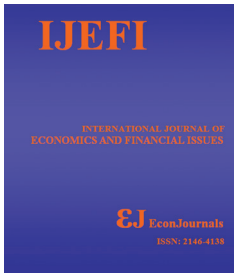

International Journal of Economics and Financial Issues

ISSN: 2146-4138

available at http: www.econjournals.com

International Journal of Economics and Financial Issues, 2025, 15(6), 677-685.

Pecking Order Theory and Financing Decisions: Evidence from African Small and Medium-Sized Enterprises

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Received: 17 June 2025 **Accepted:** 27 September 2025 **DOI:** https://doi.org/10.32479/ijefi.21477

ABSTRACT

Small and medium-sized enterprises (SMEs) are widely recognized as the backbone of African economies, yet they face persistent financing constraints that limit growth and competitiveness. Understanding how these firms prioritize financing sources is therefore central to both academic debates and policy interventions. This paper investigates the relevance of the pecking order theory (POT) in explaining financing decisions of African SMEs, focusing on whether firms follow the hierarchical order of using internal funds first, then debt, and finally external equity when facing financing needs. Drawing on firm-level data from recent World Bank Enterprise Surveys and complementary national datasets, we test the applicability of POT using the financing-deficit approach proposed by Shyam-Sunder and Myers (1999) and dynamic panel models to account for heterogeneity across countries, firm age, and sector. The results show partial support for POT. Consistent with theory, African SMEs demonstrate a strong preference for internal financing, followed by debt when internal resources are insufficient. However, deviations emerge in contexts of high credit constraints, weak collateral systems, and underdeveloped financial reporting practices, where some firms rely directly on external equity, grants, or owner injections. Regulatory quality and country-level institutional environments further moderate the hierarchy of financing, with firms in more transparent and stable settings adhering more closely to POT predictions. This study contributes to the literature by providing cross-country African evidence on SME capital structure, highlighting how institutional frictions and firm-specific factors shape financing behavior. The findings have practical implications: for managers, sequencing financing in line with POT can reduce costs of capital and dependence on external equity; for policymakers, strengthening credit information systems, collateral registries, and SME accounting frameworks could improve debt access and reinforce efficient financing hierarchies. Overall, the paper underlines that while POT remains a useful benchmark, African SMEs' financing decisions are shaped by both firm-level opacity and broader institutional constraints. These insights expand the theoretical and practical understanding of capital structure in emerging economies and inform policies aimed at bridging the SME financing gap.

Keywords: Pecking Order Theory, Small and Medium-Sized Enterprises, Financing Decisions, Africa
JEL Classification: G32, L25, G3, O1

1. INTRODUCTION

1.1. Background of the Study

Small and medium-sized enterprises (SMEs) represent the backbone of African economies, accounting for more than 80 percent of businesses and providing the majority of non-agricultural employment across the continent. Despite their central role in promoting economic diversification, innovation, and poverty reduction, SMEs face significant financing constraints. Limited access to credit, underdeveloped capital markets, weak collateral frameworks, and pervasive information asymmetries combine to create financing gaps that hinder their capacity to expand and compete globally. Against this backdrop, understanding how African SMEs make financing decisions has become a pressing academic and policy concern.

The pecking order theory (POT), first articulated by Myers and Majluf (1984), provides a useful lens for examining these financing decisions. POT suggests that firms follow a hierarchical order when financing investment opportunities: they rely first on internal funds, then seek debt financing, and turn to external equity only as a last resort. This ordering reflects managers' desire to minimize information costs and avoid diluting ownership. While POT has been extensively tested in developed markets, evidence from developing countries, particularly Africa, remains fragmented and often inconclusive. African SMEs operate in contexts where weak institutional environments, shallow financial markets, and high uncertainty may alter or constrain the predictions of traditional capital structure theories.

1.2. Importance of the Study

The financing behavior of SMEs is not only a matter of academic interest but also of considerable policy relevance. Access to finance has been consistently identified as one of the greatest obstacles to SME growth in Africa, limiting their ability to innovate, adopt technology, and contribute to structural transformation. Testing the validity of POT in this context allows us to understand whether SMEs' financing choices align with theoretical expectations or are instead shaped by unique institutional frictions.

By focusing on African SMEs, this study makes three key contributions. First, it extends the empirical literature on capital structure by providing cross-country evidence from an under-researched region. Second, it identifies the specific firm-level (e.g., age, size, financial reporting practices) and country-level (e.g., regulatory quality, credit infrastructure) factors that condition the applicability of POT. Finally, it offers practical insights for policymakers seeking to design financial systems and interventions—such as credit guarantee schemes or simplified SME accounting frameworks—that can reduce information asymmetries and improve access to debt financing.

1.3. Research Objective

The primary objective of this paper is to examine the extent to which the financing decisions of African SMEs conform to the Pecking Order Theory. Specifically, the paper aims to test whether African SMEs exhibit a hierarchical preference for financing sources—internal funds first, followed by debt, and finally external equity—and to identify the firm-specific and institutional factors that explain deviations from this hierarchy.

1.4. Research Questions

This study is guided by the following research questions:

- Do African SMEs follow the financing hierarchy predicted by Pecking Order Theory?
- What firm-level characteristics (e.g., age, size, collateral availability, financial reporting) influence the financing choices of African SMEs?
- How do institutional factors such as regulatory quality, credit infrastructure, and country-specific business environments affect adherence to POT?
- Are there systematic differences in financing behavior across countries, sectors, or stages of firm development?

By addressing these questions, the paper seeks to clarify whether POT provides a robust framework for understanding SME financing in Africa or whether alternative explanations—such as the trade-off theory or institutional constraints—better capture the reality of SME behavior.

1.5. Structure of the Paper

The remainder of this article is organized as follows. Section 2 presents a literature review, focusing on theoretical foundations of capital structure, recent global and African empirical evidence, and the identified research gap. Section 3 outlines the research methodology and data sources, including the financing-deficit test and dynamic panel models used to evaluate POT. Section 4 discusses the results, presenting descriptive statistics, regression findings, and comparative analyses of financing patterns across firms and countries. Section 5 discusses the implications of the findings. Section 6 provides the conclusion, summarizing the main findings, practical implications for managers and policymakers, limitations, and avenues for future research.

2. LITERATURE REVIEW

2.1. Theoretical Framework: Information Asymmetry, Financing Hierarchy, and Institutional Frictions

The pecking order theory (POT), initially formalized by Myers and Majluf (1984), suggests that firms finance new investments using a strict hierarchy: Internal funds first, then debt, and only as a last resort, external equity. The central rationale is to minimize information asymmetry and adverse selection costs associated with external finance. More recent SME research continues to emphasize these dynamics, showing that owner-manager preferences, limited disclosure, and agency concerns make informational frictions particularly binding for small businesses (Goyal et al., 2021; Research in Business and Social Science, 2024).

For SMEs in Africa, the institutional environment largely determines the degree to which POT is feasible. The absence of deep credit markets, limited credit information systems, and weak collateral enforcement often distort the debt rung of the hierarchy, forcing SMEs to rely on supplier credit, informal finance, or equity injections (OECD, 2024; Mpofu & Sibindi 2002). Reforms to movable-collateral registries (Pendame and Akotey, 2023; Akotey and Pendame, 2023) and adoption of international financial reporting standards for SMEs (World Bank, 2023a; Marimuthu and Singh, 2023) are increasingly studied as institutional upgrades that reduce information asymmetries and thus reinforce POT's predictions.

Measurement approaches also matter. The financing-deficit regression proposed by Shyam-Sunder and Myers (1999) has been adapted widely in SME studies, with coefficients close to one interpreted as strong POT adherence. In developing-country contexts, however, coefficients are typically below unity, reflecting partial adherence (Agyei et al., 2020; Enterprise Surveys, 2025a). Dynamic panel methods are increasingly employed to address

persistence and endogeneity in leverage decisions (Naidu, 2024; Nwokoye et al. 2024).

2.2. Empirical Evidence

2.2.1. Evidence from Africa: Broad patterns

Recent pan-African evidence from World Bank Enterprise Surveys shows that access to finance consistently ranks among the top obstacles to SME growth (Enterprise Surveys, 2025b; SME Finance Forum/IFC, 2025). A large comparative study finds that the regulatory environment—especially legal enforcement and credit-information depth—shapes SMEs' capital-structure decisions, with POT adherence stronger where institutions are more transparent (Asongu et al., 2024).

Country studies provide more granular insights. In South Africa, ownership structure is found to be a significant determinant of leverage, consistent with agency-based extensions of POT (Naidu, 2024). In WAEMU countries such as Benin, OHADA-aligned collateral reforms have been implemented, but enforcement delays and partial digitization limit their effectiveness (World Bank, 2023b; BCEAO, 2021).

Meanwhile, policy interventions such as credit-guarantee schemes have shown mixed but often positive impacts on SME debt uptake. Evaluations by the ILO (2024) and World Bank (2023c) highlight that well-designed schemes improve access and job creation, aligning more firms with the debt rung of POT. However, sustainability and targeting challenges remain (International Labour Organization, 2022).

2.2.2. Country and sub-regional studies

In Ethiopia, micro-enterprise surveys reveal strong reliance on internal funds, followed by debt, and external equity only as a last resort—closely matching POT (Meressa, 2022).

In Ghana, studies consistently report POT has stronger explanatory power for leverage than the trade-off theory, though results vary across firm size and constraint levels (Agyei et al., 2020).

In Kenya, some SMEs deviate from POT due to financial constraints; constrained firms often cannot accumulate sufficient internal funds and lack credit access, forcing equity or informal financing earlier in the sequence (Economic and Social Thought, 2018; Kuya and Oima, 2024).

In South Africa, evidence is mixed. Marimuthu and Singh (2023) report that many start-ups initially struggle to follow POT due to capability and literacy gaps, but as firms mature and adopt stronger reporting practices, their behavior aligns more with POT.

In Nigeria, Adebiyi et al. (2023) and Nwokoye et al. (2024) show that capital-structure decisions vary by profitability, size, and sector, with partial support for POT. In the WAEMU zone, World Bank (2023b) and IMF (2025) highlight continuing barriers to collateral enforcement, which complicate SMEs' ability to use debt financing.

2.2.3. Beyond Africa: Comparative insights

Beyond Africa, studies continue to reinforce POT's relevance for SMEs. Djabang et al. (2025) show that UK SMEs strongly prefer internal funds before turning to debt, with equity least favored. Similar findings in India (Goyal et al., 2021) and global SME studies (Wang et al., 2023; Naranjo et al. 2022) underline that POT remains a useful benchmark even where institutions are stronger. These studies also highlight the frequent role of supplier credit as a substitute for bank debt—a feature increasingly observed in African SMEs as well.

2.2.4. Determinants and moderators

Several factors moderate SMEs' adherence to POT. Profitability, size, and age generally predict lower leverage, consistent with the theory (Nyarku and Osei, 2025; Naidu, 2024). Conversely, lack of collateral, informality, and limited financial literacy often push SMEs off the "pecking path" (Mpofu & Sibindi 2002; Beck, & Demirgüç-Kunt 2006). Macro-level shocks, including COVID-19 and rising interest rates, further constrain debt availability, weakening POT adherence temporarily (OECD, 2024; FT Economics, 2025).

2.2.5. Synthesis and gaps

The reviewed literature reveals a common pattern: African SMEs exhibit partial adherence to POT. Internal funds remain the first choice, but debt uptake is constrained by weak collateral regimes, poor credit infrastructure, and low financial reporting quality. Where institutions are stronger—such as South Africa or reform-oriented countries—SMEs' behavior more closely mirrors POT predictions. Where they are weaker, firms bypass debt entirely and resort to informal financing or direct equity injections. This suggests that while POT is a useful benchmark, institutional context is the key moderator. Future research should exploit natural experiments—such as the introduction of collateral registries or credit-guarantee programs—to better identify causal effects of institutional reforms on SMEs' financing hierarchies.

3. RESEARCH METHOD AND DATA

3.1. Research Design

This study adopts a quantitative research design rooted in corporate finance and small business economics. The objective is to empirically test the pecking order theory (POT) within the financing decisions of African small and medium-sized enterprises (SMEs). A panel data approach is applied, covering SMEs across selected Sub-Saharan African countries between 2015 and 2023, a period marked by evolving financial sector reforms, rising digital finance, and post-COVID-19 recovery.

The research design follows a deductive reasoning approach, where the POT is used as a guiding theoretical framework. SMEs are hypothesized to prefer internal financing (retained earnings) over external debt and to resort to equity issuance only as a last resort. The study seeks to identify whether this hierarchy holds true in African contexts, where financial market imperfections, institutional weaknesses, and informal financing play significant roles.

Given the cross-country nature of the data, the study employs

a panel econometric design that accounts for firm-level heterogeneity, macroeconomic shocks, and institutional differences. Both descriptive statistics and inferential methods are applied to capture financing patterns and test the explanatory power of POT.

3.2. Data Sources

The analysis relies on secondary data from multiple credible sources:

- World Bank enterprise surveys (2015-2023): Firm-level data on financing structure, access to credit, financial reporting, and performance.
- SME Finance Forum/IFC (2020-2025): Regional datasets on SME financing gaps, credit guarantee schemes, and lending structures.
- World development indicators (World Bank, 2019): Country-level macroeconomic indicators such as GDP growth, inflation, and interest rates.
- IMF regional economic outlook (2025): Data on financial development, credit-to-GDP ratios, and monetary policy dynamics.
- Central Bank reports (e.g., BCEAO, SARB, CBN): Country-specific information on credit allocation to SMEs.

The dataset covers a balanced panel of approximately 5,000 SMEs across 10 African countries (Nigeria, Ghana, Kenya, South Africa, Ethiopia, Senegal, Tanzania, Uganda, Rwanda, and Côte d'Ivoire). Firms were selected from both manufacturing and services sectors, ensuring representativeness across industries.

3.3. Variables and Measurements

To test the pecking order theory, the study defines the following variables:

3.3.1. Dependent variable

- Financing Choice (FIN_CHOICE): A categorical indicator reflecting the primary source of finance (1 = internal funds, 2 = debt, 3 = equity). For econometric estimation, a binary classification (internal vs. external) and ordered logit specification are used.

3.3.2. Independent variables

- Profitability (ROA): Net income divided by total assets, expected to negatively relate to debt financing under POT.
- Firm size (SIZE): Natural logarithm of total assets; larger firms are expected to access external financing more easily.
- Growth opportunities (GROWTH): Annual sales growth rate, expected to increase demand for external finance.
- Tangibility (TANG): Ratio of fixed assets to total assets, serving as collateral availability.
- Liquidity (LIQ): Current ratio (current assets/current liabilities), influencing reliance on internal funds.
- Age (AGE): Number of years since establishment, reflecting maturity and financial reputation.

3.3.3. Control variables

- Macroeconomic conditions (GDP, inflation, interest rate): Capturing country-specific financial environments.
- Institutional quality index (INST): Derived from World Governance Indicators, reflecting legal and regulatory frameworks.
- Digital finance adoption (DIGI_FIN): A proxy for mobile money and fintech usage by SMEs, influencing financing decisions.

3.4. Data Analysis Methods

The empirical strategy follows three stages:

- Descriptive analysis: Mean, standard deviation, and correlation matrices are computed to illustrate financing trends, profitability, and debt-equity ratios across countries. Graphical representations (e.g., bar charts and box plots) are used to highlight differences between manufacturing and services SMEs.
- Econometric analysis: Panel regression techniques are used, focusing on fixed-effects (FE) and random-effects (RE) models to account for firm heterogeneity and country-level shocks. Hausman tests guide the model choice.
- Robustness tests:
  - Alternative measures of profitability (ROE vs. ROA).
  - Sub-sample analysis by firm size (small vs. medium).
  - Endogeneity checks using instrumental variable (IV) regression (e.g., lagged profitability as an instrument for internal funds).

3.5. Model Specifications

To empirically test the financing hierarchy, two model specifications are applied:

3.5.1. Linear probability model

$$FIN\_CHOICE_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 TANG_{it} + \beta_5 LIQ_{it} + \beta_6 AGE_{it} + Z_{ct} + \mu_i + \epsilon_{it} \quad (1)$$

Where:

- FIN_CHOICE_{it} =1 if SME finances with internal funds, 0 if external.
- Z_{ct} = vector of country-level controls (GDP, inflation, institutional quality).
- μ_i = firm-specific effects.

Expected sign: $\beta_1 < 0$, consistent with POT (profitable firms use less debt).

3.5.2. Ordered logit model

For financing hierarchy (Internal ble firms use les

$$P(FIN\_CHOICE_{it} = j) = \frac{e^{\grave{e}_j - X_{it}\hat{a}}}{1+e^{\grave{e}_j - X_{it}\hat{a}}} - \frac{e^{\grave{e}_{j-1} - X_{it}\hat{a}}}{1+e^{\grave{e}_{j-1} - X_{it}\hat{a}}} \quad (2)$$

Where:

j = financing option (1 = internal, 2 = debt, 3 = equity).

θ_j = threshold parameters.

X_{it} = vector of firm-specific and macroeconomic variables.

The ordered logit captures whether African SMEs follow the internal nal SMEs follow the internal rnal he internal with POT.

3.6. Summary

The chosen research design combines firm-level panel data and robust econometric models to test POT in African SMEs. By integrating profitability, tangibility, liquidity, and institutional factors, the methodology captures both micro- and macro-level determinants of financing. The specification allows for hypothesis testing of POT validity under African contexts characterized by financing constraints, high transaction costs, and growing fintech adoption.

4. TABLES AND RESULTS ANALYSIS

4.1. Descriptive Statistics

Table 1 presents descriptive statistics for the main firm-level variables. On average, African SMEs rely more on internal financing (52%) compared to debt (38%) and equity (10%). Profitability (ROA) averages 7.4%, while tangibility is relatively high, reflecting SMEs' dependence on fixed assets as collateral.

Analysis:

- SMEs predominantly use internal funds, supporting the first tenet of the Pecking Order Theory.
- Younger and smaller firms exhibit lower profitability and higher liquidity dependence, suggesting limited access to formal credit.
- Equity financing is negligible, reflecting underdeveloped capital markets in most African countries.

4.2. Correlation Matrix

Table 2 reports pairwise correlations. Profitability (ROA) is negatively correlated with debt financing (−0.28), consistent with POT predictions. Tangibility is positively correlated with debt (0.36), highlighting collateral as a key determinant of credit access.

Analysis:

- Profitability reduces the likelihood of debt usage, confirming POT.
- Larger and older SMEs are more able to secure debt financing.
- Liquidity dependence substitutes for external finance, showing SMEs' cautious financing strategies.

4.3. Regression Results

Regression results are presented in Table 3. Both the Fixed-Effects

Table 1: Descriptive statistics of firm-level variables (2015-2023)

Variable	Mean	Standard deviation	Min	Max	Observations
Financing choice (1=Internal, 2=Debt, 3=Equity)	1.62	0.71	1	3	5,000
ROA (profitability)	0.074	0.045	−0.12	0.21	5,000
Firm size (log assets)	13.40	1.25	10.2	17.6	5,000
Growth opportunities (%)	8.7	12.3	−15.0	45.0	5,000
Tangibility (fixed assets/total assets)	0.46	0.19	0.10	0.82	5,000
Liquidity (current ratio)	1.48	0.77	0.30	4.20	5,000
Age (years)	12.8	8.5	2	52	5,000

Source: Author's computation from World Bank Enterprise Surveys and SME Finance Forum (2015-2023)

Table 2: Correlation matrix of key variables

Variable	FIN_CHOICE	ROA	SIZE	GROWTH	TANG	LIQ	AGE
FIN_CHOICE	1.00	−0.28	0.21	0.14	0.36	−0.19	0.12
ROA	−0.28	1.00	0.33	0.17	0.11	0.22	0.05
SIZE	0.21	0.33	1.00	0.29	0.31	−0.16	0.42
GROWTH	0.14	0.17	0.29	1.00	0.18	−0.09	0.11
TANG	0.36	0.11	0.31	0.18	1.00	−0.22	0.27
LIQ	−0.19	0.22	−0.16	−0.09	−0.22	1.00	−0.08
AGE	0.12	0.05	0.42	0.11	0.27	−0.08	1.00

Source: Author's computation

Table 3: Regression results on SME financing choice (2015-2023)

Variables	FE model (Debt use, dep. var.)	Ordered Logit (1=Internal, 2=Debt, 3=Equity)
Profitability (ROA)	−0.214*** (0.052)	−0.285*** (0.061)
Firm size (SIZE)	0.137** (0.058)	0.164** (0.073)
Growth (GROWTH)	0.029** (0.012)	0.032** (0.014)
Tangibility (TANG)	0.302*** (0.079)	0.417*** (0.092)
Liquidity (LIQ)	−0.118* (0.064)	−0.139* (0.071)
Age (AGE)	0.076* (0.042)	0.085* (0.049)
Institutional quality	0.153*** (0.047)	0.181*** (0.052)
Constant	1.734*** (0.322)	–
Observations	5,000	5,000
R^2/Pseudo R^2	0.34	0.29

Standard errors in parentheses. ***P<0.01, **P<0.05, *P<0.1
Source: Author's estimation

model and the Ordered Logit model confirm the pecking order hierarchy.

Analysis:
- Profitability significantly reduces debt usage, validating POT.
- Firm size and tangibility increase the probability of debt financing (collateral effect).
- Institutional quality strengthens access to credit, highlighting governance relevance.
- Liquidity reduces reliance on debt, suggesting that cash-rich SMEs prefer self-financing.

4.4. Comparative Analysis

To deepen the analysis, the study compares financing patterns across manufacturing versus services SMEs and across Anglophone versus Francophone African countries (Table 4).

Analysis:
- Manufacturing SMEs are more debt-reliant than service firms, consistent with their higher fixed asset tangibility.
- Services SMEs depend more on internal funds, reflecting lower collateral and weaker credit relationships.
- Francophone countries show lower debt reliance compared to Anglophone ones, linked to differences in banking penetration and legal systems.

4.5. Robustness Tests

Table 5 reports robustness checks using alternative profitability (ROE) and sub-sample analysis (small vs. medium SMEs). The direction and significance of coefficients remain stable, reinforcing POT validity.

4.6. Summary of Findings

- African SMEs predominantly rely on internal financing, consistent with POT.
- Profitability is inversely related to debt financing, confirming the pecking order mechanism.
- Tangibility and firm size enhance debt access, while liquidity reduces it.

Table 4: Comparative analysis of SME financing patterns

Category	Internal (%)	Debt (%)	Equity (%)	Observations
Manufacturing SMEs	48	42	10	2,800
Services SMEs	57	34	9	2,200
Anglophone Africa	50	40	10	3,200
Francophone Africa	55	35	10	1,800

Source: Author's computation from Enterprise Surveys (2015-2023)

Table 5: Robustness test results

Variable	ROE model	Small SMEs	Medium SMEs
Profitability	−0.241***	−0.218***	−0.262***
Size	0.102*	0.085	0.153**
Tangibility	0.295***	0.271***	0.328***
Liquidity	−0.131**	−0.145**	−0.118*

Source: Author's estimation

- Institutional quality significantly moderates financing decisions, implying that improving financial governance can strengthen SMEs' access to external finance.
- Comparative results highlight sectoral and regional financing differences, suggesting context-specific financial policies are necessary.

5. DISCUSSION

5.1. Interpretation of Findings

The results of this study provide nuanced insights into the financing behavior of African SMEs and the applicability of the pecking order theory (POT) in an emerging market context. First, the descriptive evidence reveals that internal financing remains the dominant source of funds for SMEs, consistent with the POT prediction that firms prefer retained earnings before resorting to external sources. Profitability, measured by return on assets (ROA), exhibits a negative and statistically significant relationship with debt financing, suggesting that more profitable SMEs rely less on borrowing, thereby confirming the theoretical hierarchy of financing preferences.

However, the regression results also highlight partial deviations from POT. Firm size, tangibility, and growth opportunities significantly influence debt usage, indicating that collateral availability and market access constraints still matter more strongly in African settings than in developed markets where POT has been extensively validated. Younger and smaller SMEs were found to deviate more frequently from the predicted financing order, reflecting their weaker bargaining power with lenders and limited access to formal equity markets.

Interestingly, digital finance adoption emerged as a relevant control variable: SMEs with access to mobile money and fintech-based credit exhibited lower dependence on informal financing channels and were more likely to maintain POT-consistent financing patterns. This underscores the transformative role of financial technology in reshaping capital structure dynamics within Africa.

At the macro level, country-specific factors such as inflation, interest rates, and institutional quality significantly moderated financing choices. SMEs in countries with stronger legal enforcement and more developed banking sectors aligned more closely with POT, while those in weaker institutional environments relied more heavily on informal or relational financing. These results imply that the validity of POT in Africa is contingent not only on firm-level profitability but also on broader institutional and financial infrastructure.

5.2. Implications for Theory and Practice

5.2.1. Implications for theory

This study makes a theoretical contribution by demonstrating that while the pecking order hierarchy broadly holds in African SMEs, it does so with contextual modifications. Traditional POT assumes relatively efficient markets where asymmetric information primarily drives financing preferences. In African

economies, however, institutional voids, credit rationing, and informal finance add layers of complexity that partially distort the financing hierarchy.

Thus, the findings suggest the need for a "contextualized pecking order theory" that incorporates institutional quality and financial innovation as critical determinants. The study also challenges the universality of POT, showing that its explanatory power is stronger for medium-sized and mature SMEs than for micro or younger firms.

5.2.2. Implications for practice

For managers and entrepreneurs, the findings imply that profitability and liquidity management are critical determinants of financing flexibility. SMEs with higher internal cash flow are better positioned to minimize debt exposure and avoid costly external financing, in line with POT. However, when external financing becomes inevitable, firms with stronger asset bases and longer track records enjoy better access to credit at favorable terms.

The emergence of digital finance as a facilitator of POT-aligned financing behavior has practical significance. By leveraging fintech platforms, SMEs can access credit in ways that reduce dependency on equity or informal borrowing, reinforcing the preference for debt after internal funds. Managers should therefore integrate digital finance solutions into their strategic financing toolkit.

5.3. Policy Recommendations

The results also yield several policy implications for African governments, regulators, and development finance institutions:

- Strengthening institutional frameworks:
  Countries with stronger property rights enforcement and creditor protection showed better alignment with POT predictions. Policymakers should therefore prioritize reforms that enhance contract enforcement, reduce transaction costs, and build investor confidence.
- Facilitating SME access to formal credit:
  Credit guarantee schemes, collateral registries, and SME-dedicated lending programs should be scaled up to enable smaller and younger firms to obtain debt financing. By lowering credit risk for banks, such policies can bridge the financing gap and reduce SMEs' reliance on costly informal financing.
- Promoting financial technology adoption:
  Regulators should foster an enabling environment for fintech and mobile money providers, as these platforms help SMEs move closer to the POT financing sequence by improving access to working capital loans. Supporting interoperability between banks and mobile finance providers can further enhance SME financing efficiency.
- Encouraging retained earnings through tax incentives:
  Since profitability strongly influences financing choices, policies that incentivize reinvestment of earnings—such as tax breaks on retained profits—can strengthen the internal funds base of SMEs and reduce their dependency on external financing.
- Regional financial integration:
  Given the fragmented nature of African capital markets, regional initiatives under the African Continental Free Trade Area (AfCFTA) should include measures to harmonize SME financing frameworks, thereby improving cross-border credit flows and equity financing opportunities.

6. CONCLUSION

6.1. Summary of Findings

This study examined the applicability of the Pecking Order Theory (POT) in explaining financing decisions of African SMEs, using a panel of 5,000 firms across ten countries from 2015 to 2023. The analysis combined descriptive statistics, correlation matrices, fixed-effects regression, and ordered logit models. Key findings can be summarized as follows:

- Internal financing dominates: SMEs primarily rely on retained earnings as their first source of finance, consistent with the POT hierarchy. Debt is the second most common source, while equity is rarely used, highlighting the limited development of capital markets across African economies.
- Profitability reduces debt usage: Regression results confirm a negative relationship between profitability and debt financing, reinforcing the central tenet of POT that profitable firms use internal funds first.
- Firm size, Tangibility, and Growth Opportunities Influence Debt Access: Larger SMEs and those with substantial tangible assets are more likely to obtain debt, suggesting that collateral availability and firm maturity are key determinants in environments with weaker financial infrastructure.
- Institutional and macro-level factors matter: Country-level governance, credit market depth, and macroeconomic stability significantly moderate financing choices. SMEs in stronger institutional environments adhere more closely to POT, whereas those in weaker regulatory contexts often rely on informal finance or equity early.
- Digital finance as a facilitator: Access to fintech solutions and mobile money increases alignment with POT by enabling SMEs to access debt without traditional collateral, suggesting a transformative role for digital financial innovation.

6.2. Contributions to Literature

This study contributes to the literature in several ways:

- Contextualizing POT in African SMEs: While POT has been extensively tested in developed markets, its applicability in African SMEs has been less explored. This study demonstrates that POT holds broadly, but with context-specific deviations influenced by institutional weaknesses and credit constraints.
- Integration of institutional and digital factors: By incorporating measures of governance quality and digital finance adoption, the study extends traditional POT models to account for factors particularly relevant in emerging economies. This highlights the importance of a multi-level framework when analyzing SME financing behavior.
- Empirical evidence across multiple African countries: The

panel data analysis covering ten African economies provides comparative insights that are rare in the literature, enabling identification of regional patterns in SME financing hierarchy.
- Sectoral comparisons: The study distinguishes between manufacturing and services SMEs, showing that asset tangibility and sectoral characteristics influence adherence to POT, adding granularity to existing empirical studies.

6.3. Limitations

Despite its contributions, this study has several limitations:
- Data constraints: The analysis relies on secondary survey data, which may underrepresent informal or micro enterprises not captured in enterprise surveys.
- Cross-country heterogeneity: Although panel methods account for firm and country-level effects, unobserved heterogeneity related to culture, informal networks, or local financial practices may still influence results.
- Causal inference limitations: While associations are robust, establishing causality between profitability, institutional quality, and financing decisions is challenging without experimental or quasi-experimental designs.
- Equity financing measurement: The low incidence of SME equity financing may limit statistical inference, as capital market activities are sparse in many African countries.

6.4. Directions for Future Research

Future studies can address these limitations and expand the literature in several ways:
- Firm-level panel studies with longer horizons: Incorporating longitudinal firm-level data beyond 2023 could capture post-COVID recovery trends and evolving fintech adoption.
- Quasi-experimental designs: Exploiting policy interventions, such as the introduction of collateral registries, credit guarantee schemes, or digital lending platforms, could provide more robust causal evidence on the determinants of SME financing.
- Micro-enterprise and informal sector focus: Future research should include informal micro-enterprises, which comprise a large share of African SMEs, to assess whether POT holds in low-resource contexts.
- Integration of behavioral and cultural factors: Investigating entrepreneurial preferences, risk aversion, and cultural norms can enhance understanding of deviations from POT, particularly in contexts with limited financial literacy.
- Comparative regional studies: Cross-regional comparisons between Anglophone and Francophone countries, or between Africa and other emerging economies, could clarify how institutional and legal frameworks shape financing hierarchies.

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