

**FINANCIAL INCLUSION AND INCOME GROWTH IN NIGERIA****NEKABARI SORDUM****DEPARTMENT OF FINANCE AND BANKING, UNIVERSITY OF PORT HARCOURT,****RIVERS STATE, NIGERIA****E-MAIL: [nekabaris077@gmail.com](mailto:nekabaris077@gmail.com)****AND****EBELE P. IFIONU****<sup>2</sup> PROFESSOR, DEPARTMENT OF FINANCE AND BANKING, UNIVERSITY OF PORT HARCOURT,****RIVERS STATE, NIGERIA****E-MAIL: [ebele.ifionu@uniport.edu.ng](mailto:ebele.ifionu@uniport.edu.ng)****Abstract**

*This paper investigates whether per capita income has a long-run co-integrating relationship with financial inclusion indicators such as market capitalization per head, number of insurance policies per head, number of pension accounts per head, number of microfinance bank accounts per head, and number of deposit money bank accounts per head in Nigeria. Inclusion-Growth models based on multivariate regression, causality, and nonlinear Autoregressive Distributed Lag formulations were estimated and evaluated using long run bond and multiplier tests using Nigerian yearly time series data from 1981 to 2022. The bond test findings show that there is a co-integrating link between market capitalization per head, insurance policies per head, micro finance bank account per head, pension account per head, deposit money bank account per head, and per capita income. The long-run multiplier effect findings demonstrate that deposit money bank accounts and pension accounts per head have substantial positive long-run multiplier effects on per capital income, but insurance policies per head have a big negative influence on per capital income. The number of microfinance bank accounts per person has a positive but weak effect on per capital income, while market capitalization per head has a negative and weak influence on per capital income. These findings imply that increasing the number of Deposit Money Bank accounts per person, Pension accounts per person, and Micro Finance Bank accounts per person might improve access to financial services, hence increasing per capita income. According to the report, positive and negative changes in financial inclusion indices have long-run multiplier impacts on per capita income in Nigeria. We urge that all obligatory insurance be successfully enforced, and that Nigerian insurance firms expand into the maritime, aviation, and oil and gas insurance sub-sectors.*

**Keywords:** Financial Inclusion, income Growth, Market Capitalization, Insurance Policies, Pension, Micro Finance Bank.

**Introduction**

In recent years, financial inclusion has risen to the forefront of national economic agendas and has become an increasingly important factor in international attempts to grow the global economy. This tendency is supported by the fact that finance is the key to getting people involved in the economy, making things work better, and growing the economy, which in turn creates jobs, redistributes money, and creates wealth. The beneficial association between the availability of finance, GDP per capita, alleviating

poverty, and household wellbeing is supported by personal experiences (CBN 2018). Despite the clear advantages of financial inclusion, Nigerians' access to these services seems to be lower than anticipated. As an example, Elfina (2018) estimates that 36.6 million adults in Nigeria, including 44% men and 56% women, do not have access to basic banking services.

Unreliable income, unemployment, limited literacy, farther to monetary access points, high costs of services, unsuitable products, insufficient security for customers, distrust of service suppliers,

informal identification, cumbersome Know Your Customer procedures, and unsuitable safety for consumers are all factors that are alleged to contribute to this level of exclusion. All of these things taken together explain why Nigerians don't appear to have much access to banking, savings, insurance, retirement savings, credit, deposit, or financial market services—all of which have major effects on the country's productivity and revenue.

The term "income growth" describes the gradual but steady rise in a household's or individual's disposable income. To get a more true picture of buying power, it is usually expressed as real income, which accounts for inflation. Several obstacles stand in the way of Nigeria's income development. Unpredictability in oil prices drives economic volatility, which in turn affects tax collection and GDP growth, making it harder to achieve steady income growth. With one of the world's worst rates of economic disparity and an elevated rate of joblessness, many Nigerians are unable to improve their standard of living. Corruption hinders the potential for economic development and income growth by stealing funds from investments that may be put to better use.

With the goal of lowering the proportion of adult Nigerians excluded from financial services to 20% by 2020, Nigeria created the National Financial Inclusion Strategy in 2012 and amended it in 2018 in an effort to boost income growth and remove obstacles to financial inclusion. Financial literacy programmes, consumer protection, local money transfers, a spike in the quantity of bank branches, the usage of automated teller machines (ATMs), point-of-sale terminals (POS), and mobile money were all essential parts of the strategy (CBN 2012). This is in line with the federal government's novel financing vehicles and regulatory changes, which aim to create unfettered access to a variety of financial offerings and services. The goal is to improve effectiveness financial intermediation, which should lead to more money flowing into the formal financial system, more businesses being able to affordably use a wide range of financial services, an active economy, less poverty, and increased output.

It would appear that the conventional financial system has failed miserably in its efforts to break into the informal financial market in Nigeria, particularly given the flagging income growth in the country, despite the aforementioned initiatives by the government and its monetary policymakers to promote financial inclusion and raise income levels. Previous empirical research on financial inclusion by other researchers has been too static, concentrating only on the banking industry, and therefore fails to adequately address the complex questions surrounding the dynamic effect of financial inclusion on economic development in Nigeria. To rephrase, there is debate regarding the extent to which the financial inclusion initiatives implemented in Nigeria have contributed to rising incomes, and questions about the specifics of that effect.

While banks do collect data on financial inclusion, it is also known that other market and nonbanking financial institutions, such as those involved in the capital market, insurance, and pension fund administration, can provide insight into the extent to which financial inclusion is affecting their operations. Therefore, we begin by saying that this study is an effort to give a strong explanation by combining the five (5) financial inclusion variables—insurance policy per head, pension account per head, microfinance bank account per head, deposit money bank account per head, and market capitalization per head—with the measurements of financial inclusion provided by banking, stock market, insurance, and pension fund administrators. We then examine the impact of these factors on per capita income. This study aims to address that gap.

Our study aims to examine the relationship between per capita income and various financial inclusion indicators in Nigeria. These indicators include total market capitalization per head, number of insurance policies per head, number of pension accounts per head, number of microfinance bank accounts per head, and number of deposit money bank accounts per head. Through long-term analysis, we hope to draw conclusions about this relationship. There are five parts to this article. The work is introduced in the

first part. The review of relevant empirical literature and conceptual/theoretical frameworks are presented in the second part. Section three contains the study methodology, whereas Section four presents the findings and analyses in depth. The last section contains the final thoughts.

## **Literature Review**

### **The Concept and Strategy of Financial Inclusion**

Each country has its own unique set of circumstances, requirements, and potential beneficiaries when formulating a plan to increase access to financial services. Considering the bigger picture, a regional objective is financial participation. Legislation in the MENA region supports inclusion, allowing for microfinance-style backward operations by established financial institutions. Microcredit, postal networks, and state banks are all part of the plan in this area, which is run by non-governmental organisations. Microfinance institutions (MFIs) cannot provide deposit services, while the legislation allows them to operate as microfinance institutions. Private banks control a larger portion of Syria's market, while publicly-owned banks in Algeria lend to micro, small, and medium-sized enterprises (MSME).

To improve bulk banking service, commercial banks team up with microfinance businesses to increase deposits and use their strategic advantage. This aids the public by directing funds to microfinance institutions that are physically closer to the people. In numerous nations, state banks control a large percentage of the financial service locations, according to Pearce (2011). In the countries of Algeria, Tunisia, Egypt, Iraq, and Syria, the Principal Bank for Development and Agricultural Credit (PDBAC) is mentioned as a financial institution that offers deposit, settlement, foreign currency, passbook, and agricultural machinery loans to businesses involved in the farming of food.

The government of Latin America—Paraguay, for example, collaborated with the World Bank to conduct an evaluation of financial participation in the nation. A consumer security

and knowledge of finance assessment was part of the evaluation, which also included a demand-side survey of people, an evaluation of current financial goods and services, and an analysis of the regulatory and legislative environment for financial participation. The number of people seen by government officials as an exempted and prioritised group determines how financial participation is implemented, even if the definitions of what it ought to encompass are comparable.

Rural dwellers, the impoverished, individuals with low levels of education, displaced peoples, and people with disabilities are among the vulnerable categories that are recognised as being financially excluded in Peru's National Financial participation plan. An action plan tailored to each identified group has been created since then. As an example, Peru has implemented a national identification system that connects displaced people to their jobs in the shadowy economy, lowers paperwork requirements for those with low levels of education, and expands insurance for farming assistance programmes to include local rural communities.

Helping low-rated entrepreneurs get the cash they need to build their enterprises and contribute to a strong national economy that produces more money is central to the Nigerian model of financial participation. The need of financial participation is paramount due to the alarming number of individuals living in poverty. In 2012, the National Financial participation Strategy (NFIS) was created by the Central Bank of Nigeria as an economic strategy approach to the central bank's recognition of the importance of finance in reducing poverty. Women have unique challenges in today's economy, and this initiative seeks to alleviate some of those obstacles. We want to reduce the percentage of women who are now excluded from 54% to 20% by 2020. In order to reach this goal, the bank is planning to provide financial institutions with incentives and assistance so that they may launch products that are tailored to the needs of female entrepreneurs in Nigeria. Each of the country's six geopolitical zones has an Entrepreneurship Development Centre (EDC) that receives funding from the central bank.

Additionally, the company is planning to build a platform to encourage more women to join similar clubs in the near future.

The Central Bank of Nigeria largely reduced obstacles to inclusion in 2013 with the implementation of streamlined three-tiered know your customer (KYC) mandatory procedures, which reduced the amount of paperwork and identity needed to create an account with a bank. There is no minimum amount required to create a bank or mobile money account of any tier, according to the new due diligence. To contract with a potential client for a first-tier account, all you need is their personal information, a passport, and a cell phone number. Additionally, financial organisations often visit key locations with large populations in order to promote to all economic actors. Along main thoroughfares, campus-to-campus and street commercialization are commonplace. Customers may get their account numbers via phone messages even if they don't want to go to the bank. Biometric verification numbers (BVNs) were mandated by the Central Bank in 2014 with the aim of collecting customers' biometric data and associating it with several accounts held by the same individual across various institutions. To further educate the public on the range of financial offerings available and how to make the most of them, the CBN also introduced the National Financial Literacy Framework in 2015.

### **The Extent of Financial participation Across Regions**

When compared to other nations, Nigeria's official banking sector's performance figures on financial participation were shockingly low. The exponential growth of non-bankable assets and the steadily rising proportion of individuals without access to official financial services (about 41.6% as of 2016) are indicators of this trend (EFInA, 2018). Nonetheless, as of 2018, the percentage of adults in Nigeria who were not able to access official financial services fell to 36.8% (EFInA cit. CBN, 2018). As a result, the number of people who were unable to pay their bills dropped from 2 billion in 2016 to 1.7

billion in 2017, according to Global Findex (2017). This accomplishment suggests that there has been an improvement in the rate of access to and consumption of reasonably priced financial products within a short period of time. The availability and free access to payment services, savings, credit, insurance, and pension goods is something that an increasing number of persons are aware of.

There is a clear lack of deposit money and microfinance bank branches per 100,000 adults in Nigeria, which is preventing a large portion of the country's adult population—63.3% to be exact—from having access to official banking services. This is especially problematic in developing nations like Nigeria, where the majority of bank branches are located in urban areas. Therefore, in comparison to other economies, there are comparatively few ATMs, point-of-sale terminals, and mobile agents per 100,000 individuals (CBN, 2018). The result is a large degree of economic marginalisation in Nigeria. Reportedly, when it comes to the provision of financial services, Nigeria lags behind some African countries. For example, in 2018, 40% of Nigerian adults had accounts with a bank, compared to 42% in 2016. Similarly, in 2017, 68% of Namibians had accounts with a bank, and in 2018, 80% of South Africans had accounts with a bank. South Africa has the lowest rate of financial exclusion in Africa, at 7%, while Nigeria has the highest rate of adults without accounts, at 37% (EFInA, 2018).

The percentage of people who have access to official financial services was also lower than in South Africa (68% vs. 41%) and Kenya (30.7 vs. 40.7 million) (National financial participation plan, 2012). Thus, the syndrome of financial disequilibria caused by financial exclusion is prevalent in Nigeria. Through the financial participation mechanism, the financial sector must maintain its focus on bridging the resource gap and reducing the inefficiencies of financial intermediation. Now we need to know how much of an impact financial participation mechanisms have on narrowing the resource gap and boosting productivity in Nigeria's economy.

Approximately 41% of adults in economically developing nations have an account with a bank, insurance company, pension fund, or other official financial institution, in contrast to 89% of adults in high-income economies, according to data from Global Findex (2015). Having said that, it is said that four out of five people in the Middle East and North Africa are unbanked. South Asia and Sub-Saharan Africa follow. Nearly 40% of Nigerians have an account with a bank or mobile money carrier in 2017, according to Global Findex, a statistic that is common in many developing nations. According to Global Findex (2017), the gender difference in account ownership has grown by 24%. Among adult males, 51% possess accounts, while just 27% of women do the same.

In fact, the percentage of the population that is not banked nor has a bank account is rising, and this includes many people who have very limited access to the capital market. People whose access to official financial services and products is limited or unreliable are known as the underbanked. Someone would create an account with the bank for getting a government payout, but then they would remove all of the money at once and just use cash from that point on. According to demographic data, the degree of financial participation varies between China's rapidly expanding emerging markets, the United States' highly established high-income economy, and Nigeria's low-income developing African economy. In a similar vein, this has sparked interest in monetary inclusion procedures in Nigeria and prompted inquiries on the growth-inducing behaviours of financial participation.

Because nations' internal development of running banks and other financial institutions varies, ranking them makes comparison impossible, even if financial participation flourishes in a sophisticated banking sector. There is an effort to ensure that those who do not merit financial participation have access to a variety of high-quality services. Systematic measures have just arisen to quantify how individuals utilise financial goods world-wide, but there has been a general absence of uniform gauges of financial participation throughout markets and countries

(Abrahms, 2017). From 2014 to 2017, the percentage of adults in emerging countries adopting digital payments increased from 12% to 44%. It has reached 91% of adults in high-income nations (Demirguc-Kunt et al. 2017).

In the rapidly developing Indian economy, an unprecedented surge in the number of people with bank accounts has occurred, with an estimated 80% of individuals now having an active bank account (Ravi, 2019). This is made available by the World Bank's Global Findex Database. The adult savings, borrowing, risk management, and payment processes in 148 nations are all quantified by Global Findex. Mobile money has had little success in Sub-Saharan Africa, a region with an extensive record of inequality. Among individuals in this area, 16% utilise mobile phone digital services to pay bills and other obligations, whereas 31% do so using a official deposit money bank account (Abrahams 2017; Demirguc-Kunt, Klapper, Singer & Oudheusden, 2015).

Using data from 21 different countries, the Brookings FDIP study provides a comparative evaluation of the breadth of financial participation throughout the world. According to Villasenor et al. (2016), the study highlights four important aspects out of 33 indicators: (i) nation dedication; (ii) mobile capability; (iii) regulatory landscape; and (iv) adoption. As of right now, there are a lot of complicated and linked obstacles to financial participation advancement (Financial participation Centre, 2015). Physical access, the absence of adequate paperwork for distant rural people in low-income countries who labour in the unofficial sector, and obstacles established by financial institutions are the three pillars that Demirguc-Kunt (2010) identifies as restricting inclusion. Exorbitant costs, minimum account requirements, and fees are commonplace at many financial institutions.

The global expansion of financial participation is affected by these constraints. Depending on their economic levels, the financial participation map shows a wide variety of countries. The basic region standard of the proportion of banked population is 84%, with the majority of these countries being high-income

OECD and non-OECD nations. Latin America and the Caribbean do 3% better than Europe and Central Asia, which registers 42% inclusion. South Asia accounts for 24% of the total, while East Asia and the Pacific make up 39%. Sub-Saharan African nations make up a pitiful 12% of the total, whereas MENA countries have 35% financial participation. That 2.7 billion people, or about 70% of the global population, live in developing nations without adequate availability of official financial services is supported by the research of Stein, Randhawa, and Bilandzic (2010). In order to increase the degree of financial participation, these are possible excellent market segments. Nigeria and the rest of Sub-Saharan Africa lag well behind the world's most inclusive financial markets. The development of large-scale diverse goods, rather than microcredits, is associated with the achievement of large-scale inclusion with a small portion of the OECD's excluded people. An increase in remittances, microinsurance, savings accounts, electronic payments, and a paperless society all contribute to broader inclusion. In order to increase domestic participation in the low sub-region, they are crucial.

## **Theoretical Framework**

### **Gap Theory**

It was the landmark British Macmillan Report that first brought attention to the gap hypothesis. The renowned 'Macmillan gaps' were drawn from this paper. According to this view, the need to address "Gaps" in the economic system is the driving force for financial participation as well as improvement banking. Alternately stated, the idea maintained that the need to fill the gaps in the country's financial system is the driving force for the implementation of financial participation initiatives and the creation of financial institutions that support financial participation. The inadequacy of the financial system in providing adequate short-, medium-, and future capital for the expansion of small, micro, and medium-scale businesses is the root cause of these gaps, as is the inefficiency of the mechanism for financial intermediation within the wider economy. According to Nwankwo (1980), financial

participation methods and mechanisms are established to address the lack of efficient money mobilisation and to provide firms with micro, short, and medium-term loans at optimum prices.

According to this theory, there is a fund that isn't part of the official financial system. To close this gap, we need to find ways to get that money out of the system and into productive endeavours that will increase our income and output. Therefore, the increase of production and income is directly related to the amount of money mobilised from the capital market, pension, insurance, and financial sub-sectors of Nigeria's financial system. We have built our study on this idea. Theoretically, this research postulates that financial participation measures are the primary drivers of income development. According to this theory, financial shocks were a major factor in the development of this connection. The key thesis of this research is the interconnectedness of the link between financial participation and income development.

### **The Financial Services Theory**

Building an environment where financial service providers and markets can provide outstanding financial services is the central concern in this approach, rather than focusing just on bolstering financial institutions or markets (Levine, 1997; Merton & Bodie, 1995). For example, corporate oversight, improved liquidity, easier savings mobilisation, better risk management, and evaluation of possible investment possibilities are all outcomes of financial structures. The idea emphasised how markets and financial institutions work together to study businesses, evaluate investment possibilities, impose corporate oversight, manage risk, increase liquidity, and put society's wealth to work. Various financial structures contribute to economic progress in different ways by offering various financial services. Because of its emphasis on the overall quality of monetary services, it does see markets and banking institutions as complementary rather than competing.

### Theory of Financial Intermediation

Therefore, financial intermediation comprises markets and financial organisations such as commercial banks, pension funds, insurance companies, microfinance banks, and the market for stocks. These facilitate the transfer of savings from their creators to those who intend to put them or use them in an economic system where they will generate the highest return. A number of economic variables, including total production, income, and capital creation, are favourably affected by this setup because it encourages more productive actions. Financial intermediation encompasses a wide range of activities, including payment system organisation and management, savings collection and transfer mechanisms, money market investments in micro and short-term financial instruments, and protocols covering investment activities related to investments in micro, small, and medium-scale enterprises and securities (Nzotta, 2004).

### Empirical Review

The 55 member states of the Organisation of Islamic Cooperation (OIC) are the subject of an investigation by Kim, Vu, and Hassan (2018) on the connection between financial participation and GDP growth. An examination using panel VAR data shows that financial participation contributes to GDP growth. An examination using panel VAR data shows that financial participation contributes to GDP growth. Findings also demonstrate that OIC economic development is favourably impacted by financial participation.

Bakar and Sulong (2018) use a literature review approach to examine the impact of financial participation on nations with low GDP development. The authors show, using descriptive methodologies, that the banking sector's participation, the development of bank branches, and the reduction of barriers to accessing finance are the foundations of the favourable growth-oriented perspectives on financial participation. Other research, however, has shown that financial participation actually has a detrimental effect on GDP growth.

Financial participation, governance, and economic advancement in Nigeria from 1980 to 2014 were examined by Omojolaibi (2017). Investment in facilities and increases in GDP per person had a favourable relationship with political stability, oversight of fraud, and loans to rural regions, according to his analysis.

The goal of Gretta's (2017) research is to find a chain reaction of transformational pathways connecting financial literacy, intermediation, and economic development in BRICS and MENA nations. Finding the importance of financial participation in MENA and BRICS economies was made possible by using the VAR approach to determine numerical relationships between the study's variables.

Financial participation and company performance are examined by Chauvet and Jacolin (2017) using a company-level outcome panel that includes 26 nations. This study's results contradict those of earlier research that found no correlation between financial development and economic growth in developing nations, or even the opposite. The authors' results show that financial participation has a favourable effect on business growth, in contradiction to this premise, and that financial development has no effect on average firm performance.

The idea that customers, especially women and low-income individuals, greatly benefit from suitable financial services is examined by Demirgüç-Kunt, Klapper, and Singer (2017). The research used a worldwide perspective on financial participation. It comes to a conclusion that financial participations make it easier and safer for consumers to do large-scale financial transactions every day, which in turn opens up additional options for investing and managing financial risk within the official financial system.

Using a profit estimating procedure about different dimensions of financial participation in 147 countries making up 97% of the world's population—Kalsoon, Mohammed, and Aribah (2016) investigate financial participation and its implications for equitable expansion in a study of Pakistan. Their research focuses on the several topographical and socioeconomic variables that

people believe function as obstacles to financial participation. They found that women and those with lower incomes are disproportionately affected by the lack of access to financial opportunities in Pakistan, which ranks among the least financial inclusive nations in the world. There are substantial hurdles to obtaining financial services, they found, due to a lack of the necessary paperwork. The study's authors argue that everyone should have equal access to financial services in order to foster long-term, inclusive economic development.

Alter and Yontcheva (2015) analyse the factors that contribute to the financial development gap and look at how it affects financial participation and advancement in the CEMAC area. According to the research, the CEMAC zone's financial stability void is caused by elements including inflation, novel innovations, and intergenerational cost. The research goes on to say that countries in the CFA franc zone that have more robust institutions, where issues of government efficiency and poverty rights take centre stage, have also created more equitable financial systems.

Williams, Adegoke, and Adegbola (2015) used a panel study of data spanning 2006–2015 to examine the financial participation and real GDP. The researchers affirm that financial participation has not succeeded in providing reliable banking and marketing assistance to economies in terms of reducing inequality.

The relationship within financial participation and prosperity in Nigeria from 1981 to 2012 is examined by Babajide, Adeboye, and Omoankhanlen (2015). The research verifies a substantial correlation between financial participation and economic development in Nigeria by using OLS estimation methods.

Nkwede (2015) used Nigeria to investigate the relationship between financial participation and economic development in Africa. The study's data set included years 1981–2013. A detrimental correlation within financial participation and GDP growth was found in the Nigerian economy, according to the research. He says that

people are severely underserved by financial services, which explains the result.

Using the assessment approach of Panel FMLS, Olaniyi (2015) studied the influence that the economy and finance in Africa from 2005 to 2014. The results showed that prosperity had a substantial beneficial effect on financial accessibility. He came to the conclusion that more accessible financial systems are associated with stronger economic development in African nations and suggested that, to maintain growth, banks should use their larger deposit bases to fund activities that are not currently covered.

Based on theory, experience, and policy, Aina and Oluyomba (2014) analyse the link between financial participation in Nigeria's economy. With just 1.4 accounts per adult (including dormant accounts), the research found that the penetration ratio of bank accounts is very low. Online payments, wire transfers, and ATM/DEBIT cards are the most preferred alternatives to carrying around cash, the data reveals.

Using statistics on commercial bank branches, ATMs, bank borrowers, and deposits per km and per 100,000 persons from 1980 to 2012, Mbutor and Uba (2013) examined the effect of financial participation on monetary policy in Nigeria. Their research shows that a 0.01% drop in inflation may be achieved with a 1% rise in the proportion of total credit to loans. Expanding access to financial services is a proven way to make monetary policy work better, according to the research. If the central bank is serious about fostering economic growth in Nigeria, the authors argue that it should step up its efforts to expand access to banking services.

Finding, collecting, and analysing both individual and broad terms financial participation metrics that impact output in Nigeria is the goal of this study, which aims to address the problems caused by the authors' varied approaches to measuring financial participation. This study primarily aims to begin specifications that address the aforementioned sub-sectors of finance and their effects on Nigerian production. The exploration of the time series linkages between

the correlates is sparked by this hypothesis. Number of pension accounts, insurance policies, deposit money bank accounts, and outstanding shares per head (the percentage of market capitalization per head) are the financial participation metrics used in this research. For this analysis, we employ all of these ratios in addition to the economic performance ratio, which is GDP per capita.

### Research Design

The research strategy used in this work is an experimental one, with an econometric component. Experimental research is defined by Kothari (2013) as studies where the dependent variable is controlled in respect to the independent variable. The purpose of this study is to analyse the five financial inclusion characteristics and their long-term impact on Nigeria's per capita income. This study's premise is that people can't help but become financially included when they have easy access to savings accounts, credit, and insurance against financial losses. The Central Bank's financial policy measures have an impact on these accesses, which could largely revitalise financial inclusion. If these indicators could be used to drive PPH, which is measured by per capita income in Nigeria, that would be great.

The study will gather data annually from 1981 to 2022 on one economic performance variable—per capita income—and five financial inclusion variables—market capitalization per head, insurance policy per head, pension account per head, micro-finance account per head, and bank deposit/loan account per head. The samples were selected at random. Due to the quantitative character of the variables being studied, secondary data is used in this research. The CBN statistics bulletin compiles data on these factors every year from 1981 to 2022, for a grand total of 43 observations. Statistically, this range is sufficient; but, the absence of policy initiatives before to 1981 that promoted the relationship between economic development and financial inclusion may explain its selection. We use the Philip Peron (PP) method to conduct a unit root test on these variables since their series tend to

trend. The variables will be converted to order one and modelled using the linear ARDL framework after the verification and attestation of mixed integration, which characterises them. According to the Schwarz Information Criterion (SIC), the maximum lag length is used to quote the ARDL technique. After estimating the link between the variables using maximum likelihood, we check for a level relationship using Wald's test. Furthermore, for the purpose of estimating the long term adjustment parameter, we assess a limited ARDL model.

### The Model Specification

The premise of the Gap Theory is that there is a lack of integration between the formal financial system and the funds that exist outside of it. To close this gap, the theory suggests implementing mechanisms and strategies for financial inclusion, which will allow for the efficient mobilisation of these funds and their subsequent channelling into effective ventures, ultimately leading to increased PPH. Therefore, we postulate that the financial market sub-sectors of Nigeria—pension, insurance, banking, and capital markets—contribute favourably to PPH. But here is where the theory underlying our models and their specifications in this research begins. The linear specifications of Canova (2007) and DeJong and Dave (2011), with minor modifications, serve as the source for this investigation. Nonetheless, our baseline equations say the following, which reflect these requirements but with other variables.

### Per Capital Income-Inclusion Indicator Relationship

$$PPPPPP_{tt} = cc_0 + PP_2mmmmh_{tt} + PP_3iimmh_{tt} + PP_4mmhmm_{tt} + PP_5mmmmmmh_{tt} + PP_6ddmmh_{tt} + uu_{tt} \quad 3.1$$

### Where:

PCI is proxy for PPH representing per capital income.

MPH is market capitalization per head,

IPH is insurance policy per head,

PPH is the pension account/fund per head,

MFPH micro finance account per head,

DPH is deposit money bank deposit/loan account per head, q is the lag length. **U** is error term**Data Presentation, Analysis and Discussion of Findings****Results And Discussions****Table 4.1: Data set on per capital income, Insurance Policies Per Head Micro Finance Bank Account Per Head, Market Capitalization Per Head, Pension Account Per Head, and Deposit Money Bank Account per Head**

Year	PCI	IPH	MFPH	MPH	PPH	DPH
1981	1,845.60	18,282.03	10.4	662.24048	176.8	141.4486
1982	1,923.91	1,909.48	10.3	64.53870	192.0	155.1368
1983	1,997.81	1,983.88	10.1	71.73215	197.3	175.4103
1984	2,035.08	2,013.36	10.8	67.48653	219.1	193.0704
1985	2,246.42	2,215.25	10.2	78.93481	222.7	210.4581
1986	2,308.63	2,248.64	10.3	79.23699	222.2	222.2
1987	2,777.25	2,650.99	9.6	93.07433	235.9	262.0462
1988	3,489.38	3,453.51	9.6	110.5580	243.0	321.3379
1989	4,468.35	4,256.52	9.7	137.8651	249.7	292.5854
1990	5,192.02	4,914.57	9.6	171.0927	256.0	171.09254
1991	6,037.88	5,735.95	9.4	236.3744	261.8	536.2803
1992	9,040.26	8,482.38	9.7	311.3101	267.3	748.8176
1993	12,233.9	11,199.6	31.1	462.2345	272.4	1,074.85
1994	16,788.7	15,621.0	44.5	629.2962	277.1	1,352.92
1995	28,702.8	27,256.3	38.0	1,670.19	281.4	1,656.88
1996	36,900.2	35,288.5	40.0	2,580.99	261.3	1,935.83
1997	38,923.6	37,325.3	41.5	2483.20	334.1	2,377.03
1998	41,286.4	39,149.3	55.7	2,256.29	356.2	2,700.53
1999	45,943.9	44,802.0	74.6	2,514.10	420.1	3,991.98
2000	57,724.9	57,614.7	98.2	3,860.17	503.5	5,738.40
2001	65,632.6	62,002.0	39.9	5,280.42	622/2	7,549.48
2002	89,389.5	83,675.3	120.2	5,944.82	662.6	8,993.09
2003	102,726	95,225.7	217.4	10,299.9	941.6	10,133.1
2004	133,862	124,187	252.3	15,602.7	1,043.0	12,271.5
2005	166,417	153,787	596.4	20,872.8	1,461.9	14,654.5
2006	212,989	208,800	386.7	35,907.4	2,156.5	22,754.8
2007	236,830	226,649	516.0	90,028.4	2,919.7	34,159.1
2008	265,746	253,797	816.5	63,605.8	3,812.2	52,945.2
2009	281,482	267,438	981.9	45,535.9	3,798.3	59,261.1
2010	344,387	325,891	1,074.2	62,544.6	3,689.1	61,701.6
2011	387,622	366,098	723.7	63,086.5	3,813.3	70,315.4
2012	432,472	411,681	1,131.5	88,470.9	4,054.8	78,495.6
2013	471,456	448,091	1,384.2	111,025	4,180.1	80,122.9
2014	510,805	493,760	1,256.1	95,631.0	4,296.6	97,391.8
2015	525,316	511,495	1,898.0	93,847.2	4,404.9	95,139.1
2016	551,512	539,656	1,754.0	87,024.9	4,505.5	96,404.6
2017	602,388	583,963	2,106.7	83,877.1	4,602.6	95,395.0
2018	618,017	603,596	2,322.8	80,069.9	4,694.5	94,974.1

2019	574,308	559,678	2,020.5	86,204.8	4,551.9	95,478.2
2020	586,556	571,723	2,051.0	84,294.2	4,588.6	95,563.0
2021	595,317	579,740	2,125.3	83,611.5	4,609.4	95,352.6
2022	593,550	578,184	2,129.9	83,545.1	4,611.1	95,342.0

**Source: CBN Annual Statistical Bulletin**

Approximate data points for each variable from 1981 to 2022 are shown in Table 4.1. The statistics are shown according to market capitalization per capita, insurance policies per capita, microfinance bank accounts per capita, pension accounts per capita, and deposit money

bank accounts per capita. Both billions and ratios are used to display the data. Table 4.2 shows the results of the statistical descriptions calculations with regard to various metrics or units of assessment.

### Summary of Descriptive Statistic Results

**Table 4.2-Descriptive Statistic Results**

	PCI	MPH	MFPH	IPH	PPH	DPH
Mean	166339.9	28331.60	476.8654	159598.5	1608.135	26766.98
Median	51834.38	3220.580	65.13395	48708.32	461.7925	4865.187
Maximum	618017.1	111025.4	2322.758	603595.8	4694.507	97391.78
Minimum	1845.599	64.53870	9.385394	1828.029	176.7654	141.4486
Std. Dev.	204269.1	37819.29	675.4119	197601.3	1754.185	36293.01
Skewness	1.008058	0.911649	1.375786	1.034836	0.743409	1.008197
Kurtosis	2.534879	2.149289	3.699598	2.607598	1.740009	2.320811
Jarque-Bera	6.778344	6.409536	12.76260	7.026081	6.013824	7.167978
Probability	0.033737	0.040568	0.001693	0.029806	0.049444	0.027765
Sum	6320916.	1076601.	18120.88	6064742.	61109.13	1017145.
Sum Sq. Dev.	1.54E+12	5.29E+10	16878706	1.44E+12	1.14E+08	4.87E+10
Observations	43	43	43	43	43	43

**Source: Author's Computation, (2019)**

### Descriptive Statistic

The following notations are used to express various forms of income: PCI, MPH, MFPH, IPH, PPH, and DPH.

From 1981 to 2022, a total of 43 observations were made for each variable. IPH, MPH, 28331.60, 1608.135, 159598.5, and 26766.98 are the mean values, respectively. All the variables tend to increase throughout the sample period, according to this. As a measure of PPH, PPH may reach a maximum of around 618,017 million naira within this sample range. The highest value of microfinance bank accounts per head was 2,322,758 in 2018, according to table 4.1. The highest value of MPH was achieved in 2013. In 2018, the greatest value of IPH was

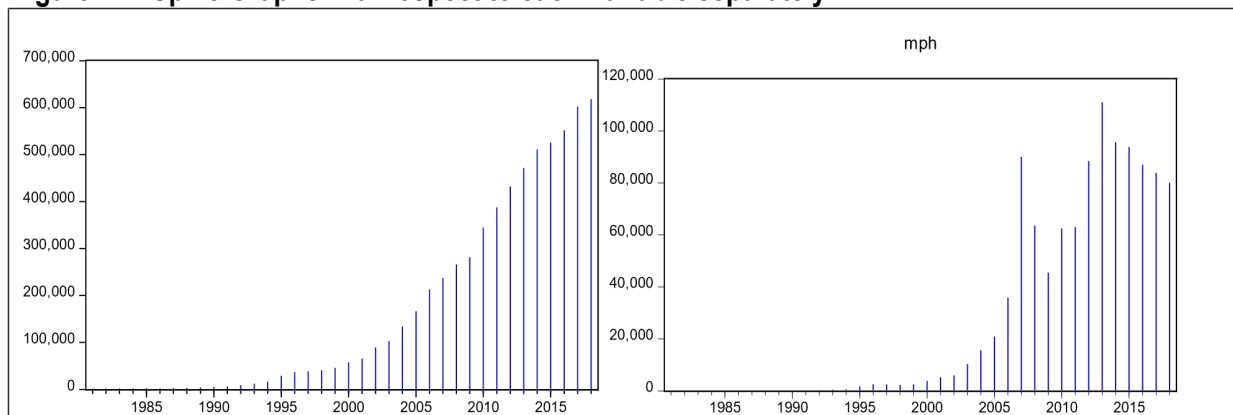
4694.507, the maximum value of PPH was 603595.8, and the maximum value of DPH was 97391.78, all achieved in 2014. With a standard value of 204269.1, the PPH has the widest range of values, from 618017.1 to 1845.599. Because of this, we may say that PPH is the most variable dependent. MFPH also show a low range of values, from 9.385394 to 2322.758, with a standard deviation of 675.4119. Microfinance bank accounts per capita are therefore the most stable of the variables.

The skewness and kurtosis scores provide another crucial description of these variables. All of the skewness ratings are somewhat more than zero. It may be concluded that all the variables exhibit a favourable skew. All

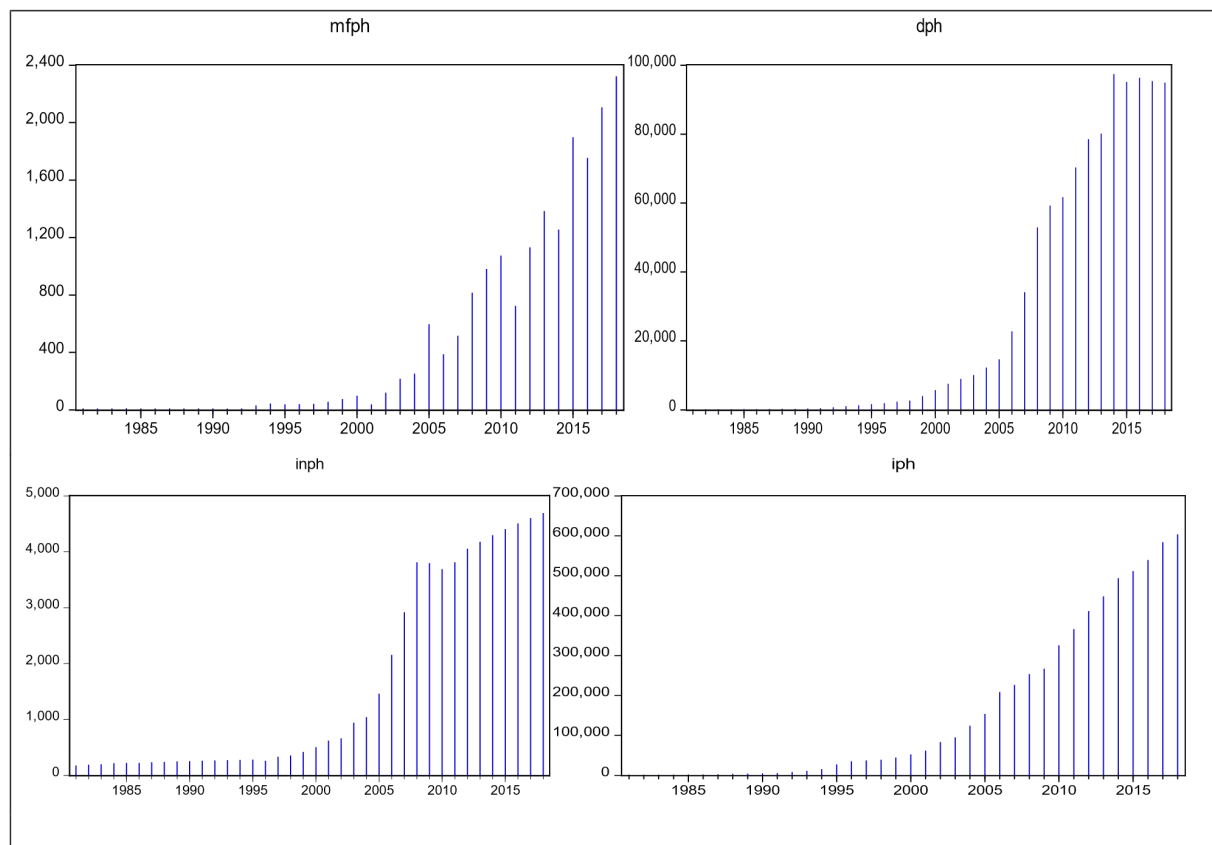
variables, with the exception of microfinance bank account per head, have normal distributions according to the kurtosis scores. Except in the instance of microfinance bank accounts per head, this suggests that there is no indication of an outlier. We can rule out normalcy as a possibility since the JB statistics are non-zero in every way.

Therefore, it may be concluded that none of these variables follows a normal distribution. Central Limit Theory (CMT) states, however, that big samples do not pose a difficulty with normality. We also illustrate the data on these variables utilising spikes for emphasis, using visual or graphical methods. Figure 4.1 below displays them.

**Figure 4.1: Spike Graphs with respect to each Variable separately**



oph



## PCI

Each variable's distribution may be understood in a clear and succinct manner from the spike graphs. Each variable's height is equal to the other's height. The MPH, MFPH, IPH, PPH, and DPH levels, as a percentage of total revenue, are very low between 1981 and 2000. From 2001– 2018, both DPH and PPH per capita income grew steadily. In contrast, from 2001 to 2019, there is a

periodic upswing and downswing in MPH, MFPH, IPH, and PPH.

The unit root is what we may think of as an issue. Hence, we assumed an intersection and the absence of a trend and tested for a unit root using the Philip-Peron (PP) Procedure. In table 4.3, the findings are summarised

**Table 4.3: Test of Unit Root Based on PP Mechanism**

Variable	PP-stat	5% critical value	P-value
LOGPCI	-0.840764	-2.943427	0.7955
D(LOGPCI)	-3.229590	-2.945842	0.0263
LOGIPH	-3.496097	-2.943427	0.0137
LOGMPH	-1.997068	-3.536601	0.5837
D(LOGMPH)	-4.403027	-3.540328	0.0066
LOGMFPH	-9.054965	-3.536601	0.0000
LOGPPH	-3.430950	-3.536601	0.0626
LOGDPH	-1.951439	-3.536601	0.6077
D(LOGDPH)	-3.408052	-2.945842	0.0172

**Source: Author's Computation, (2023)**

The variables in focus are per capital income, MPH, MFPH, IPH, PPH, and DPH respectively. The 5% critical threshold in general terms is about 2.95, as seen in table 4.3 up there. Absolute PP data for MPH, DPH, and PPH at levels are around 0.84, 1.99, and 1.95 correspondingly, whereas absolute PP statistics for the initial difference are - 3.22, 4.40, and 3.40; accordingly. Therefore, these factors are not level-stationary but first-difference stationary. At the same level, the MFPH, IPH, and PPH remain stable. What this means is that the variables we're interested in are a mix of I(0) and I(1) variables. Cointegration by Johansen and/or

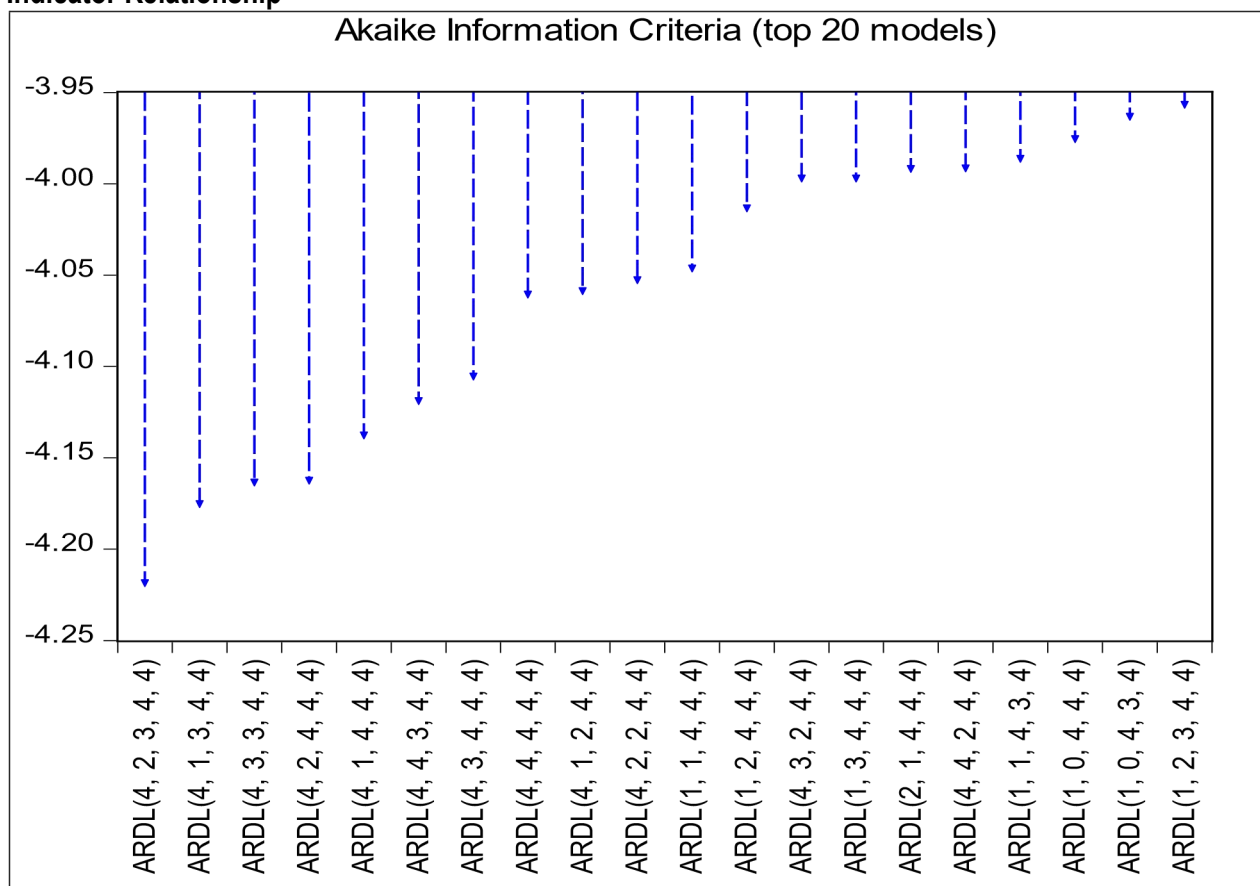
Engle and Granger does not apply since this is a heterogeneous integrated scenario. In this work, the ARDL and Bond test technique to cointegration is used as the appropriate method.

#### **Inferential Statistic Results**

This research employs the ARDL and Bond test approaches to cointegration. The steps involved in this application's procedure include selecting a model, testing its stability, running it through a long run, and finally, bond testing. In order to accomplish the goals of this research, all of these procedures are adhered to.

### Model Selection

**Figure 4.2: Optimum ARDL Selection for Optimum ARDL Model for per capital incomeInclusion Indicator Relationship**



From the top ARDL models, ARDL (4, 2, 3, 4, 4), has the lowest AIC value, which is approximately -4.25. On the other hand, ARDL has the greatest

AIC at about -3.95 (1, 2, 3, 4, 4). Accordingly, the best ARDL model is ARDL (1, 2, 3, 4, 4).

### Testing for Autocorrelation

**Table 4.4: Autocorrelation Test for ARDL**

Lag	AC	PAC	Q-Stat	Prob*
1	-0.153	-0.153	0.8709	0.351

2	-0.328	-0.360	4.9858	0.083
3	-0.085	-0.245	5.2687	0.153
4	0.114	-0.104	5.7999	0.215

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**Source: Author's Computation, (2023)**

You can find the autocorrelation and partial autocorrelation coefficients, together with the Q statistics and probability for each, in Table 4.4, up until lag 4. Since the p-values are more than 5%

for all lags, we cannot rule out the possibility of autocorrelation. There is no autocorrelation in the fitted ARDL (1, 2, 3, 4, 4) in this investigation.

### Stability Test

**Table 4.5-Stability Test by Statistical Evidence**

ARDL (1, 2, 3, 4, 4)				
AR Root(s)	Modulus		Cycle	
-0.212243	±0.845622i	0.871851	3.458558	

**Source: Author's Computation, (2023)**

Table 4.5 shows that ARDL ((1, 2, 3, 4, 4)) has a modulus of 0.87. The fact that the exponent is less than one is quite obvious. It follows that the structure remains unchanged. This research

successfully meets the requirements for the cointegration test. The evaluation of cointegration by bound method is the next step.

### Cointegration Test based on Bond Approach

**Table 4.6-Bound Test Results on per capital income-Inclusion Indicator Relationship**

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	3.576953	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

**Source: Authors Computation, (2023)**

Table 4.6 shows that the finite dataset has an upper limit of 4.088 and the exponential sample has an upper bound of 2.56, with both samples having a lower bond I (0) value of 2.947 at 5%.

The F statistic is 3.57. The F statistic of 3.57 surpasses the highest value of asymptotic sample sizes, which is a favourable sign. At the five per cent threshold of meaning, this indicates that the

null expectation of no level association is rejected. Based on the results of this study, it seems that MPH, IPH, MFPH, PPH, DPH, and per capita

income are all cointegrated. If these variables are cointegrated, then this resolves the problem.

### Long Run Multiplier Effects

**Table 4.7 per capital income-Inclusion Indicator -Treated for Long Run Multiplier Effects**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGMPH	-0.615843		0.703445	-0.875467
0.3985				
LOGMFPH	0.192725	0.237839	0.810318	0.4335
LOGINPH	-0.763670	0.232343	-3.286821	0.0065
LOGDPH	1.787952	0.792783	2.255285	0.0436
LOGPPH	1.338371	0.176643	7.576709	0.0000

**Source: Author's Computation, (2023)**

There are comparable chances of 39.85%, 43.35%, 0.65%, 4.36%, and 0% for the MPH, MFPH, IPH, DPH, and PPH coefficients, which are -0.61, 0.19, -0.76, 1.78, and 1.33, accordingly, as shown in Table 4.7. This suggests that in the long term, PPH is detrimentally impacted by MPH and IPH due to their multiplier effects, and favourably impacted by MFPH, DPH, and PPH. The decline in PPH is about 61% and 76% with a 1% change in MPH and IPH, respectively. While per capita income increases by 17% for MFPH, 180% for DPH, and 133% for PPH with every 1% increase, respectively. While MPH and MFPH do not have any long-run multiplier effects on PPH, the results show that IPH, DPH, and PPH do. This also implies that, in the long term, MFPH, DPH, and PPH, not MPH and IPH, are the primary drivers or increasers of PPH in Nigeria as assessed by PPH. The current dormancy of Nigeria's stock exchange market, low coverage for insurance, and the dominance of foreign insurance firms in marine, aviation, and oil and gas cover are all factors that can be contributing to the detrimental impact of market capitalization on insurance.

Additionally, we find that PPH, DPH, and IPH have a higher long-term effect on PPH than MPH and MFPH. Microfinance institutions, banks, pension fund managers, and insurance businesses are the theoretical backbone of PPH, however the effect

of insurance does not match the a priori assumption.

### Discussion of Findings

Evidence of cointegration and long-run connection between market capitalization per head, deposit money bank accounts per head, microfinance bank accounts per head, insurance policies per head, pension accounts per head, and per capita income was found in Nigeria by conducting a Long-Run cointegration test based on a bound approach. There will be fewer people left out of the formal financial sector if financial inclusion indicators go up, because more people will have access to savings facilities, loans, insurance, pension services, and the capital market. This, in turn, will lead to more investment, higher earnings for economic units, better risk management, better pension benefits, and stronger production of goods and services. Consequently, the economy's production of products and services is enhanced.

If we look at the long-term relationship between market capitalization per head, insurance policies per head, microfinance bank accounts per head, pension accounts per head, deposit money bank accounts per head, and per capital income in Nigeria, we can see that insurance policies per head has a strong detrimental effect and deposit

money and pension accounts per head both show strong favourable effects. Market capitalization per capita has a detrimental but weak effect on per capita income, but the number of microfinance bank accounts per capita has a favourable but weak effect.

Since the correlation between the number of microfinance bank accounts and per capita income is favourable but weak, expanding access to these accounts would lead to higher incomes since more people would be able to borrow money. Fina access (2018) found that while the number of accounts in microfinance banks climbed by 37%, access to credit increased by a pitiful 23%, lending credence to this claim. In their study on the effects of micro-credit on household income, Johnson and Morduch (2007) found that small business loans were utilised for various purposes such as paying for school fees, medical treatment, home repairs or extensions, daily consumption needs, social and holiday expenses, and social and recreational activities. This suggests that the influence is weak. The weak impact could be caused by them. Once again, Frithjof (2018) noted that government microfinance programmes intended to alleviate poverty and stimulate economic development often wind up benefiting those who were not initially targeted. According to his findings, income development might be hindered if employees of formal microfinance banks divert money.

While market capitalization and insurance policies per head do show some favourable long-term effects, the results indicate that increased deposit money bank accounts per head and pension accounts per head seem to exhibit the strongest favourable long-run multiplier effect or drive per capital income among all the financial inclusion variables. Since the Nigerian Stock Exchange has seen increased activity over the years, but no discernible effect on the actual sector of the economy that may lead to PPH, the detrimental link between market capitalization per person and that metric can be explained. Reason being, buying and selling of current equities predominates on the Nigerian Stock Exchange floor, which does nothing to boost market capitalization. The market capitalization and per

capita income have not been boosted by the issuance of new issues. Investors were generally uninterested in the stock market after the 2008 financial crisis caused values to plummet. Market capitalization and income per capita fell even more as a result of the widespread economic collapse, which cut into the liquidity of market players. This agrees with what Oke and Adeusi (2012) discovered when they looked at the effect of capital market reforms on GDP development in Nigeria from 1981 to 2010. They found that total new issues and total value of operations had detrimental and negligible associations with GDP. Additionally, using yearly data from 1984 to 2011, Ihendinihu and Onwuchekwa (2012) investigated the relationship between stock market performance and economic development in Nigeria. They discovered that, in the short term, the total number of listed businesses had a detrimental and minor influence on PPH.

The current inertia of Nigeria's stock exchange market, low insurance penetration, and the dominance of foreign insurance companies in marine, aviation, and oil and gas insurance cover could explain the inverse relationship between market capitalization per head and the number of policies per head. The expansion of deposit money, pension, and microfinance bank accounts, as well as the opening of new accounts by more individuals, seems to be the primary driver of PPH.

## **Conclusions and Recommendations**

### **Conclusions**

In light of the study's aims, we have been able to adequately describe the investigation's findings. This is the setting in which the study's findings are laid forth.

An increase in financial inclusion indicators may lead to more people having access to savings facilities, loans, insurance, pension services, and the capital market, which in turn will encourage investment, raise GDP growth, and improve income levels, according to research into the longrun relationship based on the bound approach. This led researchers to conclude that Nigeria's per capita income could rise if more Nigerians were to join the formal financial sector,

which would increase the country's market capitalization, insurance policies, microfinance bank accounts, pension accounts, and deposit money bank accounts. Consequently, a rise in the amount of market capitalization per head, more insurance policies purchased, more pension accounts purchased, more microfinance bank accounts and deposit money accounts per head, and so on could lead to more investment and higher PPH for the country.

Using the long-run multiplier effect to test the nature and direction of the long-run relationship, we find that insurance policies per head have a strong detrimental effect on per capita income, whereas deposit money bank accounts and pension accounts per head show strong favourable effects. Market capitalization per capita has a detrimental but weak effect on GDP per capita, but the number of Micro Finance bank accounts per capita has a favourable but weak effect. While the number of insurance policies per head largely lowers per capital income, there is evidence of strong favourable innovations or a long run multiplier effect flowing from the number of deposit money bank accounts per head and the number of pension accounts per head to per capital income. In Nigeria, a rise in market capitalization per capita has a little detrimental effect on per capita income, but a rise in the number of Micro Finance bank accounts per capita has a modest favourable effect.

### Recommendations

In light of the study's conclusions, we propose the following measures:

- i. The effective implementation of all mandatory insurance policies; the establishment and formalisation of new policies in the Nigerian insurance market; and the penetration of the marine, aviation, and oil and gas insurance sub-sectors by Nigerian insurance companies to reduce capital flight. The beneficial impact of insurance on real sector production growth will be amplified as a result.

- ii. Stock market and economic leaders should keep the market active and shielded against shocks caused by the global financial catastrophe if they want to fix the detrimental link between market capitalization per capita and GDP.

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