



Digital Literacy and Logistics Capability as Missing Links: How Human Capital and Supply Chain Readiness Shape Fintech's Impact on Agripreneur Performance in Cameroon's North West Region

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Abstract

This study examined the mediating roles of digital literacy and logistics capability in the relationship between FinTech adoption and agripreneur performance, and the moderating effects of human capital and supply chain readiness in Cameroon's North West Region. A quantitative cross-sectional survey design was employed, collecting data from 277 agripreneurs through structured questionnaires. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings revealed that digital literacy and logistics capability significantly mediate the FinTech adoption and performance relationship. Human capital moderated the FinTech adoption and digital literacy relationship, while supply chain readiness moderated the FinTech adoption and logistics capability relationship. The study recommends integrating digital literacy training and supply chain development into FinTech initiatives and tailoring interventions to agripreneurs with varying capability levels. These findings contribute to understanding how FinTech adoption generates performance improvements in agricultural contexts, extending the Resource-Based View and Dynamic Capabilities Theory to individual-level agripreneurship in a developing-country setting.

Keywords: *Fintech Adoption, Digital Literacy, Logistics Capability, Human Capital, Supply Chain Readiness, Agripreneur Performance*

Introduction

Agriculture remains the backbone of Cameroon's economy, employing nearly 60% of the population and providing the primary

livelihood for millions of rural households. Within this context, agripreneurs, smallholder farmers and agricultural entrepreneurs engaged in commercial farming, are critical

for economic transformation and poverty reduction. The North West Region, despite its agricultural potential, faces persistent challenges: limited market access, postharvest losses, and inadequate financial services. Recent evidence from Ako (2026) documents that digital technology adoption among smallholder farmers in Cameroon is associated with notable economic benefits, including an average annual income increase of \$500 and yield improvements of 200 kg/ha, with adoption likelihood strongly influenced by mobile ownership, credit access, cooperative membership, and electricity availability.

FinTech has emerged as a transformative force offering digital payments, alternative credit scoring, and market-linking platforms. In Cameroon, mobile money services (MTN Mobile Money, Orange Money) have achieved significant penetration, yet adoption of more advanced FinTech services remains uneven. The critical insight emerging from recent scholarship is that mere availability of FinTech does not guarantee improved performance; effectiveness depends on enabling capabilities. Ako (2026) demonstrates that digital literacy functions as a significant driver of technology adoption among Cameroonian farmers, while infrastructure deficits, particularly electricity access and rural connectivity, persist as barriers. This suggests that the mechanisms through which FinTech translates into performance gains require systematic investigation.

Empirical research examining these mechanisms in the Cameroonian context remains limited. The North West Region is especially relevant given its agricultural potential, the disruption of informal labor networks due to the Anglophone Crisis, and ongoing digital entrepreneurship initiatives. Understanding how FinTech impacts agripreneur performance is essential for designing effective interventions.

Statement of the Problem

Agripreneurs in Cameroon's North West Region faces a paradox: despite FinTech proliferation and government-supported digital agriculture initiatives, tangible performance improvements remain inconsistent. Ako (2026) found that while mobile technology adoption is associated with measurable economic gains, adoption rates remain constrained by digital literacy gaps, infrastructure deficits, and limited access to complementary resources. The digital divide persists, with less than half of citizens having reliable internet access, particularly in rural production zones. Limited financial literacy and weak understanding of digital financial products further constrain effective utilization. Three critical gaps remain: (1) the mediating role of digital literacy in translating FinTech access into effective utilization is underexplored in Cameroonian agriculture; (2) logistics capability, the ability to manage supply chains and physical distribution, is underexamined as an explanation for why digital market access does not always yield sales or reduce postharvest losses; and (3) the foundational roles of human capital and supply chain readiness have not been systematically investigated at the individual agripreneur level.

The problem, therefore, is that the mechanisms through which FinTech investments translate into agripreneur performance remain poorly understood. Without clarity on these mediating and moderating effects, interventions may continue to underperform relative to their potential.

Objectives of the Study

1. To examine the mediating roles of digital literacy and logistics capability in the relationship between FinTech adoption and agripreneur performance in Cameroon's North West Region.

2. To assess the moderating effects of human capital and supply chain readiness on the relationship between FinTech adoption and agripreneur performance through digital literacy and logistics capability.

Research Hypotheses

H1: Digital literacy mediates the relationship between FinTech adoption and agripreneur performance.

H2: Logistics capability mediates the relationship between FinTech adoption and agripreneur performance.

H3: Human capital moderates the relationship between FinTech adoption and digital literacy, such that the positive effect is stronger for agripreneurs with higher human capital.

H4: Supply chain readiness moderates the relationship between FinTech adoption and logistics capability, such that the positive effect is stronger for agripreneurs with higher supply chain readiness.

Literature Review

Conceptual Review

FinTech Adoption. FinTech refers to technological innovations in financial services, including digital payments, mobile banking, blockchain, alternative credit scoring, and crowdfunding. In agriculture, it manifests through mobile money, digital lending, and farmer and buyer platforms. Adoption extends beyond mere access to the integration of digital tools into business processes and decision-making. Ako (2026) emphasizes that adoption is a multifaceted phenomenon shaped by individual, household, and contextual factors, including mobile ownership, credit access, and cooperative membership.

Digital Literacy. Digital literacy encompasses the skills, knowledge, and competencies needed to navigate, evaluate, and create information with digital technologies, including using digital financial

tools, understanding digital products, and managing digital risks. It exists on a continuum from basic operational skills to strategic capability. Ako (2026) identifies digital literacy as a statistically significant driver of technology adoption among Cameroonian farmers, underscoring its foundational role in determining who benefits from digital innovations.

Logistics Capability. Logistics capability is the capacity to manage the flow of goods, information, and resources from origin to consumption, covering transportation, storage, inventory, order fulfillment, and supply chain coordination. In the North West Cameroon context, logistics capability is complicated by postconflict disruptions to transportation networks and market infrastructure. Ako's (2026) research on worker-side labor matching platforms in the region documents that farmers face high search costs due to information asymmetry, with workers spending time and money traveling to farms that may not need them. This directly illustrates how logistics capability gaps constrain agricultural performance.

Human Capital. Human capital represents the knowledge, skills, competencies, and attributes embodied in individuals, including formal education, agricultural training, business skills, experience, and capacity to learn. Individuals with higher human capital better recognize technology value and integrate it into operations. Ako (2026) found that academic qualification is a key predictor of technology receptiveness, highlighting the role of human capital in shaping adoption effectiveness.

Supply Chain Readiness. Supply chain readiness is the preparedness of a value chain to coordinate activities, manage information, and respond to market demands, referring to the structural and relational conditions that enable logistics activities, rather than the activities themselves. In postconflict North West Cameroon, supply chain readiness is

particularly compromised: Ako (2026) documents that the Anglophone Crisis has shattered informal labor networks, creating severe coordination challenges for agribusinesses and workers alike.

Agripreneur Performance. Performance is a multidimensional construct encompassing economic outcomes (income, profit, sales), operational outcomes (efficiency, reduced postharvest losses), and market outcomes (access, customer reach). Ako (2026) provides empirical evidence that technology adoption among Cameroonian farmers is associated with poverty reduction of approximately 10 percentage points, demonstrating the transformative potential of digital tools when enabling conditions are present.

Theoretical Literature Review

Resource-Based View (RBV). Barney (1991) holds that firms achieve competitive advantage through valuable, rare, imperfectly imitable, non-substitutable resources. FinTech constitutes such a strategic resource, but resources alone are insufficient; firms need capabilities to leverage them. Digital literacy and logistics capability are the organizational capabilities that convert FinTech resources into performance, explaining why access alone does not guarantee gains.

Dynamic Capabilities Theory. Teece, Pisano, and Shuen (1997) extend RBV by focusing on integrating, building, and reconfiguring competencies in changing environments, including sensing, seizing, and transforming. Digital literacy and logistics capability function as dynamic capabilities enabling agripreneurs to respond to technological and market change. In postconflict contexts like North West Cameroon, where traditional labor networks have been disrupted, dynamic capabilities take on heightened importance.

Technology Acceptance Model (TAM). Davis (1989) posits that perceived usefulness and perceived ease of use drive adoption and

usage. TAM explains why adoption is an ongoing integration process, shows how digital literacy shapes perceived ease of use, and how human capital shapes perceived usefulness, accounting for variation in adoption effectiveness. Ako's (2026) finding that perceived usefulness was the strongest predictor of AI-powered support integration ($r = 0.52$, $p < 0.01$) corroborates TAM's relevance in Cameroonian agripreneurship.

Information Processing Theory. Organizations with superior information processing capabilities manage uncertainty, coordinate supply chains, and respond to markets. FinTech enhances information processing through digital platforms and market information services, but technology alone is insufficient. Supply chain readiness provides the structural conditions enabling effective information processing, while logistics capability reflects the actual capacity to act on information.

Empirical Literature Review

FinTech Adoption and Performance. Ako (2026), in a mixed-methods study of 850 farmers across three Cameroonian regions, found that technology adoption yields measurable economic benefits: a \$500 increase in annual income, 200 kg/ha yield improvement, and a 10-percentage point reduction in poverty rates. These findings align with broader evidence that FinTech-enabled digital transformation enhances performance, though the mechanisms vary by context.

Digital Literacy as a Mediating Mechanism. Digital literacy emerges as a critical enabler in Cameroonian agriculture. Ako (2026) identified digital literacy as a significant driver of adoption (alongside cooperative membership and electricity access), with qualitative interviews confirming that stakeholders view mobile technology as a critical enabler while identifying infrastructure deficits as persistent barriers.

This supports the proposition that digital literacy mediates the translation of FinTech access into tangible outcomes.

Logistics Capability as a Mediating Mechanism. Logistics constraints in North West Cameroon are well documented. Ako (2026) reports that postconflict disruptions to labor networks create high search costs and coordination failures, with workers wasting time and money on travel to farms that do not need them. The same study found that AI-powered matching platforms with voice and offline capabilities significantly reduced wasted travel (+23 percentage points improvement) and increased wages (+2,400 CFA), demonstrating that logistics capability, operationalized through coordination mechanisms, directly affects economic outcomes.

Human Capital and Technology Adoption. Ako (2026) found that academic qualification significantly predicted mHealth receptiveness, and that digital literacy gaps require capacity-building efforts tailored to varying educational backgrounds. In related research, Ako (2026) demonstrated that perceived usefulness of AI support systems was the strongest predictor of digital resilience among agripreneurs in Northwest Cameroon ($\beta = 0.25$, $p < 0.001$), with human resource practice integration also significant ($\beta = 0.21$, $p < 0.001$). These findings support the moderating role of human capital.

Supply Chain Readiness and Logistics Performance. Ako's (2026) research on worker-side platforms in Northwest Cameroon provides direct evidence that supply chain coordination mechanisms, when designed appropriately, can overcome readiness deficits. The study found that voice-enabled, offline-capable platforms were significantly more accessible than text-based alternatives (73% preferred voice interfaces; 87% required offline capability), and that platform users experienced reduced wasted travel and higher wages. This suggests that

supply chain readiness moderates the effectiveness of technology-enabled logistics improvements.

Literature Gap

Several gaps motivate this study. First, digital literacy and logistics capability have received limited attention as distinct mediating mechanisms in agriculture; research tends to treat digital capabilities as monolithic. Ako (2026) advances understanding of adoption drivers but does not test mediation pathways through specific capabilities. Second, human capital's moderating role in agricultural FinTech adoption is not systematically examined at the individual agripreneur level, despite evidence on dynamic capabilities. Third, existing research emphasizes firm-level analysis, with limited attention to the individual agripreneur level, which is essential for designing targeted interventions. This study addresses these gaps by testing an integrated mediation and moderation framework using PLS-SEM.

Methodology

Research Design

A quantitative, cross-sectional survey design was used to collect primary data from agripreneurs in Cameroon's North West Region, enabling statistical testing of the hypothesized relationships. The cross-sectional approach was appropriate for examining relationships at a single point in time, and the quantitative method provided the statistical power needed for structural equation modeling, including direct, indirect (mediation), and moderation effects.

Study Area and Population

The North West Region was selected for three reasons: (1) it hosts targeted digital agriculture and entrepreneurship initiatives; (2) it faces significant agricultural challenges, including postconflict disruptions to labor and market networks, making it an apt context for

examining FinTech effectiveness; and (3) its agricultural potential and entrepreneurial activity make it relevant for studying agripreneur performance.

The target population comprised agripreneurs in the region, including farmers engaged in commercial production, agricultural processors, and those involved in input supply and marketing, who had access to or used FinTech solutions (mobile money, digital payments, or market-linking platforms).

Sampling Technique and Sample Size

Purposive sampling was used, with respondents required to: (1) operate as agripreneurs in the North West Region; (2) have engaged in agricultural production or trading for at least three years; (3) have used or had access to FinTech solutions; and (4) be directly involved in decisions on technology adoption and supply chain management. Purposive sampling was justified because the study required respondents with specific experience and knowledge relevant to FinTech adoption and agripreneurial activities, a sampling strategy consistent with recent research on technology adoption in the region. Following the guideline of a minimum of 10 cases per indicator and the study's 25 measurement items, a target sample of 300 was set. Of 350 questionnaires distributed, the final usable sample was 277 (79.1% response rate).

Data Collection Instrument

A structured questionnaire measured each construct using items adapted from validated scales and contextualized to Cameroonian agriculture. The instrument is presented in Appendix A. FinTech adoption was measured using four items adapted from Xu et al. (2026). Digital literacy was measured using four items adapted from Ako (2026). Logistics capability was measured using four items adapted from supply chain coordination literature. Human capital was measured using

four items covering education, training, and business experience. Supply chain readiness was measured using four items covering partners, infrastructure, and information systems. Agripreneur performance was measured using five items covering economic, operational, and market outcomes.

All items used five-point Likert scales (1 = strongly disagree to 5 = strongly agree). The instrument was administered in English with French and local-language translation as needed, and piloted with 30 agripreneurs, yielding minor wording refinements.

Data Collection Procedure

Data were collected over three months (January to March 2026) by trained research assistants via face-to-face interviews, accommodating varying literacy levels and ensuring consistent item interpretation. Ethical safeguards included informed consent, clear explanation of purpose, voluntary participation, and assurance of confidentiality with aggregate-only reporting. The study protocol was reviewed and approved by the University of Bamenda Ethics Committee (Protocol Number: UB/EC/2026/012) prior to data collection.

Data Analysis Techniques

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4.0. PLS-SEM was selected because it suits complex models with multiple mediation and moderation relationships, accommodates reflective and formative measures without normality assumptions, and performs well with relatively small samples.

Analysis proceeded in two stages: first, the measurement model was assessed via indicator loadings, composite reliability, average variance extracted (AVE), and discriminant validity (HTMT); second, the structural model tested direct, mediation, and moderation effects. Bootstrapping with 5,000

resamples generated standard errors and t-statistics. Common method bias was checked using Harman's single-factor test and the common latent factor method.

Validity and Reliability

Content validity was ensured by adapting items from validated scales; construct validity was assessed via confirmatory factor analysis. Convergent validity was confirmed with AVE values above 0.50, and discriminant validity via the Fornell-Larcker criterion and HTMT ratio. Reliability was established through composite reliability and Cronbach's alpha, both exceeding 0.70.

Ethical Considerations

This study was conducted in accordance with the Declaration of Helsinki and Cameroonian ethical guidelines for research involving human participants. Given the post-conflict context and the vulnerability of the study population, special safeguards were implemented to protect participants' rights, safety, and well-being.

Informed Consent. All participants provided informed consent prior to participation. Given varying literacy levels, consent was obtained verbally in the presence of a witness and read aloud in English, Pidgin English, or local languages as needed. Participants were informed of the study purpose, voluntary nature of participation, right to withdraw at any time without penalty, procedures involved,

potential risks and benefits, confidentiality measures, and contact information for questions or concerns. Written consent was obtained where participants were literate; for non-literate participants, verbal consent was documented and witnessed.

Confidentiality and Anonymity. All responses were kept confidential. Data were anonymized using unique identification codes, and personal identifiers were removed prior to analysis. Given the sensitivity of displacement status and potential security risks in a post-conflict setting, special care was taken to ensure individual responses could not be traced back to specific participants. Data were stored on encrypted devices accessible only to the research team. Only aggregate-level results are reported.

Protection of Vulnerable Populations. The study population included internally displaced persons, women, and agricultural workers in a conflict-affected region. Additional safeguards included: (1) all interviews conducted in private settings; (2) explicit assurance that responses would not be shared with village chiefs, farm managers, or community members; (3) village chiefs engaged only for community acceptance and not present during individual interviews; (4) participants informed they could decline any question; and (5) provision of contact information for local psychosocial support services in case of distress.

Results of findings

Descriptive Statistics

Table 1: Descriptive Statistics of Respondents (N = 277)

Variable	Category	Frequency (n)	Percentage (%)
Gender			
	Male	173	62.5
	Female	104	37.5
	Total	277	100.0
Education Level			
	Primary only	37	13.4
	Secondary	189	68.2

	Tertiary	51	18.4
	Total	277	100.0
Business Structure			
	Sole proprietor	152	54.9
	Cooperative member	87	31.4
	Other structures	38	13.7
	Total	277	100.0
FinTech Adoption by Type			
	Mobile money	204	73.6
	Digital payment systems	127	45.8
	Digital lending platforms	60	21.7
Continuous Variables	Mean	SD	Range
Age (years)	41.3	9.7	22 to 68
Business experience (years)	12.5	6.8	3 to 35

Note: Percentages for FinTech adoption by type exceed 100% because respondents could report using multiple FinTech services. SD = standard deviation.

The final sample comprised 277 agripreneurs: 62.5% male and 37.5% female; 68.2% had completed secondary education, 18.4% tertiary, and 13.4% primary only. Mean age was 41.3 years (SD = 9.7; range 22 to 68). Business-wise, 54.9% were sole proprietors, 31.4% cooperative members, and 13.7% other structures; mean business experience was 12.5 years (SD = 6.8).

FinTech adoption was uneven: 73.6% used mobile money, 45.8% used digital payment systems, and 21.7% used digital lending platforms, indicating that advanced FinTech services remain limited. These adoption patterns are consistent with Ako's (2026) findings on technology adoption among Cameroonian farmers, where mobile ownership and access to credit significantly enhance adoption likelihood.

Measurement Model Assessment

Table 2: Measurement Model Assessment (Outer Loadings, Reliability, and Convergent Validity)

Construct	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
FinTech Adoption	FTA1	0.842	0.847	0.892	0.674
	FTA2	0.815			
	FTA3	0.798			
	FTA4	0.829			
Digital Literacy	DL1	0.856	0.872	0.906	0.709
	DL2	0.834			
	DL3	0.821			
	DL4	0.862			
Logistics Capability	LC1	0.803	0.835	0.884	0.658
	LC2	0.817			
	LC3	0.792			
	LC4	0.826			
Human Capital	HC1	0.781	0.813	0.867	0.620

	HC2	0.794			
	HC3	0.786			
	HC4	0.789			
Supply Chain Readiness	SCR1	0.812	0.826	0.879	0.646
	SCR2	0.798			
	SCR3	0.805			
	SCR4	0.801			
Agripreneur Performance	AP1	0.871	0.891	0.918	0.738
	AP2	0.858			
	AP3	0.845			
	AP4	0.862			
	AP5	0.876			

Note: All outer loadings exceed the 0.708 threshold. All reliability values exceed 0.70. All AVE values exceed 0.50.

All constructs demonstrated adequate reliability, with Cronbach's alpha and composite reliability values exceeding 0.70. Convergent validity was supported, as all AVE values exceeded 0.50 and all outer loadings exceeded 0.708.

Discriminant validity was assessed using the Fornell-Larcker criterion and HTMT ratio. Table 3 presents the Fornell-Larcker results, with the square root of AVE for each construct exceeding inter-construct correlations.

Table 3: Discriminant Validity Assessment (Fornell-Larcker Criterion)

Construct	FTA	DL	LC	HC	SCR	AP
FinTech Adoption (FTA)	0.821					
Digital Literacy (DL)	0.583	0.842				
Logistics Capability (LC)	0.527	0.612	0.811			
Human Capital (HC)	0.419	0.503	0.445	0.787		
Supply Chain Readiness (SCR)	0.504	0.538	0.591	0.476	0.804	
Agripreneur Performance (AP)	0.562	0.641	0.634	0.512	0.557	0.859

Note: Diagonal values represent the square root of AVE; off-diagonal values represent correlations between constructs.

Table 4: Heterotrait-Monotrait (HTMT) Ratio

Construct	FTA	DL	LC	HC	SCR
Digital Literacy (DL)	0.684				
Logistics Capability (LC)	0.627	0.712			
Human Capital (HC)	0.498	0.583	0.524		
Supply Chain Readiness (SCR)	0.598	0.624	0.678	0.562	
Agripreneur Performance (AP)	0.648	0.718	0.724	0.598	0.654

Note: All HTMT values are below the 0.85 threshold, confirming discriminant validity.

Table 5: Variance Inflation Factor (VIF) Values

Construct	VIF
FinTech Adoption	1.842
Digital Literacy	1.976
Logistics Capability	1.758
Human Capital	1.623
Supply Chain Readiness	1.694

Note: All VIF values are below 5, indicating no multicollinearity concerns.

HTMT ratios were all below the 0.85 threshold, further confirming discriminant validity. VIF values for all indicators were

below 5, indicating no multicollinearity concerns.

Structural Model Assessment

The structural model was assessed to test the hypothesized relationships. The model explained 40.3% of the variance in digital literacy ($R^2 = 0.403$), 34.7% of the variance in logistics capability ($R^2 = 0.347$), and 45.8% of the variance in agripreneur performance ($R^2 = 0.458$). These values indicate moderate to substantial explanatory power.

Effect sizes (f^2) were calculated: FinTech adoption on digital literacy ($f^2 = 0.256$),

FinTech adoption on logistics capability ($f^2 = 0.189$), digital literacy on performance ($f^2 = 0.142$), logistics capability on performance ($f^2 = 0.156$), and FinTech adoption on performance ($f^2 = 0.048$). Predictive relevance (Q^2) values, obtained through blindfolding, were all above zero (digital literacy: 0.287; logistics capability: 0.241; agripreneur performance: 0.312), confirming the model's predictive relevance.

Table 6: Model Fit Assessment

Fit Index	Value	Threshold	Interpretation
SRMR	0.062	Less than 0.08	Good fit
NFI	0.912	Greater than 0.80	Acceptable fit
R^2 (Digital Literacy)	0.403	Moderate	Substantial explanatory power
R^2 (Logistics Capability)	0.347	Moderate	Substantial explanatory power
R^2 (Agripreneur Performance)	0.458	Substantial	Strong explanatory power
Q^2 (Digital Literacy)	0.287	Greater than 0	Predictive relevance confirmed
Q^2 (Logistics Capability)	0.241	Greater than 0	Predictive relevance confirmed
Q^2 (Agripreneur Performance)	0.312	Greater than 0	Predictive relevance confirmed

Direct Effects

Table 7: Direct Effects

Path	β	t-value	p-value
FinTech Adoption → Digital Literacy	0.451	7.234	Less than 0.001
FinTech Adoption → Logistics Capability	0.383	6.127	Less than 0.001
Digital Literacy → Agripreneur Performance	0.337	5.498	Less than 0.001
Logistics Capability → Agripreneur Performance	0.356	5.872	Less than 0.001
FinTech Adoption → Agripreneur Performance	0.189	3.214	0.001

The results demonstrated significant positive relationships between FinTech adoption and both mediating variables. FinTech adoption had a positive effect on digital literacy ($\beta = 0.451$, p less than 0.001) and on logistics capability ($\beta = 0.383$, p less than 0.001). Both

mediating variables significantly predicted agripreneur performance. The direct effect of FinTech adoption on agripreneur performance was also significant but relatively smaller ($\beta = 0.189$, $p = 0.001$).

Mediation Effects

Table 8: Mediation Effects

Path	Indirect Effect	95% CI Lower	95% CI Upper	p-value	Mediation Type
FinTech Adoption $\rightarrow$ Digital Literacy $\rightarrow$ Agripreneur Performance	0.152	0.094	0.218	Less than 0.001	Partial
FinTech Adoption $\rightarrow$ Logistics Capability $\rightarrow$ Agripreneur Performance	0.136	0.082	0.197	Less than 0.001	Partial

The indirect effect through digital literacy was significant ($\beta = 0.152$, 95% CI [0.094, 0.218], p less than 0.001), supporting Hypothesis 1. Similarly, the indirect effect through logistics capability was significant ($\beta = 0.136$, 95% CI [0.082, 0.197], p less than 0.001), supporting Hypothesis 2.

The total effect of FinTech adoption on agripreneur performance was 0.477, with the direct effect accounting for 39.6% of this total and the indirect effects through digital literacy and logistics capability accounting for 31.9% and 28.5% respectively. These findings indicate partial mediation, as the direct effect remains significant alongside the indirect effects. This pattern suggests that FinTech adoption influences agripreneur performance both directly and through the intervening

mechanisms of digital literacy and logistics capability, consistent with the theoretical expectation that capability development constitutes one pathway among others through which digital financial technologies generate outcomes. The classification of partial mediation follows the standard criterion that significant direct and indirect effects coexist, indicating that the mediator accounts for only part of the total effect rather than the entirety of the relationship.

Moderation Effects

Table 9: Moderation Effects

Moderation Path	β	t-value	p-value
Human Capital $\times$ FinTech Adoption $\rightarrow$ Digital Literacy	0.187	3.782	Less than 0.001
Supply Chain Readiness $\times$ FinTech Adoption $\rightarrow$ Logistics Capability	0.215	4.223	Less than 0.001

The interaction between human capital and FinTech adoption significantly predicted digital literacy ($\beta = 0.187$, p less than 0.001), supporting Hypothesis 3. Simple slope analysis revealed that the positive effect of FinTech adoption on digital literacy was stronger for agripreneurs with high human capital ($\beta = 0.587$, $t = 7.892$, p less than 0.001) compared to those with low human

capital ($\beta = 0.315$, $t = 4.127$, p less than 0.001). This finding aligns with Ako's (2026) observation that academic qualification and digital literacy gaps require differentiated capacity-building strategies.

The interaction between supply chain readiness and FinTech adoption significantly predicted logistics capability ($\beta = 0.215$, p less than 0.001), supporting Hypothesis 4. Simple slope analysis revealed that the

positive effect was stronger for agripreneurs with high supply chain readiness ($\beta = 0.542$, $t = 7.341$, p less than 0.001) compared to those with low readiness ($\beta = 0.224$, $t = 3.018$, $p = 0.003$).

Summary of Hypothesis Testing

Table 10: Hypothesis Testing Summary

Hypothesis	Path	β	p-value	Support
H1	FinTech Adoption $\rightarrow$ Digital Literacy $\rightarrow$ Agripreneur Performance	0.152	Less than 0.001	Supported
H2	FinTech Adoption $\rightarrow$ Logistics Capability $\rightarrow$ Agripreneur Performance	0.136	Less than 0.001	Supported
H3	Human Capital moderates FinTech Adoption $\rightarrow$ Digital Literacy	0.187	Less than 0.001	Supported
H4	Supply Chain Readiness moderates FinTech Adoption $\rightarrow$ Logistics Capability	0.215	Less than 0.001	Supported

Discussion

Mediating Roles of Digital Literacy and Logistics Capability

The findings support both mediation hypotheses. The significant indirect effect through digital literacy ($\beta = 0.152$, p less than 0.001) indicates that agripreneurs with adequate digital literacy skills are better positioned to benefit from FinTech adoption. This aligns with Ako's (2026) finding that digital literacy significantly drives technology adoption and economic outcomes among Cameroonian farmers. The present study extends this by identifying digital literacy as a specific mediating mechanism, not merely a correlate of adoption, but a pathway through which FinTech access translates into performance.

The significant indirect effect through logistics capability ($\beta = 0.136$, p less than 0.001) demonstrates that FinTech adoption also enhances performance by improving supply chain management capacity. This is particularly meaningful in North West

Cameroon, where Ako (2026) documents severe coordination failures: workers waste time and money traveling to farms that do not need them, and agribusinesses cannot find workers reliably. Digital platforms and mobile money systems enable better coordination with supply chain partners, helping agripreneurs reduce postharvest losses and access markets.

The dual mediation reveals complementary mechanisms: digital literacy enables effective use of digital tools for financial management and decision-making, while logistics capability translates market access into actual sales by ensuring product availability and quality. Together they form a pathway through which digital financial technology generates tangible business outcomes. The partial nature of mediation (significant direct effect: $\beta = 0.189$, $p = 0.001$) suggests FinTech adoption also operates through additional mechanisms not captured in the model, potentially including improved financial

inclusion, reduced transaction costs, or enhanced market information access.

Moderating Effects of Human Capital and Supply Chain Readiness

Human capital significantly moderates the FinTech adoption and digital literacy relationship ($\beta = 0.187$, p less than 0.001), with the positive effect nearly twice as strong for agripreneurs with high human capital. This is consistent with Ako's (2026) finding that perceived usefulness of technology support was the strongest predictor of digital resilience among Northwest Cameroon agripreneurs, and that HR practice integration further strengthened outcomes. Human capital, including education, agricultural training, business skills, and experience, provides the foundation enabling agripreneurs to learn and apply digital skills.

Supply chain readiness significantly moderates the FinTech adoption and logistics capability relationship ($\beta = 0.215$, p less than 0.001), with the positive effect more than twice as strong for agripreneurs in high-readiness contexts. This finding is directly corroborated by Ako's (2026) research demonstrating that platform design features, including voice interfaces, offline capability, and integration with informal networks, determine whether technology can overcome coordination barriers. FinTech cannot substitute for inadequate supply chain infrastructure and relationships; it delivers logistics improvements only when the enabling environment exists.

Integrated Discussion and Theoretical Contributions

The results support a model in which FinTech adoption influences agripreneur performance both directly and through digital literacy and logistics capability, with effectiveness depending on human capital and supply chain readiness. Theoretically, this extends the Resource-Based View by identifying the

complementary capabilities through which FinTech resources generate performance, and supports Dynamic Capabilities Theory by showing that human capital enables agripreneurs to sense and seize opportunities created by FinTech adoption. TAM is extended by demonstrating that digital literacy shapes utilization effectiveness, not merely adoption decisions. Information Processing Theory is enriched by showing that supply chain readiness provides the structural conditions enabling logistics capability development.

Practically, interventions focused solely on providing FinTech access may underperform unless complemented by capacity building and supply chain development. The moderation findings imply that interventions should be tailored to target populations' human capital and supply chain readiness, with additional support for those with lower levels of these enabling conditions.

Conclusion

Based on data from 277 agripreneurs in Cameroon's North West Region, the study supported all four hypotheses. Digital literacy and logistics capability significantly mediate the FinTech adoption and agripreneur performance relationship. Human capital moderates the FinTech and digital literacy relationship, and supply chain readiness moderates the FinTech and logistics capability relationship. These findings provide theoretical and practical insights for enhancing the effectiveness of FinTech adoption in agricultural development, extending understanding of how capability development mediates technology and performance linkages in developing-country agripreneurship.

Implications

Theoretical Implications. The study makes five contributions: (1) extends RBV by identifying digital literacy and logistics

capability as complementary organizational capabilities required to leverage FinTech resources; (2) contributes to Dynamic Capabilities Theory by demonstrating that human capital enables agripreneurs to sense and seize FinTech opportunities; (3) extends TAM to agricultural FinTech by showing digital literacy shapes utilization effectiveness; (4) contributes to Information Processing Theory by showing supply chain readiness provides structural conditions enabling logistics capability; and (5) provides empirical evidence on mechanisms bridging technology availability and performance in agricultural development.

Practical Implications. For policymakers, FinTech infrastructure investment should be complemented by capacity building and supply chain development. Digital literacy training should be integrated into FinTech promotion programs, with interventions targeted to agripreneurs with lower human capital and supply chain readiness. Ako's (2026) finding that cooperative membership and access to credit significantly enhance adoption likelihood suggests that leveraging existing cooperative structures may be an effective delivery mechanism. For agripreneurs, investing in human capital and building supply chain relationships through training, cooperatives, and partnerships positions them to benefit more fully from FinTech adoption.

Limitations and Future Research

Three limitations are acknowledged: the cross-sectional design limits causal inference; self-reported data may carry response bias; and the North West Region focus limits generalizability. Future research should: (1) examine additional mediating mechanisms (financial inclusion, market access); (2) investigate other contextual moderators (institutional, cultural factors); (3) use longitudinal designs to capture dynamic capability development; (4) employ

qualitative methods to reveal capability-building processes; and (5) examine differential FinTech effects across agripreneur types (gender, age, cooperative membership).

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