JurnalEkonomi Pembangunan
Vol. 21, No. 02, December 2023, 179 ~ 188

The Effect of Financial Literacy and Financial Inclusion on Income Inequality in Indonesia

Aidillia Zulkarnain[a]*, Alpon Satrianto[b]
[a,b]Economics, Faculty of Economics and Bisnis, Padang State University
* Corresponding author: aidilliazulkarnain11@gmail.com

Article Info

Article history:
Received September 21, 2023
Revised December 14, 2023
Accepted December 18, 2023
Available online December 31, 2023

Keywords:
Income Inequality, Financial Literacy, Financial Inclusion, Poverty, Wages

JEL Classification; B26, C33, F63, G53, O15, P34

Abstract

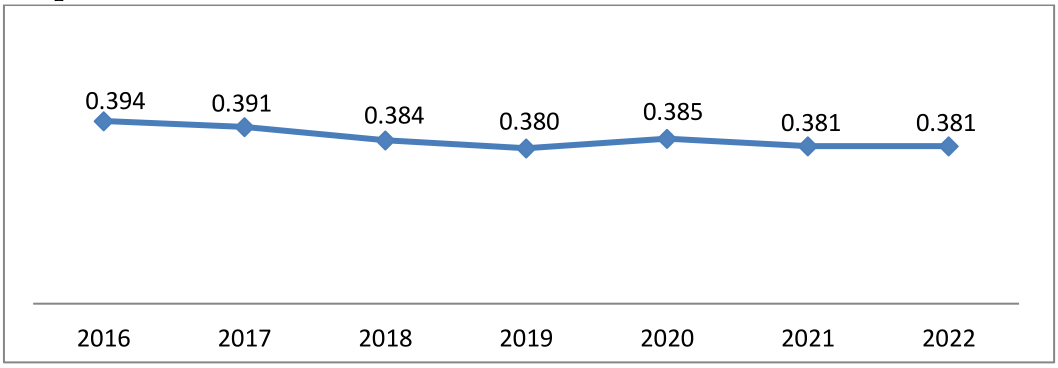
Income inequality is an economic phenomenon that has an impact on economic instability and the welfare of society. Indonesia's income inequality has not significantly improved or changed much from previous years. This study aims to analyze the effect of financial literacy and financial inclusion on income inequality in Indonesia. The type of research used in this study is quantitative research. The data used is panel data of 34 provinces in Indonesia in 2016, 2019, and 2022. The analysis method used is Panel Data Regression using the Random Effect Model (REM) approach. The results show that (1) financial literacy does not affect income inequality in Indonesia; (2) financial inclusion does not affect income inequality in Indonesia; (3) poverty has a significant positive effect on income inequality in Indonesia; and (4) wages has a significant negative effect on income inequality in Indonesia. Suggestions in this study: Financial institutions should start expanding the target of introducing new and existing products to increase public understanding and confidence, especially among the lower middle class. In addition, government intervention must be carried out massively and aggressively so that a general understanding of finance increases.

INTRODUCTION

The economic development of a country aims to achieve national prosperity through economic growth and income distribution. Economic growth and income equality can be created through efficient market operation (Rozali, 2020). Developed countries have experienced significant challenges and trade-offs in economic development. In addition, developing countries, especially developing Asian countries, are starting to enter inclusive growth, where most of the countries have entered middle-income countries after achieving rapid growth (Egawa, 2013).

Income inequality is an important issue that must be considered, as it can disrupt economic growth and governance (Wibowo, 2016). In some cases, inequality has been shown to trigger economic instability, making the economy challenging to predict over time (Buhaerah, 2017). Even income inequality can distort economic growth. There are three reasons why income inequality can distort economic growth. First, high-income inequality can inhibit and trigger market underdevelopment, creating poverty, and increasing poverty will hinder economic growth. Second, the more unequal the income distribution, the faster the growth rate needed to achieve poverty reduction. Third, high-income inequality can lead to social conflicts and tensions, undermining stability.

Graph 1. Indonesia's Gini Index 2016-2022



Source : (Badan Pusat Statistik)

Based on the graph above, nationally, since 2016, the gini ratio has decreased until 2019. This shows that in that period, there was an improvement in income distribution in Indonesia. However, during the COVID-19 pandemic, it increased to 0,380 in 2020. After that, the Gini ratio decreased again in 2021 to 0,381, the same as the 2022 Gini ratio. This shows no improvement in income distribution in 2021 and 2022.

Based on the World Inequality Report (2022), income inequality in Indonesia is still relatively high. So far, Indonesia's income inequality has not shown any improvement. Looking at the proportion, the bottom 50% group only has 12,4% of the total national income in 2021. This percentage is lower than the previous two decades, which amounted to 17,4%. Meanwhile, the population group with the top 10% of income can control 48% of the total national income in 2021. This proportion has increased compared to 2001, which was 41,5%.

One of the government's ways to reduce income inequality is to improve people's welfare through the National Strategy for Financial Inclusion (SNIK). By regulation No. 82 of 2016 concerning the National Strategy for Financial Inclusion (SNKI), low-income people are one of the targets of this program. In the next five years, the goal of strengthening the financial sector is to increase people's financial access to formal financial services within the framework of inclusive and equitable economic development.

Financial inclusion is an integral part of the socio-economy; good financial inclusion and access at all levels of society can encourage economic growth. Financial system stability can alleviate poverty and reduce economic inequality between communities. Economic equality in society can improve people's quality of life if they plan long-term financial goals to prepare for unexpected economic crises.

According to Omar & Inaba (2020), the problem of inequality experienced by middle-income countries is resolved through economic development policies, namely financial inclusion. From a macro perspective, financial inclusion drives a country's economy. This will further positively impact the economy through financial system stability, increased welfare that helps pave the way out of poverty, and reduction of economic disparities both between regions and individuals. The broader availability of reasonable access to financial services will enable people to utilize financial products and services and manage them properly.

In addition to financial inclusion, financial literacy is also one-factor affecting income inequality. According to Bustami & Saifrizal (2022), financial literacy policies will encourage demand-side community participation in using financial products and services facilities. Increased financial literacy is expected to contribute to financial system stability and reduce vulnerabilities in the financial system and ease of obtaining capital, ultimately impacting economic growth and income distribution.

According to Lo Prete (2013), income inequality grows slightly in countries with high levels of financial literacy. Batsaikhan (2018), Hoch (2013), dan Lusardi & Mitchell (2012) state that there is a negative relationship between literacy and income inequality. The level of financial literacy of society can affect the extent to which they can manage their personal or family finances well. If financial literacy is low, people tend to be less able to manage their finances and are vulnerable to adverse financial actions.

This study analyzes two financial variables, namely financial literacy and financial inclusion. This study will also show which of the two dominant financial variables affect income inequality in Indonesia. Thus, the government can issue policies based on the dominant variables that affect income inequality to minimize the amount of income inequality in Indonesia.

This study examines the effect of financial literacy and financial inclusion on interprovincial inequality in Indonesia. Researchers are interested in examining this title because this research is fundamental. However, very little literature still discusses the effect of financial literacy and financial inclusion on income inequality in Indonesia. In addition, researchers added two control variables, namely poverty and wages.

RESEARCH METHODS

This study uses data from 34 provinces in Indonesia in 2016, 2019, and 2022. Secondary data that will be used in this study include a) Gini index as a proxy of income inequality, b) Financial literacy index as a proxy of financial literacy, c) Financial inclusion index as a proxy of financial inclusion, d) Poverty percentage as a proxy of poverty, and e) Provincial minimum wage as a proxy of wages. Gini Index, poverty percentage, and provincial minimum wage data are obtained from the Central Bureau of Statistics. In contrast, financial literacy and inclusion index data are obtained from the Indonesian National Survey of Financial Literacy and Inclusion (SNLIK) published by the Financial Services Authority.

Data analysis in this study used panel data regression methods consisting of the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches. The best model selection from the above models is selected using a panel data specification test consisting of the Chow, Hausman, and Lagrange multiplier tests. The Chow test is a test to select the best model between the CommonEffectModel (CEM) and the FixedEffectModel (FEM). Hausman test is a test to choose the best model between the FixedEffectModel (FEM) and the RandomEffectModel (REM). In addition, the Lagrange multiplier test is used to select the best model between the CommonEffectModel (CEM) and the RandomEffectModel (REM).

The panel data regression equation model in this study is as follows (Ghozali, 2018) :

$$GNI_{it} = \beta_0 + \beta_1 \mathrm{LOG}(\mathrm{ILK}_{it}) + \beta_2 \mathrm{LOG}(\mathrm{IIK}_{it}) + \beta_3 \mathrm{LOG}(\mathrm{PVT}_{it}) + \beta_4 \mathrm{LOG}(\mathrm{UPH}_{it}) + \varepsilon_{it} \quad \text{.......(1)}$$

With GNI = Income inequality; ILK = Financial literacy index; IIK = Financial inclusion index; PVT = Poverty; UPH = Wages; $\beta_{1,2,3,4}$ = Coefficient; i = 34 Indonesian provinces (cross-section); t = 2016, 2019, and 2022; ε_{it} = Error term.

RESULT AND DISCUSSION

1. Best Model Selection

a. Chow Test

Table 1. Chow Test

Effect Test	Prob.
Cross-Section F	0,0000
Cross-section Chi-square	0,0000

From the Chow test results, the cross-section Chi-Square value <0,05 means that in the Chow test results, the selected model is the Fixed Effect Model, and the Hausman test is continued.

b. Hausman Test

Tabel 2. Hausman Test

Test Summary	Prob.
Cross-section Chi-square	0,3404

From the Hausman test results, the cross-section Chi-Square value> 0.05 means that from the Hausman test results, the selected model is the Random Effect Model, and the Lagrange Multiplier test is continued.

c. Lagrange Multiplier Test

Tabel 4. Lagrange Multiplier Test

Effect Test	Prob.
Cross-Section	0,0000
Both	0,0000

From the Lagrange Multiplier test results, it can be seen that Both> 0.05 means that from the Lagrange Multiplier test results, the selected model is the Random Effect Model.

2. Panel Data Regression Model

The results of the best model selection show that the random effect model is the best model of the three models. Therefore, this study will further analyze the RandomEffectModel (REM) estimation results. The results of the RandomEffectModel (REM) estimation are as follows:

Table 5. Estimation of Panel Data Regression

Variable	Coefficient	t-statistic	Prob.
c	0,733745	4,804125	0,0000
LOG(ILK)	-0,001238	-0,132992	0,8945
LOG(IIK)	-0,015603	-0,850513	0,3971
LOG(PVT)	0,021948	1,985939	0,0499
Log(UPH)	-0,024575	-2,162067	0,0331
R-Squared	0,263295		
F-Statistic	8,666849		
Prob (F-Statistic)	0,000005		

The following equation can estimate the panel data regression model for the random effect model approach:

$$GNI_{it} = 0{,}733 - 0{,}001\mathrm{Log}(\mathrm{ILK}_{it}) - 0{,}015\mathrm{Log}(\mathrm{IIK}_{it}) + 0{,}021\mathrm{Log}(\mathrm{PVT}_{it}+) - 0{,}024\mathrm{Log}(\mathrm{UPH}_{it}) \ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

3. Hypothesis Test

a. F-Statistic

This test is conducted to empirically prove the simultaneous effect between the independent variables, namely financial literacy, financial inclusion, poverty, and wages, on the dependent variable, namely income inequality. From the estimation results, it can be seen that the probability value of the F-statistic is 0,000005; the value is smaller than alpha 0,05, which means that financial literacy, financial inclusion, poverty, and wages have a simultaneous effect on income inequality.

b. Coefficient of Determintwtwotion (R^2)

The Coefficient of Determination is used to see and determine how much influence the independent variables have in explaining the dependent variable. Based on the estimation results obtained in this study, the Coefficient of Determination is 0,263295. This result shows that financial literacy, inclusion, poverty, and wages influence 26,32 percent of labor absorption. At the same time, the remaining 73,68 percent of income inequality is influenced by other variables not included in the research model.

c. T-Statistic

Partial tests of dependent variables on independent variables are carried out by comparing probability values and significance levels. First, based on Table 5 above, the estimation results show that the financial literacy variable has a coefficient value of -0,001 with a probability level of 0,8945 > 0,05. It can be concluded that the financial literacy variable has a negative but insignificant effect on income inequality in Indonesia. Second, the financial inclusion variable has a coefficient value of -0,015 with a probability value of 0,3971 > 0,05. It can be concluded that the financial inclusion variable has a negative but insignificant effect on income inequality in Indonesia.

Third, the poverty variable has a coefficient value 0,021 with a probability value of 0,0499 < 0,05. It can be concluded that the poverty variable has a positive and significant effect on income inequality in Indonesia. Furthermore, the fourth wage variable has a coefficient value of -0,024 with a probability of 0,0331< 0,05. It can be concluded that the wage variable has a negative and significant relationship with income inequality in Indonesia.

Effect of Financial Literacy on Income Inequality

Financial literacy does not affect income inequality. This is due to the low financial literacy of low-income Indonesians, unaware of using and utilizing existing financial services. Low financial literacy can make people vulnerable to fraud and lead to poor financial decisions (Hoch, 2013). People who do not understand financial concepts may be unable to manage their finances wisely. They may not know how to save, invest, or effectively manage their money, making it difficult to increase their income (Lusardi & Mitchell, 2012). Other causes of Indonesia's low financial literacy include uneven digital infrastructure. People with minimal digital infrastructure will find it difficult to access knowledge about financial literacy. Information dissemination can be easier digitally.

Based on the 2022 National Survey on Financial Literacy and Inclusion (SNLIK) results by the Financial Services Authority (OJK), the financial literacy index touched 49.68 percent. Financial literacy increased by 27.88 percentage points from 21.84 percent in the first SNLIK in 2013. This means that people's understanding and skills in financial management have increased in the last nine years. The financial literacy index of 49.68 percent is still relatively low. This means that people do not understand the characteristics of financial products and services financial service institutions offer. The risk is that they are vulnerable to the seduction of illegal financial services.

Based on the results of SNLIK 2022, the financial inclusion index has reached 85.10 percent. The difference between financial inclusion and financial literacy reaches 35.42 percent. This means that people only access financial services but do not fully understand how they work out the risks or other products available.

The high financial inclusion rate shows that people are familiar with financial services, especially banking. However, low literacy means that people only know about certain financial products. Such conditions indicate Indonesians are not well versed in the financial products and services offered by formal financial services institutions and are more interested in other potentially harmful investment offers.

This aligns with research conducted by Lo Prete (2013), who found that income inequality grows lower in countries with higher economic literacy levels. A high level of financial literacy is believed to improve welfare because, with increased public literacy, people can make sound financial decisions, so family or personal financial planning is more optimal.

Effect of Financial Inclusion on Income Inequality

The financial inclusion index has a negative but insignificant effect on income inequality. This is due to the low access to finance for low-income people. Currently, the development of the financial sector can only be utilized by people with middle and upper income, so inequality is still high. The increase in financial inclusion from 2016 to 2022 is increasing, but the financial access gap is still significant. In addition, based on data from the Otoritas Jasa Keuangan (OJK), financial inclusion in Indonesia is uneven. Access to finance in urban areas reached 84 percent, much higher than in rural areas, which only reached 69 percent. This indicates a sizable finance access gap between urban and rural areas. This result is also supported by research that states that financial inclusion in Indonesia has not been able to reduce income inequality.

Some areas of Java Island still have limitations on the utilization of access to financial services. According to data from the Otoritas Jasa Keuangan(2017), the distribution of ATMs and branch offices in Indonesia is uneven. Both branch offices and ATMs in Indonesia have not fully reached remote areas because 65% of ATMs and 51% of branch offices are still concentrated on the island of Java. In addition, based on Bank Indonesia data (2014), around 52% of Indonesia's population live in rural areas, and around 60% do not have access to formal financial services in the form of branches or ATMs. Whereas from around 12,49% of the population below the poverty line, around 64% live in rural areas.

The Effect of Poverty on Income Inequality

Poverty has a positive and significant relationship with income inequality. One percent increase in poverty percentage will increase income inequality by 0,021948 with a significance level of 0,0499. This means that the higher the poverty, the higher the income inequality; the lower the poverty, the narrower the income gap. Poverty is one of the factors that can affect income inequality.

Poverty can be one of the main factors that increase income inequality. Workers in poverty usually have much lower incomes than those in society's upper or middle strata. This creates a significant gap in income between groups. Poor people may have limited access to quality education, health services, good job opportunities, and social capital. These limitations can trap them in poverty, while those with more significant resources can increase their income more efficiently. This leads to a widening income gap.

The results of this study are from several previous studies, including research by Apergis et al. (2011), which states that poverty has a positive and significant impact on income inequality in the short and long term. Furthermore, Hassan et al. (2015) stated that there is a positive and significant relationship between poverty and income inequality.

Effect of Wages on Income Inequality

Wages have a significant negative relationship with income inequality. This means that an increase in wages can reduce income inequality; conversely, income inequality will increase if wages decrease. The wage coefficient is 0,024575, and the probability is 0,0331. This means that a 1 percent wage increase decreases income inequality by 0,024575 units. The minimum wage can potentially reduce income inequality between low-paid and high-paid workers. Providing a more decent wage to previously low-income workers can reduce the income gap between high-income and low-income workers.

This research is in line with the research of Litwin (2015), showing that minimum wage hurts income distribution inequality. An increase in the actual value of the minimum wage will reduce the real minimum wage and reduce income distribution inequality in income distribution due to the redistribution of wealth from consumers and employers to low-wage workers. Research by Lin and Yun (2016) also shows that an increase in the minimum wage substantially contributes to reducing inequality in income distribution.

CONCLUSIONS

This study aims to determine and analyze the effect of two financial variables, namely financial literacy and financial inclusion, on income inequality in Indonesia. This research will also investigate the influence of poverty and wages on income inequality in the country. The study will focus on data from 2016, 2019, and 2022, aligning with the National Survey of Financial Literacy and Inclusion (SNLIK) conducted every three years.

Based on the results, it can be concluded that financial literacy and inclusion do not affect income inequality in Indonesia. In contrast, poverty and wages have a positive significant effect on income inequality among provinces in Indonesia. Financial institutions should start expanding their product introduction targets, both new and existing products, to increase public understanding and confidence, especially in the lower middle class. In addition, government intervention needs to be done massively and aggressively to increase public understanding of finance. Through education, the government can integrate financial literacy education into the curriculum with updated materials.

In addition, through the OJK, the government must tighten investment product issuance licenses. This is because, so far, many people have been deceived by fraudulent investment products issued by small-scale banks and informal financial institutions. By tightening the product issuance license, the public will feel more confident and safe to use it. This, in turn, can increase people's motivation to start seeking information. In addition, OJK can create a smartphone application containing information about financial institution products and their risks with content that people from all walks of life can easily understand.

The limitation of this study is that the author only focuses on the variables of financial literacy and financial inclusion; besides that, the data comes from the results of the National Survey of Financial Literacy and Inclusion (SNLIK), which is published every three years, so the data is limited. Therefore, further analysis needs to add other financial variables that affect income inequality. Future research can also add data from the National Survey of Financial Literacy and Inclusion (SNLIK) results in the following year.

REFERENCE

Apergis, N., Dincer, O., & Payne, J. E. (2011). On the dynamics of poverty and income inequality in US states. *Journal of Economic Studies*, *38*(2), 132–143. https://doi.org/10.1108/01443581111128370

Badan, P. S. (n.d.). *Gini Ratio Menurut Provinsi dan Daerah 2022-2023*. Badan Pusat Statistik. https://www.bps.go.id/indicator/23/98/1/gini-rasio.html

Batsaikhan, U. (2018). *Financial literacy and inclusive growth in the European Union. Bruegel Policy Contribution Issue n° 08 | May 2018*.

Buhaerah, P. (2017). Pengaruh Finansialisasi Terhadap Ketimpangan Pendapatan Di Asean : Analisis Data Panel. *Buletin Ekonomi Moneter Dan Perbankan*, *19*(3), 335–352.

Bustami, K., & Saifrizal, M. (2022). Financial Literacy Capabilities in Increasing Financial Inclusion Through Sharia Fintech. *Jurnal Ekonomi*, *11*(03), 1073–1081. http://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/832

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2022). *WORLD*.

Egawa, A. (2013). Bruegel Working Paper 2013 / 06 Will Income Inequality Cause a Middle-Income Trap in Asia ? *Bruegel Working Paper*, *06*(October).

Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25 edisi ke-9*. Badan Penerbit Universitas Diponegoro. https://onesearch.id/Record/IOS2851.slims-19545

Hassan, S. A., Zaman, K., & Gul, S. (2015). The Relationship between Growth-Inequality-Poverty Triangle and Environmental Degradation: Unveiling the Reality. *Arab Economic and Business Journal*, *10*(1), 57–71. https://doi.org/10.1016/j.aebj.2014.05.007

Hoch, I. N. (2013). *Can Financial Literacy Help Alleviate Wealth And Income Inequality In The US ? 18*(1), 2013.

Lin, C., & Yun, M. S. (2016). The effects of the minimum wage on earnings inequality: Evidence from China. *Research in Labor Economics*, *44*, 179–212. https://doi.org/10.1108/S0147-912120160000044012

Litwin, B. S. (2015). Determining the Effect of the Minimum Wage on Income Inequality. *Student Publications*, *300*, 1–22. https://cupola.gettysburg.edu/student_scholarshiphttps://cupola.gettysburg.edu/student_scholarship/300https://cupola.gettysburg.edu/student_scholarship/

300

Lo Prete, A. (2013). Economic literacy, inequality, and financial development. *Economics Letters*, *118*(1), 74–76. https://doi.org/10.1016/j.econlet.2012.09.029

Lusardi, A., & Mitchell, O. S. (2012). Financial Literacy Around the World: An Overview. *SSRN Electronic Journal*, *June*. https://doi.org/10.2139/ssrn.1810551

Muslikhah, A. S., & Utami, E. D. (2020). Pengaruh Inklusi Keuangan Terhadap Ketimpangan Pendapatan Di Indonesia Tahun 2012-2017. *Seminar Nasional Official Statistics*, *2019*(1), 738–748. https://doi.org/10.34123/semnasoffstat.v2019i1.102

Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. *Journal of Economic Structures*, *9*(1). https://doi.org/10.1186/s40008-020-00214-4

Otoritas Jasa Keuangan. (2017). Statistik Perbankan Indonesia 2017. *Statistik Perbankan Indonesia 2017*, *16*, *No. 1*, 195.

Rozali, M. (2020). Faktor Faktor yang Mempengaruhi Ketimpangan Distribusi Pendapatan dan Implikasinya terhadap Kemiskinan di Propinsi Sumatera Selatan. *Jurnal Ekonomi*, *22*(1), 1–16.

Wibowo, T. (2016). Ketimpangan Pendapatan dan Middle Income Trap Income Inequality and Middle Income Trap. *Kajian Ekonomi Keuangan*, *20*(2), 111–132. http://fiskal.kemenkeu.go.id/ejournal