**	**0.0543015*** (0.0195333)**	-0.0197565 (0.0298084)
Health Spending	- 0.0704901 (0.0563133)	**-0.2525376*** (0.0702671)**	0.01297236 (0.0801465)
Education Spending	0.0313053 (0.0549125)	**2.2110018*** (0.0677614)**	-0.1193913 (0.1197876)

Protection Social Spending	0.0107674 (0.024704)	-0.02499 (0.0340111)	0.0351043 (0.0517765)
Public Services Spending	-0.0097949 (0.0445654)	0.0307636 (0.0498675)	-0.0330317 (0.0865762)
Housing & Public Facilities Spending	0.0045263 (0.0116302)	0.0083148 (0.0123115)	-0.0264269 (0.0261349)
Tourist Spending	0.0071739 (0.0120278)	-0.0097776 (0.0155433)	0.0249952 (0.0220808)
Variables Control			
Dana Alokasi Umum Fisik	-0.0078472 (0.0180018)	-0.0357517 (0.0242062)	-0.0302938 (0.0287412)
Dana Alokasi Umum non Fisik	-0.008179 (0.012044)	-0.0044017 (0.0108614)	-0.0358459 (0.0287412)
Investment	**-1.36e-06**** **(6.74e-07)**	**-2.96e-06***** **9.55e-07**	-6.11e-07 (7.80e-07)
Economic growth	**0.0032243*** **(0.0018287)**	**-0.0064766***** **(0.002198)**	0.0005562 (0.0026431)
Amount Resident	2.2129232 (1.59247)	-0.632822 0.1949178	0.2789773 (0.3013185)
F-Statistic	**0.0000*****	**0.0004*****	0.2590
Total observations	95	50	29
Total panel groups	19	10	6

Description: The dependent variable is the Williamson index as an indicator of regional inequality. The independent variable is in logarithms. Significance levels: 0.01 (1%)***; 0.05 (5%)**; and 0.1 (10%)*, fixed estimates effect model using robustness test

Source: data processed by the author, 2024

Based on table 5, total government spending and total special allocation funds do not have a significant effect on regional inequality with *fixed estimates. effect* . However, total government spending has a significant and positive effect on regional inequality with *random estimates. effecti* . This means that the greater the total government spending, the greater the regional inequality in the Western Region of Indonesia. This needs to be studied how the total government spending increases inequality and/or whether there is a measurement error or bias selection in data analysis.

Table 5. Regression Results

Variables	**Fixed Effect**	**Random Effect**
	[1]	**[2]**
Total Spending Government	9.78e-17 (2.16e-15)	**3.371e-15**** **(1.72e-15)**
Total Allocation Fund Special (Physical + Non- Physical)	-4.53e-16 (9.38e-16)	-2.71e-16 (9.91e-16)
F-Statistic	0.8896	-
Total observations	105	105
Total panel groups	21	21

Description: The dependent variable is the Williamson index as an indicator of regional inequality. Significance levels: 0.01 (1%)***; 0.05 (5%)**; and 0.1 (10%)*, estimation using robustness test

Source: data processed by the author, 2024

5. DISCUSSION

Based on the results of the study, it was found that government spending has not had a significant impact on reducing regional inequality. Although government spending has been carried out, inequality between regions remains high, with several provinces still categorized as significant inequality. This is reinforced by a study from (Rosmeli & Nurhayani, 2014)which shows that the Western Region of Indonesia has a higher level of inequality compared to the eastern region, with an average index of 0.83 for the Western Region of Indonesia and 0.45 for the Eastern Region of Indonesia. The study (Izzati & Firmansyah, 2023) noted that efforts to increase the effectiveness of spending, the results obtained are not always consistent in reducing inequality. Meanwhile, the study (Yasni & Yulianto, 2020) emphasized that government spending policies should focus more on the form of the right policy, not just on the amount of spending issued.

This shows that even though government spending has been done, without the right and targeted policies, the results will not be significant in reducing regional inequality. The study (Astuti, 2022) also shows that central government spending is not always in synergy with regional spending, which can hinder the effectiveness of spending in achieving equitable development goals. Overall, although government spending has been done to reduce regional inequality, the results of the study show that its influence is still low and insignificant. Therefore, evaluation and improvement of government spending policies are needed so that they can be more effective in achieving the goal of eradicating regional inequality in the Western Region of Indonesia.

The policy implications of the research results showing that government spending is ineffective and insignificant in alleviating regional inequality in the Western Region of Indonesia are very important to note. First, a comprehensive evaluation of the implementation of government spending is needed, with a focus on the effectiveness and efficiency of budget allocation. The study (Santi & Iskandar, 2021) emphasizes the importance of fiscal decentralization policies that can contribute to reducing inequality, so the government needs to strengthen the implementation of this policy by considering the characteristics and specific needs of each region. Second, strengthening the accountability and transparency system in

budget management is also crucial. The study (Yasni & Yulianto, 2020) shows that the right form of policy is more important than just the amount of spending issued.

Therefore, the government must ensure that all expenditure is directed to programs that have a direct impact on reducing inequality, such as infrastructure development and improving the quality of education and health in disadvantaged areas. Third, the development of an accurate and comprehensive database is also needed to support better analysis and planning. Studies from (Astuti, 2022) show that central government spending can be a stimulus for regional spending, so that strengthening cooperation between levels of government will help achieve more equitable and sustainable development goals.

Macroeconomic factors, namely investment, show significant results on regional inequality. This indicates that investment has a significant role in reducing regional inequality in Indonesia. In the context of economic development, proper investment allocation can encourage more equitable growth in various regions, thereby reducing disparities between more advanced and less developed regions. The results of the study are in line with studies (Cholily, 2024) that found that regional investment allocation patterns in Indonesia greatly affect economic growth and development mapping between regions.

Investments focused on less developed areas can improve people's quality of life and reduce inequality. Studies (Kurnianingsih et al., 2023) emphasize that increased investment is closely related to economic growth, which in turn can increase household consumption. Optimizing investment in various sectors, especially in less developed areas, can create jobs and increase people's incomes, thereby reducing inequality. Foreign direct investment in Indonesia serves as a driving force for development, which is essential to accelerate economic growth in developing countries (Mainita & Sholeh, 2019. Another study found that investment had a significant negative effect on regional development inequality in West Papua (Putri et al., 2016). This suggests that by increasing investment in certain areas, inequality can be minimized.

In addition, this study shows that the increasing population will increase regional inequality in the Western Region of Indonesia. This is in line with the results of a study from (Noviyanti et al., 2020; Suryantini et al., 2022; Rohman & Suryanto, 2023). An increase in population in an area can put pressure on resources and infrastructure, which can worsen economic and social inequality between regions. An increase in population that is not balanced by balanced economic growth can lead to a decrease in income distribution and an increase in unemployment and will increase regional inequality (Amelia,2023). A high population often has difficulty providing basic services and adequate infrastructure, thus worsening the

economic conditions of the community (Noviyanti et al., 2020; Rohman & Suryanto, 2023). This causes a greater disparity between districts/cities (Suryantini et al., 2022).

6. CONCLUSION

Based on the results of the study, this study shows that economic spending still has a negative and significant effect on regional inequality, but other government spending does not show significant results on regional inequality in the Western Region of Indonesia. Other macroeconomic factors such as investment and population show a significant effect on regional inequality. Increased investment can reduce regional inequality but not in high population numbers. This study states that efforts to reduce regional inequality aimed at accelerating equitable development through fiscal policy tend to be ineffective. The contribution of government spending has not had a significant impact on reducing inequality. Therefore, evaluation and improvement are needed in government spending policies so that they can be more effective in achieving the goal of alleviating regional inequality in the Western Region of Indonesia.

The policy implications recommendations from this study include the need for a comprehensive evaluation of the implementation of government spending, with a focus on the effectiveness and efficiency of budget allocation, strengthening the accountability and transparency system in budget management is also crucial, the development of an accurate and comprehensive database is also needed to support better analysis and planning, training and capacity building for local government officials in budget management must remain a priority, collaboration between the central and local governments needs to be improved to ensure synergy in public spending. Ultimately, a holistic and integrated approach is needed, which includes policy evaluation, strengthening accountability, capacity building, and collaboration between governments.

REFERENCES

Alamanda. (2020). *The Effect Of Government Expenditure On Income Inequality And Poverty In Indonesia*.

Anderson, E., d'Orey, M. A. J., Duvendack, M., & Esposito, L. (2018a). Does Government Spending Affect Income Poverty? A Meta-regression Analysis. *World Development*, *103*, 60–71. https://doi.org/10.1016/j.worlddev.2017.10.006

Anderson, E., d'Orey, M. A. J., Duvendack, M., & Esposito, L. (2018b). Does Government Spending Affect Income Poverty? A Meta-regression Analysis. *World Development*, *103*, 60–71. https://doi.org/10.1016/j.worlddev.2017.10.006

Astuti, R. (2022). Does Central Expenditure Spent in Local Synergize with Local Expenditure? Case Study: Regencies/Cities in Indonesia. In *Jurnal Anggaran dan Keuangan Negara Indonesia* (Vol. 4, Issue 1). https://anggaran.e-journal.id/akurasi

Azis, F., Isma, A., & Alisyahbana, A. N. Q. A. (2023). Determinants of Government Spending on Regional Development Inequality in the East Indonesia Area. *Ekonomis: Journal of Economics and Business*, *7*(2), 944. https://doi.org/10.33087/ekonomis.v7i2.1172

Benos, N., & Karagiannis, S. (2016). Do education quality and spillovers matter? Evidence on human capital and productivity in Greece. *Economic Modelling*, *54*, 563–573. https://doi.org/10.1016/j.econmod.2016.01.015

Davoodi, H. R., Tiongson, E. R., & Asawanuchit, S. S. (2010). Benefit Incidence of Public Education and Health Spending Worldwide: Evidence From A New Database. *Poverty and Public Policy*, *2*(2), 5–52. https://doi.org/10.2202/1944-2858.1055

Dewinda Santi dan Doddy Aditya Iskandar, S., & Artikel, I. (2021). Kebijakan Desentralisasi Dan Ketimpangan Capaian Pembangunan Wilayah Di Indonesia. *Jurnal Syntax Admiration*, *2*(3).

Erani Yustika, A., & Maskie, G. (2015). *Local Government Expenditure, Economic Growth And Income Inequality In South Sulawesi Province*.

Ferreira, I. A., Gisselquist, R. M., & Tarp, F. (2022). On the Impact of Inequality on Growth, Human Development, and Governance. *International Studies Review*, *24*(1). https://doi.org/10.1093/isr/viab058

Gujarati, D. (2015). *Econometrics by example second edition*. 466.

Gulo, A. K., Zamzami, Z., & Bhakti, A. (2017). Dampak alokasi belanja langsung terhadap ketimpangan ekonomi wilayah (Studi kasus Provinsi Sumatera Utara, Provinsi Jambi, dan Provinsi Bengkulu). *Jurnal Paradigma Ekonomika*, *12*(2), 57–66. https://doi.org/10.22437/paradigma.v12i2.3941

Hania Cholily, V. (2024). Analisis Pola Alokasi Investasi Regional dan Faktor yang Mempengaruhinya di Indonesia Tahun 2019. *COMSERVA : Jurnal Penelitian Dan Pengabdian Masyarakat*, *3*(09), 3762–3773. https://doi.org/10.59141/comserva.v3i09.1157

Hidayadi, T., & Niam, A. M. (2022). Analisis Disparitas Ekonomi Wilayah Jabodetaek Pada Masa Pandemi Covid 19. *ILTIZAM Journal of Shariah Economics Research*, *6*(1), 117–130. https://doi.org/10.30631/iltizam.v6i1.1301

Hidayat, M. (n.d.). *Inequality across districts and cities in the Riau Article Info*. https://doi.org/10.20885/ejem

Islami, F. S., & SBM, N. (2018). Faktor-Faktor Mempengaruhi Ketimpangan Wilayah di Provinsi Jawa Timur, Indonesia. *Media Ekonomi Dan Manajemen*, *33*(1), 29–39. https://doi.org/10.24856/mem.v33i1.564

Izzati, A. K., & Firmansyah, A. (2023). Fraud Diamond Theory, Efektivitas Belanja Pemerintah Dan Komitmen Organisasi. *Media Riset Akuntansi, Auditing & Informasi*, *23*(1), 65–90. https://doi.org/10.25105/mraai.v23i1.15845

Jeffrey M. Wooldridge. (2013). Introductory econometrics : a modern approach. 5th. In *South-Western Cengange learning*.

Kurnianingsih, F., Putri, R. A., & Valentina, A. (2023). Kebijakan Penguatan Ekonomi dalam Optimalisasi Investasi di Indonesia. *Jurnal E-Bis*, *7*(1), 414–424. https://doi.org/10.37339/e-bis.v7i1.1209

Kwon, H. J., & Kim, E. (2014). Poverty reduction and good governance: Examining the rationale of the millennium development goals. *Development and Change*, *45*(2), 353–375. https://doi.org/10.1111/dech.12084

Kyriacou, A. P., Muinelo-Gallo, L., & Roca-Sagalés, O. (2017). Regional inequalities, fiscal decentralization and government quality. *Regional Studies*, *51*(6), 945–957. https://doi.org/10.1080/00343404.2016.1150992

Lee, D. W., & Rogers, M. Z. (2019). Interregional inequality and the dynamics of government spending. *Journal of Politics*, *81*(2), 487–504. https://doi.org/10.1086/701634

Lustig, N., & Higgins, S. (2014). Commitment to equity: A diagnostic framework to assess governments' fiscal policy. In *Inequality in Asia and the Pacific: Trends, Drivers, and Policy Implications* (Issue January 2014).

Mardhian, D., Yulianita, A., & Mukhlis, M. (2023). Ketimpangan dan Prospek Perekonomian di Pulau Sumatera. *Jurnal Informatika Ekonomi Bisnis*, *5*, 3–8. https://doi.org/10.37034/infeb.v5i3.612

Martinez-Vazquez, J., Lago-Peñas, S., & Sacchi, A. (2017). the Impact of Fiscal Decentralization: a Survey. *Journal of Economic Surveys*, *31*(4), 1095–1129. https://doi.org/10.1111/joes.12182

Nasution, M. (2020). Inequality between Regions & Their Relationship with Government Expenditures: A Study in Indonesia Marihot Nasution. *Jurnal Budget*, *5*(2), 84–102.

Nopiah, R., Febriani, R. E., & Sitorus, A. (2023). *Financial Technology (Peer-to-Peer Lending): Efficiency and Effect on Economic Growth in Indonesia* (Issue Bicemba). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-328-3_14

Noviyanti, D., Emma Pravitasari, A., & Sahara, S. (2020). Analisis Perkembangan Wilayah Provinsi Jawa Barat Untuk Arahan Pembangunan Berbasis Wilayah Pengembangan. *JURNAL GEOGRAFI*, *12*(01), 280. https://doi.org/10.24114/jg.v12i01.14799

Nur Aini, D., Puspitawati .(2016). Disparity and Factors Influence the Quality of Human Development in Depok. *Jurnal Manajemen Pembangunan Daerah*, *8*(1), 71–85.

Panggarti, U., Zumaeroh, Z., Dwi Purnomo, S., Retnowati, D., & Adhitya, B. (2022). Studi komparatif ketimpangan antar pulau di Indonesia. *Forum Ekonomi*, *24*(2), 288–298. https://doi.org/10.30872/jfor.v24i2.10988

Pratiwi, M. C. Y., & Kuncoro, M. (2016). Analisis Pusat Pertumbuhan dan Autokorelasi Spasial di Kalimantan: Studi Empiris di 55 Kabupaten/Kota, 2000–2012. *Jurnal Ekonomi Dan Pembangunan Indonesia*, *16*(2), 81–104. https://doi.org/10.21002/jepi.v16i2.01

Putri, E. I. K., Achsani, N. A., & Kolopaking, L. (2016). Peranan Sektor Unggulan sebagai Salah Satu Faktor dalam Mengurangi Ketimpangan Pembangunan Wilayah di Provinsi Papua Barat. *Jurnal Perencanaan Wilayah Dan Kota*, *27*(2), 119. https://doi.org/10.5614/jrcp.2016.27.2.4

Putu Santi Suryantini, N., Putu Ayu Darmayanti, N., Made Artha Wibawa, I., Gusti Ketut Gede, I., Administrasi Niaga, J., & Negeri Bali, P. (n.d.). Analisis Pertumbuhan Ekonomi dan Ketimpangan Regional Di Propinsi Bali. *Jurnal Bisnis & Kewirausahaan*, *18*, 2022. http://ojs2.pnb.ac.id/index.php/JBK

Rahman, Md. A., Nath, S. P., Siddqu, Md. A. B., & Hossain, S. (2023). The Impact of Government Expenditure on Economic Growth: A Study of SAARC Countries. *Open Journal of Business and Management*, *11*(04), 1691–1703. https://doi.org/10.4236/ojbm.2023.114095

Rambe, R. A. (2020). Implication of Regional Split in Local Government Efficiency: Evidence From North Sumatra, Indonesia. *Jurnal Ekonomi Dan Studi Pembangunan*, *12*(32), 159–175.

Rohman, F. A., & Suryanto, S. (2023). Hubungan indeks kualitas lingkungan hidup dan ketimpangan pendapatan di Kabupaten Kebumen. *Region : Jurnal Pembangunan Wilayah Dan Perencanaan Partisipatif*, *18*(1), 123. https://doi.org/10.20961/region.v18i1.49206

Rosmeli, R., & Nurhayani, N. (2014). Studi Komperatif Ketimpangan Wilayah Antara Kawasan Barat Indonesia Dan Kawasan Timur Indonesia. *Jurnal Manajemen Terapan Dan Keuangan*, *3*(1), 456–463. https://doi.org/10.22437/jmk.v3i1.1861

Sri Hartati, Y. (2022). Analisis Ketimpangan Ekonomi Di Provinsi Papua. *Jurnal Ekonomi Dan Bisnis*, *14*(2), 19–29. https://doi.org/10.55049/jeb.v14i2.116

Tselios, V., Rodríguez-Pose, A., Pike, A., Tomaney, J., & Torrisi, G. (2012). Income inequality, decentralisation, and regional development in Western Europe. *Environment and Planning A*, *44*(6), 1278–1301. https://doi.org/10.1068/a44334

Wardhana, A., Juanda, B., Siregar, H., & Wibowo, K. (2013). Dampak Transfer Pemerintah Pusat Terhadap Penurunan Ketimpangan Pendapatan Di Indonesia. *Sosiohumaniora*, *15*(2), 111. https://doi.org/10.24198/sosiohumaniora.v15i2.5737

Wibowo, E. A., & Oktivalerina, A. (2022). Analisis Dampak Kebijakan Desentralisasi Fiskal terhadap Penurunan Tingkat Kemiskinan pada Kabupaten/Kota: Studi Kasus Indonesia pada 2010 - 2018. *Bappenas Working Papers*, *5*(1), 97–119. https://doi.org/10.47266/bwp.v5i1.117

Yasni Politeknik Keuangan Negara STAN, R., & Yulianto Direktorat Jenderal Anggaran, H. (2020). *Peran Belanja Modal Dan Belanja Bantuan Sosial Pemerintah Daerah Terhadap Ketimpangan Pendapatan Di Indonesia* (Vol. 4, Issue 1).