

FINANCIAL INCLUSION AND ECONOMIC GROWTH IN NIGERIA

By

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Abstract

This study examined financial inclusion and economic growth in Nigeria, despite the concerted efforts to promote financial inclusion in Nigeria, several challenges persist. This research work will adopt *ex-post facto* research design. The study observed that number of bank branches positively and significantly affect Gross domestic product of Nigeria. These findings are based on the coefficient of Gross domestic product of 0.343780 and the p-value of 0.0014 which is significant at 5% level ($0.05 > 0.0014$). Number of bank branches positively, but non-significantly affect Per capita income of Nigeria. These findings are in line with the coefficient of Per capita income of 291.5011 and the p-value of 0.2028 which is not significant at 5% level ($0.05 < 0.2028$). Number of bank branches positively and significantly affect Gross national product of Nigeria. These findings are consistent with the coefficient of Gross national product of 0.439605 and the p-value of 0.0000 which is significant at 5% level ($0.05 > 0.0000$). Number of bank branches positively and significantly affect Human development index of Nigeria. These findings are based on the coefficient of Human development index of 0.454810 and the p-value of 0.0002 which is significant at 5% level ($0.05 > 0.0002$). Number of bank branches positively and significantly affect unemployment rate of Nigeria. These findings are consistent with the coefficient of unemployment rate of 3.873483 and the p-value of 0.0000 which is significant at 5% level ($0.05 > 0.0000$). Based on the findings, the study recommended that the government and financial institutions should prioritize the establishment of more bank branches, particularly in underserved and rural areas, to further stimulate GDP growth and enhance economic inclusivity. Policymakers should complement banking expansion with targeted economic policies, such as skill development and job creation programs, to translate increased banking access into higher per capita income. Banking institutions should explore innovative financial products and services that cater to businesses and individuals to maximize their contribution to the GNP. Efforts to increase banking access should include tailored financial literacy programs and affordable services to enhance their impact on HDI, ensuring that all population segments benefit from improved banking infrastructure and while banking expansion supports economic activity, its role in reducing unemployment appears limited. Therefore, the government should implement targeted employment generation initiatives alongside financial sector expansion to tackle unemployment effectively.

1.1 Introduction

According to Abbas and Atanda, (2019), financial inclusion is defined as delivery of financial services to the poor at affordable cost while Banco, (2020) posit that financial inclusion means access to, and use of financial products and services by house-holds or firms which is one of the main, albeit challenging priorities in Emerging Markets (EMs), and a key factor for financial development. Financial inclusion is expected to increase the growth and development of the system by making sure that funds are accessible for economic and investment purposes in the areas they don't exist. Harnessing and accumulating these resources provide a huge source of cheap long term investable capital (Moghalo, 2018). The informal financial world is brought together through this process. The idle fund of the economy is mostly controlled by the low and middle income earners, because they have the highest percentage on it.

Most economies that have not embraced financial inclusion properly are mostly structured that a lot of funds flow in the informal sector which is detrimental to society and the individual, (Akpansung and Babalola, 2019). Financial inclusion, development and economic growth are inter-woven and inter-connected. We take financial inclusion to be a way of tackling poverty and inequality, and a way to bring about sustainable development goals. Babajide, Adegboye and Omankhalem, (2020) suggested that the strength of scholarly submissions lies in the fact that financial inclusion is in-fact, very imperative for the growth process of any economy including Nigeria because as more individuals are brought or captured into the formal financial system, it will help ensure proper planning and decision making by policy makers.

Financial inclusion can only be achieved when formal financial services can be easily accessed, when financial services and products can be used in a comprehensive way, when financial products are set up in a way it suits the people and can easily be purchased by low-income earners without any difficulty (Mbutor, 2021). Migap and Ojeka, (2020) stated that a review of most scholarly submissions highlight the fact that the purpose of financial inclusion is to improve economic growth by increasing the economic well-being of people at the base of the pyramid and unbanked by availing them affordable financial services at a reasonable cost.

1.2 Statement of problem

In Nigeria, one of the reasons why the federal government's policy on financial inclusion has not worked perfectly is because of the exclusion of rural dwellers from access and usage of financial services. According to EFINA report in 2020, from the target group of adults 18 + and above totalling 106 million, the major reasons for lack of access to financial services include the following: 31 % of the adult population lacked access to financial services due to irregular

income, 27% of the adult population declared that banks were too far from where they work and live. Also, 21 % were financially excluded because they had no jobs. 15% of the population is illiterate. 3% declared that interest earned on deposits were too low, and 3% stated that interest on loans were too high. In 2020, financial inclusion shows that 69% of the adult population was banked, which means that 36% of this population representing 38 million was unbanked.

Despite the concerted efforts to promote financial inclusion in Nigeria, several challenges persist. The persistence of a large unbanked population, limited access to credit for small and medium-sized enterprises (SMEs), and the need for robust financial infrastructure pose obstacles to the full realization of the benefits of financial inclusion. Additionally, the effectiveness of existing financial inclusion policies and initiatives in translating into tangible economic growth outcomes requires thorough examination.

Increased financial inclusion contributes to economic growth by providing access to credit, savings, and investment opportunities. This allows businesses and individuals to participate more actively in economic activities, leading to higher production and consumption, ultimately boosting GDP. This suggests that financial exclusion may reduce or even slow down financial services contributions to planning and policy making and in the long run, economic growth and development. The CBN developed a five-year plan (2019-2024) towards a goal of 95 per cent financial inclusion rate by 2024 which required financial institutions to follow through on by extending their services and facilities to rural areas. However, despite this directive, In Nigeria the higher population of the financially excluded is still in the rural areas. Therefore, for Nigeria to achieve financial inclusion, policy makers and key stake holders in the financial sector should develop innovative ways and actionable plans to address challenges of financial inclusion in the less developed areas of the country. It is against this backdrop that this study tends to examine financial inclusion and economic growth of Nigeria.

1.3 Objectives of the Study

The aim of this research work is to examine financial inclusion and economic growth of Nigeria. The specific objectives of this research work are to;

- I. Examine the effect of number of bank branches on the gross domestic product of Nigeria.
- II. Ascertain the effect of number of bank branches on per capita income of Nigeria.
- III. Determine the effect of number of bank branches on gross national product of Nigeria.
- IV. Evaluate the effect of number of bank branches on human development index in Nigeria.
- V. Ascertain the effect of number of bank branches on unemployment rate in Nigeria.

1.0 REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Financial Inclusion

Financial inclusion is expected to increase the growth and development of the system by making sure that funds are accessible economic and investment purposes in the areas they don't exist. Harnessing and accumulating these resources provide a huge source of cheap long term investable capital (Abbas and Atanda, 2019). The informal financial world is brought together through this process. The idle fund of the economy is mostly controlled by the low and middle income earners, because they have the highest percentage on it.

Most economies that have not embraced financial inclusion properly are mostly structured that a lot of funds flow in the informal sector which is detrimental to society and the individual,. According to Akhil, (2016), financial inclusion is defined as delivery of financial services to the poor at affordable cost while Aina and Oluyombo, (2014) posit that financial inclusion means access to, and use of financial products and services by house-holds or firms which is one of the main, albeit challenging priorities in Emerging Markets (EMs), and a key factor for financial development. Financial inclusion, development and economic growth are inter-woven and inter-connected. We take Financial inclusion to be a way of tackling poverty and inequality, and a way to bring about sustainable development goals. Ajakaiye, (2013) buttressed by suggesting that the strength of scholarly submissions lies in the fact that financial inclusion is in-fact, very imperative for the growth process of any economy including Nigeria because as more individuals are brought or captured into the formal financial system, it will help ensure proper planning and decision making by policy makers.

Financial inclusion can only be achieved when formal financial services can be easily accessed, when financial services and products can be used in a comprehensive way, when financial products are set up in a way it suits the people and can easily be purchased by low-income earners without any difficulty (NFIS2018).

2.1.2 Gross Domestic Product (GDP)

GDP is a primary measure of a country's economic performance, representing the total monetary value of all goods and services produced within its borders, within a specific time frame. It serves as a comprehensive indicator of economic health and growth, reflecting the overall size and productivity of an economy. Governments, policymakers, and analysts closely monitor GDP trends to assess economic stability, identify areas for improvement, and formulate appropriate fiscal and monetary policies.

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of a given country's economic health.

2.1.3 Number of Bank Branches

The number of bank branches in a country serves as a crucial indicator of its financial infrastructure and accessibility to banking services. A higher number of bank branches often indicates a more developed financial system, facilitating easier access to credit, savings, and investment opportunities for individuals and businesses alike. It also reflects the extent of financial inclusion within a society, as more branches mean greater outreach to underserved communities.

The relationship between the number of bank branches and economic growth in Nigeria is a complex one and can be influenced by various factors.

2.1.4 Per Capita Income

Per capita income measures the average income earned by individuals within a country over a specified period, typically on an annual basis. It provides insights into the standard of living and economic well-being of the population, indicating the level of prosperity and income distribution within a society. Higher per capita income suggests greater purchasing power, improved living standards, and enhanced quality of life for the residents.

In economics, per capita is a measure of average. It translates directly to "per head", which really means per person. It is used to calculate how much of something there is per person in a specific area. It is a way of looking at the average amount of a set variable. The number of trees per capita in a specific city would look at how many trees there are in comparison to how many people there are in the specific city. To find the number of trees per capita, one would total the number of trees in that city, and then divide it by the number of people in that city. Even if all of the trees in the city are in one location, and the people are all located in a different location, this would still compare the number of trees to people in the city. It doesn't mean that each person owns that many trees, it only tells an average amount of trees there are in comparison to people.

2.1.5 Unemployment Rate

The unemployment rate quantifies the percentage of the labour force that is actively seeking employment but unable to find work. It reflects the health of the labour market and the efficiency of resource allocation within an economy. High unemployment rates indicate underutilization of human capital and potential economic inefficiencies, while low rates may signify a robust job market and strong economic growth. Policymakers often use unemployment data to design interventions aimed at reducing joblessness and promoting workforce participation.

Unemployment, according to the OECD (Organisation for Economic Co-operation and Development), is people above a specified age not being in paid employment or self-employment but currently available for work during the reference period.

Unemployment 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).

2.2 Theoretical Review

2.2.1 Public good theory

According to the public good concept of financial inclusion, providing formal financial services should be considered a public good. Formal financial services, according to the idea, are a public good that should be made available to everyone for everyone's benefit. Everyone should have unrestricted access to financial resources and because formal financial services are a public good, one person's access to them has no bearing on the availability of such services for others. According to this point of view, financial inclusion benefits everyone and leaves no one out. The public benefit principle of financial inclusion allows for the distribution of free debit cards to anybody who opens a formal bank account. They can use Automated Teller Machines (ATMs) to conduct transactions without incurring a transaction fee. As a sunk cost of doing business, financial institutions and other suppliers of formal financial services will be accountable for paying the costs associated with providing those services.

2.2.2 Finance-Growth Theory

The Finance-Growth nexus can be traced back to the work of Bagehot during 1870s and was advanced by the contributions of Schumpeter (1934), Goldsmith (1969) and Shaw (1973). This theory will be adopted for the theoretical framework in this study because of the belief that financial development creates a dynamic productive environment for growth through 'supply leading' or 'demand-following' effect. This theory will also recognize the lack of access to finance as a critical factor responsible for persistent income inequality as well as sluggish growth. Hence, access to a safe, easy and affordable source of finance is acknowledged as a precondition for quickening growth and reducing income disparities and poverty which create equal opportunities, enables economically and socially excluded people to integrate better into the economy and actively contribute to the development and shield themselves against economic shocks. (Serrao, Sequeira, and Hans 2012).

This theory will be important to this study because if the populace has easy access to financial services, it will go a long way to foster economic growth, as a result of proper implementation of financial inclusion.

This study is anchored on finance-growth theory, the finance-growth theory posits that financial development is a critical driver of economic growth. This theory, articulated by economists such

as Schumpeter (1911), Goldsmith (1969), McKinnon (1973), and Shaw (1973), highlights how financial intermediaries and markets facilitate investment in productive activities, efficient allocation of resources, and risk management. By anchoring your research on this theory, you align with a well-established framework that provides a robust basis for analyzing the relationship between financial inclusion and economic growth.

2.3 Empirical Review

Levine, (2021) examined finance and growth: theory and evidence using panel data analysis of over 50 countries using regression models to examine the relationship between financial development (including number of bank branches) and GDP growth. The study found a positive and significant relationship between the density of bank branches and GDP growth. The presence of more bank branches facilitates financial intermediation, leading to higher investment and economic growth.

Berger and Udell, (2020) evaluated small business credit availability and relationship lending: The importance of bank organisational structure. Using cross-sectional analysis of U.S. data using regression techniques to study the impact of bank branching on local economic outcomes, including GDP. The research demonstrated that regions with a higher number of bank branches experienced higher GDP growth rates. Increased accessibility to banking services led to greater credit availability, which in turn stimulated economic activities.

Jayarathne and Strahan, (2016) examined the finance-growth nexus: Evidence from bank branch deregulation, using natural experiment approach, examining U.S. states that deregulated bank branching laws compared to those that did not. The study showed that allowed more bank branches saw significant increases in GDP growth compared to those that did not. The deregulation facilitated better allocation of financial resources and increased efficiency in financial services.

Nwafor and Yomi (2018) empirically 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.

Onalo, Lizam and Kaseri (2017) investigated the relationship between financial inclusion and economic growth with particular reference to micro finance for the period 1992 to 2013.

Employing the Johansen Cointegration test, the study revealed that the activities of micro finance as one of the financial inclusion strategies significantly contribute to economic growth. They recommended that micro finance banks concentrate efforts on low-cost deposits to reach large number of people and increase in financial education to enlighten the public on benefits of financial services.

Burgess and Pande, (2021) carried out a research on the topic titled Do rural banks matter? Evidence from the Indian social banking experiment. The study used panel data analysis of rural Indian districts using fixed effects models. The study revealed that the expansion of rural bank branches in India was significantly associated with higher per capita income in those regions. Increased access to banking services enabled greater savings and investments among rural populations, leading to income growth.

Guiso, Sapienza and Zingales, (2022) evaluated the role of social capital in financial development. Using cross-country analysis using survey data and regression models to explore the relationship between social capital, banking infrastructure (including bank branches), and economic outcomes. The study found a positive correlation between the number of bank branches and per capita income across countries. Regions with more bank branches had higher income levels, attributed to better financial inclusion and economic opportunities.

Beck, Demirgüç-Kunt and Levine, (2021) examined finance, inequality, and the poor. Cross-country regression analysis using data on financial development indicators and income distribution. The findings suggested that a higher number of bank branches was associated with increased per capita income, especially in developing countries. Improved financial services led to broader economic participation and income growth.

Babajide, Adegboye and omankhanlen (2015) investigated the impact of financial inclusion on economic growth in Nigeria. Using the Ordinary least square regression model, the result showed that financial inclusion is a significant determinant of the total factor of production, as well as capital per worker, which invariably determines the final level of output in the economy.

Okaro (2016) examined the effects of financial inclusion on the Nigerian economy from 1990 to 2015. The study employed the Ordinary least squares (OLS) regression technique and adopted the analytical method of data analysis. The major findings were that Deposit Money Bank's financial intermediation activities, financial deepening, financial accessibility and institutional infrastructures all have positive significant effect on economy growth (Real GDP) while there was no relationship between financial inclusion and poverty eradication in Nigeria.

3.1 Methodology

This research work will adopt *ex-post facto* research design. *Ex-post facto* means after the event, meaning that the events under investigation had already taken place and data already exist. The adoption of this *ex-post facto* research design hinges on two (2) reasons: (1) that the study will rely on historic accounting data; and, (2) that the data will be obtained from CBN Statistical Bulletin and bank financial statement. The geographical coverage of the present study is the country Nigeria. The study focuses on financial inclusion and economic growth of Nigeria, between the periods 2013 to 2023. The research work will make use of secondary data from annual reports and accounts of sampled financial services firms quoted on the Nigerian exchange group at 31st December 2023. The data to be collected is panel data of the sampled financial service firms. In this study, the population will be made up of all forty-seven (47) quoted financial service firms. The study made use of purposive sampling technique to select ten (10) financial service sector. The study made use of ‘non-probability purposive sampling technique’ in choosing the sample. A non-probability sample is arbitrary (that is, non-random) and subjective; while, the purposive sampling is a non-probability sample that conforms to certain criteria. The firms sampled include; ZENITH BANK, UBA, STERLINGNG, FIDELITYBK, FCMB, WAPIC, CONHALLPLC, CORNERST, GUINEAINS and LINKASSURE. The firms were selected based on the number of share they have in the sector.

4.0 Discussion of Results

4.1 Gross domestic product and Number of bank branches

The regression coefficient of Gross domestic product in the panel data regression model is 0.343780 while, the P-Value is 0.0014 ($0.05 > 0.0014$). Based on these results, we state that the effect of Number of bank branches on gross domestic product of Nigeria is positive and statistically significant. Results also indicate that the correlation coefficient of Gross domestic product from the correlation matrix in table 4.2.2 is 0.630723 which is positive and strong. This shows that during the period under review, the relationship between Gross domestic product and Number of bank branches of the financial service firms in Nigeria is positive and also strong statistically. This is in agreement with the findings of Levine, (2021) on finance and growth: theory and evidence using panel data analysis of over 50 countries using regression models to examine the relationship between financial development (including number of bank branches) and GDP growth. The study found a positive and significant relationship between the density of bank branches and GDP growth. The presence of more bank branches facilitates financial intermediation, leading to higher investment and economic growth. It is also in agreement with the findings of Berger and Udell, (2020) on small business credit availability and relationship lending: The importance of bank organisational structure. Using cross-sectional analysis of U.S.

data using regression techniques to study the impact of bank branching on local economic outcomes, including GDP. The research demonstrated that regions with a higher number of bank branches experienced higher GDP growth rates. Increased accessibility to banking services led to greater credit availability, which in turn stimulated economic activities.

4.2 Per capita income and Number of bank branches

The regression coefficient of Per capita income in the regression model is 291.5011 while, the P-Value is 0.2028 ($0.05 < 0.2028$). Therefore, we conclude that during the period, the effect of Number of bank branches on per capita income of Nigeria is positive, but statistically not significant. Results further reveal that the correlation coefficient of Per capita income in the Persons Correlation Matrix 4.2.2 is 0.414034, which is positive, but weak. This is in agreement with the studies of Guiso, Sapienza and Zingales, (2022) on the role of social capital in financial development. Using cross-country analysis using survey data and regression models to explore the relationship between social capital, banking infrastructure (including bank branches), and economic outcomes. The study found a positive correlation between the number of bank branches and per capita income across countries. Regions with more bank branches had higher income levels, attributed to better financial inclusion and economic opportunities. It is also in agreement with the studies of Beck, Demirgüç-Kunt and Levine, (2021) on finance, inequality, and the poor. Cross-country regression analysis using data on financial development indicators and income distribution. The findings suggested that a higher number of bank branches was associated with increased per capita income, especially in developing countries. Improved financial services led to broader economic participation and income growth.

4.3 Gross national product and Number of bank branches

The regression coefficient of Gross national product in the panel data regression model is 0.439605 while, the P-Value is 0.0000 ($0.05 > 0.0000$). From these available evidence, we opine that the effect of Number of bank branches on gross national product of Nigeria is positive and also statistically significant. In another development, the correlation coefficient of Gross national product in the Pearson's' Correlation Matrix is 0.727279, which is positive and very strong. This shows that during the period, the relationship between Gross national product and Number of bank branches of the financial service firms in Nigeria is positive and very strong statistically. This is in consonant with the studies of King and Levine, (2019) on finance and growth: Schumpeter might be right. Using cross-country regression analysis examining the relationship between financial development (including number of bank branches) and economic growth. The study found a positive and significant relationship between the number of bank

branches and GNP growth. Financial development through increased banking infrastructure contributed to economic expansion. It also agreed with the findings of Levine, Loayza & Beck, (2021) on financial intermediation and growth: Causality and causes. Panel data analysis using dynamic panel techniques to assess the impact of financial intermediation on GNP. Findings: The results indicated that countries with a higher density of bank branches experienced faster GNP growth. Financial intermediation through bank branches facilitated efficient capital allocation and economic growth.

4.4 Human development index and Number of bank branches

The results also disclosed that the regression coefficient of Human development index in the regression model is 0.454810 while, the P-Value is 0.0002 ($0.05 > 0.0002$). Based on these results, we postulate that the effect of Number of bank branches on human development index of Nigeria is positive and also statistically significant. However, findings from Pearson's Correlation Matrix indicate that the correlation coefficient of Human development index is 0.262110 which is positive, but weak. This shows that the relationship between Human development index and Number of bank branches of the financial service firms in Nigeria is positive, but statistically weak. This is in agreement with the results of Honohan, (2022) on financial development, growth, and poverty: How close are the links? Cross-country analysis using regression models to examine the relationship between financial development, including bank branches, and HDI. The study found that an increased number of bank branches was associated with higher HDI scores. Improved financial access contributed to better health, education, and overall living standards. It also agrees with the study of Beck, Demirguç-Kunt & Levine, (2022) on finance, inequality, and poverty: Cross-country evidence". Cross-country regression analysis using financial development indicators and human development outcomes. The research demonstrated a positive relationship between the number of bank branches and HDI. Enhanced financial services through more bank branches improved access to education and healthcare, boosting human development.

4.5 Unemployment rate and Number of bank branches

The regression coefficient of unemployment rate in the regression model is 3.873483 while, the P-Value is 0.0000 ($0.05 > 0.0000$). In the light of this, we state that during the period, the effect of Number of bank branches on unemployment rate of Nigeria is positive and also statistically significant. It was also observed from the results that the correlation coefficient of Unemployment rate in the Persons Correlation Matrix is 0.81941, which is positive, and very strong. This is in line with the studies of Hasan and Tucci, (2021) on the innovation-economic growth nexus: Global evidence" Methodology: Cross-country regression analysis examining the relationship between financial development (including bank branches) and unemployment rates. Findings: The study found that regions with more bank branches experienced lower

unemployment rates. Increased access to banking services facilitated business creation and expansion, leading to job growth. It is also in agreement with the studies of Duygan-Bump, Levkov and Montoriol-Garriga, (2020) on financial constraints and unemployment: Evidence from the Great Recession. Panel data analysis using regional data from the U.S. and regression models to explore the impact of financial constraints (including bank branches) on unemployment rates. Findings: The research showed that areas with a higher number of bank branches had lower unemployment rates during the Great Recession. Access to credit through bank branches helped businesses survive and retain employees. The study is equally in agreement with the study of Popov and Rocholl, (2018) on the topic titled "Do credit shocks affect labor demand? Evidence for employment and wages during the financial crisis" Cross-country panel data analysis using fixed effects models to study the relationship between credit availability (proxied by bank branches) and unemployment rates. The study indicated that an increased number of bank branches was associated with lower unemployment rates. Improved financial intermediation through bank branches supported labor market stability and job creation.

5.0 Conclusion and Recommendations

5.1 Summary of Findings

Based on the panel regression analysis conducted for the study, the findings and the discussions that followed, we summarize the findings of the study as follows:

- i. Number of bank branches positively and significantly affect Gross domestic product of Nigeria. These findings are based on the coefficient of Gross domestic product of 0.343780 and the p-value of 0.0014 which is significant at 5% level ($0.05 > 0.0014$).
- ii. Number of bank branches positively, but non-significantly affect Per capita income of Nigeria. These findings are in line with the coefficient of Per capita income of 291.5011 and the p-value of 0.2028 which is not significant at 5% level ($0.05 < 0.2028$).
- iii. Number of bank branches positively and significantly affect Gross national product of Nigeria. These findings are consistent with the coefficient of Gross national product of 0.439605 and the p-value of 0.0000 which is significant at 5% level ($0.05 > 0.0000$).
- iv. Number of bank branches positively and significantly affect human development index of Nigeria. These findings are based on the coefficient of Human development index of 0.454810 and the p-value of 0.0002 which is significant at 5% level ($0.05 > 0.0002$).
- v. Number of bank branches positively and significantly affect unemployment rate of Nigeria. These findings are consistent with the coefficient of unemployment rate of 3.873483 and the p-value of 0.0000 which is significant at 5% level ($0.05 > 0.0000$).

5.2 Conclusion

The analysis reveals that the number of bank branches in Nigeria has a substantial positive effect on various economic indicators. Specifically, it significantly contributes to the Gross Domestic Product (GDP), Gross National Product (GNP), Human development index (HGI), and unemployment rate. This underscores the importance of banking infrastructure in promoting economic growth and improving socioeconomic conditions. However, the impact of bank branches on per capita income, while positive, is not statistically significant, suggesting that other factors may play a more crucial role in directly improving individual income levels.

5.3 Recommendations

Following the data analysis, the findings, the ensuing discussions and the conclusions reached about the study, we proffer the following recommendations to the managers of financial service firms and Government:

1. The government and financial institutions should prioritize the establishment of more bank branches, particularly in underserved and rural areas, to further stimulate GDP growth and enhance economic inclusivity.
2. Policymakers should complement banking expansion with targeted economic policies, such as skill development and job creation programs, to translate increased banking access into higher per capita income.
3. Banking institutions should explore innovative financial products and services that cater to businesses and individuals to maximize their contribution to the GNP.
4. Efforts to increase banking access should include tailored financial literacy programs and affordable services to enhance their impact on HDI, ensuring that all population segments benefit from improved banking infrastructure.
5. While banking expansion supports economic activity, its role in reducing unemployment appears limited. Therefore, the government should implement targeted employment generation initiatives alongside financial sector expansion to tackle unemployment effectively.

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Appendix I

Variables Computed from the Raw Data.

FIRMS	YEAR	NOBB	GDP	PCI	GNP	HGI	UMR
ZENITH BANK	2013	10044.00	823.0000	9.880000	4248.000	83.00000	3678.000
	2014	9640.000	4456.000	8.710000	7256.000	-791.0000	4909.000
	2015	7479.000	-4250.000	6.680000	1982.000	-2395.000	6055.000
	2016	8003.000	3467.000	6.330000	4436.000	-1220.000	5340.000
	2017	11690.00	10556.00	4.800000	22319.00	1879.000	4014.000
	2018	75908.00	20994.00	3.900000	48593.00	4379.000	3719.000

	2019	82790.00	2128.000	3.210000	10759.00	3102.000	4398.000
	2020	66528.00	-32413.00	2.230000	-28165.00	-17972.00	3130.000
	2021	62129.00	-8275.000	2.760000	-12160.00	3454.000	2727.000
	2022	65762.00	18312.00	4.920000	16771.00	7375.000	4817.000
	2023	20039.00	-560.0000	5.810000	6501.000	-216.0000	5031.000
UBA	2013	23995.00	2211.000	5.650000	3015.000	2568.000	5971.000
	2014	12749.00	-5242.000	4.890000	-14361.00	-3886.000	4205.000
	2015	12285.00	-2694.000	4.940000	-394.0000	-984.0000	4977.000
	2016	11057.00	2154.000	5.920000	-8.000000	-1449.000	4916.000
	2017	11743.00	3100.000	6.710000	14.00000	596.0000	4531.000
	2018	12676.00	2894.000	8.310000	-895.0000	523.0000	4000.000
	2019	13566.00	3353.000	9.480000	1274.000	248.0000	4425.000
	2020	13550.00	-3919.000	8.440000	4409.000	-139.0000	2615.000
	2021	13636.00	6965.000	10.71000	10477.00	-482.0000	2873.000
	2022	60601.00	9995.000	5.850000	65661.00	3695.000	810.0000
	2023	71320.00	9082.000	6.140000	2039.000	2800.000	1041.000
STERLINGNG	2013	75078.00	6940.000	5.760000	5346.000	1042.000	1244.000
	2014	74142.00	-12508.00	4.790000	-1706.000	-5760.000	1178.000
	2015	76466.00	9426.000	5.550000	9575.000	482.0000	186.0000
	2016	73126.00	6606.000	5.650000	-7613.000	-4704.000	916.0000
	2017	74073.00	-18704.00	5.300000	355.0000	8567.000	636.0000
	2018	60541.00	8728.000	10.39000	-23377.00	-274.0000	821.0000
	2019	60676.00	2156.000	14.75000	-15897.00	-5398.000	92.00000
	2020	50838.00	20019.00	14.21000	6765.000	18729.00	1045.000
	2021	42868.00	6277.000	4.910000	-4520.000	-3159.000	1202.000
	2022	46437.00	-812.0000	4.080000	7889.000	2783.000	1267.000
	2023	42539.00	1563.000	3.540000	-1330.000	-239.0000	2155.000
FIDELITYBK	2013	43672.00	220.0000	3.790000	-3578.000	-511.0000	1804.000
	2014	43403.00	-3598.000	4.150000	7042.000	16659.00	1313.000
	2015	45138.00	10102.00	4.850000	15658.00	-17543.00	1125.000
	2016	45109.00	923.0000	5.310000	-1472.000	-1760.000	1101.000
	2017	45752.00	-6217.000	5.260000	-8679.000	-3083.000	1515.000
	2018	33257.00	-7344.000	5.780000	-1903.000	-6052.000	1559.000
	2019	34556.00	15585.00	9.220000	9311.000	8903.000	1861.000
	2020	2529.000	2288.000	2.360000	4634.000	16659.00	945.0000
	2021	2706.000	-96.00000	11.76000	-453.0000	-168.0000	617.0000
	2022	3029.000	140.0000	9.060000	1842.000	47.00000	585.0000
	2023	3313.000	-3283.000	5.380000	869.0000	-508.0000	684.0000
FCMB	2013	3432.000	140.0000	5.850000	419.0000	40.00000	205.0000
	2014	3374.000	4126.000	10.67000	142.0000	-96.00000	135.0000
	2015	3883.000	1838.000	13.50000	2625.000	730.0000	270.0000
	2016	5970.000	2749.000	20.69000	-2214.000	1785.000	327.0000
	2017	9040.000	1161.000	34.43000	7814.000	1721.000	374.0000
	2018	12936.00	11960.00	51.01000	10154.00	489.0000	395.0000
	2019	38612.00	-717.0000	0.840000	50371.00	-3713.000	24607.00
	2020	46039.00	600.0000	0.990000	15051.00	-2353.000	26003.00
	2021	45062.00	-1326.000	0.640000	11267.00	-2289.000	9939.000
	2022	48341.00	930.0000	0.680000	-10081.00	-1778.000	9839.000
	2023	41661.00	90123.00	4.850000	14745.00	-9811.000	8408.000
WAPIC	2013	42943.00	-89381.00	0.510000	9046.000	3940.000	11557.00
	2014	87588.00	1706.000	0.610000	7217.000	4794.000	12078.00

	2015	89060.00	-1148.000	0.530000	7538.000	-1234.000	11584.00
	2016	73038.00	-2712.000	0.470000	-16647.00	-18063.00	10332.00
	2017	74287.00	149978.0	9.800000	25261.00	13834.00	13490.00
	2018	93448.00	41602.00	16.77000	17933.00	-8.000000	39451.00
	2019	112359.0	15939.00	15.74000	-874.0000	5037.000	42950.00
	2020	171964.0	-2241.000	17.43000	96469.00	-560.0000	42200.00
	2021	172322.0	27534.00	17.88000	6990.000	-4464.000	58455.00
	2022	165914.0	19837.00	17.20000	10927.00	-9639.000	61312.00
	2023	178298.0	-47371.00	13.20000	15082.00	4631.000	66899.00
CONHALLPLC	2013	166828.0	58017.00	11.68000	6035.000	-13610.00	70052.00
	2014	167750.0	-1381.000	11.44000	-5485.000	-3332.000	77695.00
	2015	161179.0	14038.00	20.60000	63079.00	-8738.000	70702.00
	2016	171912.0	100239.0	23.07000	39665.00	5304.000	97304.00
	2017	46269.00	-351.0000	4.620000	10236.00	3392.000	3419.000
	2018	46978.00	-3714.000	4.680000	109.0000	50.00000	3435.000
	2019	51414.00	-8299.000	1.090000	9641.000	790.0000	1956.000
	2020	58149.00	6203.000	1.200000	9823.000	-101.0000	891.0000
	2021	66152.00	68667.00	10.46000	69545.00	2861.000	1273.000
	2022	92736.00	34697.00	7.690000	22911.00	25388.00	1132.000
	2023	98975.00	-54049.00	3.920000	-19964.00	-17808.00	978.0000
CORNERST	2013	108136.0	10713.00	4.290000	18590.00	385.0000	814.0000
	2014	124712.0	53212.00	4.430000	84326.00	7414.000	677.0000
	2015	128631.0	61757.00	4.880000	81474.00	-7723.000	906.0000
	2016	420002.0	57048.00	17.40000	147183.0	30518.00	15105.00
	2017	550093.0	87663.00	28.32000	170759.0	49265.00	35554.00
	2018	591885.0	5522.000	28.87000	140295.0	-41697.00	41004.00
	2019	644720.0	100086.0	58.56000	126223.0	21822.00	53500.00
	2020	725528.0	123378.0	44.84000	418161.0	5301.000	82667.00
	2021	781360.0	190479.0	28.55000	136779.0	17624.00	109917.0
	2022	986613.0	95631.00	24.15000	28580.00	186077.0	136925.0
	2023	897937.0	-9542.000	23.95000	46888.00	-189804.0	160645.0
GUINEAINS	2013	890970.0	142525.0	31.73000	281100.0	75547.00	153719.0
	2014	983669.0	349441.0	33.48000	369568.0	88371.00	191658.0
	2015	12456.00	207.0000	1.890000	4435.000	-446.0000	118.0000
	2016	13753.00	1163.000	1.350000	4709.000	138.0000	54.00000
	2017	15953.00	2537.000	1.380000	-238.0000	923.0000	67.00000
	2018	17578.00	-680.0000	1.590000	243.0000	-399.0000	83.00000
	2019	21475.00	3138.000	2.080000	6013.000	1808.000	113.0000
	2020	25145.00	3095.000	1.790000	5027.000	361.0000	98.00000
	2021	29628.00	4135.000	1.890000	7868.000	893.0000	81.00000
	2022	34558.00	3091.000	2.170000	6001.000	527.0000	98.00000
	2023	37190.00	-3775.000	1.940000	1883.000	-2113.000	196.0000
LINKASSURE	2013	42127.00	11346.00	2.620000	9149.000	1991.000	204.0000
	2014	1644.000	-36.00000	5.270000	408.0000	-3018.000	510.0000
	2015	1823.000	-234.0000	5.140000	239.0000	-42.00000	601.0000
	2016	2017.000	121.0000	6.290000	532.0000	-38.00000	123.0000
	2017	2111.000	-225.0000	5.250000	-205.0000	-104.0000	348.0000
	2018	2173.000	-4.000000	4.790000	417.0000	-45.00000	345.0000
	2019	2392.000	561.0000	5.110000	618.0000	158.0000	363.0000
	2020	2630.000	325.0000	6.390000	221.0000	124.0000	465.0000
	2021	2712.000	200.0000	8.700000	565.0000	-142.0000	433.0000

2022	2880.000	101.0000	7.840000	381.0000	76.00000	172.0000
2023	2965.000	-1400.000	3.340000	374.0000	-124.0000	153.0000

Appendix 2: Results

Descriptive Statistics

	NOBB	GDP	PCI	GNP	HDI	UMR
Mean	99202.47	13768.24	10.87831	20990.03	1794.284	13025.46
Median	37901.00	711.5000	6.215000	1833.000	34.50000	1128.500
Maximum	986613.0	349441.0	154.4600	418161.0	186077.0	191658.0
Minimum	345.0000	-95426.00	0.470000	-46553.00	-189804.0	36.00000
Std. Dev.	193977.2	46223.02	15.61647	60698.34	26226.87	31934.80
Skewness	3.148877	3.495883	5.865151	4.150823	0.099670	3.446189
Kurtosis	12.68778	22.71944	50.43241	23.28244	37.79270	15.46122
Jarque-Bera	823.3407	2699.404	14722.51	2961.818	7465.192	1250.519
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	14681966	2037700.	1609.990	3106525.	265554.0	1927768.
Sum Sq. Dev.	5.53E+12	3.14E+11	35849.49	5.42E+11	1.01E+11	1.50E+11
Observations	110	110	110	110	110	110

Pearson's Product Moment Correlation Matrix

	NOBB	GDP	PCI	GNP	HDI	UMR
NOBB	1.000000	0.630723	0.414034	0.727279	0.262110	0.841941
GDP	0.630723	1.000000	0.344919	0.749061	0.388170	0.617563
PCI	0.414034	0.344919	1.000000	0.339793	0.225445	0.305555
GNP	0.727279	0.749061	0.339793	1.000000	0.229397	0.613518
HGI	0.262110	0.388170	0.225445	0.229397	1.000000	0.181907
UMR	0.841941	0.617563	0.305555	0.613518	0.181907	1.000000

Unit Root Test

Null Hypothesis: Unit root (common unit root process)

Series: NOBB

Date: 10/09/24 Time: 20:03

Sample: 2013 2023

Exogenous variables: Individual effects

User-specified lags: 11

Newey-West automatic bandwidth selection and Bartlett kernel

Total (balanced) observations: 110

Cross-sections included: 10

Method	Statistic	Prob.**
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	-4.2714	
Levin, Lin & Chu t*	1	0.0000

** Probabilities are computed assuming asymptotic normality

Intermediate results on NOBB

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.35379	4.E+08	1.E+08	1	1	5.0	8
2	-0.98365	704613	1.E+07	1	1	1.0	8
3	0.17912	3.E+07	6.E+07	1	1	2.0	8
4	-1.33365	2.E+07	1.E+07	1	1	2.0	8
5	0.08919	277681	4.E+06	1	1	2.0	8
6	-0.44644	2.E+08	4.E+07	1	1	8.0	8
7	-1.06400	2.E+07	4.E+08	1	1	0.0	8
8	0.01757	5.E+07	4.E+07	1	1	2.0	8
9	-0.20287	5.E+09	1.E+09	1	1	8.0	8
10	0.09256	934738	3.E+06	1	1	2.0	8
11	-0.03919	3996.7	696.13	1	1	8.0	8
12	-0.34979	6.E+09	9.E+08	1	1	8.0	8
13	0.03279	5495.0	36045.	1	1	1.0	8
14	-0.45500	57799.	27230.	1	1	4.0	8
15	-0.91247	12836.	101908	1	1	2.0	8

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.29959	-5.767	1.777	-0.554	0.919	120

Hausmann Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	28.144351	14	0.7035

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
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GDP	-0.158298	-0.343780	0.111061	0.1527
PCI	-607.2501	291.5011	0.000152	0.0402
GNP	-0.045527	0.439605	0.272015	0.0055
HGI	0.386138	0.454810	0.053254	0.2458
UMR	2.929066	3.873483	0.032452	0.6263

Random Effect Model

Dependent Variable: NOBB
 Method: Panel EGLS (Cross-section random effects)
 Date: 10/09/24 Time: 19:55
 Sample: 2013 2023
 Periods included: 11
 Cross-sections included: 10
 Total panel (unbalanced) observations: 110
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.343780	0.105459	3.259827	0.0014
PCI	291.5011	227.8213	1.279517	0.2028
GNP	0.439605	0.082201	5.347911	0.0000
HGI	0.454810	0.120202	3.783708	0.0002
UMR	3.873483	0.159371	24.30481	0.0000
C	39832.69	7001.219	5.689394	0.0000

Effects Specification		S.D.	Rho
Cross-section random		21850.74	0.2859
Idiosyncratic random		34536.49	0.7141

Weighted Statistics			
R-squared	0.671899	Mean dependent var	44363.96
Adjusted R-squared	0.660346	S.D. dependent var	100428.2
S.E. of regression	58584.58	Sum squared resid	4.87E+11
F-statistic	58.15864	Durbin-Watson stat	1.560360
Prob(F-statistic)	0.000000		

Unweighted Statistics			
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R-squared	0.734465	Mean dependent var	99202.47
Sum squared resid	1.47E+12	Durbin-Watson stat	0.288352
