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Digital Microcredit in Nigeria: Financial Inclusion or Entrepreneurial Debt Trap?

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Abstract

Digital microcredit services in Nigeria have become one of the most tangible symbols of Africa's financial-technology (fintech) revolution. Characterised by their ability to deliver short-term credit quickly to smartphones, these services have been touted as a key contributor to financial inclusion. By filling the structural gaps left by traditional banks and microfinance organizations in the market, fintechs have provided entrepreneurs with quick and easy access to credit, enabling them to secure working capital. On the other hand, rising concerns over interest rates, repayment tenors, and debt collection methods have led to questions over whether efforts at financial inclusion through microcredit are a prelude to building risk and debt dependency. This study aims to determine whether digital microcredit is an inclusive innovation, a means of financial inclusion for entrepreneurs, or a means of entrenching them in debt. The specific objectives of this study are to determine the contribution of digital loans to financial inclusion in Nigeria, to investigate the nexus between digital loans and entrepreneurial performance, to identify the linkage between digital loans and debt accumulation, and to develop policy recommendations for building a responsible and sustainable digital credit market. The research will adopt a mixed-method approach to gather primary data through surveys of 300 digital credit users and key informant interviews with a sample of entrepreneurs and fintech operators in South-West Nigeria. The findings of this research are expected to contribute to establishing the dual nature of digital microcredit, both as an inclusive innovation and a potential risk to inclusive development. Through this, the paper aims to provide both empirical and theoretical insights into the establishment of responsible and sustainable digital finance models for emerging markets, and to develop policy frameworks that can help strike a balance between innovation and accountability.

Keywords:
Debt, Entrepreneurs, Fintech, Microcredit, Nigeria

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Background to the Study

In recent years, credit has become more accessible in Nigeria. This can be attributed to the widespread use of mobile phones, the increased fintech innovation and the growing use of the internet. Aided by smartphones and USSD (Unstructured Supplementary Service Data) menu interfaces, millions of Nigerians, especially those who are unbanked or financially excluded, can now access short-term, unsecured microloans in just a few minutes. The 2023 CBN/EFinA National Survey reveals that over 15 million digital loans were issued in 2022 alone, and the value of transactions in digital loan accounts has increased by over 35% annually in recent years (Central Bank of Nigeria and Enhancing Financial Innovation and Access [CBN/EFinA], 2023). Fintech companies such as FairMoney, PalmCredit, Carbon, Branch, and others have been bridging liquidity gaps for small business owners (Fintech and SME Financing in Nigeria, 2024). This has been instrumental in financing their working capital needs and smoothing cash flow fluctuations caused by inventory financing or unexpected expenses.

The potentials as well as limits of the development are confirmed in empirical work. Björkegren, Blumenstock, Oyeniran, and Razaq (2022) demonstrate that the approval of digital loans enhances the subjective well-being of credit recipients, but does not result in a significant increase in income or long-term business expansion in Nigeria. In a related field experiment, Ekong (2022) confirms that the digital finance sector has expanded access to credit among small-firm owners in Nigeria, but reports that pricing opacity, consumer protection gaps, and limited access to credit reporting continue to place severe limitations on its sustainable impact. Similar findings are reported in recent studies showing that the use of fintech credit products improves small-firm access to loans but also raises concerns about cost management and repayment discipline (Björkegren, Blumenstock, Oyeniran, & Razaq, 2022; Guérin, Roesch, Venkatasubramanian, & Kumar, 202; Ozili, 2022).

At the same time, the rapid growth in fintech lending has given rise to new vulnerabilities. Many fintech credit platforms have opaque pricing structures with hidden or exorbitant effective interest rates (annualised through daily service charges). Moreover, tenors tend to be short (between seven and 30 days), and digital repayment processes that make use of automated debits, pre-authorised charges, and algorithmic debt-collection partnerships have often led to privacy intrusions, harassment of borrowers, and loss of reputation (Federal Competition and Consumer Protection Commission [FCCPC], 2024). For micro-entrepreneurs, particularly those who depend on revolving loans to manage cash flows or keep their businesses afloat, these factors could easily push financial inclusion towards financial fragility. Overtapped revolving-credit models and short refinancing cycles can easily create a debt-stress spiral that bloats existing loan costs and depresses profitability, placing entrepreneurs' very survival at risk (Guérin, Roesch, Venkatasubramanian, & Kumar, 2021; Ghosh & Gupta, 2018; Schicks, 2014).

Expanded access to credit and riskier borrowing conditions: The case of digital microcredit in Nigeria reflects a significant contradiction in outcomes. On the one hand,

digital credit helps realize the SDG objectives for inclusive economic growth, industrial and technological innovation, and responsible and sustainable industry and infrastructure (SDG 8 and SDG 9). On the other hand, a lack of cost transparency, borrower sophistication, and an under-regulated debt-market ethic could easily undermine those same goals. As a result, the existing empirical literature on fintech credit and small businesses is fragmented. Most of the peer-reviewed and industry research measures and discusses the technology adoption rate, inclusion metrics, and efficiency. Fewer, however, interrogate how loan-product design and borrower capabilities affect profitability and enterprise resilience. Existing studies on the fintech impact on Nigerian small businesses are also anonymous to geographic variability and regional market heterogeneity, particularly in South-West Nigeria. The region is Nigeria's most dynamic Small and Medium Enterprises (SME) cluster, contributing over 40 percent to the national GDP according to the National Bureau of Statistics [NBS] (2024). Nonetheless, South-West Nigeria continues to be under-represented in most small-business research in Nigeria, which is mainly focused on the North.

In other ways, borrower heterogeneity also plays a role. Financial education, technological proficiency, entrepreneurial experience, and firm size all play a role in determining whether entrepreneurs can successfully leverage digital credit to meet their business needs. Recent empirical evidence demonstrates that the adoption and use of digital finance positively influence entrepreneurship, but this effect is significant only when accompanied by moderate to high levels of digital and financial capabilities among users (Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2018; Osei-Assibey & Sarpong-Kumankoma, 2023; Ozili, 2022). Yet in the Nigerian case, studies are rare that combine these variables into a more complex empirical model. As such, the empirical research base in Nigeria remains unable to properly clarify whether digital credit is empowering small business owners or keeping them in a permanent cycle of debt.

Access to credit may have improved for credit-seeking SMEs in Nigeria; however, even for those who successfully obtain fintech loans, short repayment terms, high interest charges, and automated debit collections tend to heighten default risk and raise the effective cost of credit (Björkegren, Blumenstock, Oyeniran, & Razaq, 2022; Guérin, Roesch, Venkatasubramanian, & Kumar, 2021; Ghosh & Gupta, 2018). Loan cost structures and collection features also increase SME risk. The stress of daily or weekly repayments, along with the associated interest burden, can easily interact with macroeconomic risk factors, such as foreign exchange risk and inflationary pressures. Entrepreneurs often trade off the long-term erosion of profits against the short-term access to business capital. Fintech companies and regulators have taken steps to address these risks and concerns, including through the Central Bank of Nigeria's (CBN) fintech regulations and the FCCPC's increased scrutiny and consumer-protection campaigns. As a result, for most fintechs, the challenge is not access, but rather compliance with evolving regulatory standards. At a macro-policy level, however, the central policy question remains underexplored in both peer-reviewed and industry research: Under what conditions does digital microcredit enable financial inclusion and entrepreneurial

development? When does it cause debt stress that offsets its advantages and undermines sustainable SME growth?

This study aims to fill that gap. It situates the digital microcredit model within the context of sustainable financial inclusion and SDGs 8 and 9. It also draws on three theoretical perspectives to analyse the role of microcredit on SME performance and business development. First, it is based on financial inclusion theory, which frames credit access as an enabler of economic participation (CBN/EFINA, 2023; World Bank, 2015). Second, it draws on the emerging literature on entrepreneurial finance theory, which theorizes the role of debt and investor capital in entrepreneurship (Cumming & Zhang, 2019; Block, Colombo, Cumming, & Vismara, 2018). Third, the dynamics of debt stress are applied to operationalize the micro-level implications of unaffordable and unsuitable debt (Ghosh & Gupta, 2018; Schicks, 2014; Guérin, Roesch, Venkatasubramanian, & Kumar, 2021). These three perspectives form a multi-theoretical basis to guide the research questions.

Literature Review

Digital microcredit is among the most vibrant financial innovations of recent times in Nigeria. Essentially, it can be defined as small-ticket, short-tenor, often collateral-free loans with pricing based on algorithmic risk scores, disbursed and collected in tranches from mobile apps or USSD platforms, and repaid through auto-withdrawals from linked wallets or bank accounts. The model is praised for its speed, convenience, and inclusivity, as it enables unbanked and underbanked Nigerians to access instant working capital, with some flexibility for self-employed and freelance Nigerians. With digital microcredit, interest rates, tenures, and monthly repayments are automatically set, and collection channels often automate the repayment process, determining when and how much to repay. The only option for borrowers is to negotiate a repayment schedule that suits their own needs. Nigeria is among the most active markets for digital credit, with Fintechs like FairMoney, Branch, Carbon, and PalmCredit leading a boom of mobile-based microloans, which now represent a majority share of nano-finance (EFInA, 2023). Yet, it is precisely this scale, automation, and data access that can also generate unique product risks, reflected in opaque pricing, data asymmetries, and aggressive debt collection, recurring concerns for Nigeria's digital microcredit market (FCCPC, 2024). The potential impacts are both business-model and consumer welfare-based. On the one hand, access to easy digital credit increases liquidity and is often one of the top drivers of fintech adoption. On the other hand, it also introduces repayment pressure through loan designs that are insensitive to cash flow volatility and the business cycle realities of microenterprises.

The evidence on these impacts from Nigeria and other comparable markets is mixed, pointing to an adverse effect on SME performance. In a randomized evaluation, Björkegren, Blumenstock, Oyeniran, and Razaq (2022) showed that even instant digital microcredit approvals, causing what they describe as "immediacy-induced elation", only boost subjective well-being among borrowers, without a corresponding increase in enterprise income or investment. Other regional studies have yielded similar ambiguous

results: Recent studies show that fintech credit broadens access to working capital for micro, small, and medium enterprises (MSMEs); however, when loans have short tenors or maturities that do not align with business revenue cycles, the risk of repayment default increases. Such evidence suggests that the developmental impact of digital credit depends not only on expanding access but also on product quality and how loans are priced, structured, and governed (Björkegren, Blumenstock, Oyeniran, & Razaq, 2022; Guérin, Roesch, Venkatasubramanian, & Kumar, 2021; Schicks, 2014).

It is here that the broader theory of financial inclusion becomes relevant. The updated meaning of financial inclusion since 2000 has evolved beyond basic account ownership to encompass access to "quality" financial products that are not only affordable, appropriate, and transparent but also include effective grievance redress mechanisms. On this account, it is not merely the quantity of inclusion that matters, but the quality of that inclusion, with specific reference to customer protection features such as fair treatment, data privacy, and pricing. With some notable progress on the former, the situation regarding inclusion quality in Nigeria has been described as "uneven", particularly in terms of transparency, grievance management, and customer data rights (Ekong, 2022; Ozili, 2022). Many digital borrowers lack complete comprehension of the pricing of credit or their rights to redress mechanisms when faced with misconduct. Thus, the perspective adopted in this study is more multidimensional, where inclusion is meaningful only if products are affordable and fit for purpose, not just available.

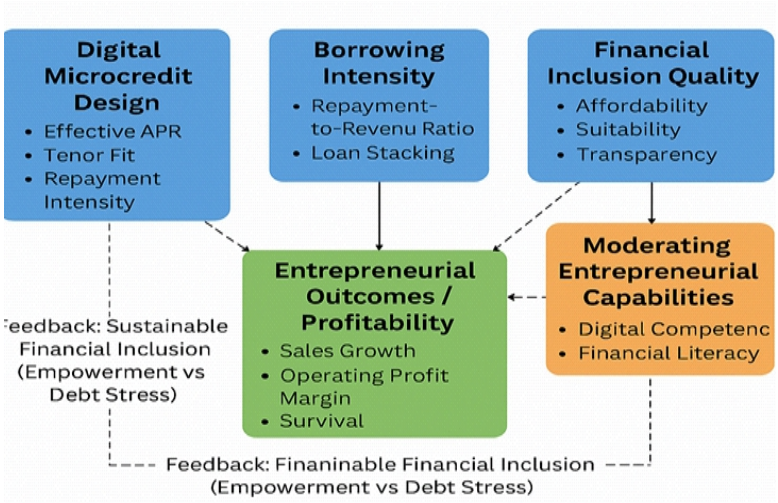

Figure 1. Hybrid conceptual framework linking digital microcredit design, entrepreneurial capabilities, and profitability outcomes in South-West Nigeria

Source: Anchored in Financial Inclusion–Capability Framework (Sen 1999; Kempson 2016; Ozili 2022), Debt-Stress Dynamics (Stiglitz & Weiss 1981; Ghosh & Gupta 2018), and Resource-Based View (RBV) (Barney 1991).

A construct used to capture the opposite of "affordability" in this study is entrepreneurial debt stress, a form of financial strain that occurs when small firms are subjected to various

pressures, including the combined impact of high pricing (expressed as effective annual percentage rate), tenor–cash-cycle mismatch, heavy repayment-to-revenue ratios, and the concurrent carrying of multiple, often overlapping, debt obligations. The term is intentionally less emotive than "debt trap", but is intended to capture a similar state of financial vulnerability or distress. It arises when the obligations of repayment overwhelm business revenues and liquidity. In such cases, business owners are often compelled to divert income to service debt, thereby reducing the amount available for reinvestment and narrowing their margins. The long-term effect is a self-reinforcing loop that crowds out productive capital, raises default risk, and constrains business expansion. Emerging evidence from Nigerian SMEs suggests that fintech credit—when not accompanied by fair treatment, transparent terms, and effective credit planning—can heighten repayment stress and cost-management challenges for firms with weak cash-flow alignment (Björkegren, Blumenstock, Oyeniran, & Razaq, 2022; Ozili, 2022; Eze, Chinedu-Eze, Awa, & Diarah, 2023). Profitability, the dependent variable of interest, is conceptualised for this study in line with previous small-business research as an overarching multidimensional outcome comprising operating profit margin, sales growth, owner withdrawals, employment change, and business survival (NBS, 2024). Given the practical difficulty of obtaining reliable income data among many micro and small enterprises in Nigeria, where many do not file audited accounts, this approach allows for indirect measurement based on triangulated proxy indicators, such as self-reported profit bands, revenue levels, and business continuity. This is both a pragmatic and defensible position that allows for a more holistic yet meaningful comparison across relevant businesses while considering the lack of financial statements.

Digital competence and financial literacy are two entrepreneurial capabilities expected to moderate the direction and degree to which digital credit impacts SME performance. Digital competence in this context refers to the owner's ability to use the fintech product, with a specific focus on apps and dashboards, as well as ancillary tools such as repayment channels or loan analytics. Financial literacy is a related but distinct capability that involves knowledge of product pricing, planning for cash flow, and prioritising debt obligations. The underlying argument is that the presence or absence of these skills is one of the key factors that determine whether entrepreneurs use credit productively or reactively. Recent research demonstrates that the adoption and use of digital-finance tools and products support entrepreneurship only to the extent that users possess adequate baseline digital and financial capabilities to moderate their effectiveness (Osei-Assibey & Sarpong-Kumankoma, 2023; Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2018).. In a similar vein, Ozili (2022) demonstrated that financial digital literacy, when present, reduces the risk of customer distrust and contributes to the informed and rational use of digital credit, in contrast to cases where users are uninformed. For these reasons, digital competence and financial literacy are treated as moderators in the model.

On this basis, the proposed conceptual model shows the theorised pathways by which digital microcredit design, in particular pricing and tenor-fit, along with repayment intensity, is expected to exert both a direct and indirect impact on SME profitability, with

positive and negative values along the causal paths representing an increase and decrease in the outcome, respectively. However, this is a non-linear model in which the impact of both digital credit use and pricing can take positive or negative values. The idea here is that moderate or "safe" credit use may have a beneficial effect by enabling growth when liquidity is limited, while excessive use or improper tenor can negate or even reverse these potential benefits. This model also proposes that entrepreneurs with better digital and financial skills can better manage these risks, thus attenuating the negative impact of cost and tenor mismatch. This logic is consistent with the extended financial-inclusion framework, which frames financial access as empowerment only when it is accompanied by both capability and product quality (Ekong, 2022; Ozili, 2022). By combining these elements, the model aims to integrate theoretical and empirical insights into how the interaction between credit design and borrower capability determines the extent to which digital microcredit operates as a tool for entrepreneurial empowerment or an instrument of financial strain for emerging market businesses.

Theoretical Framework

This paper's point of departure is the unusually diverse theoretical literature to which it speaks. I see three distinctive but partially overlapping perspectives in your work: The Financial Inclusion–Capability lens (Sen, 1999; Kempson, 2016; Ozili, 2022), the Debt-Stress literature on credit markets (Stiglitz & Weiss, 1981; Ghosh & Gupta, 2018), and the RBV of entrepreneurial performance (Barney, 1991; Amit & Schoemaker, 1993). The insights from these views illuminate your central findings: increased access to credit does not automatically translate to profit growth, and the conditions under which inclusion is empowerment versus burden.

The modern understanding of inclusion encompasses not only account ownership but also the quality of use, including affordability, suitability for cash-flow patterns, transparency of total costs, and effective recourse (Kempson, 2016; Ozili, 2022). From this perspective, digital microcredit can only serve as a vehicle for enterprise growth if its product design is compatible with the firm's cash conversion cycle and the borrower can understand, compare, and manage the total cost. In other words, dimensions of inclusion quality (adequate APR disclosure, fit-for-purpose tenors) are not simple control variables but a causal path linking access to outcome. By including variables such as effective APR/fees and tenor–cash-cycle fit, your model operationalises this notion of "quality," and it becomes more plausible that access boosts profitability when quality is high.

Credit markets with information frictions have an incentive structure that produces high prices and contract features that raise repayment risk (Stiglitz & Weiss, 1981). Digital microcredit with short tenors, automated collections, and fee-dense pricing is particularly conducive to a rollover dynamic and loan stacking (Ghosh & Gupta, 2018), which generates entrepreneurial debt stress. This framework would therefore predict that the effects of borrowing on performance are non-linear: liquidity constraint relaxation at low levels of debt raises profits, but after a repayment-to-revenue threshold (RMR), profitability begins to suffer as debt service crowds out working capital and productive

investment. It would also predict that a tenor mismatch with cash flows (tenor < cash conversion days) is a significant risk factor for delinquency and late payment, as evidenced by directly observable data (stacking flag, RMR, mismatch indicator).

The fact that firms using similar credit products exhibit heterogeneous outcomes is consistent with a "foundations of difference" (Helfat & Finkelstein, 2004) rooted in the firm itself. In micro and small firms, the owner's capabilities, notably digital competence (facility with apps, dashboards, and repayments) and financial literacy (pricing comprehension, budgeting, and debt prioritisation), are strategic assets that affect how credit affects performance (Amit & Schoemaker, 1993). The RBV therefore provides an analytical basis for modelling digital competence and financial literacy as moderators, not simply as controls: one would expect higher capability to (i) raise the extent to which adoption translates to profit and (ii) attenuate the adverse effects of misaligned costs and tenors. Integrating these three lenses reveals several patterns that are evident in the data and hypotheses. First, cost and design do matter: a higher effective APR and poor tenor fit are hypothesized to reduce profitability; RMR is hypothesized to have an inverted-U relation with profits (Debt-Stress). Second, capabilities moderate these pathways: higher digital competence should raise the adoption→profit path (better tool use, fewer operational errors), and higher financial literacy should reduce the cost→profit drag (better comparison, budgeting, debt scheduling) (RBV). Third, quality of inclusion is what turns access into empowerment: transparent, affordable, and suitable products are the conditions for digital credit to enable sustainable growth (Inclusion–Capability).

Empirical

The Nigerian evidence, as well as that from African markets with similar digital microfinance features, remains mixed. On the one hand, inclusion can yield benefits: randomised evaluations of digital credit in Nigeria confirm gains in access and adoption (Björkegren, Blumenstock, Oyeniran, & Razaq, 2022), cross-sectional studies report positive SME outcomes linked to fintech use (Ozili, 2022; Osei-Assibey & Sarpong-Kumankoma, 2023), and policy reports document widened financial access and increased adoption of mobile-lending platforms (CBN & EFInA, 2023; FCCPC, 2024). However, these studies also highlight deleterious effects: borrower over-indebtedness and repayment stress are evident (Guérin, Roesch, Venkatasubramanian, & Kumar, 2021; Ghosh & Gupta, 2018), affordability concerns persist (CBN & EFInA, 2023), and regulatory bulletins warn of high-cost loans and compliance lapses among fintech lenders (FCCPC, 2024). The aggregate pattern also appears at the firm level: while Nigerian SMEs report that digital credit alleviates working-capital constraints, they also experience cost-management and repayment-discipline challenges when product tenors are short or ex-post disclosure is weak (Eze, Chinedu-Eze, Awa, & Diarah, 2023; Ozili, 2022).

In a broader digital microcredit setting, studies have also identified various inclusion risks and design sensitivities. One such piece of African evidence, which aligns with the Nigerian examples and may be relevant for your work, is research on product design and its impact on enterprise outcomes. This evidence consistently finds that certain design

elements, such as high fees, short tenors, and rigid repayment schedules, can have adverse effects on borrower welfare and firm performance, especially in contexts where users have limited financial literacy or operate in volatile markets. A string of new studies investigates channels through which design features and user choices may raise or reduce perceived and material risk. First, as you note, empirical work on fintech credit shows a consistently negative correlation between effective APR/fund-usage fees and profitability proxies (sales, income, non-cash operating profits, post-loan measures), especially where user cash flows are intermittent and heavily levered, and revenues are unpredictable (Ekong, 2022; FCCPC, 2024; NBS, 2024; Omeke, 2025). Second, a tenor–cash-cycle mismatch is a significant predictor of delinquency and late payment. When the loan tenor is shorter than the time taken to sell the financed inventory (cash conversion cycle), borrowers may resort to loan stacking and refinancing to keep their operations afloat. This practice, often exacerbated by opaque pricing and high effective rates, leads to an increased total cost of credit and potential over-indebtedness (Ekong, 2022; FCCPC, 2024). Third, repayment-to-revenue burden (RMR = monthly repayment/monthly total revenue*100%) exhibits a negative non-linear association with self-reported (profit, improvement) and objective profit measures (NBS, 2024): low repayment-to-income burden (under a moderate threshold) acts as a growth booster as it smooths liquidity over the business cycle, while above that threshold, debt service crowds out liquidity and erodes profit. These patterns are consistent with discussions of debt stress in the African context (Ghosh & Gupta, 2018), with Nigerian warning messages and fines for over-indebtedness and loan stacking in the FCCPC compliance bulletin (FCCPC, 2024), and with some recent firm surveys where repayment burden mediates the cost effect on sales growth (Omeke, 2025). Overall, design risk channels correspond to the model's main design variables (effective APR/fees, tenor fit with cash cycle, RMR and stacking) and suggest a strategy for testing borrowing-intensity non-linearity.

The other key piece of African evidence pertains to capability-contingent impacts. Digital finance adoption is associated with entrepreneurship in a suite of African firm studies, but its net effect is conditioned by absorptive capabilities, including digital competence (tool use, record-keeping, dashboard literacy) and financial literacy (pricing comprehension, budgeting, debt prioritisation). Erondu, Nwokah, and Ananaba (2025) establish that capability gaps mitigate the benefits from digital service features, while Ozili (2022) shows that the same financial digital literacy variables are positively associated with user trust and negatively associated with predatory product use. Transferred to the SME setting, this body of research suggests that owners' capabilities can be considered as moderators. They condition the adoption→profit relationship: the positive effect of adoption is stronger when owners are digitally capable and financially savvy. These capabilities are also hypothesised to moderate the cost→profit relationship: their presence weakens the adverse effects of costs on profit and growth. In other words, these capabilities strengthen the positive impacts while mitigating the negative ones.

Methodology

The study employed an ex-post-facto research design to examine a sample of small and medium-sized enterprises (SMEs) operating in South-West Nigeria that had accessed digital microcredit via mobile-based lending platforms (e.g., FairMoney, Branch, Carbon, and PalmCredit). The study employed the ex-post-facto design because the research was based on a hypothesis that is a relationship between variables that had already occurred and therefore, could not be controlled or manipulated by the researcher.

A purposive sampling technique was employed to identify SMEs with exposure to digital credit experiences, as no sampling frame was available for the population. This was appropriate as it helped to sample only SMEs that had accessed at least one digital loan in the past three years. This has a limiting effect on the generalisability of the findings. The primary data collection instrument was a standardized questionnaire adapted from previous surveys that had examined digital finance, financial inclusion, and SME performance (Ekong, 2022; Omeke, 2025; Ozili, 2022). It had questions about loan characteristics, digital competence, financial literacy, and profitability indicators (e.g., sales growth, operating profit margin). The questionnaire was pre-tested on 30 SMEs in Osogbo to check the clarity and appropriateness of the items for the study. A reliability analysis (Cronbach's alpha) on the pre-test data yielded satisfactory reliability coefficients for all scales, ranging from 0.74 to 0.88.

The primary survey collected 500 usable responses out of the 600 questionnaires administered, yielding an 83 % response rate. The quantitative data were analysed using multiple regression analysis to examine how the cost structure of loans, the repayment-to-revenue ratio, and borrower capabilities impacted SME profitability. Frequencies, means, and standard deviations were used to describe respondents' demographic characteristics and firms' basic attributes. The qualitative data from 20 semi-structured interviews with entrepreneurs and fintech managers were analysed thematically to provide a context-based explanation for the quantitative results.

Results and Discussion

Profile of Respondents

Out of all the sampled respondents, 38% identified retail trade as their core business, 22% services, 18% hospitality, and the remaining 22% agriculture and logistics. Sixty-four percent (64 %) of the businesses had less than ten (10) staff, and 71 % reported having applied for digital credit at least twice in the past three (3) years. FairMoney (56%), Branch (52%), and Carbon (47%) were the platforms most recognized by respondents, indicating a near-congruent alignment with the reported market shares in a recent EFInA (2023) survey.

Table 1: Summary of Respondents' Profile and Digital-Credit Usage

Variable	Category	Frequency (n=500)	Percentage (%)
Firm Age	2–4 years	174	34.8
	5–9 years	212	42.4
	≥10 years	114	22.8
Sector	Retail Trade	190	38.0
	Services	110	22.0
	Hospitality	90	18.0
	Agriculture/Agro-Allied	65	13.0
	Logistics/Transport	45	9.0
Loan Size (₦)	< 500,000	300	60.0
	500,001 – 1,000,000	135	27.0
	> 1,000,000	65	13.0
Platform Used	FairMoney	280	56.0
	Branch	260	52.0
	Carbon	235	47.0
	PalmCredit	188	37.6

Source: Field Survey, 2025

According to the data presented in Table 1, the sample participants were primarily younger firms (less than ten years old) and micro-scale operators, which were more commonly found in retail and services. FairMoney, Branch, and Carbon were the most widely used platforms, as the data aligns with EFInA's (2023) estimate of market shares. Most loans were less than ₦ 500,000, indicating that SMEs may be using digital credit for short-term liquidity rather than expansion.

Extent of Digital-Credit Usage

Sixty percent (60%) of the SMEs accessed loans of ₦500,000 or less. While 92% of these firms used digital loans to finance their working capital, 68% reported that the tenors were often shorter than the cash conversion cycles of their businesses, and as a result, they were forced to renew or "roll over" the loans. On average, 41% reported effective interest rates above 35% per annum, signalling high effective costs compared to formal banking products.

Table 2: Descriptive Statistics of Key Variables

Variable	Minimum	Maximum	Mean	Std. Deviation
Effective Interest Rate (APR, %)	12	64	38.21	9.46
Tenor (days)	7	90	33.7	18.2
Repayment-to-Revenue Ratio (RMR)	0.08	0.58	0.29	0.10
Digital Competence (1–5 scale)	1.8	4.9	3.64	0.72
Financial Literacy (1–5 scale)	2.1	4.8	3.79	0.65
Profitability (Composite Index 1–5)	1.5	4.7	3.42	0.68

Source: Field Survey, 2025

Average effective rates hovered around 38%, well above formal bank lending averages. The mean repayment-to-revenue ratio (0.29) indicates that, on average, nearly one-third of monthly revenue is allocated to servicing debt. Mean scores above 3.5 for competence and literacy indicate moderate capability levels among respondents, although considerable variability remains.

Relationship between Digital Microcredit and SME Profitability

The results of the linear-multiple-regression analysis show a positive and statistically significant relationship between the adoption of digital microcredit and the profitability of SMEs, after adjusting for business size and industry of operation ($\beta = 0.327$; $R^2 = 0.396$; Adjusted $R^2 = 0.382$; $t = 9.845$; $p < 0.05$; $F = 18.732$). The positive β-coefficient is indicative of the marginal contribution of digital credit access to enhancing sales turnover and short-term profitability, and indeed a reversal of the financing constraint. However, the modest R^2 coefficient suggests that other variables not included in the model, such as the cost base of the SME, the financial and digital literacy of the owner, and ancillary aspects of profitability, may also play a role.

Table 3: Multiple Regression Results: Digital Microcredit and SME Profitability

Predictor Variable	β	t-Value	Sig. (p)	Remark
Constant	2.341	5.742	0.000	—
Effective Interest Rate (Cost)	–0.213	–3.856	0.000	Significant (negative)
RMR (Borrowing Intensity)	0.294	4.911	0.000	Significant (positive)
RMR^2	–0.167	–3.102	0.002	Significant (inverted-U)
Tenor–Cash-Cycle Mismatch	–0.185	–3.621	0.000	Significant (negative)
Loan Stacking	–0.142	–2.784	0.005	Significant (negative)
Digital Competence × Adoption	0.216	3.892	0.000	Significant (moderation +)

Source: Field Survey, 2025

$R^2 = 0.451$ Adjusted $R^2 = 0.438$ $F = 21.106$ $p < 0.05$

Table 3 indicates that the digital microcredit design variables collectively explain 45% of the variation in profitability. The negative coefficient for the interest rate shows that high borrowing costs reduce profit margins. The positive-negative pattern of RMR and RMR^2 confirms a threshold (inverted-U) effect: profitability rises with moderate borrowing but declines beyond an RMR of roughly 0.30–0.35. Tenor mismatch and loan stacking significantly reduce performance, corroborating the debt-stress hypothesis (Ghosh & Gupta, 2018). Interaction terms for digital competence and financial literacy are positive and significant, confirming that capable entrepreneurs mitigate cost burdens and extract more value from digital finance. These quantitative findings were supported qualitatively by interview evidence; respondents described automatic deductions as "helpful for discipline" but "punitive when sales are delayed," and several cited improved budgeting after acquiring financial-literacy training.

Moderating Role of Capabilities

By introducing the two moderation variables into the model, we observed some improvements in terms of fit, with an adjusted R^2 of 0.451, a ΔR^2 of 0.069, and an F-value of 21.106, all of which were statistically significant ($p < 0.05$). The regression coefficients of the interaction variables between digital microcredit adoption and digital competence were positive and statistically significant ($\beta = 0.216$; $p < 0.05$). This suggests a greater marginal benefit from microcredit adoption for firms with higher digital literacy. The interaction between the cost of borrowing and financial literacy was also negative and significant ($\beta = 0.189$; $p < 0.05$), which is an effect of buffering: that is, for firms with higher financial literacy, the high cost of digital loans had a lower marginal negative impact on the enterprise's profitability. In other words, it costs less to service expensive digital loans for businesses led by financially literate owners. As such, this data empirically corroborates the a priori hypotheses derived from the Resource-Based View and Capability literatures, namely that entrepreneurial capabilities are leveraged to improve performance outcomes in digital microfinance.

Debt-Stress Indicators

Plotting the profitability scores against the repayment-to-revenue ratios (RMR) of the firms, we observed a distinct inverted-U pattern, with profit scores rising until a threshold RMR of approximately 0.25, before falling precipitously at higher levels of RMR, more so after the value of 0.35 is crossed. Firms with RMR in the last quartile, comprising 22% of our sample, also reported struggling to meet their day-to-day expenses from their revenues and resorted to multiple borrowings to bridge the gap. This conforms to the hypothesis on the (occurrence and causes of) debt-stress (Ghosh & Gupta, 2018). From our qualitative interviews with business owners, while several respondents noted that the automation of repayments was "helpful in keeping me disciplined," they also described the pre-programmed repayments as "punishing when my sales are slow."

Table 4: Themes from Qualitative Interviews

Theme	Illustrative Quote	Interpretation
Ease of Access	"Loans come within minutes; we don't queue in banks anymore."	Access dimension of inclusion achieved.
Cost Burden	"After paying charges every week, the profit vanishes."	Highly effective APR erodes margins.
Tenor Mismatch	"Repayment starts before customers pay me."	Confirms short-cycle pressure.
Capability Gain	"I learned to track repayments with the app; now I don't default."	Competence moderates stress.
Need for Education	"Many don't read terms; they just click borrow."	Reinforces policy call for literacy.

Source: Field Interview, 2025

The qualitative evidence underscores the dual nature of digital credit. While convenience and immediacy enhance inclusion, high costs and poor design of tenor generate repayment stress. Entrepreneurial capability, digital competence, and financial literacy emerge as the critical buffer that converts access into empowerment rather than debt stress.

Discussion of Findings

Quantitative and qualitative results indicate that digital microcredit enhances liquidity and immediate profitability, but it also comes with structural risks that constrain its longer-term sustainability. Microbusiness owners with higher levels of digital skills and financial literacy exhibit better control over borrowing costs, lower incidence of loan stacking, and higher profit retention—consistent with the conditionality of inclusion effects suggested by Björkegren, Blumenstock, Oyeniran, and Razaq (2022) and supported by evidence that financial and digital capabilities moderate the performance effects of fintech adoption (Ozili, 2022; Osei-Assibey & Sarpong-Kumankoma, 2023). Combined, these results highlight the enabling and constraining characteristics of digital microcredit: while mobile loans provide crucial liquidity for short-term operations, their high effective costs and short tenors can significantly undercut realised profits. Entrepreneurial capability, therefore, emerges as the key moderating factor that distinguishes between empowerment and financial vulnerability. This duality highlights the importance of policy frameworks that ensure the pricing and repayment terms of digital microcredit are better aligned with SMEs' cash-flow realities and advocate for the integration of borrower-education initiatives within digital finance ecosystems to ensure sustainable inclusion.

Implications

Based on the study's results, several conclusions and practical takeaways can be drawn. For regulators, the first implication is the need to complement policies on fintech expansion and digital finance inclusion with targeted financial education programs, as well as an intensification of advocacy and enforcement of responsible lending standards and market transparency by the FCCPC and Central Bank. Fintech lenders also have a role to play by incorporating in-app financial literacy nudges and other flexibilities around repayment and credit scoring features, enabling lower-income and less technically competent entrepreneurs to use mobile microcredit safely. For researchers, there is an opportunity for follow-up work, especially using panel data to capture the dynamics of repeat borrowing on long-term enterprise sustainability.

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