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THE EFFECT OF FINANCIAL INCLUSION ON INCLUSIVE ECONOMIC GROWTH IN INDONESIA

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ABSTRACT

This study examines the influence of financial inclusion on inclusive economic growth in Indonesia using data from 34 provinces. Financial inclusion is measured using the number of bank branch offices, the ratio of credit savings to GRDP, and third-party funds. Meanwhile, economic growth is described by the logarithmic variable of the difference in GRDP per capita. Secondary data from the Central Statistics Agency (BPS) and the Financial Services Authority (OJK) are used in this study. According to the statistical panel regression estimation results, the savings ratio per GRDP and third-party funds significantly positively affect inclusive economic growth. In contrast, the number of bank branch offices has no significant effect on inclusive economic growth.

Keywords: *Financial Inclusion, Inclusive Economic Growth, Number of Bank Branches, Third Party Funds*

ABSTRAK

Penelitian ini menggunakan data dari 34 provinsi di Indonesia untuk menganalisis pengaruh keuangan inklusif terhadap pertumbuhan ekonomi inklusif. Keuangan inklusif diukur dengan menggunakan variabel jumlah kantor cabang bank, rasio tabungan kredit terhadap PDRB, dan Dana Pihak Ketiga. Pertumbuhan ekonomi inklusif pada penelitian ini digambarkan dengan variabel logaritma selisih dari PDRB per kapita. Penelitian ini menggunakan data sekunder yang diperoleh dari Badan Pusat Statistik dan Otoritas Jasa Keuangan. Dengan menggunakan teknik estimasi regresi panel, hasil penelitian ini menunjukkan bahwa variabel rasio tabungan per PDRB dan dana pihak ketiga memiliki pengaruh positif signifikan terhadap pertumbuhan ekonomi inklusif sedangkan jumlah kantor cabang bank tidak berpengaruh signifikan terhadap pertumbuhan ekonomi inklusif.

Kata Kunci: *Inklusi Keuangan, Pertumbuhan Ekonomi Inklusif, Jumlah Kantor Cabang Bank, Dana Pihak Ketiga*

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Introduction

Inclusive finance has become known since the 2008 financial crisis, which impacted low-income groups. Based on Financial Services Authority Regulation Number 76 of 2016, financial inclusion exists to remove all barriers to obtaining or using a variety of banking goods and services following societal needs to increase people's well-being.

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The National Strategy of Financial Inclusion has several aspects of achieving financial inclusion. It is necessary to look at several aspects to make a national strategy, such as appropriate service facilities, appropriate products, and responsive finance through financial education and consumer protection. Based on these aspects, Indonesia made a strategy in Presidential Regulation 82 of 2016. The strategy contains guidelines for strategic steps for financial institutions to help boost economic growth, accelerate poverty reduction, and lower income disparities between individuals and regions so that Indonesians' welfare can be achieved.

Referring to the National Strategy of Financial Inclusion in Presidential Regulation Number 114 of 2020, financial inclusion is a policy that increases financial system stability, encourages economic growth, supports poverty alleviation, and reduces income gaps in society. The government issued this strategy by developing a general financial inclusion framework consisting of six pillars: public financial facilities, financial education, financial information mapping, supporting policies, intermediary facilities, distribution channels, and consumer protection. The six pillars aim to increase public awareness of the existence of financial institutions and expand the reach of financial institutions so that they can be utilized by various levels of society.

According to the Financial Services Authority's (OJK) National Literacy and Financial Inclusion Survey, Indonesia's financial inclusion has increased sharply. Indonesia's financial inclusion rate was 69 percent in 2016 and 76.20 percent in 2019. However, compared to neighboring countries such as Malaysia and Singapore, Indonesia's financial inclusion index is still lagging. Based on the 2017 Global Financial Index survey, account ownership rates in Singapore, Thailand, and Malaysia are 98 percent, 82 percent, and 85 percent, respectively. Therefore, the President is targeting Indonesia to have a financial inclusion index of more than 90 percent by 2024. By 2020, adult account ownership in formal financial institutions has reached 55.7 percent. This number has increased relatively high compared to 2014 data which was only 31.30 percent.

In order to promote people's welfare, the National Strategy for Inclusive Finance includes various goals, including boosting economic growth, lowering poverty rates, and reducing income inequality. Economic growth is essential for people's welfare. Rapid economic growth can only ensure that some receive the same advantages. Hence it does not always influence lowering inequality and poverty levels. High inequality also impacts the social and political stability needed for sustainable growth (Ali & Son, 2007). Thus, a nation's macroeconomic goals need to be more focused on inclusive economic growth, or growth that raises a nation's GDP and reduces poverty and income disparity (Sholihah et al., 2013).

The concept of inclusive economic growth was first introduced by the Asian Development Bank (ADB). Inclusive economic growth has been implemented in various nations, including Indonesia. Inclusive economic growth ensures that everyone has equal opportunities to participate and gain from the growth process (Anand et al., 2013). This concept also highlights that growth's economic opportunities must be attainable to all levels of society, specifically those living below the poverty line. Various concepts offered to formulate inclusive growth have their views on how economic growth should be. Inequality, poverty, sectorial issues, and labor issues are often mentioned as factors affecting inclusive economic growth.

In Indonesia, inclusive economic growth has increased, as evidenced by the rise of the middle-class economy (Sholihah et al., 2013). However, the middle class is still dominated by people with low incomes. It shows that there is still a growing gap between the middle class

and the lower class. It can exacerbate economic inequality. Therefore, efforts are needed to boost inclusive economic growth to reduce inequality.

Based on the conditions above, it is essential to research how much financial inclusion influences inclusive economic growth in Indonesia. Hence, this study is intended to examine and analyze the influence of bank branch offices, third-party funds, savings and loan ratios per GRDP, and the average years of schooling on inclusive economic growth in Indonesia. In this study, the indicators of financial inclusion used are the number of bank branch offices, the ratio of savings and loans per Gross Regional Domestic Product (GDP), and third-party funds per adult population. The control variable used in this study is the average years of schooling. In addition, this study used the logarithm of the difference in GRDP per capita as a variable that represents inclusive economic growth.

Many financial inclusion studies have been conducted in Indonesia and other countries. In Indonesia, previous research has focused more on the effect of financial inclusion on economic growth (Anwar et al., 2016; Purwiyanta et al., 2020) as well as poverty and income inequality in eastern Indonesia (Erlando et al., 2020). Afolabi (2020) has also examined the impact of inclusive finance on inclusive economic growth in other countries. Research conducted by Afolabi (2020) shows that rural credit, bank branch offices, and liquidity levels positively affect inclusive economic growth. Afolabi (2020) found that evenly distributed financial services can increase national productivity and inclusive economic growth. The findings of this study are consistent with the findings of Dixit & Ghosh (2013). Research conducted by Zulfiqar et al. (2016) stated that educational level and gender equality are essential factors of financial inclusion. Meanwhile, Kim et al. (2018) applied the Granger panel causality test to investigate the causality of financial inclusion with economic growth in OIC countries.

In contrast to previous studies which used the financial inclusion index to describe financial inclusion, this study will examine and analyze the effect of financial inclusion on inclusive economic growth in Indonesia from 2010-2019. This study utilizes inclusive economic growth as the dependent variable and the number of bank branch offices, third-party funds per adult population, and the ratio of credit deposits per GRDP as independent variables. These three independent variables represent financial inclusion. This study also included the average years of schooling variable as a control variable in this study. The method applied to investigate the effect of financial inclusion on inclusive economic growth in 34 provinces in Indonesia is the panel data regression.

Literature Review

Financial Inclusion

Financial inclusion has various definitions from several researchers and financial institutions. According to Rangarajan (2008), financial inclusion ensures that financial services are accessible to marginalized communities at an affordable cost. According to Bank Indonesia, financial inclusion is an effort to remove obstacles in facilitating public access to banking services. Meanwhile, Sharma et al. (2014) and Mialou et al. (2017) explained that conditions where people can easily access banking facilities without any obstacles, can be regarded as financial inclusion.

The financial inclusion index is a measurement tool needed to determine a region's financial inclusion level. This index has three essential dimensions: availability, accessibility, and usage. A region has a high level of financial inclusion if its financial inclusion index is high (Sarma, 2012). The dimension of accessibility to banking services is quantified by the number

of bank accounts per 1,000 residents. The quantity of ATMs and bank branches per 1,000 people determines the availability dimension. Meanwhile, the usage dimension is quantified by the number of loans plus deposits to GDP.

Several prior studies have covered the effect of financial inclusion on economic growth in various countries (Ain et al., 2020; Erlando et al., 2020; Kim et al., 2018; Purwiyanta et al., 2020). Several earlier studies have also investigated how financial inclusion affects inclusive growth (Afolabi, 2020; Amponsah et al., 2021; Dixit & Ghosh, 2013).

Kim et al. (2018) conducted research in 55 Organization of Islamic Cooperation (OIC) nations regarding the causal relationship between financial inclusion and economic growth using dynamic panel techniques, VAR panels, IRF, and the Granger causality test. The dynamic panel estimation denoted that financial inclusion positively affects economic growth. Referring to the IRF results obtained from the VAR panel data analysis, financial inclusion positively impacts economic growth. Meanwhile, according to the Granger panel causality test, financial inclusion and economic development possess reciprocal causality. It indicates that financial inclusion significantly impacts OIC countries' economic growth.

Ain et al. (2020) applied the GMM approach to study the influence of financial inclusion on economic growth in 33 developing countries from 2004 – 2016. Related to the findings of this study, inclusive finance positively impacts economic growth, whereas entrepreneurship negatively impacts economic growth. Several institutional variables negatively affect economic growth. Additionally, other factors like government effectiveness and corruption prevention positively impact economic growth.

Several studies also discussed financial inclusion in Indonesia (Erlando et al., 2020; Purwiyanta et al., 2020). In discussing the effect of financial inclusion on Indonesia's economic growth, Purwiyanta et al. (2020) utilized aspects of access, depth, and stability to describe financial inclusion. This study used GRDP per capita to represent economic growth variables. Related to the findings of this study, all financial inclusion indicators influenced economic growth. Financial access has a negative impact, whereas financial stability and depth have a positive impact.

Meanwhile, Erlando et al. (2020) researched the effect of financial inclusion on economic growth and poverty reduction in eastern Indonesia. Three aspects were utilized in this study to gauge financial inclusion. The research results denoted that poverty rates decrease as financial inclusion levels rise. In addition, financial inclusion also has a positive effect on economic growth.

Several previous studies examined the effect of financial inclusion on inclusive growth (Afolabi, 2020; Amponsah et al., 2021; Dixit & Ghosh, 2013). Dixit & Ghosh (2013) focused on how financial inclusion affects inclusive growth in Indian states. In their research, Dixit & Ghosh (2013) explained that financial inclusion is one of the instruments used to generate inclusive growth. The study emphasized the necessity of equal opportunities for financial inclusion to generate inclusive growth. Inclusive finance plays an essential role in inclusive growth through generating and mobilizing resources for economic growth.

Research conducted by Afolabi (2020) discussed the influence of financial inclusion on inclusive economic growth in Nigeria from 1981 – 2017. According to the findings of this study, while interest rates restrict inclusive growth, financial inclusion represented by rural loans, total branch offices, and the level of liquidity significantly affect inclusive economic growth in the short and long term.

Amponsah et al. (2021) analyzed the impact of financial inclusion on inclusive economic growth in 44 Sub-Saharan African countries from 1990 – 2018. According to GMM estimation results, this study denoted that financial inclusion significantly affects inclusive economic growth in Sub-Saharan African nations. It shows how crucial financial inclusion is in promoting inclusive economic growth.

Economic Growth

Roy F. Harrod and Evsey D. Domar developed the Harrod-Domar growth model. This model is defined as a functional economic relationship in which the GDP growth rate is inversely related to national capital output and depends directly on the national saving rate (Todaro & Smith, 2012). This theory has two essential components that can drive economic growth: savings and capital output. A higher saving ratio can increase capital, which can increase economic growth. Harrod and Domar argue that saving and investment are essential to increase income growth at a certain level. This model emphasizes that investment can create income, which is considered a demand effect, and increase economic production capacity, which is considered a supply effect.

To explain economic growth, the Harrod-Domar growth model requires various assumptions. These assumptions are:

1. The economy is in total employment, and accessible capital goods are being utilized to their maximum potential.
2. The main factors affecting economic growth are productivity and savings rates.
3. The capital-output ratio and propensity to save are assumed to have constant returns to scale in this model.

The Harrod Domar model describes economic growth with these assumptions so that the economy can achieve stable growth in the long term. Steady growth is a condition where capital goods have reached optimal capacity, savings have an ideal proportion with the level of national income, and the ratio between capital and production remains constant.

Inclusive Economic Growth

Inclusive economic growth originates from “pro-poor” economic growth, both linked to reducing the poverty rate. Inclusive economic growth is sustainable economic growth that does not only consider income growth but also considers reducing poverty and inequality in society. According to Kodan & Chhikara (2013) inclusive growth is frequently defined as accelerating economic growth by creating equal conditions for investment and expanding employment opportunities. Inclusive growth is interpreted by the Organization for Economic Co-operation and Development (OECD) as economic growth that distributes monetary and non-monetary growth equally throughout society and creates opportunities for all socioeconomic groups.

The distinction between pro-poor and inclusive economic growth is based on the target group. Pro-poor economic growth involves people who are under the poverty line. Meanwhile, inclusive economic growth involves everyone, whether under the poverty line or not (Klasen, 2010). Referring to the World Bank, inclusive economic growth is economic growth that focuses on equity in all sectors, which will open equity for people to have the opportunity to enter the market in the long term. According to Ali & Son (2007), three aspects of inclusive economic growth need attention: poverty, income inequality, and employment opportunities.

The OECD’s strategy for inclusive growth strongly emphasizes the population’s contribution, particularly those who participate less in the growth process. The OECD defines

inclusive growth as creating opportunities and access to broader economic involvement, which depends on political freedom and social opportunities, including education and health. Numerous researchers have created social opportunity functions related to inclusive growth to understand better how society distributes opportunities. Previous research explored the topic of institutions and economic development with the availability of economic institutions within the framework of equal opportunity for all members of society (Stawska & Jabłońska, 2022). Previous studies divided the components of inclusive economic growth into four significant groups following the OECD approach to assessing inclusive growth. These groups include inclusive and effective markets, equal opportunity and basis for future prosperity, growth and guaranteeing that benefits from growth are fairly distributed, and governance.

Data and Research Methods

A quantitative approach was used to analyze the data in this study using panel data regression. Several models can be applied: Pooled Least Square Model, Fixed Effect Model, and Random Effect Model. The data used in this research is panel data from 34 provinces in Indonesia in 2010-2019. This study additionally utilized the Granger Causality test as a robustness test to determine the causal relationship between the variables. The robustness test was conducted to validate the results of the effect of financial inclusion on inclusive economic growth in Indonesia.

The variables used in this study include inclusive economic growth as the dependent variable; the number of bank branch offices, third-party funds per adult population, and the ratio of savings and credit per GRDP as independent variables representing the dimensions of financial inclusion; and the average years of schooling as a control variable. Secondary data from the Indonesian Central Bureau of Statistics (BPS) and the Financial Services Authority (OJK) were used in this study. The following are the variables utilized in this study.

Table 1: Variables, Definitions, and Sources

Variable	Definition	Source
Inclusive economic growth	Inclusive economic growth in this study is represented by the logarithm of the increase in GRDP per capita (Amponsah et al., 2021). $Inclusive\ economic\ growth = \ln \frac{\partial y}{\partial x} GDRP\ per\ capita$	Indonesian Central Bureau of Statistics (BPS)
Bank branch office	This variable is one of the variables representing the dimensions of the availability of financial inclusion. $Bank\ branch\ offices\ per\ 100,000\ population = \frac{Number\ of\ bank\ branch\ offices}{100,000\ adult\ population}$	Financial Services Authority (OJK)
Third-party funds per adult population	Third-party funds per adult population represent the accessibility dimension of financial inclusion. Third-party funds consist of savings, demand deposits, and time deposits. $Third-party\ funds\ per\ adult\ population = \frac{Total\ third-party\ funds}{Total\ adult\ population}$	Financial Services Authority (OJK)
Savings and credit ratio per GRDP	The ratio of savings and credit per GRDP in this study represents the dimensions of using financial inclusion. $Ratio\ of\ savings\ and\ credit\ per\ GRDP = \frac{Total\ saving + total\ credit}{Gross\ regional\ domestic\ product}$	Financial Services Authority (OJK)

Variable	Definition	Source
Average years of schooling	The average number of years of schooling is the average number of years the population spends in formal education. $Average\ years\ of\ schooling = \frac{1}{n}\sum_{i=1}^{n} xi$	Indonesian Central Bureau of Statistics (BPS)

The next stage is to determine the empirical model. The empirical model used to estimate panel data is as follows:

$$\ln DPDRBK_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 DPK_{it} + \beta_3 \ln KCB_{it} + \beta_4 \ln RLS_{it} + \varepsilon_{it} \quad (1)$$

Where:

DPDRBK : Inclusive economic growth (thousand rupiahs)
DC : Savings and Credit per GRDP (thousand rupiahs)
DPK : Third-party funds per adult population (thousand rupiah per adult population)
KCB : Total bank branch offices (units per 100,000 adult populations)
RLS : Average years of schooling (years)
ε : Error term
i : Province
t : Year

The first step in performing a panel data regression test is to select the optimal model from three options, namely Pooled Least Squares (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). Several tests were used to pick the model, including the Chow, Hausman, and Lagrange Multiplier tests. After obtaining the best model, the next stage is to perform a classic assumption test consisting of an autocorrelation, multicollinearity, and heteroscedasticity test. The next step is to conduct a significance test using the F-test and t-test. In addition, this study also used the Granger causality test as a robustness test. The Granger causality test was applied to determine the causal relationship among the model's variables.

Finding and Discussion

Estimation Results

The total observations in this study were 334 observations. Statistical descriptions of each variable used in the study are provided in Table 2. Statistical descriptions include mean, minimum, maximum, and standard deviation values.

Table 2: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Inclusive Economic Growth	334	37118.4	29254.6	9316.79	174812.5
Average Years of Schooling	334	8.00859	1.00387	5.59	11.06
Bank Branch Offices	334	2.39188	1.10937	0.773	7.053
Third-Party Funds	334	1.42869	4.34181	1.19E-05	29.35402
Savings and Credit Ratio	334	0.02951	0.02273	0.00330	0.153174

In order to determine the impact of the number of bank branch offices, third-party funds per adult population, and the ratio of savings and credit to GRDP on Indonesia's inclusive economic growth in 2010 – 2019, this study applied the panel data regression approach.

Table 3: Regression Results

Variables	Inclusive Economic Growth
lnRLS	1.501***
	(-0.524)
DC	5.929**
	(-2.903)
DPK	0.00843*
	(-0.005)
lnKCB	0.0559
	(-0.194)
Constant	3.763***
	(-1.057)

Referring to Table 3, the variable ratio of savings and credit to GRDP significantly positively affects the inclusive economic growth variable of 5,929, assuming ceteris paribus. The third-party funds variable significantly positively affects the inclusive economic growth of 0.0843, assuming ceteris paribus. The average years of schooling variable significantly positively affect the inclusive economic growth of 1,501, assuming ceteris paribus. Meanwhile, the number of bank branches has no significant impact on inclusive economic growth.

After conducting a partial test, the next stage is a simultaneous test. This test is applied to investigate the effect of all independent variables on the dependent variable. The simultaneous test result shows that the independent variables significantly influence the dependent variable simultaneously, with a value of 0.2643 or 26.43 percent. The Prob > F value of 0.0000 or less than α indicates that at least one independent variable affects the dependent variable in this model.

The classical assumption tests, which include a multicollinearity test, autocorrelation test, and heteroscedasticity test, are performed after obtaining the estimation results. The first classical assumption test, namely the multicollinearity test, is applied to analyze the relationship between the independent variables in this study. The multicollinearity test is based on the VIF value. The model has multicollinearity if the VIF value is higher than 10. If the VIF value is less than 10, the model has no multicollinearity problem. In Table 4, the VIF value is 1.13 or less than 10. Hence, this means that the issue of multicollinearity does not exist.

Table 4: Multicollinearity Test Results

Variable	VIF	1/VIF
lnRLS	1.13	0.883664
DPK	1.13	0.883664
Mean VIF	1.13	

The following classical assumption test, the autocorrelation test, is applied to identify autocorrelation problems in the model. The autocorrelation test's null hypothesis is that there is no autocorrelation, while the alternative hypothesis is that there is autocorrelation. The test

results in Table 5 show a Prob > F value of 0.4207 or more significant than α. Hence, it can be inferred that the model has an autocorrelation issue.

Table 5: Autocorrelation Test Results

H0: no first-order autocorrelation	
F (1, 32) =	0.665
Prob > F =	0.4207

The last classical assumption test is the heteroscedasticity test, which analyzes the heteroscedasticity issue in the error term. The heteroscedasticity test's null hypothesis is that there is no heteroscedasticity, while the alternative hypothesis is that there is heteroscedasticity. The results of the heteroscedasticity test in Table 6 show a Prob>Chi2 value of 0.0000 or less than α. Hence, it can be considered that the model has a heteroscedasticity issue.

Table 6: Heteroscedasticity Test Results

H0: sigma(i)^2 = sigma^2 for all i	
chi2 (34) =	85420.07
Prob>chi2 =	0.0000

Discussion

The estimation results show that the ratio of savings and credit per GRDP positively affects inclusive economic growth. A one-unit increase in credit and savings will result in a 5.92-unit increase in inclusive economic growth with the ceteris paribus assumption. These results indicate that an increase in savings and credit will encourage an increase in inclusive economic growth.

Third-party funds variable has a significant positive effect on inclusive economic growth. When third-party funds increase by one-unit, inclusive economic growth will increase by 0.084 units assuming ceteris paribus. The estimation results show that the increase in funds collected from the public by banks will encourage an increase in inclusive economic growth.

Financial inclusion in Indonesia, as represented by third-party funds and the ratio of savings and credit to GRDP, significantly impacts inclusive economic growth. Third-party funds can positively affect inclusive economic growth in Indonesia if banks can use these funds for productive activities. It is reflected in bank programs, such as providing credit facilities for MSMEs or people experiencing poverty. MSME actors can use this credit fund to develop their businesses to increase income. Funds raised by banks can also be distributed through government investment, where banks play a role in improving infrastructure that can help the community, especially people experiencing poverty. Thus, banking has become essential to inclusive economic growth in Indonesia.

The average years of schooling variable, which describes the education quality in Indonesia, also positively affects inclusive growth. It shows that education quality can improve people's knowledge and skills to boost their productivity. The results of this study indicated that all levels of society can access education in Indonesia. Therefore, this can increase inclusive economic growth.

Inclusive growth in Indonesia is not affected by the number of bank branch offices. This result can occur because bank branch offices are considered inefficient due to digitalization in the banking world. Banking digitization creates branchless banking. Branchless banking

has a function to replace the function of bank branch offices which are considered to incur more costs. Branchless banking is one of the policies to improve the financial inclusion strategy in Indonesia. Banking digitization has also increased the use of mobile and Internet banking services. Sophisticated mobile and internet banking features can be accessed from anywhere and anytime so that people do not need to come to branch offices to make financial transactions or use banking services. Thus, the number of bank branch offices does not affect inclusive growth.

Increases in savings and credit show that people are connected to financial services. With financial inclusion, banks will benefit all levels of society, both poor and non-poor, through savings or credit (Ain et al., 2020). It can increase society's productivity by creating jobs that will increase the production of goods and services. Therefore, higher output results in inclusive economic growth.

As stated in a study by Boukhatem (2016), an increase in bank lending and savings results in more financial transactions, which increases the welfare of people experiencing poverty and creates capital accumulation, income distribution, and consumption opportunities. Banking services can encourage inclusive economic growth by providing financial services such as credit that micro-entrepreneurs can use.

Third-party funds have a positive effect on inclusive economic growth. It is consistent with Harrod-Domar's theory of economic growth which states that saving can increase economic growth. The third-party variable funds per adult population describe the funds collected from the public by banks. Third-party funds can encourage inclusive economic growth if banks use the funds collected to become government participation, securities, and credit or loans. The existence of credit services at banks can help people experiencing poverty obtain business capital so that they can open jobs. These productive activities can promote inclusive growth.

The average years of schooling significantly positively affect inclusive economic growth. This finding is confirmed by Gyamfi et al. (2019) and Omar & Inaba (2020), which stated that the level of education would encourage inclusive growth. Both studies show that a higher level of education will increase inclusive economic growth. Omar & Inaba (2020) stated that a higher degree of education would increase the skill, knowledge, and productivity of low-income households, ultimately increasing income levels.

The estimation results imply that using the control variable, the average years of schooling, and inclusive finance from the aspects of use and accessibility can increase inclusive economic growth in Indonesia (Yaqin & Safuan, 2023). Meanwhile, the availability aspect, described by the variable number of bank branch offices, does not influence inclusive growth in Indonesia. These results are supported by Boukhatem (2016); Gyamfi et al. (2019); Ain et al. (2020); Erlando et al. (2020); and Omar & Inaba (2020).

Robustness Test

The Granger Causality approach is utilized as a robustness test in this study. This test is performed to identify the causal relationship between variables. The variables in the robustness test are the same as those in the panel data regression test. The variables used include the logarithmic difference of GDP per capita, the number of bank branches, the ratio of savings and credit per GRDP, third-party funds per adult population, and the average years of schooling. Table 7 contains the estimation outcomes of the Granger causality test.

Table 7: Granger Causality Test Results

Null Hypothesis	Obs	F-Statistic	Prob.
LnKCB does not Granger Cause LnDPDRBK	241	29.6210	1.00E-07
LnDPDRBK does not Granger Cause LnKCB		0.09065	0.7636
DC does not Granger Cause LnDPDRBK	240	10.9312	0.0011
LnDPDRBK does not Granger Cause DC		1.63612	0.2021
DPK does not Granger Cause LnDPDRBK	240	13.3686	0.0003
LnDPDRBK does not Granger Cause DPK		10.3759	0.0015
LnRLS does not Granger Cause LnDPDRBK	241	10.2931	0.0015
LnDPDRBK does not Granger Cause LnRLS		0.20457	0.6515

Table 7 reveals that the number of bank branches and inclusive economic growth is not reciprocal. While the ratio of savings and loans to GRDP affects inclusive economic growth, inclusive economic growth does not affect the ratio of savings and loans to GRDP. Furthermore, the third-party funds per adult population variable have a reciprocal relationship with the inclusive economic growth variable. It indicated that third-party funds per population affect inclusive economic growth and vice versa.

The average years of schooling variable affect inclusive growth, but inclusive growth does not affect the average years of schooling. The bank branch office variable and the savings and loan ratio to GRDP have a one-way relationship; the bank branch office affects the savings and loan ratio. Another one-way relationship is found between third-party funds per adult population, the ratio of savings and loans to GRDP, and the relationship between the average years of schooling and third-party funds per adult population. Several other variables do not have a reciprocal relationship, such as the average years of schooling with the number of bank branch offices and the average years of schooling with the ratio of savings and loans to GRDP.

Table 8: The Results of the Panel Data Regression Test Using GRDP per Capita Growth As the Dependent Variable

Variable	GRDP per Capita Growth
LnKCB	3.938*
	-2.172
LnRLS	3.23
	-2.191
DPK	0.113*
	-0.0636
DC	9.939
	-12.01
Constant	-3.438
	-4.401

The outcomes of the panel data regression test using GRDP per capita growth as the dependent variable are available in Table 8. Related to these findings, inclusive economic growth is significantly influenced by the total bank branch offices and third-party funds but not by the variable ratio of credit savings to gross domestic product (GRDP).

Conclusion

There are several conclusions from this study related to the results and discussion. The variables of third-party funds, the ratio of savings and credit per GRDP, and the average years of schooling significantly positively affect inclusive economic growth in Indonesia. However,

the bank branch office variable has no significant effect on inclusive economic growth in Indonesia. The study results in show that bank branch offices, the ratio of savings and credit per GRDP, and the average years of schooling have a unidirectional relationship with inclusive economic growth. Meanwhile, the third-party variable funds have a causal relationship with inclusive economic growth.

The government needs to expand the reach of financial services by improving financial services that can help people to use banking services anywhere. In addition, the government needs to provide banking products that can encourage people to be productive, such as low-interest loans that all people can access. This loan can later be used to invest or become business capital that can increase inclusive economic growth.

There are still some things that could be improved in this research. The variables used in this study do not include digital banking services and only use one control variable. Moreover, indicators of inclusive economic growth are currently being developed.

Future research is expected to use mobile banking or Internet banking variables to determine the impact of financial inclusion on inclusive economic growth. Other control variables must also be added to future research for better results. Not only that, the use of more comprehensive inclusive economic growth indicators is highly recommended to produce more accurate results.

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