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FINANCIAL INSTITUTION INDEX, BANKING STABILITY, AND HUMAN DEVELOPMENT INDEX NEXUS IN EMERGING MARKET COUNTRIES[10]

This study highlights the importance of understanding the factors that influence the Human Development Index (HDI), a key indicator for assessing social and economic progress in emerging markets. The study used annual panel data from the period 2000 to 2021 obtained from the International Monetary Fund and the World Bank. The analysis method used is Fixed Effect Model panel data regression. The results showed that Financial Depth, Access, Efficiency Institution Index, and banking stability have a positive and significant impact on HDI. The government is advised to expand access to financial services, improve financial inclusion programs, and improve financial regulations to increase transparency. This will help meet basic needs such as education and health and strengthen the financial sector. In addition, it is necessary to improve the supervision and management of financial risks as well as the operational efficiency of financial institutions. These efforts are expected to maintain banking sector stability, support MSMEs, and enhance cooperation between the government, financial institutions, and the private sector for inclusive and sustainable human development.

Keywords: Human Development Index; Banking Stability; Financial Institution Index; Emerging Markets
JEL: G21; I14; I24

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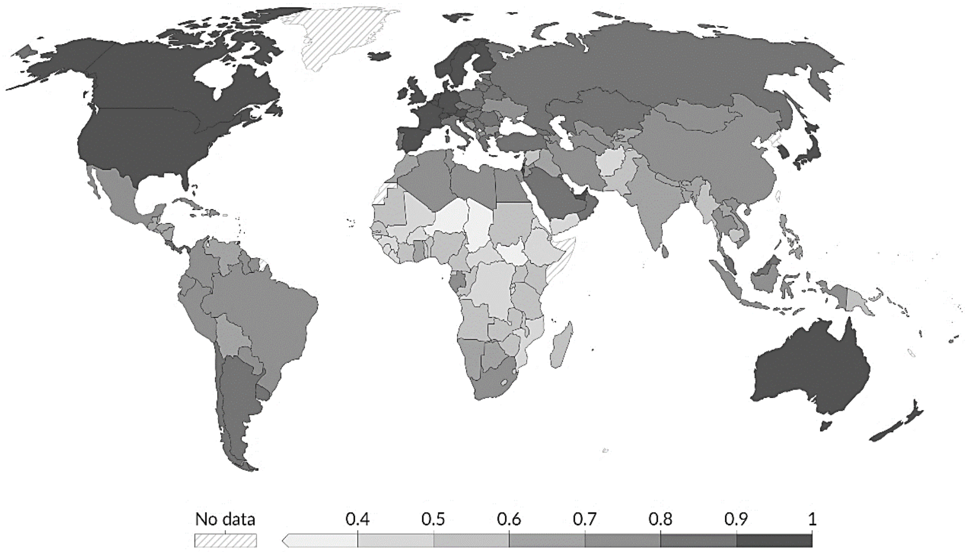
1. Introduction

In an era of increasingly integrated economic globalization, the role of Emerging Market countries is increasingly significant in the global economy (Ahmed, Zlate, 2014). Rapid economic growth, rapid urbanization, and meaningful structural transformation have become the hallmarks of these countries (Bakirtas, Akpolat, 2018). Nonetheless, achieving sustainable human development amid complex global economic dynamics remains a significant challenge (Almulhim, Cobbinah, 2023). Human development is not only limited to economic aspects, but also includes other important aspects such as education, health, social security, and technological development (Heckman, Mosso, 2014).

In 1990, the Human Development Index (HDI) was introduced as an indicator designed to provide a more holistic picture of human development progress, beyond traditional economic metrics such as GDP (Hickel, 2020). HDI covers three main dimensions namely longevity and health, knowledge, and a decent standard of living (Dhahri, Omri, 2018). Countries recognize the importance of ending poverty and other problems while improving health and education, shrinking inequality, developing economies, and responding to the challenges of climate change and environmental preservation (Human Development Forum, 2024; Tatli, Tasci, 2021). In 2015, the UN introduced the Sustainable Development Goals (SDGs) which consist of 17 goals covering social, economic, and environmental aspects to create a more just and sustainable world. Countries with high HDI are generally developed countries (Swadźba, 2020) (Figure 1). However, in emerging markets, the challenges of increasing HDI are often more complex due to limited resources, economic inequality, and pressures from rapid social and economic change.

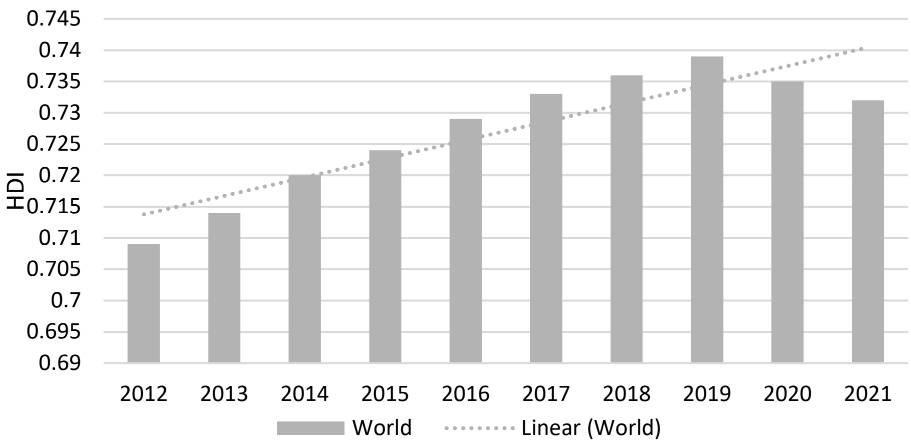
Figure 1. World Human Development Index 2021



Source: Human Development Report (2022).

HDI plays an important role as a measure of human development progress amid the complex dynamics of the global economy. While challenges remain in achieving optimal human development standards, in recent years emerging countries have recorded steady increases in HDI (Figure 2). However, due to the COVID-19 pandemic, there has been a decrease in HDI across countries. In various parts of the world, the pandemic has caused crises in terms of human development (Kavuran, Gökhan, Yeroğlu, 2020). Rapid economic growth and investment in key sectors such as education and health have been key factors in boosting HDI in some countries (Rahman, Raja, Ryan, 2020). However, challenges such as social inequality, income inequality, and limited access to basic services remain barriers that need to be overcome in the quest towards sustainable human development (Seven, Coskun, 2016).

Figure 2. World Human Development Index (HDI)



Source: Our World in Data, data processed, 2024.

Financial development has a crucial impact on human development efforts, directly affecting economic growth, poverty reduction efforts, and improving people's overall welfare (Akif, Asumadu, 2019; Samargandi et al., 2015; Hidayat et al., 2023). In some developing countries, such as China, India, Indonesia, and Thailand, more than 80 per cent of the population has gained access to banking services. This has had a positive impact on increasing the level of human development (Klapper, El-Zoghbi, Hess, 2016). This concept encompasses the access, depth, and efficiency of financial institutions, which are essential elements of financial progress. Financial Development supports the achievement of SDGs, especially SDGs number 1 and 8, by increasing financial access, reducing economic inequality, and facilitating access to capital for Small and Medium Enterprises (SMEs).

Banking stability has an important role in human development which has a significant influence on economic conditions and people's welfare (Kim, Yu, Hassan, 2018). The European Central Bank identifies three types of systemic risks in the banking sector: a slow increase in vulnerability that could trigger a financial crisis, specific risks to financial institutions that could be transferred to other entities, general shocks that affect the system as a whole and impact the real sector (Karkowska, 2019). Empirical and theoretical research has consistently shown that the stability of the banking system has a profound impact on various aspects of economic and social life (Acharya, Ryan, 2016). In a study conducted by Ntarmah et al. (2019), Svirydzenka (2016), and Kim et al. (2018), it has been investigated the relationship between banking stability and the progress of human development in various countries. The results of the study revealed that banking stability not only plays a role in increasing economic growth, but also has a significant positive influence on human development indicators.

The challenges faced by developing countries in developing stable and inclusive financial systems while improving the quality of life of their populations are an important phenomenon to be examined. The significance of this research lies in its focus on emerging markets, which enriches the understanding of the importance of the financial institution index and banking stability in driving human development. These countries are included in the category of developing countries with rapid economic growth and have the potential to become global economic powers in the future. This study took samples from ten countries including Brazil, China, India, Indonesia, Malaysia, Thailand, Philippines, Vietnam, Russia, and South Africa. The study adopts qualitative and quantitative analysis approaches, thus providing an opportunity for a more comprehensive analysis. This study uses the population of countries classified as emerging categories. As such, it is expected that this research can make a substantial contribution to the literature on finance and human development, as well as provide new insights relevant to emerging market practitioners and policymakers. In an effort to improve the SDGs, a deeper understanding of the influence between the Financial Institution Index and bank stability on human development can help in designing more effective and sustainable policies.

The rest of the study is outlined as follows. The second part discusses the literature review. The third section discusses operational data, methods, and definitions. The fourth section will discuss the analysis of variable movements, results, and discussion. The final section discusses conclusions and implications for Emerging Markets.

2. Literature Review

According to human development theory, the main goal of development is to improve the quality of human life, including aspects such as health, education, and living standards (Ismagilova et al., 2019). This approach emphasizes that development should expand the choices available to individuals and increase their freedom to live meaningful and meaningful lives (Fukuda-Parr, Yamin, Greenstein, 2014). Researchers interested in development and transformation follow three main paths of social change (Loorbach et al., 2017; Feola, 2015; Klofsten et al., 2019). The most fundamental of these three pathways is socio-economic, which is explained as a series of interrelated transformations, such as technological advancement, increased productivity, increased life expectancy, increased income, increased level of education, increased access to information, and increased social complexity (Coccia, Bellitto, 2018).

The Human Development Report, first published by the UN Programme in 1990, was a milestone in discussions on methods of measuring development progress (Baumann, 2021). This approach succeeded in bringing together various concepts that had been debated previously in development into a more unified concept known as human development. HDI is often considered a broader and more comprehensive measurement than traditional metrics such as GDP or GNP in assessing socio-economic well-being, or rather, as one of the leading indicators of human development (Kummu, Taka, Guillaume, 2018).

Financial development studies are often used in analyzing the relationship between the financial system and economic growth (Samargandi, Fidrmuc, Ghosh, 2015). This concept seeks to explain how the development of the financial system affects economic growth, and vice versa (Pradhan et al., 2014). One of the main ideas of financial development theory is that access to financial services and the functions of financial intermediaries can play an important role in driving economic growth. An efficient financial system can help direct investment funds and increase access to credit for companies and individuals, so as to support economic growth in the country.

In general, financial development can be classified into two main types, Financial Institutions and Financial Markets. Financial Institution refers to a diverse range of entities that provide a wide range of financial services, including banks, insurance companies, pension funds, and other non-bank financial institutions (Caporale et al., 2014). The main role of these institutions is to act as an intermediary between depositors and borrowers, flowing funds from savers to borrowers, as well as providing financial services such as deposit acceptance, lending, and securities guarantee services (Cruijsen et al., 2021).

The concept of financial stability is an essential foundation in the theoretical structure of modern finance that emphasizes the harmony and reliability of the entire financial system (Adrian, Covitz, Liang, 2015). Financial stability covers various aspects, including resilience to financial crises, effective risk management, and compliance with established regulations and standards (Ellis, Haldane, Moshirian, 2014). Theories on financial stability highlight the importance of having a sound and stable financial system in supporting sustainable economic growth and reducing systemic risks that may arise (Gangi et al., 2019). A common measure for evaluating stability at the individual level in financial institutions is the z-score (Li et al., 2020). This score specifically compares buffer capital (capitalization and yield) with risk (yield volatility) to assess a bank's solvency risk.

3. Research Method

This study examines the relationship between the Financial Institution Index measured using depth, access, and efficiency, banking stability proxied using bank z-scores against the Human Development Index (HDI) in Emerging Markets. This study took samples from ten countries including Brazil, China, India, Indonesia, Malaysia, Thailand, Philippines, Vietnam, Russia, and South Africa. This research data uses secondary data types with a range of 2000-2021. Data sources in this study used secondary data obtained from Our World in Data, the International Monetary Fund and the World Bank. The equation model in this study is as follows:

$$\mathrm{HDI}_{\mathrm{it}} = \beta_0 + \beta_1 \mathrm{FAI}_{\mathrm{it}} + \beta_2 \mathrm{FID}_{\mathrm{it}} + \beta_3 \mathrm{FIE}_{\mathrm{it}} + \beta_4 \mathrm{BZS}_{\mathrm{it}} + \varepsilon_{\mathrm{it}} \quad (1)$$

Where: β is the regression direction coefficient; HDI is the Human Development Index FIA is the Financial Institution Access Index; FID is the Financial Institution Depth Index; FIE is the Financial Institution Efficiency Index; BZS is banking stability proxied using bank z-scores; i is cross section; and t is the time series.

Table 1. Operational Definitions of Variables

Variable	Definition	Unit
Human Development Index (HDI)	The HDI is a summary of measures of average attainment in the main dimensions of human development, measured through three dimensions: health, education, and decent living standards. The HDI index is calculated by flattening and combining the three indicators. Initially, all indicators were placed on a similar scale, starting from 0 to 1. This process involves setting minimum and maximum values for each indicator. Countries that reach or exceed the maximum score will be given a score of 1, while those below the threshold will be given a score of 0. $HDI(i) = \frac{(Actual\ x_i value - minimum\ x_i value)}{(Maximum\ x_i value - minimum\ x_i\ value)}$ Next, the indicators are put together by calculating the average of the knowledge indicators and then calculating the geometric mean of all three dimensions.	Index
Financial Institution Access Index (FIA)	The assessment of access to financial institutions is measured through several variables, including: • Number of accounts per 1000 adults (commercial banks) • Number of branches per 100,000 adults (commercial banks) • % of people with bank accounts (from user surveys) • % of companies with a line of credit (all companies) • % of companies with a line of credit (small companies)	Index
Financial Institution Depth Index (FID)	The depth assessment of financial institutions is measured through several variables, including: • Private Sector Credit to GDP • Financial Institution Assets/GDP • M2/GDP • Deposits/GDP • Gross Value Added of the financial sector to GDP	Index
Financial Institution Efficiency Index (FIE)	Assessment of the efficiency of financial institutions is measured through a number of variables, including: • Net interest margin • The difference between credit and deposits • Non-interest income to total income • Operating expenses (% of total assets) • Profitability (ROA, ROE) • Boone (or Herfindahl) indicator	Index
Banking Stability (BZS)	This study uses bank z-scores as a proxy for banking stability. A bank's z-score reflects the risk of default in the commercial banking system. Bank Z-Score: $Z - scores = \frac{ROA + CAR}{\sigma ROA}$ ROA represents the rate of return on assets, CAR represents the capital adequacy ratio and σROA is the standard deviation of the total return on assets.	Score

Source: Author Compilation (2024).

This research uses qualitative and quantitative analysis method approaches. Qualitative analysis by analyzing trends in the movement of data for each variable studied, while quantitative research uses regression analysis of panel data to test the influence between variables. There are three types of panel data regression that will be used, namely Common, Fixed, and Random Effect Models. In choosing the best method used Chow, Hausman, and LM Test.

4. Results and Discussion

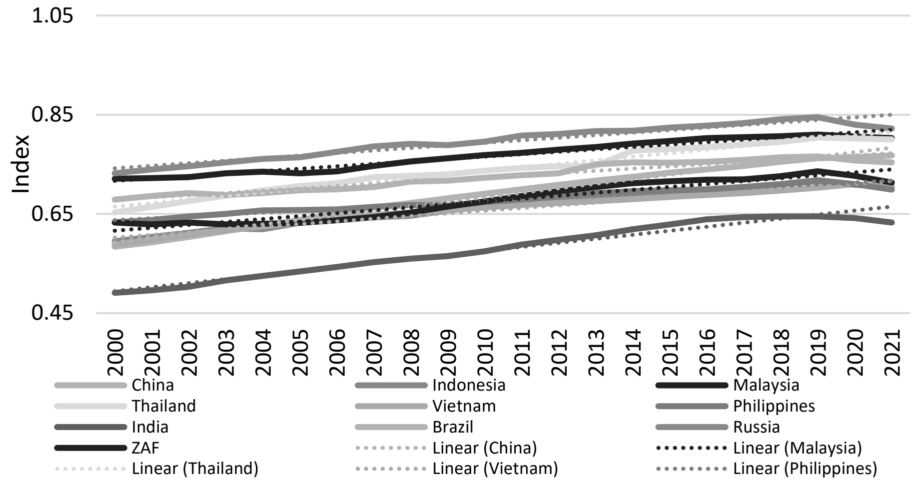
4.1. Analysis of Human Development Index Variable Trend Movement

HDI which tends to be lower in emerging economies has a direct impact on the achievement of SDGs, especially SDG number 1 (Ending Poverty), SDG number 3 (Good Health and Well-being), and SDG number 4 (Quality Education). This phenomenon reflects the challenges still faced by these countries in achieving optimal levels of human development. The SDGs aim to create a more just, sustainable, and inclusive world, focusing on various aspects of human development, including health, education, poverty reduction, and gender equality. Therefore, the human development gap seen in emerging market HDI is crucial in achieving the SDGs. Efforts to increase HDI in these countries are important to support global efforts in achieving the sustainable development goals mandated by the SDGs.

Countries with HDI in the high category (0-700-0.7999) in emerging markets are Russia, Malaysia, Thailand, South Africa and Brazil. In Russia, the government has designed and implemented various programs aimed at increasing HDI and improving the social and demographic conditions of the country. One of the programs that received priority and substantial funding is the national program “Demography”, which includes various actions that are expected to produce concrete results and have a long-term positive impact on society. The demographic program is designed with a comprehensive approach and includes a number of strategic measures aimed at completely transforming the system and achieving significant social change (Mitrofanova et al., 2021). The Brazilian government's efforts to increase HDI include a significant increase in spending on social assistance. Spending on social assistance increased by 375 per cent in real terms between 2002 and 2015, mainly coming from social programs, including Bolsa Família and the Continuous Welfare Benefit (Benefício de Prestação Continuada – BPC) (Silva, Andrade, 2017).

Malaysia despite having a relatively high HDI rate compared to other countries, still faces challenges in comprehensive skills development to support future economic growth. Educational institutions in Malaysia also experience misalignment with industry needs, as well as a lack of effective coordination between the two. As a result, in several indicators, such as the pillars of health and basic education as well as higher education and training, Malaysia is in a relatively low position, ranking unsatisfactory. Lack of learning programs, shortages in technical and vocational training, and unpreparedness for technology have led Malaysia to occupy a suboptimal position in the technology readiness pillar. If there is no significant improvement in this regard, Malaysia may be stuck in middle-income country status without significant progress (Taskinsoy, 2020).

Figure 3. Human Development Index in Emerging Markets



Source: Our World in Data, data processed, 2024.

Countries in the medium HDI category (0.550-0.699) are China, the Philippines, Indonesia, Vietnam, and India. Having experienced rapid economic development over the past three decades, China has become one of the major economic powers in the world. However, along with these advances, environmental challenges in China have also increased, with significant impacts on social and economic aspects. The global financial crisis has prompted China to prioritize domestic consumption and undertake major infrastructure development. Despite having the second largest GDP in the world, China's GDP per capita is still far below that of the developed world. Despite efforts to protect the environment and improve the efficiency of resource use, China still faces serious challenges related to environmental pollution and limited natural resources (Liu, Raven, 2010).

India faces a number of challenges in achieving HDI. One of the major challenges is the issue of waste management, which includes the issue of handling solid waste in Indian cities (Srivastava et al., 2015). There is a need for more specific screening programs for certain cancers, such as oral cancer, which is highly prevalent in India (Deo, Sharma, Kumar, 2022). India also has key programs that form the cornerstone of part of the social security system, including school meals, Integrated Child Development Services, the National Rural Employment Security Act, the public distribution system, and social security pensions for single mothers, the elderly, and persons with disabilities (Drèze, Khera, 2017). However, the challenges faced in the implementation and effectiveness of these programs need to be overcome to improve the overall welfare of the community.

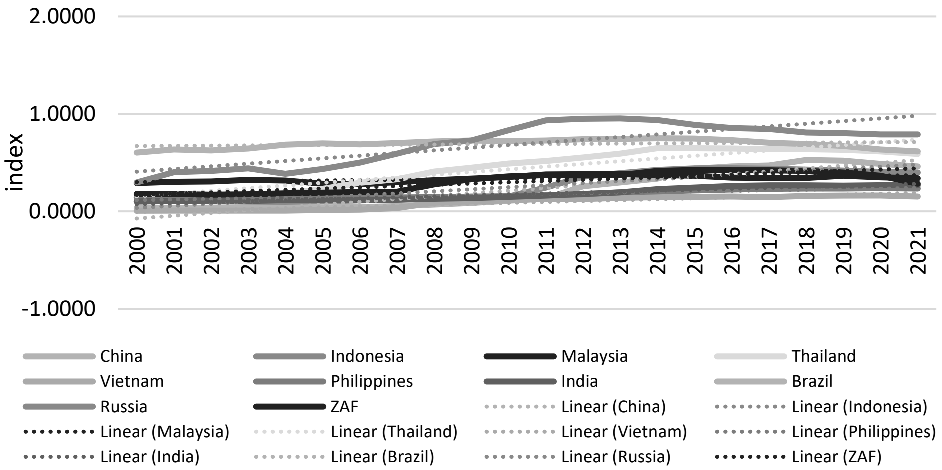
Indonesia faces a number of challenges in its efforts to increase HDI. With a population of over 262 million spread across more than 17,744 islands, the country experiences unique barriers to achieving Universal Health Coverage (UHC). One of the main challenges is the issue of accessibility and equity in higher education. Although there have been efforts through various scholarship schemes such as Bidikmisi, Academic Achievement

Improvement Scholarship (BPP-PPA), International Science Olympiad (OSI), and Kampus Merdeka, there are still gaps in the accessibility of higher education, especially for people from low economic backgrounds and remote areas (Purnastuti and Izzaty, 2016). The quality of education in Indonesia also needs to be improved. This is reflected in the low HDI and low higher education participation rate. Indonesia also faces a low human capital index, a digital divide between rural and urban areas, as well as between the Java-Bali region and other regions (Ssenyonga, 2021).

4.2. Analysis of Variable Trend Movement Financial Access Institution Index

Overall, there was a consistent increase in the Financial Institution Access (FIA) Index across all countries investigated, reflecting ongoing efforts to expand access to financial institutions at the global level (Figure 4). Countries such as Russia, Thailand, and Indonesia showed the most significant upward trend in the access institution. This significant increase can be indicated as a result of effective policy implementation in promoting financial inclusion and expanding access to financial services at the national level. Major banks in Russia have started the development of Fintech independently. The features of the Russian banking system have a direct effect on the progress of Fintech. The Bank of Russia, as the main regulator, supports the development of Fintech and plans to gradually adjust regulations to changing conditions (Matveevskii et al., 2019). In Brazil, the concept of regionalization of health services has been successfully implemented, resulting in a more equitable distribution and access to health services throughout the territory of the country (Viana, Silva, Yi, 2017). Through this approach, populations in rural and remote areas have also benefited from improved access to health services.

Figure 4. Financial Access Institution Index Emerging Markets



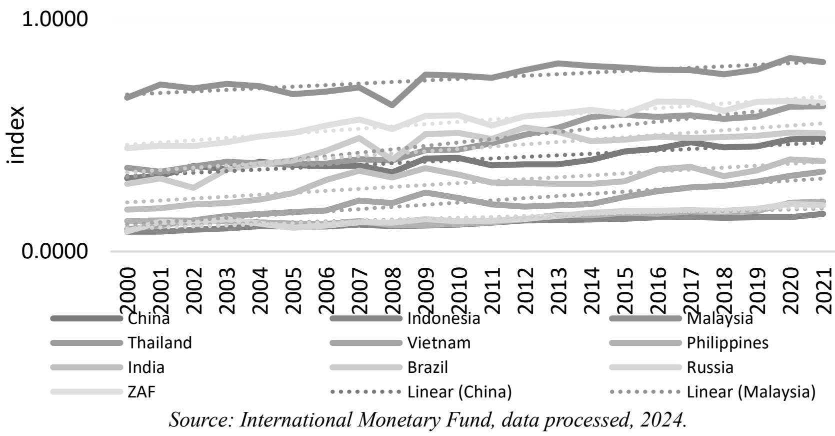
Source: International Monetary Fund, data processed, 2024.

China prioritizes financial inclusion in rural areas and for underprivileged communities, while Indonesia focuses on strengthening microfinance institutions and MSMEs in remote areas. Malaysia prioritizes financial infrastructure development and promotion of digital financial services innovation, while Thailand emphasizes expanding access to financial institutions in rural areas and the informal sector. Vietnam and the Philippines are working to improve financial transparency and supervision. India prioritizes improving access to financial services in rural areas through government programs, while Brazil implements policies to strengthen the role of financial institutions in supporting economic growth. South Africa has taken various steps to improve access to financial institutions, especially for historically marginalized black communities. One of the main efforts was the launch of the 'Mzansi' account in 2004, designed to provide basic financial access to the underprivileged (Kostov, Arun, Annim, 2015).

4.3. Analysis of Trend Movements of Financial Institution Depth Index Variables

In general, there was an increase in the value of the Financial Institution Depth Index in Emerging Markets (Figure 5). In 2008, the global financial crisis caused a decrease in the value of such variables in most countries. Then, when COVID-19 hit in 2020, there was a different trend. Although this crisis has also had a negative impact on the financial sector in many countries, the value of such variables tends to increase overall. This indicates the adaptation and policies implemented by countries to overcome the economic impact of the pandemic, such as economic stimulus and loose monetary policy (Hakim et al., 2023). South Africa is quite high in financial depth. As Africa's second-largest economy, it is in the upper-middle-income category (Kumar et al., 2015). South Africa's financial sector is relatively well-developed. Strict banking regulations, including minimum capital requirements for foreign bank branches, have been a key commitment, to creating financial sector stability (Beck, Senbet, Simbanegavi, 2015). The contribution of foreign banks from developing countries, as well as the expansion of access to individual consumer loans, have increased financial inclusion in the country.

Figure 5. Financial Depth Institution Index Emerging Markets



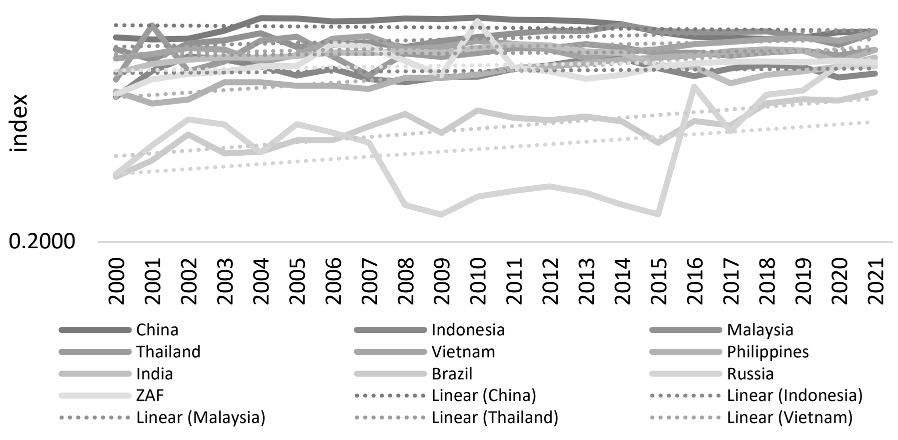
Source: International Monetary Fund, data processed, 2024.

Indonesia, Russia and the Philippines show low financial depth. According to Lianto et al., (2018), electronic money transfers are on the rise in the Philippines, but the rate of digital adoption, especially for mobile payments, is relatively low especially when compared to emerging markets. One of Indonesia's main challenges is limited accessibility and equity in education, especially for those from low economic backgrounds. The management of education funds is also an obstacle, where the risk of misuse of funds and lack of transparency in their use can hamper the effectiveness of education programs (Plummer, Boyle, 2016). Financial deepening in Russia is happening slowly when compared to other developing countries. Although the Russian government has committed to implementing better economic policies and carrying out important structural reforms to improve institutional conditions and address structural weaknesses, over time, the fatigue effects of such reforms are beginning to be felt. As a result, significant gaps and weaknesses in institutional and business conditions are still characteristic in Russia.

4.4. Analysis of Trend Movements of Financial Institution Efficiency Index

Russia, Brazil, Indonesia, Malaysia, Vietnam, and the Philippines recorded significant increases in the FIE index. This increase illustrates the success of policies implemented to improve the efficiency of financial institutions in these countries. Brazil has undertaken a series of financial sector reforms aimed at improving transparency, accountability and oversight, efforts that have likely contributed to the improvement of FIE in the country. However, there are countries such as China and India that showed a decline in FIE during the same period. This decline can be attributed to the structural challenges faced in the financial sector as well as the underlying economic instability. China faces complexity and fragmentation in their financial system, whereas India is experiencing problems such as bad debts and banking crises.

Figure 6. Financial Efficiency Institution Index Emerging Markets



Source: International Monetary Fund, data processed, 2024.

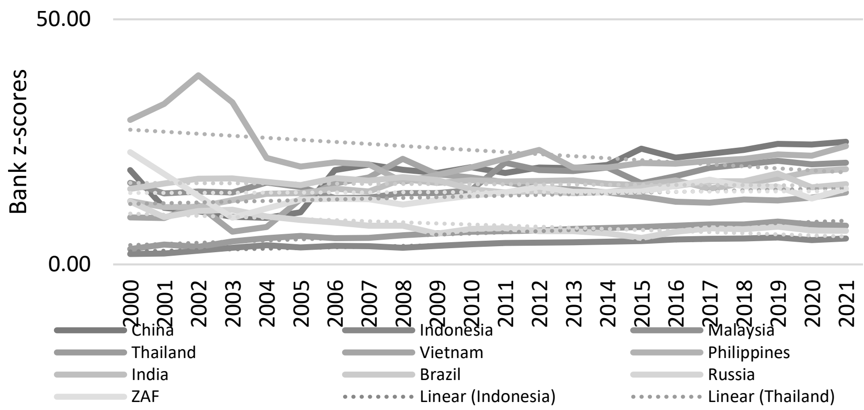
FIE declines such as those in Thailand and South Africa reflect significant challenges in improving the efficiency of the financial sector. Lack of innovation in financial services is one of the main factors hindering progress, as such innovation is often a driver of growth and efficiency in the financial system. Targeted policy implementation, as observed in Brazil and Indonesia, has proven its effectiveness in improving the efficiency of financial institutions. These measures include transparency, accountability, and financial infrastructure, which overall improves the accessibility and performance of the financial sector. Russia showed the lowest financial efficiency among the emerging markets studied. The policy in Russia to improve banking stability involves great efforts in the development of a modern credit infrastructure. This credit infrastructure forms the core of the bank lending market, where various key participants, such as credit bureaus, rating agencies, and banking associations, have a crucial role in ensuring the smooth running of the Russian banking system (Ezangina, Evstratov, Jovanovic, 2016). Some of the initiatives under consideration include the establishment of the National Credit History Bureau, the development of an accreditation system for credit rating agencies, as well as the restructuring of the guarantee fund system to be more effective in shoring up the country's banking stability.

4.5. Analysis of Banking Stability Variable Trend Movement

Based on the banking stability category, if the bank z-scores above 2.57, this indicates that the banking condition is stable and very healthy. Thus, all Emerging Markets countries studied are classified as countries with a very healthy category. India, China, Indonesia, Thailand, Malaysia, Vietnam and South Africa show an upward trend in banking stability (Figure 7). This increase reflects the successful implementation of stable macroeconomic policies, strengthening banking regulation and supervision, as well as the solid performance of financial institutions in these countries. India has implemented various financial reform measures to boost the resilience of the banking sector, including restructuring non-performing assets and increasing the capitalization of small banks. On the other hand, the decline in banking stability observed in the Philippines, Russia, and Brazil was caused by factors such as economic instability, financial crisis, or failure in effective policy implementation. In Brazil, the economic slowdown and corruption scandals in the public sector have affected investor confidence and the stability of the financial system as a whole. Philippine banking stability is also declining as bank management deemed "too big to fail" requires a government response to prevent the failure of these institutions, which is directly linked to the potential broad economic impact of their relationships with other entities in the provision of goods and services (Banderlipe, 2016).

India, China, Indonesia, Thailand, Malaysia, Vietnam and South Africa have taken a series of policy measures to strengthen banking stability. One of the main policies implemented is strengthening banking regulation and supervision. This includes improving the regulatory framework, establishing a strong financial supervisory authority, and conducting rigorous audits and monitoring of financial institutions. Some countries have also implemented fiscal and monetary policies that support banking stability (Shodrokova, Asngari, Hidayat, 2023). This includes measures such as emergency liquidity provision by the central bank, interest rate adjustments to manage bad loans, as well as economic stimulus to reduce financial pressure on the banking sector. In addition, these countries have also committed to strengthening cooperation among financial institutions, both domestic and cross-border, to improve coordination in dealing with systemic risks and addressing challenges that may arise in the future. In 2020, it was seen that all countries showed a decline in banking stability, this was attributed to the COVID-19 pandemic which had an impact on declining revenues, economic performance, and an increase in non-performing loans (Nurhaliza et al., 2024).

Figure 7. Banking Stability Emerging Markets



Source: World Bank, 2024.

4.6. Descriptive Statistical Analysis

Descriptive statistics show that the average HDI value is 0.697 with a range of values between 0.491 to 0.845 (Table 2). The median HDI is 0.6995, which indicates the middle value of the distribution. The HDI standard deviation is 0.071, indicating a relatively low degree of variation of HDI values in the sample. The highest maximum HDI value in Russia in 2019 was 0.845, while the lowest value in India was 0.491 in 2000. The maximum value of FID in Malaysia in 2020 is 0.8323, while the minimum value of FID in Indonesia in 2000 is 0.0852. The maximum FIA score in Russia in 2013 was 0.9536 while the minimum in Vietnam in 2000. The FIE maximum in 2010 in China was 0.7686. The maximum BZS in the Philippines in 2002 was 38,57995, while the minimum was 2,127 in Indonesia in 2000. The skewness of HDI is -0.306199, indicating that the HDI distribution tends to lean somewhat to the left, although overall the distribution is almost symmetrical. The HDI kurtosis is 2.991126, indicating that the HDI distribution has a slightly heavier tail than the normal distribution. Overall, the results of the Jarque-Bera test show that the HDI distribution is significantly different from the normal distribution with a probability value of 0.179.

The mean value of FID is 0.355596, which indicates the middle value of all FID data in the sample. The median FID is 0.345868, which indicates that half of the data has values above 0.345868 and the other half has values below it. The range of FID values is from 0.085164 to 0.832317, which indicates the maximum and minimum variation in the data. The standard deviation of the FID is 0.205384, which indicates how far the data is spread from the mean.

The skewness of the FID is 0.510186, which indicates that the data distribution tends to be slightly skewed to the right.

Table 2. Statistics Descriptive

	HDI	FIA	FID	FIE	BZS
Mean	0.69754	0.340040	0.355596	0.633513	13.86636
Median	0.699500	0.290938	0.345868	0.661493	14.70296
Maximum	0.845000	0.953622	0.832317	0.768580	38.57995
Minimum	0.491000	0.006608	0.085164	0.268714	2.127169
Std. Dev.	0.071368	0.236318	0.205384	0.104091	6.388665
Skewness	-0.306199	0.723575	0.510186	-1.529727	0.276295
Kurtosis	2.991126	2.574139	2.188495	5.194586	3.308844
Jarque-Bera	3.438503	20.85966	15.8057	129.9509	3.673445
Probability	0.179200	0.000030	0.000414	0.000000	0.159339
Sum	153.4600	74.80871	78.23110	139.3728	3050.599
Sum Sq. Dev.	1.115441	12.23034	9.238024	2.372859	8938.495
Observations	220	220	220	220	220

Source: EViews, data processed, 2024.

4.7. Classical Assumption and Stationarity Test Results

The results of the classical assumption tests indicate that the regression model meets the normality assumption with a p-value of 0.2191, suggesting normally distributed residuals (Table 3). The heteroscedasticity tests show no significant issues, with p-values greater than 0.05 for all variables, indicating that the homoscedasticity assumption is satisfied. Additionally, the multicollinearity test reveals no high correlations among the independent variables, suggesting that multicollinearity is not a significant problem. Therefore, the regression model satisfies the necessary classical assumptions for valid analysis.

Table 3. Classical Assumption Test Results

	F-Statistics		Prob	
Normality Test	3.0358		0.2191	
Heteroscedasticity Test				
C	0.210915		0.8332	
FIA	1.539447		0.1252	
FID	-0.810458		0.4186	
FIE	-1.931588		0.0548	
BZS	0.683710		0.4949	
Multicollinearity Test				
	FIA	FID	FIE	BZS
FIA	1.0000	0.2109	-0.6102	-0.1766
FID	0.2109	1.0000	0.3357	0.2298
FIE	-0.6102	0.3357	1.0000	0.1907
BZS	-0.1766	0.2298	0.1907	1.0000

Source: EViews, data processed, 2024.

Table 4. Results of the Stationarity Test

Variable	Augmented Dickey Fuller		Phillips-Perron	
	level	1st difference	level	1st difference
HDI	32.489**	101.519***	51.798***	35.716**
FIA	11.235	111.356***	8.753	38.934***
FID	6.781	87.310***	10.996	183.131***
FIE	10.997	183.131***	68.865***	455.641***
BZS	27.953	75.876***	35.797**	149.815***

*Note *, **, and *** Indication of significance levels at the level of 10%, 5% and 1%*
Source: EViews, data processed, 2024.

The results of the stationarity test presented in Table 4 indicate that most variables become stationary after the first difference. HDI is non-stationary at the level but becomes stationary after the first difference according to both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. FIA and FID also show non-stationarity at the level but become stationary after the first difference. FIE is stationary only after the first difference according to ADF, though it shows significance at the level with the PP test. Finally, BZS becomes stationary after the first difference. Overall, these variables require differencing to meet the stationarity assumption.

4.8. Estimated Results

In the analysis, the results of the Chow test and Hausman test shown in Table 5 show that the probability is less than α= 5 per cent. Therefore, based on these considerations, it was concluded that the Fixed Effect Model is the most suitable method.

The results of the model estimation in this study are as follows:

$$\widehat{\mathrm{HDI}}_{\mathrm{it}} = 0.471 + 0.162\mathrm{FIA}_{\mathrm{it}} + 0.277FID_{it} + 0.081\mathrm{FIE}_{\mathrm{it}} + 0.001\mathrm{BZS}_{\mathrm{it}} + \varepsilon_{\mathrm{it}} \quad (2)$$

Based on Table 5, the magnitude of the HDI constant is 0.4711, positive and significant at an alpha level of 1 per cent. The variables FIA, FID, FIE, and BZS showed a positive and significant influence at an alpha level of 1 per cent. The R-squared is 0.9395, which indicates that the regression model explains about 93.95 per cent of the variability in the dependent variable. The F-statistic value is 246.2693 with an F-statistic probability of 0.0000, which indicates that the overall regression model is significant.

Based on the results of the cross-section effect, it was found that Russia had the most significant impact on increasing HDI compared to other countries in this analysis, with the highest coefficient of 0.5950. Followed by Indonesia with a coefficient of 0.529172, showing that Indonesia also had a significant impact on increasing HDI after controlling for other independent variables. Meanwhile, India had the lowest coefficient of 0.3900, indicating that India had less impact on HDI increase compared to other countries in this analysis after controlling for other independent variables.

Table 5. Estimated Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.471154	0.017277	27.27137	0.0000***
FIA	0.162224	0.013064	12.41773	0.0000***
FID	0.277510	0.029657	9.357464	0.0000***
FIE	0.081708	0.027436	2.978145	0.0032***
BZS	0.001499	0.000431	3.476419	0.0006***
R-squared	0.939545	Mean dependent var		0.69754
S.E. of regression	0.018093	Akaike info criterion		-5.12508
Sum squared resid	0.067434	Schwarz criterion		-4.90912
Log likelihood	577.7595	Hannan-Quinn criter.		-5.03787
F-statistic	246.2693	Durbin-Watson stat		0.33542
Prob(F-statistic)	0.000000			
Chow Test				0.0000
Hausman Test				0.0000
Normality Test				0.2191
Heteroscedasticity Test				0.2049
Individual Cross-Section Effect				
China	-0.018563			
Indonesian	0.058018			
Malaysia	-0.048876			
Thailand	-0.000470			
Vietnamese	0.035840			
Philippines	0.050697			
India	-0.081090			
Brazil	-0.045724			
Russia	0.123938			
South Africa	-0.073770			

*Note *, **, and *** Indication of significance levels at the level of 10%, 5% and 1%*
Source: EViews, data processed, 2024.

4.9. Effect of the Financial Institution Access Index on the Human Development Index

The results of regression analysis show a significant positive correlation between the Financial Access Institution Index and HDI. The findings highlight that countries that have wider access to financial institutions tend to show higher levels of human development. Factors that may explain this relationship include easier access to financial services, which enable individuals to acquire financial resources vital to meeting basic needs, such as education and health. Financial institutions facilitate access to credit, savings, and other financial services that support investment in those areas, which in turn contributes to improved quality of life and improved HDI. The important role of financial institutions is also seen in financial risk management and social protection, where access to financial services can help people manage financial risks such as illness or job loss, which have the potential to disrupt human development. The findings are also in line with previous research by Arora (2014) and Matekenya et al. (2021) which found a positive relationship between financial access and human development. In addition, this positive finding is in line with the movement of FAI Index and HDI variables in Figures 3 and 4.

In an effort to improve access services to financial institutions, emerging markets have implemented diverse policies. In China, the government has taken an aggressive approach by expanding financial infrastructure and financial technology, while Indonesia has focused more on financial inclusion through programs such as the National Non-Cash Movement (GNNT) and the National Movement for the Acceleration of Digital Payments (GNP2D). Malaysia has emphasized on improving the accessibility of financial services in rural areas, while Thailand has expanded its banking network in remote areas through public-private sector partnerships.

The Vietnamese government has expanded access to digital financial services, while the Philippines and India have encouraged financial inclusion through the establishment of micro banks and digital financial services. Brazil has been active in expanding financial inclusion to increase HDI. This involves initiatives to expand access to financial services, especially in rural and remote areas, through the development of an inclusive financial system. These efforts include the development of financial infrastructure in previously underserved areas and the promotion of inclusive financial institutions such as microbanks and credit cooperatives (Hajj, 2021). In Thailand, the level of financial access to healthcare is quite high, which has contributed significantly to the increase in HDI. Since the 1970s, the Thai government has focused on building healthcare infrastructure at the district level and below, as well as training health workers. Deliberately adopted policies to increase the training capacity of domestic health workers and distribute them to rural areas as well as underserved areas (Tangcharoensathien et al., 2018). Vietnam has a livelihood that depends mostly on the agricultural sector. However, access to credit in rural areas remains a significant challenge. The rural credit market in Vietnam has complex characteristics, and complicated lending procedures make access to credit difficult for households. The limited supply of formal lenders is also a problem, due to the rudimentary formal market. As a consequence, informal sources of credit tend to dominate in rural areas (Linh et al., 2019). Apart from Vietnam, financial access in India is also quite low. Credit access challenges in India are mainly related to poverty and unemployment which have been hallmarks and major obstacles to sustainable development since independence. One of the main causes is the lack of adequate credit facilities for the poor and unemployed.

4.10. Effect of Financial Institution Depth Index on Human Development Index

The Financial Institution Depth Index has a significant positive impact on HDI. These results are in line with the findings of previous research by Kishore & Singh (2020) and Anh & Nguyen (2022). In addition, the regression results are also in line with the trend of movement of FDI index and HDI variables in Figures 3 and 5. The conception of the depth of financial institutions involves a number of dimensions, including banking penetration, accessibility of financial services, diversity of financial products, and level of financial openness. Wider banking penetration in society has the potential to provide wider access to financial services for diverse segments of the population. This includes services such as savings, credit, and investment accounts, which directly affect an individual's capacity to meet basic needs such as education, health, and business. The diversity of financial products also plays an important role in improving the quality of life and welfare of society as a whole. With a wide variety of products such as savings, education loans, and health insurance, individuals can choose the option that best suits their needs and preferences.

Russia is the country with the highest HDI among other countries studied. Russia implemented a concessional loan program for MSMEs since 2019 MSME support has received the status of a national project (Razumovskaia et al., 2020). In Malaysia, support for MSMEs through the provision of credit has been instrumental in increasing HDI. Programs such as those managed by Amanah Ikthiar Malaysia (AIM) are clear examples of how microcredit can help alleviate poverty and improve people's welfare. AIM, which was established in 1986, is one of the institutions actively involved in providing microcredit to help poor households increase their income through MSMEs. These programs, which focus on empowering women and single mothers in rural areas, have succeeded in providing significant benefits to underprivileged communities (Terano, Mohamed, Jusri, 2015). In Thailand, bank lending plays an important role in supporting the MSME sector to play a large role in the country's economy. The SME sector contributes about 37 per cent to GDP and provides jobs for about 80 per cent of Thailand's workforce. However, recent data shows a decline in the number of bank loans to SMEs, highlighting the need for efficiency in the use of available funds as well as strategies to diversify financing sources for SMEs (Ramcharran, 2017).

4.11. Effect of the Financial Efficiency Institution Index on the Human Development Index

The Financial Efficiency Institution Index has a significant positive impact on HDI. Efficient and reliable operations of a country's banks and financial institutions stimulate people to save and provide confidence for investors to invest. An increase in the financial sector within a country indicates an increase in the provision of financial services, which should be supported by policies aimed at improving the effectiveness and efficiency of such financial institutions. Efficient financial intermediation plays a key role in allocating capital to the most profitable projects in the economy. In other words, efficiency in financial institutions allows for a more optimal allocation of resources, accelerates economic growth, and ultimately, increases HDI. These findings are in line with the results of recent studies as reported by Khan et al. (2022).

In emerging markets, a number of programs and policies have been implemented to support financial efficiency. In China, financial regulatory reform programs have been implemented to increase transparency and strengthen competition in the financial sector. In India, the "Digital India" program has been launched to improve the accessibility of information and communication technology, while promoting digital payment infrastructure (Vijayan, 2019). In Brazil, capacity-building and workforce training efforts in the financial sector have been carried out through the Banco do Brasil and Bolsa Família programs (Dowbor, 2020). The Programa Nacional de Financiamiento al Microempresario (Pronafim) program in Mexico, has been launched to empower SMEs and increase financial inclusion in the country (Vizcarra, Virginia Guadalupe López Torres, Imelda Yanez Ruiz, 2015). Through the implementation of these programs, emerging markets create an environment conducive to efficient and sustainable financial sector growth, which in turn will support inclusive and sustainable economic development. Financial efficiency in Russia is low for several reasons. One of them is the dominance of large financial institutions and have relations with the state, as well as the limited existence of foreign banks. The competitive pressure exerted by foreign financial institutions as they began to enter the banking market may have helped reduce the market power of domestic banks, thereby encouraging competition (Auer, Cocozza, Colabella, 2016).

4.12. Effects of Banking Stability on the Human Development Index

Banking stability has a significant and positive influence on HDI. This result is also in line with the analysis of the trend of banking stability and HDI movements in Figures 3 and 7. Banking sector stability plays a crucial role in supporting sustainable economic growth and improving public welfare. When the banking sector operates in a stable state, it reduces the risk of financial system instability, which can lead to economic uncertainty and other negative impacts on human development. Factors that lead to stability in the banking sector include effective regulatory policies, sound risk management, and close monitoring of the financial health of financial institutions. Policies that promote transparency, accountability, and integrity in the banking sector are key to maintaining its stability. A macroprudential policy designed to prevent systemic risks also plays an important role in maintaining banking sector stability. The stability of the banking sector gives confidence to the public and investors, which in turn increases investment and economic growth. Higher investment can generate new jobs, increase incomes, and reduce poverty rates, all of which contribute to increased HDI. These findings are consistent with previous research that has shown a positive link between banking sector stability and human development (Khan et al., 2021; Saha, 2020).

Some countries also face some challenges in maintaining bank stability. The decline in banking stability in the Philippines can be caused by several factors. One of them is low funding for SMEs, which is one of the important indicators of banking stability (Volz, Morgan, Naoyuki, 2018). Structural problems in the banking sector, such as weak supervision and poor risk management, can also lead to a decrease in stability. External factors, such as fluctuations in global financial markets or regional economic crises, may also put additional pressure on Philippine banking stability. Financial stability in Indonesia is faced with a number of challenges that affect its level of stability. One of the main factors is the vulnerability of Indonesia's financial system to capital flow volatility, especially since the country is included in the category of developing countries that are more vulnerable to global market turmoil (Warjiyo, 2022). Fluctuations in capital flows can cause instability in exchange rates, asset prices, and interest rates, which in turn can destabilize the financial system as a whole. In addition, imbalances between monetary, macroprudential and capital flow management policies are also obstacles to achieving solid financial stability. Russia's decline in banking stability shows that the challenges it faces, such as global market fluctuations and changing internal economic conditions, often make it difficult to achieve sustainable financial stability (Tsindeliani et al., 2019).

5. Conclusion

Financial developments including financial institution access, depth, and efficiency, have proven to have a positive influence in improving people's welfare. Examples of policy implementation such as concessional loan programs for small and medium enterprises in

Russia and support for MSMEs in Malaysia are clear evidence of how broad banking penetration provides significant benefits for human development. Countries with wider access to financial institutions tend to show higher levels of human development. Programs such as the National Non-Cash Movement (GNNT) in Indonesia and the women's empowerment program through microcredit in Malaysia provide examples of how financial inclusion policies provide significant benefits to underprivileged communities. Efficient and reliable operations of a country's financial institutions stimulate people to save and provide confidence for investors to invest. Policy initiatives such as financial regulatory reform in China and the promotion of financial inclusion in Brazil reflect emerging market countries' efforts to improve financial sector efficiency to support inclusive economic growth. Banking Stability also has a significant and positive influence on HDI. Banking sector stability plays a crucial role in supporting sustainable economic growth and improving public welfare. Efforts to maintain banking sector stability, such as financial regulatory reform in India and workforce training programs in Mexico, are key in creating an environment conducive to stable and inclusive economic growth. By integrating efficient and stable financial aspects, Emerging Market countries can be more effective in achieving various SDGs, especially those related to poverty alleviation, health, education, and sustainable economic growth.

The government needs to take concrete steps to encourage financial inclusion by expanding the accessibility of financial services, especially for underserved layers of society such as in rural areas. Financial inclusion programs, such as microcredit and digitalization of financial services, must be scaled up to ensure that the entire population can utilize financial services effectively. Financial regulatory reforms are also needed to improve transparency, accountability, and integrity in the financial sector and strengthen supervision and risk management. Improving the operational efficiency of financial institutions is also key, with investment in information technology and financial infrastructure as an important step. The government also needs to focus on efforts to maintain banking sector stability by implementing appropriate macroprudential policies, including strengthening banking regulation and supervision. In addition, support programs for MSMEs need to be strengthened to provide wider access to credit and other support for small businesses. Cooperation between the government, financial institutions, and the private sector needs to be enhanced to increase effectiveness and efficiency in financial service provision through partnerships in financial infrastructure development, digital financial services provision, and promotion of financial inclusion. By implementing these suggestions, it is hoped that emerging market countries can strengthen the role of financial institutions in supporting inclusive and sustainable human development.

This study encounters several limitations that should be acknowledged. First, although the model has undergone stationarity and classical assumption tests, potential endogeneity issues have not been fully addressed, as the use of instrumental variables such as lagged values or regulatory quality has not been incorporated. Second, the data utilized is confined to a specific period and may not capture the full global variation, potentially affecting the representativeness of the findings. Third, the study does not account for external factors that could influence the results, such as international policies or global economic crises. These limitations should be considered when interpreting the results and suggest areas for further research that could explore additional variables and a broader time frame.

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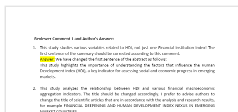

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FINANCIAL INSTITUTION INDEX, BANKING STABILITY, AND HUMAN DEVELOPMENT INDEX NEXUS IN EMERGING MARKET COUNTRIES1

by Hidayat Ariodillah

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Volume 34(3), 2025

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FINANCIAL INSTITUTION INDEX, BANKING STABILITY, AND HUMAN DEVELOPMENT INDEX NEXUS IN EMERGING MARKET COUNTRIES[10]

This study highlights the importance of understanding the factors that influence the Human Development Index (HDI), a key indicator for assessing social and economic progress in emerging markets. The study used annual panel data from the period 2000 to 2021 obtained from the International Monetary Fund and the World Bank. The analysis method used is Fixed Effect Model panel data regression. The results showed that Financial Depth, Access, Efficiency Institution Index, and banking stability have a positive and significant impact on HDI. The government is advised to expand access to financial services, improve financial inclusion programs, and improve financial regulations to increase transparency. This will help meet basic needs such as education and health and strengthen the financial sector. In addition, it is necessary to improve the supervision and management of financial risks as well as the operational efficiency of financial institutions. These efforts are expected to maintain banking sector stability, support MSMEs, and enhance cooperation between the government, financial institutions, and the private sector for inclusive and sustainable human development.

Keywords: Human Development Index; Banking Stability; Financial Institution Index; Emerging Markets
JEL: G21; I14; I24

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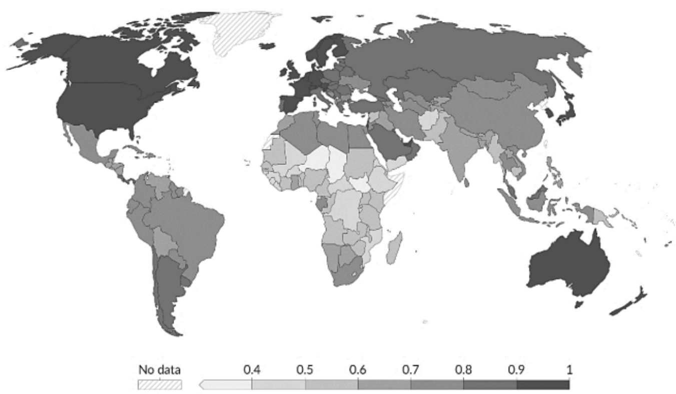
1. Introduction

In an era of increasingly integrated economic globalization, the role of Emerging Market countries is increasingly significant in the global economy (Ahmed, Zlate, 2014). Rapid economic growth, rapid urbanization, and meaningful structural transformation have become the hallmarks of these countries (Bakirtas, Akpolat, 2018). Nonetheless, achieving sustainable human development amid complex global economic dynamics remains a significant challenge (Almulhim, Cobbinah, 2023). Human development is not only limited to economic aspects, but also includes other important aspects such as education, health, social security, and technological development (Heckman, Mosso, 2014).

In 1990, the Human Development Index (HDI) was introduced as an indicator designed to provide a more holistic picture of human development progress, beyond traditional economic metrics such as GDP (Hickel, 2020). HDI covers three main dimensions namely longevity and health, knowledge, and a decent standard of living (Dhahri, Omri, 2018). Countries recognize the importance of ending poverty and other problems while improving health and education, shrinking inequality, developing economies, and responding to the challenges of climate change and environmental preservation (Human Development Forum, 2024; Tatli, Tasci, 2021). In 2015, the UN introduced the Sustainable Development Goals (SDGs) which consist of 17 goals covering social, economic, and environmental aspects to create a more just and sustainable world. Countries with high HDI are generally developed countries (Swadźba, 2020) (Figure 1). However, in emerging markets, the challenges of increasing HDI are often more complex due to limited resources, economic inequality, and pressures from rapid social and economic change.

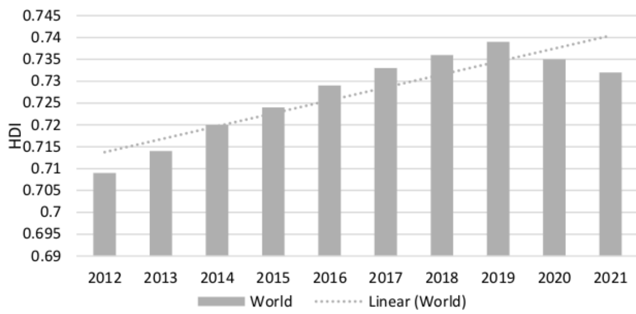
Figure 1. World Human Development Index 2021



Source: Human Development Report (2022).

HDI plays an important role as a measure of human development progress amid the complex dynamics of the global economy. While challenges remain in achieving optimal human development standards, in recent years emerging countries have recorded steady increases in HDI (Figure 2). However, due to the COVID-19 pandemic, there has been a decrease in HDI across countries. In various parts of the world, the pandemic has caused crises in terms of human development (Kavuran, Gökhan, Yeroğlu, 2020). Rapid economic growth and investment in key sectors such as education and health have been key factors in boosting HDI in some countries (Rahman, Raja, Ryan, 2020). However, challenges such as social inequality, income inequality, and limited access to basic services remain barriers that need to be overcome in the quest towards sustainable human development (Seven, Coskun, 2016).

Figure 2. World Human Development Index (HDI)



Source: Our World in Data, data processed, 2024.

Financial development has a crucial impact on human development efforts, directly affecting economic growth, poverty reduction efforts, and improving people's overall welfare (Akif, Asumadu, 2019; Samargandi et al., 2015; Hidayat et al., 2023). In some developing countries, such as China, India, Indonesia, and Thailand, more than 80 per cent of the population has gained access to banking services. This has had a positive impact on increasing the level of human development (Klapper, El-Zoghbi, Hess, 2016). This concept encompasses the access, depth, and efficiency of financial institutions, which are essential elements of financial progress. Financial Development supports the achievement of SDGs, especially SDGs number 1 and 8, by increasing financial access, reducing economic inequality, and facilitating access to capital for Small and Medium Enterprises (SMEs).

Banking stability has an important role in human development which has a significant influence on economic conditions and people's welfare (Kim, Yu, Hassan, 2018). The European Central Bank identifies three types of systemic risks in the banking sector: a slow increase in vulnerability that could trigger a financial crisis, specific risks to financial institutions that could be transferred to other entities, general shocks that affect the system as a whole and impact the real sector (Karkowska, 2019). Empirical and theoretical research has consistently shown that the stability of the banking system has a profound impact on various aspects of economic and social life (Acharya, Ryan, 2016). In a study conducted by Ntarmah et al. (2019), Svirydzenka (2016), and Kim et al. (2018), it has been investigated the relationship between banking stability and the progress of human development in various countries. The results of the study revealed that banking stability not only plays a role in increasing economic growth, but also has a significant positive influence on human development indicators.

The challenges faced by developing countries in developing stable and inclusive financial systems while improving the quality of life of their populations are an important phenomenon to be examined. The significance of this research lies in its focus on emerging markets, which enriches the understanding of the importance of the financial institution index and banking stability in driving human development. These countries are included in the category of developing countries with rapid economic growth and have the potential to become global economic powers in the future. This study took samples from ten countries including Brazil, China, India, Indonesia, Malaysia, Thailand, Philippines, Vietnam, Russia, and South Africa. The study adopts qualitative and quantitative analysis approaches, thus providing an opportunity for a more comprehensive analysis. This study uses the population of countries classified as emerging categories. As such, it is expected that this research can make a substantial contribution to the literature on finance and human development, as well as provide new insights relevant to emerging market practitioners and policymakers. In an effort to improve the SDGs, a deeper understanding of the influence between the Financial Institution Index and bank stability on human development can help in designing more effective and sustainable policies.

The rest of the study is outlined as follows. The second part discusses the literature review. The third section discusses operational data, methods, and definitions. The fourth section will discuss the analysis of variable movements, results, and discussion. The final section discusses conclusions and implications for Emerging Markets.

2. Literature Review

According to human development theory, the main goal of development is to improve the quality of human life, including aspects such as health, education, and living standards (Ismagilova et al., 2019). This approach emphasizes that development should expand the choices available to individuals and increase their freedom to live meaningful and meaningful lives (Fukuda-Parr, Yamin, Greenstein, 2014). Researchers interested in development and transformation follow three main paths of social change (Loorbach et al., 2017; Feola, 2015; Klofsten et al., 2019). The most fundamental of these three pathways is socio-economic, which is explained as a series of interrelated transformations, such as technological advancement, increased productivity, increased life expectancy, increased income, increased level of education, increased access to information, and increased social complexity (Coccia, Bellitto, 2018).

The Human Development Report, first published by the UN Programme in 1990, was a milestone in discussions on methods of measuring development progress (Baumann, 2021). This approach succeeded in bringing together various concepts that had been debated previously in development into a more unified concept known as human development. HDI is often considered a broader and more comprehensive measurement than traditional metrics such as GDP or GNP in assessing socio-economic well-being, or rather, as one of the leading indicators of human development (Kummu, Taka, Guillaume, 2018).

Financial development studies are often used in analyzing the relationship between the financial system and economic growth (Samargandi, Fidrmuc, Ghosh, 2015). This concept seeks to explain how the development of the financial system affects economic growth, and vice versa (Pradhan et al., 2014). One of the main ideas of financial development theory is that access to financial services and the functions of financial intermediaries can play an important role in driving economic growth. An efficient financial system can help direct investment funds and increase access to credit for companies and individuals, so as to support economic growth in the country.

In general, financial development can be classified into two main types, Financial Institutions and Financial Markets. Financial Institution refers to a diverse range of entities that provide a wide range of financial services, including banks, insurance companies, pension funds, and other non-bank financial institutions (Caporale et al., 2014). The main role of these institutions is to act as an intermediary between depositors and borrowers, flowing funds from savers to borrowers, as well as providing financial services such as deposit acceptance, lending, and securities guarantee services (Cruijsen et al., 2021).

The concept of financial stability is an essential foundation in the theoretical structure of modern finance that emphasizes the harmony and reliability of the entire financial system (Adrian, Covitz, Liang, 2015). Financial stability covers various aspects, including resilience to financial crises, effective risk management, and compliance with established regulations and standards (Ellis, Haldane, Moshirian, 2014). Theories on financial stability highlight the importance of having a sound and stable financial system in supporting sustainable economic growth and reducing systemic risks that may arise (Gangi et al., 2019). A common measure for evaluating stability at the individual level in financial institutions is the z-score (Li et al., 2020). This score specifically compares buffer capital (capitalization and yield) with risk (yield volatility) to assess a bank's solvency risk.

3. Research Method

This study examines the relationship between the Financial Institution Index measured using depth, access, and efficiency, banking stability proxied using bank z-scores against the Human Development Index (HDI) in Emerging Markets. This study took samples from ten countries including Brazil, China, India, Indonesia, Malaysia, Thailand, Philippines, Vietnam, Russia, and South Africa. This research data uses secondary data types with a range of 2000-2021. Data sources in this study used secondary data obtained from Our World in Data, the International Monetary Fund and the World Bank. The equation model in this study is as follows:

$$HDI_{it} = \beta_0 + \beta_1 FAI_{it} + \beta_2 FID_{it} + \beta_3 FIE_{it} + \beta_4 BZS_{it} + \varepsilon_{it} \quad (1)$$

Where: β is the regression direction coefficient; HDI is the Human Development Index FIA is the Financial Institution Access Index; FID is the Financial Institution Depth Index; FIE is the Financial Institution Efficiency Index; BZS is banking stability proxied using bank z-scores; i is cross section; and t is the time series.

Table 1. Operational Definitions of Variables

Variable	Definition	Unit
Human Development Index (HDI)	The HDI is a summary of measures of average attainment in the main dimensions of human development, measured through three dimensions: health, education, and decent living standards. The HDI index is calculated by flattening and combining the three indicators. Initially, all indicators were placed on a similar scale, starting from 0 to 1. This process involves setting minimum and maximum values for each indicator. Countries that reach or exceed the maximum score will be given a score of 1, while those below the threshold will be given a score of 0. $HDI(i) = \frac{(Actual\ x_i value - minimum\ x_i value)}{(Maximum\ x_i value - minimum\ x_i\ value)}$ Next, the indicators are put together by calculating the average of the knowledge indicators and then calculating the geometric mean of all three dimensions.	Index
Financial Institution Access Index (FIA)	The assessment of access to financial institutions is measured through several variables, including: • Number of accounts per 1000 adults (commercial banks) • Number of branches per 100,000 adults (commercial banks) • % of people with bank accounts (from user surveys) • % of companies with a line of credit (all companies) • % of companies with a line of credit (small companies)	Index
Financial Institution Depth Index (FID)	The depth assessment of financial institutions is measured through several variables, including: • Private Sector Credit to GDP • Financial Institution Assets/GDP • M2/GDP • Deposits/GDP • Gross Value Added of the financial sector to GDP	Index
Financial Institution Efficiency Index (FIE)	Assessment of the efficiency of financial institutions is measured through a number of variables, including: • Net interest margin • The difference between credit and deposits • Non-interest income to total income • Operating expenses (% of total assets) • Profitability (ROA, ROE) • Boone (or Herfindahl) indicator	Index
Banking Stability (BZS)	This study uses bank z-scores as a proxy for banking stability. A bank's z-score reflects the risk of default in the commercial banking system. Bank Z-Score: $Z - scores = \frac{ROA + CAR}{\sigma ROA}$ ROA represents the rate of return on assets, CAR represents the capital adequacy ratio and σROA is the standard deviation of the total return on assets.	Score

Source: Author Compilation (2024).

This research uses qualitative and quantitative analysis method approaches. Qualitative analysis by analyzing trends in the movement of data for each variable studied, while quantitative research uses regression analysis of panel data to test the influence between variables. There are three types of panel data regression that will be used, namely Common, Fixed, and Random Effect Models. In choosing the best method used Chow, Hausman, and LM Test.

4. Results and Discussion

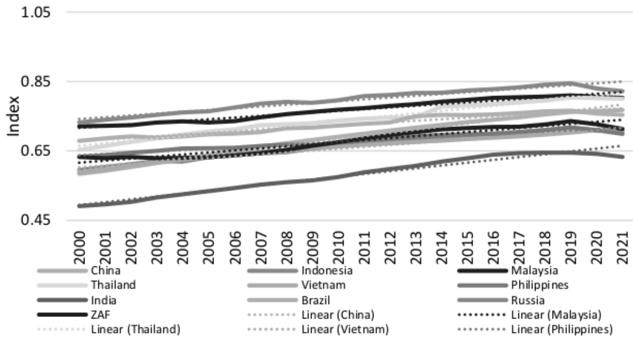
4.1. Analysis of Human Development Index Variable Trend Movement

HDI which tends to be lower in emerging economies has a direct impact on the achievement of SDGs, especially SDG number 1 (Ending Poverty), SDG number 3 (Good Health and Well-being), and SDG number 4 (Quality Education). This phenomenon reflects the challenges still faced by these countries in achieving optimal levels of human development. The SDGs aim to create a more just, sustainable, and inclusive world, focusing on various aspects of human development, including health, education, poverty reduction, and gender equality. Therefore, the human development gap seen in emerging market HDI is crucial in achieving the SDGs. Efforts to increase HDI in these countries are important to support global efforts in achieving the sustainable development goals mandated by the SDGs.

Countries with HDI in the high category (0-700-0.7999) in emerging markets are Russia, Malaysia, Thailand, South Africa and Brazil. In Russia, the government has designed and implemented various programs aimed at increasing HDI and improving the social and demographic conditions of the country. One of the programs that received priority and substantial funding is the national program "Demography", which includes various actions that are expected to produce concrete results and have a long-term positive impact on society. The demographic program is designed with a comprehensive approach and includes a number of strategic measures aimed at completely transforming the system and achieving significant social change (Mitrofanova et al., 2021). The Brazilian government's efforts to increase HDI include a significant increase in spending on social assistance. Spending on social assistance increased by 375 per cent in real terms between 2002 and 2015, mainly coming from social programs, including Bolsa Família and the Continuous Welfare Benefit (Benefício de Prestação Continuada – BPC) (Silva, Andrade, 2017).

Malaysia despite having a relatively high HDI rate compared to other countries, still faces challenges in comprehensive skills development to support future economic growth. Educational institutions in Malaysia also experience misalignment with industry needs, as well as a lack of effective coordination between the two. As a result, in several indicators, such as the pillars of health and basic education as well as higher education and training, Malaysia is in a relatively low position, ranking unsatisfactory. Lack of learning programs, shortages in technical and vocational training, and unpreparedness for technology have led Malaysia to occupy a suboptimal position in the technology readiness pillar. If there is no significant improvement in this regard, Malaysia may be stuck in middle-income country status without significant progress (Taskinsoy, 2020).

Figure 3. Human Development Index in Emerging Markets



Source: Our World in Data, data processed, 2024.

Countries in the medium HDI category (0.550-0.699) are China, the Philippines, Indonesia, Vietnam, and India. Having experienced rapid economic development over the past three decades, China has become one of the major economic powers in the world. However, along with these advances, environmental challenges in China have also increased, with significant impacts on social and economic aspects. The global financial crisis has prompted China to prioritize domestic consumption and undertake major infrastructure development. Despite having the second largest GDP in the world, China's GDP per capita is still far below that of the developed world. Despite efforts to protect the environment and improve the efficiency of resource use, China still faces serious challenges related to environmental pollution and limited natural resources (Liu, Raven, 2010).

India faces a number of challenges in achieving HDI. One of the major challenges is the issue of waste management, which includes the issue of handling solid waste in Indian cities (Srivastava et al., 2015). There is a need for more specific screening programs for certain cancers, such as oral cancer, which is highly prevalent in India (Deo, Sharma, Kumar, 2022). India also has key programs that form the cornerstone of part of the social security system, including school meals, Integrated Child Development Services, the National Rural Employment Security Act, the public distribution system, and social security pensions for single mothers, the elderly, and persons with disabilities (Drèze, Khera, 2017). However, the challenges faced in the implementation and effectiveness of these programs need to be overcome to improve the overall welfare of the community.

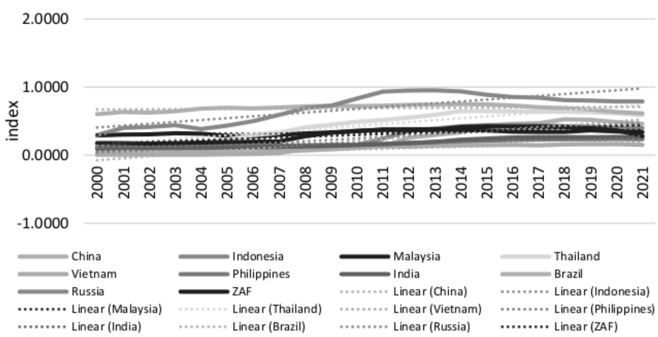
Indonesia faces a number of challenges in its efforts to increase HDI. With a population of over 262 million spread across more than 17,744 islands, the country experiences unique barriers to achieving Universal Health Coverage (UHC). One of the main challenges is the issue of accessibility and equity in higher education. Although there have been efforts through various scholarship schemes such as Bidikmisi, Academic Achievement

Improvement Scholarship (BPP-PPA), International Science Olympiad (OSI), and Kampus Merdeka, there are still gaps in the accessibility of higher education, especially for people from low economic backgrounds and remote areas (Purnastuti and Izzaty, 2016). The quality of education in Indonesia also needs to be improved. This is reflected in the low HDI and low higher education participation rate. Indonesia also faces a low human capital index, a digital divide between rural and urban areas, as well as between the Java-Bali region and other regions (Ssenyonga, 2021).

4.2. Analysis of Variable Trend Movement Financial Access Institution Index

Overall, there was a consistent increase in the Financial Institution Access (FIA) Index across all countries investigated, reflecting ongoing efforts to expand access to financial institutions at the global level (Figure 4). Countries such as Russia, Thailand, and Indonesia showed the most significant upward trend in the access institution. This significant increase can be indicated as a result of effective policy implementation in promoting financial inclusion and expanding access to financial services at the national level. Major banks in Russia have started the development of Fintech independently. The features of the Russian banking system have a direct effect on the progress of Fintech. The Bank of Russia, as the main regulator, supports the development of Fintech and plans to gradually adjust regulations to changing conditions (Matveevskii et al., 2019). In Brazil, the concept of regionalization of health services has been successfully implemented, resulting in a more equitable distribution and access to health services throughout the territory of the country (Viana, Silva, Yi, 2017). Through this approach, populations in rural and remote areas have also benefited from improved access to health services.

Figure 4. Financial Access Institution Index Emerging Markets



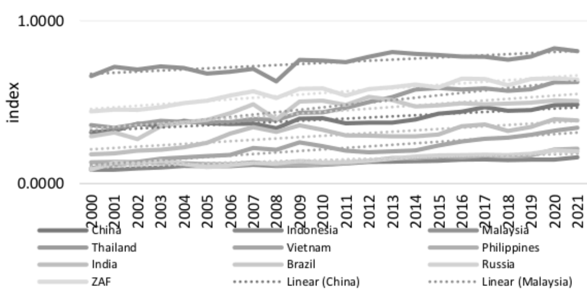
Source: International Monetary Fund, data processed, 2024.

China prioritizes financial inclusion in rural areas and for underprivileged communities, while Indonesia focuses on strengthening microfinance institutions and MSMEs in remote areas. Malaysia prioritizes financial infrastructure development and promotion of digital financial services innovation, while Thailand emphasizes expanding access to financial institutions in rural areas and the informal sector. Vietnam and the Philippines are working to improve financial transparency and supervision. India prioritizes improving access to financial services in rural areas through government programs, while Brazil implements policies to strengthen the role of financial institutions in supporting economic growth. South Africa has taken various steps to improve access to financial institutions, especially for historically marginalized black communities. One of the main efforts was the launch of the 'Mzansi' account in 2004, designed to provide basic financial access to the underprivileged (Kostov, Arun, Annim, 2015).

4.3. Analysis of Trend Movements of Financial Institution Depth Index Variables

In general, there was an increase in the value of the Financial Institution Depth Index in Emerging Markets (Figure 5). In 2008, the global financial crisis caused a decrease in the value of such variables in most countries. Then, when COVID-19 hit in 2020, there was a different trend. Although this crisis has also had a negative impact on the financial sector in many countries, the value of such variables tends to increase overall. This indicates the adaptation and policies implemented by countries to overcome the economic impact of the pandemic, such as economic stimulus and loose monetary policy (Hakim et al., 2023). South Africa is quite high in financial depth. As Africa's second-largest economy, it is in the upper-middle-income category (Kumar et al., 2015). South Africa's financial sector is relatively well-developed. Strict banking regulations, including minimum capital requirements for foreign bank branches, have been a key commitment, to creating financial sector stability (Beck, Senbet, Simbanegavi, 2015). The contribution of foreign banks from developing countries, as well as the expansion of access to individual consumer loans, have increased financial inclusion in the country.

Figure 5. Financial Depth Institution Index Emerging Markets



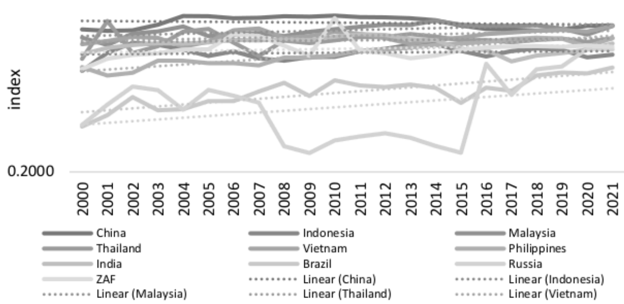
Source: International Monetary Fund, data processed, 2024.

Indonesia, Russia and the Philippines show low financial depth. According to Lianto et al., (2018), electronic money transfers are on the rise in the Philippines, but the rate of digital adoption, especially for mobile payments, is relatively low especially when compared to emerging markets. One of Indonesia's main challenges is limited accessibility and equity in education, especially for those from low economic backgrounds. The management of education funds is also an obstacle, where the risk of misuse of funds and lack of transparency in their use can hamper the effectiveness of education programs (Plummer, Boyle, 2016). Financial deepening in Russia is happening slowly when compared to other developing countries. Although the Russian government has committed to implementing better economic policies and carrying out important structural reforms to improve institutional conditions and address structural weaknesses, over time, the fatigue effects of such reforms are beginning to be felt. As a result, significant gaps and weaknesses in institutional and business conditions are still characteristic in Russia.

4.4. Analysis of Trend Movements of Financial Institution Efficiency Index

Russia, Brazil, Indonesia, Malaysia, Vietnam, and the Philippines recorded significant increases in the FIE index. This increase illustrates the success of policies implemented to improve the efficiency of financial institutions in these countries. Brazil has undertaken a series of financial sector reforms aimed at improving transparency, accountability and oversight, efforts that have likely contributed to the improvement of FIE in the country. However, there are countries such as China and India that showed a decline in FIE during the same period. This decline can be attributed to the structural challenges faced in the financial sector as well as the underlying economic instability. China faces complexity and fragmentation in their financial system, whereas India is experiencing problems such as bad debts and banking crises.

Figure 6. Financial Efficiency Institution Index Emerging Markets



Source: International Monetary Fund, data processed, 2024.

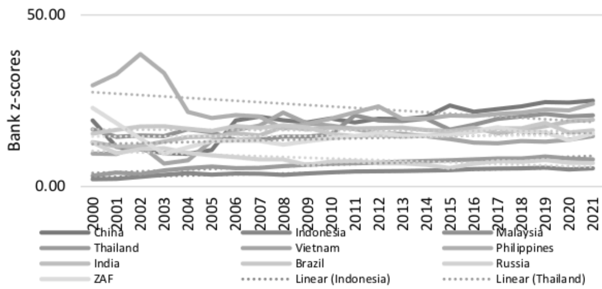
FIE declines such as those in Thailand and South Africa reflect significant challenges in improving the efficiency of the financial sector. Lack of innovation in financial services is one of the main factors hindering progress, as such innovation is often a driver of growth and efficiency in the financial system. Targeted policy implementation, as observed in Brazil and Indonesia, has proven its effectiveness in improving the efficiency of financial institutions. These measures include transparency, accountability, and financial infrastructure, which overall improves the accessibility and performance of the financial sector. Russia showed the lowest financial efficiency among the emerging markets studied. The policy in Russia to improve banking stability involves great efforts in the development of a modern credit infrastructure. This credit infrastructure forms the core of the bank lending market, where various key participants, such as credit bureaus, rating agencies, and banking associations, have a crucial role in ensuring the smooth running of the Russian banking system (Ezangina, Evstratov, Jovanovic, 2016). Some of the initiatives under consideration include the establishment of the National Credit History Bureau, the development of an accreditation system for credit rating agencies, as well as the restructuring of the guarantee fund system to be more effective in shoring up the country's banking stability.

4.5. Analysis of Banking Stability Variable Trend Movement

Based on the banking stability category, if the bank z-scores above 2.57, this indicates that the banking condition is stable and very healthy. Thus, all Emerging Markets countries studied are classified as countries with a very healthy category. India, China, Indonesia, Thailand, Malaysia, Vietnam and South Africa show an upward trend in banking stability (Figure 7). This increase reflects the successful implementation of stable macroeconomic policies, strengthening banking regulation and supervision, as well as the solid performance of financial institutions in these countries. India has implemented various financial reform measures to boost the resilience of the banking sector, including restructuring non-performing assets and increasing the capitalization of small banks. On the other hand, the decline in banking stability observed in the Philippines, Russia, and Brazil was caused by factors such as economic instability, financial crisis, or failure in effective policy implementation. In Brazil, the economic slowdown and corruption scandals in the public sector have affected investor confidence and the stability of the financial system as a whole. Philippine banking stability is also declining as bank management deemed "too big to fail" requires a government response to prevent the failure of these institutions, which is directly linked to the potential broad economic impact of their relationships with other entities in the provision of goods and services (Banderlipe, 2016).

India, China, Indonesia, Thailand, Malaysia, Vietnam and South Africa have taken a series of policy measures to strengthen banking stability. One of the main policies implemented is strengthening banking regulation and supervision. This includes improving the regulatory framework, establishing a strong financial supervisory authority, and conducting rigorous audits and monitoring of financial institutions. Some countries have also implemented fiscal and monetary policies that support banking stability (Shodrokova, Asngari, Hidayat, 2023). This includes measures such as emergency liquidity provision by the central bank, interest rate adjustments to manage bad loans, as well as economic stimulus to reduce financial pressure on the banking sector. In addition, these countries have also committed to strengthening cooperation among financial institutions, both domestic and cross-border, to improve coordination in dealing with systemic risks and addressing challenges that may arise in the future. In 2020, it was seen that all countries showed a decline in banking stability, this was attributed to the COVID-19 pandemic which had an impact on declining revenues, economic performance, and an increase in non-performing loans (Nurhaliza et al., 2024).

Figure 7. Banking Stability Emerging Markets



Source: World Bank, 2024.

4.6. Descriptive Statistical Analysis

Descriptive statistics show that the average HDI value is 0.697 with a range of values between 0.491 to 0.845 (Table 2). The median HDI is 0.6995, which indicates the middle value of the distribution. The HDI standard deviation is 0.071, indicating a relatively low degree of variation of HDI values in the sample. The highest maximum HDI value in Russia in 2019 was 0.845, while the lowest value in India was 0.491 in 2000. The maximum value of FID in Malaysia in 2020 is 0.8323, while the minimum value of FID in Indonesia in 2000 is 0.0852. The maximum FIA score in Russia in 2013 was 0.9536 while the minimum in Vietnam in 2000. The FIE maximum in 2010 in China was 0.7686. The maximum BZS in the Philippines in 2002 was 38,57995, while the minimum was 2,127 in Indonesia in 2000. The skewness of HDI is -0.306199, indicating that the HDI distribution tends to lean somewhat to the left, although overall the distribution is almost symmetrical. The HDI kurtosis is 2.991126, indicating that the HDI distribution has a slightly heavier tail than the normal distribution. Overall, the results of the Jarque-Bera test show that the HDI distribution is significantly different from the normal distribution with a probability value of 0.179.

The mean value of FID is 0.355596, which indicates the middle value of all FID data in the sample. The median FID is 0.345868, which indicates that half of the data has values above 0.345868 and the other half has values below it. The range of FID values is from 0.085164 to 0.832317, which indicates the maximum and minimum variation in the data. The standard deviation of the FID is 0.205384, which indicates how far the data is spread from the mean.

The skewness of the FID is 0.510186, which indicates that the data distribution tends to be slightly skewed to the right.

Table 2. Statistics Descriptive

	HDI	FIA	FID	FIE	BZS
Mean	0.69754	0.340040	0.355596	0.633513	13.86636
Median	0.699500	0.290938	0.345868	0.661493	14.70296
Maximum	0.845000	0.953622	0.832317	0.768580	38.57995
Minimum	0.491000	0.006608	0.085164	0.268714	2.127169
Std. Dev.	0.071368	0.236318	0.205384	0.104091	6.388665
Skewness	-0.306199	0.723575	0.510186	-1.529727	0.276295
Kurtosis	2.991126	2.574139	2.188495	5.194586	3.308844
Jarque-Bera	3.438503	20.85966	15.8057	129.9509	3.673445
Probability	0.179200	0.000030	0.000414	0.000000	0.159339
Sum	153.4600	74.80871	78.23110	139.3728	3050.599
Sum Sq. Dev.	1.115441	12.23034	9.238024	2.372859	8938.495
Observations	220	220	220	220	220

Source: EViews, data processed, 2024.

4.7. Classical Assumption and Stationarity Test Results

The results of the classical assumption tests indicate that the regression model meets the normality assumption with a p-value of 0.2191, suggesting normally distributed residuals (Table 3). The heteroscedasticity tests show no significant issues, with p-values greater than 0.05 for all variables, indicating that the homoscedasticity assumption is satisfied. Additionally, the multicollinearity test reveals no high correlations among the independent variables, suggesting that multicollinearity is not a significant problem. Therefore, the regression model satisfies the necessary classical assumptions for valid analysis.

Table 3. Classical Assumption Test Results

	F-Statistics		Prob	
Normality Test	3.0358		0.2191	
Heteroscedasticity Test				
C	0.210915		0.8332	
FIA	1.539447		0.1252	
FID	-0.810458		0.4186	
FIE	-1.931588		0.0548	
BZS	0.683710		0.4949	
Multicollinearity Test				
	FIA	FID	FIE	BZS
FIA	1.0000	0.2109	-0.6102	-0.1766
FID	0.2109	1.0000	0.3357	0.2298
FIE	-0.6102	0.3357	1.0000	0.1907
BZS	-0.1766	0.2298	0.1907	1.0000

Source: EViews, data processed, 2024.

Table 4. Results of the Stationarity Test

Variable	Augmented Dickey Fuller		Phillips-Perron	
	level	1st difference	level	1st difference
HDI	32.489**	101.519***	51.798***	35.716**
FIA	11.235	111.356***	8.753	38.934***
FID	6.781	87.310***	10.996	183.131***
FIE	10.997	183.131***	68.865***	455.641***
BZS	27.953	75.876***	35.797**	149.815***

*Note *, **, and *** Indication of significance levels at the level of 10%, 5% and 1%*
Source: EViews, data processed, 2024.

The results of the stationarity test presented in Table 4 indicate that most variables become stationary after the first difference. HDI is non-stationary at the level but becomes stationary after the first difference according to both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. FIA and FID also show non-stationarity at the level but become stationary after the first difference. FIE is stationary only after the first difference according to ADF, though it shows significance at the level with the PP test. Finally, BZS becomes stationary after the first difference. Overall, these variables require differencing to meet the stationarity assumption.

4.8. Estimated Results

In the analysis, the results of the Chow test and Hausman test shown in Table 5 show that the probability is less than α= 5 per cent. Therefore, based on these considerations, it was concluded that the Fixed Effect Model is the most suitable method.

The results of the model estimation in this study are as follows:

$$\widehat{\mathrm{HDI}}_{\mathrm{it}} = 0.471 + 0.162\mathrm{FIA}_{\mathrm{it}} + 0.277FID_{it} + 0.081\mathrm{FIE}_{\mathrm{it}} + 0.001\mathrm{BZS}_{\mathrm{it}} + \varepsilon_{\mathrm{it}} \tag{2}$$

Based on Table 5, the magnitude of the HDI constant is 0.4711, positive and significant at an alpha level of 1 per cent. The variables FIA, FID, FIE, and BZS showed a positive and significant influence at an alpha level of 1 per cent. The R-squared is 0.9395, which indicates that the regression model explains about 93.95 per cent of the variability in the dependent variable. The F-statistic value is 246.2693 with an F-statistic probability of 0.0000, which indicates that the overall regression model is significant.

Based on the results of the cross-section effect, it was found that Russia had the most significant impact on increasing HDI compared to other countries in this analysis, with the highest coefficient of 0.5950. Followed by Indonesia with a coefficient of 0.529172, showing that Indonesia also had a significant impact on increasing HDI after controlling for other independent variables. Meanwhile, India had the lowest coefficient of 0.3900, indicating that India had less impact on HDI increase compared to other countries in this analysis after controlling for other independent variables.

Table 5. Estimated Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.471154	0.017277	27.27137	0.0000***
FIA	0.162224	0.013064	12.41773	0.0000***
FID	0.277510	0.029657	9.357464	0.0000***
FIE	0.081708	0.027436	2.978145	0.0032***
BZS	0.001499	0.000431	3.476419	0.0006***
R-squared	0.939545	Mean dependent var		0.69754
S.E. of regression	0.018093	Akaike info criterion		-5.12508
Sum squared resid	0.067434	Schwarz criterion		-4.90912
Log likelihood	577.7595	Hannan-Quinn criter.		-5.03787
F-statistic	246.2693	Durbin-Watson stat		0.33542
Prob(F-statistic)	0.000000			
Chow Test				0.0000
Hausman Test				0.0000
Normality Test				0.2191
Heteroscedasticity Test				0.2049
Individual Cross-Section Effect				
China	-0.018563			
Indonesian	0.058018			
Malaysia	-0.048876			
Thailand	-0.000470			
Vietnamese	0.035840			
Philippines	0.050697			
India	-0.081090			
Brazil	-0.045724			
Russia	0.123938			
South Africa	-0.073770			

*Note *, **, and *** Indication of significance levels at the level of 10%, 5% and 1%*
Source: EViews, data processed, 2024.

4.9. *Effect of the Financial Institution Access Index on the Human Development Index*

The results of regression analysis show a significant positive correlation between the Financial Access Institution Index and HDI. The findings highlight that countries that have wider access to financial institutions tend to show higher levels of human development. Factors that may explain this relationship include easier access to financial services, which enable individuals to acquire financial resources vital to meeting basic needs, such as education and health. Financial institutions facilitate access to credit, savings, and other financial services that support investment in those areas, which in turn contributes to improved quality of life and improved HDI. The important role of financial institutions is also seen in financial risk management and social protection, where access to financial services can help people manage financial risks such as illness or job loss, which have the potential to disrupt human development. The findings are also in line with previous research by Arora (2014) and Matekenya et al. (2021) which found a positive relationship between financial access and human development. In addition, this positive finding is in line with the movement of FAI Index and HDI variables in Figures 3 and 4.

In an effort to improve access services to financial institutions, emerging markets have implemented diverse policies. In China, the government has taken an aggressive approach by expanding financial infrastructure and financial technology, while Indonesia has focused more on financial inclusion through programs such as the National Non-Cash Movement (GNNT) and the National Movement for the Acceleration of Digital Payments (GNP2D). Malaysia has emphasized on improving the accessibility of financial services in rural areas, while Thailand has expanded its banking network in remote areas through public-private sector partnerships.

The Vietnamese government has expanded access to digital financial services, while the Philippines and India have encouraged financial inclusion through the establishment of micro banks and digital financial services. Brazil has been active in expanding financial inclusion to increase HDI. This involves initiatives to expand access to financial services, especially in rural and remote areas, through the development of an inclusive financial system. These efforts include the development of financial infrastructure in previously underserved areas and the promotion of inclusive financial institutions such as microbanks and credit cooperatives (Hajj, 2021). In Thailand, the level of financial access to healthcare is quite high, which has contributed significantly to the increase in HDI. Since the 1970s, the Thai government has focused on building healthcare infrastructure at the district level and below, as well as training health workers. Deliberately adopted policies to increase the training capacity of domestic health workers and distribute them to rural areas as well as underserved areas (Tangcharoensathien et al., 2018). Vietnam has a livelihood that depends mostly on the agricultural sector. However, access to credit in rural areas remains a significant challenge. The rural credit market in Vietnam has complex characteristics, and complicated lending procedures make access to credit difficult for households. The limited supply of formal lenders is also a problem, due to the rudimentary formal market. As a consequence, informal sources of credit tend to dominate in rural areas (Linh et al., 2019). Apart from Vietnam, financial access in India is also quite low. Credit access challenges in India are mainly related to poverty and unemployment which have been hallmarks and major obstacles to sustainable development since independence. One of the main causes is the lack of adequate credit facilities for the poor and unemployed.

4.10. Effect of Financial Institution Depth Index on Human Development Index

The Financial Institution Depth Index has a significant positive impact on HDI. These results are in line with the findings of previous research by Kishore & Singh (2020) and Anh & Nguyen (2022). In addition, the regression results are also in line with the trend of movement of FDI index and HDI variables in Figures 3 and 5. The conception of the depth of financial institutions involves a number of dimensions, including banking penetration, accessibility of financial services, diversity of financial products, and level of financial openness. Wider banking penetration in society has the potential to provide wider access to financial services for diverse segments of the population. This includes services such as savings, credit, and investment accounts, which directly affect an individual's capacity to meet basic needs such as education, health, and business. The diversity of financial products also plays an important role in improving the quality of life and welfare of society as a whole. With a wide variety of products such as savings, education loans, and health insurance, individuals can choose the option that best suits their needs and preferences.

Russia is the country with the highest HDI among other countries studied. Russia implemented a concessional loan program for MSMEs since 2019 MSME support has received the status of a national project (Razumovskaia et al., 2020). In Malaysia, support for MSMEs through the provision of credit has been instrumental in increasing HDI. Programs such as those managed by Amanah Ikthiar Malaysia (AIM) are clear examples of how microcredit can help alleviate poverty and improve people's welfare. AIM, which was established in 1986, is one of the institutions actively involved in providing microcredit to help poor households increase their income through MSMEs. These programs, which focus on empowering women and single mothers in rural areas, have succeeded in providing significant benefits to underprivileged communities (Terano, Mohamed, Jusri, 2015). In Thailand, bank lending plays an important role in supporting the MSME sector to play a large role in the country's economy. The SME sector contributes about 37 per cent to GDP and provides jobs for about 80 per cent of Thailand's workforce. However, recent data shows a decline in the number of bank loans to SMEs, highlighting the need for efficiency in the use of available funds as well as strategies to diversify financing sources for SMEs (Ramcharran, 2017).

4.11. Effect of the Financial Efficiency Institution Index on the Human Development Index

The Financial Efficiency Institution Index has a significant positive impact on HDI. Efficient and reliable operations of a country's banks and financial institutions stimulate people to save and provide confidence for investors to invest. An increase in the financial sector within a country indicates an increase in the provision of financial services, which should be supported by policies aimed at improving the effectiveness and efficiency of such financial institutions. Efficient financial intermediation plays a key role in allocating capital to the most profitable projects in the economy. In other words, efficiency in financial institutions allows for a more optimal allocation of resources, accelerates economic growth, and ultimately, increases HDI. These findings are in line with the results of recent studies as reported by Khan et al. (2022).

In emerging markets, a number of programs and policies have been implemented to support financial efficiency. In China, financial regulatory reform programs have been implemented to increase transparency and strengthen competition in the financial sector. In India, the "Digital India" program has been launched to improve the accessibility of information and communication technology, while promoting digital payment infrastructure (Vijayan, 2019). In Brazil, capacity-building and workforce training efforts in the financial sector have been carried out through the Banco do Brasil and Bolsa Família programs (Dowbor, 2020). The Programa Nacional de Financiamiento al Microempresario (Pronafim) program in Mexico, has been launched to empower SMEs and increase financial inclusion in the country (Vizcarra, Virginia Guadalupe López Torres, Imelda Yanez Ruiz, 2015). Through the implementation of these programs, emerging markets create an environment conducive to efficient and sustainable financial sector growth, which in turn will support inclusive and sustainable economic development. Financial efficiency in Russia is low for several reasons. One of them is the dominance of large financial institutions and have relations with the state, as well as the limited existence of foreign banks. The competitive pressure exerted by foreign financial institutions as they began to enter the banking market may have helped reduce the market power of domestic banks, thereby encouraging competition (Auer, Cocozza, Colabella, 2016).

4.12. Effects of Banking Stability on the Human Development Index

Banking stability has a significant and positive influence on HDI. This result is also in line with the analysis of the trend of banking stability and HDI movements in Figures 3 and 7. Banking sector stability plays a crucial role in supporting sustainable economic growth and improving public welfare. When the banking sector operates in a stable state, it reduces the risk of financial system instability, which can lead to economic uncertainty and other negative impacts on human development. Factors that lead to stability in the banking sector include effective regulatory policies, sound risk management, and close monitoring of the financial health of financial institutions. Policies that promote transparency, accountability, and integrity in the banking sector are key to maintaining its stability. A macroprudential policy designed to prevent systemic risks also plays an important role in maintaining banking sector stability. The stability of the banking sector gives confidence to the public and investors, which in turn increases investment and economic growth. Higher investment can generate new jobs, increase incomes, and reduce poverty rates, all of which contribute to increased HDI. These findings are consistent with previous research that has shown a positive link between banking sector stability and human development (Khan et al., 2021; Saha, 2020).

Some countries also face some challenges in maintaining bank stability. The decline in banking stability in the Philippines can be caused by several factors. One of them is low funding for SMEs, which is one of the important indicators of banking stability (Volz, Morgan, Naoyuki, 2018). Structural problems in the banking sector, such as weak supervision and poor risk management, can also lead to a decrease in stability. External factors, such as fluctuations in global financial markets or regional economic crises, may also put additional pressure on Philippine banking stability. Financial stability in Indonesia is faced with a number of challenges that affect its level of stability. One of the main factors is the vulnerability of Indonesia's financial system to capital flow volatility, especially since the country is included in the category of developing countries that are more vulnerable to global market turmoil (Warjiyo, 2022). Fluctuations in capital flows can cause instability in exchange rates, asset prices, and interest rates, which in turn can destabilize the financial system as a whole. In addition, imbalances between monetary, macroprudential and capital flow management policies are also obstacles to achieving solid financial stability. Russia's decline in banking stability shows that the challenges it faces, such as global market fluctuations and changing internal economic conditions, often make it difficult to achieve sustainable financial stability (Tsindeliani et al., 2019).

5. Conclusion

Financial developments including financial institution access, depth, and efficiency, have proven to have a positive influence in improving people's welfare. Examples of policy implementation such as concessional loan programs for small and medium enterprises in

Russia and support for MSMEs in Malaysia are clear evidence of how broad banking penetration provides significant benefits for human development. Countries with wider access to financial institutions tend to show higher levels of human development. Programs such as the National Non-Cash Movement (GNNT) in Indonesia and the women's empowerment program through microcredit in Malaysia provide examples of how financial inclusion policies provide significant benefits to underprivileged communities. Efficient and reliable operations of a country's financial institutions stimulate people to save and provide confidence for investors to invest. Policy initiatives such as financial regulatory reform in China and the promotion of financial inclusion in Brazil reflect emerging market countries' efforts to improve financial sector efficiency to support inclusive economic growth. Banking Stability also has a significant and positive influence on HDI. Banking sector stability plays a crucial role in supporting sustainable economic growth and improving public welfare. Efforts to maintain banking sector stability, such as financial regulatory reform in India and workforce training programs in Mexico, are key in creating an environment conducive to stable and inclusive economic growth. By integrating efficient and stable financial aspects, Emerging Market countries can be more effective in achieving various SDGs, especially those related to poverty alleviation, health, education, and sustainable economic growth.

The government needs to take concrete steps to encourage financial inclusion by expanding the accessibility of financial services, especially for underserved layers of society such as in rural areas. Financial inclusion programs, such as microcredit and digitalization of financial services, must be scaled up to ensure that the entire population can utilize financial services effectively. Financial regulatory reforms are also needed to improve transparency, accountability, and integrity in the financial sector and strengthen supervision and risk management. Improving the operational efficiency of financial institutions is also key, with investment in information technology and financial infrastructure as an important step. The government also needs to focus on efforts to maintain banking sector stability by implementing appropriate macroprudential policies, including strengthening banking regulation and supervision. In addition, support programs for MSMEs need to be strengthened to provide wider access to credit and other support for small businesses. Cooperation between the government, financial institutions, and the private sector needs to be enhanced to increase effectiveness and efficiency in financial service provision through partnerships in financial infrastructure development, digital financial services provision, and promotion of financial inclusion. By implementing these suggestions, it is hoped that emerging market countries can strengthen the role of financial institutions in supporting inclusive and sustainable human development.

This study encounters several limitations that should be acknowledged. First, although the model has undergone stationarity and classical assumption tests, potential endogeneity issues have not been fully addressed, as the use of instrumental variables such as lagged values or regulatory quality has not been incorporated. Second, the data utilized is confined to a specific period and may not capture the full global variation, potentially affecting the representativeness of the findings. Third, the study does not account for external factors that could influence the results, such as international policies or global economic crises. These limitations should be considered when interpreting the results and suggest areas for further research that could explore additional variables and a broader time frame.

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