



ACCESS TO CREDIT, FIRM SIZE AND FINANCIAL PERFORMANCE OF MANUFACTURING SMALL AND MEDIUM ENTERPRISES IN EMBAKASI CONSTITUENCY, NAIROBI COUNTY

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ABSTRACT

This study examined the effect of interest rates, collateral requirements, and credit availability on the financial performance of manufacturing SMEs in Embakasi Constituency, Nairobi County, and tested firm size as a moderator of these relationships. The study was anchored in Pecking Order Theory, the Resource-Based View, Trade-Off Theory, and Credit Rationing Theory. An explanatory cross-sectional design was used. The target population comprised 792 manufacturing SMEs, from which 265 firms were selected through proportionate stratified random sampling. Of the 265 questionnaires distributed, 231 were returned, representing an 87.2% response rate; after the missing-data screen, 230 cases were used in the main statistical analyses. Data were collected using a structured five-point Likert-scale questionnaire and analysed using reliability tests, factor analysis, Pearson correlations, multiple regression, and hierarchical moderated regression. Interest rate had a negative and significant effect on financial performance, collateral requirements had a negative and significant effect, and credit availability had a positive and significant effect. Firm size significantly moderated the interest-rate, collateral, and credit-availability relationships. The findings show that credit conditions are not uniform across SMEs: smaller firms are more vulnerable to costly and collateral-intensive lending but obtain larger marginal benefits when access improves. The study recommends size-sensitive lending, more flexible collateral arrangements, strengthened credit information, and complementary financial-management support for manufacturing SMEs.

KEYWORDS: Access To Credit, Interest Rate, Collateral Requirements, Credit Availability, Firm Size, Financial Performance, Manufacturing SMEs, Kenya

1. INTRODUCTION

Small and medium enterprises occupy a central position in developing economies because they connect household entrepreneurship with employment creation, industrial production, innovation, and local value addition. Their importance is especially pronounced where large-firm employment is insufficient to absorb a growing labour force and where decentralized production supports local markets. Cross-country evidence has long shown that SMEs constitute a large share of firms and employment, even though their contribution varies with institutional quality, financial development, and the definition of enterprise size (Ayyagari et al., 2007; Ngui, 2014). In Sub-Saharan Africa, the policy case for SME development is therefore closely tied to the ability of firms to survive, formalise, invest, and move from subsistence activity toward sustainable growth. Access to finance remains one of the most persistent constraints in this transition because small firms typically possess fewer internally generated funds, thinner asset bases, shorter credit histories, and less formal financial information than established firms (Beck & Demirgüç-Kunt, 2006; Chibueze et al., 2025; Fatoki & Asah, 2011).

Financial performance is the immediate firm-level outcome through which these constraints become visible. A manufacturing SME must generate adequate margins, maintain liquidity, stabilize cash flows, finance inventories, replace equipment, and meet debt obligations while remaining competitive. When internal funds are inadequate, external credit can relax working-capital and investment constraints, but the financing itself creates costs and obligations. The relationship between credit and performance is consequently not mechanical: finance can improve performance when it is timely, affordable, and matched to productive uses, yet it can weaken performance when interest costs absorb operating surpluses, collateral requirements exclude viable firms, or loan structures do not fit business cash-flow cycles (Aminu & Zainudin, 2015; Eton & Mwosi, 2017; Muriithi, 2018). This dual character of credit is particularly relevant to manufacturing enterprises because machinery, inventories, premises, and production cycles can require larger and longer-term financing than many micro and service businesses.

The Kenyan SME financing environment reflects the same tension. Commercial banks remain important providers of formal credit, but lending decisions are shaped by borrower information, collateral, risk, loan size, business history, and the lender's own risk-management technology. The Central Bank of Kenya's MSME evidence identifies continuing gaps in the use and availability of formal finance, while studies from Nairobi and other Kenyan counties show that collateral, borrowing costs, and loan accessibility remain important



determinants of enterprise outcomes (Central Bank of Kenya, 2023; Kaimenyi, 2025; Mumin, 2018; Otieno et al., 2021). Financial institutions use these conditions to manage default risk and information asymmetry, yet the same mechanisms may ration otherwise productive firms. Thus, an apparently prudent lending requirement at the bank level can become an investment constraint at the firm level, particularly where the borrower has a viable project but limited pledgeable assets or a short formal credit record (Bougheas et al., 2005; Jagongo, 2013).

Interest rates are one pathway through which credit affects performance. For borrowers, the interest rate is the price of external debt and therefore a direct claim on future cash flows. Higher rates raise debt-service requirements, increase the hurdle rate for investment, and can discourage firms from borrowing even when projects are potentially profitable. Evidence from Kenyan SMEs indicates that high lending rates can reduce borrowing, compress profitability, and weaken enterprise performance (Kisseih, 2017; Otieno et al., 2021). Credit pricing also interacts with adverse selection: where lenders respond to risk by charging high rates, safer borrowers may withdraw while riskier borrowers remain willing to borrow, thereby complicating the lender's attempt to price risk efficiently. Credit rationing research therefore suggests that the market-clearing price of credit need not produce an efficient allocation of funds (Stiglitz & Weiss, 1981).

Collateral requirements constitute a second pathway. Collateral can reduce lender losses and provide a screening or incentive mechanism, but its distribution across firms is unequal. Established firms are more likely to own land, buildings, machinery, vehicles, or other assets that lenders can accept as security, whereas smaller enterprises often operate with movable, rented, or informally documented assets. The consequence is that two firms with similar business prospects can face different borrowing opportunities because one has stronger collateral capacity. Empirical work across developing economies identifies collateral as a significant financing constraint for smaller enterprises, while Kenyan studies similarly show that demanding collateral conditions restrict access and can suppress performance by limiting working capital and investment (Beck & Demirgüç-Kunt, 2006; Kaimenyi, 2025; Kariuki et al., 2019; Mumin, 2018).

The third dimension is the availability of credit itself. Even a firm that accepts the prevailing price and can provide some security may be unable to obtain the amount, maturity, or timing of finance required. Credit availability depends on lender policies, borrower information, banking relationships, repayment history, macroeconomic conditions, and the financial institution's willingness to lend. When adequate credit is available, SMEs can smooth cash-flow gaps, finance inventories, acquire equipment, and respond to market opportunities; when it is unavailable, viable projects may be postponed or abandoned (Beck & Demirgüç-Kunt, 2011; Muriithi, 2018; Sakwa, 2016). Evidence from African and Kenyan enterprises generally indicates that relaxing financing constraints can improve growth and performance, although the magnitude of the effect differs across firms and forms of credit (Abubakar & Bala, 2023; Chibueze et al., 2025; Rotich et al., 2015).

Firm size is likely to explain part of this heterogeneity. Larger firms normally have more employees, assets, operating history, formal records, and diversified revenue streams. They may negotiate with banks from a stronger position, spread fixed financing costs across a larger activity base, and absorb temporary financial shocks more easily. Smaller firms, by contrast, are often more flexible but financially fragile and may face higher transaction costs relative to the size of the loan required (Berger & Black, 2011; Burkart & Ellingsen, 2004; Chelliah et al., 2010). This means that the same increase in interest rates or collateral requirements may have a more severe performance effect on a small firm, while an improvement in credit availability may yield a larger marginal benefit to a credit-constrained small firm. Treating firm size only as a control can therefore obscure an important conditional relationship.

The empirical literature does not resolve these relationships uniformly. Studies in Kenya report positive effects of credit accessibility on performance, but also negative effects from high interest rates and stringent collateral conditions (Kaimenyi, 2025; Muriithi, 2018; Otieno et al., 2021; Sakwa, 2016; Wanjohi, 2025). Other studies show that the role of finance changes with firm-specific characteristics, lender type, sector, and capital structure (Aminu & Zainudin, 2015; Fatoki & Asah, 2011; Morobe, 2015). This inconsistency suggests a need to disaggregate access to credit into distinct dimensions rather than treating it as one undifferentiated construct. It also creates a methodological case for testing whether firm size changes the strength or direction of the credit-performance relationship.

Accordingly, this study investigated the effect of interest rates, collateral requirements, and credit availability on the financial performance of manufacturing SMEs in Embakasi Constituency, Nairobi County, and examined firm size as a moderator of each relationship. The study contributes by integrating three credit dimensions in one explanatory model and by explicitly estimating interaction effects. This is relevant to lenders because a uniform SME lending policy may impose different burdens on firms of different sizes; it is relevant to policymakers because financial inclusion is not only about the number of firms receiving loans but also about whether loan terms allow firms to translate finance into stronger performance. The analysis therefore moves beyond the question of whether SMEs receive credit to the more specific question of how the price, security requirements, and availability of credit combine with firm size to shape financial outcomes (Beck & Demirgüç-Kunt, 2006; Central Bank of Kenya, 2023; Chibueze et al., 2025).



2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The theoretical foundation combines Pecking Order Theory, the Resource-Based View (RBV), Trade-Off Theory, and Credit Rationing Theory. Pecking Order Theory proposes that firms prefer internal finance, then debt, and finally external equity when information asymmetry makes external financing relatively costly (Myers & Majluf, 1984). This logic is particularly applicable to owner-managed SMEs, where founders may resist dilution of control and may not have ready access to public equity. When retained earnings are insufficient, the firm moves down the financing hierarchy toward debt. If bank debt is expensive or collateral intensive, the move can impose a substantial performance penalty. The present study therefore interprets interest cost and collateral burden as part of the external-finance premium faced by SMEs, while credit availability determines whether firms can obtain debt when internal funds are inadequate (Chen et al., 2013; Myers & Majluf, 1984).

The RBV complements this financing perspective by focusing on heterogeneous firm resources. Competitive advantage depends on the firm's ability to assemble and deploy valuable resources and capabilities; financial resources and credible banking relationships can be part of that resource bundle (Barney, 1991). For SMEs, reliable credit can support the acquisition of equipment, inventories, skills, and other productive assets, but the capacity to secure and use credit is itself uneven. Larger firms may possess stronger collateral bases, records, managerial systems, and reputational capital, which make finance easier to obtain and absorb. The RBV therefore provides a theoretical basis for treating firm size as more than a demographic characteristic: size can proxy a set of accumulated resources that influence how credit conditions translate into performance (Chelliah et al., 2010; Fatoki & Asah, 2011).

Trade-Off Theory adds the idea that debt has both benefits and costs. Borrowing can support investment and permit owners to finance growth without surrendering control, but greater debt also raises expected financial distress and debt-service costs. The optimal financing position is reached where the marginal benefits of additional debt no longer exceed its marginal costs (Hovakimian et al., 2001; Jensen & Meckling, 1976; Myers, 2001). For SMEs, the trade-off may be especially sensitive to interest rates because a relatively small increase in financing cost can materially affect cash flows. Collateral requirements can also alter the trade-off by exposing owner or firm assets to loss in default, while limited credit availability can keep a firm below its desired investment level. The theory thus helps explain why more debt is not automatically associated with better performance.

Credit Rationing Theory explains why some SMEs may remain constrained even when they are willing to pay the quoted interest rate. Under asymmetric information, lenders cannot perfectly observe borrower quality or project risk. Raising interest rates may worsen the applicant pool through adverse selection and may encourage riskier borrower behaviour through moral hazard, so lenders can respond by restricting loan quantities or denying some applications instead of simply raising prices (Stiglitz & Weiss, 1981). Collateral, borrower history, and screening technologies become mechanisms for reducing this information problem. However, those mechanisms can disadvantage smaller firms with limited assets and documentation, producing a financing gap that is not explained by project quality alone (Bougheas et al., 2005; Jagongo, 2013; Mumin, 2018). Together, the four theories imply that the credit-performance relationship should be examined simultaneously through price, collateral, availability, and firm heterogeneity.

Interest rates affect SME financial performance through financing cost, investment incentives, and cash-flow pressure. A higher lending rate increases periodic debt service and leaves less operating surplus for inventory, wages, maintenance, and reinvestment. It can also alter the firm's project-selection decision by making marginal investments financially unattractive. Kisseih (2017) reported that interest-rate fluctuations influenced SME growth, while Otieno et al. (2021) found that lending interest rates significantly affected SME performance in Kenya. Eton and Mwosi (2017) likewise associated credit-financing conditions with SME performance in Uganda. These findings support the view that the affordability of debt is as important as nominal access to a loan (Eton & Mwosi, 2017; Kisseih, 2017; Otieno et al., 2021).

The relationship is nevertheless not necessarily linear across contexts. Some SMEs use little external debt and therefore experience only a weak direct effect from prevailing rates; other firms borrow because their expected project returns remain above the cost of debt. Aminu and Zainudin (2015) showed that the cost of capital does not always explain SME performance strongly, which may reflect the use of internal, family, or concessional finance. Pecking-order reasoning suggests that firms with stronger retained earnings can delay external borrowing, while credit-rationing reasoning suggests that observed borrowers may already be a selected group able to meet lender requirements (Aminu & Zainudin, 2015; Myers & Majluf, 1984; Stiglitz & Weiss, 1981). In manufacturing SMEs that depend on external finance for working capital and equipment, however, the expected effect of costly credit remains negative. Hence:

H01: Interest rates have no statistically significant effect on the financial performance of manufacturing SMEs in Embakasi Constituency, Nairobi County.

Collateral can improve access by reducing expected lender loss and by signalling borrower commitment, but stringent collateral can also prevent viable firms from borrowing. Bougheas et al. (2005) show that firm characteristics and monetary conditions shape access to external finance, while Beck and Demirgüç-Kunt (2006) identify financing constraints as a particularly important obstacle for small firms. In practice, the collateral problem is often most acute where firms hold assets that lenders find difficult to value, register, or



liquidate. Kenyan evidence shows that collateral requirements remain a major barrier to formal bank finance and can limit enterprise performance by restricting both the amount and timeliness of funds available (Kaimenyi, 2025; Kariuki et al., 2019; Mumin, 2018). Collateral also creates a size-related selection effect. Larger firms are more likely to have titled land, equipment, vehicles, inventories, audited records, or longstanding lender relationships that support secured borrowing. Smaller firms may have viable cash flows but weak pledgeable assets. Fatoki and Asah (2011) found that firm and entrepreneurial characteristics influenced SMEs' access to debt finance, and Berger and Black (2011) showed that lending technologies can affect the financing of small businesses. Thus, collateral can be beneficial as a credit-risk mechanism from the lender's perspective while remaining costly from the borrower's perspective. Where collateral thresholds are high relative to SME assets, the anticipated net performance effect is negative (Berger & Black, 2011; Fatoki & Asah, 2011; Kaimenyi, 2025). Hence:

H02: Collateral requirements have no statistically significant effect on the financial performance of manufacturing SMEs in Embakasi Constituency, Nairobi County.

Credit availability captures whether a firm can obtain financing when needed and in a form that is usable for its operations. It includes the responsiveness of financial institutions, the information available to borrowers, the lender's credit policy, the firm's repayment history, and the amount of credit offered. Credit can support performance by financing working capital, bridging receivable-payment gaps, replacing machinery, increasing inventory, and permitting firms to exploit market opportunities. Sakwa (2016) reported a positive relationship between access to finance and manufacturing-firm performance in Kenya, while Muriithi (2018) found that access to finance improved SME financial performance in the hotel sector. Rotich et al. (2015) similarly linked microfinance services to SME performance (Muriithi, 2018; Rotich et al., 2015; Sakwa, 2016).

Availability is also shaped by information asymmetry and lender structure. Banks may prefer borrowers with a documented history, established cash flows, and lower screening costs, while SMEs can be disadvantaged by incomplete records. Beck and Demirgüç-Kunt (2011) show that bank ownership and institutional characteristics influence SME financing, and Chibueze et al. (2025) identify financial inclusion, information, and collateral as continuing constraints across Sub-Saharan Africa. At the firm level, credit availability can therefore be interpreted as the outcome of both demand and supply conditions. The expected relationship with performance is positive because a firm that can obtain suitable credit is better positioned to sustain operations and invest, provided the debt is used productively and its cost remains manageable (Beck & Demirgüç-Kunt, 2011; Chibueze et al., 2025; Sakwa, 2016). Hence:

H03: Credit availability has no statistically significant effect on the financial performance of manufacturing SMEs in Embakasi Constituency, Nairobi County.

Firm size can directly influence performance and can also condition the effects of financing constraints. Larger firms can spread fixed administrative and financing costs over a wider revenue base, maintain more diversified product lines, and build longer relationships with lenders. Burkart and Ellingsen (2004) argue that firm characteristics affect financing choices, while Berger and Black (2011) demonstrate that lending technologies and bank size matter for small-business finance. Empirical SME evidence further suggests that larger enterprises are often more resilient and have stronger access to formal finance than micro and small firms (Central Bank of Kenya, 2023; Morobe, 2015). At the same time, growth can introduce overhead, tax exposure, and managerial complexity, so the direct size-performance relationship may not always be positive.

The moderating role of firm size is clearer conceptually. First, larger firms should be better able to absorb high interest costs because they have stronger internal cash flows, more diversified revenues, and greater bargaining power. Second, they should be less constrained by collateral because they own more pledgeable assets and possess more formal documentation. Third, improvements in credit availability may have a larger marginal effect on smaller firms precisely because these firms begin from a more constrained financing position. Chelliah et al. (2010) show that firm size can operate as a moderator in SME outcomes, while Beck and Demirgüç-Kunt (2006) and Fatoki and Asah (2011) show that financing obstacles differ by firm characteristics. Size-sensitive analysis is therefore essential to determine whether credit reforms benefit all manufacturing SMEs equally (Beck & Demirgüç-Kunt, 2006; Chelliah et al., 2010; Fatoki & Asah, 2011).

The study consequently tested three conditional hypotheses under the broader moderation proposition.

H04a: Firm size has no statistically significant moderating effect on the relationship between interest rates and financial performance.

H04b: Firm size has no statistically significant moderating effect on the relationship between collateral requirements and financial performance.

H04c: Firm size has no statistically significant moderating effect on the relationship between credit availability and financial performance.

These hypotheses extend the direct-effects model by asking whether the slope of each credit variable changes across the firm-size continuum. In theoretical terms, a significant interaction would indicate that financial resources and financing constraints are contingent on firm scale rather than uniform across the SME population (Barney, 1991; Chelliah et al., 2010).



3. RESEARCH METHODOLOGY

The study adopted an explanatory cross-sectional research design because the objective was to estimate hypothesised relationships between access-to-credit dimensions and financial performance and to determine whether those relationships changed with firm size. Explanatory quantitative designs are appropriate where variables are measured systematically and theory-derived hypotheses are tested through inferential statistics (Ghauri & Gronhaug, 2017; Sekaran & Bougie, 2016). The unit of analysis was the manufacturing SME operating in Embakasi Constituency, Nairobi County. The target population consisted of 792 manufacturing SMEs distributed across Embakasi East, Central, North, South, and West. The population frame provided the basis for proportional representation of the five strata.

The required sample was calculated using Yamane's finite-population approach at a 5% precision level, producing a target sample of 265 SMEs. Proportionate stratified sampling allocated 23 firms to Embakasi East, 133 to Embakasi Central, 33 to Embakasi North, 56 to Embakasi South, and 21 to Embakasi West. Random selection was then used within the strata. Stratification was intended to preserve the spatial composition of the population while reducing the risk that the largest sub-county segment would dominate the sample (Kothari, 2004; Mugenda & Mugenda, 2003).

Primary data were collected using a structured questionnaire with five-point Likert-scale items. Interest rate was measured using statements on affordability, the deterrent effect of high rates, understanding of loan pricing, repayment planning, rate variability, size-related pricing, and the influence of rates on credit applications. Collateral requirements were measured through the centrality of collateral, borrowing constraints, previous denial due to insufficient security, lender flexibility, barriers created by collateral, and the relative ability of larger firms to meet requirements. Credit availability assessed ease of obtaining bank credit, information on available credit, growth in credit received, choice of financial institutions, and access to multiple lenders. Financial performance was measured through perceived effects on profitability, growth, cash-flow stability, liquidity, and sales. Firm size was captured through employee- and scale-related indicators and respondents' perceptions of size-related credit conditions (Bougheas et al., 2005; Chelliah et al., 2010; Eton & Mwosi, 2017; Kisseih, 2017).

Instrument quality was assessed before hypothesis testing. Internal consistency was evaluated using Cronbach's alpha, with coefficients above .70 treated as acceptable for research scales (Nunnally & Bernstein, 1994). Construct validity was assessed through the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity, following multivariate-analysis guidance that adequate sampling and significant inter-item correlations are prerequisites for factor analysis (Field, 2013; Hair et al., 2018; Pallant, 2020). Regression assumptions were assessed through tolerance and variance inflation factors, scatter plots for linearity, a normal P-P plot, the Durbin-Watson statistic for autocorrelation, and Levene-type homogeneity checks. These procedures were used to identify model conditions that could distort coefficient estimates or significance tests (Field, 2013; Hair et al., 2018).

Data were cleaned before analysis. Of the 265 questionnaires distributed, 231 were returned. One case exceeded the study's missing-data threshold, leaving 230 cases in the descriptive, reliability, validity, correlation, and regression tables. Descriptive statistics summarized central tendency and dispersion. Pearson correlation assessed bivariate associations. Multiple regression estimated the direct effects of interest rate, collateral requirements, and credit availability on financial performance. Firm size was then entered and interaction terms were added hierarchically. Moderation was evaluated through the significance of interaction coefficients and the incremental change in R-squared across successive models, consistent with regression-based moderation logic (Baron & Kenny, 1986; Hayes, 2018). Statistical decisions were made at the 5% significance level.

Table 1: Measurement of variables

Variable	Role	Items	Operationalization	Selected sources
Financial performance (FP)	Dependent	5	Profitability, growth, cash-flow stability, liquidity and sales performance	Muriithi (2018); Sakwa (2016)
Interest rate (IR)	Independent	7	Affordability, deterrence, understanding, repayment planning, rate variation and application decisions	Eton & Mwosi (2017); Kisseih (2017); Otieno et al. (2021)
Collateral required (CR)	Independent	6	Collateral requirement, borrowing constraint, loan denial, flexibility and size-related capacity	Bougheas et al. (2005); Kariuki et al. (2019); Kaimenyi (2025)
Credit availability (AC)	Independent	5	Ease of access, information, amount of credit, lender choice and multiple sources	Beck & Demirgüç-Kunt (2011); Mumin (2018); Sakwa (2016)
Firm size (FS)	Moderator	5	Employee/scale indicators and size-related access to credit and borrowing conditions	Chelliah et al. (2010); Fatoki & Asah (2011)

Source: Adapted from the study instrument and literature review.



4. DATA ANALYSIS AND PRESENTATION

4.1 Response rate and respondent profile

A total of 265 questionnaires were distributed and 231 were returned, giving a response rate of 87.2%. This exceeded the threshold treated as adequate in the study methodology and provided a sufficient base for analysis (Mugenda & Mugenda, 2003). The missing-data screen removed one case from the analytical dataset, so the main statistical tables were based on 230 observations. Most sampled firms had operated for at least four years: 50.9% were in the four-to-six-year category and 12.6% had operated for more than six years. In the employee-based size profile, 51.7% were classified as large under the study categories, 26.5% as medium, 16.5% as small, and 2.6% as micro; 2.6% were uncoded or invalid on the categorical size item. This distribution provided variation in firm size that was useful for moderation analysis.

Table 2: Response rate

Response category	Frequency	Percentage (%)
Questionnaires distributed	265	100.0
Returned questionnaires	231	87.2
Non-response	34	12.8
Analytical cases after missing-data screen	230	86.8 of distributed

Source: Research data (2025).

4.2 Descriptive statistics and reliability

Respondents reported high agreement that interest-rate conditions mattered for borrowing and financial planning. The composite mean for interest rate was 3.98 (SD = .575). Collateral requirements produced the highest composite mean, 4.03 (SD = .600), reflecting strong agreement that collateral is both central to bank lending and a significant barrier to credit. Credit availability had a lower composite mean of 3.67 (SD = .736), indicating that credit was perceived as available but uneven in information, amount, and accessibility. Financial performance averaged 3.81 (SD = .688), suggesting generally positive perceptions of the contribution of loans to profitability, growth, cash flow, liquidity, and sales. Firm size averaged 3.67 (SD = .732), consistent with the view that size influences access, borrowing conditions, and performance. These patterns are compatible with evidence that SMEs face simultaneous price, collateral, and quantity constraints rather than a single financing barrier (Beck & Demirgüç-Kunt, 2006; Chibueze et al., 2025; Mumin, 2018).

Reliability was satisfactory for all constructs. Cronbach's alpha was .897 for interest rate, .877 for collateral requirements, .814 for credit availability, .880 for financial performance, and .778 for firm size, with an average alpha of .849. All coefficients exceeded the conventional .70 threshold, supporting the internal consistency of the scales (Nunnally & Bernstein, 1994). The reliability pattern also reduced concern that the regression results were being driven by highly unstable multi-item measures. The strongest reliability was observed for the interest-rate scale, while firm size had the lowest but still acceptable coefficient.

Table 3: Descriptive statistics and reliability of study constructs

Construct	N	Mean	SD	Items	Cronbach alpha
Interest rate (IR)	230	3.98	.575	7	.897
Collateral required (CR)	230	4.03	.600	6	.877
Credit availability (AC)	230	3.67	.736	5	.814
Financial performance (FP)	230	3.81	.688	5	.880
Firm size (FS)	230	3.67	.732	5	.778

Source: Research data (2025).

4.3 Validity and diagnostic tests

KMO values ranged from .694 to .886 and Bartlett's tests were significant at $p < .001$ for all five constructs. Interest rate recorded KMO = .886, collateral = .875, credit availability = .694, financial performance = .842, and firm size = .748. These results indicate adequate sampling and sufficient inter-item correlation for factor analysis (Field, 2013; Hair et al., 2018). Multicollinearity was not judged problematic: reported VIF values ranged from 1.894 to 2.386 and tolerance values ranged from .419 to .528, comfortably within the decision limits adopted in the study. The Durbin-Watson statistic was 1.987, supporting the absence of serious residual autocorrelation. Scatter and P-P plots were also interpreted as supporting linearity and approximate normality (Field, 2013; Pallant, 2020).

The homogeneity results require a more qualified reading. The mean-based Levene statistic was significant ($p = .012$), whereas the median-based ($p = .113$), adjusted-median ($p = .116$), and trimmed-mean ($p = .083$) versions were not significant. The latter robust variants support approximate equality of variances, but the difference indicates some sensitivity to the particular homogeneity statistic. The regression results should therefore be interpreted with awareness of this diagnostic nuance rather than as evidence of perfect variance homogeneity. Overall, the remaining diagnostics did not indicate severe model violations that would invalidate the planned regression analysis (Field, 2013; Hair et al., 2018).

**Table 4: Validity and regression diagnostic summary**

Test/construct	Statistic	Result/decision
KMO: Interest rate	.886	Adequate
KMO: Collateral	.875	Adequate
KMO: Credit availability	.694	Acceptable
KMO: Financial performance	.842	Adequate
KMO: Firm size	.748	Adequate
Bartlett tests	All $p < .001$	Factor analysis supported
VIF range	1.894-2.386	No serious multicollinearity
Tolerance range	.419-.528	Acceptable
Durbin-Watson	1.987	No serious autocorrelation
Levene (median based)	$p = .113$	Homogeneity supported by robust variant

Source: Research data (2025).

4.4 Correlation analysis

Pearson correlations showed positive bivariate associations between financial performance and the study predictors. Financial performance correlated with interest rate at $r = .575$, collateral requirements at $r = .674$, credit availability at $r = .560$, and firm size at $r = .333$. In the questionnaire coding, higher interest-rate and collateral scores captured respondents' agreement with a mix of affordability, awareness, restriction, and barrier items, so the positive zero-order correlations should not be interpreted as evidence that higher borrowing costs or more stringent collateral improve performance. The multivariate regression, which holds the other credit dimensions constant, provides the more direct test of the directional hypotheses. Intercorrelations among predictors were also substantial—particularly IR with CR ($r = .741$) and AC with FS ($r = .669$)—but the VIF results indicated that these associations did not create severe multicollinearity. This illustrates why the study relied on multivariate rather than correlation evidence for hypothesis decisions (Field, 2013; Pallant, 2020).

Table 5: Pearson correlations among study constructs

Variable	FP	IR	CR	AC	FS
FP	1.000	.575**	.674**	.560**	.333**
IR	.575**	1.000	.741**	.469**	.442**
CR	.674**	.741**	1.000	.493**	.376**
AC	.560**	.469**	.493**	1.000	.669**
FS	.333**	.442**	.376**	.669**	1.000

Note. $N = 230$. ** Correlation is significant at the .01 level (two-tailed). Source: Research data (2025).

4.5 Regression and moderation analysis

The direct-effects model explained 85.7% of the variance in financial performance ($R = .926$, $R^2 = .857$, adjusted $R^2 = .855$). Interest rate had a negative and statistically significant unstandardized effect ($B = -0.171$, $SE = .007$, $p < .001$), collateral requirements had a negative and significant effect ($B = -0.116$, $SE = .046$, $p = .012$), and credit availability had a positive and significant effect ($B = .058$, $SE = .029$, $p = .046$). $H01$, $H02$, and $H03$ were therefore rejected. The coefficient pattern shows that when the three credit dimensions are considered together, more costly interest conditions and more burdensome collateral conditions are associated with weaker financial performance, whereas greater credit availability is associated with stronger performance. This pattern is consistent with the core financing-constraint argument in the SME literature (Beck & Demirgüç-Kunt, 2006; Kaimenyi, 2025; Otieno et al., 2021; Sakwa, 2016). Adding firm size in Model 2 increased R^2 from .857 to .860. Firm size had a small negative coefficient in that specification ($B = -.072$, $SE = .032$, $p = .024$), suggesting that once access-to-credit conditions were controlled, larger firms did not automatically exhibit stronger perceived performance. This finding is important because it separates the direct level effect of size from its conditional effect. Firm size may generate resources and borrowing capacity while also bringing overhead, managerial complexity, and formal compliance costs. Evidence from Kenyan SMEs similarly shows that size can improve access to finance without guaranteeing uniformly superior margins or short-run financial outcomes (Central Bank of Kenya, 2023; Makena, 2016; Morobe, 2015).

The moderation models produced substantial incremental explanatory power. When the interest-rate-by-firm-size interaction was introduced, R^2 increased to .869 ($\Delta R^2 = .008$). When the collateral interaction was added, R^2 increased sharply to .952 ($\Delta R^2 = .085$). The final model, which also included the credit-availability interaction, reached $R^2 = .958$ and adjusted $R^2 = .957$, with a standard error of estimate of .14345. In the final model, $IR \times FS$ was negative ($B = -.063$, $SE = .004$), $CR \times FS$ was positive ($B = .052$, $SE = .002$), and $AC \times FS$ was negative ($B = -.114$, $SE = .021$); the study reported all three interaction terms as statistically significant. $H04a$, $H04b$, and $H04c$ were therefore rejected. The R^2 progression shows that firm size materially changed the way credit conditions were associated with financial performance, especially for collateral requirements.

**Table 6: Hierarchical regression results for financial performance**

Predictor/statistic	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	1.440 (.131)	1.509 (.133)	.940 (.197)	1.564 (.123)	.939 (.164)
Interest rate (IR)	-.171 (.007)	-.170 (.007)	-.224 (.016)	-.305 (.010)	-.263 (.012)
Collateral (CR)	-.116 (.046)	-.106 (.045)	-.157 (.046)	-.636 (.037)	-.665 (.035)
Credit availability (AC)	.058 (.029)	.104 (.035)	.128 (.035)	.088 (.021)	.484 (.076)
Firm size (FS)	-	-.072 (.032)	.134 (.062)	.312 (.038)	.515 (.052)
IR x FS	-	-	-.016 (.004)	-.074 (.004)	-.063 (.004)
CR x FS	-	-	-	.050 (.003)	.052 (.002)
AC x FS	-	-	-	-	-.114 (.021)
R ²	.857	.860	.869	.952	.958
Adjusted R ²	.855	.858	.866	.951	.957
ΔR ²	-	.003	.008	.085	.006
Std. error	.26204	.25967	.25205	.15214	.14345

Note. Entries for coefficients are unstandardized B (SE). Interaction terms were reported as statistically significant in the study.

Source: Research data (2025).

Table 7: Summary of hypothesis decisions

Hypothesis	Relationship	Effect	p value	Decision
H01	Interest rate -> financial performance	B = -.171	p < .001	Rejected
H02	Collateral -> financial performance	B = -.116	p = .012	Rejected
H03	Credit availability -> financial performance	B = .058	p = .046	Rejected
H04a	IR x firm size -> financial performance	Significant interaction	p < .001	Rejected
H04b	CR x firm size -> financial performance	Significant interaction	p < .001	Rejected
H04c	AC x firm size -> financial performance	B = -.114	p < .001	Rejected

Source: Research data (2025).

4.6 Discussion of findings

The interest-rate finding provides strong evidence that the cost of debt is a material financial-performance constraint for manufacturing SMEs in Embakasi. The negative coefficient indicates that, after controlling for collateral and credit availability, higher or less favourable interest-rate conditions are associated with weaker performance. This is consistent with the practical mechanism through which debt service absorbs margins that could otherwise be used for inventory, labour, maintenance, technology, or expansion. Otieno et al. (2021) similarly found that lending rates affected SME performance in Kenya, and Kisseih (2017) linked interest-rate fluctuations to SME growth. The result also accords with Trade-Off Theory because the benefits of debt-financed investment can be outweighed when the cost of borrowing raises financial distress or reduces net project returns (Hovakimian et al., 2001; Myers, 2001).

The result also supports Pecking Order Theory. SMEs generally prefer internally generated funds when external finance carries information and transaction costs; high bank interest rates increase the penalty attached to moving from internal funds to debt (Myers & Majluf, 1984). In firms with limited retained earnings, however, avoiding debt may mean foregoing productive investment. This creates a financing dilemma: borrow and absorb high debt costs, or remain undercapitalised. Aminu and Zainudin (2015) demonstrate that cost-of-capital effects can differ across SMEs, which helps explain why the literature is not uniformly negative. The Embakasi evidence nevertheless indicates that, for manufacturing SMEs exposed to bank credit, interest cost is a binding performance variable (Aminu & Zainudin, 2015; Otieno et al., 2021).

Collateral requirements also had a significant negative effect on financial performance. The finding suggests that collateral does more than determine whether a loan is approved; it can shape the quantity, timing, and conditions of finance available to the enterprise. Firms that cannot pledge lender-acceptable assets may receive smaller loans, delay investment, rely on expensive alternatives, or remain excluded from formal finance. Kaimenyi (2025) reports a similar negative role of collateral requirements among Kenyan SMEs, while Mumin (2018) identifies collateral as a major barrier to bank finance in Nairobi County. Cross-country evidence likewise shows that small firms face more severe financing obstacles than larger firms, particularly where legal and information institutions are less developed (Beck & Demirgüç-Kunt, 2006; Fatoki & Asah, 2011).

From Credit Rationing Theory, the collateral result reflects the lender's attempt to manage asymmetric information. Collateral can signal commitment and provide recovery value if a borrower defaults, but it can also shift credit toward firms that own pledgeable assets rather



than firms with the highest-return projects (Stiglitz & Weiss, 1981). Bougheas et al. (2005) similarly emphasize the role of firm-specific characteristics in access to external finance. The policy implication is therefore not that collateral should be eliminated, but that risk-management systems should recognize alternative forms of security, transaction histories, movable assets, guarantees, and cash-flow information where appropriate. This can preserve prudent lending while reducing the exclusion of viable firms with weak traditional collateral (Bougheas et al., 2005; Chibueze et al., 2025; Kaimenyi, 2025).

Credit availability had a positive and statistically significant direct effect on financial performance. Although its coefficient was smaller than the interest-rate effect, the positive sign is economically important because it shows that firms benefit when they can obtain external finance in the first place. Manufacturing SMEs often require financing before the associated revenue is realised: inventories must be purchased, machinery maintained or replaced, workers paid, and orders fulfilled before customers settle invoices. Timely credit can therefore support both liquidity and growth. The result is consistent with Sakwa (2016), Muriithi (2018), and Rotich et al. (2015), all of whom report positive performance effects from improved access to finance or microfinance services in Kenyan SMEs (Muriithi, 2018; Rotich et al., 2015; Sakwa, 2016).

The finding also fits the RBV because finance is not merely a transaction but an enabling resource. Access to credit permits firms to acquire complementary productive resources and capabilities; without finance, market opportunities may remain unexploited. However, the availability result should be interpreted together with the negative effects of interest and collateral. More credit is beneficial only when the terms allow the firm to convert borrowed funds into productive activity. This helps explain why policy approaches focused solely on the volume of SME lending can be incomplete. Financial inclusion should also consider affordability, repayment structure, security requirements, and the firm's capacity to deploy funds effectively (Barney, 1991; Beck & Demirgüç-Kunt, 2011; Chibueze et al., 2025).

Firm size had a significant direct effect once entered in the regression, but its more important contribution was conditional. The interest-rate interaction showed that the relationship between borrowing cost and performance differed by size. The study's moderation plot indicated that larger firms were better able to cushion adverse interest-rate conditions, while smaller firms experienced steeper performance deterioration as credit became costly. This pattern is consistent with larger firms having stronger internal cash flows, more diversified revenues, established lender relationships, and greater negotiating power. Berger and Udell (2014) show that small-business financing is shaped by lending technologies and scale, and Beck and Demirgüç-Kunt (2006) demonstrate that smaller firms report more severe financing obstacles. Thus, a common market interest rate can have unequal real effects across the SME population (Beck & Demirgüç-Kunt, 2006; Berger & Udell, 2014).

The collateral interaction was especially influential because adding it increased R^2 by .085. The positive interaction indicates that firm size reduced the severity of the negative collateral-performance relationship: smaller firms were more adversely affected, whereas larger firms were better positioned to meet or negotiate collateral requirements. This result is theoretically consistent with the RBV, since accumulated assets, documentation, reputation, and banking relationships become resources that protect firms from financing constraints (Barney, 1991). It also agrees with Fatoki and Asah (2011), who show that firm characteristics affect access to debt, and with Kaimenyi (2025), who documents the importance of collateral for SME outcomes. The magnitude of the incremental explanatory power suggests that collateral reform may have especially strong distributional effects for micro and small manufacturing firms.

The credit-availability interaction was negative in the full model, and the study's graph showed a steeper positive credit-performance slope for smaller firms. This means that smaller firms gained more sharply from incremental improvements in access, even though larger firms could retain higher absolute performance levels because of stronger internal resources. The finding is plausible under credit rationing: the firms most constrained at baseline obtain the greatest marginal benefit when a financing barrier is relaxed (Stiglitz & Weiss, 1981). It also aligns with evidence that smaller firms face stronger access barriers and therefore respond more to improvements in formal finance (Beck & Demirgüç-Kunt, 2006; Chibueze et al., 2025). For lenders and policymakers, this implies that expanding access among already well-served medium or larger firms may produce smaller marginal gains than designing viable entry pathways for constrained small firms.

Taken together, the moderation results are the study's main empirical contribution. They show that access to credit cannot be understood only through average direct effects. Interest rates, collateral, and availability operate within a firm-resource context, and firm size changes the capacity to withstand costs, provide security, and exploit newly available finance. The full model's R^2 of .958 is unusually high and should be interpreted within the cross-sectional, self-reported design, but the stepwise increase in explanatory power is substantively consistent with the theoretical expectation that financing constraints are heterogeneous. The results therefore support a segmented rather than one-size-fits-all approach to SME finance (Chelliah et al., 2010; Fatoki & Asah, 2011; Morobe, 2015).

The findings also clarify the relationship among the four theoretical perspectives. Pecking Order Theory explains why high external-finance costs push SMEs toward retained earnings; Trade-Off Theory explains why debt can improve investment capacity but become



harmful beyond a cost threshold; Credit Rationing Theory explains why price alone cannot clear the SME credit market; and the RBV explains why larger or better-resourced firms respond differently to the same financing conditions (Barney, 1991; Myers & Majluf, 1984; Myers, 2001; Stiglitz & Weiss, 1981). The empirical model therefore suggests that no single theory fully captures the credit-performance nexus. A combined perspective provides a more complete account of affordability, exclusion, resource heterogeneity, and the performance consequences of debt.

Several cautions remain. The analysis is cross-sectional, so the estimated relationships establish statistical association rather than definitive temporal causality. Reverse causality is plausible because better-performing firms may receive better credit terms, just as better credit terms may improve performance. The measures are also perceptual and derived from one questionnaire, which creates potential common-method and recall bias. The concentration on manufacturing SMEs in one Nairobi constituency limits external validity. These limitations are important when interpreting the very high explained variance in the moderated regression and suggest that future studies should triangulate survey measures with audited accounts, bank records, or credit-bureau information and should use longitudinal designs where possible (Field, 2013; Sekaran & Bougie, 2016; Yin, 2013).

5. CONCLUSION AND RECOMMENDATIONS

The study concludes that access to credit affects the financial performance of manufacturing SMEs through distinct but interrelated mechanisms. Interest rates and collateral requirements were significant negative predictors, whereas credit availability was a significant positive predictor. The evidence therefore rejects the idea that credit access can be represented adequately by a simple yes-or-no measure of borrowing. A loan may be available but too expensive; it may be affordable but inaccessible because of collateral; or it may be approved in an amount or structure that does not meet the firm's operational needs. Effective SME finance requires simultaneous attention to cost, security, and availability (Beck & Demirgüç-Kunt, 2006; Kaimenyi, 2025; Sakwa, 2016).

Firm size significantly moderated all three credit-performance relationships. Smaller firms were more vulnerable to adverse interest-rate and collateral conditions but gained more sharply when credit availability improved. This establishes firm size as a substantive boundary condition in the credit-performance relationship rather than merely a descriptive characteristic. Lenders should therefore segment SME products by firm scale, cash-flow characteristics, and asset structure. For micro and small manufacturers, this may include smaller starter facilities, cash-flow-based underwriting, movable collateral, partial guarantees, and repayment schedules aligned with production cycles. Medium and larger SMEs may require longer-term investment finance, asset financing, export credit, and products linked to expansion and technology acquisition (Berger & Black, 2011; Central Bank of Kenya, 2023; Chibueze et al., 2025).

For policymakers and regulators, the findings support measures that reduce information asymmetry and broaden acceptable security without weakening credit discipline. Strengthening positive credit reporting, expanding the use of alternative transaction data, improving movable-asset registries, encouraging credit-guarantee arrangements, and promoting standardized SME financial records can reduce lender uncertainty and the external-finance premium. Public and county enterprise programmes can also link technical assistance, bookkeeping support, and financial literacy to financing schemes so that expanded access translates into productive use of credit rather than higher indebtedness (Kaimenyi, 2025; Mumin, 2018; Sekaran & Bougie, 2016).

The study contributes to theory by showing that the four financing perspectives are complementary in an SME setting. It contributes empirically by separating interest rate, collateral, and credit availability and estimating firm-size interactions within the same model. Future research should extend the analysis to multiple counties and sectors, incorporate objective profitability and liquidity ratios, and track firms over time. Additional moderators such as firm age, ownership structure, governance, innovation capability, technological adoption, export orientation, and degree of formalisation may also explain why similar credit conditions generate different outcomes. Mixed-method studies could further illuminate how owners negotiate lending relationships and make borrowing decisions under uncertainty (Abubakar & Bala, 2023; Chelliah et al., 2010; Wanjohi, 2025; Yin, 2013).

REFERENCES

1. Abubakar, A., & Bala, D. (2023). *Impact of credit constraints on financial performance of small and medium enterprises*. *Third World Quarterly*.
2. Afande, F. (2019). *Factors influencing growth of small and micro enterprises in Nairobi Central Business District*. *Journal of Poverty, Investment and Development*, 9, 104-137.
3. Aminu, Y., & Zainudin, R. (2015). *The effect of SMEs' cost of capital on their financial performance in Nigeria*. *Journal of Finance and Accounting*, 3(1), 8-15.
4. Atieno, R. (2001). *Formal and informal institutions' lending policies and access to credit by small-scale enterprises in Kenya: An empirical assessment*. AERC Research Paper III. African Economic Research Consortium.
5. Ayyagari, M., Beck, T., & Demirgüç-Kunt, A. (2007). *Small and medium enterprises across the globe*. *Small Business Economics*, 29(4), 415-434.
6. Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2020). *Access to finance and job creation in developing countries*. *World Development*, 127, 104718.



7. Barney, J. (1991). *Firm resources and sustained competitive advantage*. *Journal of Management*, 17(1), 99-120.
8. Baron, R. M., & Kenny, D. A. (1986). *The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations*. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
9. Bateman, M., & Chang, H.-J. (2012). *Microfinance and the illusion of development: From hubris to nemesis in thirty years*. *World Economic Review*, 1, 13-36.
10. Beck, T., & Demirgüç-Kunt, A. (2006). *Small and medium-size enterprises: Access to finance as a growth constraint*. *Journal of Banking & Finance*, 30(11), 2931-2943.
11. Beck, T., & Demirgüç-Kunt, A. (2011). *Bank financing for SMEs: Evidence across countries and bank ownership types*. *Journal of Financial Services Research*, 39, 35-54.
12. Berger, A. N. (2006). *Potential competitive effects of Basel II on banks in small and micro enterprise credit markets in the United States*. *Journal of Financial Services Research*, 28, 5-36.
13. Berger, A. N., & Black, L. K. (2011). *Bank size, lending technologies, and small business finance*. *Journal of Banking & Finance*, 35, 724-735.
14. Bougheas, S., Mizen, P., & Yalcin, C. (2005). *Access to external finance: Theory and evidence on the impact of monetary policy and firm-specific characteristics*. *Journal of Banking & Finance*, 30(1), 199-227.
15. Burkart, M. C., & Ellingsen, T. (2004). *In-kind finance: A theory of trade credit*. *American Economic Review*, 94(3), 569-590.
16. Central Bank of Kenya. (2023). *2022 MSME FinAccess business survey report*.
17. Chelliah, S., Sulaiman, M., & Munusamy, J. (2010). *The moderating effect of firm size on internationalization of small and medium enterprises (SMEs) in the manufacturing sector*. *African Journal of Business Management*, 5(11), 3096-3109.
18. Chen, D., Chen, C., Chen, J., & Huang, Y. (2013). *Panel data analyses of the pecking order theory and the market timing theory of capital structure in Taiwan*. *International Review of Economics & Finance*, 27, 1-13.
19. Chibueze, T., Adeshina, T., Christopher, L. U., Ewubajo, S. D., & Ebere, L. (2025). *Access to credit and financial inclusion of MSMEs in Sub-Saharan Africa: Challenges and opportunities*. *International Journal of Financial Management and Economics*, 8(2), 861-872.
20. Eton, M., & Mwosi, F. (2017). *Credit financing and performance of SMEs in Lira Municipality, Uganda*. *Research Journal of Finance and Accounting*, 8(7), 121-133.
21. Fatoki, O., & Asah, F. (2011). *The impact of firm and entrepreneurial characteristics on access to debt finance by SMEs in King Williams' Town, South Africa*. *International Journal of Business and Management*, 6(8), 170-179.
22. Field, A. (2013). *Discovering statistics using IBM SPSS statistics (4th ed.)*. Sage.
23. Ghauri, P., & Gronhaug, K. (2017). *Research methods in business studies (3rd ed.)*. Financial Times Prentice Hall.
24. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate data analysis (8th ed.)*. Cengage.
25. Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.)*. Guilford Press.
26. Hovakimian, A., Opler, T., & Titman, S. (2001). *The debt-equity choice*. *Journal of Financial and Quantitative Analysis*, 36(1), 1-24.
27. Jagongo, A. (2013). *Factors influencing credit rationing by commercial banks in Kenya*. *International Journal of Humanities and Social Science*, 3(20), 244-252.
28. Jensen, M. C., & Meckling, W. H. (1976). *Theory of the firm: Managerial behavior, agency costs and ownership structure*. *Journal of Financial Economics*, 3(4), 305-360.
29. Kaimenyi, M. S. (2025). *Influence of collateral requirements on performance of SMEs business in Meru County, Kenya*. *International Journal of Accounting, Finance and Risk Management*, 10(1), 62-71.
30. Kariuki, A., Munene, N. H., & Mwirigi, J. (2019). *Effects of banks' loan collateral requirement on performance of small and medium enterprises in Meru County, Kenya*.
31. Kinyua, A. (2014). *Factors affecting the performance of small and medium enterprises in the Jua Kali sector in Nakuru Town, Kenya*. *IOSR Journal of Business and Management*, 16(1), 80-93.
32. Kisseih, G. K. (2017). *The impacts of interest rate fluctuations on the growth of small and medium enterprises (SMEs) in Accra*. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(2), 44-53.
33. Kothari, C. R. (2004). *Research methodology: Methods and techniques (2nd ed.)*. New Age International.
34. Makena, I. (2016). *Drivers of performance of women-owned micro and small enterprises in Kenya: A case of Embakasi Sub-County*. *Strategic Journal of Business & Change Management*.
35. Morobe, D. M. (2015). *The effect of microfinance loans on the financial performance of SMEs in Nairobi County (Master's thesis, University of Nairobi)*.
36. Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. ACTS Press.
37. Mumin, A. A. (2018). *Factors affecting SMEs' access to finance from commercial banks in Kenya: A case of Nairobi County (Master's thesis, United States International University-Africa)*.
38. Muriithi, J. (2018). *Effect of access to finance on financial performance of SMEs in the hotel industry in Kenya*. *The Strategic Journal of Business & Change Management*, 5(4), 90-105.
39. Myers, S. C. (2001). *Capital structure*. *Journal of Economic Perspectives*, 15(2), 81-102.
40. Myers, S. C., & Majluf, N. S. (1984). *Corporate financing and investment decisions when firms have information that investors do not have*. *Journal of Financial Economics*, 13(2), 187-221.
41. Ngui, T. (2014). *The role of SMEs in employment creation and economic growth in selected countries*. *International Journal of Education and Research*, 2(12), 461-472.
42. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd ed.)*. McGraw-Hill.



43. Nyaboga, Y., Nyangosi, S., & Mbunya, C. (2015). Effect of leasing competence and structure on performance of small and medium enterprises in Kisii Municipality, Kisii County. *European Journal of Business and Management*, 7(22), 106-114.
44. Ochanda, M. M. (2013). Effects of financial deepening on growth of small and medium-sized enterprises in Kenya: A case study of Nairobi County. *International Journal of Social Sciences and Entrepreneurship*, 1(11), 1-17.
45. Otieno, S. B., Anyuki, B. K., & Musa, G. A. (2021). The effects of lending interest rates on performance of SMEs in Kenya. *European Journal of Business and Management*, 13(8).
46. Pallant, J. (2020). *SPSS survival manual* (7th ed.). McGraw-Hill Education.
47. Rotich, I., Lagat, C., & Kogei, J. (2015). Effects of microfinance services on the performance of small and medium enterprises in Kenya. *African Journal of Business Management*, 9(5), 206-211.
48. Sakwa, M. (2016). Effect of access to finance on financial performance of manufacturing firms in Kenya. *The Strategic Journal of Business & Change Management*, 3(4), 403-421.
49. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach* (7th ed.). Wiley.
50. Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71(3), 393-410.
51. Wanjohi, A., & Mugure, A. (2008). Factors affecting growth of MSEs in rural areas of Kenya: A case of ICT firms in Kiserian Township, Kajiado. Unpublished thesis.
52. Wanjohi, F. N. (2025). Factors influencing financial performance of small and medium enterprises in Nairobi's manufacturing sector (Master's thesis, United States International University-Africa).
53. Yin, R. K. (2013). *Case study research: Design and methods* (4th ed.). Sage.