



FINANCIAL INCLUSION, INSTITUTIONAL QUALITY, AND POVERTY REDUCTION IN NIGERIA

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Abstract

Poverty alleviation remains a global challenge and at the fore front of the economic development of developing economies like Nigeria. Although it has been established in literature that financial inclusion is crucial for poverty reduction, few studies have examined the role of institutional quality as an important determinant of poverty reduction. Hence, this study examines institutional quality and financial inclusion on poverty reduction in Nigeria. The paper is anchored on the Capability Approach and adopts the Human Development Index (HDI) as a proxy for poverty reduction as it measures basic human capabilities. With time series data from 1987 to 2022 the VECM is employed as the estimation technique given the established long-run relationship obtained from the ARDL bounds test cointegration technique. Findings reveal that in the short run, financial inclusion and institutional quality are statistically significant and positive for poverty reduction. In the long run, however, these relationships become insignificant. This study, therefore, elucidates on the opposing directions of financial inclusion and poverty alleviation in the country with institutional quality also shown to be vital. Consequently, financial inclusion and institutional quality are found to be necessary, but insufficient conditions for poverty reduction. Hence, while financial inclusion and good institutions are important in the short run, long-term poverty alleviation strategies must be comprehensive and multi-sectoral in approach to complement, consolidate, and sustain the poverty reduction potentials of financial inclusion and high-quality institutions.

Keywords: Poverty, financial inclusion, institutional quality, Nigeria

JEL Codes: G20, I32, O17

INTRODUCTION

Poverty alleviation continues to be a priority in achieving global development. It is, therefore, no surprise that the Millennium Development Goals (MDGs) developed in 2000, aimed at reducing poverty by half in 2015. Given that the goal was not achieved, the Sustainable Development Goals (SDGs) are forging on to end extreme poverty. Despite various efforts, the poverty burden does not

seem to be commensurate with the policies and strategies to ameliorate the situation both at the national and global levels. In Nigeria particularly, about half of the Nigerian population is reported to be poor with 71 million in extreme poverty (World Poverty Clock report, 2023). Part of the strategies adopted to curb poverty is financial inclusion as it has been established in research that higher poverty rates are commonly experienced in countries that have a 26 to 48% financial exclusion rate (Le, Chuc & Taghizadeh-Hersary, 2019).

In Nigeria, lack of access to finance is a significant factor hindering economic development, which makes financial inclusion to be regarded as a prerequisite for sustainable development (Aro-Gordon, 2016; World Bank, 2015). The argument is that when the poor have stress-free access to affordable financial resources, there are improved income-earning opportunities as well as the facilitation of economic integration (Gunarsih *et al.*, 2018). Hence, financial inclusion is expected to alleviate poverty directly through access to credit facilities, savings facilities and insurance and indirectly through the growth and inequality channel (Dhrifi, 2013). To this end, various financial inclusion policies and strategies have been targeted towards poverty alleviation in Nigeria. Some of these strategies include Market Moni, Trader Moni scheme, and the National Women Empowerment Fund (NAWEF). These programs were designed to improve financial access to the unbanked and under-banked to reduce poverty incidence in the country.

Efforts to improve financial inclusion levels in Nigeria have, however, not yielded the expected significant effects on the poverty profile in the country. For instance, the financial inclusion rate increased from 47% in 2008 to 64% in 2023. According to report, over 90 million Nigerian adults now have access to financial services, (Enhancing Financial Innovation and Access (EFINA) 2023). With this impressive improvement in financial inclusion, one would expect poverty levels to fall significantly. On the contrary, poverty only reduced marginally from 53.5% in 2009 to 50% in 2018, with 71 million Nigerians still in extreme poverty in 2023 (World Bank, 2019; World Poverty Clock report, 2023). Based on the foregoing, the poverty-alleviating tendencies of financial inclusion become arguable, which is evidenced by research as empirical literature shows conflicting results. While studies such as Nsiah *et al.* (2021), Anwar *et al.* (2016), Fadun (2014), Swamy (2014) and Annim and Alnaa (2013) have established strong evidence of a positive relationship between financial inclusion and poverty alleviation, Tran and Le (2020), Mishra (2012), Ayensu (2017), Naime and Gaysset (2017) have shown otherwise. Could these conflicting results be a result of factors peculiar to the context of the study? One of which is institutional quality.

The quality of institutions may be a major determinant of the extent to which financial inclusion reduces poverty. Institutional quality through resource misallocation and inefficient markets, impacts poverty (Tebadi and Mohan 2010). Perera and Lee (2013) also argue that weak institutions lower the predictability, correctness, and effectiveness of government decision-making and financial inclusion policies. This in turn discourages overseas investment and dampens economic growth. In essence, low institutional quality may lead to inefficient and poor targeting of financial inclusion strategies, which may result in a negative consequence of inhibiting the poverty reduction rate and thus, making financial inclusion not have the desired impact. The attention of previous studies has not been focused on the link between financial inclusion, institutional quality and poverty reduction and little or nothing is known about this relationship in Nigeria.

It is, therefore, imperative to re-examine the effect of financial inclusion on poverty alleviation considering the influence of institutional quality. Thus, this study seeks to examine the effects of financial inclusion and institutional quality on poverty reduction in Nigeria for the period 1987-2022. This study employs political stability, absence of violence, and control of corruption as the institutional quality measures to consider as they have been established to be important determinants of poverty in the country which also hinder poverty alleviation efforts (Wahayu & Wildod, 2017; Hussaini, 2014).

LITERATURE REVIEW

This section reviews related literature on the nexus between financial inclusion and poverty and institutional quality and poverty while also exploring the financial inclusion strategy in Nigeria. Thereafter, the theoretical and empirical literature on the subject matter is briefly reviewed.

Financial Inclusion and Poverty

Financial inclusion, which is the extension of payments, savings, insurance, and credit to the impoverished and financially disadvantaged at a reasonable cost is crucial for inclusive and sustainable economic growth. Even though the term financial inclusion has several different meanings, all these definitions lead to the same broad idea—that financial inclusion focuses on improving financial access for the unbanked poor—they are recognized as the fundamentals of gaining access to formal financial services. Voica (2017) asserts that there is a possibility for sustained growth when the underbanked and impoverished have access to reasonably priced financial services and products. Furthermore, giving everyone the same opportunity to access a working financial system speed up integrating the socially excluded to achieve economic integration (Gurnasih et al., 2018). Additionally, it is contended that an inclusive financial system enhances a more efficient distribution of resources, which reduces the cost of capital. Reducing capital costs lead to higher levels of investment which in turn improves overall growth and development.

Aguera (2015) considers financial inclusion as a deliberate driver of economic growth and poverty reduction as access to financial products and services has the potential to create income-generating activities, reduce vulnerability to shocks as well and increase human capital investments. Assessing the association between financial inclusion and reduction in poverty levels, improved financial inclusion is regarded as tending to improve the efficacy and efficiency of other policies like poverty reduction policies (Gurnasih et al., 2018).

Financial inclusion is a phenomenon faced by both developed and developing economies and as such different policies are being designed to tackle the problem. In Nigeria, for instance, the presidency reported limitations in accessing financial resources as one of the foremost issues hampering economic growth and development. Against this background, the Federal government in October 2012 launched the National Financial Inclusion Strategy (NFIS) with a view to establishing structures to facilitate access to productive financial resources. The Central Bank of Nigeria (CBN) designed the financial inclusion strategy to enhance financial access of the greater Nigerian population and as a strategy to alleviate poverty, particularly in the rural areas. NFIS aimed to reduce the prevalence of financial exclusion among the Nigerian populace, which stood at about 46.3% of the population of Nigerian adults (Oyewo & Oyewole, 2014). The strategy charted the course of

action of all financial inclusion stakeholders to reduce the rate of exclusion to 20% by the year 2020 and increase the inclusion rate from 33% to 70% by the year 2020 (Sanya, 2017).

From the 2018 EFINA financial services access survey findings, the implementation of the financial inclusion strategy can be seen to improve the rate of financial access. The study showed that the Nigerian adult population is financially excluded by 36.8%, which amounts to 36.6 million adult Nigerians with 44.1% male and 55.9% female. Looking at the number of finances included, it was 56.4 million as of 2016, which has increased to 63.6 million in 2018, showing a growth of 11 per cent (Vanguard, 2018). According to Oyewo & Oyewole (2014), some of the major factors hindering financial inclusion in Nigeria are low income especially when irregular, affordability, accessibility, documentation requirements and financial literacy. The major stakeholders involved in enhancing Nigeria's financial inclusion bid are banks, insurance bodies, non-bank financial institutions, financial regulators, development partners and experts, telecommunication corporations and public institutions (Sanya, 2017).

Institutional Quality and Poverty

Six indicators using broad governance dimensions have been developed by the World Bank to capture institutional quality namely – political stability and absence of violence/terrorism, control of corruption, government effectiveness, voice and accountability, regulatory quality, and the rule of law (World Bank, 2019). Concerning poverty, higher institutional quality and efficiency have been found to be significant in lowering poverty levels, incidence and severity (Perera & Lee, 2013). In a similar vein, Musharraf (2011) discovered high institutional quality reduces poverty and inequality faster than in countries with weak institutional quality. Studies such as Molina (2014) have also found that government spending and policies are more effective for poverty alleviation in countries with high institutional quality.

Theoretical Review

Scholars such as Keynes (1936) and Tobin (1965) have hypothesized on the importance of the financial sector to income and economic growth. An inclusive and well-developed financial system is regarded as fundamental to economic growth, which significantly lowers poverty levels (Bist, 2018). In this strand of thought are Goldsmith (1969), Levine (1997), McKinnon (1973) and Schumpeter (1911) who postulated that a well-developed financial system is essential for economic growth. Finance is theorized to be a source of economic growth particularly through savings, investment and technology (Demirguc-Kunt, 2006). However, this position has been criticized by Neoclassical theorists such as Lucas (1988) who are of the opposing view that finance does not have an impact on growth. Recent studies in the literature tilt towards the former school of thought as economic growth has been shown to be positively influenced by financial sector development (see Durusu-Ciftci, Ispir & Yetkiner, 2017; Pradhan, Arvin, Hall & Nair, 2016; Herwatz & Walle, 2014; Levine, Loayza, & Beck, 2000; Levine, 1997).

In line with Schumpeter (1911), the development of the financial sector will promote economic growth by providing firms with adequate funding for productive activities (Bist, 2018). According to theory, therefore, financial inclusion has the potential to alleviate poverty, especially through the provision of affordable formal financial services to individuals and businesses for savings and investment purposes (Levine, 2005). As a key feature of financial sector development, financial inclusion was borne out of research findings indicating that poverty is a consequence of financial

exclusion (Le, Chuc & Taghizadeh-Hersary, 2019). Hence, financial inclusion became recognized as one of the key strategies to reduce poverty. With an inclusive, well-developed financial system, financial access is broadened, and the poor are enabled to have access to affordable financial services that will reduce the poor's vulnerability. Another impact channel for poverty reduction through financial inclusion is that with access to finance, individuals can invest and increase their productivity, which improves their income-earning abilities and increases their income thereby reducing poverty (Demirguc-Kunt & Levine, 2009).

Empirical Review

Nsiah et al. (2021) examined the threshold effect of financial inclusion on poverty reduction in Sub-Saharan Africa between 2010 and 2017. The study employed the differenced generalized method of moments (GMM). The findings suggest that financial inclusion would lead to poverty reduction beyond the threshold of 0.365. Although the study also explored other financial-related variables such as money supply and domestic credit supplied to the private sector, it did not include social variables such as education and institutional variables in the model. Similarly, Omar and Inaba (2020) studied the effect of financial inclusion on poverty reduction in 116 developing economies for the period of 2004 and 2016. Adopting a novel index of financial inclusion using a broad set of financial sector outreach indicators, the findings show that financial inclusion significantly reduces poverty in the countries of study. Even though the study examined other factors apart from the financial ones, it did not include the role institutions can play in influencing the financial inclusion-poverty relationship.

Using the Principal Component Analysis (PCA) to build a financial inclusion index, Tran and Le (2020) studied the effect of financial inclusion on poverty reduction in 29 European economy for the period of 2011 and 2017. The study adopted the 2-stage least squared (2SLS) and GMM method of analysis and the findings suggest that financial inclusion has a negative impact on poverty reduction. Kouadio and Gakpa (2022) examined how economic growth and institutional quality affects poverty and inequality in West Africa. The result suggests that economic growth remains a necessary condition for poverty reduction. Overall improvement in the quality of institutions contributes significantly to reducing poverty and income inequality in the long term. Similarly, Perera and Lee (2013) studied how economic growth and institutional quality affect poverty and income inequality in West Africa. Data was gathered from nine less-developed countries (LDCs) spanning 1985 to 2009. The Generalized System Method of Moments (GMM) was used to analyze the data which revealed economic growth as an insignificant factor when it comes to income inequality, although it reduces poverty. High institutional quality in terms of stability of government and law and order was seen to lead to a reduction in poverty while other measures such as control of corruption, accountability in government and the quality of bureaucracy seemed to worsen poverty. However, the study does not incorporate control variables of other factors that affect poverty, such as education which has been shown to affect poverty as it accounts for human capital (Rajapakse, 2016).

The interaction between financial development and institutional development concerning how they affect poverty was investigated by Aracil, Gomez-Bengochea, & Moreno-de-Tejada (2022). Using a sample of seventy-five developing and developed countries between 2004–2017, the findings suggest that institutional quality intensifies the positive effects of financial inclusion on poverty alleviation. Similarly, Cepparulo, Cuestas and Intartaglia (2016) explored data from 1984 to 2012

for 58 countries collected for three financial measures and an institutional variable. The objective was to ascertain whether the impact of financial development on poverty is different across various levels of institutional quality. The authors found that both financial development and institutional framework significantly reduce poverty, which holds for all alternative measures of financial development and poverty. However, the study discovered that the pro-poor impact of financial development is weaker where institutions work better, and stronger where they work less well. These findings provide evidence in favor of a substitution effect between finance and institutions. One possible reason for this effect is that some of the limitations associated with a weak institutional framework might be alleviated by how the banking system works. The study, however, employed only income-based poverty, with no consideration for other multidimensional aspects of poverty.

Furthermore, Nasreddine, Mensi and Amor (2018) studied the relationship between financial development, institutional quality and poverty. The three-stage least square was employed to estimate data obtained from a sample of 132 countries from 1980-2014. The finding revealed that while financial development does not necessarily reduce poverty, the effect of institutional quality on poverty is consequent upon the choice of indicators.

From the empirical review of related literature, it can be observed that most of the few studies regarding institutional quality to poverty are done from the growth and financial development perspective. No studies have examined how institutional quality and financial inclusion affect poverty reduction. This is the gap this study attempts to fill.

METHODOLOGY

Theoretical Framework

This paper is theoretically guided by Sen's Capability Approach to poverty, as the theory views poverty from a multidimensional perspective. In this theory, poverty is the inability to achieve basic capabilities needed to satisfy minimum critical functions (Sameti *et al.*, 2012; Sen, 1985) and money is only regarded as necessary but insufficient. This study thereby adopts this approach as it seeks to address poverty from the basic utilities an individual requires to function optimally.

Model Specification

In line with several empirical literatures such as Sameti *et al.* (2012), Darling (2002) and Streeten *et al.* (1981), health, education, sanitation, water supply and housing as functions essential for a decent living. Hence, the Human Development Index (HDI) is used to proxy multidimensional poverty as it measures basic human capabilities in three human development dimensions health, education and standard of living (HDR, 2018).

$$POV = f(FI_t, IQ_t) \dots\dots\dots (1)$$

where

POV_t = Poverty reduction proxied by HDI_t

FI_t = Financial Inclusion function = $f(CBLA_t, CBB_t, RUDE_t, LSCE_t, RMSG_t, CPSG_t)$

IQ_t = Institutional Quality = $f(PV_t, CC_t)$

This yields

$$POV_t = f(CBLA_t, CBB_t, RUDE_t, LSCE_t, RMSG_t, CPSG_t, PV_t, CC_t) \quad (2)$$

The model to be estimated is therefore given in its econometric format below:

$$hdi_t = \beta_0 + \beta_1 cbla_t + \beta_2 cbb_t + \beta_3 rude_t + \beta_4 lsce_t + \beta_5 rmsg_t + \beta_6 cpsg_t + \beta_7 pv_t + \beta_8 cc_t + \varepsilon_t \quad (3)$$

where

CBLA = Commercial Banks Loans and Advancement (CBLA)}

CBB = Number of Commercial Bank branches

RUDE = Deposits of rural branches of commercial banks

LSCE = Commercial banks loan to small-scale enterprises

RMSG = Ratio of money supply to GDP

CPSG = Ratio of credit to private sector to GDP

CC = Control of corruption

PV = Political Stability and absence of terrorism

With

β_0 = Intercept

$\beta_1, \beta_2, \dots, \beta_8$ = Parameter estimates

e = Error term

The a priori expectation of parameter estimates is that $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7,$ and $\beta_8,$ are expected to be ≥ 0 .

Data Estimation

The Vector Error Correction Model (VECM) is employed as the estimation technique as it is the appropriate method given the established long-run relationship obtained from the cointegration test. VECM is therefore constructed to examine both the long-run and the short-run dynamics of the cointegrating series. The VECM model is thereby specified as given in equation (4).

$$\Delta HDI_t = \sigma + \sum_{i=1}^{k-1} \beta_i \Delta HDI_{t-1} + \sum_{j=1}^{k-1} \Phi_j \Delta CBB_{t-j} + \sum_{m=1}^{k-1} \varphi_m \Delta RUDE_{t-m} + \sum_{p=1}^{k-1} \theta_p \Delta PV_{t-p} + \sum_{q=1}^{k-1} \gamma_q \Delta CC_{t-q} + \lambda_1 ECT_{t-1} + \varepsilon_{1t} \quad (4)$$

Where

k-1 = the lag length minus 1

$\beta_i, \Phi_j, \varphi_m, \theta_p, \gamma_q$ = Coefficients for the short-run relationship of the model's adjustment to long-run equilibrium

Δ = The difference operator

$\lambda_1,$ = Speed of adjustment parameter

ECT_{t-1} = Error correction term

ε_{1t} = stochastic error terms

Rationale for Time Frame and Data Sources

This study is a time series study spanning 1987-2017. 1987 is selected as the starting period given the introduction of the Structural Adjustment Program (SAP) in 1986, which brought about financial sector reforms in the country. However, the banking sector reforms did not take effect until January 1987 even though the deregulation reforms began in the fourth quarter of 1986 (Asogwa 2005; Adegbite, 2005; Ikhida and Alawode, 2001). Data for HDI is sourced from the Human Development Report (HDR), financial inclusion data are obtained from the Central Bank of Nigeria's statistical bulletin and institutional quality data is from the World Bank's World Development Indicators.

RESULTS AND DISCUSSION

Descriptive Summary

In Table 1 below, the summary statistics for the observations used in the model are presented in terms of the list of variables, the total observations used (obs), the average values (mean), the variations in the data (std. Dev.) and the minimum and maximum values. The Table also shows only three of the six financial inclusion variables stated in Section 3. However, three of the variables were dropped due to a high degree of multicollinearity. These are Commercial Banks Loans and Advancement (CBLA) and the financial deepening indicators Ratio of Money Supply to GDP (RMSG) and Ratio of Credit to Private Sector to GDP (CPSG).

Table 1 Descriptive Statistics

Variable description	Obs	Mean	std. Dev	Min	Max
HDI	35	0.433	0.088	0.241	0.532
CBB	35	3467.258	1541.946	1476.000	5807.000
LSCE	35	27043.37	23152.34	1961.700	90176.50
RUDE	35	21740.17	38076.93	19.72300	185336.5
CC	27	10.543	4.088	0.505	19.417
PV	27	8.493	6.894	2.415	26.596

Source: Authors' computation, (2023)

For the institutional quality variables - control of corruption (CC) and political stability and absence of terrorism (PV), only 27 observations are used because the data starts from 1996. It is also noteworthy that data for Commercial bank loans to small-scale enterprises (LSCE) is available only from 1992. Hence, data for sectoral bank loans to domestic trade is used from 1987 to 1991, which the authors believe is in line with LSCE.

Correlation Analysis

Table 2 presents the correlation coefficients which measure the degree of linear relationship among the variables.

Table 2 Correlation Matrix Table

Variables description		(a)	(b)	(c)	(d)	(e)	(f)
HDI	(a)	1.00					
CBB	(b)	0.85	1.00				
LSCE	(c)	-0.67	-0.74	1.00			
RUDE	(d)	0.39	0.24	-0.18	1.00		
CC	(e)	0.33	0.50	-0.72	0.07	1	
PV	(f)	-0.64	0.73	0.33	-0.07	-0.18	1

Source: Authors' computation, (2023)

From the Table, both negative and positive associations can be observed among the variables in the model with most of these relationships being regarded as weak to moderate and below the rule of thumb of 0.8. Although a coefficient of 0.85 is reported for the Number of Commercial Bank Branches (CBB) and Human Development Index (HDI), it poses no multicollinearity challenge for the analysis as they are on different sides of the equation.

Unit Root Test

Using the Augmented Dickey-Fuller (ADF) to conduct the unit root test, all variables are stationary at first difference. That is, all the variables are $I(1)$ series. This is reported in Table 3.

Table 3 Unit Root Result

Variables	ADF t- statistics	ADF critical at 5%	Order of integration
HDI	-4.261391	-3.587527	I (1)
CBB	-3.791981	-2.967767	I (1)
LSCE	-4.330542	-3.672458	I (1)
RUDE	-4.030042	-3.574244	I (1)
CC	-5.035894	-3.658446	I (1)
PV	-6.003308	-3.020686	I (1)

Source: Authors' computation, (2023)

Given that all the series are stationary at the first difference $I(1)$, a cointegration test is conducted to check the presence of cointegration in the model.

Cointegration Test

The Autoregressive Distributed Lag (ARDL) bounds test cointegration technique by Pesaran and Shin (1999) and Pesaran *et al.* (2001) are adopted to examine the presence of cointegration in the model, the result of which is presented in Table 4. The ARDL technique is employed for testing long-run relationships since it is applicable regardless of whether the variables are stationary at level $I(0)$ first difference $I(1)$ or a combination of both (Nkoro & Uko, 2016). Moreover, the ARDL model maintains the typical interpretation under stationarity even in cases where the variables are integrated at the first difference (Pesaran & Shin, 1997).

Table 4 ARDL Bounds Test for Cointegration

Variables	F- Statistics	Cointegration
F (HDI, CBB, LSCE, RUDE, CC, PV)	9.467725	Cointegration Exist
Critical value	Lower Bound	Upper Bound
1%	3.41	3.35
5%	2.62	3.79
10%	2.26	3.49

Source: Authors' computation, (2023)

From the Table, the F-statistics (9.5) is reported to be higher than the critical values in the upper bound at 1% (3.35), 5% (3.79), and 10% (3.49) levels of significance, which lead to the rejection of the null hypothesis that the series are not cointegrated. We, therefore, conclude that cointegration exists in the model, which implies there is a long-run relationship among the variables; that is, between poverty and financial inclusion and institutional quality variables. Consequently, the VECM approach is adopted to analyze the long-and short-run relationships.

The Vector Error Correction Estimates

Given the existence of cointegration established in sub-section 4.4 above, it is imperative to analyze both the long-run and short-run relationships between poverty, financial inclusion and institutional quality in Nigeria using VECM. Analyzing the long-run relationship first, the result of this estimation is presented in Table 4.5

Table 5: Long Run Estimates

	Coefficient	Std. Error	t-statistic	Prob.
HDI	0.732539	0.125065	5.857274	0.0000
CBB	4.22E-06	3.65E-06	1.155967	0.2670
LSCE	-1.25E-07	1.84E-07	-0.682748	0.5059
RUDE	1.79E-08	8.06E-08	0.222115	0.8274
CC	6.46E-05	0.000752	0.085869	0.9328
PV	0.000342	0.000481	0.710409	0.4891
C	0.117146	0.061914	1.892085	0.0793

Source: Authors' computation, (2023)

Table 6: Error Correction Model (Short-Run Estimates)

Variable	Coefficient	Std. Error	t- Statistics	Prob.
D(HDI (-1))	0.604445	0.260474	2.320558	0.0387
D(CBB (-1))	-9.73E-06	4.24E-06	-2.295079	0.0406
D(LSCE (-1))	7.75E-08	1.22E-07	0.635505	0.0537
D(RUDE (-1))	-4.22E-09	5.65E-08	-0.074826	0.9416
D(CC (-1))	0.001300	0.000609	2.133639	0.0542
D(PV (-1))	0.000121	0.000402	0.301366	0.0768
C	0.002915	0.002428	1.200489	0.0016
<i>CointEq(-1)*</i>	-0.171974	0.320081	-3.241254	0.0071
R-squared	0.749528	Mean dependent var		0.005600
Adjusted R-squared	0.603419	S.D. dependent var		0.009405
Durbin-Watson stat	1.686524			

Source: Authors' computation, (2023)

Discussion of Results

Examining the long-run relationship in Table 5, it is observed that neither financial inclusion variables nor institutional quality variables are significant for poverty reduction with all variables save for LSCE exhibiting the expected sign. Although, a somewhat surprising result, this has important implications for poverty alleviation strategies. To sustainably alleviate poverty, there is a need for more than just financial inclusion and institutional quality as poverty goes beyond the provision of financial access and peace and stability in the country. Other factors such as technological advancement and access, reduced population (Sugiharti, 2017), productive employment, infrastructure and social development (Wu, 2016) are significant for poverty reduction in the long run.

Table 6 reports the short-run dynamics of the VECM. The coefficient of the number of commercial bank branches (CBB) is shown to be -9.7 and significant at a 5% level. This means that a unit increase in CBB worsens poverty by 9.7 units. Although contrary to a priori expectation, this can be explained by the fact that the poor are generally not served by mainstream commercial banks but by microfinance banks and institutions and through informal means. Therefore, increasing the number

of commercial banks may not translate to improved access and usage of financial products and services for the poor, which will therefore not yield the expected positive effects. The estimated coefficient for Commercial bank loans to small-scale enterprises (LSCE) is shown to be 7.75 with a p-value of 0.05. Advancing loans to small and medium-scale enterprises will, therefore, have positive implications in terms of poverty reduction. The last financial inclusion variable, which is Deposits of rural branches of commercial banks (RUDE) is reported not to have a significant effect on poverty reduction. Preponderantly, it can be concluded that access to financial resources reduces poverty, which agrees with studies such as Umaru and Chibuzo (2018) and Lal (2018). Financial inclusion affords the poor access to productive resources to make them economically active and generate income, which has multiplier effects on other sectors of the economy such as health and education.

For the institutional quality variables, control of corruption (CC) and political stability and absence of terrorism (PV) are both found to be positive and statistically significant at 5% and 10% respectively. Consequently, government accountability, political stability, and peace will reduce the incidence of poverty, which agrees with Cepparulo *et al.* (2016) but contrary to Perera and Lee (2013) who found control of corruption increases poverty.

The error correction term (ECT), which shows the speed of adjustment of variables to the equilibrium state, is reported as -0.17 and highly statistically significant with a p-value of 0.00 as expected. This further confirms that there is a long-run relationship between poverty, financial inclusion and institutional quality variables and their significant lags. Hence, the estimated model is stable, and deviations from long-run equilibrium will be corrected by 17% by the following year. The reported R-square is 0.75, which implies that 75% of the variations in the poverty levels are explained by the independent variables.

Diagnostic Tests

Serial Correlation Test

Table 7 Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.549900	Prob. F (1,11)	0.4739
Obs.*R-squared	0.952215	Prob. Chi-Sq. (1)	0.3292

Source: Authors' computation, (2023)

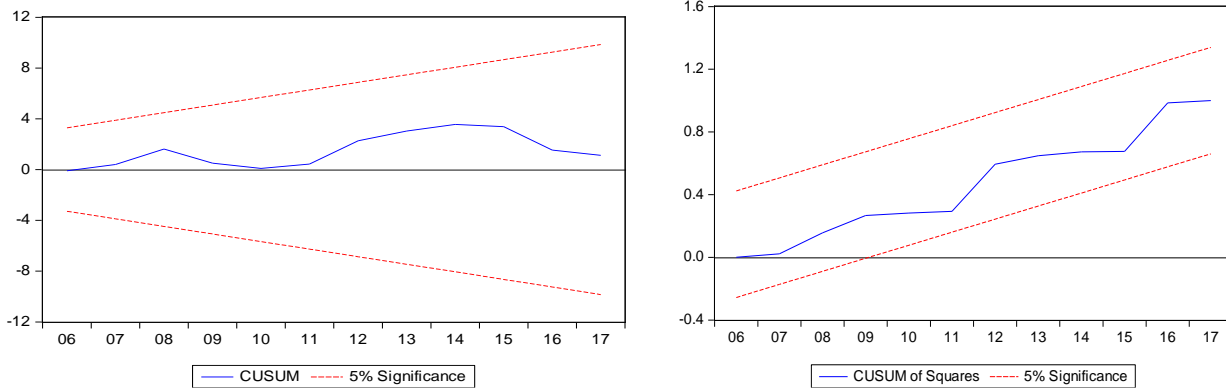
Table 7 shows there is no serial correlation in the model given the insignificant p-values of both statistics. We, therefore, fail to reject the null hypothesis that the variables are not serially correlated and conclude the model is reliable in its explanation of poverty levels in Nigeria for the years under review.

Stability Test

Figures 1 and 2 respectively show the cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) tests, which are conducted to examine the parameter stability (Pesaran & Pesaran (1997)).

Figure 1: Plot of CUSUM Test

Figure 2: Plot of CUSUMSQ Test



Source: Authors' computation, (2023)

The Figures above show that both CUSUM and CUSUMSQ plots for the model are within the 5% critical bound which suggests coefficients in the ECM are stable and concludes that there is no structural instability in the model for the period under review (Salisu, 2014).

CONCLUSION

This study examines the impact of financial inclusion on poverty reduction, considering the influence of institutional quality for the period of 1987-2017. Financial inclusion and institutional quality were found to be necessary but not sufficient conditions for poverty reduction as they were only significant in the short-run, but not in the long-run. This implies that poverty goes beyond having access to productive resources by the poor, and stability and accountability by the government. The findings of this study, therefore, explain the opposing directions of financial inclusion and poverty alleviation in Nigeria. Institutional quality, on the other hand, in terms of corruption control and political stability and peace, is shown to matter but does not suffice as suggested by this study. These are undoubtedly critical, as supported by substantial evidence in the short-run. However, there must be other factors to build on to consolidate and sustain the poverty reduction achieved. This reinforces the emerging consensus in the literature that to ameliorate the ills of poverty effectively, a multidimensional approach needs to be adopted. Thus, other factors such as accelerated industrialization, technological advancement and access, social development programs to enhance social capital, and productive employment for sustainable income generation, are vital as have been demonstrated by countries that have succeeded in achieving results in alleviating poverty such as China, Indonesia and India (Sugiharti, 2017; Wu, 2016). Consequently, a comprehensive and multi-sectoral approach to poverty reduction is required to complement and deepen poverty-alleviating potentials of financial inclusion and high institutional quality in Nigeria.

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