

The Impact of Minimum Wage, Economic Growth, and Unemployment on Poverty Levels in Sumatera

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ABSTRACT

This study analyzes the effect of minimum wage, economic growth, and unemployment rate on the poverty rate in Sumatera Island, Indonesia. The data used is panel data from 10 provinces in Sumatera during the period 2016-2023. The analysis was conducted using the Random Effects Model (REM) method with EViews 12 software. The findings indicate that the minimum wage variable exerts a significant negative influence on the poverty rate, while economic growth demonstrates no substantial effect. Conversely, the unemployment rate exhibits a significant negative impact on poverty. These observations align with the principles of the Wage Efficiency theory and the Social Security Theory, underscoring the significance of augmenting the minimum wage and implementing policies to manage unemployment in efforts to alleviate poverty. However, it is important to note that national economic growth has not been sufficient to meaningfully address the issue of poverty, underscoring the necessity for a more targeted strategy that focuses on enhancing accessibility to education, healthcare, and economic opportunities for disadvantaged populations.

INTRODUCTION

Poverty is a condition in which individuals or families do not have enough economic resources to fulfill their basic needs, such as food, clothing, shelter, education, and health. Poverty is one of the main challenges faced by Indonesia. Although Indonesia has experienced significant economic growth in recent decades, the problem of poverty remains a complex and pressing issue. (Ferezegia, 2018). According to data from the Central Statistics Agency (BPS), the percentage of people living below the poverty line still reaches a significant number. High poverty rates have become a significant problem in many developing countries, as they impede equitable economic development. A multitude of factors contribute to these high rates, including household consumption debt (Niarti et al., 2023).

This research will examine the island of Sumatra. The reason for choosing the island of Sumatra is because Sumatra Island is an island in Indonesia with provinces that are ranked in poverty, there are 3 provinces on Sumatra Island that are ranked as the poorest in Indonesia. Figure 1.1 shows that Aceh is the sixth poorest province, Bengkulu is the seventh poorest province and South Sumatra is the tenth poorest province in Indonesia. While the island of Sumatra has abundant natural resources including palm oil, rubber, coal, petroleum, natural gas.

Sumatra Island is the sixth largest island in the world with an area of 473,841 km², the population of Sumatra Island is estimated to reach 56,795,305 people (2024 census). Based on data on poverty rankings in Indonesia, out of 37 provinces in Indonesia, three provinces in Sumatra rank among the poorest in Indonesia. The following 10 provinces with the highest poverty rate based on BPS data until 2022 are Papua with a poverty percentage of 26.56 percent, West Papua with a poverty percentage of 21.33 percent, East Nusa Tenggara with a poverty percentage of 20.05 percent, Maluku with a poverty percentage of 15.97 percent, Gorontalo with a poverty rate of 15.42 percent, Aceh with a poverty rate of 14.64 percent, Bengkulu with a poverty rate of 14.62 percent, West Nusa Tenggara with a poverty rate of 13.68 percent, Central Sulawesi with a poverty rate of 12.33 percent and South Sumatra with a poverty rate of 11.90 percent (BPS, 2022). The following graph shows the percentage of poverty ranking in Indonesia:

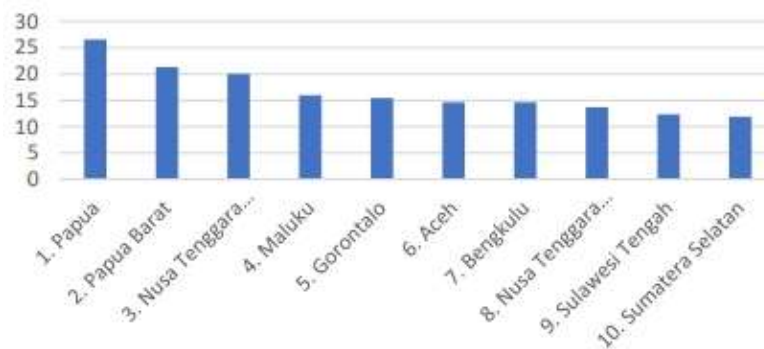


Figure 1. Poverty ranking of provinces in Indonesia
Source: (Central Bureau of Statistics, 2022)

Table 1. Percentage of Poor Population by Province in Sumatra (Percent)

Province	2017	2018	2019	2020	2021
Nanggroe Aceh Darussalam	15,92	15,97	15,32	14,99	15,33
North Sumatra	9,28	9,22	8,83	8,75	9,01
West Sumatra	6,75	6,65	6,42	6,28	6,63
Riau	7,41	7,39	7,08	6,82	7,12
Jambi	7,9	7,92	7,6	7,58	8,09
South Sumatra	13,1	12,8	12,71	12,66	12,84
Bengkulu	15,59	15,43	15,23	15,03	15,22
Lampung	13,04	13,14	12,62	12,34	12,62
Kep. Bangka Belitung	5,3	5,25	4,62	4,53	4,9
Riau Islands	6,13	6,2	5,9	5,92	6,12

Source: (Central Bureau of Statistics, 2021)

The following graph shows the percentage of poverty on the island of Sumatra:

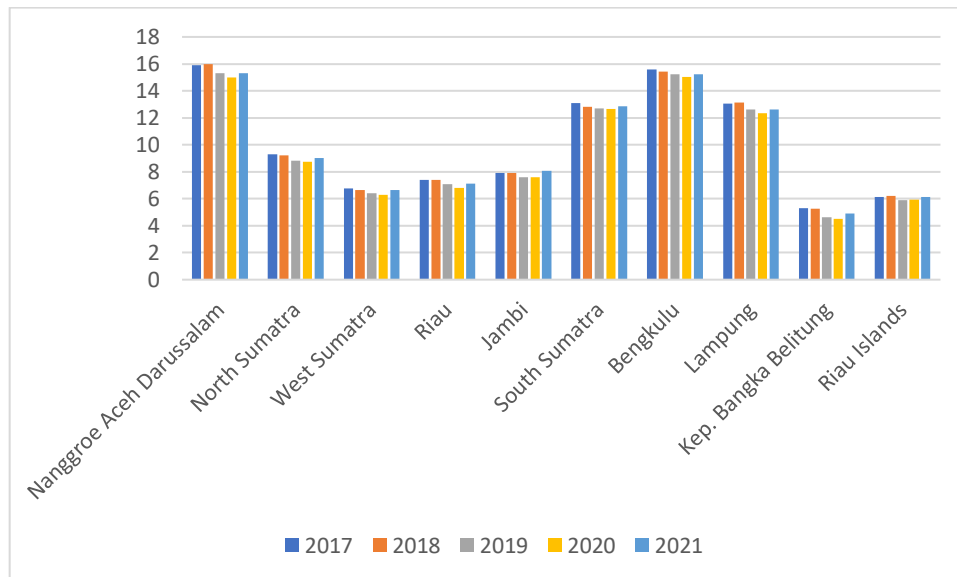


Figure 2. Poverty Percentage in Sumatra Island

Source: (Central Bureau of Statistics, 2021)

Poverty is shaped by various factors, one of which is the provincial minimum wage. Ramirez (2015) found that the minimum wage positively influences poverty levels. Conversely, Romi and Umiyati (2018) reported a negative relationship, indicating that increases in the minimum wage are inversely related to poverty rates, suggesting that the minimum wage is inherently linked to poverty. Marinda et al. (2017) further support this by stating that higher minimum wages contribute to a reduction in the number of impoverished families. In contrast, Gung et al. (2019) concluded that the minimum wage has no significant impact on poverty.

Another determinant of poverty is the unemployment rate. High unemployment leads to reduced income, which subsequently exacerbates poverty (Kristanto, 2014). Istifaiyah (2015) emphasized that open unemployment significantly and positively affects poverty levels. However, Hasballah (2021) discovered a significant negative relationship between open unemployment and poverty. Meanwhile, Oktaviana et al. (2021) argued that unemployment does not exert a significant influence on poverty.

The researcher's explanation for taking the research theme on the island of Sumatra is due to the large total population on the island of Sumatra and the high poverty rate on the island of Sumatra, and it is still an important issue for the government regarding this poverty rate. To solve the problem of poverty on the island of Sumatra in order to become a policy then more efficient to solve the problem of poverty levels. Factors that are estimated to influence the poverty rate on the island of Sumatra are as follows: (1) minimum wage (2) economic growth (3) unemployment.

LITERATURE REVIEW

Minimum Wage

The minimum wage serves as the baseline standard that employers or industry stakeholders must adhere to when compensating workers within their business or workplace. As stated in Regulation No. 1 of 1999, Article 1, Paragraph 1, the minimum wage represents the lowest monthly payment, which includes base salary and fixed allowances. This wage applies to single employees with 0–1 year of work experience, functions as a safety net, is established through a governor's decree based on recommendations from the wage council, and remains effective for one year. Referring to Article 94 of Law No. 13 of 2003 on Labor, the wage structure comprises base salary and fixed allowances, with the base salary constituting at least 75% of the total sum of both components.

The implementation of the minimum wage aims to improve the socioeconomic status of low-income groups, particularly impoverished workers. Similarly, Khabibi (2013) defines the minimum wage as a standard set by industry employers for compensating workers in a business or workplace setting. The primary objective of establishing a minimum wage is to ensure that workers' basic living needs are met, supporting their health, efficiency, and overall well-being.

Economic Growth

Economic growth refers to the process of transforming a country's economic conditions toward a more advanced state over a specific period. It is often characterized by an increase in Gross Domestic Product (GDP), regardless of whether this growth surpasses or falls below the population growth rate, as well as the expansion of an economy's production capacity, which is reflected in rising national income.

Boediono (1981) defines economic growth as an analysis of the factors that drive long-term increases in per capita output and how these factors interact to

facilitate the growth process. Therefore, economic growth serves as a logical framework for understanding how this progression unfolds.

Unemployment

Unemployed individuals are those who are not employed and are actively seeking job opportunities. This category typically includes people of working age who are not engaged in any form of employment during the working period. Working age generally refers to individuals who have completed education from elementary to high school levels. Additionally, individuals over the age of 18 who are still pursuing education may also be classified as unemployed, although this classification remains a topic of ongoing debate (Putong, 2013).

Poverty

Poverty is a condition in which an individual or group struggles or is unable to meet their basic life necessities (Sumedi & Supado, 2004). These necessities include access to healthcare, religious practices, education, sufficient income, employment, and a decent standard of living. To fulfill these essential needs, securing employment is crucial. Poverty can be categorized from two perspectives: absolute poverty and relative poverty.

RESEARCH METHODS

The type and source of data utilized in this study are secondary data. This research employs panel data, which combines cross-sectional and time-series data, covering 10 provinces on the island of Sumatra over an 8-year period from 2016 to 2023. The variables incorporated in this study include:

- X1= Minimum Wage
- X2= Economic Growth
- X3= Unemployment
- Y= Poverty

The purpose of this study is to examine the impact of economic growth, minimum wage, and the open unemployment rate on the poverty rate across 10 provinces on the island of Sumatra. The research employs the panel data analysis method (pooled data) and utilizes EViews 12 as the data processing tool.

In the panel data model, the panel regression equation can be expressed as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e_{it}$$

Where:

- Y_{it} = Poverty Level
- X_{1 it} = Economic Growth
- X_{2 it} = Provincial Minimum Wage
- X_{3 it} = Open Unemployment Rate
- α = Intercept Coefficient
- β_i = Independent Variable Coefficient
- i = province on the island of Sumatra
- t = year 2016 - 2023
- e = Error Term

RESULTS AND DISCUSSION

Model Selection Analysis

a. Chow Test

Table 2. Chow Test Estimation Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	742.194952	(6,66)	0.0000
Cross-section Chi-square	365.534097	9	0.0000

Source: Processed data Eviews 12 (2024)

Based on the results of the Chow test presented in the table, the probability value of the cross-section F-statistic is 0.0000, which is lower than the chosen significance level of $\alpha = 0.05$. This indicates that the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. Therefore, the most appropriate model for this analysis is the Fixed Effect Model (FEM).

b. Hausman Test

Table 3. Hausman Test Estimation Results

Effects Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.437885	3	0.6967

Source: Processed data Eviews 12 (2024)

Based on the results of the Hausman test shown in the table, the probability value of the cross-section F-statistic is 0.6967, which is greater than the chosen significance level of $\alpha = 0.05$. This suggests that the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_a) is rejected. Therefore, the most suitable model for this study is the Random Effects Model (REM).

c. Lagrange Multiplier Test

Table 4. Lagrange Multiplier Results

	Test Hypothesis		
	Cross-Section	Time	Both
Breusch-pagan	249.5102 (0.0000)	2.683812 (0.1014)	252.1941 (0.0000)
Honda	15.79589 (0.0000)	-1.638235 (0.9493)	10.01098 (0.0000)
King-Wu	15.79589 (0.0000)	-1.638235 (0.9493)	9.219325 (0.0000)
Standardized Honda	17.99065 (0.0000)	-1.262672 (0.8966)	8.898135 (0.0000)
Standardized King-Wu	17.99065 (0.0000)	-1.262672 (0.8966)	8.032157 (0.0000)
Gourieroux, et al.	-	-	249.5102 (0.0000)

Source: Processed data Eviews 12 (2024)

Based on the results of the *Lagrange Multiplier* test (LM test) in the table, the cross section F statistic probability of 0.000 is obtained which is lower than the significance level used, namely $\alpha = 0.05$. So that H_0 is accepted and H_a is rejected, so the best model to use in this study is the Random Effects Model.

1. Regression model

The model specification test results show that the Random Effects Model (REM) is the best among the three. Therefore, the results of the Random Effects Model will be analyzed further in this study.

2. Hypothesis Test

Table 5. Random Effects Model

Variablei	Coefficieint	Std. Error	t-Statistic	Prob.
C	11.10757	1.462880	7.592946	0.0000
X1	-9.45E-07	1.21E-07	-7.788666	0.0000
X2	-0.026616	0.022583	-1.178566	0.2423
X3	-0.206519	0.066350	3.112560	0.0026

Source: Processed data Eviews 12 (2024)

Coefficient of Determination (R2)

Table 6. Coefficient of Determination (R2)

R-squared	0.508255
Adjusted R-squared	0.488585

Source: Data Processed (2024)

Based on the table above, it can be seen that the adjusted R Square value = 0.48 or 48%, which means that this model can explain 48% of the variation in the dependent variable. While the remaining 52% is caused by other factors not included in the model.

F-test

The F-test, or simultaneous statistical test, is employed to determine whether all independent variables in the model collectively have an impact on the dependent variable. According to the research results, the calculated F-value is 25.83938, and the significance is 0.0000. With a significance level of 5% ($\alpha = 0.05$), the significance value of 0.0000 is less than 0.05, indicating statistical significance.

The F-table value is calculated using the formula $(\alpha; k-1; n-k) = (0.05; 10-1; 80-9) = (0.05; 9; 71)$, yielding an F-table value of 2.014625. Since the calculated F-value (25.83938) is greater than the F-table value (2.014625), it can be concluded that the independent variables in this study simultaneously have a significant effect on the dependent variable.

T-test

1. Minimum Wage

The results of the t-test for the minimum wage variable (X1) show a coefficient value of -9.45 with a probability of 0.0000, which is less than 0.05. Therefore, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This indicates that, in isolation, the minimum wage has a significant negative effect on poverty on the island of Sumatra.

2. Economic Growth

The results of the t-test for the Economic Growth variable (X2) show a coefficient value of -0.026616 with a probability of 0.2423, which is greater than 0.05. Therefore, the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_1) is rejected. This suggests that, on its own, Economic Growth does not have a significant effect on poverty on the island of Sumatra.

3. Unemployment

The results of the t-test for the Unemployment variable (X3) show a coefficient value of -0.206519 with a probability of 0.0026, which is less than 0.05. Therefore, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This indicates that, in isolation, unemployment has a significant negative effect on poverty on the island of Sumatra.

DISCUSSION

Based on statistical calculations that have been carried out, the results of the description of the effect of minimum wages, economic growth and unemployment on poverty rates on the island of Sumatra are as follows:

The Effect of Minimum Wage on Poverty Level

Based on the results of this study, the minimum wage variable has a significant negative effect on the poverty rate on the island of Sumatra. The results of this study are in accordance with the *Efficiency Wage Theory*, which states that an increase in the minimum wage can increase worker productivity, reduce absenteeism, and improve welfare, because workers feel more motivated to work for higher wages. Thus, this theory supports the idea that an increase in the minimum wage can reduce poverty because it increases workers' household income. The results of this study are also in line with research conducted by (I D. G. M. Radityana et al., 2023) which states that the minimum wage has a significant negative effect on poverty. These results indicate that an increase in the minimum wage is effective in reducing poverty levels with effectiveness depending on the structure of the labor market in each particular region. However, research by Deviasari & Hermanto (2023) shows that poverty has a negative and insignificant impact on GRDP.

The Effect of Economic Growth on The Poverty Level

Based on the results of this study, the economic growth variable has a negative and insignificant effect on the poverty rate on the island of Sumatra. This result is in line with the Poverty Circle Theory which states that conditions that make it difficult for individuals or groups to get out of poverty, regardless

of economic growth at the national level. Limited access to education, health, and economic opportunities reinforce the poverty cycle, so national economic growth does not have a significant impact on poverty reduction. Economic growth does not necessarily overcome the structural problems faced by the poor. This is also in line with research conducted by (Pananrangi, 2012) which states that economic growth has not been able to be used to overcome poverty. This is due to the existence of other factors that influence poverty. In other words, economic growth has not succeeded in having a real effect on poverty alleviation. This is the same as research conducted by Yahdiyani et al., (2024) that the agricultural sector GRDP variable has a significant negative effect on income distribution inequality. However, according to Barika et al., (2023, 2024) economic growth, poverty rate, unemployment rate, and investment have a significant effect on increasing the tendency of provinces that are classified as lagging regions to become fast-growing regions.

The Effect of Unemployment on the Poverty Level

Based on the results of this study, unemployment has a significant negative effect on the poverty rate. The results of this study are supported by the theory of social security and redistribution where in an economic system with strong social security, an increase in unemployment can trigger an increase in the receipt of unemployment benefits or other forms of social assistance financed by the state. In this situation, unemployment can have a significant negative impact on poverty, as unemployed individuals may receive greater assistance than the income they earn from low-wage jobs. This is in line with research conducted by (Ihsan & Ikhsan, 2018) which states that unemployment has a significant effect on the district/city poverty rate in West Kalimantan Province. Empirical data shows a relationship pattern that is not always unidirectional between the unemployment rate and the poverty rate. Unemployed people in the household do not automatically become poor because there are other family members who have enough income to keep the family living above the poverty line. The unemployed can work in farming and gardening considering that land on the island of Sumatra is still affordable as research by Cahyani et al., (2024) states that harvest area can increase the farmer exchange's rate. Pengangguran juga merubah gaya hidup

CONCLUSION AND RECOMMENDATION

The findings of the study indicate a negative relationship between the minimum wage and the poverty rate in Sumatra Island. An increase in the minimum wage has the potential to reduce poverty by increasing the household income of workers, a phenomenon that aligns with the Efficiency Wage theory. This theory posits that an increase in wages can enhance labor productivity and improve worker welfare. Conversely, economic growth exhibits a negative but insignificant impact on the poverty rate. This suggests that national economic growth has not yet surmounted significant obstacles to poverty reduction, such as

limited access to education, health, and economic opportunities. Conversely, the unemployment variable has a substantial negative impact on the poverty rate, indicating that unemployment can lead to the receipt of social assistance, which helps families maintain a higher socioeconomic status. The research model developed for this study successfully explains 48% of the variability in the poverty rate, with the remaining 52% being influenced by factors not examined in this particular model.

In light of these findings, several recommendations are put forward to address poverty in Sumatra Island. Primarily, the minimum wage policy ought to undergo continuous review and adjustment to align with regional living needs. Stakeholders such as labor unions and employers should be engaged to ensure effective implementation of this policy. Secondly, the quality of economic growth must be enhanced by prioritizing inclusive sectors, such as MSMEs, and facilitating wider access to education and skills training. Thirdly, the alleviation of unemployment can be achieved through the creation of quality jobs through real sector investment and market-based job training programs. Fourthly, the strengthening of the social security system should be prioritized to protect vulnerable communities. Finally, local governments must design policies based on local needs to overcome disparities between provinces in Sumatra Island, as well as optimize the utilization of abundant natural resources in the region. The implementation of integrated, evidence-based policies is expected to reduce the poverty rate and improve the welfare of the people in Sumatra Island.

ADVANCED RESEARCH

Subsequent research endeavors could entail a thorough examination of the impact of interactions between variables such as minimum wage, economic growth, and unemployment on poverty levels. This examination could encompass a comprehensive analysis of the structural disparities among provinces within Sumatra Island. One potential approach involves the implementation of spatial analysis to assess the influence of resource distribution and regional policies on poverty rates across different geographical areas. Additionally, the study could incorporate additional variables, including access to education, infrastructure, and income inequality levels. This would facilitate a more comprehensive understanding of the contributions of these factors to poverty reduction. In-depth interviews and focus group discussions (FGDs) with relevant stakeholders can be utilized to explore people's perceptions of poverty alleviation policies. Combining quantitative and qualitative methodologies will provide more comprehensive insights, thus facilitating the design of more effective and inclusive policies to address poverty in Sumatra Island.

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REFERENCES

- Barika, B., Ekaputri, R. A., & Hermanto, B. A. (2024). Determinan Kemiskinan Di Sumatera. *Jurnal Ekonomi-Qu*, 13(1), 68.
<https://doi.org/10.35448/jequ.v13i1.20532>
- Barika, B., Sukiyono, K., Ekaputri, R., & Hermanto, B. A. (2023). *Determinants of Indonesia's Long-Term Economic Structure Panel Data Approach Using Logistic Multinomial Regression* (Issue Bicemba). Atlantis Press International BV.
https://doi.org/10.2991/978-94-6463-328-3_17
- Cahyani, S. N., Hermanto, B. A., & Fauziah, D. A. (2024). Analysis of Harvest Area , Productivity , and Fertilizer Prices on Farmer Exchange Rate of Rice Food Crop Sub-Sector in Bengkulu Province. *Indonesian Journal of Economic & Management Sciences*, 2(2), 305–318.
- Deviasari, D., & Hermanto, B. A. (2023). *Analysis of the Impact of Poverty , Human Development Index , and Labor on Domestic Products in the District / City of Bengkulu Province 2017-2021*. 1(1), 76–81.
- Ferezegia, D. V. (2018). Jurnal Sosial Humaniora Terapan Analisis Tingkat Kemiskinan. *Jurnal Sosial Humaniora Terapan*, 4(1), 1–6.
- I D. G. M. Radityana, I K. Djayastra, A. A. N. Bagus Danendra, & Wisnu, N. (2023). Pengaruh Upah Minimum, Indeks Pembangunan Manusia dan Pengangguran Terbuka terhadap Jumlah Kemiskinan di Provinsi Bali. *Jurnal Kajian Ekonomi Dan Manajemen Indonesia (JKEMI)*, 1(1), 16–24.
<https://doi.org/10.61079/jkemi.v1i1.3>
- Ihsan, K., & Ikhsan. (2018). Analisis Pengaruh Ump, Inflasi Dan Pengangguran Terhadap Kemiskinan Di Provinsi Aceh. *Jurnal Ilmiah Mahasiswa (JIM)*, 3(3), 408–419.
- Niarti, U., Kamaludin, K., Purmini, P., & Hermanto, B. A. (2023). *Analysis of Household Debt on Poverty Level in Rejang Lebong District: A Logit Model Approach* (Issue Bicemba). Atlantis Press International BV.
https://doi.org/10.2991/978-94-6463-328-3_3
- Pananrangi, A. I. (2012). A.Idham A.Pananrangi, Pengaruh Pertumbuhan Ekonomi Terhadap Tingkat Kemiskinan. *Plano Madani : Jurnal Perencanaan Wilayah Dan Kota*, 2(1), 29–38.

Yahdiyani, R., Hermanto, B. A., & Fauziah, D. A. (2024). Agricultural Gross Domestic Product and Farmer Exchange Rate on Income Distribution Inequality on the Island of Sumatra. *Formosa Journal of Applied Sciences*, 3(5), 2479-2488. <https://doi.org/10.55927/fjas.v3i5.9062>