
**Micro, Small and Medium Enterprise Financing and Poverty Gap Index:
Nigerian Experience**

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doi.org/10.51505/IJEBMR.2025.9407

URL: <https://doi.org/10.51505/IJEBMR.2025.9407>

Received: Mar 15, 2025

Accepted: Mar 24, 2025

Online Published: Apr 13, 2025

Abstract

Poverty remains a pressing global issue, particularly prevalent in developing countries where it is often exacerbated by inefficient resource allocation and management. Prior empirical literature often treats MSME financing as a homogeneous variable. This study fills a gap by disaggregating credit into three distinct sources deposit money banks, development banks, and microfinance institutions thereby offering a nuanced understanding of their individual and collective effects on poverty reduction. This study investigated the impact of financing for Micro, Small, and Medium Enterprises (MSMEs) on the Poverty Gap Index in Nigeria. Utilizing annual time series data spanning 32 years (1992–2023), the study adopted a purposive sampling approach for period selection. Data were sourced from the Central Bank of Nigeria Statistical Bulletin, the World Development Indicators, and the World Income Inequality Database. The credibility and dependability of the data were assured by the statutory audit oversight of the Auditor General of the Federation and the methodological rigor of international data sources. The poverty gap index served as the dependent variable, while MSME financing was represented by three core credit sources: loans from deposit money banks, development banks, and microfinance banks. Empirical findings revealed that MSME financing significantly influenced the poverty gap index in Nigeria. Based on these findings, the study advocates for the expansion of sustainable credit schemes tailored to MSMEs as a viable strategy for narrowing the poverty gap in Nigeria.

Keywords: Credits from Development Banks, Credit from Deposit money banks, Credits from Microfinance Banks, MSMEs, Poverty gap.

JEL Classification: E39, P36

1. Introduction

The problem of poverty reduction is a global concern and predominantly a case of poor resource management which is common in all developing economies. According to the World Bank (2023), the trajectory roadmap geared towards ending poverty as set out in the Sustainable

Development Goal (SDG) was targeted to eradicate poverty by the year 2030. Micro, small, and medium enterprises remain a vital force in driving economic growth and development globally through tremendous contributions to employment generation, provision of vital goods and services through trading and/or production, promotion of creativity and innovations, contribution to GDP growth, among many others, which tend to reduce poverty and inequality. The definition of MSMEs has followed different criteria, adopting a mixture of annual turnover and employment levels of MSMEs in various nations. Evidently, the poverty gap is another dimension of poverty suggesting the extent of deprivation, lack of essential healthcare, education, and standard of living. The poverty gap is a measure of how far people living in poverty are from the poverty line.

The poverty gap index, also known as the P1 index, is a measure of the average distance between the poor population and the poverty line. Both of these measures can be used to assess the severity of poverty and to compare different countries or regions. Anyone living on less than \$2.15 per day is considered to be in extreme poverty, as the international poverty line was recently revised to \$2.15 per person per day at 2017 purchasing power parity (World Bank, 2023). The percentage of the population that lives below the poverty line (the poverty gaps) is measured by the poverty gap index (P1). The Nigerian Bureau of Statistics (2020) report of 2019 on poverty and inequality in Nigeria stated that the poverty gap in Nigeria was 12.85, with 4.47 and 17.42 in urban and rural areas, respectively.

In Nigeria, the Small and Medium Industries Enterprises Investment Scheme (SMIEIS) defines MSME as any enterprise with a maximum asset base of N200 million, excluding land and working capital, and with a number of staff employed not less than 10 or more than 300. MSMEs in Nigeria, as defined by the National Policy on Micro, Small, and Medium Enterprises, encompass businesses with fewer than 200 employees and capital investment not exceeding 10 million Naira (National Policy on MSMEs, 2020). Undoubtedly, micro, small, and medium-sized enterprises (MSMEs) play a central role in many countries' economic development; they are a major source of entrepreneurial skills, innovation, and employment and account for most businesses worldwide (Pedraza, 2021). Advanced economies of the world like the United States of America (USA), the United Kingdom (UK), Germany, Canada, and France, among others, all leveraged MSMEs for their economic growth and development (OECD, 2019, Agugum, 2019). Economic growth in Nigeria and, by extension, Africa and the rest of the world, depends on a vibrant private sector. The micro, small, and medium enterprise sector, a vital part of the private sector, remains the growth engine of any economy in terms of contributing to development, job creation, and export, and their contributions at this global economic trajectory need not be overemphasized as the number of people living below the poverty line keeps skyrocketing. The performance of micro, small, and medium enterprises is predicated on access to adequate funding, which impacts their competitiveness and ability to deliver on their set goals. Unfortunately, 52% of MSMEs in Sub-Saharan Africa are credit constrained, with a \$331 billion financing gap, and out of this gap, \$158 billion applies to Nigeria alone. (PWC, 2020). Private sector lending to micro, small, and medium enterprises (MSMEs) in Nigeria remains limited;

domestic credit to the private sector was about 14.1% of gross domestic product (GDP) in 2022, well below the about 35.8% average in Sub-Saharan Africa (PWC, 2024).

The most important role of deposit money banks is to create credit, which enables businesses and individuals to participate in profitable entrepreneurial projects that create goods and services, jobs, and economic growth. Deposit Money Banks' credit to MSMEs is a gauge of the percentage of loans made by financial institutions to start and expand companies that are only directed toward MSMEs' operations within a country. Akin et al. (2020), who carried out a study on reinvestigating entrepreneurial finance and poverty eradication in Nigeria, found that both the aggregate commercial banks SMEs financing and the manufacturing and food processing business financing have a significant positive relationship with GDP per capita in the long run. This implies that aggregate commercial bank loans to SMEs and commercial bank loans to the manufacturing and food processing SMEs businesses could eradicate poverty in the country.

Gap in Literature

The main objective of this study was to examine the implications and effects of micro, small, and medium enterprises financing in Nigeria. The significance of MSME financing in solving the problem of the poverty gap is imperative, as studies have highlighted the pivotal role of micro, small, and medium enterprises financing in any country, which is considered critical and a trajectory to the economic development roadmap and quite significant in tackling the problem of poverty reduction and improving standards of living and income per capita of the citizens. Incidentally, there is a dearth of literature in Nigeria researching the effect of effective MSME financing in reducing and bridging the poverty gap. While a good number of studies have considered MSMEs in Nigeria, however, there is a lack of sufficient empirical evidence of the magnitude of effect MSME financing had on the poverty gap in Nigeria (Adegbie et al., 2023; Umoh & Ekpo, 2023). This current study was aimed at extending the landscape of existing literature and contributing to knowledge in closing the gap of lack of empirical results on the significance of MSME financing on the poverty gap in Nigeria.

Besides, efforts of successive governments in Nigeria to solve the problem of poverty escalation have not been fully researched in the literature, as the problem of poverty still subsists and ravages the height and breadth of the country. The extent of such efforts of successive governments, initiating and implementing programs and policies to contract and close the gap of poverty, has remained quite unclear; hence this current study was considered imperative and justifiable to provide new empirical evidence of possible implications and effects of micro, small and medium enterprise financing in the poverty gap in Nigeria.

Consequently, in contributing to knowledge and closing the identified gaps, this study hypothesized thus:

Study hypothesis: *Micro, small, and medium enterprises do not significantly affect the poverty gap index in Nigeria.*

***Research Objective:** To investigate the effect of micro, small and medium scale financing on Poverty Gap Index in Nigeria.*

***Research Question:** How does micro, small and medium scale financing affect Poverty Gap Index in Nigeria?*

2. Literature Review and Theoretical Framework

Conceptual Review

Poverty Gap Index: The Poverty Gap Index measures the gap between the poverty threshold and the average income of people living below the threshold. It is the ratio by which the mean income of the poor falls below the poverty line. A moderately popular measure of poverty is the poverty gap index, which adds up the extent to which individuals on average fall below the poverty line and expresses it as a percentage of the poverty line. Some people find it helpful to think of this measure as the cost of eliminating poverty (relative to the poverty line) because it shows how much would have to be transferred to the poor to bring their incomes or expenditures up to the poverty line (as a proportion of the poverty line). According to the World Bank (2014), the poverty gap index gives the ratio of the cost of eliminating poverty using perfectly targeted transfers compared with using completely untargeted transfers; thus, the smaller the poverty gap index, the greater the potential for a poverty alleviation budget in identifying the characteristics of the poor so as to target benefits and programs. The sum of these poverty gaps gives the minimum cost of eliminating poverty if transfers were perfectly targeted. Recently the international poverty line has been reset at \$2.15 per person per day at 2017 purchasing power parity, and this means that anyone living on less than \$2.15 per day is in extreme poverty (World Bank, 2023). The poverty line, or poverty threshold, is the average cost of living for ‘basic needs,’ and that necessarily includes food (including water), shelter, and clothing (Nursini, 2020). Therefore, if a person earns \$1.90 per day, the poverty gap is \$0.25 (\$2.15 less \$1.90), while the poverty gap index is 0.13 (\$0.25/\$1.90). The index measures the percentage of the households in a country that suffer from multidimensional poverty. The higher the index, the more likely it is that more of the populace suffers from poverty and vice versa.

Credits from Deposit Money Banks: Credit creation is the most crucial function of the DMBs, as this facilitates the engagement by companies and individuals in productive entrepreneurship ventures that produce goods and services, generate employment, and grow the economy. Deposit Money Banks’ credit to MSMEs is a measure of the proportion of credits by the financial institutions for the establishment and growth of businesses that are channeled strictly to MSMEs activities in a nation. Zuzana et al. (2020), who examined the impact of access to finance among SMEs, confirmed that entities with access to formal financing grow faster than those with access to alternative sources of financing. Menyelim et al. (2021), in their study on financial inclusion and sustainable economic growth, opined that finance leads to sustainable prosperity by providing for efficient and equitable redistribution of capital within the economy, and for a country to achieve sustainable economic growth, there is an urgent need to establish different financial inclusion channels and inclusive growth.

Ofori-Abebrese et al. (2020) work on estimating the effect of financial inclusion on welfare in Sub-Saharan Africa concluded that from both theoretical and empirical perspectives, it has been established that broader access to formal financial services enhances overall welfare and supports prosperity. They further asserted that better financial inclusion could reduce poverty and income inequality and enhance the welfare of Africans. In all economies, developing and developed, access to bank credit is crucial in facilitating the establishment of businesses, job creation, and transforming small businesses into strong enterprises. When an SME has access to credit facilities, it improves the execution of its entrepreneurial endeavors (Maziri & Chivandi, 2020).

Credits from Development Banks: Dori (2016), who carried out a study on the impact of the Central Bank of Nigeria's development finance on economic growth and development, concluded that without sufficient and effective development finance, economic growth and development are impossible, and healthy development finance in a country ensures capital formation, higher productivity, a better standard of living for citizens, and a stable and growing economy. The development banks provide cheaper, easier, accessible, affordable, and acceptable financing alternatives as well as technical assistance to grow businesses, particularly the SMEs, in order to sustain their operations with their attendant positive impacts. Bello (2022), in his study on MSME financing and poverty reduction in North-Central Nigeria, stated that the micro, small, and medium enterprises (MSMEs) sector is very important to the economic fortune of a nation and is responsible for contributing immensely as the catalyst to economic rejuvenation due to its capacity to create jobs and increase the gross domestic products of a country. In the context of this study, the development banks in Nigeria under consideration are the Bank of Industry and the Development Bank of Nigeria.

Credits from Microfinance Banks: Microfinance banks were created by the Central Bank of Nigeria (CBN) in 2004 as a deliberate effort on the part of the government to swiftly and effectively contend with and minimize the tide of poverty that had been eating deep into the fabrics of Nigerian society (Obayagbona, 2018). The introduction of microfinance banking led to the facing off of the 'Community Banks,' which were once known as 'The Peoples' Bank.' According to CBN (2005) and the revised new regulatory guidelines of the Central Bank of Nigeria (2012), microfinance entails providing financial assistance to the poor who cannot have access to micro-financial services from the conventional financial institutions. According to Central Bank Nigeria (2020), the Microfinance Policy, Regulatory and Supervisory Framework was issued December 15, 2005, and revised in 2011 to, among others, increase the financial inclusion rate in the country, improve access to financial services for the economically active poor, pursue poverty eradication, and mainstream the informal microfinance sub-sector into the formal financial system.

2.1 Theoretical Review

Poverty Trap Theory

Numerous economists have debated the idea of the poverty trap throughout history. A well-known proponent of the poverty trap idea is the Swedish economist and Nobel laureate Gunnar Myrdal. Myrdal addressed the concept of a poverty trap in great detail in his seminal work

"Asian Drama: An Inquiry into the Poverty of Nations," which was released in 1968 (Myrdal, 1968). Myrdal's theory centered on the notion that, in some situations, especially in developing nations, there might be a self-reinforcing cycle that people or communities get stuck in. Poverty is brought on by a number of interrelated causes, including low income, illiteracy, poor access to healthcare, and a lack of prospects for economic growth. Therefore, being in a poverty trap involves more than just not having enough money. It is also a result of a combination of lack of factors that contribute to economic growth and development and improve people's quality of life, such as lack of access to basic infrastructure like power, good roads, healthcare and transportation, as well as lack of sanitation and other amenities that work together to keep a person, a family, and a community in poverty. The theory of the poverty trap comprises multiple fundamental presumptions that aid in elucidating the reasons for the perpetuation of poverty among individuals or communities. A low initial income is one of the theory's tenets. According to Banerjee and Duflo (2011), people or communities typically begin with low incomes, which makes it difficult to invest in human capital, such as healthcare and education, and to buy necessities. The premise of restricted resource access is another assumption of the theory. The inability to obtain basic services like healthcare, education, and transportation, as well as credit, insurance, and infrastructure, makes it more difficult to escape poverty (Mordoch, 1995).

2.2 Finance Gap Theory

According to the Finance Gap Theory, there is frequently a discrepancy between the financial resources needed for development initiatives and the resources that are accessible from both domestic and foreign sources, necessitating the creation of novel approaches to close this gap. The Finance Gap Theory has some advantages that together enhance its usefulness in influencing conversations about the obstacles to development and methods for getting over financial barriers in developing nations. One of these benefits is that the theory emphasizes the difficulties developing nations face in obtaining sufficient funding for economic development, which tends to draw attention to their resource limitations. The hypothesis also supports the idea that outside help is required. It emphasizes how crucial external support, including foreign aid and investment, is for bridging the financing gap and advancing vital development initiatives. Support for funding diversity is another point in the theory's favor. Hirschman (1958) advocates diversification in funding sources, noting that developing countries should investigate multiple routes, including local savings, international aid, and private investment, to meet development financing demands. The theory also stressed the necessity of private investment in the bid to close the financial gap. The Finance Gap Theory acknowledges obstacles but also the value of private investment in development. It implies that closing the financing gap may involve removing barriers to private investment.

2.3 Empirical Review

The study by Andi and Fatmawati (2023) concentrated on particular categories of government spending, such as spending on social assistance, infrastructure, health, and education that boost productivity. The purpose of the study was to examine how regional government spending on social protection, infrastructure, health, education, and economic growth affects the fight against

poverty. The Headcount Index, Poverty Gap Index, and Poverty Severity Index are three indicators of poverty that were employed in this study. Panel data regression from 2015 to 2020 was used to evaluate the data, both directly and indirectly through several regression models. According to the direct effect estimation results, government expenditure on social protection is useless and can only lower poverty through its three indicators when it comes to health. The finding by Andi and Fatmawati conformed to the research of Mire et al. (2023), which concluded that the quantity and quality of MSMEs and their education significantly reduced the depth of severity of poverty in Indonesia.

Nursini (2020) investigated how MSMEs helped reduce poverty in Indonesia between 1997 and 2018. The Head Count Index (P0), Poverty Gap Index (P1), and Poverty Severity Index (P2) are the three poverty measures utilized in this study. The MSMEs are categorized according to their scales, which are micro-small businesses (MSEs) and small-medium enterprises (SMEs). Control factors included investment, openness, government spending, and economic growth. The statistical year book of Indonesia, published by the Indonesian Central Bureau of Statistics (BPS), and the Ministry of Cooperatives and SMEs of the Republic of Indonesia provided the time series data utilized in this study, which covered the years 1997 to 2018. The study found that SMEs play a bigger role in alleviating poverty than MSEs as they reduce not only the percentage of poor people but also the Poverty Gap and Severity Index. The study of Nursiri (2020) is in consonance with the inquiry of Ulfah et al. (2020) which revealed that distribution of Zakat affects program participants' income and business size hereby lessening the intensity and depth of poverty. On the other hand, the study of Nandi et al. (2014) on the livelihood of fish farmers in Delta State, Nigeria had a different result. It discovered that the farmers' yearly average income was less than ordinary Nigerian annual minimum income.

Using the Foster, Greer, and Thorbecke (FGT) class of poverty measures, Tareq and Rahman (2020) evaluated the contribution of rural microenterprises to the decrease of poverty in Bangladesh by providing quantitative measurements of poverty in terms of several indices. In this work, the case-control study design has been used. The case and control groups are rural households with microenterprises as their primary source of income, respectively. A two-stage sampling design was used to select a sample of 360 households (180 cases and 180 controls). The primary sampling units, or villages, were chosen using standard systematic probability proportional to size sampling, while the secondary sampling units, or households within the village, were chosen using systematic random sampling. The results show that in comparison to their counterparts, households with microenterprises nevertheless experience significantly lower levels of poverty. Tareq and Rahman (2020) study tarried with the investigation of Ayu et al. which concluded that microfinance might lessen poverty's intensity and depth.

The role of Zakat in closing the Poverty Gap in Indonesia was examined by Ulfah et al. (2020), with a focus on the Entrepreneurship Assistance program in Desa Berdaya Rumah Zakat. 2323 samples were selected from the Entrepreneurship Assistance monthly report. With a quantitative approach, a descriptive method is employed to provide a thorough explanation and analysis of the impact of zakat in reducing poverty and its indicators. The poverty line, had kifayah, and the

nisab of zakat are the three poverty indicators that serve as the foundation for analysis tools including the headcount index, poverty gap, income gap, sen poverty index, and FGT index. The distribution of Zakat affects program participants' income and business size, which has the effect of lessening the intensity and depth of poverty in Indonesia. This result aligned with that carried out by Musa and Rossazana (2019) which discovered that youth empowerment by SMEs has positive impact on multidimensional poverty index. In order to find out if SMEs have a significant impact on reducing poverty, Musa and Rossazana (2019) used survey and questionnaire approaches to gather data from 432 SMEs owners in 8 local government areas of Niger State, Nigeria. For the descriptive analysis, the Statistical Package for Social Sciences was utilized, and for the hypothesis testing, Partial Least Square-Structural Equation Modeling (PLS-SEM) was employed. The findings demonstrated that participation in SMEs' activities of employment, innovation, human capital development, and income has a positive impact on people's socioeconomic status and the relationship between SMEs and the Multidimensional Poverty Index has been positively influenced by the moderating effect of youth empowerment. Musa and Rossazana (2019) study outcome is in tandem with that of Ayu et al. (2019) which confirmed that microfinance might lessen poverty intensity and depth.

Ayu, et al. (2019) used panel data from 32 Indonesian provinces from 2014 to 2018 to conduct a study on promoting Islamic funding to achieve SDGs through poverty reduction. The study's findings empirically demonstrated how Islamic financing helps initiatives aimed at reducing poverty by funding productive working capital. As a result, Islamic banks' funding significantly contributes to reaching Goal 1 of the SDGs, which is to end poverty. The study's findings also demonstrated how microfinance might lessen poverty's intensity and depth. The research of Ayu, et al. (2019) is in accord with the review of Elisabeth and Teresa (2019) which confirmed that microcredit lowered poverty as indicated by poverty gap headcount index and squared poverty gap. This contradicted the study of Siti (2017) that found that community empowerment in West Javan province in Indonesia has not lessened the poverty depth.

3. Methodology

This study examined the effect of micro, small, and medium enterprise financing on poverty gap index in Nigeria. The study employed time series data covering a period of 32 years from 1992 to 2023. A purposive sampling technique was adopted for the selection of the period while the data were extracted from the Central Bank of Nigeria Statistics Bulletin, the World Development Indicators database and the World Income Inequality database. Validity and reliability of data were premised on the statutory audit of the financial statements of the government agencies by the office of the Auditor General of the Federation and the quality of data from the international sources. While the poverty gap index is the baseline measure of the dependent variable of the study, micro, small, and medium enterprises were proxied using three major sources of credits: credits from deposit money banks, credits from development banks, and credits from microfinance banks in Nigeria.

3.1 Model Specification

Functional Relationship

$$Y_t = \beta_0 + X_t + \mu_t$$

$$PGI_t = \lambda_0 + \lambda_1 DMBC_t + \lambda_2 DVBC_t + \lambda_3 MFBC_t + \mu_t$$

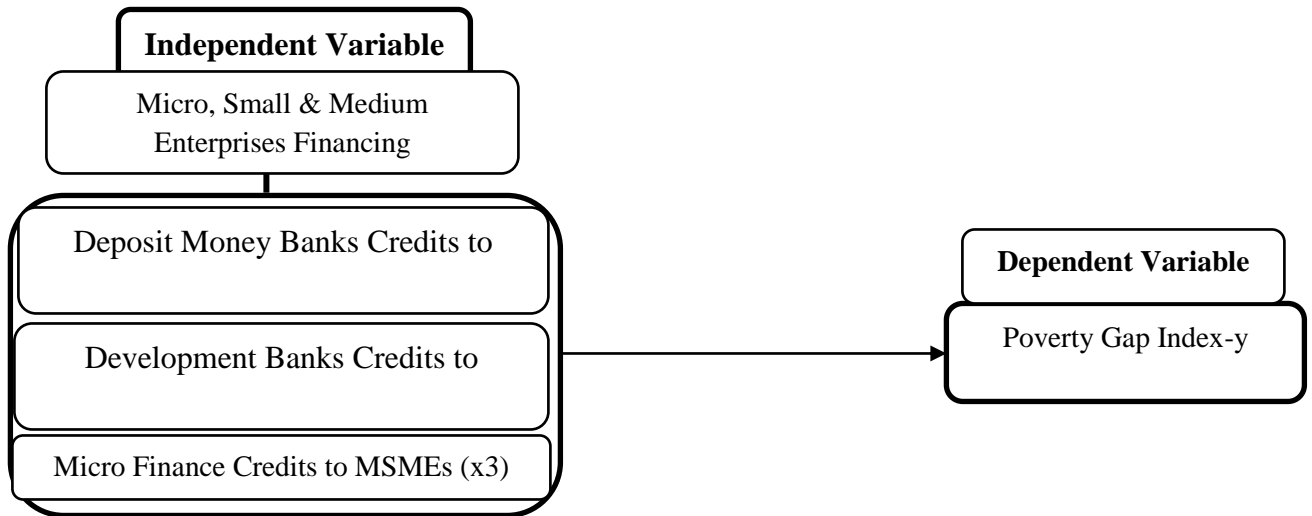
Where: PGI = Poverty Gap Index, MSME = Micro, small and medium enterprises, DMBC = Deposit money banks to MSMEs, DVBC = Development banks credit to MSMEs, MSME, and MFBC = Micro finance banks credit to MSMEs.
 t = Time series, λ = Coefficient, μ = Error terms/stochastic value.

3.2 Measurement of Variable

Independent Variable: This study employed Poverty gap index as sole baseline variable and measures as reported by NBS for the periods under consideration

Independent Variable: The independent variable in this study Micro, small and medium enterprise financing and the measures are as follows: (i) Deposit money banks credit to MSMEs (DMBC) as the Total Deposit money banks credits to MSMEs within the period; (ii) Development Banks Credits to MSMEs (DVBC) as the total Total Development Banks’ credit to MSMEs, and finally Micro Finance Banks credit to MSMEs (MFBC) as the Total Micro Finance credits to MSMEs.

Conceptual Model



Source: Researchers (2025)

4. Data Analysis, Results and Recommendations

4.1 VAR Lag Order Selection Criteria - Poverty Gap Index and MSMEs Financing

Table1 summarizes the VAR Lag Order Selection Criteria for analyzing the relationship between the Poverty Gap Index and MSMEs Financing.

Table1: VAR Lag Order Selection Criteria - Poverty Gap Index and MSMEs Financing

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-107.6678	NA	0.045022*	8.244521*	8.991826*	8.483590*
2	-103.5256	6.075257	0.103973	9.035039	10.52965	9.513178

Source: Researcher’s Computation using Eviews (2024) Note: LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion. * Indicates lag order selected by the criterion

Based on the result in Table 1, lag 1 is chosen as the optimal lag by the FPE, AIC, SC, and HQ criteria, all of which display their lowest values at lag 1 (FPE = 0.045022, AIC = 8.244521, SC = 8.991826, HQ = 8.483590). This suggests that a one-lag model is the best fit for capturing the dynamics of the variables, as it minimizes prediction error and balances model fit with complexity. Despite lag 2 showing a slight improvement in LogL and LR, the criteria point to lag 1 as optimal for more efficient estimation. Thus, lag one is chosen for the purpose of the study.

4.2 Cointegration Test - Poverty Gap Index and MSMEs Financing

The Cointegration Test results presented in Table 2 examine the long-term relationship between the Poverty Gap Index and MSMEs Financing. This analysis is crucial for understanding whether these two variables move together over time, indicating a stable long-term equilibrium.

Table 2: Cointegration Test - Poverty Gap Index and MSMEs Financing

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Prob.**	Eigenvalue	Max. Eigenvalue	Prob.**
None *	0.638082	53.51074	0.0134	0.638082	29.47378	0.0283
At most 1	0.494996	24.03696	0.1989	0.494996	19.81248	0.0756
At most 2	0.135549	4.224478	0.8846	0.135549	4.224166	0.8350
At most 3	1.07E-05	0.000311	0.9880	1.07E-05	0.000311	0.9880

Source: Researcher’s Computation using Eviews (2024) Note: Trace test indicates 1 cointegrating eqn(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level and **MacKinnon-Haug-Michelis (1999) p-values

Table 2 presents the results of the Cointegration Test examining the long-term relationship between the Poverty Gap Index and MSMEs Financing. The test indicates a significant rejection of the null hypothesis of no cointegration, evidenced by a Trace statistic of 53.51074 and a p-value of 0.0134, suggesting the presence of one cointegrating equation at the 0.05 level. However, the tests for at most one, two, and three cointegrating equations yield high p-values (0.1989, 0.8846, and 0.9880, respectively), indicating no additional significant relationships beyond the first. The Eigenvalue of 0.638082 and Max statistic of 29.47378 further confirm the long-term association, emphasizing that fluctuations in these variables are likely to revert to their established equilibrium. Therefore, the findings support the use of a vector error correction model for analyzing the dynamic interactions between MSMEs financing and poverty levels.

4.3 VECM Results - Poverty Gap Index and MSMEs Financing

The Vector Error Correction Model (VECM) results presented in Table 3 provide valuable insights into the short-run dynamics and long-run equilibrium relationship between the Poverty Gap Index (PGI) and MSME financing in Nigeria. The analysis captures the interplay between the various forms of financing, including Deposit Money Banks Credit (DMBC), Development Banks Credit (DVBC), and Micro Finance Banks Credit (MFBC), in addressing poverty within the country.

Table 3: VECM Results - Poverty Gap Index and MSMEs Financing

Dependent Variable: D(PGI)	Coefficient	Std. Error	t-Statistic	Prob.
C(1): CointEq1	-0.5513**	0.2314	-2.3821	0.0255
C(2): D(PGI(-1))	0.1862	0.2235	0.8334	0.4129
C(3): D(LOG(DMBC(-1)))	-0.6036***	0.2116	-2.8519	0.0093
C(4): D(LOG(DVBC(-1)))	-1.1108	1.1563	-0.9606	0.3463
C(5): D(LOG(MFBC(-1)))	-0.4683**	0.1944	-2.4085	0.0234
C(6): C	-0.0192	0.5246	-0.0366	0.9711
R-squared	0.2091	Mean dependent var		-0.3300
Adjusted R-squared	0.1421	S.D. dependent var		2.5488
S.E. of regression	1.0814	Akaike info criterion		4.8406
Sum squared resid	48.1998	Schwarz criterion		5.1209
Log likelihood	-46.2182	Hannan-Quinn criter.		4.9303
F-statistic	4.3961	Durbin-Watson stat		2.1134
Prob(F-statistic)	0.0084			

Source: Researcher’s Computation using E-views (2024). Note: PGI = Poverty Gap Index, DMBC = Credits from deposit money banks, DVBC = Credits from Development Banks MSME,

and MFBC = Credits from Microfinance Banks. *, ** and *** denote 10%, 5% and 1% levels of significance respectively.

The coefficient of the cointegrating equation (C(1): CointEq1) is -0.5513, which is statistically significant at the 5% level ($p = 0.0255$). This result suggests a robust negative relationship, indicating that approximately 55.13% of the deviations from the long-run equilibrium in the Poverty Gap Index are corrected in each period. This adjustment rate reflects the importance of addressing the underlying factors contributing to poverty over time, emphasizing the dynamic nature of poverty alleviation efforts. In examining the short-run dynamics, the lagged dependent variable (C(2): D(PGI(-1))) has a coefficient of 0.1862; however, it is not statistically significant ($p = 0.4129$). This indicates that past values of the Poverty Gap Index do not significantly influence its current changes, suggesting a lack of persistence in the effects of prior poverty levels in the short run. The implications are that immediate policy interventions are essential to impact current poverty levels.

Among the financing variables, the coefficient for DMBC (C(3): D(LOG(DMBC(-1)))) is -0.6036, significant at the 1% level ($p = 0.0093$). This negative coefficient demonstrates that increased credit from Deposit Money Banks to MSMEs significantly contributes to reducing the Poverty Gap Index. Such a result underscores the critical role that access to financial resources plays in alleviating poverty, suggesting that enhancing the flow of credit to MSMEs can effectively mitigate poverty levels. In contrast, the coefficient for DVBC (C(4): D(LOG(DVBC(-1)))) is -1.1108, but it is not statistically significant ($p = 0.3463$). While the negative coefficient implies a potential reduction in poverty through development bank financing, the lack of significance suggests that this relationship may not be robust enough to warrant policy emphasis. This result calls for further investigation into the mechanisms through which development bank credit influences poverty outcomes.

The coefficient for MFBC (C(5): D(LOG(MFBC(-1)))) is -0.4683, significant at the 5% level ($p = 0.0234$). This indicates that financing from Micro Finance Banks also has a significant negative impact on the Poverty Gap Index. The result reinforces the notion that microfinance serves as a crucial instrument for poverty reduction, particularly among marginalized groups who may lack access to traditional banking services. The overall model fit is captured by an R-squared value of 0.2091, suggesting that approximately 20.91% of the variation in the Poverty Gap Index is explained by the independent variables included in the model. The adjusted R-squared of 0.1421 indicates a relatively modest explanatory power after accounting for the number of predictors. The F-statistic of 4.3961 ($p = 0.0084$) confirms the overall significance of the model, while the Durbin-Watson statistic of 2.1134 suggests that the residuals are not autocorrelated, reinforcing the reliability of the model's estimates.

4.4 Granger Causality Results - Poverty Gap Index and MSMEs Financing

Table 4 presents the Granger causality analysis focused on the Poverty Gap Index (PGI) in relation to various financing channels available to Micro, Small, and Medium Enterprises (MSMEs), specifically Deposit Money Banks Credit (DMBC), Development Banks Credit

(DVBC), and Micro Finance Banks Credit (MFBC). By employing the chi-squared (χ^2) statistic, this analysis investigates whether historical values of one variable significantly predicts future values of another, providing essential insights into potential causal relationships. The results are evaluated at the 1%, 5%, and 10% significance levels.

Table 4: Granger Causality Results - Poverty Gap Index and MSMEs Financing

Dependent variable	Test results	LOG(DMBC)	LOG(DVBC)	LOG(MFBC)	All	Conclusion
PGI	χ^2	5.0569**	0.9228	6.2333**	10.105***	LOG(DMBC), LOG(MFBC) → PGI
	P-value	0.0437	0.3367	0.0187	0.0072	
LOG(DMBC)	χ^2	0.0233	0.1178	0.9634	1.0283	None
	P-value	0.8788	0.7314	0.3263	0.7944	
LOG(DVBC)	χ^2	0.3155	0.0033	0.0474	0.3802	None
	P-value	0.5743	0.9541	0.8276	0.9443	
LOG(MFBC)	χ^2	0.1996	1.2729	0.5274	2.2289	None
	P-value	0.6551	0.2592	0.4677	0.5263	

*Source: Researcher’s Computation using Eviews (2024). Note: PGI = Poverty Gap Index, DMBC = Credits from deposit money banks, DVBC = Credits from Development Banks MSME, and MFBC = Credits from Microfinance Banks. *, ** and *** denote 10%, 5% and 1% levels of significance respectively.*

The findings indicate that DMBC has a statistically significant influence on PGI, with a χ^2 statistic of 5.0569 and a p-value of 0.0437, achieving significance at the 5% level. This result suggests that fluctuations in DMBC can be used to predict future changes in the Poverty Gap Index, indicating that enhanced credit access from deposit money banks to MSMEs may lead to improvements in poverty alleviation. Similarly, LOG(MFBC) demonstrates a significant relationship with PGI, evidenced by a χ^2 statistic of 6.2333 and a p-value of 0.0187, which is significant at the 5% level. In contrast, DVBC does not exhibit a significant causal effect on PGI, as indicated by a χ^2 statistic of 0.9228 and a p-value of 0.3367. These results suggest that while both DMBC and MFBC play crucial roles in influencing the poverty gap, the financing from development banks does not appear to have the same predictive capability.

When examining reverse causality—assessing whether PGI Granger-causes changes in the financing variables—the results indicate a lack of significant predictive power. For instance, the χ^2 statistic for LOG(DMBC) is 0.0233, accompanied by a high p-value of 0.8788, indicating no significant relationship between past poverty gap values and future DMBC levels. Similar

outcomes are observed for LOG(DVBC) and LOG(MFBC), which yield χ^2 statistics of 0.3155 and 0.1996, respectively, with p-values of 0.5743 and 0.6551. This absence of significant causality in the reverse direction reinforces the notion that financing is more likely to influence poverty outcomes than to be influenced by them.

The combined effect of all three financing channels on PGI is also statistically significant, with an aggregate χ^2 statistic of 10.105 and a p-value of 0.0072, indicating a strong joint influence of DMBC and MFBC on the Poverty Gap Index. This result implies that when considered together, the financing mechanisms have a synergistic effect on reducing the poverty gap, thereby highlighting the importance of a comprehensive approach to MSME financing in combating poverty. The evidence illustrates that while DMBC and MFBC individually contribute to reducing the poverty gap, their combined efforts may further enhance their effectiveness in alleviating poverty.

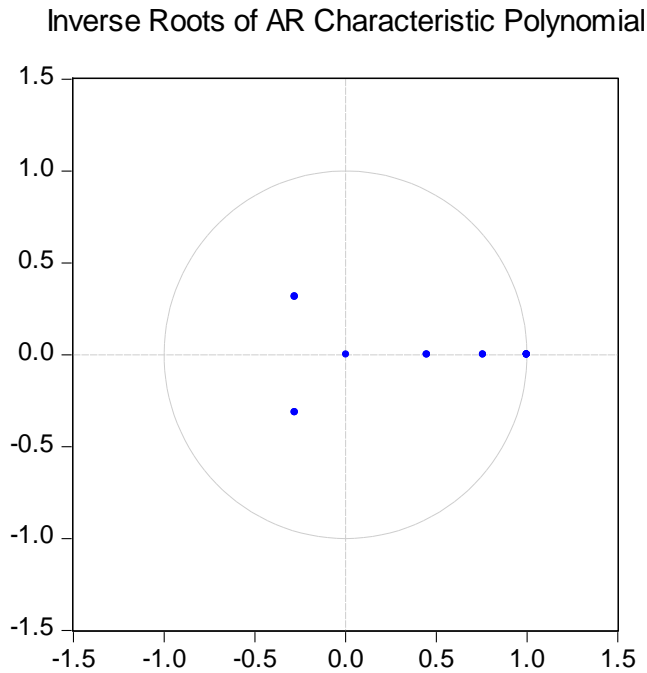
In summary, the Granger causality analysis elucidates a significant relationship between MSME financing specifically through Deposit Money Banks and Micro Finance Banks—and the Poverty Gap Index. The results indicate that increased access to financial resources from these institutions is associated with improvements in the poverty gap, thereby confirming the vital role of financial support in poverty reduction strategies. The lack of significant feedback effects from PGI to the financing channels underscores the priority that should be given to enhancing financial access for MSMEs, as such measures are critical in addressing poverty and fostering sustainable economic growth.

4.5 Diagnostic Tests Results - Poverty Gap Index and MSMEs Financing

The estimated VEC model is further validated through Residual Serial Correlation LM Tests to assess autocorrelations, where the null hypothesis posits no serial correlation. Additionally, Residual Heteroskedasticity Tests are conducted with the null hypothesis indicating no heteroskedasticity in the error term. The findings are summarized in Table 6, which includes the inverse roots of the AR.

Table 5: Diagnostic Tests Results - Poverty Gap Index and MSMEs Financing

<i>Test</i>	Test-stat.	df	Prob.
VEC Residual Heteroskedasticity	208.6303	200	0.3232
VEC Residual Serial Correlation LM Tests	16.565	16	0.414



Source: Researcher’s Computation using E-views (2024).

Based on the results in Table 5, the heteroskedasticity test yielded a probability value of 0.3232, which supports the acceptance of the null hypothesis that there is no heteroskedasticity in the error term. Additionally, the LM Test for Serial Correlation produced an insignificant value (Prob. = 0.414), indicating that there is no serial correlation present. Furthermore, the stability condition test for the model shows that no roots lie outside the unit circle, suggesting that the VECM models meet the stability condition. At a 5% level of significance, the F-statistic is 4.3961, with degrees of freedom of 4 and 27 and a probability of F-statistics of 0.0084, which is less than the chosen significance level of 0.05 for this study; therefore, the study rejected the null hypothesis, which states that “Micro, small, and medium scale financing do not significantly affect the poverty gap index in Nigeria,” rather accepted the alternative, and concluded that micro, small, and medium scale financing had a significant effect on the poverty gap index in Nigeria.

Discussion of Findings

This model examined the effect of micro, small, and medium-scale enterprise financing on the poverty gap index. The estimation revealed mixed results as some individual elements of the study model exhibited different characteristics; however, the result of the combined explanatory variables of the F-statistics showed a significant effect, suggesting that micro, small, and medium-scale enterprise financing had a significant effect on the poverty gap. This result is consistent with some other prior studies that have found similar results (Uwitonze, 2016; Olaoye et al., 2023; Mafruhat et al., 2023; Zafar et al., 2018; Oba & Onuoha, 2023; Ogbuabor et al., 2013; Umoh & Ekpo, 2023; Bello, 2022; Chidume & Nenbee, 2022; Obodai et al., 2022). For

instance, the outcome of this study aligns with the study of Mafruhah et al. (2023), which confirms that MSME financing in Indonesia has successfully lowered poverty temporarily and permanently. Oba and Onuoha (2023), which found that an increase in SMEs income contribution to GDP increases their ability to create employment and reduce poverty; Ogbuabor et al. (2013), which deduced that small-scale businesses significantly improve Nigeria's ability to reduce poverty by creating jobs and revenue. The result of this study is in tandem with the investigation of Bello (2022), which confirmed that Bank of Industry MSME financing has a significant effect on poverty reduction.

On the contrary, the result was not in tandem with some other previous studies (Obayagbona, 2018). For example, Olaoye et al. (2023) investigation discovered that there is no relationship found between microfinance and unemployment rate. In addition, the study of Adegbe et al. (2023) has a contrary result; it discovered that microfinancing, contrary to expectations, was found to not have reduced poverty in the long run in Zimbabwe. Similarly, Obayagbona (2018) also disagreed, as the study showed that microfinance deposits and liquidity ratios do not have any significant impact on poverty reduction, and also the study conducted by Umoh and Ekpo (2023) that found that women participating in microbusiness are still experiencing hardship and low standards of living despite the intervention programs. Similarly, the result obtained in the study by Singh and Dutt (2019) contradicted the outcome because it concluded that microloans supporting microenterprises do not have a substantial effect on the recipient's well-being.

5. Conclusion and Recommendations

5.1 Conclusion

The analysis in the hypothesis indicated a significant long-run relationship between MSME financing and the poverty gap index, with a substantial adjustment mechanism towards equilibrium. The short-run dynamics revealed that past poverty levels do not exert a significant influence on current changes in poverty, highlighting the need for timely interventions. The three financing sources showed a negative relationship with the poverty gap index, with development banks showing a non-significant impact. With the conclusion that micro, small, and medium enterprises financing had a significant effect on the poverty gap index in Nigeria, banks should create more easy loan facilities targeted at the financial needs of the MSMEs with more focus on the development banks to ensure they make a significant effect going forward like the other banks.

5.2 Implication of Findings

The study examined the effect of micro, small, and medium scale financing on the poverty gap index in Nigeria, and the result has implications for the policymakers in Nigeria. The result of the VECM analysis indicated a significant long-run relationship between MSME financing and the Poverty Gap Index, with a substantial adjustment mechanism towards equilibrium. The short-run dynamics revealed that past poverty levels do not exert a significant influence on current changes in poverty, highlighting the need for timely interventions. Notably, financing from deposit money banks and microfinance banks is shown to effectively reduce poverty via

reduction in the poverty gap index, while the impact of development banks is negative as well but insignificant. The implication suggests that the policymakers should revisit the existing policies and consider making impactful ones capable of assisting the MSMEs and entrepreneurs in Nigeria in having soft loans at avoidable interest rates, as the results demonstrated moderate explanatory power, emphasizing the need for a comprehensive approach in financial policy formulation to enhance the efficacy of MSME financing in poverty alleviation efforts in Nigeria. These findings advocate for targeted strategies that leverage financial inclusion to foster sustainable poverty reduction in the nation.

5.3 Recommendations

Strong information on micro, small, and medium-scale enterprise financing and poverty reduction sustainable strategies is vital to every potential investor in the MSME community in Nigeria. While the government will desire continuous poverty reduction from the investors and informal sector operators, the MSMEs should also demand the provision of enabling infrastructures from the government for accessibility and affordable loan facilities from the banks under a special policy. This study would avail entrepreneurs and MSME investors of much-needed quality financial information on the abilities and possibilities of poverty reduction. Consistent reporting as evidence of transparency and information disclosure are some of the hallmarks of effective poverty reduction.

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