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FINANCIAL DEVELOPMENT AS CATALYST FOR POVERTY REDUCTION AMONG SUB-SAHARAN AFRICAN (SSA) COUNTRIES

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Abstract

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This study examines the effects of financial sector development on poverty in developing countries chosen sub-Saharan Africa (SSA) as an example. The paper attempts to answer a critical question, is financial sector development a catalyst for poverty reduction in SSA? The study employed dynamic panel generalized method of moment (GMM) estimation to analyse the data. The findings of the study suggest that financial development and trade openness have strong and positive effect on poverty reduction in SSA. While high population growth rate has negative effect on poverty reduction in the region. This implies that the extent of financial development and degree of trade openness are very crucial in determining the rate of poverty, while high population growth rate leads to decrease in per capita income and thus intensify the rate of poverty. This study therefore recommends for appropriate financial reform fussing on effective financial intermediation and inclusion for poverty reduction in SSA countries. This study provides an insight on the financial sector effects on poverty by incorporating macroeconomic variables such as trade openness, population and inflation to account for policy and macroeconomic shocks.

1. Introduction

The relationship between economic growth and financial development has been extensively studied in the field of development economics and finance. The literature on the financial development and growth argued that a strong financial sector that adequately mobilizes savings, allocates resources efficiently, manages risk well, and with technological innovation spur capital accumulation and economic growth (Kirkpatrick, 2000). The effect of financial development on growth has almost been established, however, a critical question still remains unanswered, is financial sector development a catalyst for poverty reduction? However, the interest on financial development as measure of alleviating poverty among policy makers and development agencies have grown over the years, but there is scanty knowledge about the effects of financial sector development on poverty reduction. Theory and evidence suggest that financial development benefits the poor indirectly through increased credits to business which generate employment opportunities and directly by enabling them to have access to credits and basic financial services which enhances their ability to undertake businesses (Sehrawat and Giri, 2016). But the empirical studies provide conflicting views about the relationship between financial development and poverty.

A number of studies (e.g. Appiah et al., 2020; Sehrawat & Giri, 2016; Kirkpatrick, 2000) support the positive impact of financial development on poverty through growth-enhancing effect. Some recent studies opined that there is a threshold level of financial sector development that can only contribute to poverty reduction (Bolarinwa et al. 2021). Earlier studies such as Easterly & Fischer (2001) and Mustapha & Khalid (2013) report that the poor individuals may benefit from reduced costs of borrowing and increase access to loan; this may help them to invest in health, education and insurance against the unexpected economic shocks. Therefore, financial development reduces poverty by making loans accessible to businesses and poor individuals. Other studies argue that financial development leads to greater inequality which in turn results to poverty (De Haan et al., 2022). Therefore, there is no generalized consensus on the relationship between financial development and poverty.

This study investigates the effects of financial development on poverty reduction in Sub-Saharan Africa. It is apt because the SSA continent has experienced remarkable increase in financial sector development over the last two decades and the poverty rates is still a serious concern in SSA. We chose SSA as a case study because the region is estimated to have the lowest poverty reduction rates. However, according to Christensen (2021), the number of people living below the poverty line has reduced, in 2021 about 698 million, or 9% of the World population, are living on less than \$1.90 a day. The reports show that achievement in poverty reduction in Asia has been impressive, in poverty ridden countries such as China and India alone, more than 407 million people moved out of extreme poverty between 2010 and 2021. However, this has not been the case in Africa, between these periods, it has been estimated that increase in the number of extreme poor occurred in 26 SSA countries and that 66% of the global population living in extreme poverty live in the SSA.

This increase in number of people living in extreme poverty in SSA countries can erode the progress earlier recorded in poverty eradication in the region. This has come to terms with the popular notion that SSA, in no distance time, will be a home for the largest percentage of people living in extreme poverty. Therefore, to help abate this problem and contribute significantly towards meeting the sustainable development goals (SDGs) first of 17 goals of no-poverty in the world by 2030, a huge and significant reduction in the number of people living in extreme poverty in Africa is absolutely necessary (World Bank, 2019).

According to Sanches-Paramo et al. (2021) the recent rise in global poverty has been attributed to the slow-down of the economy resulted by COVID-19 pandemic. The World Bank posits that the impact of the pandemic has dragged many to be trapped in extreme poverty. Its further states that in 2021, the average incomes of the bottom 40 percent were 6.7% lower than in pre-pandemic, compared to 2.8% lower for the top 40%. As a result, globally, 3-4 years progress in reducing extreme poverty has been lost, but the loss is projected to be large for SSA (2-3 years for \$ 1.90 and 5-6 years for \$5.50).

On the other hand, the available statistics from the World Development Indicators (WDI) of the World Bank reports that the domestic credit to private sector to gross domestic product (GDP) in SSA consistently increased over the period 1980-1984 (25.03%) and between 1995-1999 (53.85%). The average credit to private slightly dropped over the period 2000-2004 (48.05%) and increased over the period 2005-2009 (52.40%) and subsequently recorded an average of 41.41% over the period 2015-2019. This suggests that financial development in SSA as a whole and in many African countries have recorded remarkable progress.

However, despite this progress in financial sector performance the poverty reduction in Sub Saharan Africa is relatively low though it varies across countries (Sanches-Paramo, 2021). The slow in the declining rate of poverty in SSA amidst the growth of credit to the private sector in SSA motivates this study. The findings of this study may be helpful when designing financial policies focusing on financial inclusion. It can also serve as a reference to subsequent research works in the area of financial development and poverty reduction in the context of Sub-Sahara Africa.

The rest of the paper is structured as follows. The following section reviews the existing studies on the topic. The third section describes the methodology and sources of data. The fourth presents the empirical results and discussion. In section five we provide the summary of main findings of this study and draws conclusion.

2. Literature review

The theories and empirical evidence suggest that a robust financial sector is important for growth and poverty reduction. For instance, the supply-leading hypothesis states that the development of a robust financial sector contributes to economic growth and thus generates employment opportunities. In another related theory, the vulnerable group theory states that provision of basic financial services to the poor gives them an opportunity to catch up with other segments of society. In recent years, a number of studies attempted to investigate the relationship between financial development and poverty. Bolarinwa et al. (2021) investigate whether there is a threshold between financial

development and poverty in African countries with the aid of a dynamic panel model and the results suggest that there is a threshold level of financial development necessary for poverty reduction in Africa. The study concludes that the present level of financial development might not have considerable effect on the poverty.

De Haan et al. (2022) investigate the effects of financial development on poverty gap using fixed effect panel to analyse data for 84 countries from 1975-2014. The study reveals there was no evidence that financial development has direct effect on poverty gap. It also concludes that financial development leads to increase inequality which in turn, results in more poverty. Olaniyi et al. (2023) investigate the finance-poverty nexus using nonlinear autoregressive distributed lag and data from Nigeria for the periods 1980-2018. The outcomes of the findings confirm the existence of asymmetric effect in the finance-poverty nexus in the long run while nonexistence in the short run. The study further suggests that expansionary and contractionary policies of the financial sector reduce poverty while the effect of the expansionary policy is stronger on poverty reduction.

Perez-Moreno (2011) examines the causal relationship between financial development and poverty in developing countries using a modified and traditional granger causality to test data from two different sets. The results of the data set from 1970-1980 show that financial development measured by the liquid assets of the financial system share of GDP leads to reduction in moderate poverty while for the period 1980-1990 or when financial development is measured by credit to private sector to GDP, the results do not show any evidence of causality from poverty to financial development. This tend to suggest that the poor benefits more at the initial stage of financial sector development, but during the later period the financial sectors were growing and the financial intermediaries mostly channel their credits to large corporation and business.

Molana et al. (2020) explore the financial development and poverty nexus in Iran using Autoregressive Distributed Lag model (ARDL) technique to test the relationship between the variables. The study finds financial development variable had a negative and significant effect on poverty while the test of nonlinearity suggests that an inverse relationship exist between the variables in the case of Iran. Zhu et al. (2021) investigate the effects of rural financial development on poverty reduction in China, using data from 30 provinces in mainland over the period 1997-2015. The study employed a spatial panel model to examine whether rural financial development has a positive spatial spillover effect. The study finds that rural financial development reduces poverty and at the same time it widens urban-rural income gap.

Similarly, Saidu and Marafa, (2020)investigate differently the effects of financial services and provision of credit on poverty reduction on poverty in Nigeria using data for the period 1980-2018. The study employed ARDL the parameters approach to estimate and cointegration analyses for income and consumption models. The study finds a long-run relationship among the variables in the two models. The study concludes that availability of improved financial services is more beneficial than credit growth in the country. While financial instability retards the beneficial effect of financial development in the short run.

Appiah, Frowne and Tetteh (2020) explore the degree to which financial development alleviate poverty from five African emerging economies, obtained data over a period of 1995-2015 using fully modified ordinary least squares (FMOLS) cointegration estimation technique. Using liquid liability as a percentage of GDP and bank domestic credit as a percentage of GDP as the main financial development indicators and the paper finds both financial development indicators have positive effect on poverty reduction while economic growth and inflation exert less influence on poverty reduction. It further reports that Government spending does not tend to affect

poverty irrespective of the measure of financial growth employed. These findings suggest that while financial growth is capable of reducing poverty, it must be combined with a reduction in inflation, as well as other macroeconomic variables.

Tsaurai (2020) investigates the impact of financial development on poverty alleviation using pooled OLS, fixed effects and FMOLS to analyse data for the 1994 -2013 for Brazil, Russia, India, China and South Africa (BRICS) countries. The study finds that the impact of financial development and FDI on poverty reduction in the case of member countries are mixed but in majority of the countries the financial development and FDI are effective in reducing poverty. Azam et al. (2020) examines the relationship between financial development and poverty in Pakistan using a time series data for the period 1975-2016. The ARDL approach was used to estimate the model and the study finds that trade openness and financial development exert significant impact on poverty reduction.

The theoretical insight suggests that financial sector development enables the flow of resources to productive sectors. create enormous opportunities for the poor. However, it is apparent from the reviews of the previous studies that there are no clear empirical answers that broaden our understanding regarding the impacts of financial sector in the case of SSA. For instance, the review shows that there are scanty studies on this topic that focus on Africa and some attempted to analyse finance-growth nexus. However, this might not provide adequate information, while researchers and policy makers have had strong interest in how the financial sector affects the poor. Hence, this study fills in the gap by developing empirical model that explicitly recognize the effects of financial sector on poverty, including trade openness, population and inflation as controlled variables.

3. Methodology

This study employed annual panel data for the period 2011 to 2019, the data were sourced from World Development Indicators. This period was chosen mainly because many financial sector reforms were carried out as a strategy to alleviate poverty in the region.

3.1 Model Specification

The purpose of the study is to examine the impact of financial development on poverty reduction in 41 Sub-Saharan African countries. The Sub-Saharan Africa consists of 48 countries, however, this study used data from 41 countries, the choice of countries was based on the availability of data. The poverty reduction and financial development model was specified as follows:

$$LPR_{2it} = \alpha_0 LPR_{it-1} + \alpha_1 LFD_{it} + \alpha_2 TO_{it} + \alpha_3 LIN_{it} + \alpha_4 LPO_{it} + \varepsilon_{it}$$

Where PR is the poverty reduction, FD represents financial development, TO stands for trade openness, IN represents inflation rate and PO is the population. L represents log and α_0 corresponds to constant. ε_t represents the error terms and α_{ji} represents the estimated coefficients of all independent variables, where j = 1, ..., 4. The subscript i = 1....4 denotes the country. The subscript t = 1....4 denotes the time period.

The variables and the measurements are provided in Table 1. This study used GDP per capita as a measure of poverty. GDP per capita was calculated by dividing GDP by the country's total population. This highlighted the fact that GDP per capita gives much better measurement of poverty. And, there exists a strong correlation between GDP per capita and indicators of poverty reduction such as highincome level, level of education among others (Saidu and Marafa 2020). Although there are many indicators of poverty rate such as household consumption and life expectancy and others. However, data on such measures of poverty are not available.

Financial development. For the financial development this study used domestic credit to

private sector as a share of GDP as a measure of financial development, though many proxies of financial development such as money supply to GDP (M2/GDP) and domestic money bank assets exist in the literature. However, we employ this proxy because the private sector is the engine of economic growth and poverty reduction in SSA (Obeng-Amponsah et al., 2019).

variables. Control То capture the macroeconomic stability, we included inflation variable which is measured by consumer price Index (annual %). The poor are mostly affected by inflation because they have relatively limited access to financial instruments that hedge against inflation (Easterly & Fischer, 2001; Mustapha & Khalid, 2013). The high and volatile inflation rate in SSA countries may also have adverse effect on financial intermediation because it makes difficult both short- and long-term contracts denominated in money and money terms (Mustapha & Khalid, 2013). For the trade openness we used value of imports and exports share of GDP as a proxy for trade openness. The literature suggests that that the value of import and export is a good measure of a country's degree of trade openness. The population is measured by population growth.

3.2 Method of data analysis

The study used a dynamic panel model generalized methods of moment (GMM) to estimate our financial development - poverty model. The multicollinearity test and the outlier test were used for the pre-analysis, while the Arellano-bond test for autocorrelation and the Sargan test of overidentification restrictions were used for the post-analysis. The GMM estimation accounts for probable endogeneity in the explanatory variables and increase model efficiency, especially when the explanatory variables are persistent (Arellano and Bover, 1995).

4. Results

The correlation matrix shows that the dependent variable poverty is positively correlated with the independent variable (financial development). The correlation also exhibits negative relationships between poverty and the control variables such as trade openness and inflation rate and positively related with population growth as shown in Table.2. The correlation reveals no evidence of multicollinearity problem among the variables under this study. Since none of the estimated coefficient among the independent variables is greater than 0.75 using the cut off line set by Tabachnick and Fidell (2007).

	Variable		Measurement	Expected Sign	Source
	PR	Poverty Rate	GDP per Capita (% of GDP)	-	WDI 2020
	FD	Financial Development	Domestic Credit to private sector by banks (% of GDP)	Negative	WDI 2020
Table 1:	ТО	Trade openness	Imports plus export share of GDP	Negative	WDI 2020
Variable	IN	Inflation	Consumer price index (annual %)	Positive	WDI 2020
and Measurement	РО	Population	Annual Population growth rate	Positive/ negative	WDI 2020

The results of the system GMM in Table 3 reveal that the coefficient of the financial development carries a negative sign and statistically significant. This implies that variable exerts significant negative influence on poverty. This means increase in domestic credit to private sector could lead to a reduction in poverty in SSA. This agrees with the theory and the priory expectation. A well-functioning financial sector could mobilise adequate financial resources and create credits for private sector growth and thereby lead to poverty reduction. This study corroborates the finding of Sehrawat and Giri (2016) in South Asia. However, from the value of the coefficient we can say the financial development effect on poverty reduction is weak and which need to be enhanced.

		PR	FD	EG	то	IN	РО
	PR	1.0000					
Table 2: Correlation	FD	-0.0492	1.0000				
matrix of the variables	то	-0.0673	0.0833	0.0913	1.0000		
Source: Author's own	IN	-0.0909	0.0693	-0.0572	0.0271	1.0000	
computation using Stata 16, 2021	PO	0.2927	0.0945	0.0909	0.0941	0.0300	1.0000

	Variables	System GMM	t-statistics
	PR (-1)	0.8836***	107.62
	FD	-0.0041***	-13.31
	ТО	-0.0069***	-10.42
	IN	-0.0027***	-5.18
	РО	0.0483***	14.91
	Constant	0.8947***	15.61
	Observations	297	
	Sample period	2011-2019	
Table 3: Financial	Number of codes	41	
development and poverty: dynamic panel	No. of instruments	41	
GMM estimation	Sargan (p-value)	32.4548	
	AR (1)	-1.4605	
Notes: *** indicates significance levels at 1%.	AR (2)	-0.9021	

The results further suggest that all the control variables are statistically significant indicating that they have the potential influence on poverty rates. For example, the coefficients of the trade openness and inflation variables carry negative signs indicating that increase in these variables tend to reduce poverty rates. The coefficient of the trade openness variable carries a negative sign indicating that it has positive impact on poverty reduction and it agrees with priori expectation. This suggests that trade among nations not only increase competitiveness and efficiency of the financial sector but it also stimulates output and thus increases real income. This also corroborates the findings of Azam et al. (2020) in Pakistan. This analysis demonstrates that, financial development, trade openness led to poverty reduction.

While the coefficient of the population variable has positive sign indicating that high population growth rate lead to increase in poverty rates. The low poverty reduction in SSA countries can be attributable to high population growth rate in many African countries. It has been argued that population growth not accompanied bv commensurate increase in GDP tend to dampen per capita income and thus exacerbate poverty. Furthermore, the great majority of the SSA population resides in the rural areas, the supply of infrastructural roads such as and telecommunication greatly facilities are inadequate. This undermines the ability of the financial intermediaries to reach out to the poor.

The lagged form of the poverty variable was included in the model because previous poverty in SSA affects current poverty. It can be seen from the results that the coefficient of the lag poverty variable was positive and significant. The positive sign of the coefficient means that poverty in of SSA countries in previous periods contributes positively to the current periods. The significance of the lagged dependent variable also shows that the GMM is an appropriate estimator, and the empirical results can be relied upon for statistical inference.

The post-estimation tests of the models which include instruments validity and reliability are shown by the serial correlation tests and the Sargan test. All the tests were valid as we could not reject the null hypothesis for Sargan (which stated that the overidentification restriction are valid) which means the instruments were valid. The second order serial correlation AR (2), which is meant to check AR (1), was also valid. This mean was consistent with the GMM econometric theory.

5. Conclusion

This study examines the effects of financial sector development on poverty in SSA. The paper attempts to answer a critical question, is financial sector development a catalyst for poverty reduction in SSA? The literature reviewed on financial development and poverty suggest that the findings are mixed, but majority supports that financial development reduces poverty. We observe that the nonconformity of some of the studies could be ascribed to the proxy used and measurement. However, the findings of the study suggest that financial development and all the independent variables in the model exert significant influence on poverty reduction. The financial development was found to have negative and significant indicating that increase in private sector credit reduces poverty reduction but weak in the sample countries. The trade openness and inflation lead to poverty reduction while the population was found to exhibit positive relationship indicating that the high rate population exacerbate the rate of poverty in SSA. Therefore, based on the findings this study recommends that policy makers need to focus on policies that spur the performance of the financial intermediaries and improving financial inclusion. There is need also to have sound policy on financial technology and telecommunication which enable the poor have access to basic financial services.

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