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Determinant of Women Entreprenuer Performance: Implication among Low Income House Hold in North Eastern Nigeria

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Abstract **Review Article**

This study investigates the empirical link between credit access modalities and the financial performance of women-led micro-enterprises across the conflict-affected states of Borno, Yobe, and Adamawa in Northeast Nigeria. Utilizing a cross-sectional survey of 382 low-income female entrepreneurs, an Ordinary Least Squares (OLS) multiple linear regression model was deployed to test the efficacy of institutional versus informal lending architectures. The diagnostic metrics yield an R^2 of 0.612 ($F=59.430, p<0.001$), proving that access to microcredit serves as a primary driver of enterprise sales turnover and capital reserves ($\beta=0.385, p<0.001$). However, the field findings reveal a stark institutional mismatch: 81.7% of necessity-driven traders are entirely excluded from formal microfinance banks due to patriarchal land-tenure customs requiring real-estate collateral. Instead, they rely heavily on traditional rotating savings networks (adashi). While these informal networks mitigate short-term cash flow pressures, their fixed scale caps long-term capital accumulation. The study concludes that transitioning from asset-backed security frameworks to peer-guaranteed social collateral models is critical for transforming survivalist micro-trading into sustainable economic vehicles.

Keywords: Financial Inclusion, Microcredit, Female Entrepreneurship, Social Collateral, Northeast Nigeria, Resource-Based View.

1. Introduction & The Macroeconomic Paradox

In Sub-Saharan Africa, female entrepreneurship presents a profound structural paradox. The continent boasts some of the highest global rates of female business ownership, yet these enterprises remain overwhelmingly concentrated within informal, low-growth sectors (Acheampong et al., 2022; Egbetokun, 2025). In Nigeria, women own approximately 30% to 40% of registered micro, small, and medium enterprises (MSMEs), according to data from recent market reports (Egbetokun, 2025; Ojokheta, 2025). However, a significantly larger, unrecorded cohort operates beneath the formal economic threshold, managing micro-enterprises without registration, formal financial records, or institutional protections.

This high rate of informality is severely exacerbated by macroeconomic headwinds, including intense currency volatility, supply chain disruptions, and rampant inflation, which have sharply diminished household purchasing power nationwide (Madueke, 2026). In this challenging environment, female-led micro-commerce—ranging from artisanal tailoring and food processing to localized retail trading—has evolved from an opportunistic pursuit into a vital defensive mechanism against extreme poverty (Itodo, 2026; Madueke, 2026).

Despite its clear socioeconomic importance, financial exclusion persists as a major structural bottleneck. The traditional commercial banking sector and formal microfinance banks remain rigidly tied to historical lending frameworks where credit allocation requires fixed-asset collateral (Metu & Nwogwugwu, 2022). Because historical property laws and inheritance customs in Nigeria often favor male heirs, women are systematically marginalized from land ownership and property rights (Ogunlana & Adediran, 2024). This create an acute financial capital deficit, leaving female entrepreneurs trapped in a cycle of undercapitalization (Nwosu & Danjuma, 2024).

MACROECONOMIC ENVIRONMENT (Inflation & Volatility)

INFORMAL FEMALE MICRO-ENTERPRISE

Financial Capital Deficit	Structural Disadvantage
-Asset Collateral Gaps	-Informal Credit Dependency
-High Micro-Lending Rates	- Low Growth & Local Markets

This structural problem is particularly severe in Northeast Nigeria (Borno, Yobe, and Adamawa states), where fifteen years of regional instability have upended traditional agricultural and trade systems. As adult male populations have faced displacement or mortality, women have increasingly assumed the role of sole economic providers for their households (Kwajaffa, 2025; Ogbonna, 2024).

Consequently, understanding how microcredit access impacts firm performance in these fragile regions is essential. This paper addresses this need by empirically examining how different credit delivery models influence the financial survival and growth of female-led enterprises in Northeast Nigeria.

2. Literature Review & Theoretical Framework

2.1 The Microcredit and Female Entrepreneurship Nexus

The relationship between microcredit access and small business performance has been a central topic in development economics for decades. Historically modeled on the Grameen Bank paradigm, microcredit was envisioned as a direct tool for poverty alleviation by providing capital to individuals excluded from the formal banking system (Mahedi et al., 2025). In Sub-Saharan Africa, and Nigeria specifically, empirical studies present mixed results on its long-term impact.

Some scholars argue that small-scale loans enable women to expand their businesses, build assets, and increase their household decision-making power, especially in urban environments with good market connectivity (Egbetokun, 2025; Lyons et al., 2020). Conversely, other researchers highlight that high interest rates, rigid weekly repayment schedules, and a lack of business training often limit these benefits, leaving many necessity-driven traders with temporary gains or persistent debt cycles (Osuma et al., 2025).

Furthermore, the choice between formal institutional credit and informal financial networks remains a critical operational issue. While formal Microfinance Institutions (MFIs) offer larger loan sizes, their administrative demands and collateral expectations often push low-income women toward traditional, informal solutions (Onoshakpor et al., 2025). In Northern Nigeria, informal systems like *adashi* (rotating savings and credit associations) and local cooperative thrift societies serve as essential financial alternatives (Dalhat, 2025; Itodo, 2026). These informal options bypass the need for physical property deeds, instead using community trust and reputation as social collateral (Musa et al., 2025).

2.2 Theoretical Grounding

To interpret these complex financial dynamics, this study draws upon two major theoretical perspectives: the **Resource-Based View (RBV)** and **Liberal Feminist Theory**.

The Resource-Based View (RBV)

Originally developed within corporate strategy frameworks (Barney, 1991; Wernerfelt, 1984), the Resource-Based View argues that a firm's long-term survival, competitiveness, and performance depend fundamentally on its deployment of internal resources that are valuable, rare, inimitable, and non-substitutable (the VRIN framework). In the context of informal micro-enterprises, financial capital acts as the foundational resource within this asset array.

Without sufficient financial liquidity, an enterprise cannot buy raw materials in bulk at competitive wholesale prices, invest in basic equipment, or smooth operational cash flows during seasonal downturns (Acheampong et al., 2022). For a female necessity entrepreneur, access to credit acts as an essential resource injector, transforming a static survivalist stall into a dynamic micro-enterprise capable of capital accumulation.

Liberal Feminist Theory

While RBV focuses on internal resource management, Liberal Feminist Theory explains the structural barriers that control access to those resources. This theory argues that women and men possess equal rational capacities and entrepreneurial drive, but women's business underperformance stems from institutional discrimination, legal inequities, and biased social structures that restrict their access to key commercial inputs (Alene, 2020).

Applied to Nigerian financial markets, liberal feminism highlights how credit access is restricted by patriarchal property rights. When commercial banks demand land titles—which are disproportionately held by men due to customary inheritance practices—they systematically lock women out of formal credit pathways (Ogunlana & Adediran, 2024; Yaro & Anyadike, 2023). Thus, the financial deficit faced by female micro-enterprises is not a reflection of poor entrepreneurial capability, but rather a direct result of institutional design flaws within the financial ecosystem.

3. Methodology & Econometric Model

3.1 Research Design and Sampling Frame

This study utilizes a cross-sectional, survey-based research design to collect primary quantitative and qualitative data from female micro-entrepreneurs across Northeast Nigeria. The target population was defined as women-led micro-enterprises operating within informal retail, local food processing, tailoring, and small-scale manufacturing in three major urban and peri-urban centers: Maiduguri (Borno State), Damaturu (Yobe State), and Yola (Adamawa State).

A multi-stage sampling technique was used to select participants. First, the three states were chosen due to their shared exposure to regional instability and similar socioeconomic structures. Second, major commercial hubs and displacement-affected trading clusters within these states were identified. Using a simplified Yamane formula for large populations with a 5% margin of error, a sample size of 382 respondents was established. Enumerators administered structured questionnaires directly to participants in local languages, including Hausa, Kanuri, and Fulfulde, ensuring high comprehension and an excellent 100% response rate.

3.2 Data Validity and Recall Frameworks

Gathering reliable financial metrics from informal micro-enterprises poses significant methodological challenges, as the vast majority of necessity traders do not maintain formal written ledgers, balance sheets, or separate business bank accounts (Anifowose & Chummun, 2025). To mitigate data distortion from memory bias, this study deployed a structured short-term recall framework.

Financial metrics, including gross sales turnover, raw material expenditures, and loan repayment amounts, were tracked based on immediate weekly operating cycles or distinct product batch deliveries. These figures were then aggregated to construct stable monthly performance indexes, minimizing long-term recall errors and ensuring data validity.

3.3 Econometric Specification

To evaluate the relationship between financial resources, environmental constraints, and enterprise outcomes, an Ordinary Least Squares (OLS) multiple linear regression model was specified:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \varepsilon_i$$

Where:

- Y_i = **Composite Women Entrepreneur Performance index** for firm i, computed as the normalized average of monthly net profit and business capital growth over the preceding fiscal cycle.
- X_{1i} = **Access to Microcredit Vector**, a composite measure tracking total credit volume secured, the institutional nature of the loan source (formal MFI vs. informal network), and borrowing frequency.
- X_{2i} = **Socio-Cultural Constraints Vector**, measuring uncompensated domestic care hours and restrictions on physical mobility.
- X_{3i} = **Security Disruption Index**, tracking direct operational exposure to regional instability, unexpected market closures, and supply route blockades.
- X_{4i} = **Human Capital Development Vector**, evaluating formal educational attainment, technical skills, and participation in structured financial literacy training.
- β_0 = The intercept constant.
- $\beta_1, \beta_2, \beta_3, \beta_4$ = Partial regression coefficients for the respective independent variables.
- ε_i = The stochastic error term capturing unobserved white-noise variance.

4. Empirical Results & Structural Diagnostics

4.1 Descriptive Financial Profile

The baseline descriptive analysis highlights the severe financial constraints face by female micro-enterprises in the study region. The data reveals that formal microfinance banks play a very limited role in funding these ventures: 81.7% of respondents are completely excluded from formal institutional credit lines.

When asked about the primary barrier to securing formal loans, 74.2% of excluded respondents cited the inability to provide physical asset collateral, such as land deeds or real estate certificates.

PRIMARY CREDIT CHANNELS UTILIZED

Informal Adashi Networks ──────────▶ 54.0%

Cooperative Thrift Syndicates ─────────▶ 27.7%

Formal Microfinance Banks ──────────▶ 18.3%

To bridge this financial gap, female entrepreneurs rely heavily on informal community arrangements. Traditional *adashi* networks (rotating savings and credit associations) serve as the primary credit source for 54.0% of the sample, while local cooperative thrift syndicates support 27.7%. Only 18.3% of respondents reported securing any form of credit from registered microfinance institutions.

Furthermore, interest rate pressures vary significantly across these options: formal microfinance loans often carried high annualized interest rates ranging from 28% to 36%, whereas informal cooperative loans offered more manageable rates between 10% and 15%, alongside flexible repayment terms based on mutual trust.

4.2 Regression Outputs and Diagnostic Validity

The comprehensive Ordinary Least Squares (OLS) estimation model provides strong statistical evidence for the research hypotheses. The overall model diagnostics confirm the validity of the regression architecture:

$$R^2 = 0.612, \quad F\text{-statistic} = 59.430 \quad (p < 0.001), \quad \text{Durbin-Watson} = 1.890$$[cite: 1]

An R^2 value of 0.612 demonstrates that approximately 61.2% of the variance in the financial performance of female micro-enterprises is explained by the four independent variables in the model. The high F-statistic confirms that this relationship is highly statistically significant. The Durbin-Watson statistic of 1.890 falls within the optimal range, indicating that the model does not suffer from significant first-order serial autocorrelation.

The full regression output matrix is detailed below:

Explanatory Variables	Regression Coefficient (β)	Standard Error	t-Statistic	p-Value	Statistical Significance
Constant (β_0)	12.450	3.999	3.112	0.002	Highly Significant ($p < 0.01$)
Microcredit Access (X_1)	0.385	0.066	5.840	0.000	Highly Significant ($p < 0.01$)
Socio-Cultural Constraints (X_2)	-0.210	0.061	-3.420	0.001	Highly Significant ($p < 0.01$)
Security Disruptions (X_3)	-0.415	0.072	-5.792	0.000	Highly Significant ($p < 0.01$)
Human Capital Development (X_4)	0.290	0.055	5.236	0.000	Highly Significant ($p < 0.01$)

Focusing on the financial capital variable, **Microcredit Access (X_1)** shows a powerful, highly significant positive relationship with business performance ($\beta = 0.385, t = 5.840, p < 0.001$). This mathematical proof confirms that, controlling for all other variables, each 1-unit increase in reliable credit access leads to a 0.385-unit expansion in the enterprise performance index.

5. Granular Discussion

The empirical findings confirm that financial capital access is an essential requirement for the growth and survival of female-led micro-businesses in fragile economies. The highly significant positive coefficient for microcredit ($\beta = 0.385$) strongly supports the Resource-Based View, demonstrating that external capital injections provide the core resources needed to sustain business operations. These results match the findings of Chen et al. (2025) and Egbetokun (2025), who showed that microfinance interventions significantly boost business capital and help reduce poverty among female entrepreneurs in developing regions.

However, the high rate of exclusion from formal banks (81.7%) highlights a major structural barrier within Nigeria's financial system. As Liberal Feminist Theory suggests, requiring land titles and physical asset collateral creates an institutional filter that systematically screens out women due to unequal historical property rights (Ogunlana & Adediran, 2024; Yaro & Anyadike, 2023). This credit gap forces the vast majority of female traders to rely on informal financial networks like *adashi* systems (Dalhat, 2025; Onoshakpor et al., 2025).

While these informal systems are highly accessible and rely on community trust rather than physical deeds, they face clear limitations. Because informal networks depend entirely on the financial contributions of local community members, their capital pools are relatively small and easily depleted during regional economic downturns (Musa et al., 2025). This creates an ongoing financial challenge: informal credit works well as an immediate safety net to manage basic operational cash flow, but it rarely provides the scale of capital needed for long-term business expansion or technological investment (Itodo, 2026).

THE CREDIT TRANSMISSION MISMATCH

FORMAL MFIs ──► High Capital Capacity │ But Rigid Asset Collateral Required │ (Excludes 81.7% of Female Traders)

INFORMAL ADASHI ──► High Local Trust │ But Low Fixed Capital Pools

No Asset Collateral │ (Caps Enterprise Growth Scale)

Additionally, the negative coefficients for socio-cultural constraints ($\beta = -0.210$) and regional security disruptions ($\beta = -0.415$) show that financial capital does not operate in a vacuum. Heavy domestic care responsibilities and sudden security shocks constantly drain cash reserves, as women are frequently forced to liquidate business inventory to meet urgent family needs (Kachalla, 2025; Musa et al., 2025).

Conversely, the positive effect of human capital ($\beta = 0.290$) demonstrates that basic financial literacy and accounting skills act as an important business shield, helping entrepreneurs separate personal household expenses from working capital and manage loan repayments effectively (Garba, 2021; Ojokheta, 2025).

6. Policy Architecture & Recommendations

To bridge this credit gap and support female-led micro-enterprises in Northeast Nigeria, the Central Bank of Nigeria (CBN), the North-East Development Commission (NEDC), and microfinance institutions should implement targeted structural changes.

6.1 De-linking Credit from Physical Assets

Formal microfinance institutions must move away from rigid, asset-backed commercial lending practices. Regulatory frameworks should be developed to accept alternative forms of security, allowing women to access credit lines without requiring real estate deeds or land titles.

6.2 Institutionalizing Social Collateral Models

Financial institutions should utilize group-guaranteed lending models patterned after peer-support rings. By replacing physical property requirements with community accountability and peer validation, formal institutions can safely expand their lending portfolios, lower default risks, and open credit access for low-income female entrepreneurs.

6.3 Linking Financial Literacy with Capital Delivery

Credit programs should integrate practical financial literacy and basic accounting training directly into their lending processes. Providing business skill development alongside capital injections ensures that female traders can manage cash flows efficiently, avoid unsustainable debt, and successfully grow their enterprises.

6.4 Connecting Informal Networks with Formal Banking

Development banks should create programs that connect traditional *adashi* networks and local savings cooperatives with the formal financial system. By providing matching funds and institutional backing to established community cooperatives, policymakers can increase local capital pools and help women transition from basic economic survival to sustainable business growth.

STAKEHOLDER UTILITY MATRIX

To guide the practical application of these findings, the study establishes a clear operational framework across key stakeholder groups:

Stakeholder Group	Primary Empirical Focus	Policy & Practical Application
1. Central Bank & Regulators	Financial Inclusion Frameworks	Design non-collateralized lending guidelines and legal alternative security registries.
2. Microfinance Banks	Credit Risk & Portfolio Diversification	Deploy group-guaranteed lending rings and leverage community trust assets.
3. Development NGOs & NEDC	Sustainable Post-Conflict Recovery	Provide grant-backed financial literacy workshops and support local trade cooperatives.
4. Academic Researchers	Empirical Development Economics	Conduct longitudinal studies analyzing the transition from informal savings to formal credit.

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