FINANCIAL INCLUSION AND FINANCIAL SUSTAINABILITY OF SMALL AND MEDIUM ENTERPRISES IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The study examined the effect of financial inclusion on the financial sustainability of small and medium enterprises (SMEs) in Nairobi City County, Kenya, against the backdrop of high SME failure rates and declining operational self-sufficiency levels that remained below the sustainability threshold between 2020 and 2024. Specifically, the study assessed the effects of financial product diversity, accessibility of financial infrastructure, and affordability of financial services on SME financial sustainability, while testing the moderating effect of financial literacy. Anchored on Financial Intermediation Theory, Resource-Based View, Financial Inclusion Theory, and Financial Literacy Theory, the study adopted a cross-sectional research design targeting 23,089 registered SMEs across eight sectors in Nairobi City County during the period between 1st July 2024 and 30th June 2025. A sample of 393 SMEs selected through proportionate stratified sampling was used, with primary data collected from SME owners and managers using structured questionnaires. Data were analyzed using descriptive statistics, correlation analysis, and Ordinary Least Squares regression with heteroscedasticity-robust standard errors in Stata version 18 following relevant diagnostic tests. The findings revealed that financial product diversity and accessibility of financial infrastructure positively and significantly influence SME financial sustainability, whereas affordability of financial services exerts a significant negative effect. Financial literacy significantly moderated the relationship between financial inclusion and financial sustainability by strengthening the positive effects of financial product diversity and infrastructure accessibility while reducing the negative effect of high financial service costs. The study concluded that financial inclusion contributes more effectively to SME financial sustainability when complemented by adequate financial literacy and recommended SME-focused financial product diversification, affordable inclusive finance policies, and targeted financial literacy interventions.

Key words: Financial Inclusion, Financial Sustainability, Small and Medium Enterprises (SMEs), Financial Literacy, Financial Product Diversity, Financial Infrastructure Accessibility, Affordability of Financial Services.

INTRODUCTION

Financial inclusion has increasingly emerged as a critical determinant of the financial sustainability of small and medium enterprises (SMEs) due to its role in improving access to financial resources, enhancing liquidity management, and supporting long-term business continuity. Globally, SMEs contribute significantly to employment creation, innovation, and economic growth, accounting for over 90 percent of businesses and more than half of total employment worldwide (World Bank, 2021). Despite this contribution, SMEs continue to experience high levels of financial vulnerability arising from limited access to appropriate financial services, high borrowing costs, and inadequate financial capability (OECD, 2022; International Finance Corporation, 2021). In developed economies across Europe and Asia, financial inclusion initiatives involving diversified financial products, digital financial infrastructure, and affordable financial services have improved SME resilience and operational continuity by enhancing access to credit, reducing transaction costs, and strengthening cash-flow stability (European Commission, 2022; Asian Development Bank, 2022; OECD, 2023). Similar trends have also been observed in African economies such as South Africa and Nigeria, where increased financial access through mobile banking, digital finance, and inclusive lending programs has contributed to improved SME competitiveness and sustainability outcomes (African Development Bank, 2022; UNECA, 2023).

In Kenya, and particularly in Nairobi City County, financial sustainability among SMEs remains a major economic concern despite the rapid expansion of financial inclusion through mobile money platforms, digital credit facilities, and agency banking systems. SMEs operating within Nairobi City County face a highly competitive and high-cost business environment characterized by elevated rental costs, unstable demand conditions, inflationary pressures, and increased operational expenses (KNBS, 2023; Micro and Small Enterprises Authority, 2022). Although access to financial services has improved considerably, sustainability challenges remain persistent, with approximately 50–60 percent of Kenyan SMEs reportedly exiting the market within their first five years of operation (World Bank, 2024; KNBS, 2023). Illustrative operational self-sufficiency assessments further indicate that SME financial sustainability declined to approximately 0.69 in 2020 and remained below the sustainability threshold of 1.0 through 2024, reflecting continued difficulty in covering operational and financial obligations using internally generated revenues (World Bank, 2021; AfDB, 2022). Existing evidence suggests that while financial product diversity and accessibility of financial infrastructure may enhance SME sustainability, high costs associated with financial services continue to undermine the ability of enterprises to translate financial access into long-term financial stability (CBK, 2021; FSD Kenya, 2022; OECD, 2022).
The study further emphasized the importance of financial literacy in strengthening the relationship between financial inclusion and financial sustainability among SMEs. Financial literacy was conceptualized as the financial knowledge, skills, and behavioural competencies that enable SME owners and managers to make informed financial decisions, evaluate financial products, manage

risks, and effectively utilize financial services (World Bank, 2022; OECD, 2023). Institutional and empirical evidence indicates that SMEs with higher levels of financial literacy are more likely to utilize diversified financial products effectively, manage borrowing costs prudently, and maintain stronger cash-flow control mechanisms compared to enterprises with limited financial capability (African Development Bank, 2023; FSD Kenya, 2022). The study therefore argued that financial literacy significantly conditions the effectiveness of financial inclusion by strengthening the positive effects of financial product diversity and infrastructure accessibility while reducing the adverse impact associated with high financial service costs. Consequently, the study sought to examine the effect of financial inclusion on the financial sustainability of SMEs in Nairobi City County, Kenya, with financial literacy serving as a moderating variable in the relationship.

Statement of the Problem

Small and medium enterprises (SMEs) play a critical role in employment creation, income generation, and urban economic stability within Nairobi City County, with the sector contributing significantly to business activity and livelihoods in Kenya's most commercialized urban environment (KNBS, 2023; Micro and Small Enterprises Authority, 2022). In recent years, financial inclusion initiatives such as mobile banking, digital credit, agency banking, and diversified financial products have increasingly been promoted to enhance SME sustainability through improved access to finance, transaction efficiency, and liquidity management (World Bank, 2021; Central Bank of Kenya, 2023). Despite these developments, SME survival rates have remained persistently low, with approximately 50–60 percent of Kenyan SMEs exiting the market within their first five years of operation, particularly within high-cost urban settings such as Nairobi City County (World Bank, 2024; KNBS, 2023). These conditions have raised concerns regarding the effectiveness of financial inclusion in improving long-term SME financial sustainability.

The study observed persistent weaknesses in the operational self-sufficiency of SMEs in Nairobi City County between 2020 and 2024. Illustrative assessments indicated that operational self-sufficiency declined to approximately 0.69 in 2020 following COVID-19-related revenue shocks before improving marginally to about 0.78 in 2021 and subsequently declining to nearly 0.74 in 2022 and 0.72 in 2023, remaining consistently below the sustainability threshold of 1.0 (World Bank, 2021; African Development Bank, 2022; KNBS, 2023). These trends suggested persistent operational deficits, implying that a substantial proportion of SMEs continued experiencing difficulties in meeting operating and financial obligations using internally generated revenues. The continued instability in operational self-sufficiency highlighted growing financial pressure associated with rising business costs, inflationary conditions, unstable demand, and increasing dependence on costly financial services, thereby emphasizing the need for more effective and sustainable financial inclusion strategies for SMEs operating within Nairobi City County.

Existing literature has generally established that financial inclusion enhances SME performance through improved access to credit, diversified financial products, and expanded financial infrastructure (OECD, 2022; World Bank, 2023). However, prior studies largely focused on profitability, revenue growth, or financial access indicators while paying limited attention to financial sustainability measured through operational self-sufficiency, particularly within high-cost urban SME environments. In addition, existing studies provided limited empirical attention to the moderating role of financial literacy in strengthening the relationship between financial inclusion and SME financial sustainability. The present study addressed these conceptual, contextual, methodological, and geographical gaps by examining the effects of financial product diversity, accessibility of financial infrastructure, and affordability of financial services on the financial sustainability of SMEs in Nairobi City County, while explicitly modelling financial literacy as a moderating variable within the relationship.

Objectives of the Study

The study was guided by the following objectives:

General Objective

The research general objective was to examine the effect of financial inclusion on the financial sustainability of SMEs in Nairobi City County, Kenya.

Specific Objectives

The specific objectives were: -

i. To ascertain the effect of financial product diversity on the financial sustainability of SMEs in Nairobi City County, Kenya
ii. To determine the effect of accessibility of financial infrastructure on the financial sustainability of SMEs in Nairobi City County, Kenya
iii. To examine the effect of affordability of financial services on the financial sustainability of SMEs in Nairobi City County, Kenya
iv. To establish the moderating effect of financial literacy on the connection between financial inclusion and the financial sustainability of SMEs in Nairobi City County, Kenya

Theoretical Review

The study was guided by the following theories:

Financial Intermediation Theory (FIT)

John Gurley and Edward Shaw developed Financial Intermediation Theory in 1960 to explain the critical role played by financial institutions in mobilizing savings and channeling them toward productive investments within the economy. The theory argues that financial intermediaries such as banks, microfinance institutions, and digital financial service providers reduce transaction and information costs, thereby enhancing the efficiency of financial markets and improving access to credit for businesses and households (Allen & Santomero, 1997). Douglas Diamond (1984) further advanced the theory by demonstrating that intermediaries reduce adverse selection and moral hazard through delegated monitoring of borrowers on behalf of savers. In the context of SMEs, the theory explains how financial institutions facilitate access to diversified financial products and financial infrastructure that support business expansion and financial sustainability. Through savings mobilization, credit allocation, and liquidity provision, financial intermediaries help SMEs stabilize cash flows, invest in productive activities, and improve long-term financial performance in Nairobi City County (Coetzee, 2016; Demirgüç-Kunt, Beck, & Honohan, 2020).

Resource-Based View (RBV)

Birger Wernerfelt introduced the Resource-Based View in 1984 and later Jay Barney refined it in 1991 to explain how firms achieve sustained competitive advantage through strategic utilization of valuable, rare, inimitable, and non-substitutable resources. The theory posits that organizations possessing superior internal resources are more likely to outperform competitors and achieve long-term sustainability (Barney, 1991). In the context of SMEs, financial resources such as access to credit, savings facilities, insurance products, and digital financial platforms are considered strategic assets that enhance productivity, resilience, and growth potential (Bakar & Ahmad, 2023; Mardani, Nikoosokhan, Moradi, & Doustar, 2023). Muthoga & Gitagia (2026) used the theory to explain how digital financial resources enhance financial empowerment and organizational outcomes. Firms capable of effectively deploying and reconfiguring financial resources are better positioned to exploit emerging business opportunities and withstand economic shocks. Despite criticisms that the theory places excessive emphasis on internal resources while overlooking external environmental constraints, RBV remains relevant in explaining how affordable and diversified financial products strengthen the financial sustainability of SMEs in Nairobi City County (Alraja, Imran, Khashab, & Shah, 2021; Pham, Nguyen, & Luu, 2023).

Financial Inclusion Theory

Mandira Sarma and Jesim Pais advanced Financial Inclusion Theory in 2011 to emphasize the importance of access to, availability of, and usage of formal financial services in promoting economic participation and financial well-being. The theory argues that inclusion in formal financial systems enables individuals and businesses to save, borrow, invest, and manage risks effectively, thereby improving financial outcomes and business sustainability (Sarma & Pais, 2011). In the context of SMEs, financial inclusion enhances access to working capital, reduces transaction costs, and increases operational efficiency through financial infrastructure such as banks, mobile money agents, and digital financial platforms. Empirical studies have shown that improved financial inclusion contributes positively to SME growth, employment creation, and revenue generation by expanding access to financial products and services (Allen, Demirgüç-Kunt, Klapper, & Peria, 2016). In Kenya, Ouma, Odongo, and Were (2017) established that mobile money adoption improved SME financial performance by lowering transaction costs and enhancing access to capital. Therefore, the theory provides a strong foundation for explaining how accessibility of financial infrastructure contributes to the financial sustainability of SMEs in Nairobi City County (Chikalipah, 2022).

Financial Literacy Theory

Annamaria Lusardi and Olivia Mitchell developed Financial Literacy Theory in 2007 to explain how financial knowledge, attitudes, and behavior influence financial decision-making and financial well-being. The theory argues that financially literate individuals and business owners are better able to evaluate financial products, manage financial resources efficiently, and make informed investment and financing decisions that improve long-term financial outcomes (Lusardi & Mitchell, 2007). In the context of SMEs, financial literacy enhances the ability of business owners to select suitable financial products, manage savings and credit effectively, and adopt prudent financial management practices that support enterprise growth and sustainability. Financial literacy further strengthens the effectiveness of financial inclusion because access to financial services alone is insufficient without the ability to understand and utilize them appropriately (Chikalipah, 2022). Empirical evidence indicates that financially literate SMEs are more likely to access formal financial services, negotiate favorable credit terms, diversify financial portfolios, and maintain better repayment behavior, thereby improving financial sustainability (Lusardi & Mitchell, 2014). Consequently, the theory is highly relevant in explaining the moderating role of financial literacy on the relationship between financial inclusion and the financial sustainability of SMEs in Nairobi City County.

Empirical Review

This section presents the empirical studies reviewed

Financial Product Diversity and Financial Sustainability

Empirical studies have consistently demonstrated that financial product diversity enhances the financial sustainability of SMEs through improved access to credit, savings facilities, insurance products, and digital financial services. Studies conducted in Malawi, Argentina, Nigeria, and selected Asian economies established that SMEs utilizing diversified financial products experienced improved cash flow stability, stronger operational resilience, and enhanced financial performance during periods of economic uncertainty (Chirwa & Kachanga, 2018; Martinez & Bello, 2020; Ojo, Akinyemi, & Adewale, 2020; Singh & Rahman, 2021). Additional evidence from Ghana, China, and India further indicated that diversified financial services reduced liquidity pressures, improved cost control, and strengthened financial stability among SMEs and cooperatives through integrated financial solutions (Agyei & Acheampong, 2022; Zhao & Liu, 2023; Patel & Singh, 2024). However, previous studies presented conceptual, contextual, and sectoral gaps by focusing on revenue stability, profitability, or institutional performance rather than operational self-sufficiency as a direct measure of financial sustainability. Furthermore, many studies were conducted in rural, highly digitized, or cooperative-based settings that differ substantially from the mixed formal–informal SME environment in Nairobi City County. The current study addressed these gaps by examining financial product diversity within the Nairobi SME ecosystem while measuring financial sustainability using operational self-sufficiency.

Accessibility of Financial Infrastructure and Financial Sustainability of SMEs

Empirical literature has shown that accessibility of financial infrastructure positively influences SME sustainability by improving access to credit, enhancing liquidity management, and reducing financing constraints. Studies conducted in Sweden, Europe, China, and several African countries established that proximity to bank branches, digital financial platforms, and mobile money infrastructure improved access to external finance, enhanced investment capacity, and strengthened financial stability among SMEs (Backman & Wallin, 2020; Fasano & La Rocca, 2021; Li, Zhao, & Cheng, 2021; Ajr, Boateng, & Musah, 2023). Additional studies by Agyei and Acheampong (2022), Zou and Wang (2022), and Zhao and Liu (2024) further demonstrated that availability of diversified financial infrastructure enhanced working capital management, eased liquidity constraints, and improved operational continuity. Nevertheless, previous studies focused heavily on either physical banking infrastructure or digital infrastructure independently, thereby failing to examine the combined effect of both forms of financial infrastructure within blended financial systems. In addition, many studies concentrated on leverage, investment returns, or profitability instead of operational self-sufficiency as a sustainability indicator. The current study addressed these conceptual and contextual gaps by integrating both digital and physical financial infrastructure while focusing on operational self-sufficiency among SMEs in Nairobi City County.

Affordability of Financial Services and Financial Sustainability

Empirical studies indicate that affordability of financial services significantly affects SME sustainability through its influence on borrowing decisions, transaction costs, liquidity management, and operational continuity. Research conducted in Kenya established that high lending rates, transaction costs, and loan processing fees constrained SME growth, weakened business continuity, and reduced access to affordable finance (Otieno et al., 2021; Fidow, Ahmed, & Noor, 2022; Koech, 2022). Additional studies by Simiyu, Ndede, and Wekesa (2021), Bitta (2022), Kimondo (2023), Osoro and Muturi (2024), and Oduor, Jagongo, and Njoka (2025) further revealed that affordable financial services, including reduced interest rates, favorable repayment terms, and affordable digital financial products, improved SME financial performance and sustainability. However, most previous studies concentrated on traditional banking services while overlooking the affordability dimensions of digital financial services such as mobile credit and fintech-based transactions. Moreover, many studies measured profitability and business expansion rather than operational self-sufficiency as a direct indicator of sustainability. Contextually, several studies were conducted outside Nairobi or focused on sector-specific SMEs, thereby limiting generalizability to Nairobi's diverse SME environment. The current study addressed these conceptual and contextual gaps by examining affordability across both traditional and digital financial services while measuring financial sustainability using operational self-sufficiency among SMEs in Nairobi City County.

Financial Literacy, Financial Inclusion, and Financial Sustainability

Empirical evidence demonstrates that financial literacy plays a significant role in strengthening the relationship between financial inclusion and SME sustainability through improved financial decision-making, budgeting, savings behavior, and credit management. Studies conducted in Kenya, Nigeria, and Kuwait established that financially literate SMEs were more likely to access formal financial services, negotiate favorable financial terms, adopt digital financial platforms, and improve business performance (Otieno & Anyuki, 2021; Wakhungu & Mbuva, 2023; Abdallah, Hassan, & Al-Khalifa, 2024). Additional evidence by Mohamed (2024), Ng'ang'a (2024), Simiyu, Ndede, and Wekesa (2021), Abdullahi, Sadiq, and Bello (2025), and Al-Aghbari (2024) further confirmed that budgeting practices, debt management skills, bookkeeping capabilities, and fintech literacy enhanced financial inclusion outcomes and SME financial stability. Nonetheless, previous studies largely treated financial literacy as an independent predictor variable rather than as a moderating factor within the relationship between financial inclusion and financial sustainability. Furthermore, many studies focused on financial performance or inclusion outcomes without directly linking financial literacy to operational self-sufficiency. Contextually, studies conducted in high-income economies such as Kuwait and broader national contexts failed to reflect the realities of Nairobi's mixed formal–informal SME financial environment. The current study addressed these conceptual and contextual gaps by examining the moderating role of financial literacy on the relationship between financial inclusion and financial sustainability among SMEs in Nairobi City County.

Conceptual Framework

The conceptual framework shows the relationship between financial inclusion and financial sustainability of SMEs in Nairobi City County. Financial inclusion is measured using financial product diversity, accessibility of financial infrastructure, and affordability of financial services, while financial sustainability is measured through operational self-sufficiency (World Bank, 2023). Financial literacy moderates this relationship as shown in Figure 2.1.

Financial Inclusion

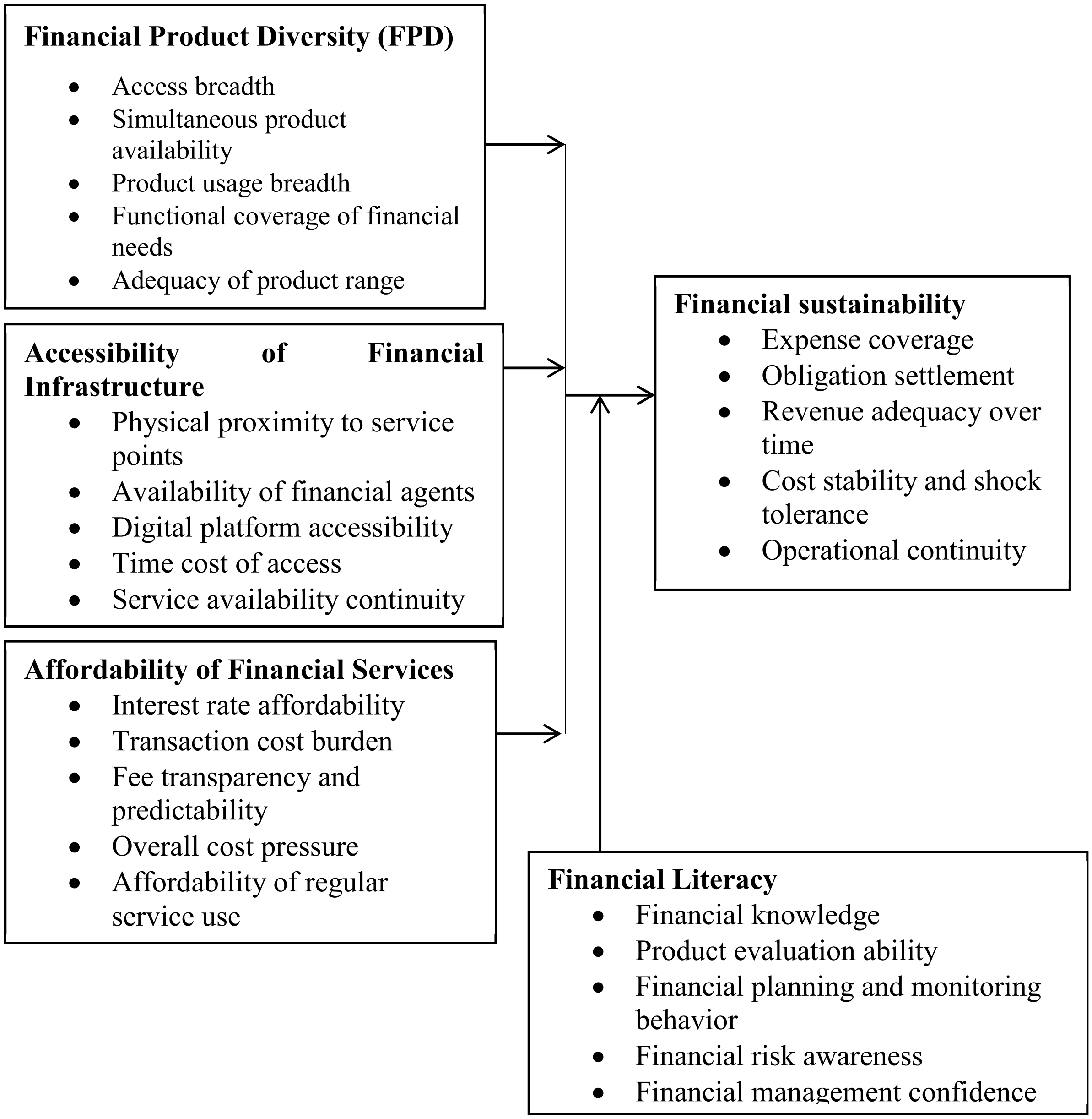

Figure 2.1 Conceptual framework
Source : Researcher, 2026

RESEARCH METHODOLOGY

The study adopted a descriptive cross-sectional research design guided by the positivist research philosophy, which emphasizes objective measurement, empirical observation, and statistical analysis in examining relationships among variables (Babbie, 2020; Creswell & Creswell, 2020). The design was considered appropriate for investigating the relationship between financial inclusion and financial sustainability of SMEs in Nairobi City County. Financial sustainability was operationalized using operational self-sufficiency, while financial inclusion was measured through financial product diversity, accessibility of financial infrastructure, and affordability of financial services. Moderation analysis was conducted to assess the influence of financial literacy on the relationship between financial inclusion and financial sustainability using regression interaction models.

The target population comprised all registered SMEs operating in Nairobi City County because of their significant contribution to employment creation, income generation, and economic growth in Kenya. According to the Nairobi City County Business Registry and KNBS (2024), the county had 23,089 registered SMEs across different sectors of economic activity during the study period. The unit of analysis was the individual SME, while the units of observation included SME owners and senior managers directly involved in financial decision-making and business operations. The study adopted proportionate stratified random sampling based on sector of operation to enhance representativeness and reduce sampling bias. Using Yamane's (1967) formula, a sample size of 393 SMEs was obtained for the study.

Data collection involved the use of primary data obtained through structured questionnaires administered to SME owners and managers within Nairobi City County. The questionnaires captured information relating to financial product diversity, accessibility of financial infrastructure, affordability of financial services, financial literacy, and operational self-sufficiency. Reliability of the research instruments was tested using Cronbach's Alpha through a pilot study, while validity was confirmed through content, construct, criterion, and face validity procedures. Quantitative data were analyzed using Stata through descriptive statistics and multiple regression analysis, with diagnostic tests conducted to assess multicollinearity, linearity, model specification, normality, and heteroscedasticity before hypothesis testing.

RESEARCH FINDINGS AND DISCUSSION

Reliability and Validity Results

The study established the reliability and validity of the research instruments before conducting the main analysis. Pilot testing involving SMEs operating in Kiambu County confirmed that all study variables achieved Cronbach's Alpha coefficients above the recommended threshold of 0.70, indicating strong internal consistency of the questionnaire items. Construct validity was further confirmed using the Kaiser-Meyer-Olkin statistic and Bartlett's Test of Sphericity, demonstrating that the instruments were suitable for factor analysis and effective in measuring financial inclusion, financial literacy, and financial sustainability. The study also attained a satisfactory response rate adequate for statistical analysis and generalization of findings.

Table 4.1: Reliability and Validity Results

Measure	Result
Overall Cronbach's Alpha	0.850
KMO Statistic	0.823
Bartlett's Test Significance	0.000
Response Rate	78.4%

Source: Field Data (2025)

The findings indicate that the research instruments achieved a Cronbach's Alpha coefficient above the recommended threshold of 0.70, confirming strong internal consistency and reliability of the questionnaire items. The KMO statistic of 0.823 and the significant Bartlett's Test result demonstrated that the data was suitable for factor analysis and that the instruments adequately measured the study constructs. Additionally, the response rate of 78.4 percent was considered sufficient for statistical analysis and generalization of the study findings.

Descriptive and Diagnostic Results

Descriptive findings showed that accessibility of financial infrastructure recorded the highest mean score among the financial inclusion dimensions, while affordability of financial services recorded comparatively lower mean scores, indicating moderate cost-related constraints among SMEs. Financial sustainability recorded moderate levels among the sampled enterprises. Diagnostic tests confirmed that the assumptions underlying regression analysis were largely satisfied. The Shapiro-Wilk test established that residuals were normally distributed, Variance Inflation Factor results confirmed absence of multicollinearity, and the RESET test confirmed correct model specification. Although the Breusch-Pagan test detected heteroscedasticity, the study corrected this using robust standard errors, thereby ensuring validity and reliability of inferential results.

Table 4.2: Descriptive Statistics of Study Variables

Variable	Mean	Std. Dev
Financial Product Diversity	3.62	0.74
Accessibility of Financial Infrastructure	3.89	0.68
Affordability of Financial Services	3.21	0.81
Financial Literacy	3.58	0.72
Financial Sustainability	2.96	0.79

Source: Field Data (2025)

The findings indicate that accessibility of financial infrastructure recorded the highest mean score, suggesting that most SMEs perceived financial service points and digital financial platforms to be reasonably accessible within Nairobi City County. Financial product diversity and financial literacy also recorded moderate mean scores, indicating moderate access to diversified financial services and financial management capability among SME owners. Affordability of financial services recorded comparatively lower mean values, reflecting moderate financial cost burdens experienced by SMEs. Financial sustainability recorded moderate levels, implying varying operational self-sufficiency across the sampled enterprises.

Diagnostic Test Results

The study conducted diagnostic tests to confirm compliance with regression assumptions. Results confirmed normality, absence of multicollinearity, correct model specification, and linearity of relationships. Heteroscedasticity was detected but corrected using robust standard errors to ensure reliability of statistical inference.

Table 4.3: Diagnostic Test Results

Diagnostic Test	Result	Interpretation
Shapiro-Wilk Test	p = 0.078	Residuals normally distributed
VIF Range	2.41 – 3.12	No multicollinearity
Ramsey RESET Test	p = 0.246	Correct model specification
Breusch-Pagan Test	p = 0.002	Heteroscedasticity present

Source: Field Data (2025)

The findings indicate that the residuals were normally distributed since the Shapiro-Wilk test produced a p-value greater than 0.05. The Variance Inflation Factor values were below the recommended threshold of 10, confirming the absence of multicollinearity among the explanatory variables. The Ramsey RESET test confirmed correct model specification, indicating absence of omitted nonlinear relationships. Although the Breusch-Pagan test detected the presence of heteroscedasticity, the study corrected this problem using robust standard errors to ensure reliable statistical inference.

Correlation and Regression Results

Correlation analysis established that financial product diversity and accessibility of financial infrastructure had positive and statistically significant relationships with financial sustainability, while affordability of financial services had a statistically significant negative relationship with financial sustainability.

Table 4.4: Correlation Results between Financial Inclusion Dimensions and Financial Sustainability

Variable	Correlation with Financial Sustainability
Financial Product Diversity	0.621**
Accessibility of Financial Infrastructure	0.587**
Affordability of Financial Services	-0.442**

Source: Field Data (2025)

The findings revealed that financial product diversity and accessibility of financial infrastructure had positive and statistically significant relationships with financial sustainability, indicating that improved access to diversified financial products and financial infrastructure enhanced operational self-sufficiency among SMEs. Accessibility of financial infrastructure recorded a strong positive relationship with financial sustainability. Conversely, affordability of financial services exhibited a statistically significant negative relationship with financial sustainability, implying that increased financial service costs weakened operational sustainability among SMEs.

Regression Results without Moderation

The regression model demonstrated strong explanatory power, with financial inclusion dimensions accounting for a substantial proportion of variations in financial sustainability among SMEs in Nairobi City County.

Table 4.5: Regression Results without Moderation

Variable	Coefficient	p-value
Financial Product Diversity	0.214	0.000
Accessibility of Financial Infrastructure	0.186	0.000
Affordability of Financial Services	-0.119	0.001
R^2	0.760	
F-statistic	321.84	0.000

Source: Field Data (2025)

The findings revealed that financial product diversity and accessibility of financial infrastructure had positive and statistically significant effects on financial sustainability among SMEs in Nairobi City County, while affordability of financial services had a statistically significant negative effect. The regression model demonstrated strong explanatory power, with financial inclusion dimensions accounting for 76 percent of the variation in financial sustainability. In addition, the significant F-statistic confirmed that the overall regression model was statistically significant and reliable for inference.

Moderation and Hypothesis Testing Results

The moderation analysis established that financial literacy significantly moderated the relationship between financial inclusion and financial sustainability. Findings indicated that SMEs with higher financial literacy levels experienced stronger positive effects of financial product diversity and financial infrastructure accessibility on financial sustainability.

Table 4.6: Moderation Regression Results

Variable	Coefficient	p-value
Financial Product Diversity	0.162	0.001
Accessibility of Financial Infrastructure	0.149	0.003
Affordability of Financial Services	-0.098	0.017
Financial Literacy	0.031	0.176
FPD × FL Interaction	0.072	0.011
AFI × FL Interaction	0.064	0.019
AFS × FL Interaction	-0.058	0.026

Source: Field Data (2025)

The findings established that the interaction between financial literacy and financial product diversity was positive and statistically significant, indicating that financial literacy strengthened the effect of financial product diversity on financial sustainability. Similarly, the interaction between financial literacy and accessibility of financial infrastructure was positive and statistically significant, implying that financially literate SMEs benefited more from accessible financial infrastructure. Conversely, the interaction between financial literacy and affordability of financial services was negative and statistically significant, suggesting that financial literacy altered the magnitude of cost-related effects on SME sustainability.

Hypothesis Testing Summary

Table 4.7: Hypothesis Testing Results

Hypothesis	Decision
H01: Financial Product Diversity → Financial Sustainability	Rejected
H02: Accessibility of Financial Infrastructure → Financial Sustainability	Rejected
H03: Affordability of Financial Services → Financial Sustainability	Rejected
H04: Financial Literacy Moderation	Rejected

Source: Field Data (2025)

The findings revealed that all the null hypotheses were rejected since the corresponding variables produced statistically significant results at the 5 percent significance level. This implies that financial product diversity, accessibility of financial infrastructure, and affordability of financial services significantly influenced financial sustainability among SMEs in Nairobi City County. The results further confirmed that financial literacy significantly moderated the relationship between financial inclusion and financial sustainability.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Regarding the first objective, the study established that financial product diversity had a positive and statistically significant effect on the financial sustainability of SMEs in Nairobi City County. SMEs that accessed and utilized diversified financial products such as savings, credit, insurance, and digital financial services were more likely to improve operational self-sufficiency and stabilize business operations. Financial product diversity therefore remains an important mechanism for strengthening the long-term financial sustainability and resilience of SMEs.

In relation to the second objective, the study established that accessibility of financial infrastructure had a positive and statistically significant effect on financial sustainability. SMEs with improved access to physical and digital financial infrastructure such as banks, mobile money platforms, and digital financial systems experienced improved transaction efficiency and better financial management outcomes. Accessibility of financial infrastructure therefore contributes significantly to improved financial sustainability among SMEs in Nairobi City County.

Concerning the third objective, the findings revealed that affordability of financial services had a negative and statistically significant effect on financial sustainability. High financial service costs such as interest rates, transaction fees, and loan-related charges increased financial pressure on SMEs and weakened their operational self-sufficiency. This implies that although access to financial services is important, sustainability outcomes remain constrained when financial services are not affordable to SMEs.

Regarding the fourth objective, the study established that financial literacy had a statistically significant moderating effect on the relationship between financial inclusion and financial sustainability. Higher levels of financial literacy strengthened the positive effects of financial product diversity and accessibility of financial infrastructure on financial sustainability, while also influencing the magnitude of affordability-related constraints. Financial literacy therefore plays a critical role in enhancing the effectiveness of financial inclusion initiatives and improving sustainable business outcomes among SMEs in Nairobi City County.

Policy Implications and Recommendations of the Study

Regarding the first objective, the positive effect of financial product diversity on financial sustainability supports the recommendation that financial institutions should strengthen the provision of diversified SME-oriented financial products that combine savings, credit, insurance, and digital financial solutions within integrated enterprise platforms. Policymakers and SME support agencies should also encourage product innovation and strengthen policies that promote wider access to multiple financial products among SMEs. Improved financial product diversity would enhance business resilience, operational continuity, and long-term sustainability among SMEs in Nairobi City County.

In relation to the second objective, the positive effect of accessibility of financial infrastructure suggests that financial institutions and policymakers should strengthen both physical and digital financial infrastructure targeting SMEs. Financial service providers should expand mobile financial platforms, digital payment systems, agency banking, and integrated financial access channels to reduce operational barriers facing SMEs. Government agencies should further strengthen digital infrastructure and connectivity to improve continuity and efficiency of financial services within urban SME environments.

Concerning the third objective, the negative effect of affordability of financial services reinforces the recommendation that financial institutions should develop more affordable SME financing frameworks characterized by lower transaction charges, reduced interest rates, and flexible repayment terms. Financial regulators should strengthen oversight on SME-related pricing structures and promote transparent disclosure of financial service costs to protect enterprises from excessive financial burdens. Improved affordability would enhance effective utilization of financial services and strengthen SME financial sustainability.

Regarding the fourth objective, the significant moderating effect of financial literacy supports the recommendation that government institutions, SME support agencies, and financial service providers should strengthen financial literacy programmes targeting SME owners and managers. Financial literacy initiatives should focus on budgeting, debt management, financial planning, digital financial usage, and enterprise financial decision-making. Financial institutions should further integrate simplified financial education content within digital financial platforms to enhance financial capability and improve the effectiveness of financial inclusion initiatives among SMEs.

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