Research Paper

Sustainable Finance and SME Growth in Kenya: Assessing the Impact of Integrating Sustainability on Credit Access, Resilience and Asset Quality

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Abstract

The study addresses a critical gap in the literature by examining the integration of environment, social and governance (ESG) in Banking and their impact on SMEs in Kenya. SMEs contribute 34% to GDP and over 80% of employment but face significant credit access barriers (only 23% access bank loans). Unlike prior studies focusing on large corporations or developed markets, this research targets an underexplored emerging market context. The study employs a robust mixed-methods approach, combining quantitative regression analysis (via SPSS) with qualitative interviews from 79 SME owners (79% response rate) and 10 bank executives. A novel contribution of the study is the development of a customized ESG performance index with 15 equally weighted indicators across environmental, social, and governance dimensions, tailored to Kenya's context and validated by experts. Regression results revealed that, ESG lending has a positive yet statistically insignificant impact on credit access ($B = 0.010$, $p = 0.816$), with macroeconomic factors (interest and inflation rates) showing stronger negative effects ($R^2 = 0.178$); ESG screening had a significant positive effect on resilience during economic shocks ($B = 0.094$, $p = 0.025$; $R^2 = 0.162$); and ESG-driven finance significantly improved bank asset quality ($B = 0.462$, $p < 0.001$).Qualitative evidence supports the view that, SMEs who adhere to the ESG have a high quality of governance, reduced default rates and greater resiliency, especially when economically distressed (e.g., COVID-19). The study proposes actionable recommendations, including a national ESG framework with tiered reporting standards, fiscal incentives (e.g., tax rebates), adopting an online ESG scoring system, and public-private partnerships to enhance SME credit access, resilience, and bank asset quality.

Keywords: *Sustainable finance, SME resilience, bank asset-quality, economic development, financial inclusion, NPL reduction, ESG compliance, Kenya banking sector*

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Introduction

Background

The growing uncertainty in local and global experience triggered by increasing climate risks, technological advancements, and geopolitical challenges has made sustainability the single most important factor in changing how we live, work, and consume (Goedertier et al., 2023). Concurrently, Gleißner et al. (2022) highlight that sustainability is becoming an overarching aim for corporations and societies all over the world. According to Goedertier et al. (2023b), "sustainability" means the interrelationship between social equity, environmental integrity, and economic viability. SMEs have not been able to borrow cheap capital, and are more vulnerable to economic changes, and cannot adopt sustainable and green financial performance measures (Pu et al., 2021). The ESG banking eliminates reckless credit risk and offers a correct way of dealing with financial risks and the economy's stability in the long run (Oyewole et al., 2024).

Research Problem

SMEs form the backbone of Kenya's economy, contributing over 30% to the gross domestic product while employing over 80% of the working population (KNBS, 2022). Evidently, with such a prominent role, SMEs also face quite a stiff challenge in terms of accessing formal credit. Only about 23% of SMEs have access to bank loans as reported by the Central Bank of Kenya (CBK) while most of them utilize informal financing channels or their own funds to expand or operate (CBK, 2021). A very important barrier is the perceived high credit risk by lenders flowing from poor financial records, lack of collateral, informal business structures, and an extremely high ratio of nonperforming loans to the SME loan portfolio. Debt defaults of underperforming SMEs made up close to 17 percent of all the non-performing loans reported in the banking sector in 2025, further creating a barrier to lending to this segment by much of the banks (CBK, 2022).

Concurrently, the adoption of Environmental, Social, and Governance principles in the international and local financial systems has been on the rise as an approach for sustainable and risk-sensitive banking. This further strengthens the fortification of sustainability metrics into credit assessments, improving loan quality and long-term risks while boosting borrower resilience. Studies conducted in developed markets demonstrate that ESG compliance is linked with high creditworthiness, high borrower activity, and decreased rates of default (Giese et al., 2019; Capelle-Blancard et al., 2021). While regulation and legislation are increasingly requiring the adoption of environmentally sustainable governance and capital allocation by large institutions, much of the attendant research finds results mostly on large corporate lending or developed economies, while SMEs have received scant attention in emerging markets.

In Kenya, the Central Bank, along with the Kenya Bankers Association, have made efforts towards the adoption of ESG through, for instance, the issuing of Sustainable Finance Guidelines. However, empirical research that has attempted to assess these efforts' impacts on SME credit access and performance remains limited. No known research has systematically reviewed whether the integration of ESG into banking practices has provided access to finance for SMEs, earned them financial resilience, or provided better asset quality to the lenders in the Kenyan context.

Research Questions

- RQ1) How do ESG finance practices adopted by Kenyan banks influence SMEs' access to credit?
- RQ2) How does ESG screening impact SME resilience to global economic shocks in Kenya?
- RQ3) What is the impact of ESG-driven finance on bank asset quality among SMEs in Kenya?

Research Objectives

- To examine how ESG-based lending impacts SMEs' access to credit in Kenya
- To evaluate how ESG screening impacts operational resilience of SMEs in Kenya
- To evaluate how ESG-driven finance contributes to asset quality in Kenyan SMEs

Contribution

A novel contribution of the study is the development of a customized ESG performance index with 15 equally weighted indicators across environmental, social, and governance dimensions, tailored to Kenya's context and validated by experts. Unlike widely used global ESG indices, this index incorporates context-specific indicators relevant to Kenya's regulatory environment, SME sector realities, and sustainable finance priorities. Literature showed that ESG indices were designed for developed markets, relying heavily on secondary disclosures, and emphasizing investor-oriented metrics. By doing so, the index provides a locally grounded and practically applicable tool for assessing ESG performance, addressing gaps in the literature where existing indices may not adequately capture the dynamics of emerging economies.

This study is timely, given the financial vulnerability of SMEs and the growing need for sustainable credit practices in Kenya. It explores how ESG integration affects SME access to credit, loan performance, and resilience while aligning with ALM constraints in banks. The findings aim to inform fiscal policy and banking practices that promote sustainable economic growth through tailored ESG financing models for SMEs.

Literature Review

Sustainable Finance and Credit Access

Environmental, Social, and Governance (ESG) banking is becoming a critical tool in sustainable finance, reshaping credit access and risk management. While global studies such as Giese et al. (2019) demonstrate that higher ESG scores are linked to lower idiosyncratic risk and reduced cost of capital, these findings mainly apply to large, listed firms in developed economies and are not easily transferable to SMEs in emerging markets. Similarly, Foster and Briceno-Garmendia (2019) show ESG-aligned risk frameworks improve banks' engagement with SMEs in Sub-Saharan Africa, but the findings are generalized and do not provide country-specific or dimension-specific (e.g., governance vs. environment) insights.

Within Kenya, empirical evidence is growing. Wandera and Muturi (2021) found ESG-compliant practices improved asset quality and profitability in 30 Kenyan banks. However, this study focused on bank-level metrics without considering borrower-level outcomes like SME credit access. Maina and Kibati (2022) linked ESG disclosure to improved credit access among listed firms, yet their findings do not extend to SMEs, which rarely have formal ESG frameworks. Okpara and Nnenna (2020), using Nigerian SME data, found basic ESG compliance improved lending terms, but the Nigerian context differs from Kenya, limiting generalizability.

Despite growing interest in ESG as a risk mitigation and credit optimization tool, significant empirical gaps persist. Globally, SMEs are underrepresented in ESG-finance research. Regionally, African studies often lack country-specific detail. Locally, Kenyan research has not yet empirically tested ESG integration’s effect on SME credit access and resilience at the borrower level. This study seeks to fill that gap.

Sustainable Finance and SME Resilience

Several studies emphasize sustainable finance's role in enhancing SME resilience. Kato (2024) discusses how sustainable Venture Capital funding supports long-term growth and resilience, while Ahmed et al. (2021) identify diversified revenue and contingency planning as resilience factors during COVID-19. Pu et al. (2021) highlight how financial mechanisms, innovation, and government support build sustainability, and Agbanyo et al. (2022) identify credit and macroeconomic factors as key to SME survival. Odoch et al. (2024) find that financial connectedness and social capital also improve resilience. These studies support the link between sustainable finance and SME robustness but often exclude the role of commercial banks in ESG-based financing, which this study addresses.

Banking Sector Stability and Sustainable Finance

Sustainable finance also supports banking sector stability by minimizing credit risk. Amoah, Dzeha and Arun (2022) identified a trade-off between sustainability and stability with social welfare investments had little impact on asset growth and profitability, potentially reducing financial stability. Macroeconomic factors like inflation were significant where inflation increases non-performing loans while interest rates increased resilience (Shahrom & Kunhibava, 2023).

Nyamongo (2019) found that while ESG policies exist in Kenyan banks, integration into credit decisions is minimal. Kariuki (2015) similarly noted that slow ESG adoption hampers financial sustainability. Msomi and Zungu (2023), studying South African SMEs post-COVID-19, showed that flexible, sustainability-linked loans helped firms survive while reducing bank risk. Kato et al. (2024) argue that policy-driven sustainable finance is essential for long-term SME development. Oyewole et al. (2024) show ESG lending enhances SME

competitiveness and risk management. Together, these studies reinforce the value of ESG-integrated finance for both SMEs and banks.

Sustainable Finance in Africa: Comparative Analysis

In emerging economies, ESG adoption in banking varies. South Africa's King IV Report and Johannesburg Stock Exchange's disclosure guidance promote ESG integration, supporting SME access to sustainable finance. Nigeria's Central Bank introduced the Nigerian Sustainable Banking Principles in 2012, requiring banks to manage environmental and social risks and annually report ESG compliance. While Kenya has initiatives like the Kenya Bankers Association's Sustainable Finance Initiative (2015) and the Capital Markets Authority's ESG Disclosure Guidelines (2021), ESG adoption remains mostly voluntary. Unlike South Africa and Nigeria, Kenya lacks mandatory ESG reporting, limiting consistency. Learning from these models can help Kenya institutionalize ESG practices.

Gaps in Literature

There is a clear gap in understanding how ESG-led banking affects SME credit access and resilience in Kenya. Existing studies address ESG's effect on bank performance or firm-level disclosures but rarely examine borrower-level impacts, especially among SMEs. Few explore how ESG finance aligns with Asset-Liability Management (ALM) strategies. No prior study has developed an ESG performance index tailored to Kenyan banks.

Theoretical Framework

Asset-Liability Management (ALM) Theory: This theory is essential in banking as it matches long-term assets (e.g., loans) with short-term liabilities (e.g., deposits) to manage risks (Maggioni & Turchetti, 2024). It helps explain how Kenyan banks use ESG-compliant credit models to balance SME loan exposure with macroeconomic and credit risk management, thereby enhancing financial sustainability.

Triple Bottom Line (TBL) Framework: The TBL framework evaluates business decisions based on economic, social, and environmental outcomes (Zaharia & Zaharia, 2021). In this study, TBL is used to assess whether Kenyan banks integrate ESG in lending to promote profitability alongside social development and environmental responsibility.

Stakeholder Theory: This theory posits that financial institutions, SMEs, policymakers, and regulators must collaborate to design effective sustainable finance policies (Mahajan et al., 2023). This research uses stakeholder theory to examine how coordinated efforts among these actors can improve ESG integration, financial literacy, and policy compliance in Kenya.

Conceptual Framework

The conceptual framework of this study was developed from the review of existing literature, which highlighted the linkages between the independent variables and the dependent variables under investigation. It integrates insights from empirical studies, thereby providing a structured basis for examining the hypothesized relationships while accounting for relevant control variables.

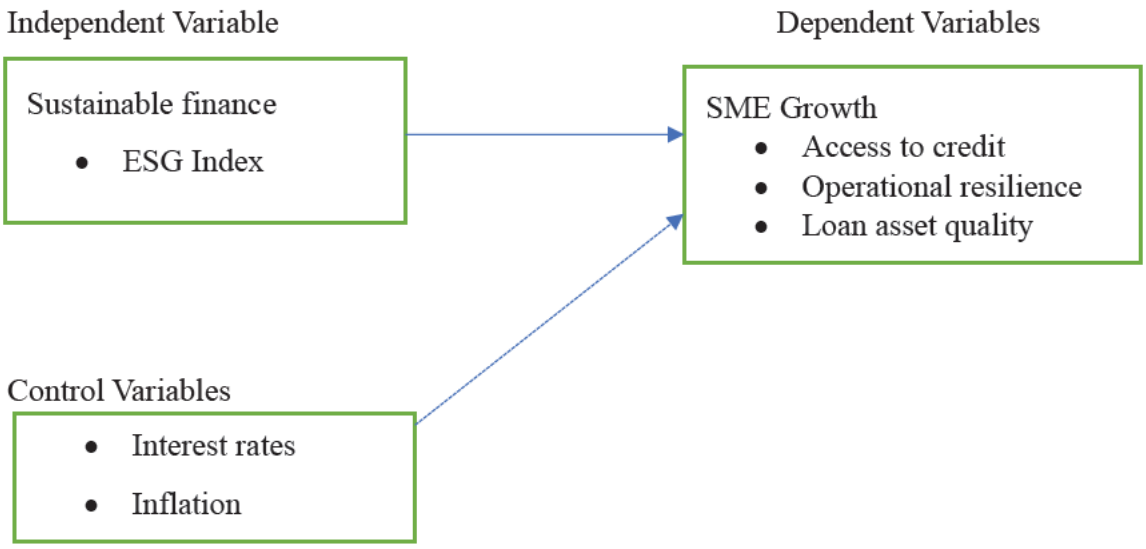


Figure 1: Conceptual Framework

Measurement

Sustainable finance - measured using a customized ESG performance index developed for this study, consisting of 15 equally weighted indicators—five each under Environmental, Social, and Governance dimensions, based on Kenya's CMA ESG guidelines. Each indicator was rated on a 5-point Likert scale, and the overall ESG score calculated as the mean across all indicators, offering a standardized measure of ESG integration within SMEs and banks (Nicholls,2021).

Dependent Variables

The dependent variable was measured through SME Growth in Kenya, reflected in:

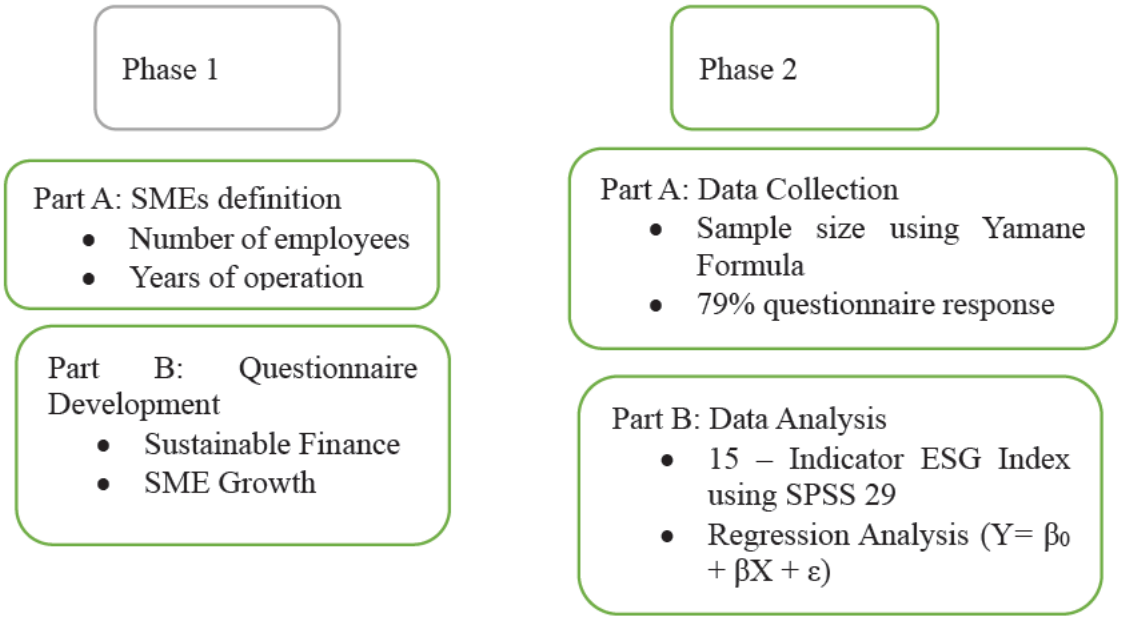
- **Credit Access**: Measured via self-reported loan approval rates, average loan sizes, and disbursement turnaround time (Beck, 2023).
- **SME Resilience**: Captured through responses on business continuity during shocks, payroll stability, and adoption of sustainable practices (Badoc-Gonzales, Mandigma & Tan, 2022).

- **Loan Asset Quality**: Assessed using self-reported non-performing loan ratios specific to SME portfolios (Gallo, 2021).

Control Variables

Macroeconomic factors of interest rates and inflation were used as control variables as they influence credit access, resilience and loan asset quality (Okunbanjo, Ojenike & Fakunmoju, 2022).

Methodology and Data



This study employed a mixed-methods approach to explore the impact of sustainable finance on SME growth, combining both qualitative and quantitative techniques. Data were collected through structured surveys and interviews with 100 SME owners and 10 bank executives from top ESG-leading banks in Kenya. Stratified and purposive sampling ensured representation across diverse sectors and levels of ESG integration. Sample size was determined using the Yamane formula.

Primary data included interviews and survey responses, while secondary data were drawn from regulatory filings, financial statements, and ESG disclosures. Triangulation with CBK reports and independent audits enhanced reliability, especially where SME recordkeeping was inconsistent. A 15-indicator ESG performance index, validated by a panel of local experts, was used to measure sustainability integration.

Quantitative data were analyzed using SPSS 29 for descriptive and regression analysis, while thematic analysis was used for interpreting qualitative responses. This allowed for a

robust assessment of ESG's impact on credit access, resilience, and asset quality. The study adopted a multiple regression model.

$Y1= \beta_0 + \beta X1 + \beta X2 + \beta X3 + \varepsilon$ ……. (1)

$Y2= \beta_0 + \beta X1 + \beta X2 + \beta X3 + \varepsilon$ ……. (2)

$Y3= \beta_0 + \beta X1 + \beta X2 + \beta X3 + \varepsilon$ ……. (3)

Where;

Y1 = credit access in SMEs

Y2=SME resilience

Y3=bank asset quality

X1= sustainable finance represented by ESG

X2=interest rate

X3=inflation rate

β_0=constant

β_{1-3}=regression coefficient

ε=Error term

Diagnostic tests were done on the regression model. This included multicollinearity, normality and heteroskedasticity. Model test statistics like R2, F-statistics and significance values were checked through ANOVA and Model Summary statistics.

Limitations included incomplete SME data due to informal practices, response bias mitigated through anonymity and triangulation, and cultural/knowledge gaps addressed via pretesting and enumerator training.

Ethical Considerations were strictly observed, including informed consent, anonymity, and Institutional Review Board (IRB) approval. All data were de-identified and used solely for academic purposes.

Results and Discussion

Reliability and Validity Test Results

To establish constructs validity of the research instrument, the study undertook a factor analysis to establish whether the research instrument measured the constructs it ought to measure. The research conducted a principal component analysis (PCA) to reduce the observed variables relating to sustainable finance into a smaller set of meaningful dimensions.

Table 1 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.735
Bartlett's Test of Sphericity	Approx. Chi-Square	137.947
	Df	105
	Sig.	.017

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.735, which is above the recommended threshold of 0.6. According to Kaiser's classification, values between 0.7 and 0.8 are considered "good," meaning the sample was adequate for factor analysis. This indicates that the correlations among the ESG-related variables in the study were strong enough to justify the application of principal component analysis. Bartlett's Test of Sphericity yielded a Chi-Square statistic of 137.947 with 105 degrees of freedom and a significance level of 0.017. Since the p-value is less than 0.05, the null hypothesis that the correlation matrix is an identity matrix was rejected. This confirms that the variables were sufficiently correlated, making them suitable for data reduction through factor analysis.

Table 2 : Total Variance Explained

Co mponent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	otal	% of Variance	Cum ulative %	otal	% of Variance	Cum ulative %
1	.815	12.1 02	12.1 02	.815	12.1 02	12.1 02

2	.613	10.753	22.855	.613	10.753	22.855
3	.501	10.010	32.865	.501	10.010	32.865
4	.460	9.736	42.600	.460	9.736	42.600
5	.304	8.694	51.294	.304	8.694	51.294
6	.131	7.543	58.837	.131	7.543	58.837
7	.047	6.978	65.815	.047	6.978	65.815
8	909	6.057	71.872			
9	846	5.639	77.512			
10	788	5.253	82.765			
11	688	4.587	87.352			
12	544	3.624	90.976			
13	536	3.576	94.551			
14	480	3.198	97.749			
15	338	2.251	100.000			
Extraction Method: Principal Component Analysis						

The Total Variance Explained table illustrates the eigenvalues, percentage of variance explained, and cumulative variance accounted for by each extracted component. In line with

Kaiser's criterion, only factors with eigenvalues greater than one were retained, as they accounted for more variance than a single variable. Based on this criterion, seven components were extracted and considered suitable for further interpretation.

The first component, with an eigenvalue of 1.815, explained 12.1% of the total variance, while the second component explained 10.8% with an eigenvalue of 1.613. The third and fourth components accounted for 10.0% and 9.7% of the variance respectively. The fifth, sixth, and seventh components explained 8.7%, 7.5%, and 7.0% of the variance respectively. Together, these seven components cumulatively explained 65.8% of the total variance in the dataset. This implies that more than half of the variability in ESG-related sustainable finance indicators among Kenyan institutions was adequately captured by the seven extracted factors.

The remaining components, from the eighth to the fifteenth, had eigenvalues less than one and contributed less explanatory power than individual variables. For instance, the eighth component explained only 6.1% of the variance, while the fifteenth explained a mere 2.3%. These factors were therefore excluded from the final solution. Retaining the seven key factors ensured that the analysis focused on the most significant underlying dimensions of sustainable finance.

The cumulative variance explained of 65.8% suggests that the ESG framework in the Kenyan context can be meaningfully summarized by a reduced set of seven dimensions. These finding highlights that sustainable finance in Kenya is multifaceted and cannot be explained by a single factor, but instead emerges from a combination of environmental, social, and governance elements. The retained components thus provide a robust basis for further interpretation and discussion of the critical drivers of sustainable finance practices among Kenyan institutions.

For reliability, the researcher used Cronbach alpha to check for internal consistency in the research instrument. A Cronbach alpha value above 0.7 depicts that the research instrument is reliable. Hence, it would give consistent results.

Table 3 : Reliability Test Results

Variable		Cronbach's Alpha	No of Items	Reliability
Sustainable Finance	ESG index	.757	15	Reliable
	Environmental	.748	5	Reliable
	Social	.831	5	Reliable
	Governance	.741	5	Reliable
Credit Access		.719	5	Reliable
SME resilience		.925	5	Reliable
Loan-asset quality		.861	5	Reliable
Interest rates		.740	5	Reliable
Inflation rates		.948	5	Reliable

A coefficient value of 0.7 or higher is generally considered acceptable in social science research, as it demonstrates that the items reliably measure the same underlying concept. This test was therefore employed to ensure that the scales used in the questionnaire were both consistent and dependable in capturing the constructs of interest. The results revealed that all the variables achieved Cronbach's alpha values above the 0.7 threshold, confirming satisfactory levels of reliability. For the ESG index, the alpha value was 0.757 with the aspects showing 0.748, 0.831 and 0.741 for the environmental, social and governance respectively.

The high Cronbach's Alpha values obtained across all constructs of the ESG index imply that the research instrument was robust in capturing consistent responses from the study participants. This enhances the credibility of the findings, as the scales used can be trusted to measure the intended constructs reliably. This suggests that while the items measuring credit access were consistent, future research could refine or expand the scale to improve reliability

further. The reliability test results imply that the study instrument was both valid and consistent, ensuring that any observed relationships between sustainable finance, credit access, SME resilience, loan asset quality, interest rates, and inflation rates are grounded in reliable measurement. This strengthens the confidence in policy recommendations and academic contributions arising from the study.

Given that the ESG index was based on self-reported measures, steps were also taken to minimize potential biases. Respondents were assured of anonymity and confidentiality, reducing the likelihood of socially desirable responses. The items were drawn from established and validated scales in previous studies, ensuring content validity and minimizing measurement error. In addition, the questionnaire was pilot tested to identify and revise ambiguous or leading questions. Procedural remedies such as randomization of items and the inclusion of both positively and negatively worded statements further helped to reduce response bias.

Descriptive Analysis

The study sought to establish the general information related to the SMEs examined. This related to the number of employees, years of operation and annual turnover.

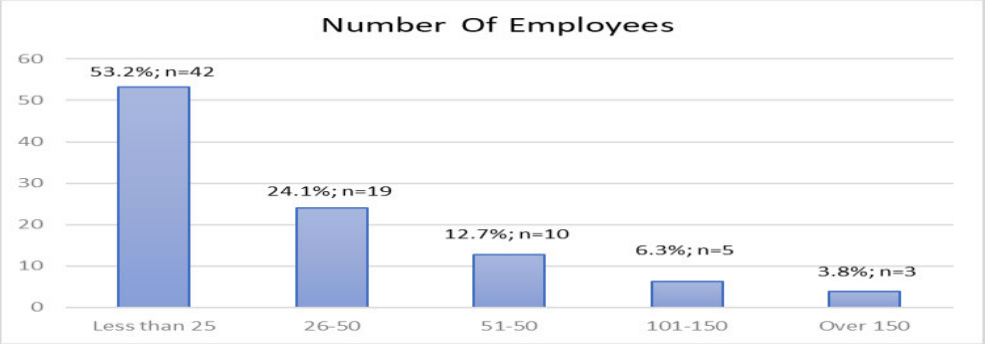


Figure 2: Number of Employees

From bar graph in figure 2, 53.2% were microenterprises with fewer than 25 employees, often informal and less equipped for ESG compliance. Another 24.1% had 25 to 50 employees, indicating some operational structure and moderate ESG readiness. In total, 77.2% had under

50 employees. Only a small proportion of SMEs had 51 to 100 (12.7%), 101 to 150 (6.3%), and more than 150 employees (3.8%), indicating that most lacked the scale and internal capacity typically needed for effective ESG adoption.

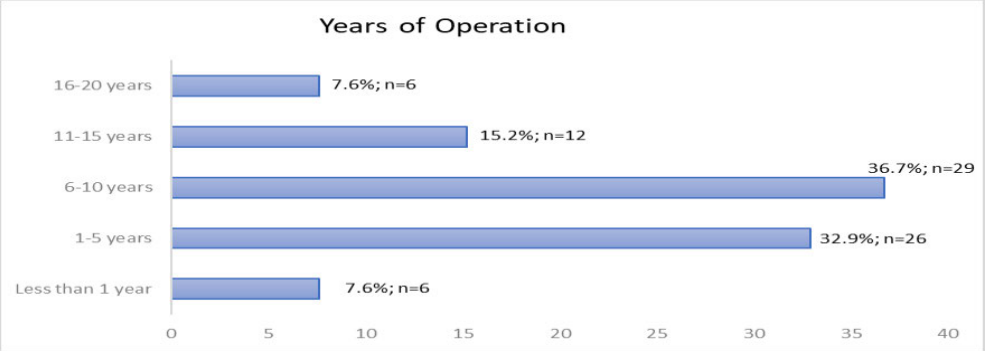


Figure 3: Years of Operation

Business longevity reflects SME resilience, institutional maturity, and readiness to engage with ESG principles. From figure 3, most SMEs had been operational for 6–10 years (36.7%) or 1–5 years (32.9%). A smaller group had operated for 11–15 years (15.2%) and 16–20 years (7.6%), likely possessing more formal governance and familiarity with ESG frameworks. Only 7.6% were under a year old, suggesting the sample leaned toward relatively established businesses capable of engaging with ESG-linked finance.

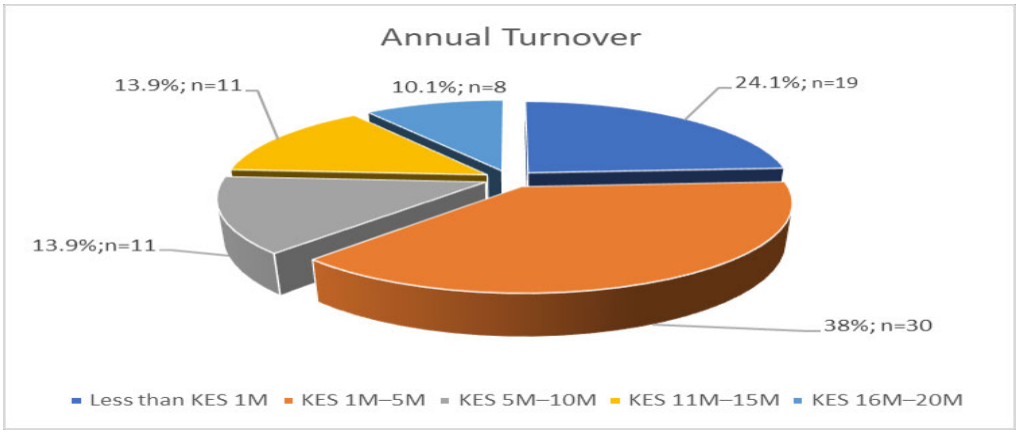


Figure 4: Annual Turnover

Annual turnover reflects an SME's financial strength, growth potential, and readiness for ESG-linked financing. From figure 4, majority (62%) earned between KES 1–5 million annually, while 24.1% earned less than KES 1 million suggesting limited capacity for ESG

compliance. Mid-tier firms earning between KES 5–20 million made up 34%, indicating more structured operations and better alignment with ESG-linked financing tools. These findings underscore the need for tiered ESG support for more established SMEs.

Sustainable Finance

The study sought to establish the sustainable finance among Kenyan based on ESG. The respondents were asked to indicate the extent to which they agreed on statements relating to ESG in their SMEs.

Table 4: Sustainable Finance

	Mean	**Std. Deviation**
Environmental		
My organization utilize energy-saving machinery and operations	2.5823	1.18330
My organization do have a policy and procedure regarding waste	2.4304	1.03383
My organization utilizes environmentally friendly materials or packaging	2.1392	.91615
My organization monitor conservation and usage of water closely	2.5823	.81031
My organization adheres to environmental laws and regulations	2.3797	.75624
Social		
My organization values gender diversity and promote equality.	3.5949	.82461
My organization provides employee health and welfare benefits	2.1215	.87613
My organization interacts with the public frequently	2.6203	.82125
My organization offers staff training and development.	2.1329	.83478
My organization guarantees occupational safety and equitable treatment	2.7722	.94665
Governance		
My organization possesses a strong board or leadership group.	2.4304	.82716
My organization adheres to anti-corruption and ethical practices	2.3797	.85190

My organization carry out reviews and internal audits	2.3165	.72579
My organization adopts openness in decision making	2.3671	.73689
My organization possesses effective redressal mechanisms	2.7975	.53872
Sustainable Finance (ESG)	**37.7468**	**.69989**

From the data, a 15-indicator ESG index, equally weighted across environmental, social, and governance dimensions, was developed and validated by experts to assess sustainability integration. This was done through transformation of Likert data through summation. Survey results in Table 1 revealed that an aggregate mean score for sustainable finance practices across the ESG dimensions of 37.7468. Therefore, Kenyan SMEs engage moderately with ESG, showing stronger commitment to social aspects like gender equality, but limited action on environmental and governance practices. Despite weak adoption in areas like waste management and anti-corruption, a positive trend is emerging. The 2024 KBA and CBK reports noted increased bank-led climate finance initiatives and a 23% rise in SME lending since 2020, though detailed ESG tracking in MSMEs remains limited.

SME Growth: Credit access, SME Resilience and Loan Asset Quality

The study sought to establish the growth of Kenyan SMEs. This was based on credit access, operational resilience and asset quality. The respondents were asked to indicate the extent to which they agreed on statements relating to the growth of their SMEs.

Table 5: SME Growth

Credit access	**Mean**	**Std. Deviation**
Access to credit from banks is easy in my business	2.2278	.87632
My organization usually receive approval of loans applied	2.6709	.92987
The size of loans received corresponds to my business requirement	2.4051	.94080
My organization enjoy good turn-around time from application to disbursement in lending	2.2911	.97602

ESG considerations are taken along with loan applications in my organization	2.4810	.93179
SME Resilience		
My business is still running despite recent economic shocks	2.1595	.55965
My organization was able to sustain payroll during hard times	1.6456	.83264
My organization adapts strategies to sustain during crises	2.5823	.91438
The ESG practices enables my organization to weather economic shocks better	2.3924	.91171
My organization possesses emergency business continuity plans or reserves	1.5823	.92830
Loan Asset Quality	11.9620	1.81478
My organization always return loans in a timely manner	1.4937	.74890
My organization has defaulted on a high loan portfolio	3.6456	.68008
My organization enjoys good relationships with lenders because its reliable	2.2152	.41358
My organization's lending history displays low risk to lenders	2.3165	.58931
My organization's asset quality has deteriorated in the last 3 years	3.6810	.78219

The SMEs in Kenya reported limited access to appropriate and timely credit, with challenges in ease of obtaining loans, suitability of amounts received, and slow turnaround times, although loan approvals were occasionally granted and ESG considerations were modestly factored in. Business resilience remained low, with most lacking continuity plans or financial buffers and struggling to maintain operations during economic shocks, though some adapted their strategies. Asset quality was also weak, with high levels of loan delinquency, poor repayment performance, and deteriorating financial health. Nationally, over 18 percent of SME loans were classified as non-performing, and the banking sector recorded a sharp rise in loan defaults, reaching a 17-year high of 14.8 percent and KES 652 billion in non-performing loans (KBA,2024), highlighting growing credit risk and financial vulnerability in the SME sector.

Macroeconomic Factors

Table 6: Macroeconomic Factors

Statement	Mean	Std. Deviation
Interest Rate		
The interest rates charged by banks are very high these days	3.7165	.88498
Interest rates have risen during the last 12 months	3.5316	.79800
The interest rate environment remains unstable	3.5190	.88955
Most SME loans carry interest above 10%	3.6456	.78508
Interest rates are among the most important cost determinants of financing	3.6962	.92479
Inflation		
The prices of goods and services have increased substantially in the last one year	3.7468	.74194
My company has been experiencing growing operating expenses because of inflation	3.3924	.89754
The inflation rates in Kenya are currently high	3.5949	.87000
The purchasing power of customers has been reduced because of inflation	3.6076	.83846
Stable prices have been made increasingly challenging by inflation	3.7468	.70653

Interest rates in the SME sector were reported to be high, unstable, and rising, with most loans carrying rates above 10 percent. Inflation over the past year significantly increased operating expenses, reduced customer purchasing power, and made price stability difficult to maintain. The combined impact of high interest and inflation rates threatens SME sustainability, especially for businesses without financial buffers or adaptive capacity.

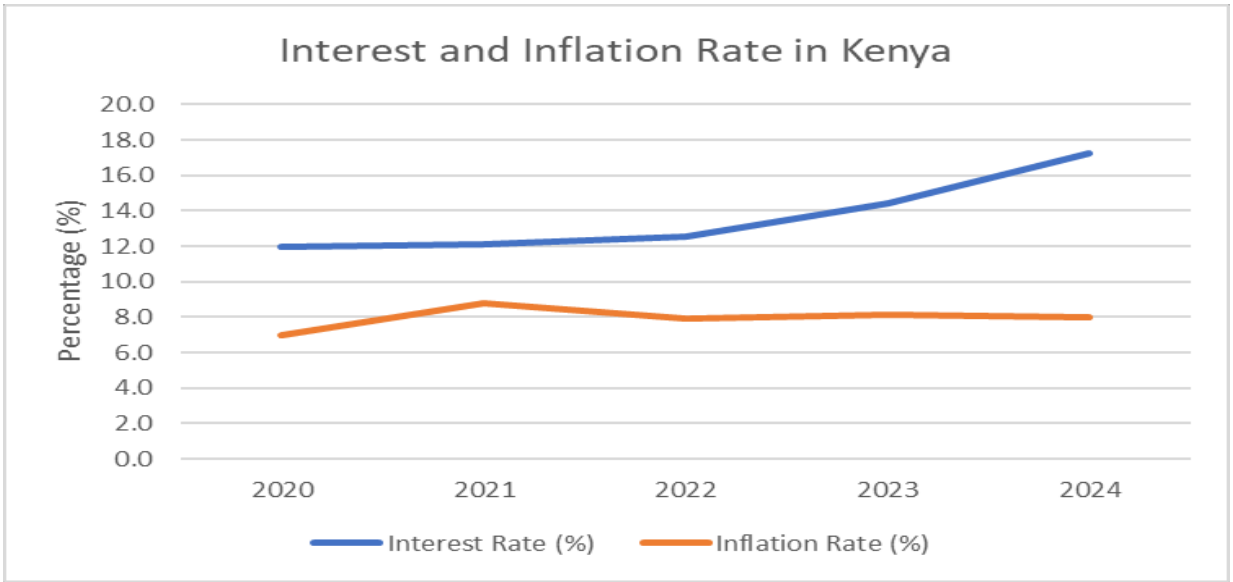


Figure 5: Inflation and Interest Rates in Kenya

From the data gathered from CBK, interest rates showed an upward trend between 2020 and 2024. The interest rates increased from 11.9% to 17.2% in 2024. This trend was also like that of inflation rates which increased marginally in the period. This trend is like the findings from the SMEs.

Diagnostic Tests

Diagnostic tests on multicollinearity, normality and heteroskedasticity were done on regression model.

Table 7: Multicollinearity

Predictor	Tolerance	VIF
Sustainable Finance (ESG)	.989	1.011
Interest rate	.946	1.057
Inflation rate	.955	1.047

Multicollinearity was done through Variance inflation factor to check on whether there existed linearity among the predictors. From the outcomes, the variables showed VIF values of less than 2. Therefore, no multicollinearity existed in the variable data.

Table 8: Normality Test

Variable	Shapiro-Wilk		
	Statistic	df	Sig.
Loan Asset Quality	.995	79	.112
Sustainable Finance (ESG)	.992	79	.107
Interest rate	.979	79	.061
Inflation rate	.984	79	.063
Credit access	.970	79	.056
SME Resilience	.989	79	.099

Normality testing was done through Shapiro wilk statistics. This checked on whether the residuals followed a normal distribution. From the analysis, all the variables showed p-values above 0.05. Therefore, the data for the variables was normally distributed which allowed for regression analysis and credibility of outcomes from the analyses.

Table 9: Heteroskedasticity

Chi-Square	Df	Sig.
.076	1	.782

Breusch-Pagan test for heteroskedasticity was done for the regression model. The results indicated that the test was not statistically significant ($\chi^2 = 0.076$, $p = 0.782 > 0.05$). Therefore, the null hypothesis, that the error variance is constant, could not be rejected. This finding confirms that the regression model did not suffer from heteroskedasticity. Consequently, the assumption of homoscedasticity was satisfied, ensuring that the estimated coefficients were efficient and that standard errors, t-statistics, and significance levels were valid for hypothesis testing.

Regression Analysis Results

Impact of Sustainable Finance (ESG) on SMEs' Growth in Kenya represented in SMEs' Access to Credit, operational resilience and loan asset quality. The results are shown in Tables 4, 5 and 6.

Table 10 : ESG Based Lending and SMEs' Access to Credit

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.073	3.100		5.507	.000
	Sustainable Finance	.010	.045	.026	.233	.816
	Interest Rate	-.114	.041	-.116	-2.792	.007
	Inflation rate	-.243	.103	-.160	-2.360	.021
R=0.422 **R Square**= 0.178						

The regression analysis showed that ESG lending had a positive but statistically insignificant effect on credit access (B = 0.010, p = 0.816), suggesting limited influence on actual lending outcomes. In contrast, both interest rates (B = –0.114, p = 0.007) and inflation (B = –0.243, p = 0.021) had significant negative effects, indicating that rising borrowing costs and inflationary pressure were major barriers to SME credit access. Despite this, financial reports (KBA, 2024; CBK, 2024) highlighted a growing trend of ESG-based lending among Kenyan banks, with increased innovation around climate-related financial products.

Table 11: Sustainable Finance and SME Resilience

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.756	2.838		4.143	.000
	Sustainable Finance	.094	.041	.244	2.293	.025
	Interest rate	-.290	.104	-.302	-2.774	.007
	Inflation rate	.099	.094	.113	1.047	.299

R=.402 **R Square**=0.162

The regression results showed that sustainable finance (ESG) had a positive and statistically significant effect on SME resilience (B = 0.094, p = 0.025), suggesting that stronger ESG performance is linked to greater operational resilience. Interest rates had a negative effect (B = –0.290, p = 0.007), highlighting that higher financing costs weaken SMEs' capacity to withstand economic shocks. Inflation had an insignificant effect on resilience (B = 0.099, p = 0.299). Supporting this, the KBA (2023) report noted that ESG-aligned lending practices enabled banks to identify resilient SMEs with strong risk management, contributing to enhanced long-term sustainability.

Table 12: Sustainable Finance and Loan Asset Quality

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.017	2.412		6.225	.000
	Sustainable Finance	.462	.135	.352	3.426	.000
	Interest Rate	-.253	.106	-.370	-2.388	.019
	Inflation rate	.045	.080	.066	.563	.575
R=.369 **R Square**= 0.136						

The regression results show that Sustainable Finance had a positive and statistically significant effect on loan asset quality (B = 0.462, p < 0.001), confirming that stronger ESG performance is linked to better credit outcomes for SMEs. Interest had a negative (B = -0.253, p < 0.001) while inflation had an insignificant effect (B = 0.045, p >0.001). Secondary data from financial reports further supported this finding, showing that banks are increasingly lending to ESG-compliant SMEs, which demonstrate lower default risk and stronger risk management practices (KBA, 2024).

Qualitative Data Analysis

ESG's Role in Resilience, Credit Access, and Asset Quality

Respondents emphasized that ESG-compliant SMEs are more resilient to shocks, better governed, and more creditworthy. Such firms were favoured by credit committees and, in some cases, accessed concessional loans under green finance partnerships. They also exhibited lower default rates and stronger repayment consistency.

"In general, ESG-compliant SMEs have better internal controls, governance, and financial discipline and this makes the SME more bankable."

ESG benefits often exclude informal or low-capacity SMEs due to their inability to meet ESG criteria. Many banks still treat ESG as a qualitative add-on rather than embedding it in formal credit risk models.

Role of ESG in Mitigating Macroeconomic Pressures

Bankers noted that ESG-rated SMEs coped better during inflationary periods and interest rate hikes due to superior cost management, governance, and income diversification. ESG contributed to their adaptability under economic stress, helping banks avoid large-scale defaults.

"Even when interest rates lit up, we noted that our ESG-rated SMEs were continuing to repay the loan… it was about better cost management and diversified income."

SMEs with high ESG-Integration in their businesses demonstrated operational stability during economic shocks for example, those adopted energy efficiency methods like solar, and biogas were cushioned during the period crude oil prices went up. Others with strong governance structures received concessional loans terms from commercial banks.

"Two years ago, when the inflation shot up and the Kenya shillings started depreciating, our input costs rose by 25%, which prompted the installation of drip irrigation system and solar energy for our farm operations. This efficiency cushioned us from rising diesel prices and

expensive bank credit, keeping our business solvent despite high interest rates", a Kenyan agribusiness client.

Despite this resilience, most banks have not updated credit risk models to reflect ESG sensitivity, missing an opportunity to improve risk forecasting and scenario analysis under volatile conditions.

Data and Appraisal Challenges

A major barrier to ESG adoption is the lack of structured and standardized ESG data from SMEs. Many banks rely on proxies or subjective assessments due to the absence of ESG scoring systems. Smaller banks struggle with the cost and complexity of ESG evaluations.

"Most of the time SMEs don't actually have structured ESG data. We usually are using proxies, like workplace health and trade waste disposal."

Without scalable tools, training, or national ESG frameworks, ESG assessments remain inconsistent across banks, undermining both adoption and credibility in SME lending decisions.

Key Findings and Implications

This section presents a consolidated overview of the study's key findings, and their implications based on both quantitative and qualitative data:

ESG Screening Improves SME Resilience

- ESG screening had a statistically significant positive effect on SME resilience (B = 0.094, $p = 0.025$; $R^2 = 0.162$).
- SMES with strong community engagement and employee support were able to sustain local supplies during COVID-19 pandemic. This enabled them to maintain control over their supply chains and retain employees.

ESG Finance Improves Asset Quality

- ESG-driven finance significantly enhanced loan asset quality (B = 0.462, $p < 0.001$; $R^2 = 0.136$).
- SMEs adopting ESG practices experienced operational efficiency, attracted concessional credit terms, ensuring long stability in their cashflows forecast and strong repayment capacity.

Limited Impact of ESG on Credit Access

- ESG lending had a positive but statistically insignificant effect on credit access (B = 0.010, $p = 0.816$; $R^2 = 0.178$).
- ESG adoption requires upfront investment which poses challenge for small and informal SMEs. This creates an opportunity for banks to create sustainable portfolios by supporting such enterprises.

ESG Benefits Mitigate Macroeconomic Constraints

- High interest rates significantly impeded both credit access (B = -0.114, $p = 0.007$) and resilience (B = -0.290, $p = 0.007$).
- Inflation had a significant impact on credit access (B = 0.243, $p = 0.021$) but no statistically significant effect on resilience or asset quality.
- SMEs with high adoption of ESG factors such as energy efficiency (solar energy), operational efficiency (drip irrigation) and strong governance structures demonstrated reduced reliance of volatile fuel prices, access to concessional credit terms as well as stable cashflow forecast.

ESG Adoption Patterns

- Social aspects (e.g., gender diversity) were more commonly implemented than environmental or governance components.
- Governance remained the weakest dimension among SMEs.

ESG Integration in Banks and Innovation

- ESG-compliant banks were more likely to finance climate innovation and adopt transition-linked financial products.

Data and Methodological Challenges:

- Data limitations stem from informal SME recordkeeping and inconsistent ESG disclosures, mitigated through triangulation with CBK reports and proxies (e.g., loan repayment consistency).
- The small sample size (79 SMEs) and potential selection bias (ESG-leading banks) limit generalizability. Response bias is addressed through anonymity and neutral questions, but cultural and financial literacy barriers may affect data quality.

Conclusion, Recommendations and Limitations of the Study

Conclusions

This paper aligns with KBA sub-theme on sustainability, aligning banking practices with long-term economic and social goals. The study concludes that

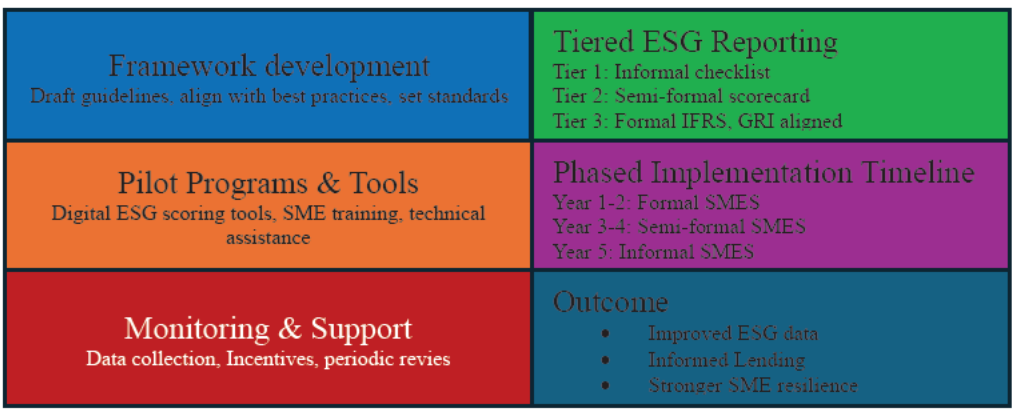
- While ESG lending shows emerging promise, its impact on credit access remains statistically insignificant due to limited ESG reporting among SMEs and structural verification challenges within banks.
- ESG screening positively influences operational resilience, with well-governed SMEs showing better adaptability, though most still lack formal crisis planning and support systems.
- ESG-aligned SMEs tend to demonstrate stronger asset quality through disciplined financial behaviour, but macroeconomic pressures like inflation and high interest rates continue to pose significant risks.

Recommendations

National ESG Framework for SMEs

- The Central Bank of Kenya (CBK), Capital Markets Authority (CMA), and other relevant stakeholders should collaborate to develop a national ESG framework tailored for SMEs. Such framework should adopt a **tiered reporting standards** that accommodate informal, semi-formal, and fully formalised SMEs with **phased implementation**. This would improve ESG data availability, reduce compliance burdens and support financial institutions make more informed lending decisions.

Proposed National ESG Framework for SMEs



Digital ESG Scoring Tools

- Banks should adopt simplified, digital ESG scoring models tailored to SMEs, especially micro and informal businesses. These tools can use proxies (e.g., energy usage, safety practices) to facilitate fast, cost-effective sustainability assessments.

Incentives for ESG Compliance

- Fiscal incentives like tax rebates, interest subsidies, and credit guarantees should be implemented to encourage ESG-aligned lending. Regulatory incentives can include reduced capital requirements or modified collateral thresholds for banks' lending to ESG-compliant SMEs.

Capacity Building and ESG Literacy

- Financial institutions should provide ESG training for credit officers and partner with SME support agencies (e.g., KNCCI, MSEA) to deliver ESG education to SME owners. This builds mutual understanding and strengthens ESG integration into lending decisions.

Limitations and Future research

The authors acknowledge that, the small sample size (79 SME responses) and the potential selection bias (10 ESG-leading banks) may limit the generalisation of the study's findings. Specifically, where ESG-lending generated a positive but statistically insignificant effect on credit access.

Future research should therefore consider adopting longitudinal research design with a larger and more diverse sample size, targeting both ESG-leading banks and non-ESG-leading banks which could provide stronger statistical power.

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