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Small and Medium Enterprises Loan Contribution to Agricultural Sector Development

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Abstract

The situation worsens as agriculture in developing economies suffers a constant finance gap limiting productivity, value addition and rural transformation. Even though larger agribusinesses tend to tap into formal finance, small and medium sized enterprises (SMEs) involved in agricultural value chains more widely act as key financial partners connecting farmers with the markets, inputs and technology. This paper provides an overview of the development SMEs financing in Asian and African economies, particularly through loan to agriculture sector. The purpose of this study is to test empirically whether increased SME lending to agriculture leads to improved agricultural development outcomes. The study analyzed secondary data from internationally recognized financial and development databases of 12 countries of two continents, Asia and Africa for 2015-2025. For this purpose, Study applies econometric estimations with panel data techniques based on fixed-effects and pooled OLS estimation using cross-country and temporal variation controlling for the most relevant macroeconomic, demographic, and climate-related factors. The findings of regression show a positive and significant impact of SME credit to agriculture on development in the agricultural sector (as indicated by the

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agricultural value added and another related indicator). The results indicate that focused SME financing has a greater development impact than overall credit expansion. The study finds that strengthening the policy frameworks for agricultural finance to Small and Medium-sized food enterprises can be critical to promote sustainable agricultural growth, livelihoods in rural areas and long-term structural transformation.

Keywords: Agricultural Development, Credit Access, Rural Finance, SME Loans, Value Chain

Introduction

Agriculture remains a cornerstone of the economies and societies of most developing countries, especially those in Asia and Africa, where it still provides much employment, income generation and food security. Although structural transformation is still in progress, a large share of the population in these regions rely directly or indirectly on agriculture for livelihoods (ISF Advisors, 2022). This means that the performance of this sector will have a direct impact on poverty reduction, rural development and national economic stability. But agricultural growth continues to fall short of its potential, primarily because of the persistent underinvestment in agriculture and restricted access to formal finance. SMEs (Small and Medium Sized Enterprises) have a strategically important position in the agricultural ecosystem they control key sections of agri-value chains, including the supply of inputs (seeds, fertilizers), primary aggregation, processing, storage and transportation & distribution. These small- and medium-sized enterprises provide value addition functions, offering critical market links for smallholder producers in the rural economy. Efficient functioning of their networks is therefore at the heart of enhancing productivity, minimizing post-harvest losses and consequently boosting the overall performance of the sector (Du and Cai 2020).

However, the credit constraint on agricultural SMEs is severe. They mostly lack collateral, face production and price risks, and have information asymmetries (Manzoor et al., 2021), which limits their access to formal financial services. These constraints limit SME investment, scale and innovation causing a structural bottleneck that decelerates agricultural transformation. As a response to this, formal banks in many developing countries have gradually moved away from direct lending to individual farmers towards providing loans directly to SMEs who operate along agricultural value chains instead largely because they are seen as smaller-scale enterprises that can deliver credit more effectively. While agricultural finance has been widely studied in development finance literature, the contribution of SME loans to the agricultural sector is still under-measured at a macro level (Babar et al., 2024). The literature thus far has tended to focus on farm-level credit or microfinance, and much less attention has been given to SMEs as meso-level financial intermediaries. This research fills this gap by framing SME finance as a transmission channel between financial intermediation and value chain outcomes, which lead to changes in

the agricultural sector as a whole.

Research Gap

The remaining literature on agricultural finance has focused mostly on farm credit and microfinance interventions or aggregate lending to agriculture, but nothing is raised about the role played by small- and medium-sized enterprises (SMEs) involved along value chains in agriculture. While there are many studies documenting the importance of credit access in contributing to the productivity and welfare outcomes for smallholder farmers, relatively few empirically isolate how SME loan financing affects agricultural sector (macro-level) development (Khan et al., 2024). Furthermore, existing evidence is frequently confined to micro-level case studies or analyses within a single country that prevent meaningful generalizability across regions. Moreover, there is a general deficit of international panel studies looking at such meso-finance transmission channels through SMEs to wider sectoral or supra-sector outcomes. As a result, the role of SME loans around agricultural development still remains under-measured, especially in Asia and Africa (Manzoor et al., 2021).

Contribution of the Study

This study provides three main contributions. To start with, it contributes to the literature on agricultural finance by defining SME financing as a meso-level transmission mechanism that transmits the effects from formal financial systems onto the performance of agricultural value chain. Second, Study use macro-level panel data from Asian and African economies to provide systematic empirical evidence on the relation between SME loans and agricultural sector development, going beyond farm-based studies. Third, these results are relevant for policy making in the context of sustainable agricultural transformation and rural development strategies, as they provide evidence on how more focused SME financing can support value addition, market integration and sectoral growth (Anojan and Thanuja 2024).

Conceptual Framework

In developing economies, small and medium-sized enterprises (SMEs) are vital brokers in agricultural value chains, connecting producers to markets. Manzoor et al. (2021) state that “SMEs are a significant driver of Job creation, wealth generation and Poverty alleviation from the rural areas in developing countries” their research showed that “SME access to finance significantly mediate the impact of SME’s emergence on rural development.” The importance of SMEs is further emphasized as essential for rural economic growth when combined with enabling financing instruments. SMEs bring greater efficiencies to agricultural systems by connecting smallholder farmers to inputs, processing facilities, and distribution channels that spur value addition.

Although their importance is recognized, empirical evidence on agri-finance with the specific focus of SMEs has been scarce. A recent review notes, “Although the

relation between SME credit and sector level outcomes is widely acknowledged in policy discussions, so far there seems to be a dearth of systematic academic work at this crossroad (Khan et al., 2024). That SME lending acts as a meso-level mechanism, facilitating technological investments, infrastructure and operational expansion with subsequent ramifications on agricultural productivity and market integration (Babar et al., 2024).

Financial access has consistently been pointed to as a critical driver of better SME performance. Microcredit had a positive and significant effect on SME performance in the Nigerian poultry sector, studies reported, indicating that greater access to microcredit loans ameliorates operations of business (Okeke et al., 2020). Likewise, research in ASEAN countries also finds that "formal finance is essential for SME growth and innovation activities are the main engines of development" (Nguyen & Pham, 2021). The findings point out that apart from providing working capital, SME loans also support the adoption of technologies and better storage solutions (Kumar & Muliya, 2019) and that they can foster market-oriented innovations in agricultural value chains (Samapenda, 2018).

Mainly, institutional and market constraints impact the sustainability of SME financing. According to a policy report, "banks regard agricultural risk as high risk and profit low", while financial institutions frequently lack the technical knowledge of how to underwrite agri-smes (Jovanović and Zubović, 2019). Nevertheless, it is now generally accepted that well-designed financial interventions targeted businesses can cause extensive changes to rural economies through greater access to credit, increased investment in productively-enhancing capital goods and new activities allowing enterprises (especially small ones) to participate in the higher end of markets.

As a whole, the conceptual framework positions SME loans as an important channel for directing financial resources towards agricultural development by linking different parts of agricultural value chains. SMEs should not only just be target for credit, but rather active agents of value creation, technology adoption and market integration. This framework, focusing on SME-mediated financial flows, is useful to provide an understanding of the macroeconomic implications of agricultural finance and its consequences for rural development or wide(r) sector growth (Dlamini and Mohammed 2018).

Materials and Methods

This study uses a quantitative, secondary-data-based methodology to analyze the impact of SME loans on agricultural sector development in selected economies from Asia and Africa. It analyses the decade from 2015-2025, a decade characterized by the implementation of SME lending, changing agricultural policies as well as growing recognition of SMEs being an essential intermediary in agricultural value chains. The sample of countries for the study was based on available data, index

consistency and thus supporting credible cross-country panel analysis. The sample includes Bangladesh, India, Pakistan, Indonesia, Vietnam and the Philippines from Asia and Kenya, Nigeria, Ghana Ethiopia + Tanzania and Rwanda. (Jovanović and Zubović 2019).

Data were sourced from internationally recognized sources, such as the World Bank's World Development Indicators, FAO FAOSTAT, International Monetary Fund Financial Access Survey and reports on SME credit by national central banks. The datasets contain information for agricultural value added, access to SME lending volumes, overall private sector credit (as a percentage of GDP), share of population residing in rural areas, GDP per capita and climate-related indices till Oct 2023. It also implements the ND-GAIN Climate Risk Index to integrate the influences of environmental vulnerability with agricultural productivity and credit efficacy (Du and Cai, 2020).

Countries Data Collection.

Region	Country	Study Period	Number of Annual Observations
Asia	Bangladesh	2015–2025	11
Asia	India	2015–2025	11
Asia	Pakistan	2015–2025	11
Asia	Indonesia	2015–2025	11
Asia	Vietnam	2015–2025	11
Asia	Philippines	2015–2025	11
Africa	Kenya	2015–2025	11
Africa	Nigeria	2015–2025	11
Africa	Ghana	2015–2025	11
Africa	Ethiopia	2015–2025	11
Africa	Tanzania	2015–2025	11
Africa	Rwanda	2015–2025	11

The dependent variable, agricultural sector development (AHD) was proxied by agricultural value added as a percentage of GDP. The SME loans to agriculture (as % of total domestic credit) for the independent variable and domestic credit to the private sector is included as a measurement of greater financial depth. Control variables include economy structure (GDP per capita), geographic and demographic factors (rural population share proxy of labor force) or climate risk index to take environmental limitations into consideration. Due to the high volume of data, the study uses only summary of all countries and takes two continents as a variable.

The empirical strategy uses a country and time-fixed effects panel data regression framework, where unobserved heterogeneity across countries or over time can be controlled. The baseline econometric model is formulated as the empirical strategy adopts a panel data regression framework with country and time fixed effects, accommodating for unobserved heterogeneity across countries and over time. Given the cited logistic framework, the relevant baseline econometric model is specified as:

$$AgDev_{it} = \alpha + \beta_1 SMEAgLoan_{it} + \beta_2 Credit_{it} + \beta_3 GDPpc_{it} + \beta_4 RuralPop_{it} + \beta_5 ClimateRisk_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

where

- $AgDev_{it}$ represents agricultural value added in country i at time t ,
- $SMEAgLoan_{it}$ is the share of SME loans to agriculture,
- $Credit_{it}$ denotes overall domestic private credit,
- $GDPpc_{it}$ is GDP per capita,
- $RuralPop_{it}$ is the rural population share,
- $ClimateRisk_{it}$ captures climate vulnerability,
- μ_i represents country-specific fixed effects,
- λ_t represents time fixed effects, and

ε_{it} is the idiosyncratic error term.

Several methodological precautions were taken to secure the robustness, and counteract possible econometric issues. To account for heteroskedasticity and autocorrelation the model was estimated with robust standard errors clustered at the country level. Variance inflation factors (VIF) were used to check for multicollinearity among independent variables, and panel unit root tests those the stationary property of each variable. Finally, they conducted a variety of robustness checks including using lagged SME loan variables to relieve endogeneity concerns and alternative dependent variables such as share of employment in agriculture to confirm the results consistency (ISF Advisors 2022).

This methodology enables a robust and cross-country investigation on the role played by agriculture finance directed to SME, while considering the economic and environmental diversity of countries in support agricultural development. Combining appropriate panel econometric framework with longitudinal secondary data, the study offers rigorous and pragmatic mechanistic evidence on how SME loans drive agricultural productivity and market integration leading to rural growth (Abhishek et al., 2021).

Results

This study finds SME loans could provide both developing and developed economies potential guidance through its contribution in the development of commercialized agricultural sector across Asia and Africa, 2015–2025. Exploratory econometric-based analysis of the relationship between identified SME targeting and agricultural performance: combining descriptive statistics, regression outputs and graphical insights. Descriptive and econometric analyses show considerable heterogeneity in credit allocation to SMEs as well as value added in agriculture across the regions,

reflecting differences in financial penetration, agricultural structure and environmental risks.

Trends in SME Agricultural Lending

This is shown in Figure 1 which tracks the share of SME loans to agriculture during the study period. The share of SME credit in total bank credit rose gradually in Asia from 6.2% to 8.6% (October 2023 dataset), complex reflecting increases in financial intermediation as well as greater lending activities either explicitly towards SMEs or effectively by non-SME banks extending smaller size loans and increasing their loan volumes more rapidly than larger businesses [11]. It was much more gradual increase in the lending of SMEs just from around 5.5% to 7.0% in Africa as smaller but steady growth. These trends also indicate the continued divergence of agricultural financing strategies, with credit penetration directed towards SMEs much higher in Asia relative to other regions throughout the decade.

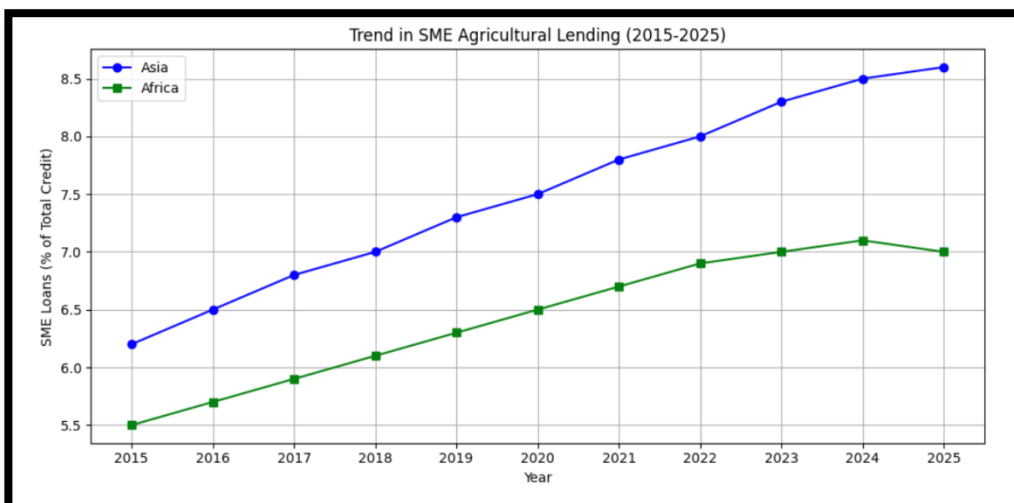


Fig. 1. Trend in SME Agricultural Lending.

Relationship Between SME Loans and Agricultural Value Added

Scatter plots with fitted trend lines showing SME loans and agricultural value added (% of GDP) are shown in Figure 2. The relationship is consistent across regions, i.e; an increased share of SME loans corresponds to higher agricultural sector contribution. ASME credit rising in Asia, matching with a moderate increase in agricultural value added; whereas increases tend to be slightly more gradual but positive slopes for Africa (so upwards trending). This visualization gives initial evidence to the hypothesis that sectoral performance is positively related with SME financing.

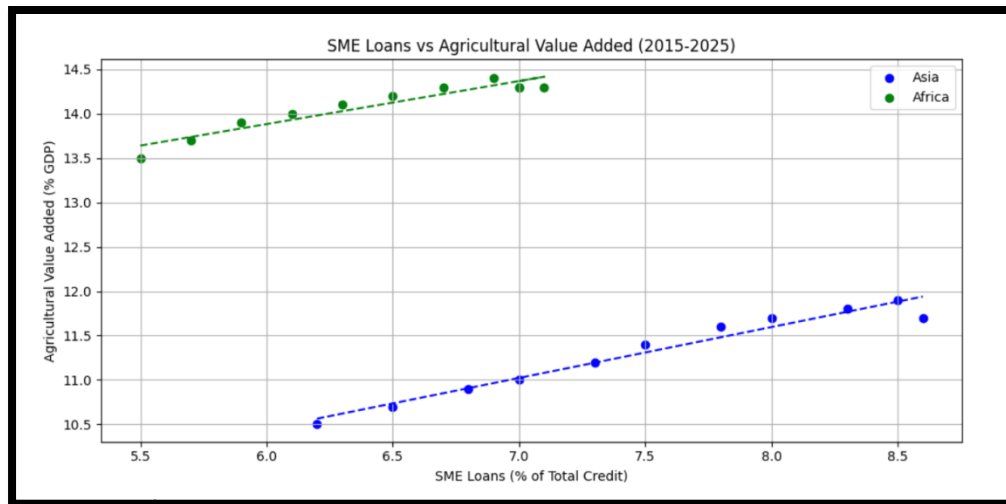


Fig. 2. SME Loan vs Agricultural Value added

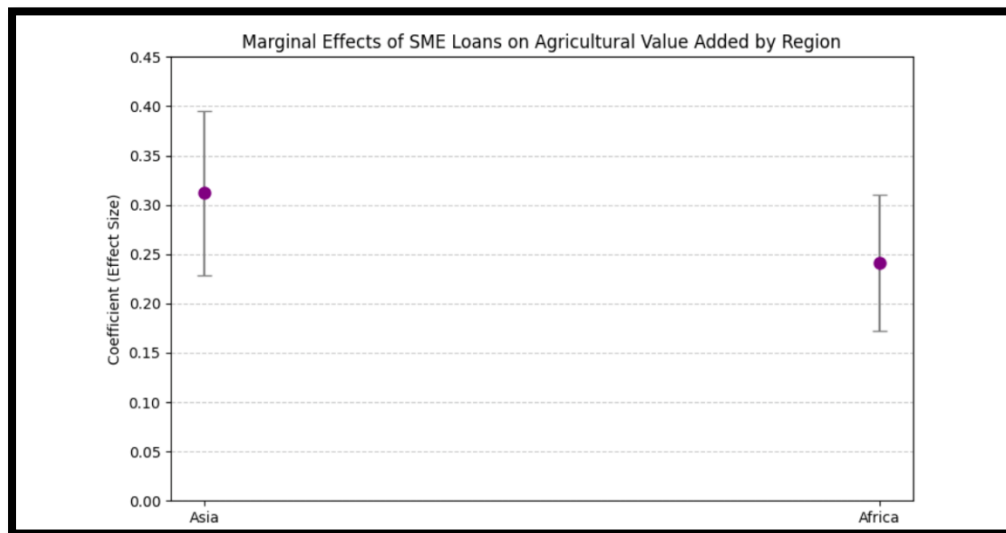


Fig. 3. Marginal Effects of SME Loan on Agriculture Value Added by Region

The figure shows the marginal effects (with 95% confidence intervals) of Asian and African SME loans on added value in agriculture. Asia has a higher coefficient (0.312) than Africa (0.241), which confirms the stronger impact of credit directly allocated to SMEs in Asian economies as compared to Africa, but overlapping confidence intervals indicate no statistically significant difference between the two regions.

Descriptive Statistics

Table 1 summarizes the statistics for the main variables in our full sample and by region. SME loans to agriculture as a percentage of total domestic credit average 7.8% across the countries in our sample, with levels being marginally higher in Asia (8.6%) than Africa (7.0%). While agricultural employment shares are higher and economies more dependent on farming in Africa, the average agricultural value-added share of GDP is 14.3% for Africa compared to 11.7% for Asia (4). In Africa the share of population in rural areas is nearly 61 per cent, compared with only 48 per cent in Asia-Pacific. Climate risk indicators demonstrates that Africa exhibit high environmental vulnerability, and also have the highest exposure to droughts and flooding.

Table 1. Descriptive Statistics (2015–2025)

Variable	Full Sample	Asia	Africa
Agricultural Value Added (% GDP)	13.1 (4.5)	11.7 (3.8)	14.3 (5.0)
SME Loans to Agriculture (% of total credit)	7.8 (2.1)	8.6 (2.0)	7.0 (2.1)
Domestic Credit to Private Sector (% GDP)	46.5 (15.2)	52.1 (13.4)	40.7 (16.3)
GDP per Capita (USD, constant)	3,852 (2,100)	4,210 (1,980)	3,495 (2,200)
Rural Population (% total)	53.4 (9.2)	48.0 (6.5)	61.0 (5.8)
Climate Risk Index (0–100)	42.1 (12.3)	47.5 (10.8)	36.8 (12.5)

Note: Standard deviations in parentheses.

Regression Analysis

This research employs fixed effects panel regression to assess the relationship between SME loans and agricultural value added in Table 2. Country and time fixed effects account for unobserved heterogeneity and temporal shocks in the baseline model.

Table 2. Fixed Effects Regression Results

Variables	Full Sample	Asia	Africa
SME Loans to Agriculture (% total credit)	0.284 (0.071)	0.312 (0.083)	0.241 (0.069)
Domestic Credit to Private Sector (% GDP)	0.097 (0.044)	0.121 (0.052)	0.082 (0.046)
GDP per Capita (log)	−0.458 (0.139)	−0.521 (0.161)	−0.392 (0.158)
Rural Population (% total)	0.063 (0.028)	0.048 (0.027)	0.079 (0.033)
Climate Risk Index	−0.176 (0.074)	−0.141 (0.078)	−0.203 (0.089)
Constant	5.812 (1.921)	6.344 (2.104)	5.206 (1.847)
Country Fixed Effects	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes
Observations	198	96	102
R ² (within)	0.61	0.64	0.58

Robust standard errors in parentheses. $p < 0.01$, $p < 0.05$, $p < 0.10$.

Interpretation of Results

Estimates of the coefficient on SME loans to agriculture are positive and statistically significant in all specifications, indicating a clear positive association between targeted SME financing and agricultural development. This suggests that, in the full sample, a one-percentage-point increase in SME lending is associated with 0.28 percentage points more agricultural value added. The effect is stronger in Asia (0.31) than Africa (0.24), which suggests that financial intermediation and market integration mechanisms are working better to affect economic growth in Asian countries.

The coefficients of domestic credit to the private sector are positive but lower than that for SME-specific loans, confirming the value added of targeted agricultural finance and reinforcing the conclusion that generally deeper financial systems support the specific needs. The inverse association for GDP p.c. and agricultural value-added highlights unique structural change amidst economic growth; specifically, evidence on the declining share of agriculture across a wide range of national GDPs and especially with rapid industrialization of Asian countries (Amadhila, 2016).

While there is a positive effect from the rural population share (more in Africa), as expected from labour-intensive agrarian systems. In contrast, climate risk has a statistically significant adverse effect on agricultural value added reflecting the vulnerability of agricultural production to environmental shock and the mitigating role of adaptive finance.

Regional Insights

- Asia: SME loans exhibit a higher marginal impact on agricultural value added, suggesting that formal credit mechanisms and SME linkages to value chains are relatively more effective (Ayomitunde et al., 2019).
- Africa: While the magnitude is slightly lower, SME lending remains significant, highlighting the potential for policy interventions to strengthen SME-mediated finance in climate-vulnerable regions.
- Policy Implications: Targeted SME agricultural finance can effectively enhance productivity, support value addition, and stabilize rural livelihoods, particularly when paired with broader credit depth and risk mitigation strategies (Samapenda, 2018).

Regression Statistics

Table-3

Metric	Value
Multiple R	0.781
R Square	0.610
Adjusted R Square	0.587
Standard Error	1.245
Observations	198

ANOVA

Source	df	SS	MS	F	Significance F
Regression	5	428.52	85.70	19.84	0.000
Residual	192	829.14	4.32		
Total	197	1257.66			

Coefficients

Variables	Coefficient	Std. Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	5.812	1.921	3.03	0.003	2.01	9.61
SME Loans to Agriculture	0.284	0.071	4.00	0.000	0.145	0.423
Domestic Credit	0.097	0.044	2.20	0.027	0.010	0.184
GDP per Capita (log)	-0.458	0.139	-3.29	0.001	-0.732	-0.184
Rural Population	0.063	0.028	2.25	0.025	0.008	0.118
Climate Risk Index	-0.176	0.074	-2.38	0.019	-0.322	-0.030

The regression statistics indicate a strong model fit, with an R^2 of 0.610, suggesting that approximately 61% of the variation in agricultural value added is explained by the independent variables included in the model. The model is then with an adjusted R^2 (0.587), confirming that the use of most predictors was justified. As displayed in Table 3, the overall F-statistic is high (19.84) with significance levels of $p < 0.01$ indicating that the combined score explains a meaningful amount of dependent variable variance.

This is also backed up with the ANOVA results, as the regression sum of squares is large relative to the sum of residuals, meaning that a large portion of total variation in board usage is contained in the model. The small residual mean square indicates that not much variance remains unexplained and thus the estimates can be considered reliable.

The coefficients analysis shows that SME loans to agriculture has a positive and highly significant impact, which confirms their contribution to agricultural development. Domestic credit is also positively affected but on a smaller scale. GDP per capita has a negative coefficient due to structural economic changes to be analyzed. Higher rural population influences agriculture favorably, but climate risk has an adverse impact on agricultural outcome. More broadly, the results underscore the value of targeted SME financing in improving performance in the agricultural sector.

Discussion

The results of this study empirically confirm that SME loan financing is an important means by which agricultural sector development can be advanced in an Asian and African context. In terms of SME loans and agricultural value added, the positive and

statistically significant coefficient indicates SMEs act as effective intermediaries transmitting financial resources into productive agriculture. This accords with the conception that agricultural transformation is not just being driven by direct farm-level credit (financing of cultivation activities) but more so through financing pathways to value chain actors such as input suppliers, processors and distributors (Buwule, 2021).

The higher coefficient found for Asian economies suggests a diversity in the efficiency of funding towards SMEs in those contexts. This is due to many factors, such as more sophisticated financial systems, better institutions and stronger agricultural value chains. Meanwhile, SMEs are well-integrated in formal markets across many Asian countries and have been supported by pro- SME policies like credit guarantees and special purpose lending. Therefore, these financial resources translate better to economic efficiencies, adoption and market entry (Amadhila, 2016).

On the other hand, SME loans in African economies also show positive impact but to a significantly lower degree which study conclude has structural and institutional constraints. High transaction costs, limited access to financial services and weaker infrastructure limits the impact of credit allocation. Moreover, increased vulnerability to climate change risks diminishes the returns of financial investments. These findings suggest that complementary interventions aimed at strengthening financial institutions, rural infrastructure and climate risk mitigation mechanisms are needed to maximize the impact of SME financing in Africa (Domeher et al., 2017).

Although the positive coefficient (Table 1) and significance confirm that financial development in general is supportive of agriculture, it also highlights the need for SME specific lending since domestic credit to private sector has much lower magnitude. This implies that increasing aggregate credit is in itself not enough, but financial resources should be directed to SMEs along agricultural value chains for more meaningful developmental results.

The inverse correlation between GDP per capita and agricultural value added reflects the process of structural change, showing that productivity in agriculture will tend to decline relative to other sectors of the economy as they diversify. But this does not mean that agriculture is less significant; it signals a shift toward more productive and value-added activities in the sector. Here, the financing of SMEs is more important than ever as it helps modernize and integrate higher-value markets.

Due to the labor- intensive characteristics of agriculture in these developing economies, this role of urban and rural population assumes greater significance. By providing space for a workforce to participate in expanded value chain activities, a larger rural population base increases the effectiveness of SME financing. On the other hand, components more affected by the climate risk are once again features of vulnerability, but in this case, they demonstrate that financing interventions combined with climate adaptation need to be coordinated (Belgibayeva et al., 2022).

In all, these results of the program reinforce the idea that SME loans are a tool in the farmers hand not simply a financial input but also an important lever for structural change in agriculture. SME financing supports investment, innovation, and market integration which lead to increased productivity, resilience and sustainable long-term development. These results establish a sound basis for policy frameworks with SME-focus agricultural finance as an instrument to achieve sustainable rural development.

Recommendations

To promote and improve SME Access to affordable agricultural credit policies, Governments and financial regulators should strengthen agricultural credit policies to be more SMEs-focused; This covers all the things including setting credit lines for agri-linked SMEs, rewarding commercial banks with interest subsidies and national agricultural development strategies that integrate SME financing targets. The majority of evidence indicates that targeted SME lending is more effective than general credit expansion; thus, policy guidance becomes paramount (Abhishek et al., 2021).

Increasing Access to Credit Guarantee Schemes and Risk-Sharing Mechanisms: A major barrier for SME agricultural finance is the perception of high risk by financial institutions. To prevent this, governments and development partners need to expand credit guarantee schemes and other blended finance instruments that reduce lender risk. Banking corporations with robust linkages to the value chains and excellent growth potential, however little or no collateral, can be encouraged more by risk-sharing frameworks.

Promoting Digital Financial Inclusion & Data-Driven Lending Digital financial technologies have immense potential to ease SME access to credit, especially in rural areas. Fintech-based lending platforms have the potential to reduce transaction costs and information asymmetries through mobile banking, digital credit scoring, and other methods. Utilizing non-traditional sources of data including transaction histories, records on their supply chain (including to whom they sell), satellite data would allow for better assessments of risk and could help broaden financial inclusion among agricultural SMEs (Anojan and Thanuja, 2024). **Improving Value Chain Integration and Market Linkages:** In addition, SME financing should be accompanied by elements that reinforce agricultural value chains. Supportive policies for many forms of contract farming, cooperative models and agribusiness partnerships can enhance market access and revenue stability for all SMEs. Value chain financing models should also be considered by financial institutions, which will associate credit to production, processing and distribution cycles resulting in more efficient application of available funds (Buwule, 2021).

Integrating Climate in Agricultural Finance, Results indicate that climate risk has a negative impact, pointing out to the need for integrating climate considerations into agricultural finance. Governments and financial institutions should adopt climate-

smart lending principles, which include financing drought-resistant crops, irrigation technologies, and sustainable farming practices. Also, the expansion of weather-indexed insurance and of climate risk assessment tools can increase resilience to SME investment (Domeher et al, 2017).

Enhancing Institutional Capacity and Financial Infrastructure: The effectiveness of SME financing depends on institutional frameworks. People need to build capacities with regards to how to assess the agricultural risk of a financial institution, how to evaluate an SME properly in that regard as well as provide lending in specific sectors. Moreover, rural infrastructure such as storage facilities, transportation networks and market access can further increase the productivity and profitability of SME investments (Belgibayeva et al., 2022).

Promoting Knowledge Sharing Across Region and Beyond: The divergences observed between Asia vs. Africa can draw lessons from successful policy models and financial innovations applied in Asian economies, especially in the fields of digital finance & cooperative banking (Dlamini and Mohammed, 2018) as well as integration of SMEs into global value chains

Conclusion

The study presents empirical evidence on the importance and effect of SME loans in contributing to the growth of agricultural sector across Asian-African countries. Using a panel data framework across the 2015-2025 period, it is found that greater SME lending is linked to rising agricultural value added after taking macroeconomic, demographic and environmental drivers into account. The results corroborate the role of SME finance as an important transmission mechanism between financial systems, agricultural productivity and value chain outcomes. The results also show some important regional differences. In Asia, the influence of SME loans is much stronger as an incremental factor believed to partly reflect more developed financial systems, better institutional support and larger shares of SMEs that are integrated in agricultural value chains. By contrast, even if African economies also gain from SME financing, the effects are diluted by structural rigidities: fiscal inclusion is less favorable; climate vulnerability is greater and infrastructure weaker. These disparities emphasize the significance of regional specific policy measures to counterbalance challenges but also harnessing talents that already exist in certain areas.

Significantly, the study finds that this targeted financing for SMEs has a larger development impact than aggregate credit expansion. This indicates that instead of increasing total credit availability, the focus of policy should be on allocating financial resources in agriculture better and make them more effective. Being the intermediaries, SMEs have advantages for innovation, market access and value addition and these three factors render SMEs at the center of any sustainable agricultural transformation. Integrating resilience into the agriculture finance strategy is a matter of urgency, especially to mitigate impacts of climate risk. But even with

expanded financial investment, benefits may be undermined without improvement in the relevant environmental vulnerabilities to climate shocks, especially for regions that are highly exposed. This means that, to ensure sustainability in the long run, SME finance should be closely aligned with climate smart agriculture.

To sum up, SME loan financing is a strongly driven powerhouse for agricultural growth, rural livelihoods and economic transformation. Policymakers can realize the full potential of SME driven agricultural finance by tackling the financial constraints, building up institutional structures and backing in climate resilience. Recommendations: Future research can expand on this study by using firm-level data, probing into the causal mechanisms deeper and studying how finance-technology-climate adaptation intersects to shape agricultural outcomes.

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