Impact of Financial Development and Economic Growth on Poverty in Middle Income African Countries

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ABSTRACT

This study examined the impact of financial development and economic growth on poverty reduction in middle-income African countries using panel data from 1990 to 2021. The study was limited to Botswana, Kenya, Nigeria, South Africa and Tunisia. Im, Pesaran and Shin unit root test and Pedroni cointegration test approach were used for data analysis. Also, data were analysed using Panel ARDL model based on MG and PMG estimators proposed by Peseran and Smith (1995) and Peseran, Smith and Shin (1999). Results of the unit root test shows the variables are stationary of mixed order, while cointegration test indicates that the variables are linearly cointegrated in the long run. The study revealed that financial development proxy by broad money as share of GDP and broad money as ratio to reserve contributed to poverty reduction in the long the-run. On the other hand, Economic growth proxy by gross domestic product per capita also contributed to poverty reduction in the long run. On the contrary, financial development proxy by domestic credit to private sector as share of GDP had detrimental impact of poverty. To reduce poverty, the study recommended the need for the middle-income countries to implement long run sustainable financial and growth policies. Also, there is need for the implementation of sustainable financial policies that will encourage more credits to private sector at single digit interest rate to promote inclusive financial system, grow the economy and increase income redistribution and reduction in poverty.

Keywords: Financial Development, Economic Growth, Poverty, Middle Income Countries, Africa

JEL Classification Codes: E02, G20, 016, 055

INTRODUCTION

Poverty remains one of the major problems facing African countries. However, despite the level of poverty, African countries have experienced financial development (Zahonogo, 2017). Many middle-income African countries have experienced more financial sector development and remarkable economic growth than previously in recent years. The financial development is one of the major drivers of economic growth in some of these middle countries (World Bank, 2020). The development of the financial sector is interrelated to economic growth through creation of more jobs and investment opportunities, mobilising, and channelling of resources for productive uses, enhancing real output and poverty reduction (Dewi, Aliassudin & Kassim, 2018).

Based on theoretical argument, financial development helps entrepreneurs to access funds, enhance capital allocation which has significant influence on poverty reduction. Likewise, financial development may impact on poverty level through direct and indirect channels. It directly reduces poverty by stimulating

access to financial services by the poor (Pradhan, 2010, Zahonogo, 2017), while it indirectly reduces poverty by enhancing economic growth through increase in rate of investment (Levine, 2005). Rajan and Zingales (1998) Stiglitz (1998) and World Bank (2001) favours the argument that financial development stimulates poverty reduction. On the contrary, Abdin (2016) and Boukhatem (2016) support the argument that financial development increases poverty level. Similarly, Singh and Haung (2015) also argued that financial sector development is largely beneficial to the rich and politicians.

Likewise, the relationship between economic growth and poverty reduction has also been a subject of debate among economists. For instance, Kuznets hypothesis states that there is an inverted U-shaped curve link between economic growth and poverty reduction. This means that during the early phases of economic growth, distribution of income decreases and increases when countries attain middle-income status. Also, income inequalities increase at the early stage of economic growth without improving living conditions of the poor.

The need to reduce poverty has become a central objective for development and it can be achieved through economic growth and equitable distribution of income (Son & Kakwani, 2004). However, even though economic growth is considered an important tool for fighting poverty, the role has been debated (Dada & Fanowopo, 2020). Many contends that the growth has not translated into poverty reduction in African countries. This underscored the growing consensus that economic growth alone cannot be relied on as a strategy for poverty reduction. In the light of this, policies and programmes aimed at the redistribution of income and assets is now emphasized to complement impact of growth (UNDP, 2004).

Therefore, in view of the irony of financial development and economic growth in the face of high poverty level, this study examined the impact of financial development and economic growth on poverty reduction in middle income African countries using panel data from 1990 to 2021. Countries covered by the study include Botswana, Kenya, Nigeria, South Africa, and Tunisia. These middle-income countries among others have experienced financial development and growth during the period under review and they have consistent data on the variables captured in model of the study. The rest of the paper consists of section two (2) which consists of theoretical and empirical literatures review. Section three (3) describes the methodology, while section four (4) presents the results and discussions of findings. Section five (5) comprises of conclusions and policy recommendations.

LITERATURE REVIEW

Theoretical Literature

The link between financial development, economic growth and poverty reduction has received comprehensive treatment in the theoretical literature. For instance, the theoretical foundation of financial development-economic growth nexus is connected to the work of Schumpeter (1911) and later, Goldsmith (1969); Shaw (1973), McKinnon (1973) and Levine (1997). These economists argued that financial development inspires economic growth. Similarly, endogenous growth literature also stressed that financial development leads to long-run economic growth through the impact of financial sector services on capital accumulation and technological innovations within the economy. These services among others include mobilizing savings and resource allocation to real sectors for productive uses, acquiring information about investments and financial risk reduction. On the contrary, Robinson (1952), Kuznets (1955) and Lucas (1988) argued that the role of financial development in an economy is either overrated or financial development happens due to the expansion of the real economy.

Similarly, the financial development-poverty reduction has also been thoroughly treated in theoretical literature. According to theoretical literature, financial development may stimulate poverty reduction either through directly or indirectly channels. Poverty may be reduced through direct channels like easy access to financial services which is beneficial to the poor (Kutnets, 1963; Pradhan, 2010). On the other hand,

financial development can reduce poverty indirectly reduced by enhancing economic growth through increase in rate of investment (Levine, 2005). Likewise, Rajan and Zingales (1998), Stiglitz (1998) and World Bank (2001) argued that financial development reduces poverty. Theoretically, it is also belief that financial development enables entrepreneurs to have easy access funds as well as enhances capital allocation which can influence poverty reduction. On the contrary, others argued that financial sector development is of more benefit to the rich and politicians (Singh & Haung, 2015).

Empirical Literature

Based on empirical evidence, many studies have investigated the impact of financial development and economic growth on poverty reduction in both developed and undeveloped countries using time series and panel data. However, none of these studies examined the subject using panel data of middle-income African countries covered by this study.

Financial Development and Poverty Reduction

The empirical evidence on the link between financial development and poverty reduction shows contradictory results. In view of this many studies have investigated the relationship between the two variables. For instance, Chemli (2014) examined the relationship between financial development and poverty reduction nexus in 8 MENA countries: Algeria, Egypt, Iran, Jordan, Mauritania, Morocco, Tunisia and Yemen using panel data from 1990 to 2012. The result of the study shows financial development has positive significant impact on poverty reduction.

In Nigeria, Dabwor and Abimiku (2016) examined whether financial deepening has played a significant role in poverty alleviation effort or not using time series data from 1990 to 2013. Findings of the study indicated that broad money ratio to GDP stimulated poverty reduction in Nigeria during the period reviewed. In addition, the study found ratio of credit to private sector and ratio of total stock traded to GDP exerted negative effect on poverty reduction. Similarly, a study conducted by Uddin, Shahbaz, Arouri, and Teulon (2014) also revealed that financial development reduces poverty, but the impact differs with the level of economic development.

Examining the financial development-poverty reduction nexus in 71 developing countries using panel data from 2002 to 2011, Donou-Adonsoua and Sylvester (2016) found that banks as proxy for final development influence poverty reduction. Keho (2017) also found that financial development and economic growth enhances poverty reduction. Similarly, in a study that covered 132 countries, Kaidi and Mensi (2017) employed three-stage least squares (3SLS) technique to examine the relationship between financial development (FD), quality of institutions and poverty. They used data covering from 1980 to 2014. They found that FD had no impact on poverty reduction during the period reviewed. In China, Ho and Iyke (2017) assessed the causal link between financial development and poverty reduction using data covering the period from 1985 to 2014. The result of the study revealed evidence of bi-directional causal relationship between financial development and poverty reduction in China.

Kheir (2018) eexamined the impact of financial development on poverty reduction in Egypt using time series data spanning from 1980 to 2015 and found bidirectional long run relationship exists between economic growth and poverty. Result of the study showed bidirectional causal relationship between financial development proxy by real domestic credit to private sector per capita and poverty. Likewise, Kaidi and Mensi (2018) found that banking system development in middle income countries does not necessarily improve condition of poor's persons, but development of the stock market does.

The study concluded that banking index is sensitive to poverty index, while stock market index is sensitive to the choice of the middle-income versus high income economies.

Bopape (2022) also examined the financial development and poverty reduction nexus in South Africa using

annual data from 1980 to 2019. Findings of the study showed in the long run, financial development measured by financial depth had insignificant influence on poverty reduction during the period under consideration. On the other hand, in the short-run the result indicated that growth in gross domestic product (GDP) contributed to poverty reduction. In addition, findings revealed GDP growth granger cause poverty reduction proxy by household final consumption expenditure per capita growth and income per capita growth.

In another similar study, Bakari, Donga, Hedima, Wilson, Babayo and Ibrahim (2019) investigated the impact of financial inclusion on poverty reduction in forty-nine (49) Sub-Saharan African (SSA) countries. They employed panel data from 1980 to 2017 and found that credits to the private sector as percentage of GDP, savings, access to ATM, inflation, access to information technology and government expenditure reduces poverty in SSA. On the other hand, the study indicated interest rate and economic growth increases poverty.

Leve and Kapingura (2019) investigated the impact of financial development on income inequality in selected SADC countries, found that financial sector development has effect on income inequality and dimension of financial development defines income level. Also, the study revealed that financial efficiency has no significant effect on income inequality reduction in the selected SADC countries. Similarly, Appiah, Frowne and Tetteh (2020) employed panel data to examine the relationship between financial development, economic growth and poverty reduction in five (5) emerging African countries. Findings from the study show that financial development variables promote poverty reduction, but economic growth has insignificant impact on poverty reduction. Also, in a study that investigated the link between financial development and poverty reduction, Haan, Pleninger and Sturm (2021) found that financial development has no direct effect on poverty gap, and it increase inequality, while economic growth has positive influence on poverty reduction.

2.2.3 Economic Growth and Poverty Reduction

The link between economic growth and poverty reduction remains a controversial subject among economists and socio-economic commentators. In a quest to reach consensus, many studies have examined the impact of economic growth on poverty reduction in both developed and undeveloped economies. For instance, Ebunoluwa and Yusuf (2018) assessed the impact of economic growth on poverty in Nigeria from 1980 to 2016 using cointegration technique. Findings from the study revealed that economic growth influenced poverty reduction during the period under review. Likewise, the results of Gangas (2017) indicated that economic growth reduce poverty. Using time series data from 1990 to 2010,

Agyei (2015) also examined and compared the implications of economic growth on poverty and income inequality. Findings from the study indicated that economic growth is responsible for the decline of both human and income poverty levels in all developing regions considered by the study. Also, result of the study revealed economic growth causes little poverty reduction in all the regions when income inequality is greater compared to when it is low. The study further revealed that economic growth has significant effect on income inequality reduction in SSA, but it promotes income inequality in LAC and OCED regions.

Similarly, Alam and Alam (2021) also examined the impact of financial development and economic growth on poverty reduction in India. Their result indicated that economic growth had no impact on poverty reduction in long-run. On the contrary, the result shows it contributed to poverty reduction in short-run. Result of the study also indicated that economic growth worsen inequality and made some sections of the Indian society wealthier. In addition, the study revealed that economic growth has positively reduce poverty in India in the short run.

Dada and Fanawopo (2020) used data from 1984 to 2018 to examine the role of institutions in the link between economic growth and poverty reduction in Nigeria. They analysed data using ARDL technique and

found that economic growth and institutions had positive impacts on per household consumption in both short and long run. The study also found that the interactive effect of institutions and economic growth on per household consumption was negative in the short run. On the other hand, findings of the study showed that institutions and economic growth had positive interactive effect on per household consumption in the long-run, indicating that institutions and economic growth played complementary roles in reducing poverty in Nigeria in the long run.

In Nigeria, Oyewale and Musiliu (2015) investigated the impact of growth on poverty reduction employing time series data covering from 1999 to 2014. Results of the study showed that economic growth has significant impact on poverty reduction. On the other hand, result of the study indicated that service value added growth rate and gross capital formation growth rate had no effect on poverty reduction. Also, in Vietnam, Pham and Riedel (2019) assessed the impact of sectoral economic growth and other factors on poverty reduction between 2010 and 2016. Their findings revealed that economic growth had no significant effect on poverty reduction during the period reviewed.

In a comparative study, Adeleye, Gershon, Ogundipe, Owolabi, Ogunrinola and Adenira (2020) used time series data from 2000 to 2015 to determine whether economic growth reduces incidence of poverty and if its interaction with income inequality has influence on poverty in sub-Saharan Africa and Latin American (LAC) countries. They found economic growth contributes to poverty reduction, while rate of inequality increases poverty. Also, inequality increases the impact of growth on poverty. Similarly, Fosu (2018) also examined the impact of recent economic growth on poverty reduction in Africa using annual data from 1985 to 2013. The study found that income growth seems to be the main factor that reduce poverty in Africa.

In Nigeria, Muhammad *et al* (2014) investigated the trivariate causality among economic growth, corruption and poverty from 1970 to 2011 and their result indicated that economic growth affected corruption before transmitting to poverty. Also, Akobeng (2017) investigated the impact of economic growth on poverty and income inequalities using the Generalized Least Square (GLS). Their study indicated that economic growth influenced reduction in income inequality and poverty level.

DATA AND METHODOLOGY

Methods of Analysis

The study used panel data from 1990 to 2021 sourced from World Bank Statistics, 2022. In order to determine the stationarity of data, panel unit root test was conducted using method proposed by Im, Pesaran and Shin (2007). The Pedroni (1999) panel cointegration test techniques were employed to determine long run relationship between variables used. Also, panel ARDL model based on Mean Group (MG) and Pool Mean Group (PMG) estimators proposed by Peseran and Smith (1995) and Peseran, Smith and Shin (1999) were used to examine the impact of financial development and economic growth on poverty reduction in middle income African countries under consideration.

The panel ARDL based on MG and PMG estimators was used to examine both the long run and short run impact of financial development and economic growth on poverty reduction. The adoption of the panel ARDL model with MG and PMG estimators is the appropriate technique for analysing the relationship between the independent and dependent variables in both long run and short run with error correction term.

One of advantages of the panel ARDL model is that it can be applied even if variables are stationarity at mixed order: I(1) and I(0).

The Hausman (1978) test was employed to test the efficiency and significance difference between the MG and PMG estimations. The null hypothesis of the Hausman test is that the difference between PMG and MG estimations is not significant. Thus, if null hypothesis is not rejected, then the estimators are not

significantly different. Likewise, the alternative hypothesis is that there is a significant difference between PMG and MG. Therefore, if the null hypothesis is rejected, it implies that there is significant difference between the PMG and MG. In this case, the PMG estimator is more efficient.

Model Specification

Panel Autoregressive Distributed Lag Model (Panel ARDL)

The panel ARDL model was specified based on Waiyaki (2016), Ho and Iyke (2018) and Dewi *et al* (2018) with some modifications. The panel ARDL model was used to examine the impact of financial development and economic growth on poverty reduction in selected middle income African countries. The study used broad money as share of GDP (M2), domestic credit to private sector as share of GDP (DCPS) and broad money ratio to reserve (MRR) as proxies for financial development. On the other hand, economic growth was proxy by Gross Domestic Product per Capita (GDP), while poverty was proxy by poverty headcount. Therefore, the long run and short run estimation form of the model is specified in equation 1.0 and 1.2 respectively.

Long run:

$$POR_{i,t} = \beta_0 + \sum_{i=1}^{n1} \beta_1\, M2_{i,t-1} + \sum_{i=0}^{n2} \beta_2\, DCPS_{i,t-1} + \sum_{i=0}^{n3} \beta_3\, MRR_{i,t-1} + \sum_{i=0}^{n4} \beta_3\, GDP_{i,t-1} + \mu_{i,t}\,..1.0$$

Short Run:

$$POR_{i,t} = \beta_0 + \sum_{i=1}^{n1} \beta_1\, \Delta M2_{i,t-1} + \sum_{i=0}^{n2} \beta_2\, \Delta DCPS_{i,t-1} + \sum_{i=0}^{n3} \beta_3\, \Delta MRR_{i,t-1} + \sum_{i=0}^{n4} \beta_3\, \Delta GDP_{i,t-1} + ECT_{i,t}$$
$$+ \mu_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1.2$$

From equations1.0 and 1.2,M2 denotes broad money as share of GDP, while DCPSis the domesticcredit to privatesector as share of GDP. Also, MRR stands for broad moneyratio to reserve. GDP is thegross domestic product per capita, while POR represents poverty headcount. The M2, DCPS, MRR and GDP are the independent variables, while POR is the dependent variable. β_1, β_2, β_3 and β_4 are the coefficients of independent variables, while $\mu_{i,t}$is the error term. On the other hand, $\sum$ is the summation sign. In equation 1.2, Δ is the change operator, while ECT is the short-run error correction term of the model.

RESULTS AND DISCUSSIONS

Panel Unit Root Test Results

The Im, Peseran and Smith (1997) panel unit root test approach was used to determine the stationarity of series used. Results of the unit root test are presented in Tables 1.

Table 1: The IPS unit root test result at 5 per cent significance level (trend included)

IPS	At Level		After 1st Difference	
Variables	t-Statistics	P-values	t-Stat	P-values
DCPS	-2.29548	0.0109	-8.81777	0.0000
GDP	1.8622	0.9687	-4.72999	0.0000
M2	-1.80353	0.0357	-6.22225	0.0000
MRR	0.61412	0.2696	-10.5182	0.0000
POR	2.0002	0.9773	-2.52888	0.0057

Source: Author's computation

Based on the results presented in Tables 1, at 5 per cent significance level, DCPS and M2 are stationary at level. On the other hand, GDP, MRR and POR are stationary after first difference. Therefore, this implies the variables are stationary of mixed order I(0) and I(1), thereby necessitating for a cointegration test. Also, the variables being stationary of mixed order justifies the used of ARDL model in the study.

Panel Cointegration Test Results

The cointegration test was conducted using Pedroni (1999) cointegration test method. The results are presented in Table 2.

Table 2: Pedroni cointegration test results: Within-dimension and Between-dimention

Alternative hypothesis: common AR coefs. (Within-dimension)

		Statistic	Prob.	WeightedStatistic	Prob.
Panel v-Statistic		-1.910266	0.9720	-1.150205	0.8750
Panel rho-Statistic		-3.684540	0.0001	-1.769186	0.0384
Panel PP-Statistic		-6.637588	0.0000	-4.122060	0.0000
Panel ADF-Statistic		-6.638397	0.0000	-4.814780	0.0000

Alternative hypothesis: individual AR coefs. (Between-dimension)

	Statistic	Prob.
Group rho-Statistic	0.144412	0.5574
Group PP-Statistic	-1.955794	0.0252
Group ADF-Statistic	-2.859430	0.0021

Source: Author's computation

The Pedroni cointegration test result presented in Table 2 indicates that the variables are cointegrated in the long run. This is because out of the eleven p-values in the result, nine are significant at 5% level of significance and only two are insignificant. Based on democracy rule, we accept the null hypothesis of no-cointegration and conclude that the variables are cointegrated in the long-run.

Panel ARDL Regression Results

The panel ARDL regression based on Mean Group (MG) and Pooled Mean Group (PMG) estimator was conducted to examine the long run and short run impact of financial development and economic growth on poverty reduction. The summary of the results is presented in Table 3.

Table 3: Results of panel ARDL regression (MG and PMG); Dependent variable: Poverty Headcount

	Mean Group (MG)		Pooled Mean Group (PMG)	
Variable	Coefficient	P-Value	Coefficient	P–Value
Long Run Estimates:				
M2 as share of GDP	-0.037681	0.424	-0.11053***	0.000
	(0.0047133)		(0.0016436)	
DCPS as share of GDP	-0.00028236	0.379	0.0087665***	0.003
	(0.0032075)		(0.002927)	
M2 ratio to reserve	-0.0037298	0.789	-0.007143***	0.002

	(0.139559)		(0.0023246)	
GDP per capita	-0.0854491***	0.002	-0.0502955***	0.004
	(0.0277349)		(0.0172467)	
Short Run Estimates:				
ECT	-0.2747966***	0.006	-0.1269847***	0.009
	(0.10096)		(0.0487414)	
?M2 share of GDP	-0.0002759	0.780	0.0006812	0.187
	(0.0009862)		(0.0005162)	
?DCPS as Share of GDP	0.0015726	0.095	0.0018206***	0.012
	(0.0009414)		(0.0007206	
?M2 ratio to reserve	(-0.0046837)	0.205	-0.0075058	0.241
	(0.0036988)		(0.0064057)	
?GDP per capita	-0.155592	0.429	0.0101981	0.659
	(0.196523)		(0.230766)	
Constant	0.3339087***	0.006	0.1177467***	0.009
	(0.1220915)		(0.0452209)	
Number of Countries	5			
Number of Observations	149			
	Chi-square(2)		**P-value**	
Hausman Test (MG Vs. PMG)	15.08		0.0045	

Source: Author's computation

Note: The asterisks *** indicate significance at 5%. Standard errors are in parentheses. Hausman test: Ho: No systematic difference between MG and PMG (PMG is efficient and consistent than MG under the null hypothesis.

The Hausman test was conducted to determine efficiency and significance difference between the PMG and MG estimations. Based on the results given in Table 3, there is a significant difference between the PMG and MG results. This is because the MG result is less efficient compared to PMG estimation result which is more efficient and significant. Also, in consideration of the p-value less of PMG which is less than 0.05% based on the Hausman test result shows that that the PMG estimator is more efficient than the MG. In view of this significant difference, results of the panel ARDL regression were interpreted based on PMG result.

Therefore, the result of the study presented in Table 3 shows that financial development proxy by broad money as share of GDP as share of GDP (M2) had negative significant impact on poverty headcount as proxy for poverty reduction in the long run. This result resonates with findings of Tsaurai (2020) and Ho and Iyke (2017). The performance of M2 toward poverty reduction in the long run may be attributed to the extent of improvement in financial deepening or depth of the financial sector development which stimulates more investment and job creation and poverty reduction. The financial deepening as depicted by the volume of M2 in countries covered in this study has resulted in increase access to financial products, savings and easy access to demand deposit by the banking public. In the light of the coefficient value -0.11053, when M2 increases by 1% in countries considered by this study, number of poor people or poverty will reduce by 1.05% in the long run.

Findings from the study also shows that broad money ratio to reserve (MRR) stimulated poverty reduction in the long run. Therefore, based on coefficient value -0.007143, when broad money ratio to reserve increase by 1%, poverty will reduce by 0.71%. Similarly, study found that financial development proxy

broad money ratio to reserve (MRR) had negative significant impact on poverty headcount as proxy for poverty reduction in the long run. The implication of this result is that MRR contributed to poverty reduction during the period under review.

Similarly, economic growth proxy by gross domestic product per capita (GDP) also had a negative significant impact on poverty headcount in the long-un. Similar result was obtained by Abosedra *et al* (2015). The implication of these findings is that economic growth experienced by countries reviewed contributed significantly to poverty reduction. Thus, if 1% economic growth is achieved in middle income countries under consideration, their poverty levels will be reduced by 5.03% in the run growth. Furthermore, findings from the study revealed that both broad money as share of GDP, broad money ratio to reserve and GDP per capita had no significant effect on poverty reduction in the short run.

On the contrary, financial development proxy by domestic credit to private sector (DCPS) showed a significant detrimental effect on poverty reduction both in long-run and short-run. This is consistent with the submissions of Abdin (2016) and Boukhatem (2016). This result indicates that the domestic credit to private sector during the period under consideration failed to contribute to poverty reduction, but rather increased the number of poor people. Therefore, based the coefficient value 0.0018206, 1% increase in DCPS will increase the number of poor people by 0.18% in countries covered. This result reflects the true picture of credit granted to the private sector which largely favours the rich in African countries. The performance of the DCPS may be because credits are granted at high interest rate with stringent conditions that cannot be made by the poor. For instance, to access credit from some banks, collateral such certificate of occupancy is required which cannot be afforded by poor persons. In this case, only the upper class and the middle class have access to credit, thereby creating inequality in terms of redistribution of income and assets which stimulates poverty level.

Based on result of the study, at 5% significance level, ECT variable is significant with the coefficient value -0.1269847. This shows that the speed of adjustment of the disequilibrium conditions in the series estimated is about 12.70% in the short-run.

Diagnostics Tests

Cross-Section Dependence Test Results

In order to determine the independent of the panel data used, cross-section dependence test was conducted, and the results are presented in Table 4.

Table 4: Result of Cross-section Dependence Test: Null hypothesis: No cross-section dependence (correlation) in residuals.

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	5.900942	10	0.8235
Pesaran scaled LM	-2.034613		0.0619
Bias-corrected scaled LM	-1.30765		0.0531
Pesaran CD	-0.475333		0.6345

Source: Author's computation

Based on the results in Table 4, the p-values of Breusch-Pagan LM, Pesaran scaled LM, Bias-corrected scaled LM and Pesaran CD tests are not less than 0.05. This means that there is no cross-section dependence in the residuals of the panel data used. This result justifies the use of first-generation panel unit root test, hence, the IPS unit root test approach in the study.

Heteroskedasticity Test Result

The result of the heteroskedasticity test is given in Table 5.

Table 5: Heteroskedasticity Test Result at 5% Significance Level

Summary Statistics			
Statistics	Max |z|	Prob.	Df
Fisher Combined	11.674	0.3074	10
Cross-section Joint Tests			
Cross-section	Max |z|	Prob.*	Obs.
Botswana	0.9065	0.8371	29
Kenya	1.2654	0.6020	27
Nigeria	0.9660	0.8033	29
South Africa	1.0752	0.7347	28
Tunisia	3.0281	0.0098	29

Source: Author's computation

In the light of the result presented in Table 5, at 5% significance level, p-values of the Fisher combined statistics is greater than 0.05, implying that the model is homoscedastic. However, based on individual country statistics, only Tunisia showed heteroskedasticity.

Wald Test Result

Wald test was conducted to determine fitness of the independent variables included in model of the study. The result is displayed in Table 6 below.

Table 6: Wald Test Result

Test Statistic	Value	Df	Probability
F-statistic	91.79443	(4, 39)	0.1730
Chi-square	367.1777	4	0.2263
Null Hypothesis: C(1)=0, C(2)=0, C(3), C(4)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	**Value**	**Std. Err.**	
C(1)	0.080120	0.028406	
C(2)	-0.078005	0.203418	
C(3)	-0.062733	0.021777	
C(4)	0.088564	0.026428	

Source: Author's computation

The results in Table revealed the p-values of F-Statistic and Chi-square are not less than 0.05 at 5% level of significance. This means that independent variables are fit for the model adopted in this study. Therefore, the implication of this result is that at all the variables are important, hence none needs to be dropped from the model. In sequential order, C(1), C(2), C(3) and C(4) represents the coefficient restriction for DCPS, BMG, MRR and GDP respectively.

CONCLUSION AND POLICY RECOMMENDATIONS

This study examined the impact of financial development and economic growth on poverty reduction in middle income African countries using panel data from 1990 to 2021. Countries covered by the study include Botswana, Kenya, Nigeria, South Africa and Tunisia. The study employed Im, Peseran and Smith panel unit root test technique to determine data stationarity, while Pedroni cointegration test approach was used to determine cointegration of variables in the long run. Panel ARDL based Pool Mean Group (PMG) and Mean Group (MG) estimators were used to examine the impact of financial development and economic growth on poverty reduction in middle income African countries covered.

Findings from the study showed that financial development proxy by broad money as share of GDP as share of GDP (M2) and broad money ratio to reserve (MRR) had negative significant impact on poverty headcount as proxy for poverty reduction in the long run. The implication of this result is that the two variables contributed to poverty reduction during the period under review. Similarly, economic growth proxy by gross domestic product per capita (GDP) also had a negative significant impact on poverty headcount in the long run. In addition, results of the study revealed that both broad money as share of GDP, broad money ratio to reserve and GDP per capita had no significant effect on poverty reduction in the short run. On the contrary, the study revealed that financial development proxy by domestic credit to private sector as share of GDP had detrimental effect on poverty headcount in both short and long run.

Although financial development variables and economic growth have significant impact on poverty reduction, they shouldn't be treated in isolation of other macroeconomic variables of real economic sectors. In the light of findings of this study, there is need for middle income countries to implement sustainable financial and growth policies and programmes to drive inclusive financial system development and sustainable economic growth in the long run to reduce poverty. Also, there is need for the implementation of sustainable financial policies that will encourage more credits to private sector at single digit interest rate to promote inclusive financial system, grow the economy and increase income redistribution and reduction in poverty. This will further create investment and job opportunities, increase in income redistribution, reduction in income disparity in middle income countries.

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