COMPARATIVE ANALYSIS OF THE INFLUENCE OF FINANCIAL SECTOR INCLUSION AND DEVELOPMENT ON ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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Abstract

This study aims to analyze and compare the influence of the financial inclusion index and the financial development index on economic growth in developing countries. The main focus of this study is to find out whether the expansion of access to finance and the strengthening of the financial sector contribute significantly to the increase in economic activity. This study uses a comparative quantitative approach with panel data covering several developing countries during the period 2015 to 2021. Data was obtained from international institutions such as the World Bank, IMF, and Global Findex. The analysis was carried out by descriptive statistical test methods, correlation tests, and regression panel data using the Fixed Effect Model (FEM). The results of the study show that financial inclusion, especially from the physical side, such as the number of bank branches, has a significant positive influence on economic growth. In contrast, the financial development index shows a negative influence in some models, indicating that an increase in financial development does not necessarily have a direct impact on growth. These findings emphasize the importance of striking a balance between inclusion and strengthening financial institutions. Further research is recommended to explore the institutional and governance factors that mediate the relationship between the financial sector and economic growth.

Keywords: Financial Development, Inclusion, Economic Growth, Developing Countries

INTRODUCTION

Economic growth in the Asian region and developing countries in the last decade has shown a fairly rapid increase. However, behind these growth figures, there are still various fundamental challenges that have the potential to hinder the sustainability of long-term development (Islam, 2021). These challenges not only come from environmental aspects such as ecological degradation due to industrialization, but also from social and economic inequality that is still high. Studies have shown that economic development that focuses too much on the growth of the Gross Domestic Product (GDP) figure often ignores aspects of quality of life and equitable access to economic resources (Rahman et al., 2020). The productive sector in developing countries, especially Micro, Small, and Medium Enterprises (MSMEs), still faces barriers in accessing financing, technology, and market information. These barriers correlate with low financial inclusion which can trigger economic inequality between regions and social groups (Naseer et al., 2020). In this case, financial inclusion is not only seen in terms of the availability of financial services, but also in terms of the utilization and quality of services received by the community. Initiatives to expand access to formal finance are an important agenda in efforts to equalize economic opportunities and social empowerment (Ndubisi et al., 2021). Several studies have shown that increased financial inclusion, such as increasing number of bank branches, savings account ownership, and access to credit, contribute to increased productivity and investment in the household and small business sectors (Ahmad et al., 2021);(Sahay et al., 2021). Financial development includes strengthening the infrastructure of the financial system, innovation of financial products, and the efficiency of intermediation that can expand the national financing base. These two things are believed to have a close relationship with economic growth through increased savings, investment, and more optimal resource allocation (Rosyid et al., 2025).

However, there are still gaps in studies that integrate the two financial indicators simultaneously in a comprehensive quantitative analysis. Many studies tend to separate the study between inclusion and financial development, even though the two interact with and influence each other. For example, increased access to finance that is not accompanied by a stable and efficient financial system can create new risks such as bad loans or intermediation failures (Putra Paratama, 2023). Therefore, a comparative approach is needed to understand the relative advantages and potential risks of each variable to economic growth. In addition, many previous studies have used region- or country-specific data that do not represent the context of developing countries broadly. This limits the external validity of the findings and hinders the generalization of enforceable policies (Rosita & Muzdalifah, 2023). Therefore, this study uses a comparative quantitative approach with data coverage across developing countries during the period 2015 to 2021. With a wider scope, this study is expected to provide a more accurate understanding of the different effects between financial inclusion and development on economic growth. In theoretical frameworks, efficient financial development supports the mobilization of savings, reduces transaction costs, and encourages better allocation of capital to productive sectors (Pathan & Fulwari, 2023); (Mtar & Belazreg, 2021). Endogenous growth theory reinforces the argument that a strong financial system can be a catalyst for innovation, human resource development, and long-term growth (Azimi, 2022); (Banik, 2023). In this regard, financial inclusion is not only a

social goal, but also a strategic instrument in encouraging sustainable economic development in developing countries.

Based on the explanation above, the purpose of this study is to empirically analyze the comparative influence between financial development and financial inclusion on economic growth in developing countries. It is hoped that this study can answer the need for evidence-based policymaking that supports inclusive economic development by using secondary data and methods such as descriptive statistical tests, correlation tests, and panel data regression. In addition, this research enhances our understanding of how the quality of the financial system and the level of access to finance contribute to progress towards equitable national development.

REVIEW OF LITERATURE

Financial Inclusion Index

Financial inclusion is the process of ensuring that individuals and businesses have access to and ability to use formal financial services effectively. These services include savings, loans, insurance, and digital payments. Ahmad et al. (2021) and Khera et al. (2021) emphasize that increased financial inclusion contributes to economic growth through the efficiency of digital transactions. Ratnawati (2020) added that financial inclusion encourages economic participation of the community, including MSMEs, by opening access to capital and expanding the consumer base. Research by (Fauziah et al., 2020) mentioned that financial inclusion strengthens the stability of the macrofinancial system, as well as increases resilience to economic turmoil. Another study also found a positive correlation between access to financial services and GDP per capita growth and poverty reduction (de Haan et al., 2022). Therefore, the financial inclusion index is not only a measure of people's economic participation, but also a strategic instrument to encourage inclusive and sustainable growth.

Financial Development Index

Financial development reflects the extent to which a country's financial system has evolved in terms of institutions, markets, and financial instruments. Pathan & Fulwari (2023) stated that a mature financial system is able to improve the efficiency of capital allocation and accelerate innovation in the real sector. According to Mtar & Belazreg (2021), financial development lowers transaction costs, expands risk diversification, and encourages productivity growth through increased investment. In previous research, there was a positive causal relationship between a healthy financial system and long-term economic growth (Mustafa, 2023). Other research also emphasizes that a mature financial system provides easy access to capital for business actors, thereby strengthening the real sector (Anakpo et al., 2023). Overall, the financial development index is an important indicator in creating a dynamic, efficient, and innovative economy.

c. Economic Growth

Economic growth is the process of increasing the production capacity of goods and services of a country in a certain period. The most commonly used indicator is Gross Domestic Product (GDP). Endogenous growth theory emphasizes that economic growth is influenced by internal factors such as innovation, capital accumulation, and increased labor productivity. Previous research has shown that financial inclusion has a direct impact on economic growth because it encourages the participation of marginalized groups in

economic activities (Azimi, 2022). Banik (2023) added that a developed financial system accelerates job creation and a competitive business climate. Countries with advanced financial systems and equitable distribution of human development tend to experience stable and sustainable economic growth. Therefore, both financial inclusion and financial development are the main drivers in encouraging economic growth in developing countries.

Hypothesis Development

Based on the theories and empirical studies that have been discussed, the following are the hypotheses developed in this study:

H1: The financial inclusion index has a significant positive effect on economic growth.

H2: The financial development index has a significant positive effect on economic growth.

H3: There are differences in the influence of financial inclusion and financial development on economic growth between developing countries.

The conceptual framework in this study describes the relationship between two independent variables, namely *the Financial Inclusion Index* and *the Financial Development Index*, to one dependent variable, namely *Economic Growth*. This model is designed to analyze comparatively how much influence each of these financial dimensions has on economic growth in developing countries. Financial inclusion represents the level of access to and use of formal financial services by the community, while financial development reflects the maturity and efficiency of the national financial system in allocating economic resources. Through this approach, the study not only examines the influence of each variable individually, but also compares its contribution to economic growth, in the hope of providing sharper policy insights into financial sector reform priorities in developing countries.

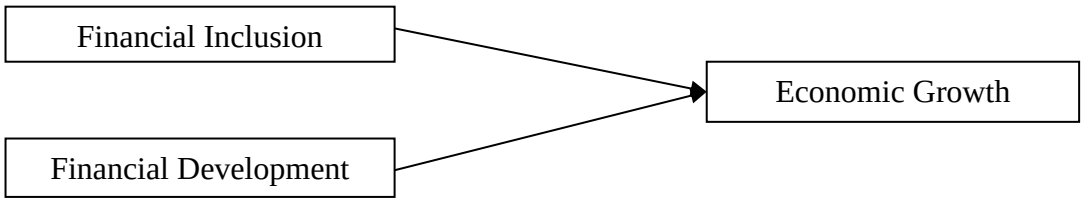

Figure 1. Conceptual Framework Model

RESEARCH METHOD

Using a comparative quantitative method, this study can determine the role of development and financial inclusion in driving economic growth in countries with comparable levels of development. This method allows comparing countries over a given period of time and measuring the relationship between variables. Secondary data collected from reliable global sources were used in this study. So that the results of the analysis become more comprehensive, the data used is in the form of panel data, which is a combination of time data and cross-country data. Since the countries had complete and consistent data for all research indicators, the study focused on 153 developing countries. The research was conducted for 6 years, from 2015 to 2021. Economic growth, measured

through GDP per capita per year, is one dependent variable in the study. In addition, this study uses two independent variables, namely the financial development index and financial inclusion. These two independent variables were chosen because of the important role of the financial sector in driving sustainable economic growth.

This research uses data from leading international institutions such as the World Bank, the Global Financial Inclusion Index (Findex), the International Monetary Fund (IMF), and the Financial Development Index Database. The statistical software of STATA is used to process the data collected online. Descriptive statistical analysis to gain a better understanding of the general nature of the data, data cleansing to prevent errors or extreme values, and data coding are all part of data processing. The objective sampling method, or purposive sampling, is used to select the sample country. The sample countries were selected based on the following criteria: The World Bank considers the country to be a developing country; they have complete and consistent data from 2015 to 2021; and they have indicators of financial inclusion, financial development, and GDP per capita. This technique really makes the analyzed sample an important part of the study.

Data analysis begins with classical assumption testing to ensure the feasibility of regression models. After that, the hypothesis was tested by regression of panel data using the Fixed Effect Model or FEM method. Next, the value of the coefficient and the level of significance were calculated to understand the influence of each variable. In addition, this study compares how financial inclusion indices and financial developments contribute to economic growth. Therefore, it is hoped that this research can help in making more inclusive and sustainable economic policies.

RESULTS AND DISCUSSION

Research Results

The financial inclusion index and the financial development index are used to determine the extent to which people can access and utilize financial services. They also show how the development of the financial sector contributes to economic growth. Factors such as the existence of financial institutions, the availability of ATMs and bank offices, and the ownership of savings and loan accounts are essential to drive the economic activity of people in developing countries. Therefore, using panel data from several developing countries, the purpose of this study is to see how these financial indicators relate to economic growth. Descriptive statistical tests, intervariable correlation tests, and regression tests were used to perform this analysis to determine the direction and magnitude of the influence of each indicator.

Descriptive Statistical Test

Table 1. Descriptive Statistical Test

	Mean	Standard Deviation	Minimum	Maximum
EcoGrowth	2.416	2.887	-58.318	153.493
FinDev	0.323	0.260	0.040	0.980
NumBankAcc	250.448	0.000	0.000	2424.755
NumBankBranches	10.680	5.220	0.000	76.840
SavedAcc	2.575	0.000	0.000	79.327
BorrowedAcc	1.335	0.000	0.000	35.007
NumATM	33.025	10.450	0.000	324.170

Source: Processed Data (2025)

Based on the results of descriptive statistical analysis, it can be seen that the Economic Growth (EcoGrowth) variable has an average value of 2,416 with a standard deviation of 2,887. The minimum value of this variable is -58.318, while the maximum value is 153.493. This shows that economic growth between countries and between years in the study sample is quite variable, with some countries experiencing growth contractions and others showing very high spikes. Meanwhile, the Financial Development (FinDev) variable has an average of 0.323 with a standard deviation of 0.260. The minimum value of FinDev is recorded at 0.040 and the maximum value is 0.980. This shows that there is a significant difference in the level of development of the financial sector between the developing countries studied.

For the financial inclusion variable, the variable number of bank accounts (NumBankAcc) has an average value of 250,448, but does not show any standard deviation. This means that this value is constant for all observations in the dataset and shows no variation, which could indicate data limitations or the need to update the indicator. Similarly, the savings account variables (SavedAcc) and loan account (BorrowedAcc) also have a standard deviation of 0.000, which indicates a fixed value across all countries and years, so further interpretation of their influence needs to be done carefully. The variable number of bank branches (NumBankBranches) has an average value of 10,680 with a standard deviation of 5,220. The minimum value of this variable is 0.000 and the maximum is 76.840, indicating that some countries still have very low bank branch distributions, while others have much wider access. Finally, the variable number of ATM machines (NumATM) showed an average of 33,025 with a standard deviation of 10,450, a minimum value of 0.000 and a maximum of 324,170, which reaffirms the existence of a significant gap in access to financial infrastructure between countries.

Correlation Test

Table 2. Correlation Test

	EcoGrowth	FinDev	NumBankAcc	NumBankBranches	SavedAcc	BorrowedAcc	NumATM
EcoGrowth	1.000						
FinDev	-0.045	1.000					
	(0.109)						
NumBankAcc	0.064**	0.040	1.000				
	(0.022)	(0.157)					
NumBankBranches	0.081***	0.352***	0.286***	1.000			
	(0.004)	(0.000)	(0.000)				
SavedAcc	0.044	0.236***	0.064**	0.173***	1.000		
	(0.118)	(0.000)	(0.021)	(0.000)			
BorrowedAcc	0.058**	0.132***	0.078***	0.162***	0.840***	1.000	
	(0.039)	(0.000)	(0.005)	(0.000)	(0.000)		
NumATM	0.022	0.489***	0.259***	0.637***	0.212***	0.173***	1.000
	(0.424)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Processed Data (2025)

Table 2 shows the results of the correlation test between the variables used in this study. The results of the correlation test showed that the Economic Growth variable had a significant positive correlation with the number of bank accounts (NumBankAcc) of 0.064* and with the number of bank branches (NumBankBranches) of 0.081***. This suggests that the increase in the number of bank accounts and bank branches has a positive relationship with economic growth, albeit with weak to moderate correlation strength. However, the

Financial Development variable does not show a significant direct correlation with economic growth.

Financial Development actually shows a significant correlation with several indicators of financial inclusion. This variable correlates significantly with NumBankBranches (0.352***), SavedAcc (0.236***), BorrowedAcc (0.132**), and NumATM (0.489***). This indicates that the higher the financial development in a country, the greater the infrastructure and financial participation of the community. In addition, there is a very strong correlation relationship between the SavedAcc and BorrowedAcc variables of 0.840***, which shows a close relationship between savings account ownership and loans by the public. In general, the correlation results illustrate that access to banking services has a positive relationship with financial development indicators and can be an important means of supporting economic growth.

Panel Regression Test

Table 3. Regression Test

	(1) EcoGrowth	(2) EcoGrowth	(3) EcoGrowth	(4) EcoGrowth	(5) EcoGrowth	(6) EcoGrowth
FinDev	-1.381**	-1.412**	-1.917**	-2.128**	-2.094**	-1.364
	(-2.03)	(-2.08)	(-2.48)	(-2.54)	(-2.49)	(-1.34)
NumBankAcc		0.000*	0.000	0.000	0.000	0.000*
		(1.79)	(1.42)	(1.44)	(1.42)	(1.70)
NumBankBranches			0.024**	0.024**	0.024**	0.037***
			(2.45)	(2.44)	(2.39)	(4.43)
SavedAcc				0.021*	0.003	0.004
				(1.82)	(0.17)	(0.26)
BorrowedAcc					0.062	0.063*
					(1.63)	(1.65)
NumATM						-0.010**
						(-2.21)
_cons	3.018***	2.910***	2.710***	2.776***	2.774***	2.775***
	(6.84)	(6.40)	(5.91)	(5.92)	(5.91)	(5.95)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
r2	0.186	0.187	0.188	0.189	0.189	0.191
r2_a	0.182	0.182	0.182	0.182	0.182	0.183
N	1281	1281	1281	1281	1281	1281

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Processed Data (2025)

To test the influence of independent variables on economic growth, a panel regression analysis was carried out with various estimation models. The results of the regression test displayed in several models (models 1 to 6) show that the Financial Development variable consistently has a significant negative influence on economic growth. The value of this variable coefficient is in the range of -1,364 to -2,128, with the level of significance at the level of 5% to 1%. This finding is quite interesting because it shows that in the context of developing countries, financial development that is not accompanied by an equitable distribution policy can actually have a negative impact on economic growth, for example through increased inequality or the dominance of the formal financial sector that is not yet inclusive. The variable number of bank branches (NumBankBranches) showed a significant positive influence on economic growth in all regression models. This means that the presence of bank branches directly contributes to increased economic activity, most

likely through increased public access to financial services such as savings, business credit, and payment transactions. The SavedAcc and BorrowedAcc variables also showed significant positive influences in some models, although not consistently in all models. Meanwhile, the NumATM variable did not show significant influence in the model (6), but was retained in the analysis to complete the model structure and look at its possible indirect contribution.

The R-squared value in all models ranges from 0.182 to 0.189. This suggests that the panel regression model used can explain about 18% variation in the economic growth of developing countries. Although this value is not very large, it is quite representative given the complexity of other factors that also affect economic growth and cannot be fully included in the model. In addition, the use of year fixed effects ensures that the influence of time or special events in certain years has been controlled, so that the results obtained are more accurate and relevant.

Discussion

For some time, particularly in developing countries, financial inclusion has been considered one of the key factors driving economic development. By providing them with access to formal financial services such as savings, credit, insurance, and payment systems, people who were previously marginalized from the financial system have the opportunity to participate in economic activities that produce results. In situations like this, the first hypothesis that the financial inclusion index has a significant positive impact on economic growth must be empirically tested.

The results of statistical testing indicate that the physical dimension of financial inclusion, such as the number of bank branches, shows a significant positive relationship to economic growth. These findings are in line with the results of studies by Biswas (2023) and Saraswati (2023) which emphasized the importance of physical banking infrastructure in reaching people in remote areas. The wider the scope of a bank's branches, the greater the likelihood of individuals and small business actors accessing financial services, safely storing funds, and obtaining business financing. This creates a multiplier effect on local economic activity, strengthens purchasing power, and increases overall economic demand. Other indicators such as savings account ownership and loan accounts, while likely to be positive, do not necessarily show significant relationships in all models. This phenomenon reflects the argument of Anindyntha (2020) which highlights the difference between financial access and financial usage. Account ownership does not automatically reflect active use of financial services, especially if limited financial literacy and trust in financial institutions are still a challenge. Thus, the effectiveness of financial inclusion is greatly influenced by the quality of use, not just the quantity of ownership. The existence of a positive correlation between financial inclusion indicators such as the number of ATMs, the number of accounts, and bank branches, reinforces the position that the provision of equitable access can expand public participation in formal economic activities. However, the very strong correlation between savings accounts and loan accounts also reflects that access to one type of service is often accompanied by access to another. This can indicate positive signals about the integration of banking services, but at the same time indicate a concentration of access in the same community group, rather than an expansion into previously marginalized groups.

The bank branch indicator supports the first hypothesis (H1). This shows that physical financial inclusion is still very important in developing countries, where the digitization of services has not been evenly distributed or faces problems with literacy and infrastructure. Governments and financial sector actors can strengthen the foundations of economic growth by geographically expanding the networks and participation of financial institutions. According to the second hypothesis (H2), which states that the financial development index has a significant positive impact on economic growth, the results of the analysis show the opposite results. In this study, the financial development variable showed a significant negative coefficient on economic growth. These variables indicate the depth and efficiency of the financial system as a whole. These findings appear to be at odds with the theoretical arguments commonly put forward by Sarwar et al. (2021) and Zeraibi et al. (2021), which state that a more advanced financial system allows for more efficient capital allocation, risk reduction, and increased productive investment. However, the economic growth of developing countries is not always in line with increasing financial inclusion. In many cases, the financial sector experienced rapid macroeconomic growth, such as capital market growth and credit volume, but did not reach the wider community or MSMEs. As a result, the financial sector appears to be growing, but the benefits are not being felt evenly. Because financial growth concentrates on consumption and the economy rather than production, inequality and strengthening long-term economic growth can occur.

Financial progress can be affected by the instability of the developing financial system, such as weak supervision, economic volatility, and reliance on external financing. If regulation and institutional reform are inadequate, the development of the financial sector risks disrupting the economy. These results indicate the failure of the second hypothesis (H2). It also serves as a warning that, in addition to expanding the scope of the financial industry, financial development must also concentrate on how funds are distributed and become more inclusive. However, the results support the third hypothesis (H3), namely that financial inclusion and financial development have different impacts on developing countries' economic growth. Direct financial developments, such as ease of access to financial services, have shown positive effects, although macro-scale financial developments have shown negative effects. These differences show how important it is to tailor financial policies to each country's unique conditions, balancing expanding access, strengthening regulations, and financial system efficiency to ensure inclusive and sustainable economic growth.

CONCLUSION

The study shows that financial inclusion drives economic growth in developing countries, especially when people have physical access to financial services such as bank branches. This suggests that increased access to finance can drive more equitable and inclusive economic activity. In contrast, overall financial development does not always have a positive impact on economic growth; In some cases, the development of a financial system that does not guarantee equal access and institutional strengthening can actually have a negative impact. These different directions of influence suggest that the development and inclusion of the financial sector must be balanced with the economic growth of developing countries to achieve more quality and sustainable growth.

But this research has some limitations. First, the analysis uses only certain metrics to demonstrate inclusion and development, failing to fully capture the complexity of the financial industry. Second, the study conducted from 2015 to 2021 was too brief to describe structural changes and the impact of financial policy over a longer period of time. Moreover, the research model does not reflect the different social, institutional, and financial literacy conditions in different developing countries. Due to these limitations, further research is recommended to use longer time frames and consider additional aspects such as financial stability, institutional quality, and the level of public literacy about finance. Future research may also divide developing countries based on specific characteristics to obtain a more contextual analysis. The results of this study are expected to improve our understanding of inclusive and adaptive financial policies that focus on long-term economic development.

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