Research Article

How Do Poverty and Inequality Impact the Economic Growth in South Sumatra?

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Abstract.
The province of South Sumatra is widely known as one of the most prosperous regions in Indonesia. In fiscal year 2022, the region's gross domestic product (GDRP) was Rp 591.603,48 billion, with a per capita income of Rp 68,31 billion. Additionally, this economy grew by 5,23%, exceeding the national average, and contributed Rp 9,98 trillion in actual revenue for the government. Nevertheless, the level of poverty remains significant, at 11.9%. Numerous scholarly studies have been conducted over the past few decades to investigate the interconnections between economic growth, income disparity, and poverty alleviation. The prevailing findings of these studies have consistently demonstrated that there is a positive correlation between economic growth and poverty alleviation. However, the relationship between economic growth and income inequality remains uncertain. This study aims to investigate the interrelationships between economic growth, inequality, and poverty reduction in the province of South Sumatra. The methodologies employed encompass descriptive analysis and panel data analysis. The analysis utilises Gross Domestic Regional Product (GDRP) statistics at the regency level, as well as data from the National Socio-economic Survey and local government budgets spanning the period from 2015 to 2022. The findings indicate that economic growth has turned out to be the result of increasing poverty and income inequality all at once. Growth in the mining and agricultural sectors tends to increase poverty because it is capital-intensive and does not appear to absorb labour from people experiencing poverty. Additionally, increases in income inequality are positively correlated with increases in poverty.

Keywords: economic growth, poverty alleviation, head count index, inequality, panel data analysis

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1. Introduction

Economic development is related to economic growth and is accompanied by changes in economic structure and output distribution [1]. Economic development should result in rapid economic growth and better general welfare. In reality, society cannot automatically take advantage of economic growth. As a result, income distribution, poverty, and unemployment become uneven.

Economic growth, income inequality, and poverty are always interesting topics to research. Several experts have highly discussed this topic [2, 3, 4, 5, 6]. Economic capacity (added value) will also increase along with rapid economic growth. With high added value, people's welfare is expected to increase.

Policymakers and development planners in Indonesia strongly believe in the trickle-down effect at the beginning of the New Order government [7]. They believe that the development results will later spread to other fields and regions in Indonesia. So true development is only carried out in Java, especially in Jakarta and its surroundings, hoping to impact other regions to remote parts of the country.

South Sumatra Province is an economic zone that has experienced the fastest economic growth in Sumatra in the last decade. The average annual growth from 2015 to 2022 is 4.43 per cent, driven by the growth of the accommodation, food and beverage supply sector [8]. This sector grew by 14.67 per cent in 2022, while the transportation-warehousing and trade sectors grew by 11.73 per cent and 10.41 per cent, respectively. So, although South Sumatra is rich in abundant natural resources, the main drivers of economic activity are not the mining and oil and gas sectors but the three sectors of these.

However, if we look further at the district/city level, the contribution of each sector is quite varied. The districts with the highest economic growth achievements are Muara Enim, Lahat, OKU, and Banyuasin, with growth rates in 2022 of 8.39 per cent, 6.9 per cent, 5.6 per cent, and 5.32, respectively [8]. Muara Enim and Lahat, the mining sector is the economy's main driver, while the industrial and trade sectors support OKU and Banyuasin more. The district with the lowest economic rate is Musi Banyuasin, with a growth rate of 4.27 per cent, where the accommodation and food sector is one of the economy's main drivers.

With a fairly high economic growth trend, South Sumatra still has significant income inequality problems. BPS noted that the Gini index showed only a 0.02 per cent correction from the original 0.36 in the last eight years. Inequality also occurs in most districts/cities in this province, which shows a significant income distribution gap between individuals. Even Lubuk Linggau, Empat Lawang, OKU Timur, OKU Selatan, Musi Banyuasin, and Musi Rawas experienced an increase in the index from 2015 to 2022. This evidence reflects that the economic growth achieved in the same period also affects inequality in South Sumatra.

The reduction in poverty rates in the South Sumatra region is quite successful. From 2015 to 2022, poverty decreased significantly from 14.25 per cent to 11.9 per cent. This decline is in line with the government's efforts to improve the economy in all regions of the province. However, does rapid economic growth and poverty reduction ensure that inequality will also be reduced? Then, what about sectors that have the potential to encourage poverty alleviation efforts in South Sumatra? Although empirical studies provide ample evidence of the positive impact of economic growth and poverty reduction, more analysis of the relationship with income inequality in South Sumatra needs to be done. For this reason, further studies need to be carried out on the relationship between economic growth, poverty reduction, and inequality levels in South Sumatra.

1.1. Economic Growth

Economic growth is a change in real value-added, the overall value of goods and services produced by economic actors in a region within a certain period [9]. There are several formulas to obtain aggregate figures through several approaches, namely the production, income, and expenditure approaches [10]. The production approach has a greater bias value due to several obstacles in implementing the data collection survey. Likewise, the income approach suffers from distortions due to the tendency to markup income data; individuals tend to provide information greater than the actual value. Therefore, most academia is more inclined to use the expenditure approach in which total expenditure is used to calculate the net aggregate income of an economy within a given region. At the national level, the overall production value of goods and services is known as Gross Domestic Product (GDP), while for regions, it is called Gross Regional Domestic Product (GDP). In the perspective of an open economy, the aggregate value of products and services considers goods in and out or export-import. The formula used is as follows:

$$Y = C + G + I + (X - M)$$

with explanation:

Y = GDP

C = Aggregate public consumption expenditure with SUSENAS data

I = Investment includes changes in the inventory of company goods and services

G = Government expenditure which is APBN or APBD expenditure.

X-M = Net exports which is the total exports minus the value of imports.

Some academia may argue that to overcome bias in obtaining this measure using the net value approach, known as Nett National Product (NNP). Thus, this value represents an increase in the economic capacity of a region free of foreign investors [1]. However, in the dynamics of an open economy, it is more difficult to identify the net value of all production of goods and services produced by issuing foreign investment. So, the GDP approach is still relevant even for comparisons between countries and monitors.

1.2. Income Inequality

Income inequality is a distance that describes the uneven income distribution a certain group receives in a certain period. This income gap can lead to economic inefficiencies, weakening social solidarity [11, 12]. Even inequality is closely related to the failure of the government to respect personal rights [13]. In essence, the impact of development in an area should be enjoyed by all its citizens but, on the contrary, can cause inequality that can hinder national development goals.

The measurement of income inequality follows the World Bank's frequent approach, the Gini index. This index is a statistical measure that has the advantage of being able to obtain variability and normality in measuring inequality [14]. So, income inequality in society can be categorized as low, medium, or high. This group is created based on the measure of inequality used. Countries with high-income inequality have Gini index values between 0.50 and 0.70, while countries with an average income distribution range from 0.20 to 0.35 [11].

The Gini index is relatively simple to interpret. Suppose a society has a Gini Index of 0.4, which means that if the average per capita income is Rp 1 million, then the difference in per capita income between two randomly selected people will be 0.4 million, or 0.4 times the average per capita income.

1.3. Poverty

The fact of poverty is a complex issue as it relates not only to the economic dimension but also to other dimensions outside the economy. However, at present, poverty is more often defined as the insufficiency of income and possessions, or the lack of income and possessions, to meet basic needs such as food, clothing, housing, education, and health, all of which fall under the economic dimension. As described by the [15], poverty includes social, environmental, empowerment, and participatory aspects.

Similarly, [16] states that poverty is not only defined as low income, but also as the inability to utilize basic abilities. According to [17], poverty, especially in rural areas, consists of problems such as helplessness, isolation, vulnerability, and physical weakness. All these factors are interrelated and have an impact on each other.

The Central Bureau of Statistics (BPS) defines poor people as those who cannot meet the minimum basic needs. The poverty line refers to the minimum requirement of 2,100 kcal per day plus a non-food minimum. These non-food needs include basic necessities for shelter, clothing, school, transportation, and other household and general necessities. The poverty line is the total expenditure in rupiah to meet basic food and non-food needs [8].

1.4. Economic Growth and Income Inequality

[18] researched the relationship between economic growth and income inequality. The results show a link between economic growth and income inequality. The Inverted U-curve hypothesis says that a country's income inequality will increase in the early stages of economic growth, tend to remain unchanged in the intermediate stage, and finally decline as the country's economy becomes more advanced. The large income inequality in the early phase of economic growth is due to the structural transformation that occurs in the agricultural sector community, which turns into a processing and service industry.

Correspondingly, [19] also found that the Kuznets hypothesis successfully explained the relationship between inequality and economic growth in industrialized countries until the 1970s. Studies such as [20, 21, 22, 23, 24, 25, 26] support this hypothesis.

However, the Kuznets Hypothesis began to receive a different response in the 1980s. According to [27], the structural transformation study uses data and methodologies that still need investigation. Furthermore, [28] concluded that there is no systematic relationship between income inequality and economic growth rates. Kuznets' hypothesis is also challenged by several other studies, such as [29], which state that the income of the poorest group in society will increase proportionally to the average income. In addition, [30,31] state that there is no correlation between inequality changes and income changes.

Based on the description above, the effect of economic growth on income inequality varies depending on the data and methodology used. There may even be no systematic relationship between economic growth and income inequality, so the influence of economic growth can have a positive or negative impact on income inequality. Economic Growth and Alleviation of Poverty

1.5. Economic Growth and Poverty Alleviation

Many economists agree that economic growth is key to poverty alleviation [32]. Everyone in society will benefit from rapid economic growth. The dominant theory in economic development in the 1950s and 60s was the Trickle-Down Effect theory, which states that economic activity causes a downflow from rich to poor. Thus, achieving high economic growth was the main focus of the 1950s and 60s economic development. High economic growth will increase economic capacity and increase per capita income. Increasing per capita income has a positive impact on reducing people experiencing poverty. Empirical evidence supporting that economic growth will reduce poverty are studies conducted by [5, 6, 29, 30, 33].

1.6. Inequality and Poverty Alleviation

In societies with high inequality, all its members do not enjoy economic growth equally. Most of the economic growth will be enjoyed by wealthy groups of society, which has an impact on reducing the effectiveness of economic growth to alleviate poverty. Conversely, in societies with low-income inequality, economic growth will be enjoyed mostly by groups of people who have low incomes.

According to [3], there are two ways to end poverty: changing income distribution or increasing income levels. The first will allow low-income groups to earn additional income to meet their basic needs and escape poverty. They are furthermore, increasing income levels will boost economic growth. Rising incomes will improve the quality of life and eliminate poverty.

According to [5], there is no systematic relationship between poverty and income inequality. He also said that a decrease in inequality usually coincides with a decrease in poverty, and an increase in inequality will hinder poverty alleviation. [34] also said that inequality harms poverty alleviation. [32] also agree that changes in income distribution are critical to ending poverty. Increased income distribution, along with economic growth, will accelerate poverty alleviation.

1.7. Empirical Review

Many experts in various countries, including Indonesia, have conducted empirical studies to determine the factors influencing poverty. One example of this empirical study is [36], which investigates India's poverty, economic growth, and income distribution.

As a result, high economic growth rates lead to a reduction in poverty rates in most provinces. The number of poor people is decreasing, as well as the depth and severity of poverty.

Second, [2] researched economic growth, income inequality, and poverty alleviation in China using data from 1985 to 2001. The result is that (1) economic growth from 1985 to 2001 has effectively reduced poverty, but increased inequality reduces efficiency from the effects of economic growth; (2) economic growth is still very effective in alleviating poverty at the current stage of economic development in China.

Third, research conducted by [4] studied the relationship between poverty and inequality using data from seventy developing countries. As a result, no systematic improvement has occurred between absolute poverty and relative inequality. The decrease in inequality goes hand in hand with the decrease in poverty, but the increase in absolute inequality will decrease poverty.

Fourth, [34] investigated the relationship between inequality and poverty from 1980 to 2000 in India and China. As a result, (1) poverty alleviation in India and China is affected by economic growth, and income inequality will hinder poverty alleviation; (2) Poverty alleviation requires a combination of economic growth, more pro-poor growth patterns, and inequality reduction.

Fifth, [5] looked at economic growth and poverty alleviation in India, Indonesia, Malaysia, the Philippines, Thailand, and Taipei (China) with data from 1960 to 1990. As a result, GDP per capita growth contributed to reducing poverty rates in all six countries. This research is interesting because the composition of sectoral growth is very different among the six countries. Sixth, [6] investigates the relationship between poverty alleviation and economic growth in Southeast Asia. These countries are Indonesia, Thailand, Malaysia, and the Philippines. As a result, the growth of the service sector in Thailand, Malaysia, and the Philippines contributed the most, while the growth of the agricultural sector in Indonesia contributed the most.

[36] investigated Indonesia further. They found that Kuznets' inverted U-curve hypothesis was invalid for Indonesia. In addition, the New Order government reduced inequality and increased economic growth, according to [37]. One way to achieve this condition is to create policies that transfer income from rich areas to poor areas and the centre.

However, according to [38], government spending on agriculture, economic growth, wages, and dummy reforms influences poverty in rural areas. On the other hand, government spending on infrastructure, economic growth, dummy reform, and dummy decentralization affect poverty in urban areas. This study aligns with research by [39], which found that economic growth at the provincial level in Indonesia will reduce poverty and increase income inequality.

The results of empirical studies conducted in various countries show that economic growth is a very important factor in poverty alleviation. However, no strong evidence suggests that economic growth causes income distribution to become more even or more unequal. Therefore, changing income distribution towards more equitable conditions will alleviate poverty.

2. Methods

2.1. Descriptive Analysis

This study used descriptive analysis to see population dynamics and economic growth in South Sumatra Province from 2015 to 2022. This analysis is presented in the form of images so that the reader can easily understand it.The Effect of Economic Growth on Income Inequality.

2.2. The Effect of Economic Growth on Income Inequality

The effect of economic growth on income inequality is calculated by the model developed by [40] as follows:

$$logG_{it} = \alpha_i + \beta_i logY_{it} + \varepsilon_{it}$$

where:

G = Gini index (value between 0 and 1)Y = Constant GRDP (in units of Rp million)

α = fixed/random effect for district i

ϵ = error term

i = district 1,2,3,..., 17 t = 2015 to 2022

The model used is a double log model so that the β parameter can symbolize the elasticity of income inequality to economic growth. If the β value is positive, a constant increase in GDP of 1 per cent will increase income inequality by β per cent. Effects of Economic Growth and Income Inequality on Poverty.

2.3. The Effect of Economic Growth and Income Inequality on Poverty

The model established by [40] is utilised to assess the impact of economic growth and income inequality on poverty.

$$logP_{it} = \omega_i + \gamma_i logY_{it} + \delta logG_{it} + V_{it}$$

where:

P = number of poor people Y = constant GDP

G = Gini index ω = fixed/random effect for district i

V = error term

The model used is a double log model so that the γ parameter can symbolize the gross elasticity of poverty to growth. At the same time, δ can symbolize the elasticity of gross poverty to inequality. If the γ and δ values are positive, it means that a constant increase in GDP and the Gini index of 1 per cent will increase poverty by γ and δ per cent. The Effect of Economic Growth on Poverty

2.4. The Effect of Economic Growth on Poverty

The impact of economic growth on poverty is assessed using the model proposed by [40] in the following manner:

$$\lambda = \gamma + (\beta + \delta)$$

The γ parameter symbolizes the elasticity of poverty to economic growth when income distribution does not change. The parameter δ symbolizes the elasticity of poverty to income inequality. Then, we can calculate the parameter λ, namely the net elasticity of poverty to economic growth (net elasticity of poverty to growth).

The scope of this research is all regencies/cities in South Sumatra in the range of 2015 to 2022. Meanwhile, the data used are panel data on the GRDP of South Sumatra Province, GRDP Districts / Cities throughout South Sumatra, Susenas data, Gini index, poverty rate, and Budget Realization from 2015 to 2022.

3. Results and Discussion

3.1. Population

South Sumatra Province has an area of 91,592 km2, consisting of 13 regencies and four cities. In 2022, 8.66 million people lived there, with a population density of 100 per km2. The province has a relatively variable population density, and most live in urban areas. The city's most populous area is Palembang City foll, owed by three other cities, namely Lubuk Linggau, Pagar Alam, and Prabumulih, with density levels of 4,681, 504, 400, and 314 inhabitants per km2, as presented in Figure 1.

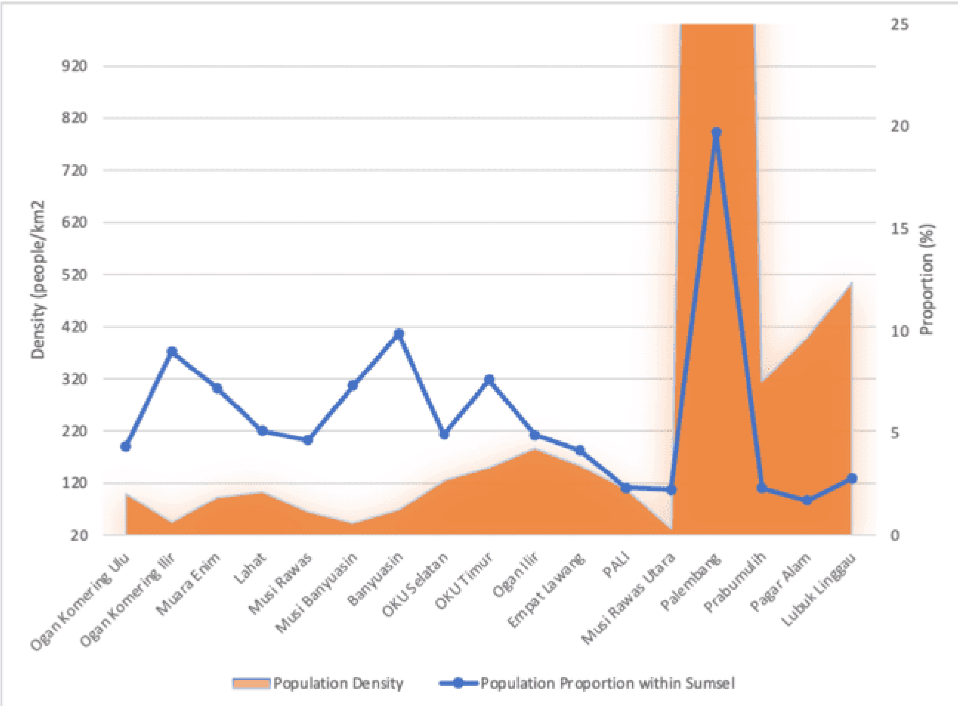

Figure 1: Distribution and Population Density in South Sumatra in 2022. Source: Author calculation from BPS, 2023.

3.2. Economy

The economy of South Sumatra over the past decade has been supported mainly by the mining, processing industry, agriculture, trade, and construction sectors with an average contribution of 21.03 per cent, 19.01 per cent, respectively, 15.26 per cent, 12.66 per cent, and 12.44 per cent. However, the main drivers of economic activity in the province are not these five sectors but other sectors. There are at least four sectors that grew significantly on average in the period 2015 to 2022. The four sectors are the restaurant, electricity and gas, information and communication, and trade sectors, with an average growth of 8.57 per cent, 8.41 per cent, 8.35 per cent, and 6.39 per cent. While the agricultural sector only grew by 2.54 per cent per year, and the mining sector grew by 4.71 per cent. These sectors significantly affect the economy of South Sumatra, as illustrated in Figure 2.

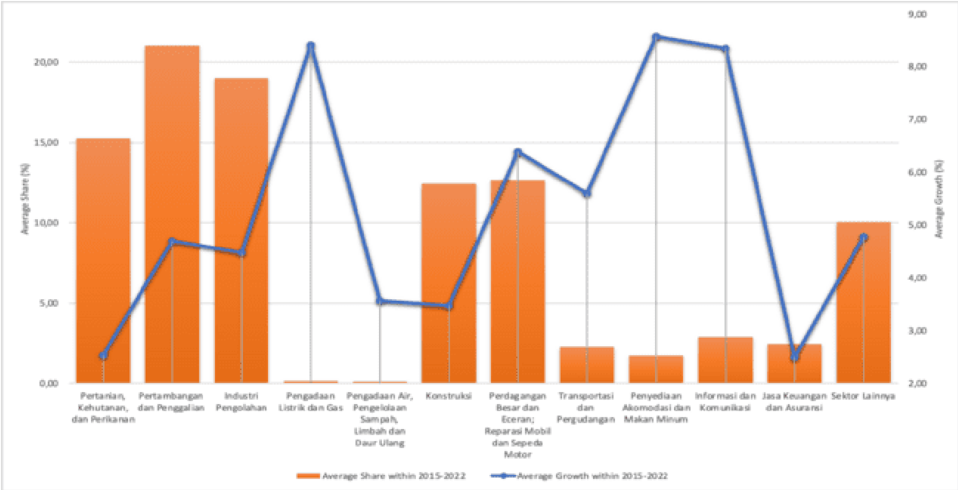

Figure 2: Average Share and Growth of South Sumatra's Sectoral Economy in the Last Decade. Source: Author calculation from BPS, 2023.

The achievement of economic growth in all regions in South Sumatra is homogeneous in the range of 4.23 per cent in the last eight years, compared to other provinces on the island of Sumatra. When viewed by district/city, the highest GDP contribution is in Palembang City, followed by Musi Banyuasin Regency and Muara Enim with a share of 32.86 per cent, 14.6 per cent, and 13.28 per cent (Figure 4). This fact is natural because Palembang is the centre of government and economy in this province. However, the area that experienced the fastest economic growth in the last region was Muara Enim Regency, with an average growth rate of 6.51 per cent per year. This district is a differentiator among others, with the main economic structure being the secondary sector, namely the mining and processing industry. The two sectors have an average contribution of 57.04 per cent and 13.29 per cent, respectively. Meanwhile, the contribution of the primary sector, namely agriculture, decreased from 11.39 per cent in 2015 to 5.68 per cent in 2022.

3.3. Inequality

In general, income distribution in South Sumatra is relatively uneven, with an average Gini index of 0.35 from 2015 to 2022. Although there has been a decline in the Gini index from 0.36 at the beginning of the period to 0.34 at the end, the level of income equality in the province varies, as illustrated in Figure 4. This figure shows that income

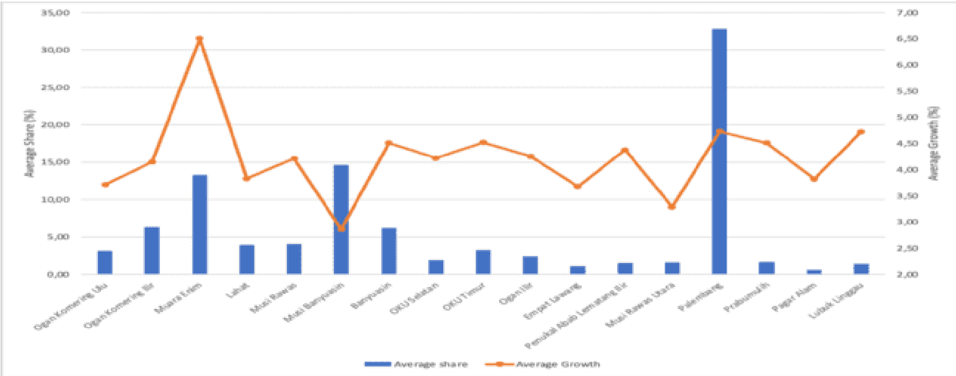

Figure 3: Contribution and Growth of GRDP by District/City in South Sumatra 2015-2022. Source: Author calculation from BPS, 2023.

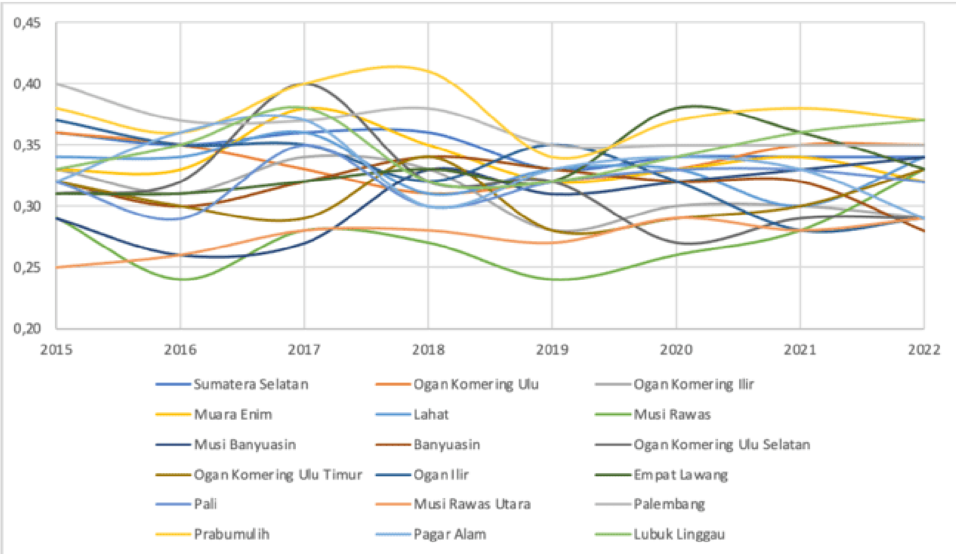

Figure 4: Dynamics of Income Inequality in South Sumatra 2015-2022. Source: Author calculation from BPS, 2023.

inequality between individuals is still a significant problem, where the dynamics of inequality levels in eight years move less significantly. Meanwhile, nine districts/cities experienced an increase in the Gini index in the same period, and six districts/cities experienced a decrease. In contrast, Lahat and PALI districts experienced no change, with a Gini index of 0.34 and 0.32, respectively.

3.4. Poverty Alleviation

The success of a region's economic development can be captured from poverty alleviation. Although hampered by the COVID-19 pandemic, the construction carried out in South Sumatra has reduced poverty from around 14.25 per cent in 2015 to 11.90 per cent in 20 years 22. However, there are significant differences if viewed in more detail by district/city. In 2022, the development process still left relatively high poverty in three districts: Musi Rawas Utara, Lahat, and Musi Banyuasin. These three districts have poverty rates above the provincial average, with proportions of 18.45 per cent, 15.61 per cent, and 15.91 per cent, respectively. Meanwhile, the city that alleviated poverty to single digits or 8.47 per cent is Pagar Alam City. This evidence provides a contrasting picture of the achievements of profound poverty alleviation in South Sumatra Province in the last eight years, as shown in Figure 5.

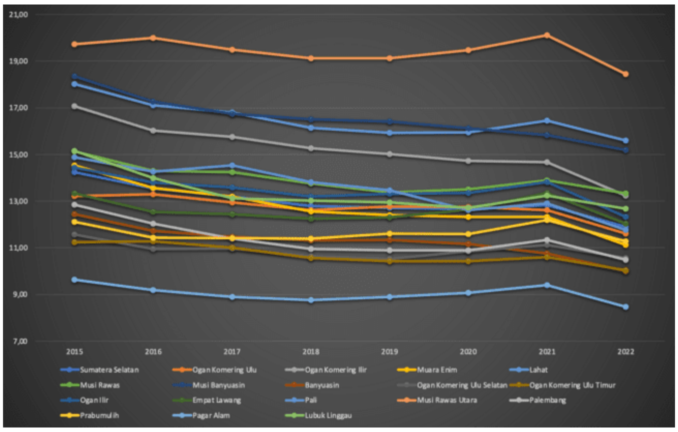

Figure 5: Poverty Alleviation Trends in South Sumatra 2015-2022. Source: Author calculation from BPS, 2023.

The government's efforts in alleviating poverty in line with the acceleration of development require considerable costs. This fiscal initiative is reflected in the South Sumatra Regional Budget, which has been realized to support poverty alleviation programs such as education, health, housing and public facilities, and social protection, reaching almost Rp 20 trillion in 2018. In detail, the budget for education reached Rp 8.86 trillion, divided into budgets for provinces and districts/cities. The budget for health reached Rp 3.96 trillion, the budget for housing and public facilities Rp 6.68 trillion and the budget for social protection amounted to Rp 370 billion (Figure 6).

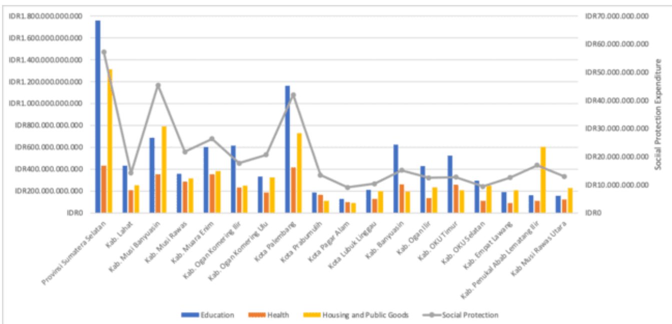

Figure 6: Realization of the 2018 South Sumatra Provincial and Regency/City Budget. Source: Author calculation from BPS, 2023.

3.5. The Linkages Between Economic Growth, Income Inequality, and Poverty Alleviation

3.5.1. The Effect of Economic Growth on Income Inequality

With the model developed by [40], the effect of economic growth on income inequality can be calculated:

$$logG_{it} = \alpha_i + \beta_i logY_{it} + \varepsilon_{it}$$

The value of income inequality elasticity to economic growth shows the effect of economic growth on income inequality. This relation can be seen using β, a double log model, because the above parameters can represent the elasticity of income inequality to economic growth. This value can be positive or negative. A value marked positive indicating an increase in constant economic growth of 1% will increase income inequality by 1%, while a value marked negative indicates a decrease in income inequality by 1%.

Table 1 shows the results of data processing, which shows that the value obtained is 0.0004978, which means that an increase in economic growth of 1% will increase income inequality by 0.05%. This number shows that the economic growth that has been achieved has caused an increase in income inequality for the people of South Sumatra. These results are in line with [2,39]. They also stated that economic growth would increase income inequality.

Gini	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
Growth	.0004978	.0056975	0.09	0.931	-.0115804	.012576
_cons	9.338721	.3310841	28.21	0.000	8.636854	10.04059
sigma_u	2.6222398					
sigma_e	2.3564272					
rho	.55323855	(fraction of variance due to u_i)				

Figure 7: The Effect of Economic Growth on Income Inequality. Source: Author calculation.

The inequality in income distribution it can be determined by looking at the changes in the distribution curve of per capita expenditure and the Gini index. Figure 7 explains that although the level of income inequality managed to decrease in 2022, the distribution of per capita expenditure showed relatively less significant change in the last eight years. This decrease means that high-income people still dominate as connoisseurs of development products. Those in the low-income group enjoyed a stagnant 20 per cent stay in the same period. This level can be seen from the curve that tends to be steady from the beginning to the end of the period with a Gini index of 0.273. So, despite the increase in per capita income from year to year, the level of equitable distribution of development results still shows significant inequality at the end of the period.

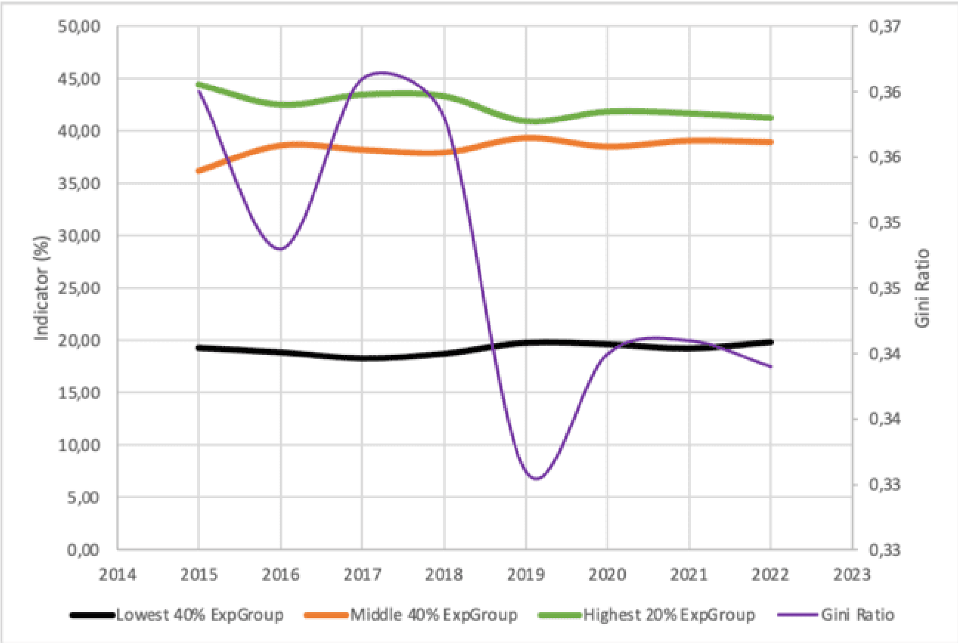

Figure 8: Inequality Analysis within Expenditure. Source: Author calculation from BPS, 2023.

It has been explained that this increase in income inequality is because the economic growth achieved is not enjoyed equally by all population groups. The next question is, why does income inequality increase with economic growth? Furthermore, who enjoys the economic growth that occurs?

The economic growth that has been achieved has the effect of increasing income inequality throughout the population. Why does income inequality increase with economic growth? In addition, who benefits from the economic growth that occurs? To answer the question above, we can analyze economic growth by sector and by district. The following will be described one by one.

South Sumatra is one of the wealthiest provinces on the island of Sumatra, with a GRDP value of IDR 591.60 trillion or IDR 68.31 million per capita in 2022 [8]. This endowment is inseparable from the contribution of the four most prominent sectors that have driven the economy in the last decade, namely the mining and quarrying sector, the processing industry, agriculture, and trade. The four sectors have contributed 21.03%, 19.01%, 15.26%, and 12.66%, respectively, as illustrated in Figure 8. In fact, at the end of 2022, the contribution of the mining and quarrying sector increased significantly to 27.64 per cent. In contrast, other sectors provide a share of less than 10%. Thus, growth in these sectors can be a support for other sectors and increase aggregate economic growth.

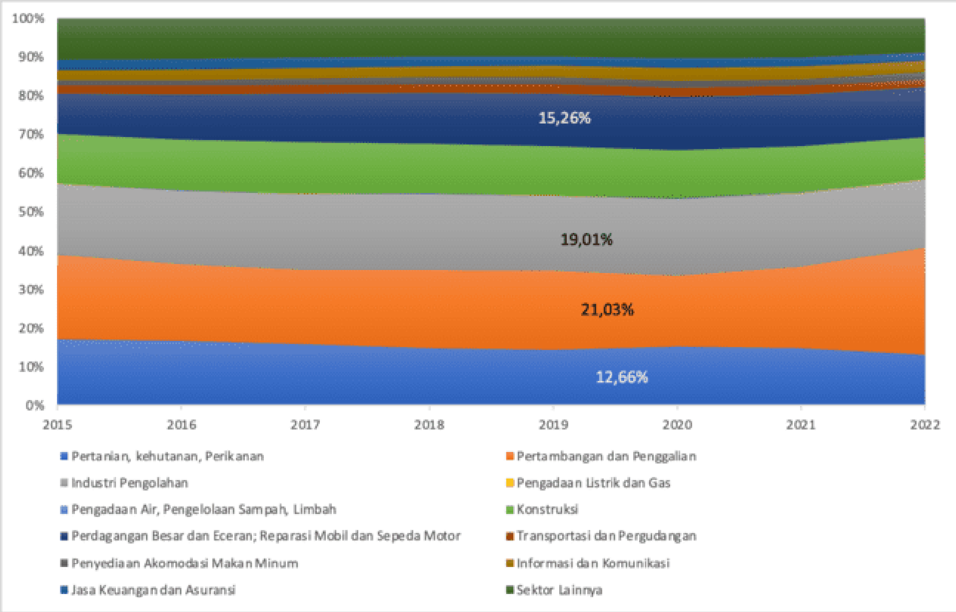

Figure 9: Share of Sectoral GRDP in South Sumatra within Eight Years. Source: Author calculation from BPS, 2023.

Although the mining and quarrying sector dramatically contributes to the economy of South Sumatra, the number of people working in this field is relatively small compared to agriculture and services, which is only around 13.19 per cent of the entire working population [8]. Since the sector is capital-intensive, most people do not enjoy an increase in income. Revenues from mining and quarrying are mainly brought to the center, and the regions only get a share as a profit-sharing fund. The increase in income will only be enjoyed by a small part of society, which means that income inequality will increase further.

During the study period, the agricultural sector also played a significant role in the economy of South Sumatra, with an average contribution of 15.26 per cent. However, the plantation subsector, with a contribution of 32.82 per cent, is mostly large plantations owned by a few people, and the community only cultivates plantations. In addition, workers engaged in this subsector are only labourers or cultivators. This status also applies to the fisheries and agriculture sub-sector, which contributes 21.02 per cent and 16.86 per cent to the province's economy. Although contributing significantly to the economy of South Sumatra, farmers and fish farmers only get relatively little added value compared to processing and service businesses. Thus, income inequality is increasing along with the growth of this subsector, the majority of which is enjoyed by a select few.

3.5.2. Effects of Economic Growth and Income Inequality on Poverty

The model proposed by [40] enables the quantification of the impact of economic growth and income inequality on poverty.

$$logP_{it} = \omega_i + \gamma_i logY_{it} + \delta logG_{it} + V_{it}$$

Using the double log model, γ parameters symbolize the elasticity of gross poverty to economic growth, and δ symbolizes the elasticity of gross poverty to income inequality. If the γ and δ values are positive, it means that poverty will increase by γ and δ per cent if GDP continues to increase and the Gini index rises by 1 per cent.

Based on an elasticity coefficient of 0.0398569, it can be inferred that there is a positive relationship between economic growth and poverty. However, it is important to note that this relationship lacks statistical significance. Given the ongoing increase, it is expected that per capita income will rise; Nevertheless, it may not be effectively distributed among individuals facing poverty. Moreover, it is worth noting that the impact of inequality on poverty exhibits a positive effect, as indicated by an elasticity value of 0.6244981. Table 2 presents the elasticity relationship between the two variables.

Poverty	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Growth	.0398569	.0362831	1.10	0.274	-.0319999	.1117136
Gini	.6244981	.4553621	1.37	0.173	-.2773227	1.526319
_cons	53.95883	4.850568	11.12	0.000	44.35253	63.56513
sigma_u	36.644437					
sigma_e	11.656064					
rho	.90811808	(fraction of variance due to u_i)				

Figure 10: Elasticity of Economic Growth and Income Inequality on. Source: Author calculation.

3.5.3. Effects of Economic Growth and Income Inequality on Poverty

The model proposed by [40] offers a framework for quantifying the impact of economic growth on poverty.

$$\lambda = \gamma + (\beta + \delta)$$

The parameter γ shows the elasticity of poverty to economic growth when the distribution of income does not change. The δ parameter symbolizes the elasticity of poverty to income inequality. Then, the parameter λ, namely the net elasticity of poverty to economic growth, can be calculated.

The value of net elasticity of poverty to economic growth (λ) measures the effect of economic growth and income inequality on overall poverty. This value is obtained by taking into account the influence of economic growth variables on poverty either directly or indirectly.

According to the data presented in Table 3, the value of the net elasticity of poverty to economic growth (λ) is 0.040, which indicates an increase in poverty of 0.040 per cent as a result of a combination of economic growth and income inequality. These results are not in line with the findings of studies such as those conducted by [2, 3, 5, 6, 34, 36]. With economic growth of 1%, poverty was supposed to rise by 0.039%, but in the end, it increased to 0.040% due to an increase in income inequality.

Table 1: Decomposition of the Effect of Net Economic Growth on Poverty.

Growth Effect	Inequality Effect	Nett Effect Poverty towards Economic Growth
0,0398569	0,000310875	0,040167775

Source: Author calculation

Increasing income levels or changing income distribution are two possible options for overcoming poverty [3, 6]. However, the situation that occurs in South Sumatra Province is that high economic growth does not touch marginal groups and inequality increases along with the increase in income. Thus, the effectiveness of increasing economic growth is disrupted in reducing poverty.

Economic growth has led to a simultaneous increase in poverty and income inequality. There are two possible reasons why this happens. The first is that the elite group enjoys the lion's share of economic growth, while people with low incomes enjoy the remaining share. The second is that the poor enjoy the lion's share of economic growth, while the elite group enjoys the remaining share. This possibility has different implications for poverty alleviation. If the first possibility occurs, economic growth will not reduce poverty, but the second possibility will reduce poverty. This option is in line with the evidence that the mining and agriculture sector has only grown on average in the last eight years by 4.71 and 2.54 per cent. The performance of these two sectors, which have the most significant contribution to the economy, is actually much smaller than other sectors whose portion is realistically small. The accommodation sector and the provision of food and drink, for example, grew massively, up to 8.57 per cent in the same period. To sum up, the mining and agricultural sectors are only partially enjoyed by people experiencing poverty, so economic growth in these sectors does not reduce poverty.

4. Conclusion

Based on the results of descriptive analysis and the relationship between economic growth, income inequality, and poverty alleviation, the following conclusions can be drawn:

Although, in general, the poverty rate in South Sumatra Province has decreased significantly from the level of 14.25 per cent to 11.9 per cent during the period 2015-2022, economic growth has turned out to be the impact of increasing poverty and income inequality all at once.

Increases in income inequality are positively correlated with increases in poverty.

The sectors that have a dominant influence on poverty alleviation are the accommodation sector, the provision of food and drink, and the trade sector, including hotels and restaurants; MSMEs, the transportation and communication sector; and the financial, rental, and corporate services sectors.

The exciting thing is that the growth that occurs in mining and the agricultural sector actually increases poverty because it is capital intensive and seems to not absorb labour from people experiencing poverty.

5. Policy Implications

Based on the results of the research and conclusions described earlier, several policies were suggested, including:

Research shows that there is a trade-off between economic growth and income inequality and poverty alleviation at the same time, so it is necessary to consider better strategies for growth. Thus, the economy growth does not increase inequality and poverty.

The development strategy carried out should be by improving distribution in the agricultural sector and increasing value-added agriculture so that the growth of the agricultural sector can reduce poverty.

Economic growth is a determining factor in poverty alleviation, so the economic growth of the accommodation sector, the provision of food and drink, MSMEs, and the service sector needs to be encouraged because it would absorb labour from the poor group.

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