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Digital Entrepreneurship and Gender-Related Constraints in Marginalised Communities: Evidence from South-South Nigeria

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ABSTRACT

Purpose: This study examines the associations between digital literacy, financial inclusion, digital infrastructure, and gender-related constraints and entrepreneurial performance in marginalised communities in South-South Nigeria.

Design/methodology/approach: A cross-sectional survey of 380 entrepreneurs across six states was conducted using structured questionnaires. Multi-item Likert scales measured digital literacy, financial inclusion, digital infrastructure, gender-related constraints, and entrepreneurial performance. Descriptive statistics, correlation analysis, and multiple regression were used to assess the relationships among the variables while controlling entrepreneur and firm characteristics.

Findings: Digital literacy, financial inclusion, and digital infrastructure are positively and significantly associated with entrepreneurial performance. Financial inclusion exhibits the strongest association. Gender-related constraints are negatively associated with performance, indicating that perceived structural barriers remain relevant even when digital and financial resources are present.

Practical implications: The findings suggest that policies aimed at strengthening digital skills, expanding responsible financial inclusion, and improving digital infrastructure may support entrepreneurial outcomes in marginalised communities. Efforts to address persistent gender-related barriers remain important for ensuring inclusive digital entrepreneurship.

Originality/value: The study provides large-scale quantitative evidence from an under-researched sub-national region of Nigeria, applying established digital entrepreneurship constructs to a marginalised context and offering context-specific insights for policy and practice.

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INTRODUCTION

The diffusion of digital technologies has reshaped entrepreneurial activity by altering how firms are created, managed, and scaled across diverse institutional contexts (UNDP, 2023; Valentowitsch & Schueffel, 2024; van der Boor et al., 2014). Tools such as mobile payments, social media platforms, and e-commerce systems have reduced spatial and informational barriers, potentially expanding market access and operational efficiency for micro and small enterprises. In developing economies, digitalisation is frequently positioned as a pathway to inclusive growth and poverty reduction (World Bank Pathways Commission, 2020; Naudé, 2023). However, the ability of entrepreneurs to benefit from digital transformation depends on access to complementary capabilities and enabling conditions.

Empirical research highlights the importance of digital literacy, financial inclusion, and digital infrastructure in shaping entrepreneurial outcomes (Fauzi, 2020; Yussupova et al., 2025; Ashubwe et al., 2025). Digital skills influence how effectively entrepreneurs use online tools, financial inclusion affects liquidity and investment capacity, and infrastructure determines reliability of digital transactions. At the same time, structural and socio-cultural constraints particularly those related to gender may affect how these resources translate into business performance (UNCTAD, 2025; Ugwuja & Ayodeji, 2022). In many developing contexts, women entrepreneurs continue to face barriers in accessing finance, networks, and training, even where digital technologies are expanding.

While national-level and cross-country studies of digital entrepreneurship are increasing, empirical evidence remains uneven across sub-national regions within developing countries. South-South Nigeria represents a region where digital adoption among micro and small enterprises is growing, yet infrastructural deficits, economic volatility, and institutional constraints remain pronounced (UNDP, 2023; Odu, 2017). Despite policy emphasis on digital inclusion, there is limited quantitative research examining how digital and financial resource access jointly relates to entrepreneurial performance within marginalised communities in this region.

This study therefore investigates the associations between digital literacy, financial inclusion, digital infrastructure, and gender-related constraints and entrepreneurial performance among entrepreneurs in marginalised communities in South-South Nigeria. Drawing on resource-based and diffusion-of-innovation perspectives as organising frameworks, the study examines how access to digital and financial resources, alongside perceived structural barriers, relates to self-reported business outcomes.

Using survey data from 380 entrepreneurs across six states and applying correlation and multiple regression analysis, the study addresses two research questions:

1. To what extent are digital literacy, financial inclusion, digital infrastructure, and gender-related constraints associated with entrepreneurial performance in marginalised communities in South-South Nigeria?
2. How do these factors relate to performance when key entrepreneur and firm characteristics are taken into account?

By providing empirical evidence from an under-researched sub-national region, the study offers context-specific insights into digital entrepreneurship and informs policy discussions on digital inclusion and small business development in Nigeria.

2. LITERATURE REVIEW

2.1 Digital Resources and Entrepreneurial Performance

Digital technologies have reshaped entrepreneurial activity by lowering transaction costs, expanding market reach, and enabling new business models, particularly in developing economies (Kraus et al., 2019; UNDP, 2023). However, performance gains from digitalisation depend not merely on technology availability, but on entrepreneurs' access to complementary resources. Prior research identifies three interrelated domains as central: digital literacy, financial inclusion, and digital infrastructure. While each has been examined independently, fewer studies assess their joint contribution within marginalised sub-national contexts.

i. Digital Literacy

Digital literacy encompasses the ability to access, evaluate, and strategically apply digital tools for value creation (Eshet-Alkalai, 2004). In entrepreneurial settings, this includes effective use of social media marketing, e-commerce platforms, digital payments, and online customer engagement tools. Empirical evidence across emerging economies generally reports a positive association between digital competence and SME performance (Fauzi, 2020; Dinasti et al., 2023; Yussupova et al., 2025).

However, digital skills alone may be insufficient in resource-constrained environments. Where infrastructure is unreliable or financial systems exclusionary, digital capability may not translate fully into performance gains (Adegbore et al., 2023; UNDP, 2023). This suggests that digital literacy functions as an enabling capability whose impact depends on complementary resource conditions.

ii. Financial Inclusion

Financial inclusion refers to access to and effective use of affordable financial services, including savings, credit, and digital payments (World Bank Pathways Commission, 2020). In Sub-Saharan Africa, access to formal and digital financial services has been associated with improved liquidity management, higher investment, and enhanced firm sustainability (Ashubwe et al., 2025; Nyamboga et al., 2025).

Yet financial access does not uniformly produce positive outcomes. High borrowing costs, limited financial literacy, and institutional barriers may constrain effective use (Babatunde, 2024). Evidence also indicates that financial inclusion yields stronger performance effects when combined with digital capability and reliable infrastructure (Hasan et al., 2023). Despite this, most studies examine finance in isolation rather than as part of a broader digital resource ecosystem.

iii. Digital Infrastructure

Digital infrastructure comprises broadband connectivity, mobile networks, electricity supply, and secure payment systems which enables digital interaction and transaction (Kwarteng et al., 2024). Reliable infrastructure supports technology adoption, operational efficiency, and scalable digital business models (Sharma & Díaz Andrade, 2023).

In Nigeria, infrastructural deficits such as unstable electricity and uneven broadband coverage continue to constrain entrepreneurs, particularly outside major urban centres (Odu, 2017; Oyelakin, 2022). Infrastructure therefore represents a foundational condition

for digital entrepreneurship. However, its effectiveness depends on entrepreneurs' skills and financial access, reinforcing the interdependence of digital resource domains.

2.2 Gender-Related Constraints in Digital Entrepreneurship

Although digital technologies are often portrayed as equalising, research consistently demonstrates that structural gender inequalities persist within entrepreneurial ecosystems (UNCTAD, 2025). Women entrepreneurs frequently encounter barriers in accessing credit, training, networks, and decision-making authority (Ugwuja & Ayodeji, 2022). These constraints may limit the extent to which digital and financial resources translate into performance gains.

Much of the literature measures gender as a demographic variable rather than modelling gender-related structural barriers directly. Conceptualising gender-related constraints as perceived discriminatory practices, exclusion from networks, or restricted access to finance allows a more precise examination of how socio-institutional factors shape entrepreneurial outcomes. In marginalised communities, such constraints may operate alongside resource limitations, potentially weakening the performance benefits associated with digitalisation.

2.3 Theoretical Foundations: RBV and DOI

The Resource-Based View (RBV) explains performance heterogeneity through differences in firms' resource endowments (Barney, 1991). In digital entrepreneurship, digital literacy, financial access, and infrastructure can be conceptualised as strategic resource domains enabling value creation (Valentowitsch & Schueffel, 2024). From this perspective, stronger digital and financial resource bundles should be associated with superior performance.

However, RBV alone does not fully account for the socio-institutional conditions influencing resource utilisation. Diffusion of Innovation (DOI) theory complements RBV by emphasising that technology adoption and effective use depend on contextual factors, including norms, perceived advantages, and environmental constraints (Rogers, 2003). Integrating RBV and DOI therefore allows analysis of both resource endowments and contextual barriers. Within marginalised communities, digital literacy, financial inclusion, and infrastructure function as enabling resources, while gender-related constraints represent contextual inhibitors that may limit resource mobilisation and performance outcomes.

2.4 Research Gap

Although prior studies document positive associations between digital resources and SME performance, three limitations remain. First, digital literacy, financial inclusion, and infrastructure are often examined independently rather than jointly. Second, gender is typically treated as a demographic characteristic rather than as a structural constraint affecting resource utilisation. Third, empirical evidence remains uneven across marginalised sub-national regions within developing economies. By modelling these resource domains and gender-related constraints simultaneously within South-South Nigeria, this study extends existing scholarship into an under-examined regional context while contributing to understanding of how digital and financial resources relate to entrepreneurial performance in structurally constrained environments.

2.5 Hypotheses Development

From an RBV perspective, digital literacy, financial inclusion, and digital infrastructure constitute valuable resource domains that enable entrepreneurs to create and capture value. DOI further suggests that effective adoption and utilisation of digital innovations depend on contextual conditions and resource availability. Within marginalised environments, these domains are expected to shape performance outcomes in distinct but complementary ways.

Digital literacy enhances entrepreneurs' ability to deploy digital tools strategically for marketing, customer engagement, and operational efficiency. Empirical evidence consistently links digital competence to improved SME performance. Accordingly:

H1: Digital literacy is positively associated with entrepreneurial performance in marginalised communities.

Access to financial services reduces capital constraints, improves liquidity management, and supports investment in productive assets. Digital financial services may further reduce transaction costs and broaden market participation. Therefore:

H2: Financial inclusion is positively associated with entrepreneurial performance in marginalised communities.

Reliable digital infrastructure facilitates connectivity, secure transactions, and information flows necessary for digital business activity. Entrepreneurs operating in environments with stronger infrastructural support are therefore expected to report higher performance.

H3: Digital infrastructure is positively associated with entrepreneurial performance in marginalised communities.

Gender-related structural constraints may limit access to networks, finance, and institutional support, thereby reducing the extent to which digital and financial resources translate into improved outcomes. Consequently:

H4: Gender-related constraints are negatively associated with entrepreneurial performance in marginalised communities.

2.6 Conceptual framework

Drawing on RBV and DOI, this study conceptualises entrepreneurial performance as a function of four primary predictors: digital literacy, financial inclusion, digital infrastructure, and gender-related constraints (Valentowitsch & Schueffel, 2024; van der Boor

et al., 2014). Digital literacy, financial inclusion, and digital infrastructure are considered enabling resource domains that enhance entrepreneurs' ability to adopt and benefit from digital innovations, while gender-related constraints are modelled as contextual barriers that may diminish or counteract these positive effects (UNDP, 2023; UNCTAD, 2025; Fauzi, 2020; Oyelakin, 2022). The empirical model specifies entrepreneurial performance as the dependent variable, with the four constructs as independent variables, and includes control variables for key entrepreneur and firm characteristics. Hypotheses H1-H4 are tested using multiple regression analysis.

3. METHODOLOGY

3.1 Research Design and Context

This study adopts a quantitative, cross-sectional survey design to examine the associations between digital literacy, financial inclusion, digital infrastructure, gender-related constraints, and entrepreneurial performance in marginalised communities in South-South Nigeria (Bryman, 2022; Saunders et al., 2023). A cross-sectional design was considered appropriate for identifying patterns of association among constructs within a specific regional context, although it does not permit causal inference.

The empirical setting comprises six states in South-South Nigeria: Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers. These states have experienced increasing adoption of digital tools among micro and small enterprises, while continuing to face infrastructural and institutional constraints (UNDP, 2023; Odu, 2017). Focusing on this region allows examination of digital entrepreneurship within a sub-national context characterised by both emerging digital engagement and structural marginalisation.

3.2 Sampling and Data Collection

A multistage sampling approach was employed. First, marginalised communities with observable digital entrepreneurial activity were purposively identified within each state. Second, entrepreneurs operating within these communities were approached using stratified criteria to ensure representation across gender, sector (retail, services, manufacturing, agriculture, other), and years of business experience (Saunders et al., 2023).

Marginalised communities were defined as localities characterised by infrastructural deficits, limited financial penetration, and below-state-average socio-economic indicators, based on National Bureau of Statistics and UNDP regional reports. Eligible communities met at least two criteria: unreliable electricity or broadband access, limited formal banking presence, or classification as peri-urban/rural areas with lower development indicators. Within these communities, entrepreneurs were included if they reported using at least one digital tool for business purposes (for example, mobile payments, social media marketing, online communication), verified through survey screening questions.

The target sample size was estimated using Cochran's (1977) formula for proportions at a 95% confidence level and 5% margin of error, yielding an approximate requirement of 400 respondents. A total of 380 usable responses were obtained and included in the final analysis. This sample size is considered adequate for multiple regression analysis with the specified number of predictors and control variables.

Data was collected using a structured questionnaire administered online via Google Forms and Qualtrics. The survey link was distributed through email and digital communication platforms, including WhatsApp and Telegram. While this approach facilitated access to digitally active entrepreneurs, it may have excluded less digitally connected businesses, and this limitation is acknowledged below. Participation was voluntary, and respondents were assured of anonymity and confidentiality.

3.3 Measures

All primary constructs were measured using multi-item Likert-type scales ranging from 1 (strongly disagree) to 5 (strongly agree). Items were adapted from established instruments in digital literacy, financial inclusion, and entrepreneurship literature to enhance content validity.

i. Digital literacy (5 items) measured respondents' ability to use digital tools for business activities, evaluate online information, and apply digital technologies to operational processes (Eshet-Alkalai, 2004; Fauzi, 2020; Dinasti et al., 2023).

ii. Financial inclusion (5 items) assessed access to and usage of financial services, including bank accounts, mobile money, digital credit, and savings products, as well as perceived ease of obtaining financial support for business activities (World Bank Pathways Commission, 2020; Ashubwe et al., 2025).

iii. Digital infrastructure (4 items) evaluated the availability and reliability of internet connectivity, mobile networks, electricity supply, and digital payment systems within the respondent's locality (UNDP, 2023; Odu, 2017).

iv. Gender-related constraints (4 items) captured perceived gender-based barriers, including discriminatory treatment by financial institutions or customers, limited access to networks or training, and difficulties obtaining finance due to gender (UNCTAD, 2025; Ugwuja & Ayodeji, 2022). Higher scores reflect stronger perceived constraints.

v. Entrepreneurial performance (5 items) measured self-reported business outcomes over the past three years, including sales growth, profitability, customer base expansion, and overall performance (Yussupova et al., 2025).

Items were reviewed by two academic experts and one practitioner to assess clarity and contextual relevance prior to data collection.

3.4 Reliability and Validity

Exploratory factor analysis (EFA) was conducted to examine the underlying factor structure of the measurement scales. Items loaded on their intended constructs, supporting construct validity. Cronbach's alpha coefficients for all scales exceeded the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), indicating acceptable internal consistency. Although procedural remedies were applied (for example, clear item wording and anonymity assurances), the use of self-reported data collected at a single point in time raises the possibility of common method variance. As such, findings should be interpreted with appropriate caution.

3.5 Control Variables

To reduce potential omitted-variable bias, the regression models included control variables for entrepreneur gender, age, education level, and years of business experience, as well as firm characteristics including sector, number of employees, business age, and state of operation. These controls were entered into the first step of the regression models prior to inclusion of the focal predictors.

3.6 Data Analysis

Data analysis proceeded in three stages. First, descriptive statistics were computed to summarise sample characteristics and examine variable distributions. Second, Pearson correlation analysis assessed bivariate associations among the constructs. Third, multiple linear regression analysis was conducted to examine the associations between the four independent variables and entrepreneurial performance while controlling relevant entrepreneur and firm characteristics (Field, 2018).

Model fit was evaluated using R, R^2, adjusted R^2, and the F-statistic. Variance inflation factors (VIF) and tolerance statistics were examined to assess multicollinearity. Residual plots were inspected to evaluate assumptions of linearity, homoscedasticity, and normality of residuals. Diagnostic results indicated no severe violations of regression assumptions, although strong correlations among resource-related variables were observed. Given the cross-sectional design, the analysis is interpreted in terms of associations rather than causal relationships.

4. RESULT

4.1 Descriptive Statistics

Table 1 presents the demographic characteristics of respondents. The sample consists of 380 entrepreneurs, with 51.6% female and 48.4% male respondents. The majority of respondents are between 25 and 44 years of age (71.1%), and most operate in the services (38.4%) and retail (24.5%) sectors. Over two-thirds of respondents report between one and six years of business experience, indicating that many firms are in early or growth stages.

Descriptive statistics and Pearson correlation coefficients for the main study variables are reported in Table 1 and 2. Entrepreneurial performance is positively correlated with digital literacy, financial inclusion, and digital infrastructure, and negatively correlated with gender-related constraints. Correlations among the resource-related variables are relatively strong, suggesting potential overlap in underlying dimensions, although diagnostic checks reported below indicate acceptable multicollinearity levels.

Table 1. Demographic Information of Respondents

		Frequency	Percent
Gender	Male	184	48.4
	Female	196	51.6
	Total	**380**	**100.0**
Age	18-24	46	12.1
	25-34	158	41.6
	35-44	112	29.5
	45-54	64	16.8
	55 and above	0	0.0
	Total	**380**	**100.0**
Educational Qualification	No Formal Education	18	4.7
	Primary	73	19.2
	Secondary	200	52.6
	Tertiary	89	23.4
	Total	**380**	**100.0**
Nature of Business	Retail	93	24.5
	Services	146	38.4
	Manufacturing	70	18.4
	Agriculture	32	8.4
	Others	39	10.3
	Total	**380**	**100.0**

Year of Business Experience	Less than 1 year	70	18.4
	1-3 Years	145	38.2
	4-6 Years	116	30.5
	More than 6 Years	49	12.9
	Total	**380**	**100.0**

Source: Research Filed Survey, (2025)

4.2 Regression Analysis

Multiple regression analysis was conducted to examine the associations between digital literacy, financial inclusion, digital infrastructure, gender-related constraints, and entrepreneurial performance, controlling for entrepreneur and firm characteristics. The overall regression model is statistically significant ($F(4, 375) = 1410.049$, $p < 0.001$). The model explains a substantial proportion of the variance in entrepreneurial performance ($R = 0.968$, $R^2 = 0.938$, adjusted $R^2 = 0.937$). While the explanatory power of the model is high, this should be interpreted cautiously given the perceptual nature of the measures and the conceptual proximity among resource-related constructs. The use of self-reported Likert scales for both independent and dependent variables may contribute to shared variance.

Table 2. Regression showing the significance of each predictor to entrepreneurial performance

R = 0.968	***$R^2 = 0.938$***	***Adjusted $R^2 = 0.937$***	***$F(4, 375) = 1410.049$, $p < 0.001$***

Source: Researcher's field survey, 2025.

The regression models include controls for entrepreneur and firm characteristics; for brevity, the coefficients for these control variables are not reported in Table 3 but are available on request.

Table 3. Contribution of each predictor to entrepreneurial performance

Predictor	B	Std. Error	Beta	t	Sig.
Constant	-0.119	0.034	–	-3.461	.001
Digital literacy	0.407	0.018	0.424	22.153	.000
Financial inclusion	0.785	0.032	0.776	24.662	.000
Digital infrastructure	0.332	0.032	0.344	10.444	.000
Gender related constraints	-0.499	0.039	-0.527	-12.820	.000

Source: Researcher's field survey, 2025.

4.3 Hypothesis Testing

Table 3 reports the regression coefficients for each predictor. Digital literacy is positively and significantly associated with entrepreneurial performance ($B = 0.407$, $\beta = 0.424$, $p < 0.001$), supporting H1. Entrepreneurs reporting higher digital skills also report stronger business performance.

Financial inclusion shows a positive and statistically significant association with performance ($B = 0.785$, $\beta = 0.776$, $p < 0.001$), supporting H2. Among the predictors, financial inclusion exhibits the largest standardised coefficient, suggesting that access to and use of financial services is strongly associated with reported performance outcomes in this sample. Digital infrastructure is also positively and significantly associated with performance ($B = 0.332$, $\beta = 0.344$, $p < 0.001$), supporting H3. Entrepreneurs operating in environments with more reliable digital connectivity and payment systems report better performance.

Gender-related constraints demonstrate a negative and statistically significant association with entrepreneurial performance ($B = -0.499$, $\beta = -0.527$, $p < 0.001$), supporting H4. Holding other variables constant, higher levels of perceived gender-based barriers are associated with lower reported performance.

4.4 Model diagnostics

Variance inflation factor (VIF) values and tolerance statistics indicate that multicollinearity remains within acceptable thresholds, although correlations among digital literacy, financial inclusion, and digital infrastructure are relatively strong. Inspection of residual plots suggests no major violations of linearity or homoscedasticity assumptions. Residuals do not show severe departures from normality. Given the cross-sectional design, the findings are interpreted as associations rather than causal effects.

5. DISCUSSION

This study examined how digital literacy, financial inclusion, digital infrastructure, and gender-related constraints are associated with entrepreneurial performance in marginalised communities in South-South Nigeria. The results indicate that all three digital resource domains are positively and significantly related to self-reported performance, while gender-related constraints are negatively associated with performance outcomes. These findings reinforce the importance of resource complementarity within structurally constrained environments.

5.1 Digital Literacy as an Enabling Capability

The positive association between digital literacy and entrepreneurial performance aligns with prior research suggesting that digital competence enhances market reach, customer engagement, and operational efficiency (Fauzi, 2020; Dinasti et al., 2023). In marginalised settings where formal business support services may be limited, digital skills appear to function as a critical enabling capability.

However, the findings should not be interpreted as evidence that digital literacy alone guarantees improved outcomes. Rather, digital competence appears to operate most effectively when supported by financial access and reliable infrastructure. This supports the RBV perspective that performance advantages arise from bundled resource configurations rather than isolated capabilities.

5.2 Financial Inclusion as a Central Resource Domain

Among the predictors, financial inclusion exhibits the largest standardised coefficient. This suggests that access to and effective use of financial services may be particularly salient for entrepreneurs operating in capital-constrained environments. Consistent with prior research, financial access likely supports liquidity management, investment in productive assets, and business expansion (Ashubwe et al., 2025; Ugwuja & Ayodeji, 2022).

In marginalised communities where informal financing dominates, access to formal and digital financial services may reduce vulnerability and enhance stability. Nevertheless, given the cross-sectional design, reverse causality cannot be ruled out. Higher-performing firms may be better positioned to secure financial access. Future longitudinal research would be necessary to disentangle directionality.

5.3 Digital Infrastructure as Foundational Support

The positive association between digital infrastructure and performance underscores the importance of enabling environmental conditions. Reliable connectivity, electricity, and payment systems provide the foundational architecture upon which digital entrepreneurship operates. In contexts characterised by infrastructural instability, improvements in infrastructure may amplify the returns to digital skills and financial inclusion.

At the same time, infrastructure alone does not appear sufficient. Its effectiveness depends on entrepreneurs' capacity to utilise available systems and their access to financial mechanisms that support digital engagement. This reinforces the interdependent nature of digital resource domains.

5.4 Gender-Related Constraints as Structural Inhibitors

Gender-related constraints are negatively associated with entrepreneurial performance, suggesting that structural barriers continue to shape outcomes within digital ecosystems. Entrepreneurs reporting higher levels of perceived discrimination, exclusion from networks, or restricted financial access also report weaker performance outcomes.

Importantly, modelling gender-related constraints as structural barriers rather than simply including a gender dummy variable allows a more precise understanding of how socio-institutional conditions influence performance. The findings indicate that digitalisation does not automatically eliminate structural inequalities; instead, such constraints may persist alongside technological advancement.

The observed positive bivariate correlation but negative regression coefficient suggests a more complex underlying relationship, potentially reflecting interaction effects among resource domains. While this study does not model moderation effects explicitly, the pattern highlights the need for future research examining how structural constraints shape resource utilisation.

5.5 Model Strength and Interpretative Caution

The regression model explains a substantial proportion of variance in entrepreneurial performance ($R^2 = 0.938$). While this indicates strong associations, it warrants careful interpretation. The use of perceptual Likert-scale measures for both independent and dependent variables may contribute to shared method variance. Additionally, conceptual proximity among digital literacy, financial inclusion, and infrastructure may partially account for the high explanatory power.

Accordingly, findings should be interpreted as robust associations rather than definitive causal relationships. Future studies incorporating objective performance indicators and multi-source data would enhance robustness.

5.6 Implications

For policymakers, the findings suggest that interventions promoting digital entrepreneurship in marginalised communities should adopt an integrated approach. Investments in digital skills training, expansion of accessible financial services, and improvements in infrastructure are likely to be most effective when implemented concurrently. Addressing gender-related structural barriers remains essential to ensure inclusive participation and equitable outcomes.

For researchers, the study demonstrates the value of modelling complementary digital resource domains alongside structural constraints within sub-national contexts. Further research employing longitudinal or mixed-method designs could provide deeper insight into causal mechanisms and interaction effects.

6. CONCLUSION

This study investigated how digital literacy, financial inclusion, digital infrastructure, and gender-related constraints are associated with entrepreneurial performance in marginalised communities in South-South Nigeria. Drawing on RBV and DOI, the findings demonstrate that digital and financial resource domains are positively related to performance, while structural gender-related constraints are negatively associated with entrepreneurial outcomes.

By modelling these factors simultaneously within a marginalised regional context, the study contributes to digital entrepreneurship scholarship in three ways. First, it highlights the complementary nature of digital and financial resources. Second, it conceptualises gender-related constraints as structural barriers rather than demographic characteristics. Third, it provides regionally grounded evidence from an under-examined sub-national setting.

Overall, the findings suggest that digital transformation alone is insufficient to guarantee improved entrepreneurial outcomes. Performance advantages appear to depend on the joint presence of enabling resources and the reduction of structural constraints.

7. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Several limitations should be acknowledged.

First, the cross-sectional design limits causal inference. Although strong associations are observed, reverse causality remains possible. Longitudinal or quasi-experimental designs would strengthen causal claims.

Second, all primary constructs were measured using self-reported Likert-scale items collected at a single point in time. This raises the possibility of common method variance and inflated correlations. The very high R^2 may partially reflect shared measurement effects or conceptual proximity among constructs. Future research should incorporate objective performance indicators, financial records, or independently verified infrastructural data.

Third, online data collection may have excluded less digitally connected entrepreneurs, potentially biasing the sample toward relatively more digitally engaged firms. Mixed-mode data collection would improve representativeness.

Fourth, while gender-related constraints were modelled as direct predictors, the study does not examine potential moderating or mediating mechanisms. Future research could explore whether structural constraints condition the impact of digital and financial resources on performance.

Finally, the findings are context-specific to South-South Nigeria. Comparative studies across multiple regions would enhance external validity and deepen understanding of contextual variation in digital entrepreneurship ecosystems.

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