

IMPACT ASSESSMENT OF MICROFINANCE BANKS ON NIGERIA'S ECONOMIC DEVELOPMENT: (AN ARDL CO-INTEGRATION TECHNIQUE)

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Abstract

This study investigates effect of Microfinance bank on Economic Development in Nigeria over the period 21 years (2003 to 2024). The proxies of Microfinance bank are Microfinance bank total Assets, Microfinance bank total Liability, and Microfinance bank Loans, while that of Human Development is Human Development Index. Ex-post facto research design was adopted in the study, with the use of secondary time series data, the data were source from CBN Statistical Bulletin 2024; the data are analyzed using descriptive and inferential statistic as well as ARDL method. Based on the findings, the study conclude that Microfinance bank has significant effect on Human Development in Nigeria. The study recommends that Regulatory policies should incentivize MFBs to expand their Assets portfolios in underserved rural areas, not just accumulate assets in a concentrated area. Also the regulatory authority should mandate that a small percentage (e.g., 0.5–1%) of annual growth in microfinance bank assets be redirected into a pooled technical assistance fund, jointly managed by the central bank and microfinance industry associations. Under implementation mechanism, the microfinance bank allocates 0.5% of any year-on-year increase in total assets to a regional fund whenever that increase reaches 10% or more. The fund disbursed are then used to support community-based training centers run by local cooperatives. Reevaluate microfinance bank strategy and assess whether microfinance banks are effectively targeting the right sector or population. Also the Central Bank of Nigeria (CBN) and development partners should foster linkages between MFBs and sectors like primary healthcare and vocational education. Microfinance bank should also be required to recycle a set minimum share typically 40-60% of their locally mobilized deposits into working capital advances for formal sector enterprises. These advance would carry zero collateral requirement and ultra- low fees, and be restricted to businesses operating within a 15 kilometer radius. Financial literacy programs must be integrated with credit access to ensure loans are used for productive, human-capital-enhancing activities. It is also recommended that microfinance bank loans and advances be differentiated not solely by risk or interest rate, but statutory minimum tenors aligned with the estimated breakeven horizon of the financed activity. For instance, shorter tenors of 3-6 months would apply to trade, while longer tenors of 12-24 months would suit light manufacturing or agro-processing.

Keywords: Assets portfolios, Credit access, Economic development, Microfinance banks, Poverty alleviation.

Introduction

Microfinance bank is one of the vital instruments used to raise funds for micro, small, and medium-scale enterprises in Nigeria. It can improve living standards by reducing or alleviating poverty in the nation. This is closely tight to the 3rd policy of the United Nations Development programmes (UNDP) for eradicating poverty across the globe by the year 2030 (United Nations Development Programme, 2017). A new and potentially game-changing instrument for global economic growth is microfinance banks. People without access to conventional banking services may nevertheless get the insurance, savings accounts, and modest loans they need from these organisations (Babarinde, 2022). Microfinance banks have grown in Nigeria thanks to the Central Bank of Nigeria's (CBN, 2024) efforts to promote economic development and alleviate poverty via its financial inclusion plan (CBN, 2019).

Poverty is a threat to most of the poor people in the world as their needs hardly met even in the midst potential plenty especially in the developing nations. Every country, developed and developing alike, has, over the years, found ways to boost their economies and reduce poverty. Microfinance, which focuses on providing small-scale loans to individuals, is an important part of Nigeria's plan to boost its economy. A variety of economic activities, including selling, tailoring, finance, vulcanizing, and restaurant companies, are made possible for the impoverished via the creation of Microsoft credit (Ehiabhi, 2019).

Credit distribution to small and medium-sized business owners is a key component of microfinance administration, a very intricate procedure in and of itself. When extending loans to its customers, microfinance institutions use the most up-to-date credit technologies available. Credit technology encompasses a wide range of processes that include lending, screening and selecting clients, applying for and receiving approval, designing products, monitoring payments, and managing delinquencies. Included as well are the organisational framework and policies pertaining to human resources, which encompass things like the recruitment, development, and compensation of employees in the financial sector. When it comes to administering credit to its consumers, financial institutions rely on two main kinds of credit technology. There are two types of lending technologies: group and individual. It is thought that economic progress and growth would be ushered in by efficient and effective microfinance administration via the deployment of credit technology in Nigeria.

Microfinance banks in Nigeria are clearly contributing to economic growth particularly through loans and deposits over the long term but their biggest impact on human development comes from investing in social infrastructure.

Statement of the problem

Poverty remains a significant challenge in Nigeria, affecting millions of individuals and hindering national development. Traditional banking systems have often failed to reach the most impoverished populations due to stringent requirements and limited accessibility. By extending credit to small firms and people with low incomes, microfinance banks (MFBs) have become an effective means of closing this gap. Because microfinance institutions play such a crucial role in fighting poverty, the Nigerian government has designated them as a primary tool in the fight against poverty and has ordered the Central Bank of Nigeria (CBN) to establish regulations that would facilitate their work. Despite this, a negligible fraction of those who would benefit from microfinance services actually end up using these institutions. In a nation where 63% of the population lives in extreme poverty, there is an estimated one million customers served by official microfinance banks (World Bank data 2025).

Many Nigerians continue to struggle with poverty, which is a major obstacle to the country's progress. The magnitude of the socio-economic difficulties confronting Nigeria is shown by the fact that, as stated in the World Bank Nigeria development report (April 2026), around 63% of the population lives in poverty. Despite various government interventions and international aid efforts, the poverty rate has remained high, necessitating alternative strategies to tackle this issue effectively. However, the effectiveness of microfinance banks in alleviating poverty for economic development has been a subject of debate. While some studies suggest that microfinance can significantly improve the living standards of beneficiaries by increasing rural income and access to essential services such as education and healthcare (Okoye *et al.*), argued that the benefits are overstated and that microfinance can sometimes lead to over-indebtedness and financial instability (Ehiabhi, 2019). This duality presents a need for a comprehensive assessment of the effect of microfinance banks on Economic development in the Nigerian context. Researchers and professionals in the microfinance sector have also noted that most programs have failed to reach their intended beneficiaries or remain operational over the long term. This line of thinking is what prompted the researcher to feel compelled to investigate microfinance banks' impact on Nigeria's economic growth.

Research Questions

1. To what extent does Microfinance bank Total Assets affect Human Development index in Nigeria?
2. To what extent does Microfinance bank Total Liability affect Human Development index in Nigeria?
3. To what extent does Microfinance bank Loans affect human development index in Nigeria?

Research Hypotheses

The hypothesis outlined below provides the direction for the study.

Ho₁: Microfinance bank total Assets has no significant effect on human development index in Nigeria.

Ho₂: Microfinance bank Total Liability has no significant effect on human development index in Nigeria.

Ho₃: Microfinance bank Loans has no significant effect on the human development index in Nigeria.

Literature Review

Conceptual Review

Concept of Microfinance bank and Economic development

People and enterprises in an economy who don't have access to larger banks often turn to microfinance institutions for a variety of small-scale financial services, such as loans, savings accounts, insurance, and more. According to Central Bank of Nigeria (2020), the Central Bank of Nigeria's guidelines describe a microfinance bank (MFB) as any institution licensed to provide financial services (savings/deposits, loans, fund transfers, etc.) to its "microfinance clients" defined as economically active low-income earners, unbanked or underserved people (notably vulnerable groups like women, youth, persons with disabilities), and small/micro-enterprises. In other words, Nigeria's microfinance sector is explicitly targeted at extending credit and related services to the poor and informal-sector businesses beyond what conventional banks serve.

Irejeh *et al.* (2024), views microfinance as "a development instrument that helps the exceptionally poor to grow their enterprises by providing financial services and products such as modest loans, savings, micro-leasing, micro-insurance, and money transfer. This definition emphasizes microfinance in Nigeria as a poverty-alleviation and enterprise-development tool, focusing on small-scale loans and savings services to empower the poorest entrepreneurs. NDIC (2020) notes that "microfinance is a general term that explains financial services designed for the low-income earners or those who do not have access to banking services." It "encompasses not only the extension of credit to the poor, but also the provision of other financial services". Thus NDIC's definition underlines the broad scope of microfinance in Nigeria including loans, savings, insurance, etc. – aimed at financial inclusion of the unbanked poor. Contemporary Nigerian studies similarly define microfinance in inclusive terms. Mustapha (2025) describe "microfinance lending" as the provision of financial services (loans, savings, insurance) to individuals or businesses "typically underserved or excluded from traditional banking services". This captures the core idea in Nigeria: microfinance extends credit and other services to low-income and informal-sector entrepreneurs who lack access to formal bank loans, thereby promoting financial inclusion.

Udensi *et al.* (2018) defines microfinance as the practice of creating efficient and effective financial institutions to meet the demands of low-income people. Financial services such savings accounts, investments, loans, payment processing, money transfers, and insurance are all part of microfinance, which aims to help low-income individuals, families, and businesses. Microfinance helps people build assets, diversify their income streams, and grow their earnings; it also helps them become less susceptible to income and consumption shocks. Microfinance banks, according to Ehiabhi (2019), help those with low incomes (such as consumers and self-employed people) who don't have access to standard banking services like money deposits. Basically, it's when low-income individuals get modest loans, often called microcredit, so they can start or expand their own enterprises.

In some parts of the world, such Southern Africa, the term "microfinance" is used to denote the provision of retail-style financial services to low-income workers. Some people see of microfinance as a global movement whose goal is to ensure that all low-income and near-poor families have consistent access to a variety of high-quality financial services, such as

loans, savings accounts, insurance, and money transfers. Microfinance advocates tend to agree that providing low-income individuals with access to loans is the best way to lift them out of poverty. Some see microfinance as a means to boost employment, economic growth, and development by lending money to small companies and micro-entrepreneurs (Udensi *et al.*, 2018). In their analysis of the microfinance program, Mustapha *et al.* (2018) found that it was one of the most effective ways to reduce vulnerability and reach the Millennium Development Goals. By providing low-income individuals with opportunities to diversify and increase their income, this program helps alleviate hunger in communities.

Microfinance bank Assets and Investment

Investment by microfinance banks in Nigeria refers to the deployment of surplus funds into approved financial assets such as Treasury Bills, money-market instruments, correspondent bank placements, and social investment projects (e.g., cottage industries, rural development schemes) as regulated by the CBN. Academically, this variable is analyzed separately from loans and deposits, and its impact on socio-economic outcomes (e.g., income, rural development). Thus, **investment** refers to how MFBs deploy funds beyond client credit into low-risk, income-generating financial instruments and equity to support microfinance sustainability in the economy.

Microfinance investment (“MFI” or “MBIV”) refers to the allocation of funds by microfinance banks into financial assets and services, aimed at supporting socio-economic outcomes. In statistical models, it is a variable distinct from loans and deposits, representing these institutions’ investments in ventures, instruments, and rural development. For example, Abdulkareem (2023) define MBIV as microfinance banks’ funds allocated into investment instruments that enhance rural development, often in conjunction with deposits and loans. According to the Central Bank of Nigeria (CBN, 2023), microfinance banks are licensed to invest their surplus funds in “*suitable instruments including placing such funds with correspondent banks and in Treasury Bills,*” and even in “*shares or equity of anybody corporate*” aimed at advancing microfinance objectives. As per the rules set out by the Central Bank of Nigeria, microfinance institutions can put their extra cash to use in “suitable instruments” like buying Treasury Bills, investing in cottage industries or income-generating projects for low-income clients, joining intervention funds, or placing it with correspondent banks. Babarinde (2022) describes microfinance investment as the investment portfolio of microfinance banks, explicitly including short-term financial instruments (like money market placements and treasury bills) and longer-term social investments, and finds a significant positive short-term effect on per-capita income, although a negative impact in the long run.

Microfinance banks rely on total deposits as a technique to increase their profitability. These deposits are then used to loan money to consumers, who in turn pay interest to the banks. Banks play a crucial role in financial markets as intermediaries, and deposits are an essential part of this. To achieve this goal, deposits are necessary for money deposit banks and microfinance institutions. Mobilising deposits is a crucial part of any financial system. For this reason, it serves as a vital source of operating capital for financial institutions generally and microfinance institutions specifically. Financial institutions take use of deposit and lending services to put people's spare cash to work for them by investing it in productive endeavors and other worthwhile ventures. The banking system, according to Agbir (2014), is essential for financial intermediation since it facilitates the mobilisation and channeling of capital for investment and other purposes. Capital accumulation is aided by deposit

mobilisation as well. Capital accumulation is the engine that drives economic expansion; investment and savings are the two main determinants of capital accumulation. Therefore, deposit mobilisation is vital for satisfying different parts of the economy. The capacity of commercial banks to foster economic development and progress is contingent upon the soundness and consistency of the financial system, according to Alex (2012). In order for microfinance banks to effectively provide their services, deposit mobilisation is a crucial source for boosting their resources. It is reasonable to assume that a bank's ability to attract deposits is a key performance indicator. To bolster their lending operations and increase their profitability, banks rely on deposit mobilisation as a key approach for accessing cash. Here, the quantity and composition of deposits matter greatly when it comes to the amount and length of loans that a bank may provide. Commercial or microfinance banks can avoid asset-liability mismatch by deciding how much of their loan portfolio should be short-, medium-, or long-term based on the mix of deposits. Large deposits allow these banks to give out bigger loans.

Microfinance Loan and Advances

People and companies who don't have the means to use regular banks can be eligible for these smaller loans and lines of credit. Poverty rates in a certain country are lowered by this loan. Interest rates are also a major consideration for people when choosing where to put their money one of the elements that determines commercial bank deposits is interest, also offering favourable interest rates on bank deposits could be seen as having a positive impact. Low deposit rates discourage saving mobilisation, according to Mustapha, (2025). Unless there is a coordinated effort to increase the savings rate overall and the deposit saving rate specifically, the banking sector will not be able to fulfil the demand for bank credit.

Human Development

Human development is the process by which a region's economic well-being and quality of life are enhanced via the deliberate and persistent efforts of its citizens and government. Literacy, life expectancy, and poverty rates are just a few of the metrics that saw gains throughout this time. Structural change, higher production, and improved welfare are all common characteristics. According to Mustapha (2025), economic development is “a multidimensional process involving the reorganization and reorientation of entire economic and social systems, leading to improvements in income levels, reduction in poverty, and advancement in education, health, and environmental sustainability.” This definition highlights that economic development transcends mere economic growth by focusing on broader human welfare. It can be refers to human capital development process.

The World Bank (2023) defines economic development as “the qualitative measure of progress in an economy that encompasses economic growth along with improvements in living standards, equitable income distribution, and poverty reduction.” This means that development includes not just the accumulation of wealth but also its fair distribution and effective use to improve people’s lives. Similarly, UNDP (2024) emphasizes that economic development involves expanding the choices people have, increasing their opportunities for employment, education, and health, and ensuring their participation in decision-making processes that affect their lives.

Furthermore, Nigeria has been shown to significantly increase short-term consumption per capita, though its long-term effects on GDP may be limited. Conversely, microfinance investment, i.e., reinvestment of funds into local capital projects, demonstrates significant long-term gains on economic output. Microfinance investments are also measured by their effect on individuals' living standards. For instance, investments in health, housing, and education enhance the social well-being of recipients, even if their impact on long-term per-capita income may vary by study. Through platforms like the Central Bank of Nigeria (CBN) Microfinance Policy Framework and MSME-focused programs (e.g., GEEP), microfinance investment is institutionalized as part of national strategies to develop inclusive finance and support small enterprises.

Theoretical Review

Financial intermediation theory

Microfinance banks, like most banks, are seen as deposit collectors by financial intermediation theorists like Diamond (1984). This means that they help household weather unpredictable shocks to their liquidity by covering them. Leland and Pyle (1977) provide the basis for an alternative method. Coalitions that share information is how they see financial intermediation. These coalitions of intermediaries may reach economies of scale, as shown by Diamond (1984). The idea that financial intermediaries serve as delegated monitors for the benefit of savers in the end is shared by Diamond (1984). Specialising could be appealing since monitoring will require growing returns to scale. Households and individuals will entrust this monitoring task to the financial intermediary, who is an expert in this field. However, according to Mohammed (1998), a kind of for-profit business that prioritises its customers' well-being is within the realm of possibility according to psychological theory. Although private companies' primary goal is profit maximisation and related self-interest goals, psychology theory shows that consumers would be loyal to a company that cares about them as people, not just as a means to an end (more profits). To rephrase, Mohammed (1998) suggested that capitalist businesses may be structured to maximise private profits while yet being responsive to consumers' just needs.

The Post-Keynesian Finance Circuit (PKFC) Model

This study is anchored on The Post-Keynesian Finance Circuit Model, This model provides a contemporary framework for understanding how microfinance banks stimulate economic activity by financing the production process before output is realized. The PKFC model, originally proposed by Keynes in 1936 and enhanced in 2017, explains that firms require initial financing (working capital) before production can begin. This credit "circulates" through the economy as wages and input costs, with final sales allowing firms to repay loans and complete the circuit. Application to microfinance: Recent research applying the PKFC model to 25 African countries (2005-2021) demonstrates that microfinance banks play a vital role in this circuit. The study confirms causal relationships where microfinance activities lead to increased investment and subsequently to economic growth. This challenges traditional PKFC models that neglected microfinance's contribution.

Modified Keynesian Liquidity Preference Theory

This extension of Keynes's (1936) liquidity preference theory incorporates microfinance banks as essential financial institutions that influence money demand and economic growth.

Theoretical foundation: Keynes's original liquidity preference theory posits that individuals demand money for three motives: transactions, precautionary, and speculative. Later, Keynes (1937) introduced a fourth "finance motive" related to the pre-emptive provision of funds for investment decisions. According to Obadire (2022), conventional banks have been the only focus of Keynesian talks, whereas microfinance banks (MFBs) have been overlooked despite their critical role in developing nations' financial systems. The updated model shows that microfinance bank funds, when included into the financial system, reduce interest rates, increase money demand, and boost economic development. Validation by empirical evidence: This study demonstrates the importance of microfinance banks in boosting demand and growth by using a sample of 32 African nations from 1990 to 2021 and using Granger causality tests and different estimation methodologies.

Empirical Review

Okafor *et al.* (2016) analysed microcredit and its impact on poverty alleviation in Nigeria from 1999 to 2014 in their study. The Error Correction Model (ECM) analytical method was used to estimate their data. The results indicated that microcredit has a negative and statistically insignificant effect on poverty alleviation in Nigeria. Similarly, Usifoh *et al.* (2017) investigated the influence of microfinance banks on poverty reduction and economic advancement in Nigeria from 1992 to 2016. The research used time series data from the Central Bank of Nigeria Statistical Bulletin and applied the Augmented Dickey-Fuller Unit Root test, Johansen Co-integration test, and Error Correction Model (ECM) for analysis. The results indicated that microfinance assets significantly influence economic growth in Nigeria. Furthermore, Murad *et al.* (2017) investigated the influence of microfinance institutions on the economic growth of Nigeria. The research used multiple regression analysis due to the cross-sectional and time series character of the data from 1992 to 2012. The study's findings indicate that microfinance loans significantly enhance short-term economic performance in Nigeria; however, they do not substantially affect long-term economic development. Conversely, microfinance investments do have a significant impact on economic performance in the long term.

Ugochukwu *et al.*, (2017) investigated the effect of microcredit on poverty reduction in Nigeria from 1999 to 2008, using ordinary least squares (OLS) regression analysis, which revealed a negative correlation between microfinance lending and poverty alleviation in Nigeria. A research conducted by Todaro and Smith (2020) evaluated the influence of the informal sector on poverty alleviation in the Chikun Local Government Area of Kaduna State, Nigeria. The research used descriptive statistics and binary logistic regression to evaluate the hypotheses. The study's results indicates that the informal sector plays a crucial role in alleviating poverty by generating employment and enhancing the wages of its participants. Likewise, Abdulkareem (2023) conduct a study in lagos State on the impact of financial inclusion and poverty alleviation in Nigeria. Ordinary Least Squares (OLS) was used to analyse the data. The research revealed that microfinance significantly contributes to poverty reduction by offering financial services to the economically engaged poor, generating self-employment possibilities, and providing modest loans to small enterprises.

Irejah *et al.*, (2024) investigated the influence of microfinance institutions on poverty alleviation in Kano State, specifically in Garko Local Government Area. The relationship between microfinance and poverty has been a significant subject in academic study. Recently, microfinance institutions have garnered considerable attention as an efficacious instrument for poverty reduction. The research used primary data obtained from a questionnaire

presented to a sample size of 290 participants. The research used a regression model to analyse the influence of microfinance banks on poverty alleviation in Kano State. The results indicate that all factors (gender, educational attainment, income level, interest rate, and loan size) significantly influence poverty alleviation in the Garko Local Government of Kano State, however age exhibits a negative correlation with poverty reduction and is statistically insignificant. Ehiabhi (2019) examined the impact of microfinance institutions on poverty alleviation in Nigeria. The research utilised a survey methodology by distributing questionnaires to two hundred (200) micro and small-scale enterprises in the Ikpoba Okha Local Government Area of Edo State. The analysis employed Pearson correlation, multivariate regression techniques, a heteroskedasticity diagnostic test, and the Ramsey reset test. The findings indicated a positive and significant relationship between microfinance institutions and poverty alleviation. Diaka, *et al.* (2019) investigated the impact of microfinance banks on the performance of certain women-owned firms in Makurdi, Benue State, Nigeria. Basic percentages, mean, and standard deviation were used for data display and analysis, while ordinary least squares (OLS) regression analysis was utilised to test the hypothesis. The study's findings indicated that microfinance loans, savings, and training services significantly impact the performance of women-owned firms in Benue State.

Materials and Methods

Research Design

This study used an ex post facto research approach to investigate the impact of microfinance banks on economic growth in Nigeria. Obadire (2022) asserts that research design constitutes the essential framework used to direct the collection and analysis of data for a specific study. This study strategy is suitable for studies using existing data on the variables of interest.

Sources and types of data

This research sourced its data from the Statistical Bulletins of the Central Bank of Nigeria throughout many years. It also sourced data from National Bureau of Statistics for the period 2003-2024. The data used are human capital development index, microfinance investment, deposits, loans and that of human development index. More to that, the data are secondary in nature which are suitable for this kind of research.

Model Specification

This research developed an econometric model to analyse the impact of microfinance banks on economic growth in Nigeria. Employing a linear model derived from the research of Diaka, *et al.* (2019).
$$HDI_t = f(MFBTA_t, MFBTL_t, MFBLO_t) \dots \dots \dots (1)$$

For estimation purpose, linearize equation (1) above as follow:

$$HDI_t = \beta_0 + \beta_1 MFBTA_t + \beta_2 MFBTL_t + \beta_3 MFBLO_t + \varepsilon_t \dots \dots \dots (2)$$

Where:

HDI_t = Human capital development Index (%)

MFBTA = Microfinance Bank Total Assets

MFBTL = Microfinance bank Total Liability

MFBLO = Microfinance bank Loans

ε_t = Random Error Term

Based on the theoretical framework, the a priori expectations are $\beta_1, \beta_2, \beta_3 > 0$
 $\beta_0 - \beta_3$ are the parameters to be estimated.

Analytical Method

Descriptive statistics, including Mean, Median, Minimum, Maximum, Standard Deviation, kurtosis, and skewness, were run on the time series data before inferential statistics diagnostic tests. Some inferential statistical methods used for data analysis include the Ramsey Reset test, the Error Correction Mechanism, the Autoregressive Distributed Lag (ARDL), and the Philip Peron (PP) test. They are emphasised in further detail below:

Philip Peron (PP), test was used statistically to determine whether the time series data are stationary or not. The data are stationary at level and at first difference, the ARDL method was considered based on the unit root test result. Instead of the Engle-Granger test, this study used the ARDL method, as it is a multivariate VAR-based approach that is more powerful and allows change to be predicted for all variables. The ARDL model involves autoregressive distribution lags. Autoregressive Distributed Lag Model (ARDL) provides a good fit for non-stationary and mixed-order-of-integration time series data, according to Ayodeji (2018). Within a general-to-specific modelling framework, the model has sufficient delays to validate the data generation process. The ARDL incorporates an Error Correction Mechanism (ECM) into both the long and short term dynamics of inflation, making it an unbiased estimator that is used in this research to analyse the impact of monetary policy on inflation in Nigeria. According to Gatawa *et al.* (2017), the study's independent variable regression coefficients may be understood using these methods: The Augmented Dickey-Fuller (ADF) test was used to determine whether the time series data are stationary at what level. Philip Peron (PP): This test was also used statistically to determine whether the time series data are stationary or not. The data are stationary at level and at first difference, the ARDL method was considered based on the unit root test result. Autoregressive Distributed Lag (ARDL) model. Ayodeji (2018) opined that, Autoregressive Distributed Lag Model (ARDL) is suitable for analyzing both non-stationary and mixed order of integration time series data. The model includes enough lags to justify the data generating process in a general-to-specific modeling framework. It is an unbiased estimator used in this study. Error Correctional Mechanism (ECM): Error Correctional Mechanism was used to determine both the long and short run dynamics.

Results and Discussion

Stationarity Test

Table 2: Summary of Unit Root Stationarity Tests Results

Variable	PP	Critical value	P. value	Order of integration	Status
HDI	-4.478787	-3.029970	0.0026	I(1)	Stationary
MFBTA	-4.115821	-3.029970	0.0055	I(1)	Stationary
MFBTL	-2.413139	-1.961409	0.0191	I(0)	Stationary
MFBLO	-4.585129	-3.020686	0.0019	I(1)	Stationary

Source: Extracted from E-views 10

The result in table 2 shows the values of PP statistics and probabilities for HDI, MFBTA, MFBTL, and MFBLO has value of -4.478787 (0.0026), -4.115821 (0.0055), -2.413139

(0.0191), -4.585129 (0.0019) respectively, it revealed that all the variables integrate at first difference except MFBTL which integrate at level. The implication is that the variables are stationary because their probability is less than 0.05 and that satisfied the assumption of ARDL

Table 3: ARDL SHORT RUN AND LONG RUN

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HDI(-1)	0.980738	0.089090	11.00833	0.0000
MFBTA	-5.17E-05	4.17E-05	-1.238828	0.2333
MFBTL	6.11E-05	5.71E-05	1.070054	0.3005
MFBLO	-6.60E-07	1.77E-05	-0.037258	0.9707
C	0.016275	0.042633	0.381747	0.7077

R-squared	0.972229	Mean dependent var	0.509048
Adjusted R-squared	0.965287	S.D. dependent var	0.028444
S.E. of regression	0.005300	Hannan-Quinn criter.	-7.384173
Sum squared resid	0.000449	Durbin-Watson stat	2.367846
Log likelihood	83.10053		
F-statistic	140.0363		
Prob(F-statistic)	0.000000		

ARDL LONG RUN

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MFBTA	-0.022684	0.013850	-0.193749	0.0488
MFBTL	0.103170	0.016734	0.189442	0.8521
MFBLO	0.433205	0.001052	0.332570	0.0744
C	0.844907	1.698465	0.497453	0.6256

Source: Extracted from E-views 10

In both the short and long term, the variable coefficients are shown in Table 3. The results demonstrate that HDI is significantly affected by the MFBTA -0.022684 coefficient and p-value of 0.0488. The effect of MFBTL on HDI is not statistically significant with coefficient of 0.10317, and p-value of 0.8521. Additionally, MFBLO insignificantly affects HDI with p-value of 0.0744 with a coefficient of 0.433205. Microfinance bank loans had a substantial influence on the Human Development Index over the time of the research, as shown in Table 3, where the F-statistic is 1.400363 and the P-value is 0.000000. The presence of autocorrelation in the model is shown by the Durbin Watson value of 2.367846. The model is excellent because the R^2 is so high; at 97%, it means that changes in the independent variables may explain changes in the HDI to a large degree; it suggests that additional factors not included here can explain the remaining 3%.

Table 4: Bound Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.633402	10%	2.37	3.2

K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Source: Extracted from E-views 10

A long-term association between the study's variables is implied by the fact that the F-statistic of 4.633402 is higher than the upper limit I (1) of 3.2, as shown in Table 4. That there is an effect on the model in the long term is shown by this. Cointegration confirms the presence of a long-run link between the variables, as shown by the bound test.

Table 5: Error Correctional Mechanism

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2994.459	310.9081	9.631331	0.0000
CointEq(-1)	0.014721	0.002757	5.340118	0.0001

Source: Researcher's output extracted from E-views 10

Table: 5 shows the error correction model coefficient has a negative coefficient of 0.104721 which means it will take the speed of 1.4% for the model to change from short run to long run. But it has a significant impact with probability value of 0.0001.

Descriptive Statistics

The model of this study used three variables (MFBTA, MFBTL, MFBLO) as predictors to test three hypotheses raised in the study against a dependent variable (HDI). Table 1 below shows the results of the descriptive statistics of the variables employed for the purpose of this study.

Table 1 Descriptive Statistics

	HDI	MFBTA	MFBTL	MFBLO
Mean	0.506364	666.6514	532.4000	336.5327
Median	0.510000	229.7450	170.7550	103.0850
Maximum	0.550000	3832.020	3125.250	1522.410
Minimum	0.450000	28.69000	21.68000	9.950000
Std. Dev.	0.030480	1079.745	877.6112	473.5071
Skewness	-0.203312	2.331410	2.296234	1.613208
Kurtosis	1.715024	7.162167	6.990595	4.255237
Jarque-Bera	1.665131	35.81007	33.93098	10.98659
Probability	0.434932	0.000000	0.000000	0.004114
Sum	11.14000	14666.33	11712.80	7403.720
Sum Sq. Dev.	0.019509	24482849	16174231	4708388.
Observations	22	22	22	22

Source: Extracted from E-views 10

The results of the descriptive statistics shows the Mean, Median, Maximum, Minimum. The average value HDI is 0.506364, MFBTA is 666.6514, MFBTL is 532.4000, and MFBLO is 336.5327. The median shows the value of HDI, MFBTA, MFBTL, and MFBLO to be 0.510000, 229.7450, 170.7550, and 103.0850 respectively. The Maximum number of HDI, MFBTA, MFBTL, and MFBLO for the period of the study is 0.550000; 3832.020; 3125.250; 1522.410 respectively. The Minimum number of HDI, MFBTA, MFBTL, and MFBLO for

the period of 22 years is 0.450000; 28.69000; 21.68000; 9.950000 respectively. The standard deviation measures show the variable spread in the series. The result of the kurtosis shows that all the variables exhibited a flat distribution (platykurtic) since none exceed the normal kurtosis measure of peakedness. Skewness measures the asymmetry from the mean and all variables show that they are not far away from the benchmark of 1. Furthermore, going by the skewness and kurtosis values all variables have displayed non-normality which can also be seen and confirmed by the Jarque-Bera test for each of the variables.

Table 6: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.440378	Prob. F(2,14)	0.2699
Obs. R-squared	3.583717	Prob. Chi-Square(2)	0.1667

Source: Researcher's output extracted from E-views 10

Table 6 shows the LM value of 1.440378, which means that the data are serially correlated as seen by the p-value of 0.1667

Test of Hypothesis

Test of hypothesis is achieved through analyzing and interpreting the coefficient of the variables. Table 4.7 below summarizes the regression result of the model.

Table 7 Test of Hypotheses

Model	Coefficient	Std. Error	t-Statistic	Prob.	Remark
H01					
MFBTA	-0.022684	0.013850	-0.193749	0.0488	Significant
H02					Not
MFBTL	0.103170	0.016734	0.189442	0.8521	Significant
H03					Not
MFBLO	0.433205	0.001052	0.332570	0.0744	Significant

Source: Researcher's output extracted from E-views 10

The coefficient for MFBTA (H01) is -0.022684 and the p-value is 0.0488, as shown in Table 7. Thus, it rejects the null hypothesis but accepts the alternate. This research accepts the null hypothesis since the results demonstrate that MFBTL (H02) does not significantly affect the Human Development Index (HDI), with a coefficient of 0.103170 and a p-value of 0.8521. However, MFBLO H03 insignificantly affects the Human Development Index (HDI), with a coefficient of 0.433205 and a p-value of 0.0744. It is possible to reject the alternate hypothesis.

Discussion of Findings

This research confirms previous findings that the Human Development Index (HDI) in Nigeria is significantly impacted by microfinance bank total assets (MFBTA). Okafor (2016) research provides a good point of comparison. When looking at the correlation between the total assets of microfinance banks and the human development index, this research is among the most straightforward. Credit to the private sector and total assets of MFBs were the main

factors considered. According to the research, human capital development in Nigeria is greatly aided by the activities of microfinance banks, such as the expansion of their assets, which in turn generate jobs and reduce poverty.

This research is consistent with that of Usifoh *et al.* (2017), which looked at how microfinance institutions in Nigeria affected poverty reduction and GDP growth between 1992 and 2016. This research made use of time series data collected by the Central Bank of Nigeria's Statistical Bulletin and analysed it using the ECM, Johansson Co integration test, and Augmented Dicket-Fuller unit root test. Microfinance is an asset that has a substantial impact on Nigeria's economic growth, according to the research. Additionally, the study is comparable to that of Ugochukwu *et al.* (2017), which used ordinary least square regression (OLS) analysis to look at the effect of microcredit on poverty reduction in Nigeria from 1999 to 2008. The results showed that microfinance lending had a negative correlation with poverty alleviation in Nigeria.

The study shows that Microfinance bank Total Liability (MFBTL) has no significant effect on Human Development Index in Nigeria. The study can be compare with that of Ogunleye (2017). Who analyzed the financial structure and sustainability of microfinance banks in Nigeria the study highlighted that a reliance on volatile or expensive borrowed funds (liabilities) jeopardizes sustainability, while a strong deposit base contributes to stability. A sustainable MFB is a prerequisite for consistent HDI impact. The Risk of "Liability-Driven Distortion". Critical literature (e.g., Obadire, 2022 argued that an excessive focus on liability growth and financial sustainability can push MFBs towards commercialization, leading to mission drift, serving less-poor clients with larger loans at higher interest rates, thereby diminishing impact on the poorest and on broader HDI.

Microfinance bank loans and advances (MFBLO) insignificantly affect Nigeria's Human Development Index, according to the research. Research by Ejefobihi *at al.* (2019) is comparable. Even though Microfinance bank loans has insignificant effect on human development but it is positively related. This proves that loans from microfinance banks greatly benefit human development in Nigeria, especially in terms of raising living conditions and increasing school enrolment. The research suggests that the producing industries should get more loans. Nevertheless, the majority of research on the impact of microfinance banks on human development found a positive and statistically significant correlation between total microfinance lending and HDI (or measures that imply it, such as poverty reduction). This is why it is so well-liked by policymakers.

Conclusion and Recommendations

Conclusion

The purpose of this research was to examine the effect of Microfinance bank on human development in Nigeria. Human Development Index (HDI) was proxy by microfinance total assets, microfinance total liability, and macro finance bank loans. The main goal was to find out whether the more the microfinance industry has grown and reached, the more the people of Nigeria have benefited in terms of health, education, and living conditions (Tche, 2025). The analysis revealed a nuanced relationship. First, it was found that microfinance bank total assets had a significant but moderate positive correlation with national Human Development Index scores in Nigeria. While microfinance bank total liabilities has positive but insignificant effect on human development index in Nigeria. Likewise microfinance bank

loans and advances. This indicates that access to credit is the most direct channel through which microfinance influences human development, enabling investments in small businesses, children's education, and household well-being. This suggests that a stronger, more stable microfinance sector contributes to overall economic inclusion, potentially freeing household resources for education and healthcare. Second, and most critically, the volume of customer deposit showed the strongest positive link to improvements in a specific human development dimensions. However, the findings also highlight critical limitations. The positive effects were not uniform across all variables, suggesting that factors like infrastructure, financial literacy, and the regulatory environment mediate these outcomes.

Recommendations

Base on the findings and results, the study recommends that:

1. Regulatory policies should incentivize MFBs to expand their Assets portfolios in underserved rural areas, not just accumulate assets in a concentrated area. Also the regulatory authority should mandate that a small percentage (e.g., 0.5–1%) of annual growth in microfinance bank assets be redirected into a pooled technical assistance fund, jointly managed by the central bank and microfinance industry associations. Under implementation mechanism, the microfinance bank allocates 0.5% of any year on year increase in total assets to a regional fund whenever that increase reaches 10% or more. The fund disbursed are then used to support community based training centers run by local cooperatives.
2. Reevaluate microfinance bank strategy and assess whether microfinance banks are effectively targeting the right sector or population. Also the Central Bank of Nigeria (CBN) and development partners should foster linkages between MFBs and sectors like primary healthcare and vocational education. Microfinance bank should also be required to recycle a set minimum share typically 40-60% of their locally mobilized deposits into working capital advances for formal sector enterprises. These advance would carry zero collateral requirement and ultra-low fees, and be restricted to businesses operating within a 15 kilometer radius.
3. Financial literacy programs must be integrated with credit access to ensure loans are used for productive, human-capital-enhancing activities. It is also recommended that microfinance bank loans and advances be differentiated not solely by risk or interest rate, but statutory minimum tenors aligned with the estimated breakeven horizon of the financed activity. For instance, shorter tenors of 3-6 months would apply to trade, while longer tenors of 12-24 months would suit light manufacturing or agro-processing.

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