

GREEN FINANCE AND SMEs PERFORMANCE: AN EMPIRICAL INVESTIGATION OF SMALL AND MEDIUM ENTERPRISES IN GOMBE STATE, NIGERIA

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Abstract

This study investigates the impact of green finance on the performance of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria. A quantitative survey research design was adopted, with data collected through structured questionnaires administered to SME owners and managers. From a population of 779 registered SMEs, a sample size of 260 was selected, resulting in 255 valid responses for analysis. The collected data were analysed using SPSS version 27.0, applying descriptive statistics and multiple regression analysis. The findings reveal that green loans and capacity-building initiatives have a positive and statistically significant effect on SME performance, while renewable energy financing shows a significant negative effect. The study concludes that green finance plays an important role in supporting SME development; however, the benefits of its various components depend largely on factors such as accessibility, affordability, and effective implementation. Based on these findings, the study recommends expanding access to affordable green loan facilities, strengthening capacity-building programmes, and introducing supportive policies to address the challenges associated with renewable energy financing. The study contributes to the existing literature by providing context-specific evidence on how different dimensions of green finance influence SME performance within a developing economy.

Keywords: green finance, green loans, renewable energy financing, capacity building, SME performance,

1. Introduction

Here's a more natural, coherent, and academically polished version of your introduction while preserving the key arguments, evidence, and research focus. Small and Medium Enterprises (SMEs) are widely recognised as key drivers of economic growth, innovation, and employment creation across the world. They serve as an important link between informal micro-enterprises and large-scale corporations, contributing significantly to economic diversification and inclusive development.

Globally, SMEs represent approximately 90% of all businesses and account for more than half of total employment (World Bank, 2023; OECD, 2022). In Africa, their contribution is even more pronounced, generating about 50% of gross domestic product



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(GDP) and nearly 80% of employment opportunities. Beyond job creation, SMEs support poverty reduction, regional economic integration, and cross-border trade initiatives such as the African Continental Free Trade Area (AfCFTA) (AfDB, 2022).

In Nigeria, SMEs remain central to economic development, contributing close to 50% of GDP and over 80% of employment. Their growth has been supported by initiatives from institutions such as the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), which promote entrepreneurship development, capacity building, digital financial solutions, and participation in global value chains (SMEDAN & NBS, 2021; Elumelu, 2020). At the state level, SMEs in Gombe State, including businesses involved in bakery, agriculture, agro-processing, retail, and small-scale manufacturing, play an important role in promoting entrepreneurship and reducing poverty. However, these enterprises continue to face significant constraints, particularly relating to infrastructure, access to finance, and business development support (Aliyu & Nwankwo, 2022; FGN, 2021).

Despite their economic importance, SMEs experience high levels of vulnerability and business failure. Globally, a considerable proportion of SMEs fail within their early years due to challenges such as limited access to finance, weak managerial capacity, and changing market conditions (World Bank, 2023; OECD, 2022). In Africa, these challenges are further intensified by infrastructure deficits, limited formal financing opportunities, and high levels of informality (AfDB, 2022). Nigeria continues to record one of the highest SME failure rates globally, with estimates suggesting that between 70% and 95% of SMEs fail within five years of establishment (SMEDAN & NBS, 2021). In Gombe State, businesses continue to struggle with unreliable electricity supply, restricted access to affordable finance, and managerial limitations, despite government interventions aimed at supporting thousands of enterprises (FGN, 2021).

Green finance has emerged as a potential mechanism for addressing some of these challenges by providing financial resources for environmentally sustainable and economically beneficial activities. Through financing options such as renewable energy projects, low-carbon technologies, and climate adaptation initiatives, green finance supports the achievement of the Sustainable Development Goals (SDGs) and the objectives of the Paris Agreement (OECD, 2022; Climate Bonds Initiative, 2022).

Across Africa, green finance is increasingly being applied in sectors such as renewable energy and sustainable agriculture, although its expansion remains constrained by high investment costs, limited financial infrastructure, and inadequate awareness (AfDB, 2022). Nigeria has demonstrated commitment to this agenda by becoming the first African country to issue a sovereign green bond in 2017, with proceeds directed towards projects in areas such as transportation, renewable energy, and afforestation (DMO, 2021).

Within Gombe State, green finance presents opportunities for SMEs operating in areas such as solar energy, environmentally friendly businesses, and agro-processing. However, adoption remains limited due to factors including low awareness, infrastructure challenges, and insufficient alignment between policies and business needs. When effectively implemented, green finance can improve SMEs' access to affordable funding, reduce operational costs, enhance environmental performance, and strengthen their long-term competitiveness.



Despite the growing importance of green finance, existing research in Nigeria has largely concentrated on national-level analyses, with limited attention given to sub-national contexts such as Gombe State (Sajuyigbe et al., 2024; Hashidu et al., 2025). Furthermore, sector-specific issues affecting SMEs in key areas such as agro-processing, manufacturing, and retail remain insufficiently explored (Bachama et al., 2019). Previous studies have also focused mainly on cross-sectional relationships and statistical associations, with limited emphasis on developing frameworks that explain how different dimensions of green finance influence SME performance (Sajuyigbe et al., 2024; Hashidu et al., 2025).

In addition, there is inadequate evidence regarding SMEs' awareness, accessibility, and utilisation of green finance instruments such as concessional loans, credit guarantees, and capacity-building initiatives (Moses-Ashike, 2024). Although financial inclusion programmes have improved SME outcomes in some areas, the specific contribution of green-focused financial interventions remains largely unexplored (Ali et al., 2024).

This study therefore seeks to address these gaps by examining the effect of green finance on the performance of SMEs in Gombe State, Nigeria. By exploring the relationship between green loans, renewable energy financing, capacity-building initiatives, and SME outcomes, the study contributes to the broader discourse on sustainable finance, enterprise development, and business resilience in developing economies.

The study is guided by the following null hypotheses: H_{01} : Access to green loans has no significant effect on the financial performance and growth of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria. H_{02} : Renewable energy financing has no significant effect on the operational efficiency and cost reduction of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria. H_{03} : Green finance-related capacity-building and awareness programmes have no significant effect on sustainability practices among Small and Medium Enterprises (SMEs) in Gombe State, Nigeria.

The main objective of this study is to examine the effect of green finance on the performance of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria. The specific objectives are to:

- i. Examine the influence of access to green loans on the financial performance and growth of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria.
- ii. Assess the effect of renewable energy financing on the operational efficiency and cost reduction of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria.
- iii. Evaluate the extent to which green finance-related capacity-building and awareness programmes enhance sustainability practices among Small and Medium Enterprises (SMEs) in Gombe State, Nigeria.

2. Literature Review

Small and Medium Enterprises (SMEs)

Small and Medium Enterprises (SMEs) are businesses that operate on a modest scale in terms of workforce, capital, and revenue, sitting between micro-enterprises and large corporations. They are widely regarded as the backbone of economies, driving employment, innovation, poverty reduction, and inclusive growth (OECD, 2023; World Bank, 2023).



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In Nigeria, SMEs contribute nearly 50% of GDP and provide jobs for over 80% of the workforce, yet they continue to face challenges such as limited access to finance, inadequate infrastructure, and inconsistent policies (SMEDAN & NBS, 2021). While definitions of SMEs may vary across contexts, their role as key drivers of socio-economic development is universally recognized. However, their full potential is often constrained by financing gaps and structural weaknesses, underscoring the need for innovative financial solutions like green finance to enhance their sustainability, growth, and competitiveness.

Green Finance

Green finance refers to financial tools and practices that channel funds toward environmentally sustainable activities, such as renewable energy, energy efficiency, climate adaptation, and low-carbon development (OECD, 2022). Common examples include green loans, green bonds, sustainability-linked credit, and climate-focused investment funds. Globally, green finance plays a key role in supporting the Paris Agreement and the Sustainable Development Goals (SDGs), with green bond issuances surpassing \$500 billion in 2021 (Climate Bonds Initiative, 2022).

In Africa, Nigeria took the lead by issuing the continent's first sovereign green bond in 2017, funding projects in renewable energy, transport, and afforestation (DMO, 2021). While definitions of green finance vary, scholars generally agree that it links environmental sustainability with financial growth, helping firms reduce their ecological footprint, lower operational costs, and improve competitiveness. Yet, in developing economies, adoption remains limited, primarily due to low awareness, weak financial infrastructure, and insufficient SME engagement. This highlights the need for more localized initiatives, especially in regions like Gombe State, to enable SMEs and other enterprises to fully benefit from green finance opportunities.

Green Loans

Green loans are financial products specifically designed to fund environmentally sustainable projects, such as renewable energy, sustainable agriculture, waste management, and climate-resilient infrastructure. Unlike traditional loans, they require borrowers to deliver measurable environmental outcomes (OECD, 2022). Green loans can take various forms, including concessional financing, sustainability-linked credit lines, or risk-sharing arrangements, providing SMEs with more affordable access to capital for green initiatives.

For small and medium enterprises, these loans can reduce operational costs, support regulatory compliance, and enhance competitiveness (World Bank, 2023). Despite these benefits, the uptake of green loans in developing economies remains low, often due to limited awareness, weak financial systems, and perceived risks from lenders. Nevertheless, green loans are widely recognized as crucial tools for helping businesses grow while promoting environmental sustainability.

Renewable Energy Financing

Renewable energy financing provides funding for clean energy technologies such as solar, wind, hydro, and biomass, helping businesses reduce dependence on fossil fuels and supporting sustainable development (IRENA, 2022). For SMEs, such financing creates opportunities to lower energy costs, boost operational efficiency, and enhance long-term competitiveness (World Bank, 2023). However, adoption in developing economies remains limited due to high initial investment costs, lack of technical expertise, and weak

policy support, highlighting the need for targeted local initiatives and supportive frameworks to encourage uptake.

Capacity Building

Capacity-building initiatives are designed to enhance the skills, knowledge, and resources of individuals and organizations, helping them become more efficient, innovative, and sustainable over the long term (UNDP, 2021). For SMEs, this often involves training programs, technical support, and access to modern technologies that strengthen managerial skills, financial literacy, and environmentally friendly practices (OECD, 2022). While capacity-building is widely seen as essential for boosting resilience and competitiveness, its impact in developing economies is often limited by insufficient training infrastructure, low awareness, and weak institutional support.

Conceptual Framework

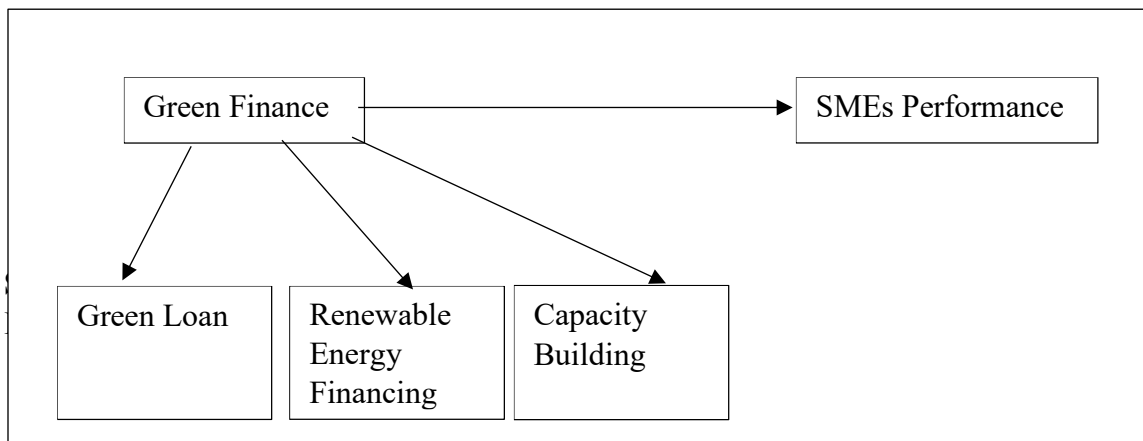


Figure 1: Conceptual Framework

Source: Author's Compilation, 2026

The conceptual model illustrates how green finance impacts the performance of small and medium enterprises (SMEs) in Gombe State. In this framework, green finance serves as the independent variable, represented by three main components: green loans, renewable energy financing, and capacity-building support. These tools are designed to help SMEs adopt environmentally sustainable practices while providing the resources needed to improve their operations. The performance of SMEs, as the dependent variable, is measured through indicators such as growth and expansion, innovation and sustainability, profitability, and job creation.

The model highlights that access to and effective use of green finance can significantly enhance SME performance by strengthening their capacity to grow, innovate, remain profitable, and generate employment. This emphasizes the critical role of sustainable financing in supporting not only the economic success of SMEs but also in promoting environmental sustainability and broader socio-economic development.

Empirical Review

Green Loans and SMEs

Adelekan and Akinwale (2024) explored green finance as a tool for enhancing SMEs' environmental performance by surveying 235 manufacturing SMEs in Lagos State, Nigeria. Their regression analysis revealed that green loans and credit facilities



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significantly improve environmental performance by encouraging eco-innovation, highlighting the important role of green lending in fostering sustainable business practices. However, the study's focus on Lagos may limit the generalizability of its findings to other regions.

Similarly, Ferrando et al. (2023) examined access to external credit during COVID-19 for green SMEs in Italy. Their study found that although green SMEs contributed positively to economic resilience, they did not receive more bank credit than other firms and largely relied on trade credit, indicating that credit market frictions can restrict access to green loans. The study's Italy-specific context, however, may limit its broader applicability.

Bertoni et al. (2025), in their study of 439 green loans across 299 European firms, found that green loans are often more accessible to smaller firms and act as signals to capital markets of a company's commitment to sustainability. They also highlighted the role of loan covenants in monitoring borrowers, though the study did not clearly differentiate SMEs from larger firms, which is a limitation.

Zhang et al. (2025) used a quasi-experimental design in China to examine the effects of green credit policies on loan allocation. They found that banks directed more credit to environmentally aligned SMEs, which reduced energy intensity and promoted sustainable production. The authors noted, however, that their findings are context-specific and may not apply directly to other countries.

Wang et al. (2021) analyzed China's green credit policy using a difference-in-differences approach. Their results showed that these policies positively redistributed credit toward environment-focused SMEs, supporting small business survival. The study, however, did not account for informal financing channels, which many SMEs still rely on.

Renewable Energy Financing and SMEs

Akinpelu et al. (2025), in their study *Nigeria's Path to Green Energy Transition: SME Solar Adoption Preferences*, used a randomized conjoint experiment to explore SMEs' choices regarding solar PV adoption. Their results showed that the design of loans, including tenure and repayment options, strongly influenced SMEs' willingness to adopt solar technology. The study concluded that innovative loan structures can facilitate the energy transition among SMEs, though it was limited by potential hypothetical bias, as the findings were based on survey responses.

Similarly, Suleiman (2023), in *Effect of Renewable Energy Development on SMEs' Sustainable Development Potential in Nigeria*, employed surveys and regression analysis to examine the impact of renewable energy financing. The findings revealed that such financing positively affects SMEs' growth, sustainability, and competitiveness, suggesting it is a key driver of SME development. The study, however, relied on self-reported performance measures, which may limit its precision.

The UNEP Copenhagen Climate Centre (2022), in *Captive Solar PV Market in Uganda: Insights Report*, conducted a market assessment using business case studies. The report showed that SMEs adopting captive solar systems benefited from financing options like power purchase agreements (PPAs) and concessional loans, highlighting how innovative financial mechanisms can accelerate renewable energy adoption. Its limitation was the lack of econometric validation.



Danladi et al. (2025), in their study on the intersection of ESG investing, green recovery, and SMEs, used a macro-panel analysis and found that ESG-linked financing promotes both renewable energy adoption and SME growth. They concluded that SMEs act as both beneficiaries and drivers of the renewable energy transition. However, the reliance on macro-level data may mask firm-level differences and nuances.

Capacity-Building and SMEs

Sajuyigbe et al. (2021), in their study Capacity Building and Women-Owned SMEs' Performance in Southwest Nigeria, surveyed 400 SMEs and used regression analysis. Their findings showed that financial literacy and entrepreneurial training significantly improve SME growth and survival, highlighting the critical role of capacity-building in enhancing sustainability. However, the study's focus on women-owned businesses limits how broadly the results can be applied to male-owned SMEs.

Similarly, Musa et al. (2024), in Entrepreneurship Education and Performance of SMEs in North-Central Nigeria, surveyed 210 SMEs and applied multiple regression analysis. Their results indicated that managerial and technical skills gained through training significantly boost profitability and productivity, suggesting that entrepreneurship education is a strategic tool for SME growth. The study, however, used a cross-sectional design, which restricts its ability to establish causal relationships.

McKenzie and Puerto (2021) examined training entrepreneurs with evidence from randomised controlled trials, conducted RCTs in Vietnam and Kenya. They found that structured entrepreneurial training improved business practices and profitability, demonstrating that training can have a measurable causal effect on SMEs. Yet, they noted that short-term gains may not always be sustained over the long term.

The World Bank (2020), in Improving Business Practices of SMEs on a Randomized Experiment in Nigeria, conducted an RCT using consulting and training interventions. The study found that targeted consulting and mentoring significantly enhanced SME productivity compared to general training programs, showing that focused interventions yield stronger results. However, the findings may have limited applicability outside Nigeria.

IIARD (2024), in Building Innovation Capacity in Rural SMEs Using NTIPs in Nigeria, employed a case study approach with qualitative interviews. Their findings revealed that mentoring, incubation, and digital capacity-building strengthened the innovation capabilities of rural SMEs, emphasizing the role of incubation programs in boosting competitiveness. The study, however, lacked quantitative measures to assess performance outcomes.

Theoretical Review

Resource-Based Theory (RBT) – Underpinning

The Resource-Based View (RBV) theory argues that a firm's sustained competitive advantage and superior performance come from its ability to acquire and effectively use resources that are valuable, rare, difficult to imitate, and non-substitutable (Barney, 1991). Building on Edith Penrose's (1959) work on firm growth and later formalized by Wernerfelt (1984) and Barney (1991), RBV has become a key framework in strategic management, helping explain how unique resources both tangible and intangible can be converted into competitive advantage. This perspective is particularly useful for resource-



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constrained firms like SMEs in Nigeria, which must leverage every available asset to succeed.

Critics of RBV argue that it is often too inward-looking, sometimes ignoring external environmental and institutional factors (Priem & Butler, 2001), and that measuring VRIN attributes in practice can be challenging. Nevertheless, RBV is highly relevant to this study because it frames green finance as a strategic bundle of resources that SMEs can use to improve performance. For example, green loans help ease financial constraints and support eco-friendly investments; renewable energy financing offers a non-substitutable solution to energy challenges while lowering operational costs; and capacity-building initiatives enhance managerial and technical skills that drive innovation and long-term competitiveness. By applying RBV, this study provides a solid theoretical basis for linking green finance resources to SMEs' growth, innovation, profitability, and sustainability in Gombe State, showing how strategic resource management can foster both economic and environmental benefits.

3. Methodology

This study adopts a quantitative survey research design to empirically examine the relationship between green finance and the performance of Small and Medium Enterprises (SMEs) in Gombe State, Nigeria. A quantitative survey design is appropriate because it enables the collection of standardized data from a relatively large population, facilitates objective measurement of research variables, and supports the application of statistical techniques for testing hypothesized relationships (Creswell & Creswell, 2023).

The study relies primarily on primary data collected through structured questionnaires administered to SME owners and managers, as questionnaires provide a cost-effective and reliable means of gathering quantitative data on respondents' perceptions and experiences. In addition, secondary data obtained from peer-reviewed journal articles, institutional reports, government publications, and policy documents are reviewed to provide theoretical, empirical, and contextual support for the study.

The target population comprises 779 registered SMEs operating in Gombe State, Nigeria. To ensure adequate representation of the population, the sample size was determined using the Krejcie and Morgan (1970) sample size determination table, which recommends a sample of 260 respondents for a population of this size. The Krejcie and Morgan approach is widely accepted in social science research because it provides statistically representative sample sizes while maintaining a 95% confidence level and a 5% margin of error, thereby enhancing the generalizability and reliability of the study findings (Krejcie & Morgan, 1970).

The primary research instrument is a structured questionnaire designed to measure the study variables using standardized measurement items adapted from established literature. Green finance, the independent variable, is operationalized through three dimensions: green loans, renewable energy financing, and capacity-building initiatives.

These dimensions capture the various forms of financial and technical support that promote environmentally sustainable business practices among SMEs. SME performance, the dependent variable, is measured using indicators including business growth and expansion, profitability, innovation and sustainability, and employment generation. These multidimensional indicators provide a comprehensive assessment of organizational

performance by capturing both financial and non-financial outcomes consistent with contemporary SME performance literature.

The collected data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 27.0. SPSS was selected because it is a robust and widely used statistical software package for quantitative research, particularly in studies involving descriptive statistics, reliability analysis, correlation analysis, regression analysis, and hypothesis testing (Pallant, 2020). The software facilitates efficient data management, accurate statistical computation, and clear presentation of empirical findings, making it suitable for examining the relationship between green finance and SME performance.

Furthermore, SPSS supports the assessment of the reliability and validity of measurement scales and provides the statistical procedures necessary to test the proposed relationships among the study variables (Hair et al., 2022). Its extensive application in business, management, and sustainability research further justifies its suitability for this study (Sarstedt et al., 2022).

4. Results and Discussion

A total of 260 questionnaires were distributed to SME owners and managers, of which 255 were returned and found suitable for analysis, representing a response rate of **98.1%**. This high response rate is considered adequate for survey research and enhances the reliability and representativeness of the study findings (Hair et al., 2022).

Table 1

Descriptive Statistics Table

Construct	N	Mean	Minimum	Maximum	Std Deviation
SMEs	255	3.33	1.00	5.00	0.64
GL	255	3.37	1.00	5.00	0.71
REF	255	3.43	1.00	5.00	0.81
CB	255	3.36	1.00	5.00	1.14

Source: SPSS Version 27.0 (2026)

Table 1 above presents the descriptive statistics for the study variables. SME performance recorded a mean score of 3.33 (SD = 0.64), while green loans (GL), renewable energy financing (REF), and capacity building (CB) recorded mean scores of 3.37, 3.43, and 3.36, respectively. Since all mean values exceed the midpoint of the five-point Likert scale, the results indicate that respondents generally agreed with the statements measuring the study constructs. The standard deviation values (0.64–1.14) indicate moderate variability in responses, suggesting sufficient variation for subsequent inferential analysis (Pallant, 2020).

Table 2

Model Summary Table

Model		R	R Square	F Change	df1	df2	Sig. F Change
1	0.845 ^a	0.713	0.710	208.246	3	251	0.000

Source: SPSS Version 27.0 (2026)

Table 2 presents the regression model summary. The correlation coefficient (R = 0.845) indicates a strong positive relationship between the independent variables (green



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loans, renewable energy financing, and capacity building) and SME performance. The coefficient of determination ($R^2 = 0.713$) shows that 71.3% of the variation in SME performance is explained by the combined effect of the independent variables, while the remaining 28.7% is attributable to other factors not included in the model.

Furthermore, the model is statistically significant ($F = 208.246$, $p < .001$), indicating that the independent variables jointly provide a significant explanation of variations in SME performance. These results suggest that the regression model has strong explanatory power and is appropriate for hypothesis testing (Hair et al., 2022; Pallant, 2020).

Table 3

Regression Table

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
(Constant)	0.936	0.107		8.762	0.000
GL	0.594	0.053	0.657	11.301	0.000
REF	-0.167	0.053	-0.209	-3.183	0.002
CB	0.287	0.025	0.507	11.424	0.000

Source: SPSS Version 27.0 (2026)

Table 3 presents the multiple regression results for the effect of green finance dimensions on SME performance. The findings show that green loans (GL) have a positive and significant effect on SME performance ($\beta = 0.657$, $t = 11.301$, $p < .001$), indicating that increased access to green loans improves SME performance. Capacity building (CB) also has a positive and significant effect ($\beta = 0.507$, $t = 11.424$, $p < .001$), suggesting that capacity-building initiatives enhance SME performance.

Nevertheless, renewable energy financing (REF) has a significant but negative effect on SME performance ($\beta = -0.209$, $t = -3.183$, $p = .002$), implying that higher renewable energy financing is associated with a reduction in SME performance within the study context. Overall, the results indicate that green loans and capacity building positively influence SME performance, while renewable energy financing exerts a significant negative effect (Hair et al., 2022; Pallant, 2020).

Discussion of Findings

The study found that green loans have a positive and significant effect on SME performance, indicating that access to green financing enables SMEs to expand operations and improve productivity. This finding is consistent with Zhang et al. (2023) and Agyekum et al. (2024) who reported that green finance enhances firm performance by supporting sustainable investments.

The results also revealed that capacity building positively and significantly influences SME performance. This suggests that training and technical support strengthen SMEs' capabilities and improve business outcomes. This finding agrees with Al Mamun et al. (2023), who found that capacity-building initiatives enhance SME performance and innovation. However, renewable energy financing was found to have a significant negative effect on SME performance. This may be attributed to the high initial costs and implementation challenges associated with renewable energy technologies among SMEs. This finding supports Khan et al. (2024), who argued that financial and technical

constraints may limit the short-term benefits of renewable energy investments in developing economies.

5. Conclusion and Recommendations

The study concludes that green finance plays a significant role in influencing the performance of SMEs in Gombe State, Nigeria. Specifically, green loans and capacity-building initiatives positively enhance SME performance, while renewable energy financing has a significant negative effect, possibly due to high implementation costs and limited supporting infrastructure.

Overall, the findings suggest that improving access to green financial products and strengthening capacity-building programs can enhance SME growth and sustainability. The study therefore recommends policies that promote affordable green financing, continuous entrepreneurial training, and supportive measures to reduce the barriers associated with renewable energy investments.

Based on the insights from this conceptual study, the following recommendations are proposed:

- i. **Improve access to green loans:** Government, financial institutions, and development partners should expand access to affordable green loans for SMEs through low-interest financing, flexible repayment terms, and simplified loan procedures. This will enable SMEs to adopt sustainable business practices and improve their overall performance.
- ii. **Strengthen capacity-building programmes:** Relevant agencies such as the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and financial institutions should provide regular training, technical assistance, and awareness programmes on green business practices and financial management to enhance SMEs' knowledge, innovation, and competitiveness.
- iii. **Enhance renewable energy financing support:** Government should introduce incentives such as grants, tax relief, and subsidies to reduce the high initial costs of renewable energy technologies. In addition, improving technical support and infrastructure will enable SMEs to realise the long-term benefits of renewable energy investments and minimise their short-term financial burden.

Unique Contribution of the Study

This study contributes to the existing literature by providing empirical evidence on the relationship between green finance and SME performance in Gombe State, Nigeria, where evidence on this subject is limited. Unlike many previous studies that examine green finance as a single construct, this study disaggregates it into green loans, renewable energy financing, and capacity-building initiatives, thereby identifying the specific contribution of each dimension to SME performance.

The study also reveals that while green loans and capacity building significantly enhance SME performance, renewable energy financing has a significant negative effect in the study area, highlighting context-specific challenges that require targeted policy interventions. These findings provide valuable insights for policymakers, financial institutions, and SME support agencies in designing effective green finance programmes for sustainable SME development.



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