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FINANCIAL INCLUSION AND UNEMPLOYMENT IN NIGERIA

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ABSTRACT

Purpose: *Studies have shown that financial inclusion harnesses savings from the locals, which increases loanable funds at the disposal of the money deposit banks which in turn increases investments that translates into increased employment opportunities in Nigeria. This study therefore examined the impact of financial inclusion on the unemployment situation in Nigeria from the year 1991 to2021.*

Approach/Methodology/Design: *Anchored on the financial literacy theory of financial inclusion articulated by Ozili, (2020), the study employed secondary data sourced from world bank indicator (WBI) and utilized Autoregressive Distributed Lag (ARDL) to analyze them. The results show amongst others that F-statistic value of (3.071786) is less than the 5% critical value of (4.01) indicating that there is no long-run dynamic relationship between unemployment rate and financial inclusion in Nigeria. But, the t-statistic value of (3.819815) is greater than the 5% critical value of (-3.41) in absolute terms, indicating that there is a short-run relationship between unemployment rate and financial in Nigeria. The result further indicates that as the F-Statistic of the model is 52.21126 with probability value of 0.000000.*

Findings: *This implies that the variables impact on the unemployment rate is statistically significant at 5 percent level since the F-calculated is greater than the F-tabulated, even with the p value which is practically zero.*

Originality/value*: The study therefore recommends that the government should embark on massive financial education to bring the knowledge of financial services and products to the citizens to enable them tap into the benefits therein. Again, the monetary authority should step up one of its key functions of guiding credit and loans channels to private sector to ignite the benefits of financial inclusion..*

INTRODUCTION

The concept of financial inclusion has assumed such an important dimension because of the pride of place it occupies in achievement of a key macroeconomic objective of full employment of labour and attainment of a key goal (Decent work and Economic growth) of the Sustainable Development Goals (SDGs). Financial inclusion is the provision of and access to financial services to all members of population particularly the poor and the other excluded members of the population (Ozili, 2018). Financial inclusion is also defined as the delivery of formal financial services to the lower income segment of the society which is under banked or unbanked at all

(Dev, 2006). In the view of Mohan (2006), financial exclusion is an indication of lack of access by certain segments of the society to access affordable and safe financial products and services from mainstream providers. Again, the centre for financial inclusion defines financial inclusion as "a state in which all who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients. It is a state where financial services are delivered by a range of providers, most of them from the private sector, with the ability to reach everyone who can use them, including the poor, disabled, rural, and other excluded populations" (Centre for Financial Inclusion, 2010). The 2010 financial survey by the Consultative Group (CGAP/World Bank) to Assist the Poor countries of the world, show that the percentage of households having deposit accounts in a formal financial institution varies greatly across countries, ranging from below 1.0 per cent in the Democratic Republic of Congo and Afghanistan to about 100 per cent in Japan. This worrisome level of access to finance, especially in the developing countries poses a serious challenge not only to the different local economies, but also to the global economic growth at large and thus, a trait to the achievement of a key macroeconomic objective of full employment of labour.

In 2012, The National Financial Inclusion Strategy (NFIS) was introduced to lubricate the economic growth of Nigeria. The goal of NFIS is to reduce the number of Nigerians without access to financial services from 46.3% to 20% by the year 2020, capping the motive for financial inclusion as ensuring that all adult members of the society have easy access to a broad range of financial products, designed according to their needs and provided at affordable costs. In the view of Afolabi, (2020), he posits that a well-developed financial system characterized by the provision of adequate financial services such as credits, savings, insurance and pensions to a low-income group could enlarge business opportunities in the private sectors and contribute significantly to an increase in savings and investment opportunities with a multiplier effect that will lead to unemployment reduction.

The prevalence of unemployment both in developed and developing nations is worrisome. According to Okereke, Sanni, Anyanwu & Ogunbiyi (2009), there are two main reasons for worrying about unemployment: first, it results to economic wastes and second, it causes human suffering (poverty) with its attendant socio-economic problems. Kyei & Gyeke (2011) argued that unemployment is a real matter of concern as it can yield devastating effect on economic welfare, crime, the erosion of human capital, misery and social instability. It is against this background that this study would examine the relationship between financial inclusion and unemployment in Nigeria.

Statement of the Problem

Unemployment reduction is an objective of financial inclusion (Uma, Rupa, &Madhu, 2013) and Khan (2012), identified the exclusion of about 57% of the country's adult population (50.1 million people) from formal finance services as a key cause of poverty and unemployment in Nigeria. Sanusi (2010) opined that improvement in any real socio-economic gain in terms of employment opportunity would be achieved at a faster rate, if all segments of the population have access to financial services. But this may not be achieved when a good chunk of the population is not part of the financial system. In the part of CBN (2012), which stated that percentage of total adult population to savings account, loans access and payment system by year 2020 is targeted at 60, 40 and 70 percent respectively, which is an indication of the extent of depth in financial exclusion. Therefore, the exclusion of such a chunk of the population of a nation from the financial services make savings difficult and since investment (which determines the rate of employment generation) is a function of savings and consumption, it therefore becomes increasingly difficult for that segment of the nation which are excluded to make decisions that concerns future investment. Hence, the motivation for this paper, to interrogate the impact of financial inclusion on the unemployment situation in Nigeria.

Objective of the Study

The main objective of this study is to investigate the impact of financial inclusion on the unemployment situation in Nigeria. However, the specific objectives which the paper intends to achieve are;

To investigate the relationship that exists between financial inclusion and unemployment rate in Nigeria.

To examine the impact of financial inclusion on unemployment rate in Nigeria

Research Questions

The paper is guided by the following research questions: What is the relationship between financial inclusion and unemployment rate in Nigeria? What is the impact of financial inclusion on unemployment rate in Nigeria

Research Hypotheses

We stated the hypothesis in the null (H_0) and alternative (H_1) form as shown below:

H_0: There is no long-run relationship between financial inclusion and unemployment rate in Nigeria

$H_{0:}$ There is no significant impact of financial inclusion on unemployment rate in Nigeria

Scope of and Limitations to the Study

This study investigated the impact of financial inclusion on unemployment situation in Nigeria from 1991 to 2022 using the 2017 World Bank Global Findex database which is the latest across the globe. The Global Financial Inclusion (Global Findex) Database is the world's most comprehensive gauge of how adults around the world save, borrow, make payments and manage risk. The data sets we utilized were not collected by us rather it was done by World Bank in partnership with the Bill and Melinda Gates Foundation. We do not have control over the quality of the collected data but we strongly depend on the integrity and long-standing skills of the institution in data collection.

Justification of The Study

This study is justified on the researcher's choice of the explanatory variables (Depositor with commercial banks (DCB), Mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB)). Because from the extent of literature reviewed, no study has examined the impact of the same set of explanatory variables on unemployment rate in Nigeria. Again, no other study of this nature has been anchored on the financial literacy theory of financial inclusion.

Structure of The Study

The remaining part of the paper is segmented as follows: Section 2 reviews the relevant literature. The methodology of the study is explained in Section 3. The analysis and results discussion are presented in Section 4. And Section 5 contains the Concluding remarks.

REVIEW OF LITERATURE

In this section, existing literature on financial inclusion and unemployment were reviewed. Specifically, the conceptual literature, basic theories and empirical literature were reviewed.

Conceptual Review

The key concepts in the study are financial inclusion and unemployment. They have been

explained below.

Financial Inclusion

Financial inclusion as a catalyst for increased economic activities has been well documented in the literature. Financial inclusion is today widely considered as a right of all citizens to social inclusion, better quality of life and a tool for strengthening the economic capacity and capabilities of the poor in a nation (Banco Central do Brazil, 2010). Uronu & Ndiege, (2018) opined that access to formal bank account opening, usage of bank products and services, quality of products offering, increase number of banks branches, increase in number of payment devices, public awareness to banks products and services and so on, constitute financial inclusion.

In a similar vein, Hariharan & Marktanner, (2012) stated that financial exclusiveness is a multifaceted socioeconomic phenomenon that results from various factors such as geography, culture, history, religion, socioeconomic inequality, structure of the economy and economic policy. And they believe that financial inclusion shows that majority of the populace have access to a portfolio of quality financial products and services which include loans, deposit services, insurance, pensions and payment systems, as well as financial education and consumer protection mechanisms. Greater financial inclusion can promote economic development through the establishment of mechanisms that allow more access to products and services of financial institutions. Also, Abdul & Adamu, (2016) posits that the deepening of financial inclusion makes access to finance flexible, easy and less stringent.

Furthermore, the Central Bank of Nigeria considers financial inclusion as a key strategy towards achieving its objective of maintaining external reserves, to safeguard the international value of the Naira. (CBN, 2015). While, Kingsley (2013), posits that when everybody gain access to financial services, their joint contributions to the development process will create a faster and more quantitative impact. In the view of Khan (2011), access to basic financial services would lead to increased economic activities and employment opportunities for rural households, as more people get engaged in economic activities, the disposable income of the rural household would rise, leading to more savings and a robust deposit base for the bank, the multiplier effect will result in economic growth.

The importance of financial services for economic growth and their allocative roles have received considerable attention in the theory of endogenous growth (Ibrahim and Alagided, 2018), in their studies, they affirmed that mobilizing savings, credit, payment system and management of risks are the prerequisites for the effective financial system and inclusive growth. In the views of Schumpeter (1911) and Shaw (1973), they believe that financial deepening has a positive influence on unemployment implying that when there are more financial services such as savings mobilization, providing credit to the private sector, increase in money supply and intermediation, it will lead to capital accumulation and economic growth Some of The Efforts Made by Government to Mitigate Financial Exclusion in Nigeria:

The Nigerian government has made several efforts that are geared towards financial inclusiveness; One of the first major policies of the government aimed at promoting financial inclusion was the adoption of the rural banking programme in the late 1970s. The Scheme was introduced by the Central Bank in 1977 with the goal of achieving one bank branch in each of Nigeria's local government areas. The commercial banks were provided with targets to establish rural branches under the scheme, to mobilize savings in the rural areas through the diffused network of branches in all parts of the society. The People's Bank and Community Banks were established in the 80’s and 90’s, to serve the poor in the society through acceptance of small deposits and provision of micro credit to the low-income members of the economy. The banks were funded from grants and loans from the Federal Government, funds from the Central Bank

of Nigeria and low-interest-bearing loans from philanthropic organization. The banks targeted the provision of the credit needs of small borrowers who were unable to meet the stringent requirements normally demanded by conventional banks.

Recently, Nigerian government issued licenses for microfinance banks with the sole responsibility of tracking small savers who were not attracted to the deposit money banks because the micro nature of their financial transactions especially in the rural and semi-urban areas. In 2012, The National Financial Inclusion Strategy (NFIS) was introduced to lubricate the economic growth of Nigeria. The goal of NFIS is to reduce the number of Nigerians without access to financial services from 46.3% to 20% by the year 2020. the incorporation of financial inclusion as one of the cardinal objectives of the Nigerian Financial System Strategy 2020 (FSS 2020). The FSS 2020 represents a holistic and strategic road map and framework for developing the Nigerian financial sector into a growth catalyst that will enable Nigeria be one of the 20 largest economies by 2020.

Again, new developments in the view of Babajide, Adegboye & Omankhanlen, (2015), have shown tremendous improvement in the number of access to financial products and services by citizens judging by the array of financial reforms to encourage such in the country, ranging from the cashless policy, to mandatory banks verification number, zero account opening initiative, establishment of interest-free banking and allied products, rural banking initiative, single-digit interest rate for onward lending to micro small and medium enterprises (MSME).

The introduction of mobile banking policy in Nigeria in 2011 could be regarded as the lightning stroke among the financial inclusion policies so far adopted to ensure financial inclusiveness. Mobile banking in Nigeria with over 100 million mobile phone subscribers will be more than financial inclusion explosion as being witnessed today. Deployment of ATMs and POS Kiosks, among others, for wider and easier reach to the greater population is the knock out strategy of financial inclusiveness.

Challenges of Financial Inclusion

Worthy of note at this juncture are few of the challenges bedeviling the propagation of financial inclusion strategy; A major challenge in the financial inclusion process is how to ensure that the poor rural dwellers are carried along considering the lack of financial sophistication among this segment of the Nigerian society due to the general low level of financial literacy. Majority of the estimated 40 million financially excluded Nigerians lack knowledge of the services and benefits derivable from accessing financial services. Non-optimal macroeconomic environment in the form of low-income capacity and pervasive poverty level among the populace has played a more critical role of eroding the eligibility of the bulk of the financially excluded, (Moghalu, 2011).

Another major challenge, especially from the part of growing saving is the inability of the populace to save as a result of double-digit inflation in the economy, with its attendant effects on real interest rate and continuous loss of money value. The disincentive negative real interest rates obviously have made potential savers remain with other non-bank avenues for savings. Continuous increase in the rate of unemployment while progress on many of the poverty-reducing Millennium Development Goals has been slow. Inefficient e-channel service of most of the deposit money banks. The various e-channels and applications such as ATM, POS and mobile banking platforms that are supposed to facilitate electronic transactions have remained deficient in most cases. ATM card requests stay untreated for weeks and months, while most subscribers to internet and mobile banking platforms complain of poor services. This challenge manifest itself generally in form of inadequate financial infrastructure especially in the rural areas where the bulk of the financially excluded are found and therefore limits options for accessing financial services.

Dimensions of Financial Inclusion

Massara and Mialou (2014) postulated that the notion of financial inclusion is advanced through its three dimensions: the access (penetration of financial services), the availability and the usage.

The access (penetration of financial services:

A comprehensive financial system needs to have as many users as possible, meaning that it must penetrate widely among those who use it. Therefore, of all the index of penetration (the number of depositors with commercial banks per 1,000 adults, credit unions and credit cooperatives per 1,000 adults and the number of mobile money accounts), we use the number of depositors with commercial banks (DCB) per 1,000 adults to represent this dimension.

The availability: According to Sarma (2016), in an overall financial system, bank transaction points: offices, branches, ATMs, mobile cellular subscription etc. must be easily available to users. Therefore, for this dimension, we use the number of mobile cellular subscription (MCS) per 100 people to represent availability dimension.

The usage: To measure the usage dimension, in view of Sarma (2016), we consider the two basic services of the banking system, credit and deposits. Accordingly, Domestic credit to private sector by banks (% of GDP), Outstanding deposits (% of GDP) and outstanding loans (% of GDP) (deposits, loans), Mobile money transactions value (% of GDP). But we settle for Domestic credit to private sector by banks (% of GDP) (DCPSB) for this dimension.

Unemployment

The state of being without any work yet looking for work is called unemployment. An unemployed person is someone of working age (18 and above), jobless, able and available to work, and is actively looking for a job. This means anyone without a job who is reaching out to contacts about jobs or applying to positions. According to the International Labour Organization (ILO) definition, an unemployed person is a person aged 15 or over, without a job during a given week, available to start a job within the next two weeks and actively having sought employment at some time during the last four weeks or having already found a job that starts within the next three months.

And, in the view of OECD (Organization for Economic Co-operation and Development), unemployment is people above a specified age (usually 15) not being in paid employment or self-employment but currently available for work during the reference period. Unemployment can be classified as frictional, cyclical, structural, or institutional and is measured by the unemployment rate, which is the number of people who are unemployed as a percentage of the labour force (the total number of people employed added to those unemployed).

Empirical Review

This section focuses on the empirical studies on the impact of financial inclusion especially on economic growth and unemployment. El-Bourainy and Salah (2021) created a new financial inclusion index for 43 developing countries utilizing a multidimensional approach and Principal Component Analysis (PCA), with three dimensions: access to, use of, and quality of financial services. Second, during the sample period of 2009 to 2018, a dynamic two-step system called the Generalized Method of Moments (GMM) is used to empirically analyze the influence of financial inclusion on the unemployment rate in 35 developing nations. According to the findings, financial inclusion has a positive impact on the unemployment rate in emerging countries. The empirical findings suggest that an increase in the level of financial inclusion in developing countries decreases their unemployment rate.

Nwafor & Yomi (2018) studied the relationship between financial inclusion and economic growth in Nigeria. Two hypotheses were formulated, corresponding data (spanning from 2001 to 2016) were obtained and tested using Two staged Least Squares Regression Method. Findings revealed that financial inclusion have significant impact on economic growth in Nigeria and that financial industry intermediation have not influenced financial inclusion within the period under review. It was recommended that Nigerian banks should develop financial products to reach the financially excluded regions of the country as this will increase GDP per capital of Nigeria and consequently economic growth.

Otiwu, Okoro, Uzowuru & Ozuzu (2018), interrogated the relationship between financial inclusion and economic growth with emphasis on microfinance for the period 1992 to 2013 in Nigeria. The study used ordinary least square method and employing the Johansen cointegration tests to test long-run and short-run relationship among variables. The dependent variable economic growth was proxied by gross domestic product and the explanatory variables were total deposits mobilized by SMEs, total loans and advances to SMEs, number of bank branches and investment. Findings indicate total deposits mobilized, number of bank branches and investment have an insignificant effect on economic growth while total loans and advances shown a significant effect on economic growth.

Babajide, et al (2015), examined the effect of financial inclusion on economic growth in Nigeria. Data were sourced from world development indicators. Economic growth was proxied by commercial bank deposit while the independent variables used for the study were capital per worker, total factor productivity, interest rate, wholesale and retail contribution to GDP, polity 2, Gini coefficient, total natural resource rent and number of bank branches. Findings from regression analysis show that capital per worker, total factor productivity, interest rate, whole sale sell and retail contribution to GDP, polity 2, Gini coefficient, and number of bank branches all have a significant effect on economic growth measured by commercial bank deposits. The regression results also indicate that total natural resource rent has an insignificant effect on economic growth proxied by number of bank branches.

Obonyo (2014) studied financial deepening, Savings Mobilization and Poverty reduction in Kenya. Using M2/GDP as financial deepening indicator and the Johansen Cointegration model and Granger Causality Test, he found that first, financial deepening granger causes both savings and poverty reduction in Kenya. Second, the effect of financial deepening on poverty reduction in Kenya was positive, though not significant, and that there was a long run relationship between financial deepening, savings mobilization and poverty reduction and by implication to unemployment reduction.

Nkwede, (2015) examined the effect of financial inclusion on economic growth in Africa with focus on Nigeria. He regressed gross domestic product as the proxy for economic growth on the independent variables of deposit money banks loans to small and medium enterprises, deposit of rural banks branches, amount of loans by rural bank branches, banks branch spread, and inflation The unit root tests result showed that the variables were stationary at first difference and statistical analysis using multiple ordinary least regression showed that all the independent variables have significant effect on economic growth proxied by gross domestic product.

Mbutor & Uba (2013) studied a simple model showing the impact of financial inclusion on monetary policy in Nigeria between 1980 and 2012. The result of the study supported the notion that growing financial inclusion would improve the effectiveness of monetary policy. However, the coefficient of the number of bank branches has the wrong sign and this is explained by the fact that, in opening branches, banks mainly pursue profits but not financial inclusion which is a

policy objective, so that there are clusters of branches which are under-utilized while numerous locations which are considered not favourable for balance sheets are under-branched.

Hariharan & Marktanner, (2012) posit that financial inclusion drives economic growth and development. They discovered a strong positive correlation between a country's financial inclusiveness and total factor productivity, indicating that financial inclusiveness has the ability to create capital. They therefore assert that financial inclusion has the potential to increase the financial sector savings portfolio, improve efficiency of intermediation, and increase entrepreneurial activities which ultimately results in economic growth.

Odhiambo (2010a) focused on the Kenyan economy to analyze the relationship between financial deepening, savings and poverty reduction. He used time series data between 1968 and 2006 and the dynamic trivariate granger causality model based on error correction mechanism. His main findings were that there is a distinct causal flow from financial deepening to both poverty reduction and savings, and that there is bi-directional causality between savings and poverty reduction implying unemployment reduction as well.

METHODOLOGY AND PROCEDURES

This section will focus on the theoretical framework the study is anchored on, model specification, justification of the model and source of data.

Theoretical Framework

This study is anchored on the financial literacy theory of financial inclusion articulated by Ozili, (2020), where he posited that financial literacy will increase people's willingness to join the formal financial sector. He believes that financial inclusion can be attained through education that increases the financial literacy of citizens. He also believes that when people become financially literate, they will seek formal financial services wherever they can find it.

He further stated that financial literacy theory of financial inclusion has some merits. One, financial literacy can make people aware of formal financial services that are available to them. When they become aware of existing formal financial services that can improve their welfare, they will join the formal financial sector by owning a formal account. Secondly, through increased financial literacy, people can take advantage of other benefits in the formal financial sector such as investment and mortgage products. Thirdly, financial literacy can also help people become self-sufficient and help them have some stability in their personal finance. Financial literacy can help people to distinguish between needs and wants, helping them to create and manage a budget, teaching them to save so that they can pay bills when due, and to plan for retirement. Finally, governments that have limited public funds, or limited tax revenue, to fund financial inclusion programs may prefer to use financial literacy as a national strategy for financial inclusion because it is relatively cheaper to educate the population about financial management and the benefits of using formal financial services.

The demerit of the financial literacy theory of financial inclusion is that it addresses the 'willingness' not 'capacity' to join the formal financial sector. Financial literacy through education can improve the willingness of people to join the formal financial sector but it does not necessarily improve 'capacity' to join the formal financial sector, where capacity is measured as having money which can be used to perform one or more financial transactions. This means that people who do not have money (that is, lack of 'capacity') cannot actively participate in the formal financial sector even if they are financially literate.

Model Specification

The study examines the impact of a set of independent variables: the number of deposit account with commercial banks (NDACB), the number of deposit money bank branches (NDMBB) and

the number of mobile money transactions (NMMT) on the unemployment rate in Nigeria (URN).

From our Analytical Framework and Literature review, the model is hereby specified following the work of Otiwu, Okoro, Uzowuru & Ozuzu (2018) with some modifications in a functional form as follows:

URN = f (DCB, DCPSB, MCS) ……. (1)

Where:

URN: Unemployment rate in Nigeria

DCB: Depositors with commercial banks per 1,000 adults.

DCPSB**:** Domestic credit to private sector by banks (% of GDP).

MCS: mobile cellular subscription (MCS) per 100 people.

$URN_t = \beta_0 + \beta_1 DCB_t + \beta_2 DCPSB_t + \beta_3 MCS_t + U_t$ …… (2)

Where:

U_t: Error term that is assumed to be normally distributed with the mean of zero and constant variance.

β0: Intercept term

β1, β2, β3: Partial slope coefficients

t: Time

Estimation Procedure

The study employs E-Views 10 software for the tests and estimation of the model. Autoregressive Distributed Lag (ARDL) was used for the analysis.

$\Delta \ln URN = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta URN + \sum_{i=1}^{q} \alpha_{2i} \Delta DCB_{t-1} + \sum_{i=1}^{q} \alpha_{3i} \Delta DCPSB_{t-1} + \sum_{i=1}^{q} \alpha_{4i} \Delta MCS_{t-1} + \alpha_5 URN_{t-1} + \alpha_6 DCB_{t-1} + \alpha_7 DCPSB_{t-1} + \alpha_8 MCS_{t-1} + \mu_t$ ..... (3)

Where, Δ is the first difference operator, p is the optimal lag length for the dependent variable, q is the optimal lag length for the regressors, $\alpha_1, \alpha_2, \alpha_3, \alpha_4$…… represent short-run dynamics of the model, α_5, α_6, α_7, α_8, represent the long-run elasticity.

Justification of the Model

The use of the model is justified on the ground that it will bring out the impact of the previous values of the independent variables on the dependent variable. Furthermore, ARDL is considered most appropriate if the study targets the long-run dynamics and short-run relationships between the dependent and independent variables.

Source of Data

This study employed annual secondary data between 1991 and 2021. The data were collected from World Bank open data database.

Descriptive Statistics

Table 1

	URN	DCB	DCP SB	MCS
Mean	4.124	482.6	10.30	35.37

	774	021	635	911
Median	3.898000	283.1837	9.843124	22.39469
Maximum	5.999000	1458.407	19.60353	98.03256
Minimum	3.700000	117.2334	4.992393	0.000000
Std. Dev.	0.611441	359.9358	3.412524	37.15303
Skewness	2.075499	1.278637	0.964483	0.377023
Kurtosis	6.244019	3.618333	3.717052	1.459573
Jarque-Bera	35.84950	8.940903	5.470300	3.799439
Probability	0.000000	0.011442	0.064884	0.149611
Sum	127.8680	14960.67	319.4969	1096.752
Sum Sq. Dev.	11.21579	3886613.	349.3597	41410.43
Observations	31	31	31	31

Source: Researcher's Computation using EViews 10

The maximum values of URN, DCB, DCPSB and MCS are 5.999000, 1458.407, 19.60353 and 98.03256 respectively. The deviations of URN, DCB and DCPSB around their mean values are radical because their standard deviations are sufficiently different from their mean values, but the deviation of MCS is slight because it is not quite different from its mean value. The skewness of URN, DCB, DCPSB and MCS are all right tailed. The kurtosis of URN, DCB and DCPSB are leptokurtic while MCS is platykurtic. The values of Jarque-Bera statistic for URN, DCB, DCPSB and MCS are significantly greater than 0 or 0.9 (which is the upper threshold) for data set to be normally distributed. This interpretation on normality is collaborated by the combined values of skewness and kurtosis of URN, DCB, DCPSB and MCS which are also different from (0 and 3) which are the thresholds for normality.

Correlation Matrix

Table 2: Correlation Matrix

	URN	DCB	DCPSB	MCS
URN	1	0.879779010830417	0.1317423818565251	0.6447669412052095
DCB	0.879779010830417	1	0.4130297324892428	0.9067480080564829
DCPSB	0.1317423818565251	0.4130297324892428	1	0.6192259334638532
MCS	0.64476694	0.90674800	0.61922593	1

	12052095	80564829	34638532	

Source: Researcher's Computation using EViews 10

The correlation matrix is normal with the elements of the lead diagonal all identity.

Test of Stationarity

Table 3: Summary of Augmented Dickey-Fuller Unit Root Test

Variables	ADF Stat.	Critical Value (5%)	Order of Integration	Prob	Remarks
URN	-4.920984	-3.574244	I (1)	0.0024	Stationary
DCB	-5.515276	-3.574244	I (1)	0.0006	Stationary
MCS	-3.789531	-3.574244	I (1)	0.0318	Stationary
DCPSB	-4.896536	-3.587927	I (1)	00028	Stationary

Source: Researcher's Computation using EViews 10

ADF unit root test was conducted and the result is shown in table 3. From the result, URN: Unemployment rate in Nigeria (URN), Depositors with commercial banks (DCB), mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB) are all stationary at first difference, that is, they are integrated at order one I(1) indicating that they are free from unit root. It is therefore concluded that all the variables are stationary since their ADF statistics are greater than the critical values at 5 per cent level of significance.

Table 4: Summary of ARDL Estimation

Dependent Variable: URN				
Method: ARDL				
Date: 05/27/23 Time: 18:11				
Sample (adjusted): 1993 2021				
Included observations: 29 after adjustments				
Dependent lags: 2 (Fixed)				
Dynamic regressors (2 lags, fixed): DCB DCPSB MCS				
Fixed regressors: C @TREND				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
URN(-1)	0.118726	0.333855	0.355622	0.7268
URN(-2)	1.357035	0.514101	2.639627	0.0178
DCB	-0.0	0.000076	-	0.

	00211	0	0.27817	7844
DCB(-1)	-0.01203	0.000770	-1.560928	0.1381
DCB(-2)	0.00895	0.000661	1.353793	0.1946
DCPSB	-0.00648	0.019286	-0.355105	0.7271
DCPSB(-1)	0.01257	0.020912	0.619607	0.5442
DCPSB(-2)	-0.02526	0.016548	-1.524451	0.1469
MCS	-0.00417	0.007745	-0.557407	0.5850
MCS(-1)	-0.00840	0.010780	-0.077940	0.9388
MCS(-2)	0.01347	0.007783	1.727793	0.1033
C	-1.686086	1.178038	-1.431266	0.1716
@TREND	0.01049	0.015038	0.692206	0.4987
R-squared	0.975099	Mean dependent var		4.136517
Adjusted R-squared	0.9564	S.D. dependent var		0.63

	23		11 19
S.E. of regression	0.1 317 47	Akaike info criterion	- 0. 91 40 18
Sum squared resid	0.2 777 18	Schwarz criterion	- 0. 30 10 92
Log likelihood	26. 253 26	Hannan-Quinn criter.	- 0. 72 20 57
F-statistic	52. 211 26	Durbin-Watson stat	1. 99 78 86
Prob(F-statistic)	0.0 000 00		
*Note: p-values and any subsequent tests do not account for model selection.			

Source: Researcher's Computation using EViews 10

From the result in table 4, the coefficients of the current values of DCB, DCPSB and MCS are all negative, implies that a one percent increase in the current value of DCB, DCPSB and MCS will decrease the rate of unemployment by 0.000211, 0.006848 and 0.004317 respectively. Also, the coefficients of the first lag values of DCB and MCS are also negative, indicating that a one percent increase in the first past values of DCB and MCS will reduce unemployment rate by 0.001203 and 0.000840 respectively. But, the coefficient of the first lag of DCPSB is positive, meaning that for a one percent in the first past value of DCPSB unemployment will increase by 0.012957.

The Adjusted R-Squared value of 0.956423 is high (strong) indicating that the explanatory variables (Depositor with commercial banks (DCB), Mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB) are able to explain on the average 96% of the variations in the dependent variable (Unemployment Rate in Nigeria (URN)). While about 4% remaining may be attributed to other variables that are not explicitly captured in the model but also influence URN

The F-Statistic of the model is 52.21126 with probability value of 0.000000. This implies that the variables are jointly statistically significant at 5 percent level since the F-calculated is greater than the F-tabulated, even with the p value which is practically zero. This model is thus well-specified. The Durbin-Watson statistic is 1.997886, which is approximately 2. It implies that the model is not suffering from autocorrelation.

Table 5: Long-Run F-Statistic Bound Test Summary Result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	3.071786	10%	3.47	4.45
k	3	5%	4.01	5.07
		2.5%	4.52	5.62
		1%	5.17	6.36
Actual Sample Size	29		Finite Sample: n=35	

Source: Researcher's Computation using EViews 10

From the F-Bound test result in table 5, the F-statistic value of (3.071786) is less than the 5% critical value of (4.01) indicating that there is no long-run dynamic relationship between unemployment rate in Nigeria and financial inclusion proxied by (Depositors with commercial banks (DCB), mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB). We therefore proceed to error correction model (ECM) to test for the short run relationship between them.

Table 6: ARDL Error Correction Model Summary Result

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	3.819815	10%	-3.13	-3.84
		5%	-3.41	-4.16
		2.5%	-3.65	-4.42
		1%	-3.96	-4.

				73

Source: Researcher's Computation using EViews 10

From the ECM test result in table 6, the t-statistic value of (3.819815) is greater than the 5% critical value of (-3.41) in absolute terms, indicating that there is a short-run relationship between unemployment rate in Nigeria and financial inclusion proxied by (Depositors with commercial banks (DCB), mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB).

RESULTS AND DISCUSSION

Autoregressive Distributed Lag (ARDL) models are linear regression models, as such are expected to conform to the assumption of Classical Linear Regression Models (CLRM). Therefore, we will verify whether the estimates from the ARDL models are reliable. Using Breusch-Godfrey LM test for serial correlation, Breusch-Pagan-Godfrey test for hetreroscedasticity, Cusum and Cussum Q Residual test for stability and we will also test for normality.

Table 7: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.046801	Prob. F(1,15)	0.8316
Obs*R-squared	0.090201	Prob. Chi-Square(1)	0.7639

Source: Researcher's Computation using Eviews 10

From the result in table 7, the F-Statistic and Obs*R-squared values of 0.046801 and 0.090201 with p values of 0.8316 and 0.7639 respectively are greater than the critical values at 5 percent level of significance. Hence, we conclude that there is no serial correlation in the model.

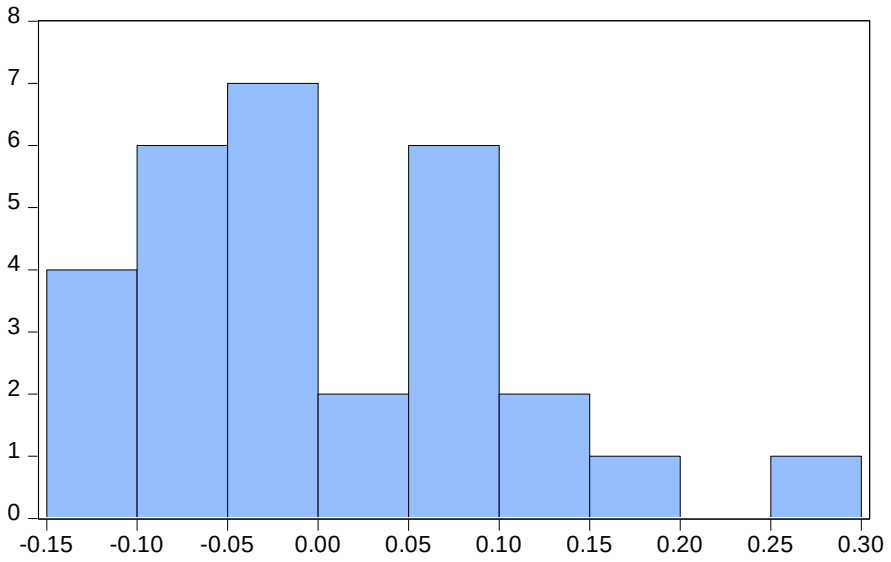
Table 8: Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.386496	Prob. F(12,16)	0.2665
Obs*R-squared	14.78342	Prob. Chi-Square(12)	0.2535
Scaled explained SS	5.308327	Prob. Chi-Square(12)	0.9469

Source: Researcher's Computation using Eviews 10

Table 8 presents the result of heteroscedasticity test. From the result, the F-statistic and Obs*R-squared have the values of 1.386496 and 14.78342 with corresponding p values of 0.2665 and 0.2535 respectively. These values are greater than the critical values at 5 percent level of significance. It means that the model is free from heteroscedasticity, that is, the mean, variance and covariance are constant over time.

Table 9: Normality Test



Series: Residuals	
Sample 1993 2021	
Observations 29	
Mean	1.04e-15
Median	-0.024907
Maximum	0.282803
Minimum	-0.135229
Std. Dev.	0.099592
Skewness	0.795575
Kurtosis	3.359222
Jarque-Bera	3.215129
Probability	0.200375

Table 9 presents the normality test. Which shows the normal distribution of data set.

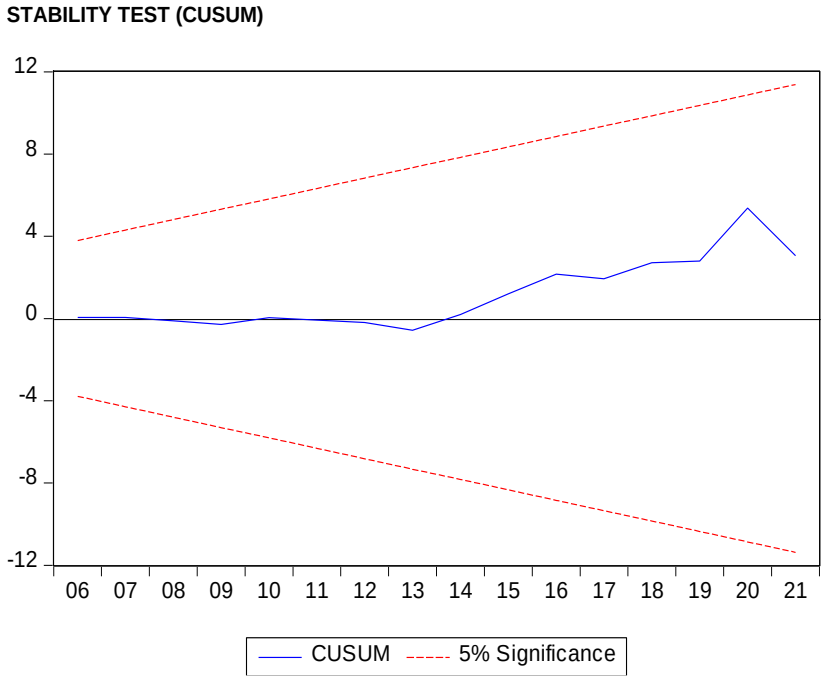


Figure 1: Stability Test (CUSUM)

The result in figures 1 shows that the plot of CUSUM for the model under consideration is within the 5% critical bound. An indication that the parameters of the model do not suffer from any structural instability over the period under study

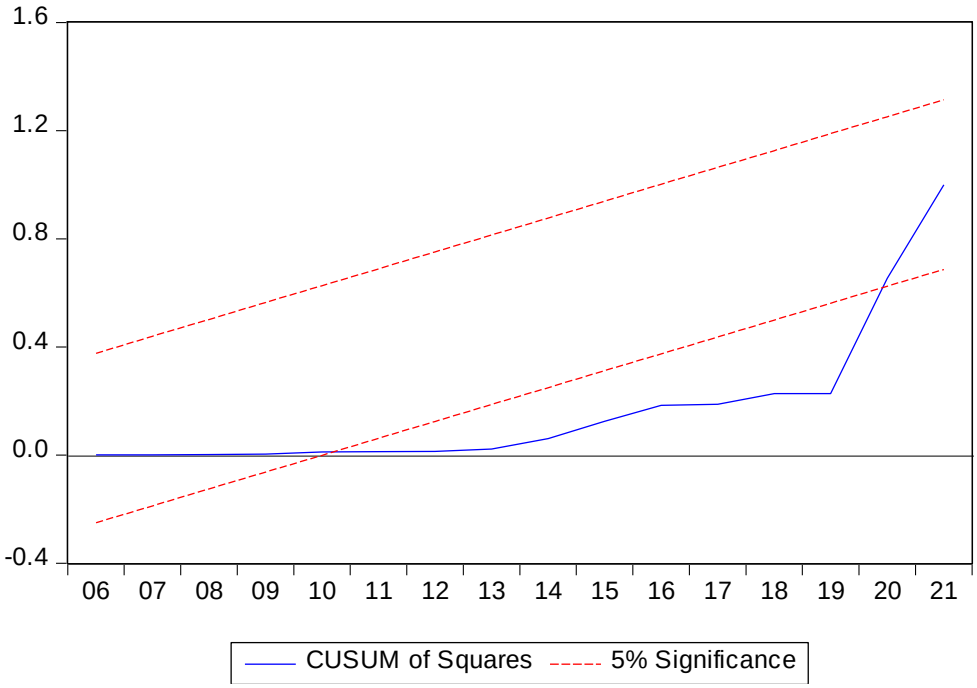


Figure 2: Cusum Sum of Squares

Figure 2 shows that the plot of CUSUM SUM OF SQUARES for the model under consideration is not within the 5% critical bound. And therefore, suggest that the parameters of the model may have suffered some kind of structural stability over the period of analysis.

CONCLUSION AND SUGGESTION

The study analyzed financial inclusion in Nigeria proxied by (Depositors with Commercial Banks (DCB), The Number of Mobile Cellular Subscription (MCS) per 100 people, Domestic Credit to Private Sector by Banks (% of GDP) (DCPSB)). Data from the Global Findex database was utilized to examine the impact of the aforementioned variables on the unemployment situation in Nigeria from the year 1991 to2021. The study was anchored on the financial literacy theory of financial inclusion articulated by Ozili, (2020), utilized Autoregressive Distributed Lag (ARDL) to analyze them. The results show that F-statistic value of (3.071786) is less than the 5% critical value of (4.01) indicating that there is no long-run dynamic relationship between unemployment rate in Nigeria and financial inclusion proxied by (Depositors with commercial banks (DCB), mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB). But, the t-statistic value of (3.819815) is greater than the 5% critical value of (-3.41) in absolute terms, indicating that there is a short-run relationship between unemployment rate in Nigeria and financial inclusion proxied by (Depositors with commercial banks (DCB), mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB). The Adjusted R-Squared value of 0.956423 is high (strong) indicating that the explanatory variables (Depositor with commercial banks (DCB), Mobile cellular subscription (MCS) and Domestic credit to private sector by banks (DCPSB) are able to explain on the average 96% of the variations in the dependent variable (Unemployment Rate in Nigeria (URN)). While about 4% remaining may be attributed to other variables that are not explicitly captured in the model but also influence URN.

Policy Recommendations

The study therefore recommends that the government should embark on massive financial education to bring the knowledge of financial services and products to the citizens to enable them tap into the benefits therein. Again, the monetary authority should step up one of its key functions of guiding credit and loans channels to private sector to ignite the benefits of financial inclusion

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