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Impact of Availability Dimension of Financial Inclusion on Poverty in Selected Developing Countries

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Abstract

This paper examined the relationship between the availability dimension of financial inclusion and poverty reduction in selected developing countries between 2012 and 2019. Using time series data and subjecting it to the necessary pre-regression diagnostic tests, the study employed appropriate estimators to determine the impact of financial infrastructure on poverty outcomes. The findings revealed that the availability dimension of financial inclusion—measured through the number of commercial bank branches, microfinance institutions, ATMs, and mobile money outlets per 100,000 adults—has a negative and statistically significant effect on poverty. This implies that improved accessibility of financial services contributes to reducing the poverty headcount by enabling a wider section of the population, particularly in rural and underserved areas, to participate in the financial system. Based on these findings, the paper recommends the adoption of policies that foster collaboration between monetary authorities and financial institutions to expand outreach. Importantly, bank expansion strategies should not be driven solely by profitability but should emphasise inclusivity, thereby enhance financial access and promote sustainable poverty alleviation.

Keywords:
Financial inclusion, Availability dimension, Poverty reduction, Developing countries, Financial infrastructure, Banking outreach, Inclusivity

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Background to the Study

In the 1950s and 1960s, many developing countries achieved their economic growth targets. However, improvements in Gross National Product (GNP) did not translate into better living standards for the majority of their populations, exposing the limitations of equating growth with development (Kumar & Sharma, 2014). Evidence showed that rising national income did not necessarily reduce poverty or address widespread inequality, unemployment, and illiteracy (Dang & Pheng, 2015; Sharma, 2008). This revealed that Gross Domestic Product (GDP), as a measure of development, was too narrow since it overlooked crucial social dimensions such as access to health, education, leisure, environmental quality, freedom, and social justice (Goeff, 2003; Stewart, 2016).

Poverty has remained one of the most pressing challenges in developing countries. Despite decades of growth, millions continue to face deprivation, exclusion from productive opportunities, and lack of access to basic services. Unlike economic growth, which is largely driven by market forces, poverty reduction requires deliberate investments in infrastructure, innovations, and institutional reforms that expand people's capabilities. Sen (1999) in Todaro and Smith (2009) emphasises that development should be about enhancing "capability to function," meaning that poverty is reduced only when people gain the freedoms, resources, and opportunities necessary to live meaningful lives. In this context, poverty alleviation demands sustained improvements in access to income-generating activities, education, health, and social empowerment.

In recent decades, global and national policymakers have increasingly recognised financial inclusion as a crucial strategy for addressing poverty. Financial exclusion perpetuates economic marginalisation by limiting access to savings, credit, insurance, and payment systems, thereby constraining poor households from participating fully in economic life (De Sousa, 2015). Following the 2008 global financial crisis, the Group of Twenty (G20) and subsequent initiatives such as the Maya Declaration underscored the urgency of expanding financial access to low-income groups as a pathway to stability and inclusive growth (Asuming et al., 2018; Tita & Aziakpono, 2017; Oji, 2015). By 2013, more than 50 countries had adopted financial inclusion strategies, signalling its emergence as a global development priority (Cull, Ehrbeck & Holle, 2014).

International organisations such as the Financial Action Task Force (FATF) and the World Bank have also linked financial inclusion to broader developmental and governance outcomes, arguing that reducing financial exclusion not only empowers households but also strengthens financial transparency and economic resilience (Koker & Jentzsch, 2013; Kim, Zoo, Lee & Kang, 2018). As Owen and Pereira (2017) note, these reforms have intensified scrutiny of banking structures, given their central role in enabling or constraining inclusive growth. Against this background, this paper seeks to examine the impact of the availability dimension of financial inclusion—the extent to which financial services are accessible to the poor—on poverty reduction in selected developing countries. By focusing on availability, the study aims to contribute to ongoing debates on how improving access to financial services can promote inclusive development and sustainable poverty alleviation.

Review of Related Literature

Ajinaja and Odeyale (2017) examined the role of microfinance in advancing financial inclusion for SME development in Nigeria between 2005 and 2015. Using two econometric models estimated with Ordinary Least Squares (OLS), the study analysed whether financial inclusion improved the financial well-being of low-income savers and assessed the impact of microfinance on SME performance. Their results showed a significant relationship between financial inclusion and the well-being of low-income earners. However, the relationship between microfinance loans to small enterprises and loans to rural areas was negatively significant, suggesting that microfinance could only enhance small business development if inclusive financial strategies were effectively implemented.

Harley, Adetoso and Adegbola (2017) investigated the contribution of financial inclusion to economic growth and poverty reduction across three African countries from 2006 to 2015. Employing OLS estimation, their findings indicated that the number of ATMs, bank branches, and government expenditure were strong predictors of financial inclusion's impact on poverty reduction in developing economies. Similarly, Donou-Adonsou and Sylwester (2016) assessed the extent to which banks and microfinance institutions (MFIs) reduce poverty in 71 developing countries between 2002 and 2011. Using a fixed-effects two-stage least squares approach, they found that banks reduce poverty when measured by headcount ratio and poverty gap, but MFIs showed no significant effect across poverty measures. This suggests that, at an aggregate level, banks play a stronger role in poverty reduction than MFIs.

In a related study, Enami, Lustig and Taqdiri (2016) examined the impact of fiscal policy on inequality and poverty in Iran using household survey data for 2011/2012. Applying the marginal contribution approach, they found that taxes and transfers significantly reduced inequality and poverty, with the Targeted Subsidy Program driving most reductions, especially in rural areas. While income taxes were effective in reducing inequality without worsening poverty, the poor targeting of transfers limited their overall poverty-reducing potential.

Ajide (2016) analysed the impact of financial inclusion on poverty reduction in rural Nigeria using data from 1996–2013 and the Autoregressive Distributed Lag (ARDL) model. Results confirmed both short- and long-run significance of financial inclusion in reducing rural poverty. Similarly, Schmied and Marr (2016) found that financial inclusion improved human poverty indicators in Peru, while Anwar, Uppun and Reviani (2016), using data from 31 Indonesian provinces (2005–2013) and a two-stage least squares method, established that inclusive finance positively influenced investment and growth and significantly reduced poverty, although its impact on economic growth was not significant.

Raichoudhury (2016) provided cross-country evidence showing that financial inclusion and economic development strongly correlate, with income levels closely aligned to

levels of inclusion. High-income countries were found to have stronger financial inclusion indicators. Ezeaku, Okafor and Ugwuegbe (2016) investigated the role of microcredit in Nigeria (1999–2014) using an error correction model. They found that while the size of microfinance banks had a positive effect on poverty reduction, microcredit itself had a negative and non-significant impact due to inefficiencies and high-interest rate spreads. They recommended stronger regulatory oversight to ensure affordable credit and better targeting of loans. Abdin (2016) analysed the relationship between financial development, financial instability, and poverty in Bangladesh from 1974–2013 using the Generalised Method of Moments (GMM). Findings indicated that financial development reduced poverty directly by enhancing access to credit and savings opportunities, and indirectly through economic growth. However, financial instability negatively affected poverty reduction efforts, suggesting a trade-off between deepening financial development and maintaining stability.

Taiwo and Olurinola (2016) studied the impact of microfinance on welfare and poverty alleviation in Southwest Nigeria using OLS regression and survey data from Lagos and Ogun States. Their findings showed that loan demand was more sensitive to availability than interest rates, and that microfinance positively affected beneficiaries' businesses, welfare, and access to essential services. The study recommended mobilising long-term capital to expand loan volumes and improving infrastructure to support financial intermediation. They concluded that higher MFI loan portfolios per capita were associated with lower poverty headcount ratios, highlighting the equalising role of microfinance in poorer countries.

Methodology

The study is quantitative in nature and basically depends on *ex post facto* research design, as it involves exploring the causal link between availability dimension of financial inclusion index) and poverty index. The data already exist and accordingly the investigation starts after the fact has taken place (Neil, 2000). And the data will be taken out from the Central Bank of Nigeria (CBN) statistical reports, within the period 2012 to 2019. The total proportion of economic development will be measured by the poverty index in Nigeria. Then, the appropriate regression analysis technique will be applied along granger causality analysis to examine the impact of financial inclusion on poverty index after the necessary diagnostic test.

Determine the impact of availability dimension of financial inclusion on poverty in selected developing countries, we specify the following dynamic Panel model;

$$lnpovhead_{i,t}=a_0+a_1 lnpovhead_{i,t-1}+\beta_1 lnadi_{i,t}+\beta_2 lngdppc_{i,t}+ \beta_3 lnssenroll_{i,t}+\beta_4 lngovtexp_{i,t}+\beta_5 lntradeopen_{i,t}+\pi_i+\rho_t+\mu_{it} \quad (3)$$

Where;
lnpovhead = log of poverty headcount ratio,
lnadi = log of availability dimension index,

lngdppc = log of per capita real GDP,
lnssenroll = log of secondary school enrolment ratio,
lninflation = log of inflation rate,
lngovtexp = log of government expenditure,
lntradeopen = log of trade openness.
i = 1,2,3,… 41 country,
t = 1,2,3,… 8 time period,
π_i is unobserved country-specific effect,
ρ_t is the time-specific effect and
μ_{it} is the idiosyncratic error term.
$\beta_1 - \beta_5$ and α_0 are the variable coefficients, and
α_0 is the intercept.

Table 1.

Variable	Description	Measure	Designation	Source
ADI	Availability dimension index of financial inclusion – branches + ATMs + mobile money agents **Branches** - Number of commercial banks, credit union, credit cooperative and all microfinance institution branches per 100,000 adults **ATMs** - Number of Automated Teller Machines (ATMs) per 100,000 Adults **Mobile money agents** - Number of registered mobile money agent outlets per 100,000 adults	Computed by using PCA Annual	Independent Variable	Financial Access Survey database of the IMF

Results, Findings and Discussion

Regression Results

Table 2: Regression Results for Hypothesis Two

Dependent Variable: *lnPOVHEAD*				
Method: System Generalized Method of Moment				
Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
C	-0. 2084	0. 3632	-0.57	0.570
L1.lnPOVHEAD	0. 9219	0. 0379	24.27	0.000
LnADI	-0. 0398	0. 0180	-2.21	0.034
LnGDPPC	-0.0725	0. 1057	-0.69	0.498
lnSSENROLL	0.0292	0.0110	2.65	0.012
lnGOVTEXTP	-0. 0395	0.0672	-0.59	0.560
lnTRAOPEN	0.0435	0.0455	0.96	0.346
F-stat (6, 33)= 528.12			Prob (F-stat)=0.000	
Hansen J-Statistic=16.15			Prob (J-Statistic)=0.443	
Arellano-Bond AR(1) = -1.54			Prob (AB)= 0.228	
Arellano-Bond AR(2) = 0.19			Prob (AB)= 0.852	
No. Obs = 238			No of instruments/groups =29/34	

Source: Author's Computation (STATA 15)

(See Appendix G2 for verification of result)

Table 2 shows that the coefficient of the constant term *C* is -0.2084 but it is not significant. It shows that when there is nothing influencing the poverty per head count, it decreases with time. The coefficient of the lagged value of poverty per head count (*L1. POVHEAD*) is 0.9219 and significant at 5% conventional level of significance. It means that lower income countries do not reduce poverty faster compared to higher income countries in the developing world. The log of availability dimension index of financial inclusion (*lnADI*) is -0.0398 with a probability value (P-value) of 0.034 which is less than 5% level is significant. This conforms to the '*a priori*' expectation due to the negative sign and the significant value. This means that a percentage increase in the availability dimension will decrease the level of poverty by 3.98% in the selected developing countries, ceteris paribus. The estimated coefficient of the log of GDPPC (*lnGDPPC*) is -0.073 although not significant, conforms to the '*a priori*' expectation and economically means that a percentage increase in gross domestic growth per capita will lead to a 7.25 percent decrease in poverty per head count in the selected developing countries. The estimated coefficient of the log of secondary school enrollment (lnSSENTROLL) is positive (0.0292) and significant at 5% level of significance, which did not follow '*a priori*' expectation. It means that a unit increase in primary school enrollment rate increases poverty per head count by 2.92 percent. Also, the estimated coefficient of the log of government expenditure (lnGOVEXTP) is -0.0395 and non-significant at 5% level of significance. It means that a unit increase in government expenditure will decrease poverty per head count by 3.95 percent. Finally, the estimated coefficient of the log of trade opennes (lnTRAOPEN) is positive (0.0435) although non-significant at 5% level of significance. It means that a unit increase in trade openness increases poverty per head count by 4.35 percent.

The F-stat value of 528.12 and the probability value of 0.000 which is less than 0.05 as shown in Table 2 implies that there is a significant relationship between the dependent variable and the independent variables of model (3). The calculated J-statistic of 16.15 with a p-value of 0.443 is greater than 0.05 significant levels. The null hypothesis for the Hansen J – statistics is that the instruments are valid, which means that the error term is uncorrelated and the instruments excluded are rightly excluded. So, the study does not reject the null hypothesis signifying that our instrument set is appropriate for model (3). It is important to understand that the *rule of thumb* is that the number of instruments should not exceed the number of groups, and it was satisfied in our model (No of instruments/groups =29/34). The study may not rely on the Hansen J tests if this pre-condition is not satisfied and, in most cases, the instruments will be weak. Also, the Arellano-Bond AR test reveals that there is no second order autocorrelation due to the non-significant probability value (*see Table 2*). This further justifies the acceptance of the regression result in Table 2. Also, the study observed from the table that there is a possible problem of heteroscedasticity and autocorrelation and the robust option was included in the GMM estimation for the variance correction.

Research Hypothesis Testing

Availability dimension of financial inclusion does not have a positive and significant impact on poverty in selected developing countries.

Test Statistic:

Table 3: Test Statistics for Hypothesis

Dependent Variable: *lnPOVHEAD*				
Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
lnADI	-0. 0398	0. 0180	-2.21	0.034

Source: Author's Computation (STATA 15)
(See Appendix G2 for verifications)

Decision

Based on the test statistic result, the negative coefficient and the probability value of 0.034 (*see Table 3*) which is less than the 5% conventional significance level, we reject the null hypothesis and conclude that availability dimension of financial inclusion does not have a positive but significant impact on poverty in selected developing countries at the 5 percent level of significance. The implication of our finding is that availability dimension of financial inclusion has a negative impact on the poverty head count of the selected developing countries. This has provided answers to research question two, and consequently achieves our research objective.

Summary

This study set out to determine the impact of the availability dimension of financial inclusion on poverty in selected developing countries. Availability was measured using the number of commercial banks, credit unions, credit cooperatives, and microfinance

institution branches per 100,000 adults, as well as the number of ATMs and registered mobile money agent outlets per 100,000 adults. The findings reveal that the availability dimension of financial inclusion has a negative and statistically significant impact on poverty headcount at the 5% level. Specifically, the log of availability dimension index (-0.0398) with a probability value of 0.034 indicates that, all things being equal, a 1% increase in availability leads to a 3.98% reduction in poverty levels in the selected countries.

The results are consistent with the finance narrowing hypothesis of Galor and Zeira (1993) and Banerjee and Newman (1993), which emphasises how financial imperfections constrain the poor from borrowing for productive investment. Empirically, the study aligns with Burgess and Rohini (2005) in India, who found that expanding rural banking improved income distribution and reduced poverty. Similarly, Harley, Adetoso and Adegbola (2017) in developing economies and Bakari et al. (2019) in Sub-Saharan Africa showed that the presence of ATMs and bank branches significantly drives financial inclusion and poverty reduction. The implication is that expanding access to banking services and financial infrastructure, especially in rural areas, can play a pivotal role in alleviating poverty.

Conclusion

The study concludes that the availability dimension of financial inclusion is a crucial driver of poverty reduction in developing countries. Greater demographic penetration and geographic reach of financial services provide the poor with opportunities to access savings, credit, and payment systems that are essential for economic empowerment. The findings underscore the importance of expanding financial infrastructure—through bank branches, ATMs, and mobile money agents—as these facilities serve as vital entry points for integrating the poor into the financial system.

Theoretically, the results reinforce classical and modern perspectives on finance and development (Schumpeter, 1911; Goldsmith, 1969; McKinnon, 1973; Shaw, 1973), which argue that financial systems facilitate growth and welfare improvements by mobilising savings and allocating resources efficiently. Practically, the results highlight that availability of financial services not only reduces poverty but also narrows inequality gaps by providing disadvantaged groups—particularly rural households and small-scale entrepreneurs—with greater access to financial opportunities. However, without deliberate policy interventions, financial institutions may prioritise profitability over inclusivity, leaving vulnerable populations underserved. Overall, the study provides robust evidence that improving the availability of financial services has a measurable and significant role in reducing poverty in developing countries. Expanding financial outreach therefore remains a necessary condition for sustainable development and inclusive growth.

Recommendations

Based on the findings, the following recommendations are made:

1. **Policy Synergy for Expanded Outreach:** Monetary authorities should work in synergy with commercial banks and microfinance institutions to ensure wider geographical coverage of financial services, particularly in rural and underserved areas. Profitability should not be the sole determinant for branch expansion; inclusivity and developmental impact must also guide decisions.
2. **Incentivise Financial Institutions:** Governments should design incentives (such as tax breaks, subsidised infrastructure, or risk-sharing schemes) that encourage banks and MFIs to extend their operations to less profitable but high-need regions.
3. **Strengthen Mobile and Digital Finance:** Since mobile money agents and digital banking have proven effective in reaching the unbanked, policies should support the development of digital infrastructure, ensure affordability of mobile services, and provide regulatory frameworks that protect consumers.
4. **Enhance Financial Literacy:** Alongside expanding physical and digital infrastructure, governments and NGOs should implement financial literacy programmes to enable low-income households to effectively utilise available financial services, thereby maximising their poverty-reducing potential.
5. **Improve Regulatory Oversight:** Regulatory bodies must ensure that microfinance institutions and banks provide affordable credit, fair lending terms, and transparent services to prevent financial exclusion arising from high interest rates and exploitative practices.
6. **Integrate Financial Inclusion into Development Strategies:** Policymakers should embed financial inclusion goals within broader poverty alleviation and national development strategies, recognising availability of financial services as a critical enabler of sustainable economic empowerment.

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