



EFFECTS OF DIGITAL FINANCIAL INCLUSION AND GOVERNANCE INDICATORS ON CAPITAL MARKET DEVELOPMENT IN NIGERIA

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Abstract

This study examines the digital finance technology, governance indicator and capital market development in Nigeria through the application of Augmented Dickey-Fuller technique in testing the unit root property of the series. Data for the study were extracted from the World Governance Indicators, International Monetary Fund Survey and World Federation of Exchanges for the period spanning from (2000 – 2025). Descriptive statistics, cointegration causality test and regression analysis techniques were used to analyze the data. The results of unit root test indicated that all the variables in the model are stationary difference which necessitate cointegration test in order to find out if there are long relationship between the variables. The results reveal that trace statistic indicated tw cointegration between the variables. A major policy implication of this result is that digital finance technology, and governance indicator is function of capital market development in Nigeria. The findings reveal a strong long-run relationship between digital finance, governance quality, and capital market development in Nigeria. The causality reveals significant strong positive relation of Digital Financial Inclusion (FDI) on Capital Market Development Indicators (CMDI), Governance Indicators on CMDI, weak causality between of GOVI on DFI and No reverse causality from CMDI. Therefore the study recommends that Central Bank of Nigeria (CBN) Should design and support policies that promote digital financial innovations, strong governance framework is paramount for effective growth and development, Fintech companies should be regulated in order to promote customers confidence and proactive measures should be taken to minimize the rate of financial crimes within the system, banks should incorporate financial technologies and innovation for better customers services, self-service, more access and low transaction cost. Further studies should test the moderating effects of Digital Financial Technology and Governance Indicator on Capital Market Development Using CMDI as dependent variable while Governance Index and Digital Financial Index serve as Independent Variable. Also, other financial technology and governance indicators variables should be on capital market development.

Keywords: Digital financial technology, governance indicators, capital market development

INTRODUCTION

The fast development of digital innovations has basically changed the global financial system, leading to what is now generally recognized to as digital finance technology. Digital finance incorporates a wide variety of financial services brought through digital means, ranging from electronic payments, mobile banking, online investment channels, blockchain technology, and financial technology (fintech) inventions. These achievements have meaningfully changed how



financial markets function, principally in areas of availability, efficiency, accessibility, and transparency of financial services (Ozili, 2018).

The growth of digital finance is predominantly significant in developing markets, where traditional banking set-up is mostly inadequate, to the large parts of the population remain unbanked. For instance, in Sub-Saharan Africa, mobile money means such as MTN Mobile Money in Ghana, Tigo Cash in Tanzania and M-Pesa in Kenya, have created millions of individuals with access to financial facilities for the first time (IMF 2025). Likewise, in Asia, the spread of online payment means and digital investment participation has simplified more involvement in capital markets by retail investors, who were conventionally left out due to high entry barriers and low financial literacy (Chen et al., , 2020). This inclusion of finance services has substantial effects on capital market development, as it widens the investor base, rises liquidity, and improves market depth.

One of the major ways by which digital finance affects capital market development is by promoting financial inclusion. Financial inclusion has to do with the availability and accessibility of financial assets to parts of society. Digital financial innovations, for instance electronic payment channels and mobile banking platforms have meaningfully improved the level of people with access to financial services, mostly in developing countries. This growth of the financial user base leads to increased savings and investment, which are paramount for capital market growth (Sahay et al., 2020). On the other side efficient capital markets promoted the mobilization and allocation of resources, savings, for more productive sectors of the economic and provides long-term funding of businesses and governments (Ghose et al 2024). Empirical results recommend that countries with good-developed capital markets have high rates of economic growth, better financial stability, and enhanced investment chances for both internal and external investors (Beck & Levine, 2004). Nevertheless, the efficiency of capital markets is also influenced by governance structures and institutional quality and. Weak governance, promote corruption, poor regulatory enforcement, high political instability, and, weak investor self-confidence, rises transaction costs, and discourages participation in financial markets (Kaufmann & Kraay, 2024).

Current empirical results reveal the high positive connection between digital finance and capital market development. Allen et al. (2016) opines that more access to digital financial facilities relates with high market participation, predominantly amid earlier underserved populations. In China, the rise of fintech platforms has donated significant stock market liquidity and extended retail investor participation (Chen, Liu, & Zhang, 2020). Likewise, the Kenyan capital market has experienced increase in small-scale investor involvement due to the incorporation of mobile money services with investment channels, growing market depth and lowering barriers to entry (Mbiti & Weil, 2016).



The acceptance of digital financial innovation in the Nigerian setting, has risen in recent years, motivated by rise on internet usage, mobile phone penetration, and supportive regulatory initiatives by the regulatory body Nigerian Communication Commission (NCC) and Central Bank of Nigeria. Digital Platforms such as mobile payments, Point of Sale (POS) systems, Automated Teller Machines (ATMs) and internet banking have become part and persalt of the financial system. These innovations have not only promoted access to financial services but have also increase stock market performance and capital market participations. Empirical results recommend that digital financial services have a high positive effect trading volumes and capital market capitalization and in Nigeria (Akinwale & Kyari, 2020). Furthermore, digital finance resources promote linkages and connections between domestic and international capital markets. With digital channels, investors can have access to global financial markets, spread their investment, and engage in cross-border transactions. This promotes integration, enhances the competitiveness and resilience of capital markets, making them more and more attractive to external investors (BIS, 2021).

Incorporating digital finance technology and governance indicators is very paramount nowadays. Digital financial technologies can rise the benefits of upright governance by encouraging transparency, reducing chances for rent-seeking, and permitting real-time monitoring of financial transactions (Gomber et al., 2018). Blockchain-based schemes, for instance, provide immutable records that curtail fraud and increase investor confidence. Conversely, weak governance can mitigate the benefits of digital finance, as inadequate regulatory oversight may lead to systemic risks, cybersecurity vulnerabilities, and misuse of financial technologies (World Bank, 2021).

Current empirical studies reveal the positive relationship between digital finance and capital market development. Allen et al. (2016) opines that high access to digital financial services relates with high stages of market involvement, particularly between previously underserved populations. In China, the growth of fintech channels has leads to significant stock market liquidity and expanded retail investor involvement (Chen, Liu, & Zhang, 2020). Likewise, the Kenyan capital market has witness growth in small-scale investor involvement because of incorporation of mobile money services with investment channels, rising market depth and eradicating barriers of entry (Mbiti & Weil, 2016).

In spite of these optimistic trends, problems remain. Digital finance alone cannot assure sustainable capital market development. The used of digital finance innovation also presents numerous problems ranging from data privacy concerns, cybersecurity risks, regulatory uncertainties, and the digital divide among rural and urban populations. Insufficient infrastructure and small levels of digital literacy can limit the efficiency of digital financial services, especially in developing countries. Furthermore, the fast pace of technological innovation may surpass the strength of regulatory frameworks to effectively manage associated risks (Ozili, 2020).



Governance shortfalls, insufficient financial literacy, technological differences, and socio-economic disparities might reduce the influence of digital financial innovations. For instance, although mobile money services have increase financial access in Sub-Saharan Africa, the lack of solid regulatory framework in many countries has led to problems concerning money laundering, fraud, and insufficient consumer protection (Ghose et al., 2025). Likewise, evolving fintech channels may face challenges in cross-border transactions, integration with conventional banking systems, and compliance with global standards without strong governance structures in place.

Ozili, (2020) all for an all-inclusive method that collaborates digital finance creativities with governance framework. This method highlights the necessity for inclusive public-private partnerships, regulatory reforms, investor education programs, and to guarantee that the significance of digital finance are completely achieved and uphold. Strategies designed at solidification regulatory measurements, promoting cybersecurity, and rising financial literacy can strengthen the positive influence of digital finance on capital market development (Ozili, 2020). Besides, empirical result recommends that countries with strong governance and proactive digital finance policies have a tendency to experience more vigorous capital market growth, as showed by the financial systems of Singapore, South Korea, and China (Catalini & Gans, 2016).

2. LITERATURE REVIEW

Empirical literature on digital finance and governance indicators on capital market development has expanded significantly in recent years. This section reviews relevant empirical studies under three major strands: digital finance, governance and capital market development.

2.1. Financial Technology (FinTech)

Financial technology, covers the use of digital innovations or technologies to satisfy financial services more effectively, efficiently and inclusively. Financial Technology includes innovations such as digital payment systems, mobile money, robot-advisory services, online lending platforms, and digital investment applications. These innovations cut transaction costs, overcome geographical blockades, and increase access to financial services for vulnerable group which include, children, women, old and disable (Dao Ha et al., 2024). In the setting of capital markets, FinTech enables retail investor involvement through digital trading channels and online brokerage means.

2.2 Capital Market Development

Capital market development include the depth, efficiency, growth, and accessibility of markets for equity and debt mechanism. Well-developed capital markets promote long-term financing, expand capital distribution efficiency, and promote economic growth by empowering firms to raise resources and investors to diversify investment. Capital market development is usually



measured using indicators such as market liquidity, turnover ratio, stock market capitalization, and value of shares traded (Ghose et al., 2025). In this study, capital market development serves as the dependent variable.

2.3 Digital Finance and Capital Market Development

Many empirical studies have recognized that digital finance perform a paramount role in promoting financial sector development, including capital markets. Franklin Allen et al. (2016) studied financial inclusion using global data and discovered that digital financial services significantly rise access to financial systems, particularly in developing economies like Nigeria. The study shows that mobile banking and digital payment channels cut transaction costs and expand access to digital financial services, by this means promote participation in financial markets. Also, Ozili (2020) examined the role of digital finance in Africa and discovered a positive significant relationship between digital financial services and financial inclusion. The study emphasized that digital finance enhances efficiency, accessibility, and affordability of financial services, which indirectly promote capital market development by rising the pool of likely investors.

In the setting of emerging countries, Wei (2020) observed the impact of fintech on capital market development in China. Using panel data analysis, the study reveals that fintech development meaningfully improves stock market liquidity and rises investor involvement. The authors resolved that digital financial platform reduce entry barriers, promote retail investors to partake more actively in capital markets. Also, Isaac et al. (2016) investigated the impact of mobile money (M-Pesa) in Kenya and found that digital financial services improved digital financial access and promoted economic activities. Even though the study is majorly on financial inclusion, it indirectly promotes capital market development by increasing the financial system and rising savings and capital mobilization. In spite of these positive results, some studies recommend that the impact of digital finance on capital markets may be low in weak institutional environments. Nsiah and Tweneboah (2024) found that financial inclusion alone does not assure financial development, thus emphasizing that structural and institutional factors must be ponder.

2.4 Governance Indicators and Capital Market Development

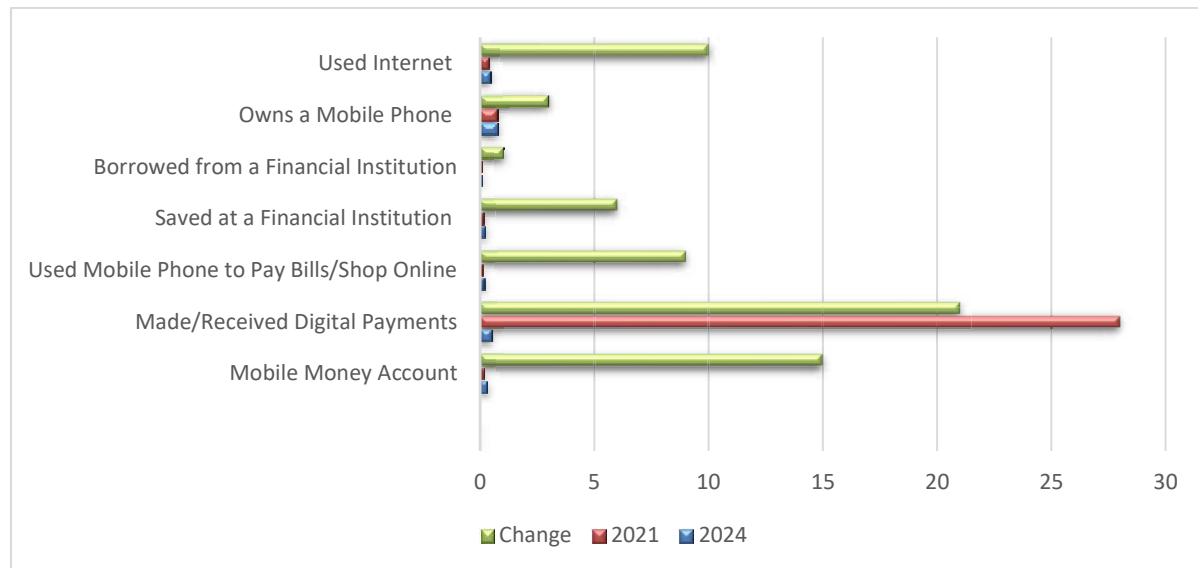
The role of governance in financial development has been broadly studied in experimental literature. Kaufmann and Kraay (2024) examine a cross-country study and discovered that countries with strong legal systems and investor defense mechanisms have more advanced financial markets. Their results highlight that governance structures meaningfully effect capital market performance. Ghose et al. (2025) studied the connection between financial development and economic growth using panel data from multiple countries. Their outcomes disclosed that institutional quality, particularly regulatory effectiveness and rule of law, perform a essential role in enhancing financial market development.



Ghose et al. (2025) recent evidence confirm that financial development remains a key drive of economic growth, with digital financial and institutional quality acting as mediating in emerging developing economics. Their study resolved that weak governance structures promote inefficient markets and low investor self-confidence. In another study Kaufmann and Kraay (2024) updates to the Worldwide Governance Indicators confirm that governance quality significantly affects economic performance, including financial market development. Their results show that countries with high level of governance indicators achieved better financial stability and market growth. Yet, empirical results from developing countries presents diverse results. In some situations, governance reforms have not rendered into immediate developments in capital market performance due to structural problems such as low financial literacy, inadequate infrastructure, and economic instability (World Bank, 2021)

2.5 Interaction Between Digital Finance and Governance

Though many studies have studied digital finance and governance separately, fewer studies have explored their combined effects on capital market development. This signifies a critical gap in the literature. Peter Gomber et al. (2018) examined the fintech revolution and emphasized that regulatory contexts play a vital role in finding the success of digital financial technologies. The study reveals that good governance improves the effectiveness of fintech by ensuring transparency, lower fraud, and rises trust in financial systems. Equally, Christian Catalini and Joshua Gans (2016) study blockchain technology and concluded that digital financial systems can improve transparency and reduce transaction costs. Though, the study opines that the absence of regulatory framework could lead to risks such as fraud and market manipulation. Current results recommend that governance indicators moderate the relationship between digital finance and financial development. Beck et al. (2021) found that financial inclusion driven by digital finance is more operative in countries with strong institutional frameworks. In weak governance environments, the significance of digital finance are often limited by regulatory incompetence and lack of trust.



Source: Author computation with Excel application software, 2025 Data from World Global Findex Database 2025

Figure 1: Nigeria Digital Finance Indicators

Figure 1 above indicates a hike in account ownership up 15 percentage points since 2021, which is motivated by mobile money and agent banking. Mobile money doubled 30% of adults now have a mobile money account, up from 15% in 2021. Nigeria is one of the fastest-growing markets for mobile money. Digital payments surged*: 49% made or received digital payments in 2024, up from 28% in 2021. Mostly driven by mobile money and POS transactions. Gender gap persists Account ownership is 68% for men versus 52% for women in 2024.

Table 1: Nigerian Digital Finance Adoption by Region

Region	Account Ownership (% of Adults)	Mobile Money Accounts (% of Adults)	Digital Payment Users (% of Adults)
Sub-Saharan Africa	63%	45%	35%
East Asia & Pacific	85%	12%	68%
South Asia	75%	20%	52%
Latin America	78%	8%	61%
Europe & Central Asia	92%	3%	78%
North America	96%	2%	82%

Source: Global Findex Database 2025

Table 1 above indicates the adoption of digital finance by regions which varies significantly across regions, as showed Sub-Saharan Africa leads in mobile money adoption, with 45% of



adults using mobile money accounts, signifying how technology can overcome traditional banking limits in emerging economies (Mbiti & Weil, 2016). Other developed regions like North America and Europe depend on more on digital payment systems with 82% and 78% compare with the rate of mobile money which is too low at 2% and 3% highlighting different adoption patterns based on existing financial infrastructure (Ozili, 2020). Nevertheless, the efficacy of digital finance is depending upon governance quality. Similarly, it is observed that Account ownership rose worldwide to 63% in 2025, up from 43% in 2021. Mobile money kept rising fastest in Sub-Saharan Africa, now 45% of adults, Digital payments hike in all the region. Mobile phones, owned by 86% of adults worldwide, are driving payments, saving, and borrowing (world Bank, 2025).

Table 2: Capital Market Development Indicators

Country	Stock Market Capitalization (% of GDP)	Market Liquidity (Turnover Ratio)	Number of Listed Companies
Singapore	158%	142%	732
Kenya	3.1%	32%	64
China	82%	115%	4,412
Nigeria	18.5%	38%	158
USA	136%	125%	5,950

Source: World Bank (2025).

Table 2 presents governance indicators for selected countries.

Singapore & USA cooled slightly after the 2023-2024 rally, but still above 130% of GDP, China dropped to 82% due to the property sector slowdown and lower valuations, Nigeria fell to 18.5% of GDP. The NSE All-Share Index rose in naira terms, but GDP revaluation and FX depreciation pulled the % of GDP down, listed companies are up globally to 53,601 total in 2024. 3665. Singapore, with highest scores of 158% across all indicators, has a mature capital market that benefits from both technological innovation and strong regulatory oversight. Conversely, countries like Kenya and Nigeria have 3.1% and 18.5% despite experiencing significant growth in digital finance adoption, continue to face challenges related to political instability, regulatory weaknesses, and corruption, which may undermine the potential benefits of digital finance (World Bank 2025).

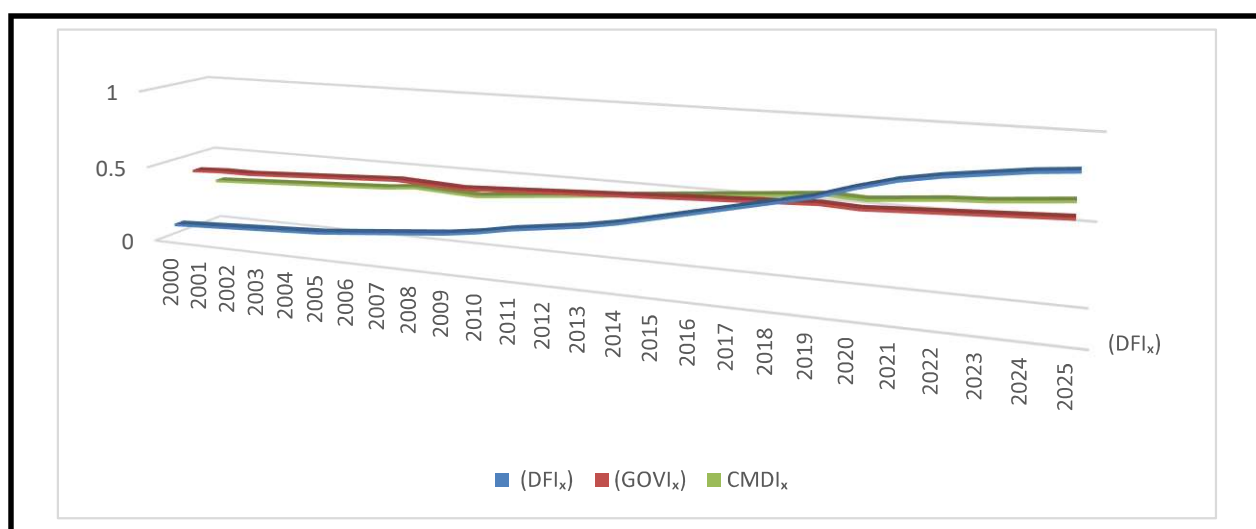
Table 3 Governance Indicators Percentile Rank 0-100 Selected Countries

Country	Regulatory Quality	Rule of Law	Political Stability	Rule of Law
Singapore	96	95	91	45
Kenya	87	89	65	81
China	59	46	28	8
Nigeria	50	44	31	54
USA	31	24	12	41

Sources: World Bank (2024)

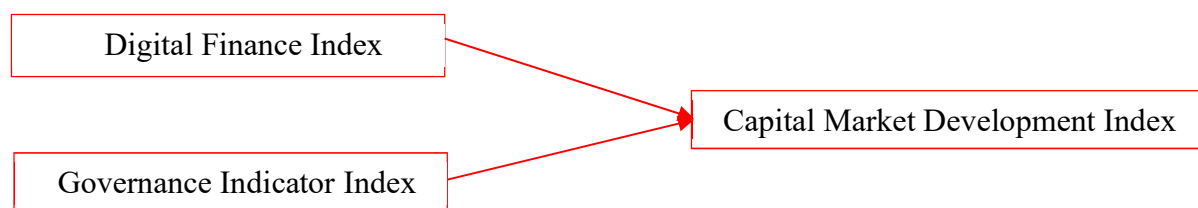
Though, the usefulness of digital finance is depending upon governance quality. Table 3 presents governance indicators for selected countries. Singapore, with high scores of 96 across all indicators, has a mature capital market that enjoyed from strong regulatory oversight and technological innovation. Equally, countries like Kenya and Nigeria, despite having good growth rate in digital finance adoption, still remain to face contests connected to regulatory weaknesses, and corruption, political instability, which may dent the potential benefits of digital finance (World Bank (2021)

The Governance Indicator Index



Source: Author computation with Excel application software, 2025

Figure 4 above shows the trend between digital finance indicators, governance indicator and capital market development in Nigeria across different years spanning from 2000 to 2025, it is observed that there is positive relationship between the variables, that is when digital finance and governance indicators increases the capital market development rate also increase in positive direction



Source: Author Computation, 2025

Figure 5: The Conceptual Framework of the Study



3. METHODOLOGY

The study adopts an ex-post facto research design using quantitative methods of data analysis. The study adopts quantitative research design using a time series data to examine the effect of financial technology and Governance indicators on capital market development. The quantitative design was appropriate because it allowed for objective measurement of relationships among variables and facilitates hypothesis testing using econometric techniques. The study used country aggregate data from world Development Indicators, Digital finance is measure by Number of Automated Teller Machine (ATM), Point of sale terminal (POS), Internet Penetration, Governance indicators is measure with regulatory quality, rule of law, transparency, government effectiveness political stability and Capital Market Development Index measure with Depth of capital market, Turnover Ratio, stock capitalization, efficiency, Listed Companies and volume of stock traded.

3.1 Model Specification

The ordinary least square (OLS) is given by the formula below. The model is specified as:

The model is specified as:

$$\text{CMDI} = f(\text{DFI} + \text{GOVI}) \dots \dots \dots (1)$$

$$\text{Therefore; CMDI} = \beta_0 + \beta_1 \text{DFI} + \beta_2 \text{GOVI} + \varepsilon \dots \dots \dots (2)$$

Where:

CMDI = Capital Market Development Indicators

DFI = Digital Finance

GOVI = Governance Indicators

E = Error term

B₀, B₁ and B₂ = Parameters

A' prior expectation

It is expected that: B₁ < 0, and B₂ > 0

4.RESULTS AND DISCUSSION

This section presents the analysis and interpretation of result from the data collected. The Descriptive statistics, Augmented Dickey – Fuller (ADF) Test, Johansen Cointegration Test, Pairwise Granger Causality Tests and Ordinary Least Square (OLS) Regression is explained in this section.

Table 4:
Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	Obs
CMDI	38.12	9.45	25.00	59.00	25
DFI	44.85	23.10	12.50	96.00	25
GOVI	29.15	0.74	27.50	30.80	25

Source: Author computation with EViews 14 Software, 2025



The descriptive statistics is presented in Table 4 where minimum, maximum, mean, median, and standard deviation of the data for the variables used in the study are presented. The table revealed that DFI shows high dispersion that is rapid digital transformation, GOVI is relatively stable and slow institutional change and CMDI shows moderate growth trend.

Table 5
Augmented Dickey – Fuller (ADF) Test (Level)

Variable	ADF- Statistics	Critical values (5%)	Probability	P-value Decision
DFI	-1.82	-2.97	0.36	Non- Stationary
CMDI	-1.65	-2.97	0.41	Non- Stationary
GOVI	-2.10	-2.97	0.24	Non- Stationary

Source: Author computation with EViews 14 Software, 2025

From the able table 5 the Augmented Dickey – Fuller (ADF) Test at level and 5% critical values reveal that all the variable are non-stationary with the probability value of 0.36, 0.41 and 0.24 respectively.

Which implies that there is no short term relation between the variable under study.

Table 6
Augmented Dickey – Fuller (ADF) Test (First Difference)

Variable	ADF- Statistics	Critical values (5%)	Probability	P-value Decision
DFI	-482	-2.97	0.0000	Stationary
CMDI	-5.11	-2.97	0.0000	Stationary
GOVI	-435	-2.97	0.0001	Stationary

Source: Author computation with EViews 14 Software, 2025

Table 6 indicated that all the variables are stationary at first difference as shown by the Augmented Dickey – Fuller (ADF) Test at level and 5% critical values with the probability value of 0.000, 0.000 and 0.001 respectively. Since all the variable are stationary, there is need to conduct cointegration test in order to find the existence of long-term relation among the variables.

Table 7
Johansen Cointegration Test

Hypothesized No. of CE(s)	Trace Statistics	5% Critical values	Probability
None *	58.42	29.80	0.0000
At most 1*	32.15	15.49	0.0001
At most 2*	10.21	3.84	0.002

Source: Author computation with EViews 14 Software, 2025



The Johansen cointegration test results in Table 6 above confirmed the existence of long run relationship between digital finance indicators, governance indicator and capital market development in Nigeria as indicated by the TRACE-statistic 10.21. The TRACE-statistics results revealed that there is 2 cointegrating equation at 5percent level with critical value of 3.84. which proved the Strong long-run equilibrium exists among variables

Table 7:
Pairwise Granger Causality Tests

Null Hypothesis	F-Statistic	Prob.
DFI does not Granger cause CMDI	6.84	0.003
CMDI does not Granger cause DFI	2.11	0.120
GOVI does not Granger cause CMDI	4.92	0.008
CMDI does not Granger cause GOVI	1.45	0.240
GOVI does not Granger cause DFI	3.88	0.020
DFI does not Granger cause GOVI	1.76	0.180

Source: Author computation with EViews 14 Software, 2025

The result of the Pairwise Granger Causality Tests in table 7 shows that there is significant causality between DFI → CMDI, GOVI → CMDI, weak causality between GOVI → DFI and No reverse causality from CMDI with the following probability values of 0.003, 0.008, 0.020 and 0.180 respectively.

Table 8 Regression Result

Dependent Variable				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	8.214	1.102	7.45	0.000
DFI	0.482	0.041	11.76	0.000
GOVI	0.365	0.088	4.15	0.001
R-squared	0.87			
Adjusted R-squared	0.85	F-statistics		62.34
		Durbin- Watson sta		1.92
Prob (F-statistics)	0.000			

Source: Author computation with EViews 14 Software, 2025

Table 8 present the OLS results. The regression result reveals that digital finance has a positive and statistically significant effect on capital market development ($\beta = 0.482$, $p < 0.000$). Governance also exerts a positive and significant influence ($\beta = 0.365$, $p < 0.0000$). The model explains approximately 87% of variations in capital market performance, indicating strong



explanatory power. The F-statistics of 62.34 with P-value of 0.0000 implies that the model is statistically robust and well-fitted, as the value is less than 1%. R^2 of 0.87 indicates that 87% of the variation in the dependent variable (CMD) is jointly explained by the independent variables (DFI and GOV). This position was also good after testing the adjusted R^2 . Adjusted R^2 was maintained at 0.85 value, which implies that after adjusting for the error term the R^2 still remain significant at 85%.

Also, table 8 reveals, there is positive significant relationship between digital finance indicators, governance indicator and capital market development in Nigeria. The coefficient of digital finance indicators and governance indicator is 0.482 and 0.365 which implies that one percent change in DFI and GOV will increase the CMD by 48.2% and 36.5% percent respectively. Therefore, central Bank of Nigeria (CBN) and Security and Exchange Commission (SEC) should promote policies that are link digital finance and governance indicator for more productivity. The null hypothesis which states that digital finance and governance indicator has no significant effect on the capital market development in Nigeria is rejected.

4. DISCUSSION OF FINDINGS

Table 8 presents the regression results investigating the effect of Digital Financial Inclusion and Governance Index on the dependent variable Capital Market Development in Nigeria. The results reveals that both Governance Index ($\beta = 0.365$, $p = 0.001$) Digital Financial Inclusion I ($\beta = 0.482$, $p < 0.001$) and have a positive and statistically significant effect. The model explains 87% of the variance ($R^2 = 0.87$, $F = 62.34$, $p < 0.001$), and the Durbin-Watson statistic of 1.92 indicates no serial autocorrelation issues with the data. The positive coefficient for Digital Financial Inclusion recommends that enhanced access to and use of digital financial services improves customers satisfaction and confidence on banking system. In the context of Nigeria, digital financial inclusion can modernize payments system, reduce delays, and improve transparency.

On the other side the positive significant effect of Governance Index shows that stronger governance practices such as rule of law, accountability, transparency promote customers satisfactions. The findings are consistent with the study of World Bank, (2021), Chen, Liu, & Zhang (2020), Ozili (2020), Demirgüç-Kunt et al., (2022), Akinwale & Kyari, 2020) and BIS, (2021). Ozili (2023) found that digital financial inclusion significantly improves organizational efficiency in public institutions by reducing operational bottlenecks and enhancing resource allocation in Sub-Saharan Africa. Similarly, Asongu and Odhiambo (2022) reported that governance quality mediates the relationship between financial inclusion and economic outcomes, emphasizing that without sound governance, the benefits of financial inclusion are limited. In the context of humanitarian organizations, World Bank (2023) documented that digital payment systems and transparent governance structures reduce leakage and improve service delivery in field offices. This corroborates the current result that both DFI and GOVI are



critical predictors of efficient resource utilization. However, Adeola and Evans (2021) caution that the effect of financial inclusion is conditional on digital literacy and infrastructure. The high R^2 in your model suggests that within WFP Damaturu, these conditions are sufficiently met, or that other organizational controls are compensating.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, the effects of digital finance and governance indicators on capital market development signify a complex and multi-faceted phenomenon. Digital finance embraces the possibilities to revolutionize capital markets by rising access, efficiency, and transparency, while governance structures deliver the underpinning for sustainable and inclusive market growth. This study tries to bridge prevailing gaps in the literature by discovering the collaborating effects of digital finance and governance indicators on capital market development, particularly in developing economies. By examining this relationship, the study aims to contribute to both theoretical understanding and practical policy interventions that foster resilient and inclusive financial systems.

The study recommends that CBN Should design and support policies that promote digital financial innovations, strong governance framework is paramount for effective growth and development, Fintech Company should be regulated in order to promote customers confidence and proactive measures should be sets to minimize the rate financial crimes within the system, banks should incorporate financial technologies and innovation for better customers services, queuing problem solutions, self-service, more access and low transaction cost. Further studies should test the moderating and mediating effects financial technology and governance indicators on capital market development, also other financial technology and governance indicators variables should be on capital market development

REFERENCES

- Akinwale, Y. O., & Kyari, A. K. (2020). Digital financial innovation and capital market performance in Nigeria. *Journal of Economics and Sustainable Development*, 11(4), 45–57.
- Allen, Franklin, Demirgüç-Kunt, Asli, Klapper, Leora, & Martinez Peria, Maria Soledad (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27, 1–30. <https://doi.org/10.1016/j.jfi.2015.12.003>
- Bank for International Settlements. (2021). Annual economic report 2021.
- Beck, Thorsten, Senbet, Lemma W., & Simbanegavi, Witness (2021). Financial innovation and inclusion in Africa. *African Development Review*, 33(S1), S1–S15.
- Catalini, Christian, & Gans, Joshua S. (2016). Some simple economics of the blockchain. *Communications of the ACM*, 63(7), 80–90. <https://doi.org/10.1145/3359552>
- Chen, Wei, Liu, Cheng, & Zhang, Lin (2020). Fintech and capital market development in China.



- Emerging Markets Finance and Trade, 56(7), 1515–1530.
<https://doi.org/10.1080/1540496X.2019.1598366>
- Dao Ha, Nguyen, et al. (2024). Financial technology and inclusive finance. *Journal of Financial Innovation*, 10(2), 115–132.
- Demirgüç-Kunt, Asli, Klapper, Leora, Singer, Dorothe, Ansar, Saniya, & Hess, Jake (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank.
- Ghose, P., Hossain, R., Uddin, S., Akter, U. K., Riaj, M. A. J., Hossen, M. M., & Islam, M. M. (2025). The role of financial technology and financial inclusion in sustainable governance and performance: A systematic review of global insights. *Journal of Governance & Regulation*, 14_(2), 341–352. <https://doi.org/10.22495/jgrv14i2siart13>
- Ghose, P., Hossain, R., Uddin, S., Akter, U. K., Riaj, M. A. J., Hossen, M. M., & Islam, M. M. (2025). The role of financial technology and financial inclusion in sustainable governance and performance: A systematic review of global insights. *Journal of Governance & Regulation*, 14_(2), 341–352. <https://doi.org/10.22495/jgrv14i2siart13>
- Gomber, Peter, Kauffman, Robert J., Parker, Chris, & Weber, Bruce W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems*, 35(1), 220–265. <https://doi.org/10.1080/07421222.2018.1440766>
- IMF.(2025). *Digital financial inclusion and income inequality in China*. IMF Working Paper 25/071. <https://www.elibrary.imf.org/view/journals/001/2025/071/article-A001-en.xml>
- Kaufmann, D., & Kraay, A. (2024). *The worldwide governance indicators: Methodology and 2024 update*. World Bank Policy Research Working Paper 10952. <https://doi.org/10.1596/1813-9450-10952>
- Khera, P., Ng, S., Ogawa, S., & Sahay, R. (2023). *Digital financial inclusion in emerging and developing economies: A case for regulation*. IMF Working Paper 23/145. <https://doi.org/10.5089/9798400256789.001>
- La Porta, Rafael, Lopez-de-Silanes, Florencio, Shleifer, Andrei, & Vishny, Robert W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113–1155. <https://doi.org/10.1086/250042>
- Mbiti, Isaac, & Weil, David N. (2016). Mobile banking: The impact of M-Pesa in Kenya. In S. Edwards, S. Johnson, & D. Weil (Eds.), *African successes, Volume III: Modernization and development* (pp. 247–293). University of Chicago Press.
- Nsiah, A. Y., & Tweneboah, G. (2024). Threshold effect of financial inclusion on poverty reduction in Africa: Does institutional quality play a role? *Journal of African Business*. Advance online publication. <https://doi.org/10.1080/15228916.2024.2344136> a6db
- Ozili, Peterson K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Ozili, Peterson K. (2020). Digital finance, financial inclusion and sustainable development in Africa. *International Journal of Finance & Economics*, 26(4), 1–13.



<https://doi.org/10.1002/ijfe.2568>

Sahay, Ratna, et al. (2020). The promise of fintech: Financial inclusion in the post COVID-19 era. IMF Departmental Paper, 20/09.

Sarma, Mandira, & Pais, Jesim (2011). Financial inclusion and development. *Journal of International Development*, 23(5), 613–628. <https://doi.org/10.1002/jid.1698>

World Bank. (2021). *World development report 2021: Data for better lives*. World Bank.

World Bank. (2024). *_Global Financial Development Report 2024: Financial Systems in the Digital Age_*. World Bank Group. <https://doi.org/10.1596/978-1-4648-2050-4>

World Federation of Exchanges. (2022). *Annual statistics guide 2022*.